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Logging In

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The Readiness platform is completely web based. To access the platform you will need:

- computer, tablet or mobile phone
- up-to-date web browser
- internet connection
- the URL for your Readiness tenant
- your credentials (username and password)

The URL for your Readiness tenant will take the form of:

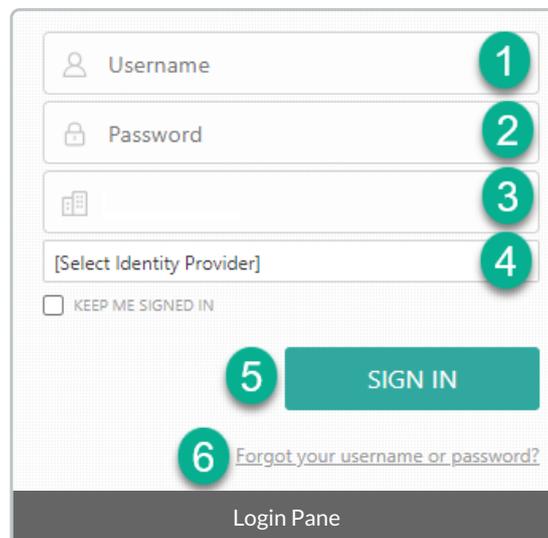
`https://<chosen.name>.readiness.com/sp/#/<tenant.name>` where:

- <chosen name> may be your company name or a name that has significance to your company
- `readiness.com/sp/#` points to the Readiness platform infrastructure for your tenant
- <tenant.name> is the name for this particular tenant. Your company may have more than one tenant.

e.g. If the company name was Maple and the tenant name was Design, the URL would be:

`https://maple.readiness.com/sp/#/design`

Enter your URL in your browser's address bar and this will take you to the login pane.



The image shows a login pane with the following elements:

- 1. Username input field
- 2. Password input field
- 3. Tenant name input field (with a dropdown icon)
- 4. Identity provider selection dropdown menu (labeled "[Select Identity Provider]")
- 5. "SIGN IN" button
- 6. "Forgot your username or password?" link
- KEEP ME SIGNED IN checkbox

At the bottom of the pane, the text "Login Pane" is displayed.

The fields of the login pane are:

1. Username
2. Password
3. Tenant name - should have auto-populated for you based on your URL.
4. Identity provider could be a single sign on provider or Readiness authentication:

Your organisation may have configured single sign on, which allows you to log in with a single ID and

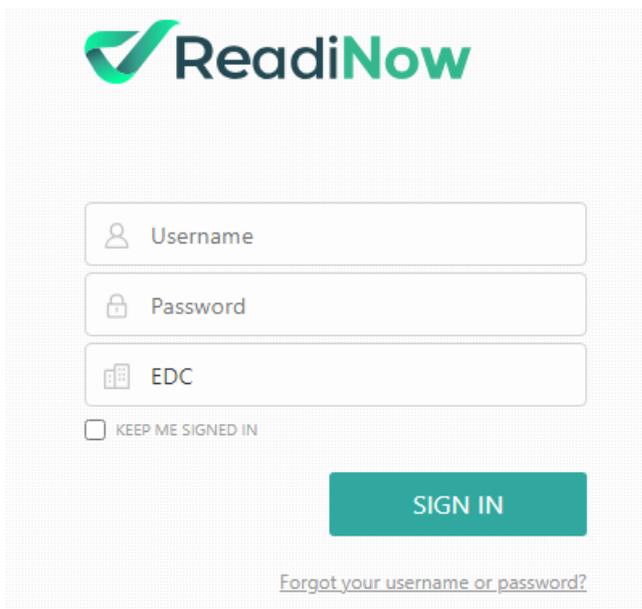
password to several software systems all belonging to your organisation. If single sign on has been enabled, there will be an appropriate name showing in the identity provider box. In this case you do not need to enter your username and password in the ReadNow login pane.

If the only option in the identity provider box is ReadNow, you are authenticating with a username and password set up for you in the ReadNow system. You need to enter this username and password before clicking Sign in.

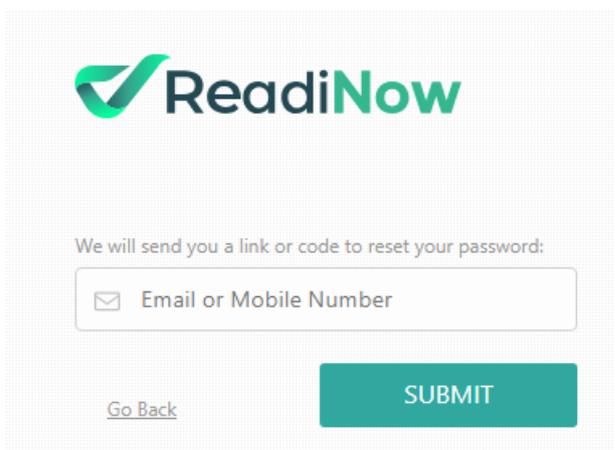
5. Sign In button. Click this when you have completed any information required in the first four fields

Forgot your username or password

1. If you forget your login credentials, click the "Forgot your username or password?" link to retrieve your username or your password.



2. You can either enter your **Email** or **Mobile Number** configured in the platform for the account holder of the account you are resetting password for and press SUBMIT.



3. If you entered your mobile number, enter the 6 digit code received on entered Mobile Number and the set new password.



Please enter the code that was sent to mobile number
+61234323456

[Go Back](#)

RESET PASSWORD

[Resend Code](#)

i Code has been sent to mobile number provided. If you don't receive code within 1 minute, please check the mobile number you have entered OR click on 'Resend Code' to request new code.

4. Verify the details and click on RESET PASSWORD.

5. Once the password reset is successful, user will be redirected to the login page to login with new password.

Landing Page

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The first page you reach after logging in is your landing page.

The exact contents of your landing page will depend on what your administrator has configured for you. Below is an example of a landing page.



1. User menu

- Every page will have the same user menu in the top right corner. (See [Navigation page](#) for an explanation of this menu.)

2. Name

- The name associated with the logged in user

3. Application icon

- Each of these tiles, or icons, represents a separate application.
- The applications displayed on your landing page will reflect the applications your organisation has purchased and then made available to you.

4. Logo image

- There will always be a logo in the top left corner of the screen. This logo could be the ReadiNow logo, or the logo of your organisation. Clicking the logo will return you to the landing page.

Navigation

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Key areas of the ReadiNow page layout are as follows:

The screenshot shows the ReadiNow interface with the following elements highlighted:

- 1. User menu:** Located at the top right, containing icons for administration mode, application menu, user account, recent items, open tasks, documentation, and maximise content.
- 2. Tab menu:** Located at the top left, showing 'FOSTER UNIVERSITY' and 'HOGWARTS UNIVERSITY' tabs.
- 3. Left menu:** A sidebar menu on the left with categories: Reports, Charts, Screens, Qualifications screen, and Staff screen - all three.
- 4. Main content area:** Displays a 'Student report list' table with columns: Student..., Student, Address line1, State, Email address, Country, Balance, and Gender.

Student...	Student	Address line1	State	Email address	Country	Balance	Gender
1145	Selma Terrell	P.O. Box 994, 8276 ...	SA	Selma.Terrell@non...	Australia	-\$79.17	Female
1221	Yoshi Joseph	Ap #770-9459 Quis...	SA	Yoshi.Joseph@Phas...	Australia	\$237.50	Male
1149	Meredith Alvarez	Ap #632-1121 Mag...	NSW	Meredith.Alvarez@...	Australia	-\$62.50	Female
1139	Wayne Avery	Ap #928-6993 At Av.		Wayne.Avery@mag...	New Ze...	-\$104.17	Male

1. User menu - the user menu contains the following functions from left to right:

- Administration mode (the spanner icon, which appears only for users with the administrator role)
- Application menu
- User account menu
- Recent items
- Open tasks
- Documentation
- Maximise content (hides the tab menu and user menu)

2. Tab menu

- Tabs are used to distinguish sections within an application

3. Left menu

- Contains sections based on the context of the currently selected tab
- Click each section to expand it and see the list of pages it holds
- The left menu can be hidden by clicking the < arrow at the top of the left menu
- The left navigation can be customised by administrators

4. Main content area

- The main content of each page is presented here
- Pages can show different types of content such as reports, forms, charts and screens

Reports

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Reports are used to list a set of records and to access the forms of individual records.

The screenshot presents an overview of basic capabilities when viewing a report.

1. Action menu bar allows you to create new records, activate **Inline Editing** and undertake other relevant actions (see **Action Menus**)
2. Analyser icon allows you to perform live filtering of data (see **Analyser**)
3. Quick search allows you to perform a quick search. Note: Quick search finds any matching result in text, choice, numeric or lookup columns
4. Select any row then select **ACTION > View** to open the form view of that record

Reports can be very powerful when used to analyse information. For a description of reporting capabilities, see **Report Builder**.

The screenshot shows a 'Student report' interface. At the top left is a grid icon and the title 'Student report'. Below the title is an action menu bar with a refresh icon, a dropdown arrow, and the text 'ACTION'. To the right of the action menu are three icons: a plus sign for '+ NEW', a pencil for 'EDIT INLINE', and a funnel for filtering. A search bar with a magnifying glass icon is on the far right. The table below has columns for StudentID, Student, Address line1, State, Email address, Country, Balance, and Gender. The row for student 1174, Gray Byrd, is highlighted. A dark bar at the bottom of the table area contains the text 'Report in view mode'. Blue circles with numbers 1 through 4 are overlaid on the interface to highlight specific features: 1 on the 'ACTION' menu, 2 on the filter icon, 3 on the search bar, and 4 on the selected row.

StudentID	Student	Address line1	State	Email address	Country	Balance	Gender
1145	Selma Terrell	P.O. Box 994, 8276 Vit...	SA	Selma.Terrell@non.ca	Australia	-\$79.17	Female
1221	Yoshi Joseph	Ap #770-9459 Quis Av.	SA	Yoshi.Joseph@Phasel...	Australia	\$237.50	Male
1149	Meredith Alvarez	Ap #632-1121 Magna...	NSW	Meredith.Alvarez@ad...	Australia	-\$62.50	Female
1139	Wayne Avery	Ap #928-6993 At Av.		Wayne.Avery@magna...	New Zealand	-\$104.17	Male
1132	Ezekiel Cooley	P.O. Box 447, 567 Se...	NSW	Ezekiel.Cooley@ipsu...	Australia	-\$133.33	Male
1146	Irene Roman	1619 Nunc Ave	SA	Irene.Roman@etipsu...	Australia	-\$75.00	Female
1163	Sara Nieves	802-6839 Ac Street	QLD	Sara.Nieves@nec.co.uk	Australia	-\$4.17	Female
1173	Alvin Robinson	9854 Ante St.	SA	Alvin.Robinson@duiC...	Australia	\$37.50	Male
1197	Alfonso McClure	132-6203 Aliquet Av.	VIC	Alfonso.McClure@acc...	Australia	\$137.50	Male
1160	Baker Sparks	3510 Magna, St.	SA	Baker.Sparks@Namte...	Australia	-\$16.67	Male
1174	Gray Byrd	P.O. Box 783, 2995 Ali...	NSW	Gray.Byrd@nonlacinia...	Australia	\$41.67	Male
1215	Kennedy Byers	400-7876 Et Rd.	ACT	Kennedy.Byers@nec...	Australia	\$212.50	Male
1178	Cain Bonner	Ap #202-897 Consect...	ACT	Cain.Bonner@metus...	Australia	\$58.33	Male

Inline Editing

Last Modified on 25/08/2020 10:49 am AEST

Editing a record directly from a report is possible with inline editing.

Editing inline on a report

To edit inline on a report:

1. Navigate to a report with records that you want to edit. Note: this can be a report in navigation area, a report on the screen or a report on a form.
2. Select **EDIT INLINE** in the Action menu bar.
3. Edit the fields as required. Edited rows appear highlighted in green.
 - Select **SAVE CHANGES** to save the changes.
 - Select **DISCARD CHANGES** to discard the changes.

Check

- Green rows show successful saves.
- Red rows show unsuccessful saves. A save is unsuccessful if it does not conform to the validation rules on the form (for example leaving a mandatory field blank).

Tip

After selecting **EDIT INLINE** select a row to set focus on the first cell. Press the Up/Down arrows to change rows being edited and press Tab to move across cells being edited.

Editing restrictions

Please refer to the notes below for details on inline editing behaviour.

In some cases, inline editing may not be available on certain cells.

Fields Types

Only the following field types can be edited inline:

- Text
- Multiline Text

- Number
- Autonumber
- Decimal
- Currency
- Date & Time
- Date
- Time
- Yes/No
- Choice
- Lookup

Conditions

To be able to inline edit a cell, the following conditions must be met:

- The field must be on the form that is assigned to the report, see [Report Properties](#)
- The field must be editable on the form that is assigned to the report i.e. must not be read-only
- The logged in user must have access to edit the record, see [Record Access](#)

Charts

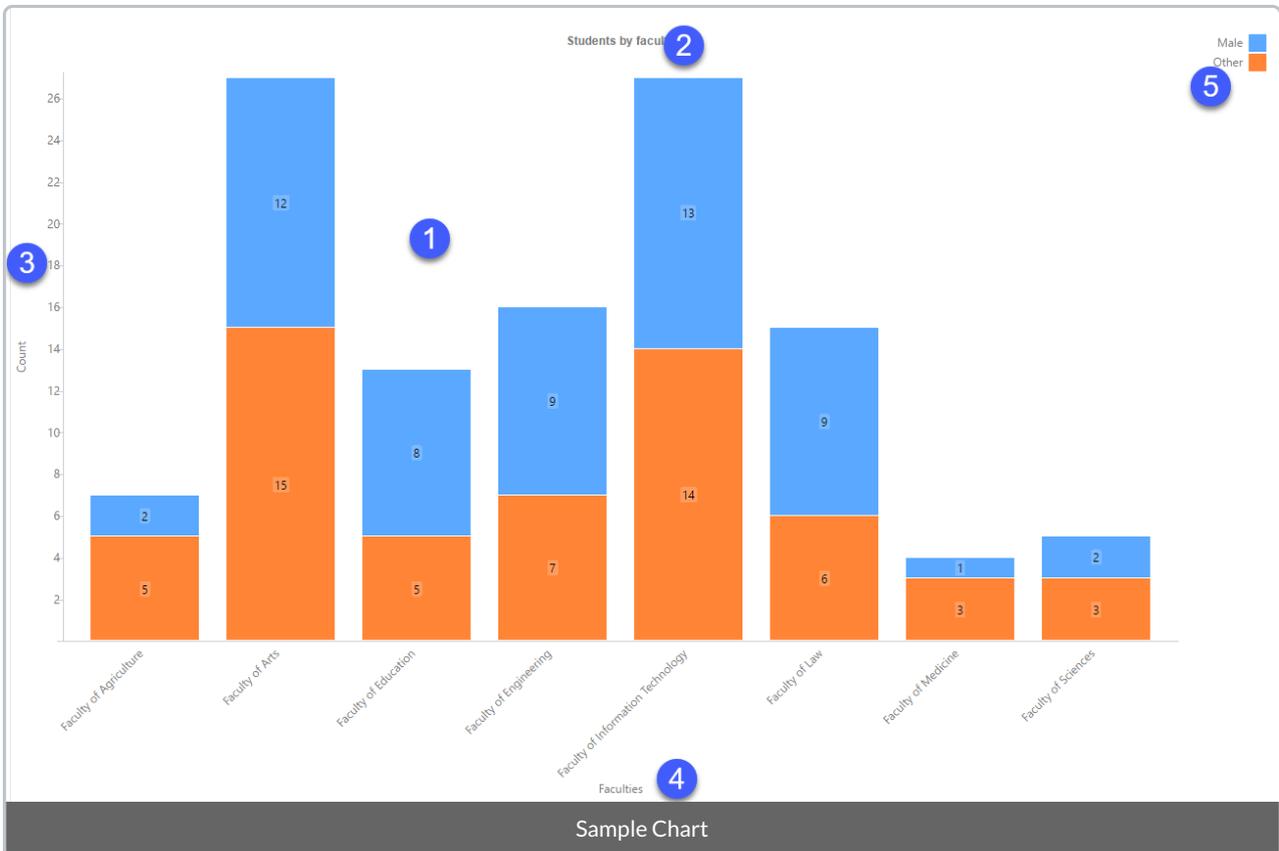
Last Modified on 27/07/2020 2:33 pm AEST

Charts are based on [Reports](#) and are used to visualise the data in the report.

The screenshot presents an overview of basic capabilities when viewing a chart.

1. Chart data: select any segment of a chart to drill down to the underlying data
2. Chart heading
3. Values axis
4. Primary axis
5. Chart Legend

To build charts, see [Chart Builder](#).



Forms

Last Modified on 16/04/2019 6:21 pm AEST

Forms are the main way to view and edit data. Forms are based on an object and have two modes:

- View Mode - Fields are read only
- Edit Mode - Fields are editable

To build forms, see [Form Builder](#).

View Mode

The screenshot presents an overview of basic capabilities of a form in view mode.

1. **BACK**: navigate back to previous page
2. **EDIT**: put the form into Edit Mode
3. Fields on the form
4. A report on a form

← BACK **1** **2** EDIT

Student

PERSONAL DETAILS		ADDRESS DETAILS		STUDENT DETAILS	
StudentID:	1139	Address line 1:	Ap #928-6993 At Av.	Club:	Chess, Debating
Title:	Dr.	Address line2:		Library card #:	11124
First name:	Wayne	Country:	New Zealand	Balance:	\$356.00
Last name:	Avery	State:	WA		
Gender:	Male 3	Suburb:	Petone		
DOB:	28/05/1991	Postcode:	5012		
Phone number:	(04) 8475 4456	Email address:	Wayne.Avery@magnaator.com		

Subjects Qualifications

⌵ ACTION + NEW **4** EDIT INLINE Search

Subject ID	Subjects	Qualifications	Credit Points	Subject Mode	Pre-requisites
31005	Advanced Data Analytics	Bachelor of Science in Information ...	6	On campus	
31005	Advanced Data Analytics	Bachelor of Science in Information ...	6	On campus	
31242	Advanced Internet Programming	Bachelor of Science in Information ...	6	On campus	
31242	Advanced Internet Programming	Bachelor of Science in Information ...	6	On campus	
41004	Analytics Capstone Project	Bachelor of Science in Information ...	6	On campus	
41004	Analytics Capstone Project	Bachelor of Science in Information ...	6	On campus	
31243	Analytics Capstone Project B	Bachelor of Science in Information ...	6	On campus	
31243	Analytics Capstone Project B	Bachelor of Science in Information ...	6	On campus	

Sample form in view mode

Edit Mode

The screenshot presents an overview of basic capabilities of a form in edit mode.

1. **SAVE**: save your changes
2. **X**: close without saving

Student

1 SAVE 2

PERSONAL DETAILS

StudentID: 1139

Title: Dr.

First name: Wayne

Last name: Avery

Gender: Male

DOB: 28/05/1991

Phone number: (04) 8475 4456

ADDRESS DETAILS

Address line1: Ap #928-6993 At Av.

Address line2:

Country: New Zealand

State: WA

Suburb: Petone

Postcode: 5012

Email address: Wayne.Avery@magnaator.com

STUDENT DETAILS

Club: Chess, Debating

Library card #: 11124

Balance: \$ 356

Subjects Qualifications

ACTION +NEW EDIT IN LINE

Search

Subject ID	Subjects	Qualifications	Credit Points	Subject Mode	Pre-requisites
31005	Advanced Data Analytics	Bachelor of Science in Information ...	6	On campus	
31005	Advanced Data Analytics	Bachelor of Science in Information ...	6	On campus	
31242	Advanced Internet Programming	Bachelor of Science in Information ...	6	On campus	
31242	Advanced Internet Programming	Bachelor of Science in Information ...	6	On campus	
41004	Analytics Capstone Project	Bachelor of Science in Information ...	6	On campus	
41004	Analytics Capstone Project	Bachelor of Science in Information ...	6	On campus	
31243	Analytics Capstone Project B	Bachelor of Science in Information ...	6	On campus	
31243	Analytics Capstone Project B	Bachelor of Science in Information ...	6	On campus	

Sample form in edit mode

Screens

Last Modified on 04/08/2020 5:47 pm AEST

Screens are used to combine multiple reports, forms and charts onto a single page.

To build screens, see [Screen Builder](#).

Student Dashboard

1. STUDENT BY FACULTY

Students by faculty

Faculty	Male	Female
Faculty of Agriculture	2	5
Faculty of Arts	12	15
Faculty of Education	8	5
Faculty of Engineering	9	7
Faculty of Information Technology	13	14
Faculty of Law	9	6
Faculty of Medicine	1	3
Faculty of Sciences	2	3

2. STUDENT BY GENDER

Students by gender

Gender	Count
Female	58
Male	56

STUDENT REPORT

[ACTION](#)
[NEW](#)
[EDIT IN LINE](#)
Search

StudentID	Student	Address line1	State	Description	Email address	Country	Balance	Gender
1145	Selma Terrell	P.O. Box 994, 8276 Vitae St.	SA		Selma.Terrell@non.ca	Australia	-\$79.17	Female
1221	Yoshi Joseph	Ap #770-9459 Quis Av.	SA		Yoshi.Joseph@Phasellus.co.uk	Australia	\$237.50	Male
1149	Meredith Alvarez	Ap #632-1121 Magna St.	NSW		Meredith.Alvarez@adipiscin...	Australia	-\$62.50	Female
1139	Wayne Avery	Ap #928-6993 At Av.	WA		Wayne.Avery@magnaatorcor...	New Zealand	\$356.00	Male
1132	Ezekiel Cooley	P.O. Box 447, 567 Semper Rd.	NSW		Ezekiel.Cooley@ipsumSuspe...	Australia	-\$133.33	Male
1146	Irene Roman	1619 Nunc Ave	SA		Irene.Roman@etipsum.ca	Australia	-\$75.00	Female
1163	Sara Nieves	kkkt	QLD		Sara.Nieves@nec.co.uk	Australia	\$545,489.00	Female
1173	Alvin Robinson	9854 Ante St.	SA		Alvin.Robinson@duiCum.net	Australia	\$37.50	Male
1197	Alfonso McClure	132-6203 Aliquet Av.	VIC		Alfonso.McClure@accumsanL...	Australia	\$137.50	Male
1160	Baker Sparks	3510 Magna, St.	SA		Baker.Sparks@Namtempor.ca	Australia	-\$16.67	Male

Sample Screen

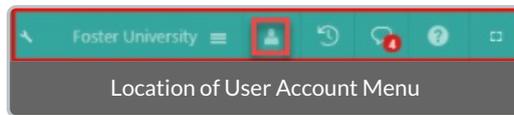
Changing Password

Last Modified on 22/10/2020 9:57 am AEDT

You can change your password at any time.

To change your password:

1. Navigate to the User Menu in the top right corner
2. Select the User Account icon. The menu appears.
3. Select **Change password**. The Change password dialog appears.
4. Type the old password, and then type the new password. Re-enter your new password in the **Confirm password** field.
5. Select **OK** to save changes.



The new password can only be set as defined in the Password Policy rules.

Using Global Search

Last Modified on 26/11/2020 5:17 pm AEDT

Overview

The Global Search feature allows you to easily find any record, document, reports etc from anywhere within ReadNow.

Note: Global Search is disabled by default, for information about enabling and configuring Global Search please see: [Configuring Global Search](#).

Global Search can be accessed throughout the ReadNow Platform via the search icon located in the header. To cancel a search click outside the search window (or press 'escape'). This article explains how to use Global Search and covers:

- Search Expressions
- Search Results
- Search Options
- Saving Searches

Search Expressions

Keyword Matching

The most common type of search is where you simply enter a keyword into the search input. For example you might search for an employee by entering their first name; or just the first few letter of their name.

By default searching for 'David' will return any record, document, chart, etc. that contains the name David. It will also return anything that contains (for example) 'Davidson'. Note that results that represent an exact match will appear higher in the search results.

Wild Cards

Global search supports wild card searches using '?' and '*' to represent a 'single character' and 'many characters' respectively. For example:

- the '?' in d?g matches *any single character* and will return anything that contains: dig, dog, dag, etc.
- the '*' in d*g matches any number of characters and will return items that contain: dig, ding, dragging, etc.

Wild cards:

- will NOT match white-space
- will match non-alphanumeric characters (e.g. slashes, apostrophes, colons etc.)

Excluding Terms

Search results can be narrowed by excluding results that contain a specific term. You can exclude all items that contain a specific term by prefixing the term with a 'minus sign', for example: "find_this -but_not_this"

Entity ID

In addition to searching using text you can search directly on entity Ids.

Empty Expression

If you open Global Search but do NOT enter a search expression you will typically see a history of clicked search results; these are the last 10 recently visited search results. This list is updated every time you click on a search result. In addition to the recently visited list, you will also see any searches that you have saved ([saving searches is explained below](#)).

Search Results

Ranking

Each result in the search results list provides an overview of what the item is. Search results are ordered by relevance, searches that match: headings, titles, names, etc. are prioritised over those that match '*body content*'.

Navigation

As you scroll toward the bottom of the results list additional results will be loaded, if available. You can also use keyboard navigation (using the up/down arrow keys) to index through the list, however keyboard navigation does **not** cause more results to load when reaching the end of the list, instead the results wrap around to the top again.

You can navigate to a search result by clicking on the result (or by 'high-lighting' it using the keyboard up/down arrow keys and pressing enter). Navigating to a search result:

- takes you to the corresponding item
- adds the result to your searches history

The search history enhances navigation by allowing you to quickly and easily return to results, see [Empty Expression](#).

The basic behaviour to be expected when navigating to search results is as follows:

- If the selected item exists in the navigation tree, it will be navigated to
- Boards, Charts, Reports, etc. will navigate to their 'default views'
- Applications will navigate to the application's default landing page
- All other items will navigate to their default Form view

Search Options

Filter by Object / Resource Type

Search expressions can be refined by filtering against Object type. Object types can be selected via the 'Resources' drop-down. This will show a pop-up window containing available resource types.

Clicking the checkbox beside a resource will enable/disable it as well as all of its ancestors and descendants, this is useful for limiting your search to something specific, e.g. a 'Person'.

To locate a Type quickly, use the filter box at the top. Entering values in here will reduce the list of Types to only show those that contain a sub-string match. The filter can be cleared by clicking on the cross that appears to the right, once cleared all available nodes will be visible again.

Selecting / deselecting resources updates the search results in real time. The name of the button (and its tool-tip) change according to which resources are selected.

Document Types

Global Search can also index documents from your document library. Documents that are encrypted, password protected, or that use proprietary encoding will only be indexed based on file names etc. When you conduct a search you can choose to exclude specific document types by deselecting them from the search options. For example you can search for PDFs and MS Word documents but not Excel Spreadsheets.

Date Ranges

By default Global Search includes results from all dates. You can narrow search results according to when items were last modified date IF the item contains date data.

NOTE: When a date range is specified *results that do not contain date information are excluded.*

Saving Searches

You can save searches (expressions + search options) to reuse. Setup a search using as many of the features you wish and save the search with a descriptive name. Saved searches appear in a list.

Browser Support

Last Modified on 05/10/2022 12:08 pm AEDT

ReadiNow is a web based product. Users require an Internet browser and Internet connection.

The currently supported browsers are listed below:

Vendor	Platform	Browser	Version
Google	Windows	Chrome	Versions up to 12 months old
Mozilla Foundation	Windows	Firefox	Versions up to 12 months old
Microsoft	Windows 10	Edge	Versions up to 12 months old
Apple	Mac	Safari	Versions up to 12 months old

Mobile devices are subject to the same browser support policy. Additionally, ReadiNow tests the platform using the latest version of Android and IOS. Any issues found while using a mobile device will be prioritized as per ReadiNow's Support and Maintenance Plans.

Local Settings & Date Format

Last Modified on 20/06/2022 10:30 am AEST

The ReadNow user interface is provided by your web browser and will therefore display dates etc according to each user's individual browser settings, as opposed to the system settings.

To ensure dates and currency are correctly formatted, please ensure your browser is set to use the language appropriate to their business needs. This can typically be changed via your browser settings.

Please refer to your browser documentation to find out how to change the settings.

Training

Last Modified on 10/09/2020 2:39 pm AEST

ReadiNow offers both **online** and **instructor-led platform training** for various levels. It is recommended that any user undertaking in an administration or configuration activity completes the appropriate ReadiNow training course. Participants receive digital certificates on completion of the respective training course.



Platform Training

Target

General System Administrator or Business Analyst

Audience

Key Topics

- General Navigation
 - Data Modelling
 - Creating objects, forms & fields
 - Show & Hide fields
 - Relationships
 - Spreadsheet Import
 - Calculations
 - Reporting
 - Charts & analytics
 - Screens and dashboards
 - Configuring security roles
 - Adding user accounts
-
- Intermediate Microsoft office skills (e.g. basic excel formulas)
 - Prior experience in using cloud based technologies
 - Good understanding of the business requirements for using ReadiNow

Prerequisites

- Course Inclusions (Online)**
- Access to online training course designed to take you step by step through creating an application to cover the topics listed above
 - Access to your own dedicated online training tenant for you to complete the training modules. This access is for 3 months from date of acceptance. (Note: this training tenant does not fail under SLA's defined in the agreement)
 - Remote support from Readiness professional services consultant. Up to 3 hours of consultant time (per person) provided remotely to assist with Q&A regarding training. Consultant time to be booked via a support request, and is available for 3 months from date of acceptance

- Course Inclusions (Instructor-led)**
- Hard-copy training material (with soft-copy available to participants on request) This material consists of reference material and a collection of exercises to build a complete fleet management application.
 - Access to a dedicated online training tenant for the duration of the course.

Advanced Training

Target Audience Technical Business Analyst, Developer, or System Administrator.

Key Topics Covered

- Application building best practice
- Data modelling with inheritance
- Understanding relationship types & relationship ownership
- Advanced Workflows
 - Cloning Records
 - Using survey activities
 - Triggering child workflows
 - Generating documents through workflows
 - User Input
 - User Notifications
 - Using variables
- Advanced reporting including
 - Summarised Reports
 - Using custom joins
 - Recursive reports
 - Advanced report options
- Advanced Analytics
 - Using multiple series
 - Axis scale options
 - Using Inheritance
- Advanced security (using 'secures to' flag)
- Advanced calculation functions
- Configuring hierarchy objects
- Import/Export of schema elements
- Configuring Email Listener

Prerequisites

- Completion of ReadiNow General Training
- Minimum 3 months using ReadiNow to configure business solutions

Configuring Global Search

Last Modified on 04/10/2020 1:24 pm AEDT

Overview

This article explains how to enable configure Global Search and covers:

- Data Security Considerations
- Indexing Options
- Enabling Global Search

For general use as well as 'tips and tricks' for getting the most out of Global Search, see this article: [Using Global Search](#)

Data Security Considerations

Security Access Rules

Global Search was developed with data security in mind. As expected the search results respect the security rules for each Role in your tenant. Accordingly, Global Search results for different users will be limited by the Security Access Rules in place. It is important to note that when users navigate to a search result they will be taken to the 'Default View' for the corresponding Record or Report.

In situations where UI and/or Navigation controls have been inappropriately implemented as a surrogate for security rules, users may see information that is normally hidden from them. Therefore BEFORE enabling Global Search it is essential that you understand how your Security Rules are set up, and whether or not UI and/or Navigation controls are used to hide sensitive data.

In most cases you can enable Global Search full indexing with confidence, however IF there is any doubt about the potential use of UI and/or Navigation controls to hide sensitive data then it is recommended that Global Search is ONLY enabled for entities that do NOT contain sensitive data until appropriate security rules are implemented.

Document Encryption

Global Search can also be used to index your documents. By design Global Search makes no attempt to index or display the content of documents that are: encrypted, pass-word protected, or that use proprietary encoding (such as .doc). However, depending on Security Access Rules, these documents may still show up in search results if a search expression matches the document meta-data. In such cases a preview of the document will not be available.

Indexing Options

In most cases you can confidently enable Global Search with full indexing. However, if there are concerns about inappropriate use of UI and/or Navigation controls to hide sensitive data then you should ensure you understand your entity model and the expected behaviour of indexing.

When setting up indexing it is helpful to think of the check-boxes against each Object in your entity model as an explicit *include* (rather than an explicit exclude). For example if you have the following structure:

Person (*Abstract*)

- Contractor (*Derived from Person*)
- Employee (*Derived from Person*)
- Manager (*Derived from Employee*)

Unless Security Access Rules for the Objects specify 'Exact Type' the following behaviour is expected:

1. Deselecting 'Manager' will NOT exclude managers from the search results
Manager is implicitly included as an 'Employee'
2. Deselecting 'Person' & 'Manager' will NOT exclude managers from the search results
Manager is implicitly included as an 'Employee'
3. Deselecting 'Person' & 'Contractor' WILL exclude contractors from the search results
Employees and managers are explicitly included

Enabling Global Search

✓ **BEFORE enabling Global Search: please read Data Security Considerations AND Indexing Options**

Global Search is disabled by default and the icon that normally appears in the header is hidden until it is enabled. To enable Global Search:

1. navigate to Administration > Settings (on left) > Global Search Settings
2. check the box: 'Indexing enabled'
3. optional - change indexing options (*see tips below*)
4. press 'Save' (indexing may take a few minutes to complete)

Note:

Global Search discards the current index and creates a new index whenever indexing options are saved.

Tip:

To quickly deselect all Objects (or Types, Documents):

- select the radio button 'No objects'
 - press 'Save' (on saving the corresponding entities will be deselected and the index will be rebuilt)
-

Offline Mobile

Last Modified on 16/08/2021 4:08 pm AEST

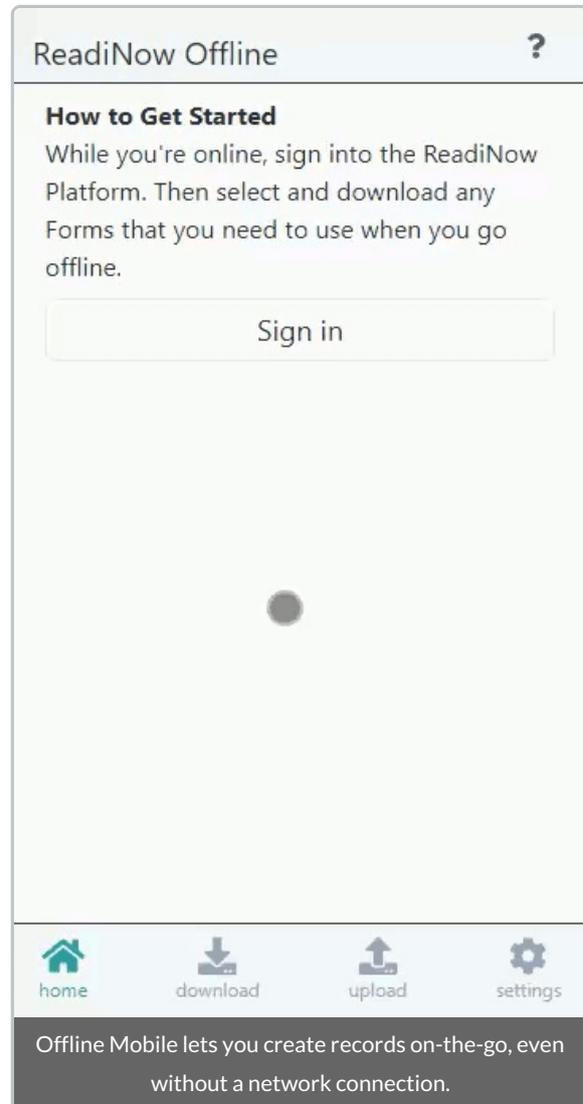
Overview

Offline Mobile is an app that enables people to capture structured information when they are on-the-go, even without internet access at the time.

A classic use case is where someone is working remotely or in a 'reception blackspot' and needs to capture, for example, details of an incident or investigation.

With Offline Mobile your users can:

- sign in using their Readiness account
- download Forms to their mobile device
- create draft record while offline
 - choice field pickers
 - relationship pickers
 - date time fields
 - image fields
- review & edit their draft records
- upload drafts to create new records



How it works

Create a new Form (or use an existing Form) that should be available to people on-the-go. Add the Form to the tenant's Offline Profiles (Administration > Settings > Offline Profiles) and send your Users the link provided.

[Image of Admin Screen - Offline Profiles]

The link provided by Offline Profiles will take your users to the Offline Mobile App for your Tenant. Access to the App requires a User Account, and once authenticated, Users will see the Forms that are available to them (as determined by the Security Rules for their role). Users are also prompted to add Offline Mobile to their device home screen (recommended for performance & accessibility).

Users 'enable' the Forms they need and download them to their device; Forms can also be enabled by force via the Offline Profiles page. Once downloaded the Forms can be accessed from the App's 'home' screen.

On the home screen tapping a Form opens it for data capture, to create a draft Record. Closing a draft record (Form) moves it to the 'Uploads' screen. Draft records can be reopened at any time for further editing (unless they have been deleted or already uploaded by the User).

Forms on the uploads screen can be opened for review or edit; or they can be deleted. Forms that are 'complete' can also be synchronised to your tenant (if an internet connection is available).

Administration

Offline Profiles

An offline profile is a collection of Forms that share common settings, specifically:

- whether the profile is enabled or disabled
- whether users can turn a Form Off or not

Security Considerations

Offline Mobile respects the Security Rules for your tenant. If a User Role does not have permission to access the Form on your tenant they will be able to access the Form on their Device (it won't be listed as an available Form).

Offline Mobile does NOT allow users to download any Records. Once a record has been uploaded it will no longer be accessible using Offline Mobile.

In the context of the Offline Mobile app, logging in enables the logged in user to check for and download Forms for Offline use and to upload completed records. Since the application is intended for Offline use, logging in is not required to create, view and edit draft records.

The app supports both Single Sign On (SSO) as well as native authentication (i.e. Username & Password). To use Offline Mobile without a network connected the user must have already logged into the App and downloaded the forms required for offline use, this requires an internet connection.

Form Design Considerations

What is supported:

- Mandatory Fields
- Image upload
- Show Hide Rules
- Lookups and Relationships (Pickers)

Best Practices

- keep form names short
- forms should be uniquely identifiable from the start of their name
- test forms

Public Forms Security Overview

Last Modified on 20/04/2021 9:47 am AEST

Overview

Public Forms provide a lightweight, low friction solution that allows you to collect information from unauthenticated users, i.e. members of the public. Generally Public Forms are for data entry and do NOT support retrieval and/or editing of existing Records.

This article provides an overview of the security features put in place for Public Forms. To learn more about implementing Public Forms, refer to [Public Forms Best Practices](#).

IP Ranges

Respects IP ranges as configured in the general tenant settings.

reCaptcha v3

Low friction reCaptcha technology powered by Google to mitigate automated form submission.

Admin only Configuration

The 'out-of-Box' default security settings prevent non-administrators from creating Public Forms; this can be configured.

File Upload Restrictions

Only permits common image file types to be uploaded (e.g. png, jpg, etc.) with maximum file size restricted to 20 MB and built in rate limiting. Automatic cleanup of image files that are not associated with a specific record.

Silent Failure

Operations which fail in a way that potentially 'leaks' information are designed to fail silently.

Secure, Rate Limited API Endpoints

Public Forms use dedicated API endpoints and server side filtering to minimise the amount of information reaching the browser. Rate Limits are hard coded to mitigate abuse.

Per Form Enable / Disable

Each Public Form has the ability to be enabled / disabled individually.

Logging

Configuration Change

Configuration changes made to Public Forms are logged.

Security Logging

A security log record is created each time a user accesses a Public Form.

Event Logging

Event logging can be configured for Public Forms

Input Sanitation

Input fields are sanitised to remove potentially malicious string sequences.

Lookup Restrictions

To reduce the risk of accidental data exposure, Public Forms 'picker reports' for lookups are restricted to display 1 single 'text' field and search, analyser is removed.

Workflow Restrictions

Workflows that are triggered by a record creation event are required to: 'run as owner'

Documented Best Practices

In addition to the built-in security precautions (*outlined above*) we strongly recommend adopting the additional identified best practices for Public Forms. These provide a strategy for isolating 'dirty' data (*unverified submitted by unauthenticated users*) from 'clean' data (*generated by trusted, authenticated users*).

SteveB Test Page

Last Modified on 25/08/2022 9:51 am AEST

Updated Articles

New Articles

Popular Articles

Report Builder

Last Modified on 16/04/2019 6:25 pm AEST

To go to the Report Builder mode:

1. Navigate to the report in the console.
2. Select the Configure icon in the top right corner.
3. Select the Configure icon in the top right corner of report. The menu appears.
4. Select **Modify Report**. The report displays in Report Builder mode.

For a general overview to the areas of the report builder, see the screenshot.

1. The Relationship viewer pane displays the current object being reported on, as well as all related objects used in this report
2. The Field & Related Objects pane show all the fields and lookups that can be added to this report
3. The report builder menu bar contains actions such as Reload, Properties, Save and Save as (see [Report Builder Menu](#))
4. The Action menu bar (see [Action Menus](#))

The screenshot displays the ReadNow Report Builder interface. On the left, there is a sidebar with two main sections: 'Relationship viewer' (marked with a blue '1') and 'Fields & Related Objects' (marked with a blue '2'). The 'Relationship viewer' shows a tree structure with 'Student' selected, and sub-items for 'Country', 'Gender', 'State', and 'Suburb'. The 'Fields & Related Objects' section has a search bar and a list of fields with checkboxes, including 'Name', 'Description', 'User Account', 'Address line 1', 'Address line 2', 'Country', 'Email address', 'Postcode', 'State', 'Suburb', 'Image Details', and 'Photo'. The main area shows a table titled 'Student report' with columns: StudentID, Student, Address line 1, State, Country, Balance, and Gender. The table contains 20 rows of student data. At the top right, there is a menu bar with 'ACTIONS', '+ NEW', and 'EDIT INLINE' (marked with a blue '4'). Below this, there are icons for 'RELOAD', 'PROPERTIES', 'SAVE', and 'SAVE AS' (marked with a blue '3'). The footer of the interface shows the version '2.81.11.0-Trunk / C:2.81.6.0-Trunk' and 'Powered by ReadNow'.

StudentID	Student	Address line 1	State	Country	Balance	Gender
1145	Selma Terrell	P.O. Box 994, 8276 Vitae ...	SA	Australia	-\$79.17	Female
1221	Yoshi Joseph	Ap #770-9459 Quis Av.	SA	Australia	\$237.50	Male
1149	Meredith Alvarez	Ap #632-1121 Magna St.	NSW	Australia	-\$62.50	Female
1139	Wayne Avery	Ap #928-6993 At Av.		New Zealand	-\$104.17	Male
1132	Ezekiel Cooley	P.O. Box 447, 567 Sempe...	NSW	Australia	-\$133.33	Male
1146	Irene Roman	1619 Nunc Ave	SA	Australia	-\$75.00	Female
1163	Sara Nieves	802-6839 Ac Street	QLD	Australia	-\$4.17	Female
1173	Alvin Robinson	9854 Ante St.	SA	Australia	\$37.50	Male
1197	Alfonso McClure	132-6203 Aliquet Av.	VIC	Australia	\$137.50	Male
1160	Baker Sparks	3510 Magna, St.	SA	Australia	-\$16.67	Male
1174	Gray Byrd	P.O. Box 783, 2995 Alique...	NSW	Australia	\$41.67	Male
1215	Kennedy Byers	400-7876 Et Rd.	ACT	Australia	\$212.50	Male
1178	Cain Bonner	Ap #202-897 Consectetu...	ACT	Australia	\$58.33	Male
1196	Stacy Wade	P.O. Box 531, 8362 Pede, ...	SA	Australia	\$133.33	Female
1208	Jacqueline Osborn	7638 Amet Street	NT	Australia	\$183.33	Female
1214	Callie Clark	Ap #407-7254 Pharetra A...	TAS	Australia	\$208.33	Female
1151	Axel Mckay	P.O. Box 133, 3131 Nibh ...	NSW	Australia	-\$54.17	Male
1155	Kelsey Powers	Ap #599-9050 Ante Rd.		New Zealand	-\$37.50	Female
1191	Whoopi Singleton	117-4204 A Rd.	NSW	Australia	\$112.50	Female
1166	Anthony Nash	937-6783 Scelerisque St.		New Zealand	\$8.33	Male
1148	Rina Savage	P.O. Box 447, 7490 Conse...	WA	Australia	-\$66.67	Female
1156	Susan Jacobs	9190 Vivamus Av.	ACT	Australia	-\$33.33	Female
1199	Rylee Wilkinson	Ap #447-6065 Sed Street	QLD	Australia	\$145.83	Female

Creating and Editing Reports

Last Modified on 31/07/2020 3:58 pm AEST

To create reports in the Left Navigation Area:

1. Turn on configuration mode by clicking on the spanner  on top right.
2. Locate the  button in the left navigation area and click once to load the Create New Page selection screen.
3. Select **New Report**
4. Select **Create**
5. Type the name for the report in the **Name** field.
6. Type the description for the report in the **Description** field.
7. In the **Report based on** field, select the Pencil icon. The Select dialogue appears.
8. Select the Object on which the report will be based.
9. Select **OK**.
10. Select **OK** to generate report. The new report displays in **Report Builder** mode.

Note: To create reports on some hidden system objects, select the **Analyser** and clear the setting that is filtering "Advanced Object".

In addition to the above settings, more options can be set on a report. See [Report Properties](#) for more details.

Editing Reports

Editing an existing report is performed in **Report Builder**.

Report Builder Menu

Last Modified on 27/03/2019 3:25 pm AEDT

When in [Report Builder](#) mode, the Report Builder Menu bar appears in the top right corner.

Menu option	Description
RELOAD	Click to reload the changes to the report if they are not automatically loaded.
PROPERTIES	Click to view the Report Properties .
SAVE	Click to save changes to the report.
SAVE AS	Click to make a copy of the report and save it by different name.

Report Columns

Last Modified on 29/03/2019 3:34 pm AEDT

Report columns can be added, removed and reordered ONLY in Report Builder mode.

Report Columns can be resized in both report builder and view mode.

Adding Report Columns

There are two ways to add Columns to the report.

- With the check boxes
- Drag and drop

Selecting Check Boxes

To add columns to the report through check boxes:

1. Go to the [Report Builder](#)
2. Search or find field that you want to add to the report in the Left Navigation Area.
3. Select the first check box next to the field name to add the column.

Drag and Drop

To add a column to the report using drag and drop:

1. Go to the [Report Builder](#)
2. Search or find field that you want to add to the report in the Left Navigation Area.
3. Select and hold the field you want to add to the report.
4. Drag the field to the report header and drop it at the location where you want the column to appear.

Removing Report Columns

Selecting Check Boxes

To remove columns from the report through check boxes:

1. Go to the [Report Builder](#)
2. Search or find field that you want to remove from the report in the Left Navigation Area.
3. Select to clear the first check box next to the field name to remove the field from the report.

Drag and Drop

To remove a column from the report using drag and drop:

1. Go to the [Report Builder](#)
2. Search or find field that you want to remove from the report in the Left Navigation Area.
3. Select and hold the column header of the column that you want to remove from the report.
4. Drag the field off the report header. The column is removed from the report.

Reordering Report Columns

Columns can only be reordered with drag and drop.

To reorder a column:

1. Go to the [Report Builder](#)
2. Select and hold the column header of the column that you want to rearrange.
3. Drag and drop the column to the location on the report header where you want the column to appear.

Resizing Report Columns

Reports columns can be resized either in the builder mode or view mode.

- When report columns are resized in **report builder** the column sizes are saved as percentages as part of value formatting.
- When report columns are resized in **view mode** the column sizes are saved as percentages in local session storage and will not affect the reports for another user as the changes are local to his machine.
- If the column width is resized by the end user in the report viewer, it will store the settings in local session storage and will override the value formatting widths.
- A context menu called Reset Column Width is shown for columns that have a custom width, which will reset the width of the column to default.
- The initial column size for Currency, Decimal, Integer, Bool, Time, Date, DateTime, Choice, Image column types is half the width of the other columns.
- Any custom width will still override any initial width.

Sorting

Last Modified on 29/03/2019 3:45 pm AEDT

Columns can be sorted in the report builder mode by various methods.

Method 1: Selecting column headings

1. Go to the **Report Builder**.
2. Select a column heading to sort by that column (to sort A to Z).
3. Select the column heading again (to sort Z to A).
4. Repeat for multiple columns as required.
5. Select **SAVE** to save the report.

Method 2: Using the column context menu

1. Go to the **Report Builder**.
2. Select the down arrow in the column header (visible on hover). The column context menu appears.
3. Select 'Sort A to Z' or 'Sort Z to A'.
4. Repeat for multiple columns as required.
5. Select **SAVE** to save the report.

Method 3: Using the sort options

1. Go to the **Report Builder**.
2. Select the down arrow in the column heading (visible on hover). The column context menu appears.
3. Select **Sort Options**. The Report Sorting Options dialog appears with existing sort settings.
4. Select **Add Sorting**. The Sort by fields appear.
5. Select the first down arrow. The column titles display.
6. Select the column to sort.
7. Select the next down arrow. The sort order options display.
8. Select the sort order to sort.
9. Select **Add Sorting** to sort sort by more than one column.
10. Select **OK** to sort the report.
11. Select **SAVE** to save the report.

Grouping

Last Modified on 25/08/2020 1:22 pm AEST

Grouping is a feature of reports whereby rows can be grouped together into expandable/collapsible sections. A column of the report is nominated as the grouped column, and rows are categorized into the same group if they have the same value in this column. For example, a report of employees may be grouped by department by nominating the department column as the grouped column. Sub groups can also be achieved by selecting more than one grouping column.

To perform grouping on a column in a report:

1. Go to the **Report Builder**.
2. Decide which column should be the grouped column.
3. Hover on the column header of the chosen column. A down arrow appears in the right side of the column header.
4. Select the down arrow. The column context menu appears.
5. Select **Group By**. The report with the Group By displays.
6. Select **SAVE** to save the report.

Totals

Last Modified on 18/04/2019 10:19 am AEST

Totals are performed in report builder mode and can be seen in the view mode of the report.

Performing totals on any column in the report

To perform totals on any column in the report:

1. Go to the [Report Builder](#).
2. Hover on the column header where the total is to be performed. The down arrow displays in the right side of the column header.
3. Select the down arrow. The column context menu appears.
4. Select **Show Totals**. The Totals menu appears.
5. Select **Show grand totals**.
6. Select any arithmetic option, see table below.
7. Select **OK**. The totals appear below the column header of the corresponding column.

Performing sub totals on any column in the report

Sub totals can be performed only when a report is already grouped by some column. Please refer to [Grouping](#) to see how grouping on a column is performed.

To perform sub totals on any column in the report:

1. Go to the [Report Builder](#).
2. Hover on the column header where the sub totals are to be performed. The down arrow displays in the right side of the column header.
3. Select the down arrow. The Column Header Context menu appears.
4. Select **Show Totals**. The Totals menu appears.
5. Select **Show sub totals**.
6. Select any arithmetic option, see table below.
7. Select **OK**. The sub totals appear below the column header for each group.

Arithmetic options

Arithmetic options on Totals / Sub totals vary depending on the column type as shown in the table.

Text Field	Number Field	Date Field	Date and Time Field	Time Field
------------	--------------	------------	---------------------	------------

Text Field	Number Field	Date Field	Date and Time Field	Time Field
------------	--------------	------------	---------------------	------------

	Count			
	Count unique	Count	Count	Count
Count	Count all	Count unique	Count unique	Count unique
Count unique	Sum	Count all	Count all	Count all
Count all	Average	Max	Max	Max
	Max	Min	Min	Min
	Min			

Analysers

Last Modified on 16/04/2019 6:27 pm AEST

The Analyser is used to filter the report data based on some values. To filter the report based on any value of a field, the corresponding field needs to be added to analyser.

Note that if the report builder (usually the administrator) has checked the **Hidden** box then a filter will be in effect but not visible in Analyser.

Student

Picker Report:

Hidden:

The administrator will see the hidden field as translucent in the **Analysers**.

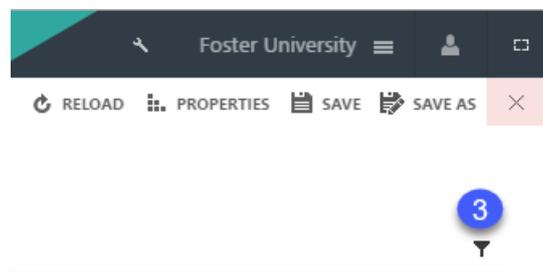
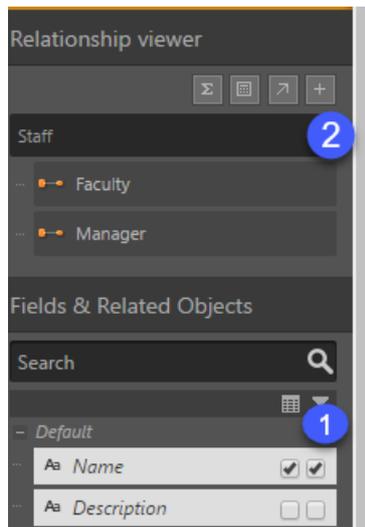
Student :

Limit results :

Adding a field to Analyser

To add a field to analyser:

1. Go to **Report Builder**.
2. Select the second check box for a field (see item 1 in the screen shot) to add the field to analyser.
3. Select analyser (see item 3 in the screen shot).
4. Type the required value for the field on which the data is to be filtered on the report.
5. Select **SAVE** to save the report. The data displays in view mode of the report.



Adding a relationship to Analyser

Relationships do not appear by default on the field group.

To add relationship field to analyser:

1. Select + the Relationship icon (see item 2 in the screen shot). The Add Relationship dialogue appears.
2. Select the Type as Relationships to see only the relationships on the report.
3. Select **Add** to add the relationship you want.
4. Select **OK**.
5. Select the relationship node from the relationship viewer. The fields on the related object display.
6. Select the second check box for the name field from the Default field group. The corresponding relationship is added to analyser.
7. Set the required value for the corresponding relationship field on which the data is to be filtered on the report.
8. Select **SAVE** to save the report. The data displays in view mode of the report.

Adding a Hierarchy field to analyser

To add a Hierarchy field to analyser:

1. Create a Hierarchy for the required object and relationship.
2. Go to [Report Builder](#).

3. On the field group, select the first and second check box of the required field to add to analyser.
4. Hover on the same column which was added to analyser on the above step. The down arrow displays in the right side of the column header.
5. Select the down arrow. The column context menu appears.
6. Select **Format Column**. The Format dialogue appears.
7. Select **Value Formatting** tab.
8. In the **Hierarchy** field select the down arrow and the option you want. This displays the hierarchy operators of the corresponding column in the analyser.
9. Set the required value for the corresponding hierarchy field on which the data is to be filtered on the report.
10. Select **SAVE** to save the report. The data displays in view mode of the report

Analysers Operators for Various Fields

Text / Relationship Field	Number Field	Choice Field	Hierarchy Field	Boolean Field
Is defined	=			
Is not defined	<>		Any below	
Any of	>	Is defined	Any at or below	
Any except	>=	Is not defined	Any above	Yes
=	<	Any of	Any at or above	No
<>	<=	Any except	Contains	
Contains	Is defined		Is defined	
Starts with	Is not defined		Is not defined	
Ends with				

Analysers Operators for Records

Limit results	Note
Top N records	Show top N records on whatever sorting condition applied.

Action Menus

Last Modified on 29/03/2019 4:06 pm AEDT

Adding an action to the menu

To add an action to the Actions menu:

Action menus are configured in Report Builder mode.

1. Go to [Report Builder](#).
2. Select **ACTIONS**. The Actions dialogue appears.
3. Select the checkbox next to the action you want in the **Enable** column. The action is enabled for Record and Report. The enabled actions appear in the Actions menu of the report.
4. Select the checkbox next to the action in the **Show Button** column. The action appears as a button at the top of the report header.

Actions

The following set of actions displays in the Actions dialogue for Record and Report actions.

Record Actions	Report Actions
New (All)	Edit Inline
New	Export (All)
View	Export to Excel
Edit	Export to CSV
Delete	Export to Word
Workflow name (if any)	
Export	

Record Actions

Actions that can be performed on every individual record of the report.

1. **New (All)**: create a new record for the derived type of the object
2. **New**: create a new record for the report
3. **View**: go to view mode of the selected row on the report
4. **Edit**: go to edit mode of the selected row on the report

5. **Delete:** delete the selected row on the report
6. **Workflow name:** run the workflow on the selected row from the view mode of the report
7. **Export:** export the selected row of the report. Please note that only the selected row will be exported in XML format, not the entire report

Report Actions

Actions performed on the whole report **not** just for an individual record of the report.

1. **Edit Inline:** Edit Inline appears as a menu option on the report and allows to edit individual record on the report without going to the edit mode of the record
2. **Export (All):** Export (All) appears as a button on the report and gives the option to export the report to Excel, CSV and Word
3. **Export to Excel:** export the report to Excel
4. **Export to CSV:** export the report to CSV
5. **Export to Word:** export the report to Word

Summarising Reports

Last Modified on 17/04/2019 1:01 pm AEST

Summarise is performed on reports to summarise the data of the report. Summarise can be performed on report level and on column level.

Summarising on Report Level

To summarise on Report Level:

1. Go to report builder of the report where the summarise is to be performed, see [Creating or Editing Reports](#).
2. Select the top most node in Relationship viewer. Summarise is performed on the whole report.
3. In the Relationship viewer pane, select Summarise icon. The Summarise dialogue appears.
4. Select the required arithmetic function for each of the columns.
5. Select **OK**. The summarised report displays.
6. Select **SAVE** to save the report. The data displays in view mode of the report.

Summarising on Column Level

Summarising on column level is usually done between a column and another related column of the report.

For example, Student name is a column and Subjects is a related column on student report. To find the number of subjects each student has, summarising as count on subjects column displays the number of subjects each student has.

To summarise on Column Level:

Method 1

1. Go to report builder of the report where the summarise is to be performed, see [Creating or Editing Reports](#).
2. Hover on the column you want to summarise.
3. Select the down arrow which appears to the right of the column.
4. Select **Summarise**. The Summarise dialog appears.
5. Select the required arithmetic function for the column.
6. Select **OK**.
7. Select **SAVE** to save the report. The data displays in view mode of the report.

Method 2

1. Go to report builder of the report where the summarise is to be performed, see [Creating or Editing Reports](#).
2. Add the related column to the report.
3. Select the **Related Node**.
4. Select **Summarise**. The Summarise dialogue appears.
5. Select the required arithmetic function for the column.
6. Select **OK**.

7. Select **SAVE** to save the report. The data displays in view mode of the report.

Summarise Operators

Summarise

Select how to summarise all columns in report

Show Tree

Text	Number	DateTime	Date	Time	Single Select Choice
<input checked="" type="checkbox"/> Show values					
<input type="checkbox"/> Count					
<input type="checkbox"/> Count unique					
<input type="checkbox"/> Count all					
<input type="checkbox"/> List	<input type="checkbox"/> Sum	<input type="checkbox"/> Max	<input type="checkbox"/> Max	<input type="checkbox"/> Max	<input type="checkbox"/> Max
	<input type="checkbox"/> Average	<input type="checkbox"/> Min	<input type="checkbox"/> Min	<input type="checkbox"/> Min	<input type="checkbox"/> Min
	<input type="checkbox"/> Max				<input type="checkbox"/> List
	<input type="checkbox"/> Min				

Remove Summarise OK Cancel

Calculated Columns

Last Modified on 29/03/2019 4:09 pm AEDT

Calculations can be used as columns in a report for special summaries based on the values of the report data. These calculations are performed dynamically when the report is rendered.

To add a calculated column to a report:

1. Go to **Report Builder**.
2. In the Relationship viewer pane, select **Calculated** icon. The Calculation dialogue appears.
3. Type a name for the calculation in the **Column Name** field.
4. Type the calculation in the **Enter Calculation** field.
5. Select **OK**.
6. Select **SAVE** to save the report. The data displays in view mode of the report.

Conditional Formatting

Last Modified on 12/01/2022 2:39 pm AEDT

Conditional formatting is performed in Report Builder on any column.

If applying conditional formatting for a column that is displaying a choice field, additional considerations apply. See the section "Conditional Formatting on Choice Fields"

Performing conditional formatting

To perform conditional formatting:

1. Go to **Report Builder**.
2. Hover on the column where you want to perform the conditional formatting.
3. Select the down arrow. The column context menu appears.
4. Select **Format Column**. The Format dialogue appears.
5. In the **Format** field, select the down arrow and select the option you want.

For a text column, there are two types of formats available: Highlight and Icon

For a number column, there are three types of formats available: Highlight, Icon and Progress Bar

Highlight Conditional Formatting

To use highlight conditional formatting:

1. Follow the steps in **Performing conditional formatting** above and select the format as **Highlight**.
2. Select the checkbox for **Display text**. The text displays in the highlighted colour. If the checkbox is unchecked then the text does not display.
3. In the **Scheme** field select the down arrow and select the option you want. Once a format is selected, the corresponding schemes are listed in the scheme drop down. At the maximum, you can select up to a four step scheme and a minimum of a two step scheme.

If you select a four step scheme, four rows of rules are provided. If you select a three step scheme, three rows of rules are provided and so on

Rules have three columns: Operation, Value and Colour

4. Select an Operation, type a Value and select a Colour for each rule.
5. Select + icon to add a row for the rule, see item 1 in the screen shot.
6. Select X icon to remove any row in the rule, see item 2 in the screen shot.
7. When complete, select **OK**. The rules apply on the report.
8. Select **SAVE** to save the report. The conditional formatting displays in view mode of the report.

Icon Conditional Formatting

To use Icon Conditional Formatting:

1. Follow the steps in **Performing conditional formatting** above and select the format as **Icon**.
2. Select the checkbox for **Display text**. The text displays in the highlighted colour. If the checkbox is unchecked then the text does not display.
3. Select the **Scheme** you want.
4. Once a scheme is selected, create the rules for the column.
5. Select an operation, value and icon to make a rule.
6. When complete, select **OK**. The rules apply on the report.
7. Select **SAVE** to save the report. The icon formatting displays in view mode of the report.

Progress Bar Formatting

Progress Bar Formatting is available only for a number column.

To use Progress Bar Formatting:

1. Follow the steps in **Performing conditional formatting** above and select the format as **Progress Bar**.
2. Select the checkbox for **Display text**. The text displays in the highlighted colour. If the checkbox is unchecked then the text does not display.
3. Select **Scheme**.
4. Type a **Minimum** value.
5. Type a **Maximum** value.
6. The **Colour** field shows the value selected in the scheme. You can select any other colour.
7. Select **OK**. The rules apply on the report.
8. Select **SAVE** to save the report. The applied Progress Bar formatting displays in view mode of the report.

Note: The progress Bar begins at the minimum value and it keeps increasing till it reaches the maximum value. Once the maximum value is reached, the full progress bar is displayed for the rest of the values above maximum value.

Conditional Formatting on Choice Fields

Conditional Formatting can be set directly on the choice field itself. This allows the same conditional format scheme to be used on all reports where this choice field is displayed.

If a conditional format scheme is applied to a choice field, then this will be on by default when the choice field is added to a report.

To configure this:

1. Follow the steps in **Performing conditional formatting** above for the column that contains the choice field
2. Select or Deselect the checkbox for **Use default format for choice field**

Value Formatting

Last Modified on 29/03/2019 4:14 pm AEDT

Value formatting is performed in report builder on any column of a report.

To perform value formatting:

1. Go to [Report Builder](#).
2. Hover on the column where you want to perform the value formatting.
3. Select the down arrow. The column context menu appears.
4. Select **Format Column**. The Format dialog appears.
5. Select **Value Formatting** tab
6. Select the required formatting options, see table.
7. Select **OK**.
8. Select **SAVE** to save the report. The applied value formatting displays in view mode of the report.

Formatting options

Different formatting options are available for different types of columns

Text	Number / Autonumber	Decimal / Currency	Date	Date and Time	Time
Alignment	Alignment	Alignment	Alignment	Alignment	Alignment
<ul style="list-style-type: none">• Default• Left• Centre• Right					

Text	Number / Autonumber	Decimal / Currency	Date	Date and Time	Time
				Date time format (with examples)	
			Date Format (with examples)	<ul style="list-style-type: none"> • Default (13/03/1982 09:00 AM) • 24 Hour (13/03/1982 09:00) • Day Month (13 March) • Day Month Time (13 March 9:00 AM) • Long (Saturday, 13 March 1982) • Long (Saturday, 13 March 1982 9:00 AM) • Sortable (1982-03-13T09:00:00) • Date only (13/03/1982) • Time only (09:00 AM) • Month (Mar) • Month Year (March 1982) • Quarter (Q1) • Quarter Year (Q1, 1982) • Year (1982) • Weekday (Saturday) 	Time format (with examples)
Lines	Prefix	Decimal Places	<ul style="list-style-type: none"> • Default (13/03/1982) • Day Month (13 March) • Long (Saturday, 13 March 1982) • Month (Mar) • Month Year (March 1982) • Quarter (Q1) • Quarter Year (Q1, 1982) • Year (1982) • Weekday (Saturday) 	<ul style="list-style-type: none"> • Default (9:00 AM) • 24 Hour (09:00) • Hour Only (09:00 AM) 	
	Suffix	Prefix			
		Suffix			

Advanced Options

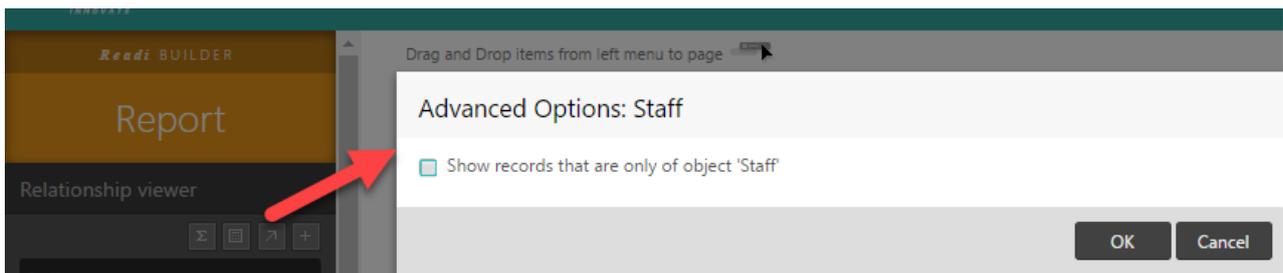
Last Modified on 16/04/2019 7:05 pm AEST

Advanced Options allows you to display data including derived types, or data of only the original type on the report.

For example, 'Staff' is an object and 'Dean' is an object which is derived from 'Staff'. The object 'Dean' is called a derived type of 'Staff'.

To set Advanced Options:

1. Go to [Report Builder](#).
2. In the Relationship viewer pane, select Advanced Options icon. The Advanced Options dialog appears.
3. If you want to display the records of of the original object and the derived object, then leave the checkbox unchecked for **Show records that are only of object 'Staff'**.
4. If you want to display the records of only the original object, then select the checkbox for **Show records that are only of object 'Staff'**.
5. Select **OK**.
6. Select **SAVE** to save the report. The data displays in view mode of the report.



Report Properties

Last Modified on 29/03/2019 4:25 pm AEDT

There are additional settings that can be configured for a report.

To configure additional settings:

1. Go to [Report Builder](#).
2. On the menu bar at top right, select **PROPERTIES**. The Report Properties dialog appears.
3. Select **OPTIONS**. The tabs **Advanced**, **Format** and **Deploy** display.

Advanced

Setting	Description
Applications	Refers to the name of the application to which the report belongs.
Report form	Refers to the form that launches when you open a resource.
Default Display Report	Marks the report as the Default Display Report (Glossary) for the Object
Default Picker Report	Marks the report as the Default Picker Report (Glossary) for the Object

Format

Setting	Description
Icon	Allows you to set the icon for your report.
Style	Allows you to define a different style for your report.
Hide Action Bar	Allows you to hide the actions bar which includes the actions menu, inline editing and quick search text box.
Hide Report header	Allows you to hide the column names from the report.

Deploy

Setting	Description
---------	-------------

Setting	Description
Desktop	When selected allows the report to be displayed on desktop.
Tablet	When selected allows the report to be displayed on tablet.
Mobile	When selected allows the report to be displayed on mobile.

4. Set the options as required.
5. Select **OK**.
6. Select **SAVE** to save the report. The effect of the additional settings displays in view mode of the report.

Relationship Columns

Last Modified on 29/03/2019 4:25 pm AEDT

To add relationship columns:

1. Go to **Report Builder**.
2. In the Relationship viewer pane, select **Add Relationship** icon. The Add Relationship dialog appears.
3. Select the down arrow in the **Type** field and select the type you want. The Relationships display in the tab. Or use Quick search to locate the relationship you want.
4. If you want to add Hidden Relationships, select the **Advanced Options** button and select the check box for 'Show Hidden Relationships'. System relationship are mainly the hidden relationships.
5. Select the **Add** button for the Relationship you want to add.
6. Click **OK**.
7. Select **SAVE** to save the report. The data displays in view mode of the report

Use the Search field to search for a relationship by its Name.

Add Name field to the Report is checked by default and the Name field of the related resource is added to the report.

A relationship can be added multiple times to the Report.

Report Diagnostics

Last Modified on 16/04/2019 7:05 pm AEST

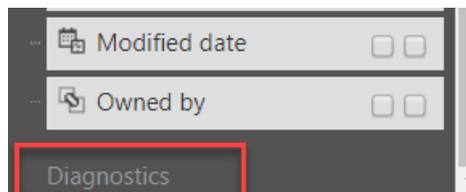
The report diagnostics tool has been designed to diagnose and improve report performance.

In order to improve report performance, it is helpful to understand how the:

- report is structured
- security rules are applied
- data is cached and shared

How to run the report diagnostics

1. Select the required report and go to the report builder
2. Scroll down the left-hand field list to the bottom
3. Clicking on the grey **Diagnostics** link will open the Report Diagnostic tool



4. Select the **User** context for the report analysis
5. Then select **Show Diagnostics**

The tool will only analyse the saved report. If you have unsaved changes, then the report will only show the result as of the last save.

If the user that you are trying to run the report as does not have access to that report, you will receive a *Forbidden* message.

Report Diagnostics Sections

Caching

This area shows ways a report can be cached:

1. **Cachable and shareable between users** - The server will cache the result set, and provide this cached result to other users in the same role until a relevant change is detected. This is most preferable for good report performance.
2. **Data cachable, but user-specific** - The server will cache the result set, but it will only be reserved back to the same user.
3. **Plan and data uncachable** - The server cannot cache the result set. This likely to occur for reports that depend on time.

Referenced Object Types

This area lists all the types of objects that are used on the report. Any object that is potentially accessed in a report is significant, because it determines the access rules that need to be considered.

- **Full grant**
 - If an access rule is found that grants **Read** access to all records of a particular object, then **full grant** will be shown.
 - The access rule may also provide create, modify, delete but only *read* is relevant to reports.
 - The access rule may also be applied to a parent or ancestor object but not derived type.
 - Reports will perform fastest when every object is **full grant**.
- **System rules**
 - In addition to visible access control rules, there are internal system access rules.
 - For most users these do not apply, but for certain system/admin objects they may.
 - If there are any applicable system rules, then **system rules** is shown

Nodes

Nodes are arranged in a tree-like structure starting with the object the report is based on, then following relationships to corresponding objects that also exist in the report. Information will also include nodes when data is summarised or calculations are performed.

- **Relationships**
 - the direction of the relationship is marked with either **Fwd** or **Rev**.
 - the cardinality of the relationship is marked with either **to-one** or **to-many** shows how many related records may be returned.
 - recursive relationships are also indicated.
- **Summarise operations**
 - appear in the node list as **Aggregate**.
 - will appear as either **Ungrouped** or **Grouped**, for the later, indicating that some descendant nodes have field values used for grouping
 - if there are two separate paths of relationships that contain 'to-many', then the top node of each path will indicate (crossed). This is because the results of the two separate paths are effectively multiplied out. A message is also shown below the node table indicating that crossed joins are present is not ideal and may affect performance.

Each node is typically is secured in one of the following ways:

- **Secured**
 - access rules are applied in the normal manner.
 - if a node is full grant, then **full-grant** is shown, meaning this node gets optimised.

- **Implicitly secured**
 - access that has been granted via the relationship means that the security check can be optimised by virtue of the records relationship with its parent.
- **Unsecured**
 - the tenant administrator has used the !unsecured option in a calculated-field to explicitly suppress security checks for this node.
- **Explicit security check (bad!)**
 - access that has been granted via the relationship but in the opposite direction being followed in the report, will mean that the report engine must enter a special mode to evaluate security correctly, which can be *very slow*.

Calculations

All calculations are listed out as either calculated columns, conditions or calculated fields along with the type of calculation.

Calculations can substantially increase the number of nodes in a report.

Inherited/Derived Types

In order to determine what type of security rules apply, it's also helpful to understand inherited and derived objects.

The total set of security access rules that apply to an object include:

- rules applied to the object itself
- rules applied to ancestor objects
- rules applied to derived objects
- rules applied to other ancestor objects of derived objects (if at least one derived type contains multiple ancestor objects)

Objects in (slow) secures flags mode

This section lists any objects used in the report that was necessary to enter the slow mode to evaluate an explicit security check. This means that any objects that have been used that have been granted access via the relationship but in the opposite direction.

The system will add the word **activated** to explicitly indicate that the mode was activated. If there are any objects in this list, then it is a good idea to carefully review the structure of security rules, relationship security flags, and the report itself.

Suggested workarounds if you find yourself in the slow secures flag mode:

- Create an access rule that provides full access to the object that to be secured via the flag. For this to work, there must be no conditions applied, otherwise it will fall back into the slow secures flag mode.
- If you are accessing the node via a calculation, you could also 'un-secure' the calculation using the !unsecured

function. Use this with caution, as you may need to not be appropriate to 'un-secure' column data.

User Security Roles

This section lists all of the security roles that apply to the current user.

The user may be directly assigned to those roles, or the role may be include other roles (directly or indirectly) that the user is assigned to.

Access Control Rules

This is the list of access control rules that have been found to be relevant, for the current user, to the objects used in the report.

This section includes:

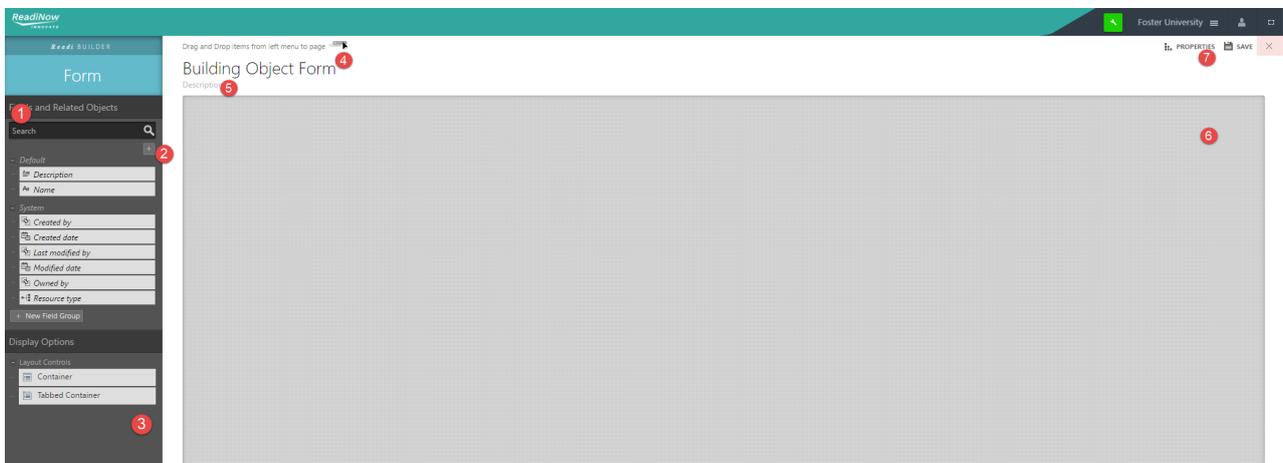
- object that the rule is applied to
- name of the access rule
- name of the role
- details about the rule and how it got used

Form Builder

Last Modified on 23/07/2020 11:16 am AEST

The Form builder consists of a number of features, refer to the screenshot below.

1. Quick search
2. Add field icon.
3. Field list
4. Form title
5. Form description.
6. Form Canvas
7. Form Builder menu.



Editing a Form

Last Modified on 03/04/2019 11:27 am AEDT

Editing an existing form is performed in Form Builder mode.

To go to the Form Builder mode:

1. Navigate to the report
2. Select the Configure icon in the top right corner.
3. Select a row in the report and select **ACTION > View**. The form displays in view mode.
4. Select the Configure icon in the top right corner of the form. The menu appears.
5. Select **Modify Form**. The form displays in Form Builder mode.
6. Select **SAVE** to save changes.

Action Buttons

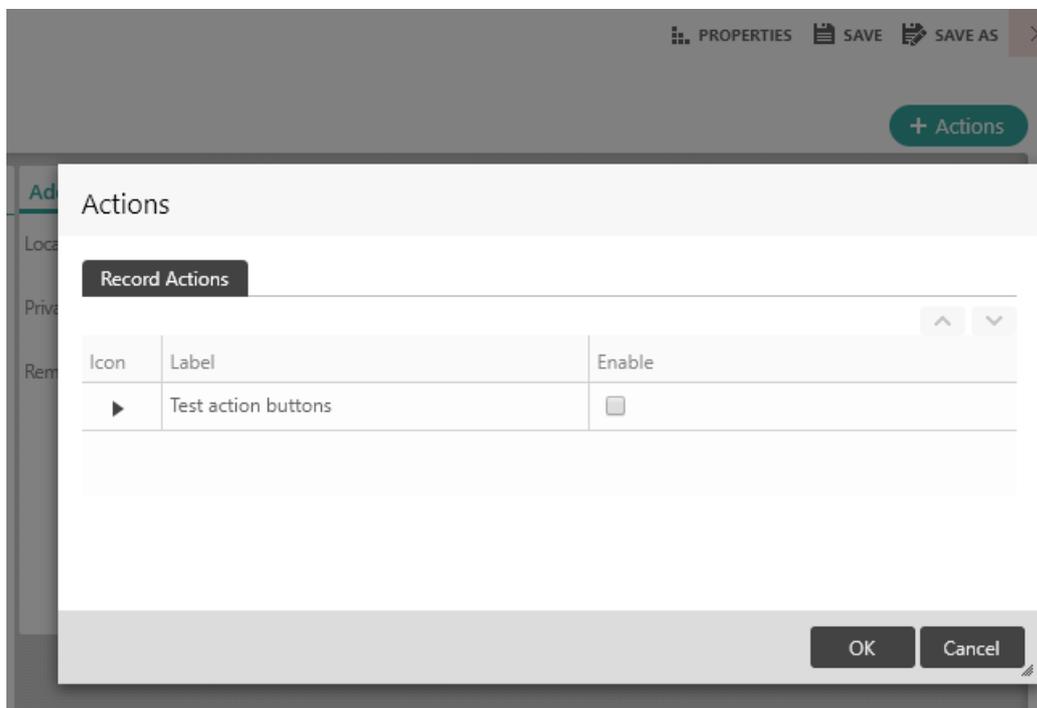
Last Modified on 18/04/2019 10:24 am AEST

An Action button allows you to start a workflow or generate a document from a form or screen.

You can select more than one action on the same form.

To enable the workflow or document generation on the form:

1. Open the **Form Builder**
2. Select the **+ Actions** button. The Actions dialogue appears as shown in the screenshot.
3. Select the checkbox for the required action in the **Enable** column (workflow or document generation).
4. Select **OK**.
5. Select **SAVE** to save the form.



To start the workflow or generate the document:

1. Navigate to the report which is created using the same object.
2. Select any record and go to New / Edit / View mode of the record on the report.
3. Select the Action button on the form to run the action on that form alone.

The workflow or document generation needs to exist to select the workflow or document generation from the form builder.

Please see [Creating and Editing Workflows](#) for workflows and [Document Generation Overview](#) for documents.

Form Layout

Last Modified on 03/04/2019 1:11 pm AEDT

When designing a form, fields can be placed directly on the form or can be added to a Container or a Tabbed Container.

Adding fields and relationships to Containers and Tabbed Containers assists with better form layout.

Note: Containers can be placed horizontally next to one another whereas Tabbed Containers can ONLY be placed one beneath the other.

To add containers to the form:

1. Open **Form Builder**
2. Select and hold Container in Left Navigation Area.
3. Drag and drop the Container on the Form Canvas.
4. Select Configure icon in right corner of Container. The Container dialogue appears.
5. Complete details and select **OK** to save.

Adding Tabbed Containers to the form

To add tabbed containers to the form:

1. Open **Form Builder**
2. Select and hold Tabbed Container in Left Navigation Area.
3. Drag and drop the Tabbed Container on the Form Canvas.
4. Click +. A tab appears in the Tabbed Container.
5. Select Configure icon next to New Tab. The Container dialogue appears.
6. Complete details and select **OK** to save.

Adding Fields to an Object

Last Modified on 17/04/2019 1:16 pm AEST

To add fields to an object:

1. Open the Form Builder, see [Opening the Form Builder](#).
2. Select + the Add field icon in Left Navigation Area. The list of fields appears.
3. Select and hold the type of field that you want to add to the object.
4. Drag and drop the field to the Left Navigation Area.
5. Select **SAVE** to save the field to the Object.

Adding Fields to a Form

Last Modified on 17/04/2019 1:13 pm AEST

To add fields to a form:

1. Open the Form Builder.
2. Select + the Add field icon in Left Navigation Area. The list of fields appears.
3. Select and hold the type of field that you want to add to the object or form.
4. Drag and drop the field to the Form Canvas.
5. Select **SAVE** to save the field to the object and the form.

When you add the fields directly to the form they are vertically stacked. To add fields horizontally across the form, add Containers to the form and then add the fields to the Containers. Adding Containers to the form assists with a better form layout, see [Form Layout](#).

Fields are of different datatypes. Depending on the schema of the application pick the datatype that will be most suitable for the type of field it represents. [Field Types](#) explains each of the datatype in detail, see [Form Layout](#).

Cascading Fields

Last Modified on 17/08/2020 1:32 pm AEST

The ability to filter one field from another field is called cascading fields.

Cascading fields can be configured between:

- Two choice fields
- A single choice field and a multi choice field
- Two lookup fields
- A lookup and a relationship field

Cascade between choice fields

The example below describes how to filter between Category and Sub-category choice fields.

1. Open the form of where you want to configure the cascading choice fields
2. Create and add values to both Category and Sub-category choice fields
3. Select **Save**
4. Navigate to **Application toolbox**
5. Expand the **Choice Fields** menu from left hand navigation
6. Select the application in the drop down of where Category and Sub-category choice fields were created in
7. Select the child choice field, in this case Sub-Category and **Create** a new form
8. Add the **Name** field to the form
9. Select + in left navigation area of the Form Builder
10. Drag and drop **Choice Field** field onto the form
11. In the **Choice Field Properties** dialog select **Use Existing**
12. Find and select the parent choice field, in this case Category
13. Name your choice field with the same name as the existing one
14. Select **OK**
15. **Save** the form
16. Navigate to **Administration – Resources – Choice fields**
17. Find and select the child choice field, in this case Sub-Category
18. Select choice field value
19. Edit the choice field and select the appropriate parent value
20. Repeat steps 18 and 19 until all parent-child values have been assigned
21. Navigate back to the **Form** from step 1
22. Modify the **Choice Field Properties** of the child choice field, in this case Sub-Category
23. Expand **Options** and from the **Form Detail** tab, select the **Filter By** picker
24. **Add Filter** and select the parent choice field in **Filter by field** and **Relationship**
25. Select **OK**

26. **Save** the form

Cascade between lookups/relationships

The example below describes how to filter between Campus and Buildings lookups.

1. To filter the child lookup based on the value of the parent, firstly, ensure that you have a parent-child relationship between two objects. In our campus and building example, campus is the parent and building child, where the campus object must contain a relationship to building.
2. Secondly, ensure you have records against Campus which also include Building relationship records
3. Now open the form of where you want to configure the cascading lookups
4. Modify the **Lookup Properties** of the child lookup, in this case Building
5. Expand **Options** and from the **Form Detail** tab select **Filter By** picker
6. **Add Filter** and select the parent choice field in **Filter by field** and **Relationship**
7. Select **OK**
8. **Save** the form

Showing or Hiding Fields

Last Modified on 15/04/2019 3:24 pm AEST

This is a conditional visibility feature allows you to conditionally hide or show elements on a form, depending on the data the user has input to the form. A show/hide rule can be configured in the form of a Calculation that results in a true/false. If the condition is TRUE, then the element will be shown, if the condition is FALSE, then the element will be hidden. Show/Hide rules can be configured on the following elements

- Fields
- Containers
- Tab Containers
- Action buttons on from

Creating a Show/Hide Rule

1. Go to form builder of the form you want to apply the show/hide rule
2. Select the Configure icon of the element you want to configure a show/hide condition to open the properties of that element
3. Find the "Show When" property (Depending on the element, this may be in **OPTIONS** > **Visibility** of the properties window)
4. Type in a calculation that evaluates to a true/false
5. Click **OK**.
6. Select **SAVE** to save changes.

For more information about the condition, please see [Calculations](#).

Control only **Show When** condition has a True value.

Conditions are 'form specific' (i.e. only apply to the form where the condition is set)

Field Properties

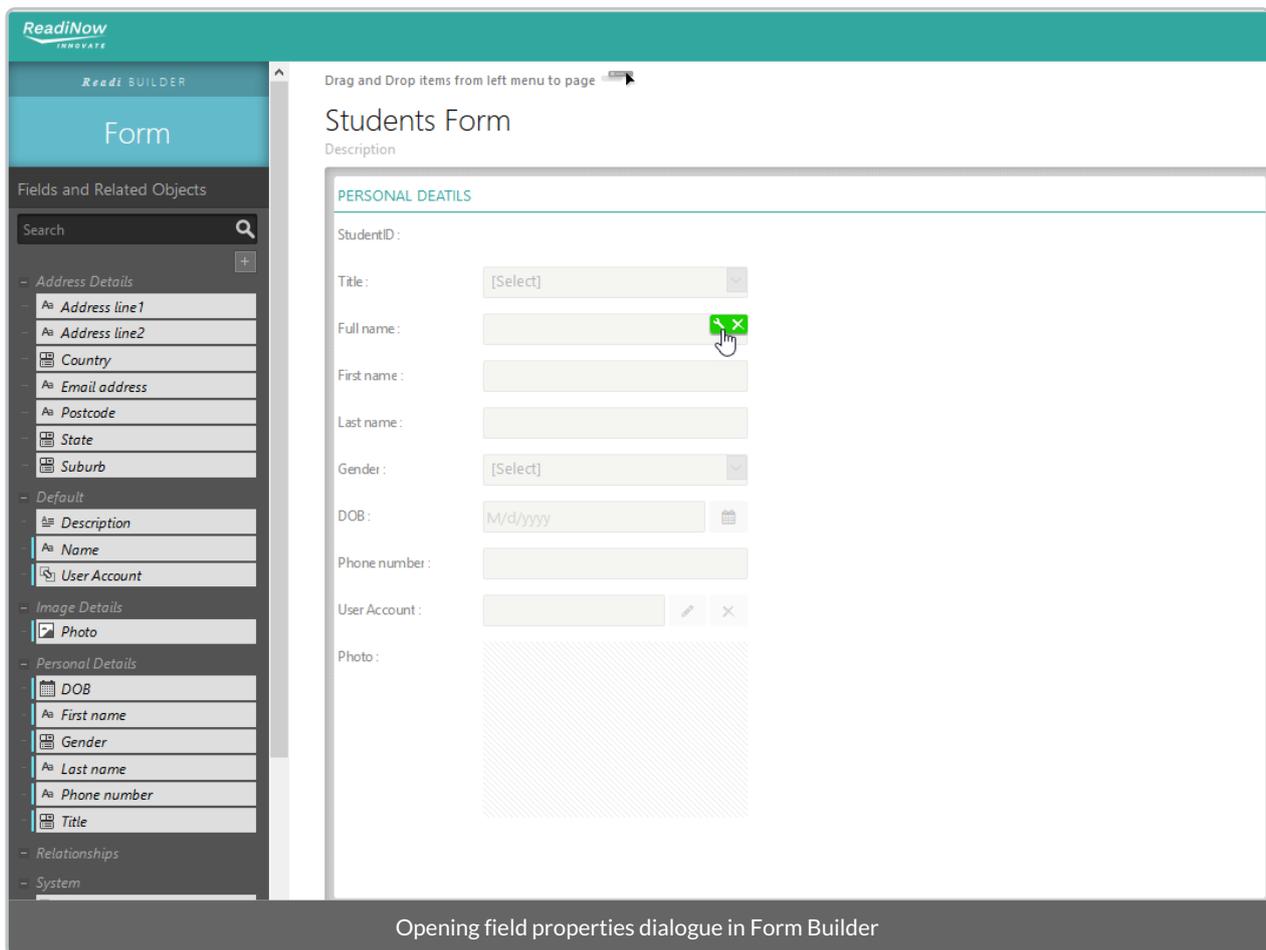
Last Modified on 22/04/2020 10:37 am AEST

Check the details of a field in the Field Properties dialog. Each Field Type has its Field Properties dialog.

Opening the Field Properties dialog

To open the Field Properties dialog:

1. Open Form Builder mode, see [Opening and Using Form Builder](#)
2. Hover over the desired Field. The control icons appear.
3. Select Configure icon. The Field Properties dialog displays.
4. Make any desired changes, then select **OK** to save.



Viewing Field Properties details

1. Open Field Properties dialog.
2. Select **OPTIONS**. The options tabs appear.
3. Select the desired tab:
 - **Form Detail** : Set whether Field is Mandatory or whether pop-up Help is available for this Field

- **Form Behaviour** : Define Read Only and/or Visibility settings
- **Object Detail** : Define Script name, Minimum and Maximum input size, Default values or Text Patterns
- **Format** : Set Background Colour, Horizontal Resize or Vertical Resize
- **Custom Form Validation** : Define a Boolean evaluated calculation used to validate the input in this Field

Text Field Properties

Field Name :

Display Name :

Description :

^ OPTIONS

Form Detail | Form Behaviour | Object Detail | Format | Custom Form Validation

Mandatory:

Show Help:

OK Cancel

Field Type Properties Dialog

Form Detail Tab

The Form Detail tab is where the Field may be set to Mandatory, and whether pop-up Help is available for this Field.

Text Field Properties

Field Name :

Display Name :

Description :

^ OPTIONS

Form Detail | Form Behaviour | Object Detail | Format | Custom Form Validation

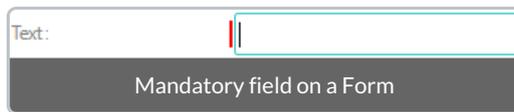
Mandatory:

Show Help:

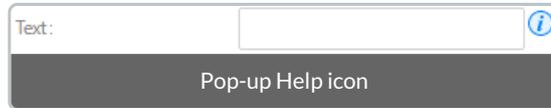
OK Cancel

Form Detail Tab

Checking the Mandatory box means a new Record created on this Form cannot be saved without a value in this Field. This will be indicated on Record creation by the red line adjacent to the field, as below:

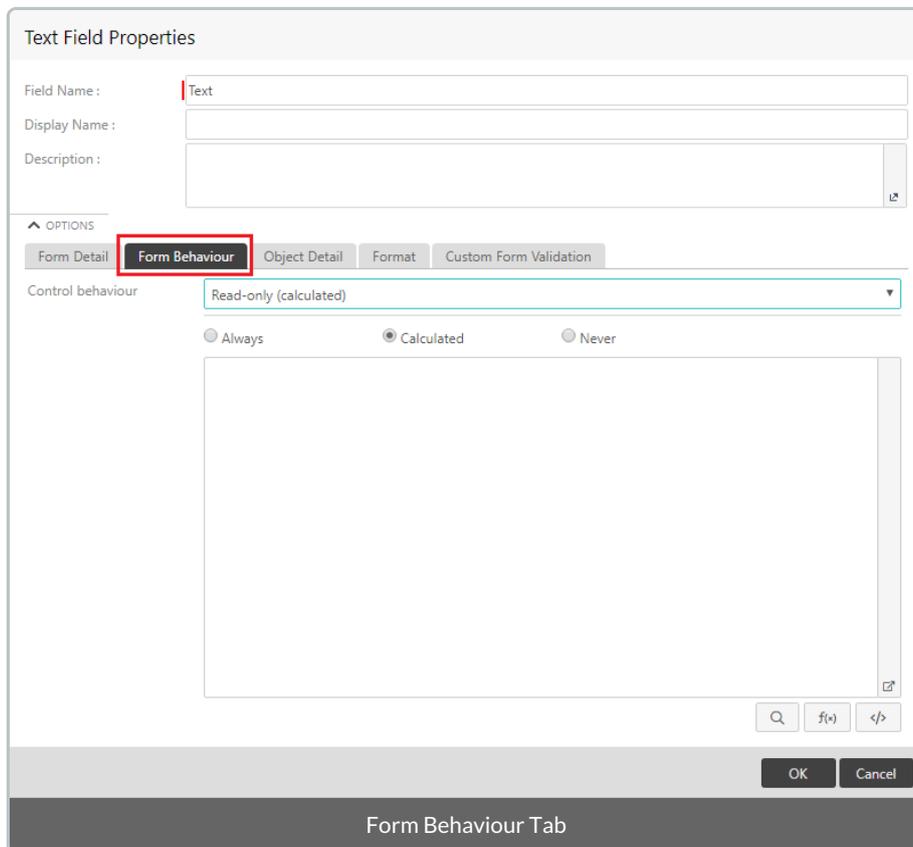


Checking the Show Help box means Pop-up Help will be available for this field. The text for the Pop-up Help is taken from the *Description* field in the Field Properties Dialog.



Form Behaviour Tab

The *Form Behaviour* tab allows the definition of rules around a Field's Read-only and/or Visibility attribute.



To configure the *Visibility* behaviour of the field, select *Visibility* from the *Control Behaviour* drop down, then select:

- *Always* - the expression box is disabled and the field will always be Visible. This will not delete an existing calculation in the expression box, but any calculation therein will be ignored
- *Calculated* - this requires a calculation that evaluates to a Boolean - when TRUE this field will be visible and when FALSE this field will not be visible
- Note that *Never* is not applicable to *Visibility* and is disabled

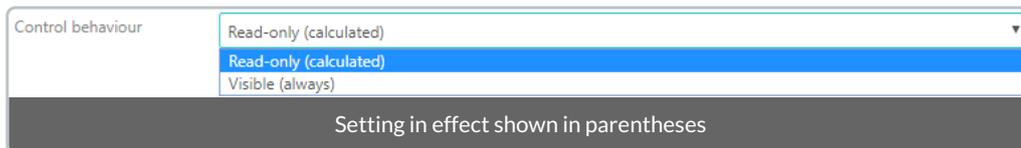
To configure the *Read-only* behaviour of the field, select *Read-only* from the *Control Behaviour* drop down.

- *Always* - the expression box is disabled and the field will always be Read-only. This will not delete an existing

calculation in the expression box, but any calculation therein will be ignored

- *Calculated* - this requires a calculation that evaluates to a Boolean - when TRUE this field will be Read-only and when FALSE this field will not be Read-only
- *Never* - the expression box is disabled and the field will never be Read-only. This will not delete an existing calculation in the expression box, but any calculation therein will be ignored

Note that the setting applied to both Read-only and Visibility behaviours are shown in parentheses after each respective item. For example, in the screenshot below, *Read-only* is set to *Calculated* and *Visible* is set to *Always*.



Text

Last Modified on 18/04/2019 10:09 am AEST

A Text field is a basic text control that enables the user to type a line of text. If the intention is to obtain more than one line of input from the user, use a [Multiline Text Field](#).

General field properties can be found in [General Field Properties](#)

- Max. length: 1,000 characters, with an exception on Name field with max. length 300 characters
- Can be defined as Mandatory
- Can be defined as Read-only
- Can be defined with a Minimum or Maximum value
- Can be defined with a specific [text pattern](#)

Multiline Text

Last Modified on 17/04/2019 3:16 pm AEST

A Multiline Text field is a field that enables the user to type a large amount of text. If the intention is to use a small amount of text, use a [Text Field](#).

General field properties can be found in [General Field Properties](#).

- Max. length: 10,000 characters.
- Can be defined as Mandatory
- Can be defined as Read-only
- Can specify a minimum or maximum length
- Can be defined with a [specific text pattern](#)

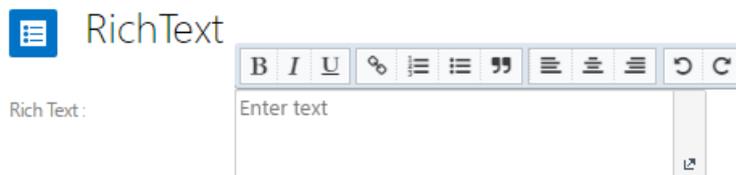
Rich Text

Last Modified on 16/04/2019 7:04 pm AEST

The Rich text field type provides the ability for users to enter and record special formatted content.

Rich text supports the following formatting:

1. Paragraph
 1. Bullet list
 2. Numbered list
 3. Text alignment - supporting left, right and centre
2. Font
 1. Bold text
 2. Italics text
 3. Underlined text
3. Quotes
4. Links
 1. URL - default to be opened in a new tab
5. Undo / Redo



Rich text behaviour on forms:

- Rich text formatting is done in edit mode and same is viewed in view mode.
- When the contents of the field is too large to fit into the space, a pop up button is displayed.

Rich text on reports:

- Rich text renders the same character length as of the text field.
- When inline editing is turned on, the user is presented a single text field control in the report.
- When the user clicks on the pop up button of the rich text field control they are presented with a pop up window, the rich text tool bar is displayed in the pop up.

Audit on Rich text:

- When auditing rich text field, the actual non-rendered HTML (including tags) is displayed since the Rich Text

is stored as HTML.

- Only the value and the formatting are audited. For example, let's say on a rich text field the user enters "Hello World" and saves it. They then make the text bold "**Hello World**" and save again. The audit record on the second save would show as `<bold> Hello World </bold>`.

Number

Last Modified on 17/04/2019 3:18 pm AEST

A Number field is a field that enables the user to type a whole number.

General field properties can be found in [General Field Properties](#).

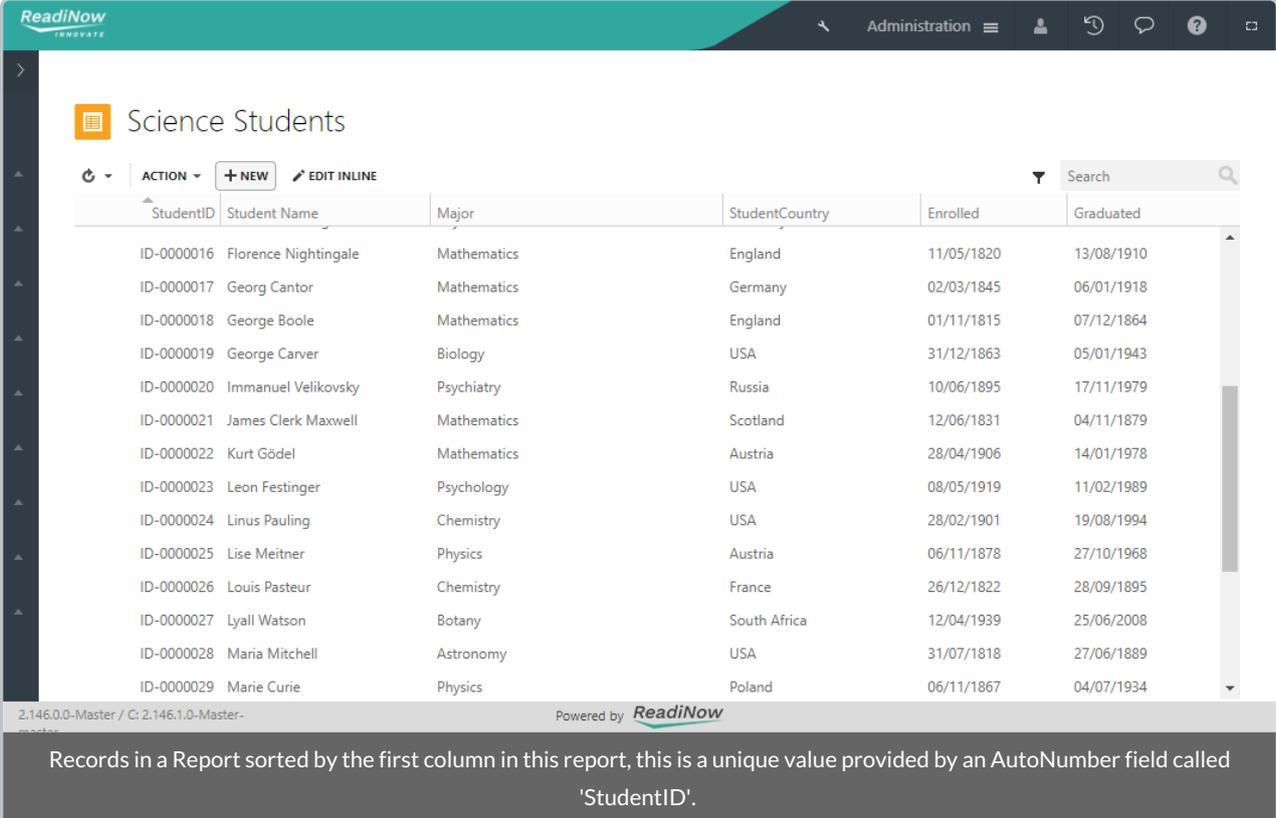
- Value range: -999,999,999 ~ 999,999,999
- Can be defined as Mandatory
- Can be defined as Read-only
- Can specify a minimum or maximum value
- Can specify a default value

AutoNumber Fields

Last Modified on 12/10/2020 9:52 pm AEDT

AutoNumber fields are fields that 'automatically increment'; i.e. they are automatically assigned a number when a new record is created and the number increases by 1 for each new record. This means they can be used to create an identity column which uniquely identifies each record in a report.

AutoNumber fields also support number patterns with 'zero-padding' as well as prefixes and suffixes; this is useful for generating employee IDs, Invoices, etc. The image below shows a Student ID that is generated using an AutoNumber field.



The screenshot shows a ReadiNow report titled "Science Students". The report displays a table with the following columns: StudentID, Student Name, Major, StudentCountry, Enrolled, and Graduated. The StudentID column contains values ranging from ID-0000016 to ID-0000029. The report is sorted by the StudentID column. A footer note states: "Records in a Report sorted by the first column in this report, this is a unique value provided by an AutoNumber field called 'StudentID'."

StudentID	Student Name	Major	StudentCountry	Enrolled	Graduated
ID-0000016	Florence Nightingale	Mathematics	England	11/05/1820	13/08/1910
ID-0000017	Georg Cantor	Mathematics	Germany	02/03/1845	06/01/1918
ID-0000018	George Boole	Mathematics	England	01/11/1815	07/12/1864
ID-0000019	George Carver	Biology	USA	31/12/1863	05/01/1943
ID-0000020	Immanuel Velikovsky	Psychiatry	Russia	10/06/1895	17/11/1979
ID-0000021	James Clerk Maxwell	Mathematics	Scotland	12/06/1831	04/11/1879
ID-0000022	Kurt Gödel	Mathematics	Austria	28/04/1906	14/01/1978
ID-0000023	Leon Festinger	Psychology	USA	08/05/1919	11/02/1989
ID-0000024	Linus Pauling	Chemistry	USA	28/02/1901	19/08/1994
ID-0000025	Lise Meitner	Physics	Austria	06/11/1878	27/10/1968
ID-0000026	Louis Pasteur	Chemistry	France	26/12/1822	28/09/1895
ID-0000027	Lyall Watson	Botany	South Africa	12/04/1939	25/06/2008
ID-0000028	Maria Mitchell	Astronomy	USA	31/07/1818	27/06/1889
ID-0000029	Marie Curie	Physics	Poland	06/11/1867	04/07/1934

Supported Patterns for AutoNumbers

AutoNumbers can be prefixed (INV: 00001) or suffixed (000001-X), or both (INV: 00001-X) using 'patterns'. These patterns have the following rules:

- can be left blank (default) - output will be a number
- can be a string of zeros - output will use leading zeros as padding
- can be a single '#' - output will be a number
- prefixes and suffixes must be accompanied by either one or more '0's, or a '#'
- to include a '#' or '-' in the output the character must be escaped using a '\'
- there can only be 1 number group in a pattern
- prefixes and suffixes may contain characters 'a' through to 'Z', spaces, colons
- prefixes and suffixes may NOT contain any number [0-9]

AutoNumber Properties

AutoNumber fields can also specify a 'starting number', note that the starting number can not be changed once it has been set. In contrast the pattern can be changed at any time. The AutoNumber field properties is shown in the image below:

AutoNumber Field Properties

Field Name :

Display Name :

Description :

^ OPTIONS

Form Behaviour **Object Detail** Format

Script Name :

Starting Number :

Pattern :

Specifier	Description	Input	Pattern	Output
"0"	Zero placeholder	1234	00000	-> 01234
"#"	Digit placeholder	1234	(#####)	-> (1234)
string	Literal string	1234	# degrees	-> 1234 degrees
"\"	Escape character	1234	\#team\ -#	-> #team-1234

OK Cancel

AutoNumber Field Properties for a Student ID, the pattern ID\ -000000 will output: ID-000001, ID-000002, etc.

Points to note about AutoNumber Fields

AutoNumber fields:

- are read-only
- do NOT have **Form Detail** or **Custom Form Validation** tabs
- can specify a starting number, default = 1 (*can not be changed after being set*)
- support pattern formatting, e.g.: INV-0001, ID-0001-X
- can be setup as [Resource Keys](#)

Note: for general information about field properties refer to [General Field Properties](#).

Decimal

Last Modified on 17/04/2019 3:22 pm AEST

A Decimal field is a field that enables the user to type a number as a decimal.

General field properties can be found in [General Field Properties](#).

- Can be defined as Mandatory
- Can be defined as Read-only
- Can specify a minimum or maximum value
- Can specify a default value
- Can specify decimal places

Currency

Last Modified on 17/04/2019 3:20 pm AEST

A Currency field is similar to the [Decimal Field](#), and includes the currency symbol in the field label.

General field properties can be found in [General Field Properties](#).

- The maximum value allowed in a currency field is 1 000 000 000.

Date and Time

Last Modified on 17/04/2019 3:19 pm AEST

A Date and Time field is a control that you can use to specify both date and time values.

General field properties can be found in [General Field Properties](#).

- Can be defined as mandatory
- Can specify a minimum or maximum value
- Can specify a default value, or tick to choose now

Date

Last Modified on 17/04/2019 3:18 pm AEST

A Date field is a control that you can use to specify a date value.

General field properties can be found in [General Field Properties](#).

- Can be defined as Mandatory
- Can specify a minimum or maximum value
- Can specify a default value, or tick to choose today

Time

Last Modified on 17/04/2019 3:19 pm AEST

A Time Field is a control that user can use to specify a time value.

General field properties can be found in [General Field Properties](#).

- Can be defined as Mandatory
- Can specify a minimum or maximum value
- Can specify a default value, including now

Yes/No

Last Modified on 18/04/2019 10:03 am AEST

A Yes/No field is a control that enables the user to choose either True or False.

- You can specify a default value

Image

Last Modified on 18/04/2019 10:04 am AEST

An Image field is a control that enables you to upload an image.

- Can be defined as Mandatory
- Can specify a default image
- Internally, it is a relationship to image type
- For details on Thumbnail Sizes, see [Thumbnail Sizes](#)

Calculation

Last Modified on 14/03/2019 10:32 am AEDT

A Calculation field allows you to define a read-only field on an object whose value is automatically calculated based on other fields/relationships.

Calculations are performed dynamically when user views a record.

Lookup

Last Modified on 14/03/2019 12:01 pm AEDT

Lookup is a type of control that enables the user to define a 'to-one' relationship.

There are two types of Lookup fields, defined in RELATIONSHIP TYPE tab:

- Many to One
- One to One

Ownership Properties

Ownership can also be defined on Lookups, there are two types:

- No Ownership
- Full Ownership

Type	Ownership	Description	Example
Many to One	No Ownership	A normal lookup. Points to a single resource, but neither is owned by the other	Employee is in Department
Many to One	Full ownership	This resource is owned by the resource being pointed to	Plan Step belongs to Plan
One to One	No Ownership	A normal lookup. Points to a single resource, but neither is owned by the other	Car has Engine
One to One	Full Ownership	This resource is owned by the resource being pointed to	Each Student has a User Account

Relationship Control

Last Modified on 20/02/2020 11:56 pm AEDT

Relationship is a type of control that enables the user to define a 'to-many' relationship.

Refer to [Relationships](#) for more details about how records can be related to each other, and about the meaning and behavior of these relationship settings.

There are two types of Relationship fields, defined in the RELATIONSHIP TYPE tab:

- One to Many
- Many to Many

Type	Description	Example
One to Many	One item points to multiple related items	Department has Employees
Many to Many	Many items point to multiple related items, but does not strongly own them.	Students study Subjects

Refer to [Relationships](#) for more details about relationship types.

Ownership Properties

Ownership can also be defined on Relationships, there are two types:

- No Ownership
- Full Ownership

Type	Ownership	Description	Example
Many to One	No Ownership	A normal lookup. Points to a single resource, but neither is owned by the other	Employee is in Department
Many to One	Full ownership	This resource is owned by the resource being pointed to	Plan Step belongs to Plan

Type	Ownership	Description	Example
One to One	No Ownership	A normal lookup. Points to a single resource, but neither is owned by the other	Car has Engine
One to One	Full Ownership	This resource is owned by the resource being pointed to	Each Student has a User Account

Refer to [Relationships](#) for more details about relationship ownership.

Refer to [Security Relationships](#) for information about the Security settings that are available on a relationship.

Documents

Last Modified on 27/09/2021 10:16 am AEST

Documents field is a control that enables you to upload a document. The Document field enables users to define a 'one-to-many' relationship to documents.

Documents can be added by dragging them to the Document field.

Clicking on a document name will download the document.

Security for document file names

In line with our commitment to ensuring the highest level of security, we have introduced new filename restrictions for files uploaded to the document library and generated by the platform.

File names and file extensions can use any combination of characters except for the following prohibited characters (which will be automatically sanitised by replacing with an underscore):

;	- semicolon	"	- straight double quote	.	- period or dot	/	- slash
:	- colon		- vertical bar or pipe	%	- percent	\	- backslash
>	- greater than	?	- question mark	*	- asterisk or star	&	- ampersand or and
<	- less than	#	- hash or pound	!	- exclamation mark	=	- equals

Note: a single 'dot' is permitted to separate the file name from the file extension.

Other generally prohibited characters are:

- Integer value zero, sometimes referred to as the ASCII NUL character
- Characters whose integer representations are in the range from 1 through 31

For convenience, when an attempt is made to upload a file with any of the listed characters is made ReadNow will automatically sanitise the file name by replacing the prohibited characters with an underscore, '_'. Similarly generated and downloaded files will also be renamed by replacing the prohibited characters with an underscore, '_'.

In the case of a period or dot, replacement will occur from left to right and only the last period or dot will be left in place to separate the file name from the file extension.

Choice

Last Modified on 12/01/2022 11:02 am AEDT

A Choice field is a control that enables the user to choose from defined a group of option values.

There are two Types of Choice field:

- **Single select**, choose one value from a list
- **Multi select**, choose more than one values from a list

When you define a new choice field, indicate whether it is Single or Multi select before you save the field.

General field properties can be found in [General Field Properties](#).

- Option values can re-use existing choice field for available option values
- Option values can be [imported from file](#)
- Can be defined as Mandatory
- Can define default value
- Internally, it is a relationship to choice field entity

Conditional formatting can be applied to the choice field values. When this is applied, the conditional format will be displayed on the form (in view mode) and by default on a report, when that choice field is added to a report. To learn more about Conditional formatting on reports, see [Conditional Formatting on Reports](#)

To Set Conditional Formatting on Choice field values

1. Open the form that contains the choice field
2. Use the spanner to **Modify Form**.
3. Hover over the choice field and Select **Properties button** for the choice field to open properties dialog.
4. Select the type of formatting to apply from the **Format Dropdown**.
5. For each of the Choice Values select the format to apply.
6. Select OK.

- Display Text option is only able to be checked/unchecked for Icon formatting

Create a New Chart

Last Modified on 17/08/2020 2:00 pm AEST

To create a standalone chart

1. Open an Application in Edit mode
2. Open the 'Create New Page' menu (click )
3. Select **New Chart**
4. Select **Create**

To create a chart via Screen Builder

To create a chart from Screen builder:

1. Open **Screen Builder**
2. Select '+' (right of the Application dropdown selector)
3. Select **Add Chart**.

New Chart dialogue

As you create a chart the New Chart dialogue appears, see screenshot.

To complete the New Chart dialogue:

1. Type the name for the chart in the **Name** field.
2. Type the description for the chart in the **Description** field.
3. In the **Report** field, select the Pencil icon. The Select Report dialogue appears.
4. Select the report for the chart and select **OK**.
5. Select the Chart type you want.
6. Select **OK**. The chart displays in Chart Builder mode.

New Chart

Name :

New Chart

Description :

Report:

Chart type:



▼ OPTIONS

OK

Cancel

Chart Builder

Last Modified on 04/09/2020 5:05 pm AEST

The chart builder page has the following features:

- A Left Navigation Area toolbox with a list of fields from based report
- A toolbar at the top right corner
- Chart header area
 - Chart name - editable label
 - Chart description - editable label
- Chart series panel
- Chart preview

Any change to the chart settings makes the preview update immediately, except those made in property windows, which are applied when you select OK.

Toolbox

Chart builder consists of:

- The chart report name
 - Which is linked to the based report (navigate to it if clicking on it)
 - And will show <none> if there is no name
- A 'refresh' icon, which will reload the based report
- A list of chart series, each of which have:
 - A list of report columns, which can be used as data sources
 - A special 'Count' source of type integer
 - A special 'Row number' source of type integer

The chart series:

- Show the column name
- Show an icon, based on the data type of the report column
- Can use drag and drop onto chart series inputs

Header

- Allows name and description to be edited
- Committed once you press enter or click away, or select save

Toolbar

Chart toolbar has the following options:

- **Refresh** - Reloads the report data, and re-renders the chart
- **Properties** - Opens the chart properties dialog
- **Undo/Redo** - Should work for all chart operations
- **Save** - Saves the chart (and reloads it). Prompts that save was successful
- **Save As** - Saves a copy of the chart as a new one. Prompts with a dialog for new chart name
- **X** - Closes chart builder, prompts the user to save any unsaved changes then does a navigate to parent

Series Panel

A chart has one or more series.

A series represents an instruction to take a particular set of sources and render them in a particular way.

Each series consists of the following:

- A name
- A chart type e.g. column, line, pie, etc.
- Several data source inputs e.g. primary, value, colour, that report columns (sources) can be assigned to
- Various properties (although these are typically exposed in the UI via property pages of individual inputs)
- A primary axis and a value axis (although some charts do not make use of these).
 - Either or both of the axes may be shared between series

Updating the name

- The name of a series can be renamed by selecting the name and typing over it, otherwise a default name is assigned based on the chart type and the 'values' source
- A name can be restored to 'using the default value' by editing it and clearing the value

Adding or removing a series

- The **Add series** button bar at the top of the series panel adds a new series
- The **X** icon on each series will remove it
- A chart must have at least one series to work

Setting chart types

- The chart type can be selected from the Properties icon.
- Chart type is selected per-series, not per-chart

Chart Types Overview

Last Modified on 15/04/2019 3:59 pm AEST

Chart Types allow inputs as follows:

 Mandatory (or series won't render)

 Supported (optional)

Chart Type	Primary	Value	End Value	Size	Associate	Colour	Text	Image	Symbol	Can be stacked	Configurable data label position
Line											
Area											
Column											
Bar											
Pie											
Donut											
Matrix											
Scatter											
Bubble											
Funnel											
Gauge											
Tree Map											
Force Graph											
Horizontal Tree											
Radial Tree											
Sunburst											
Arrow											

General Principles

- End value is available on anything for which it makes sense to have ranges (and they are subsequently stackable)
- Image is available on chart types that allow images
- Hierarchy chart types (and only hierarchy charts) have the associate input

Chart Targets

Last Modified on 08/04/2019 5:24 pm AEST

Characteristics

Each chart target shows the following characteristics:

- A non-adjustable input name e.g. primary, value, size, etc.
- Some targets also have a 'Properties' button, that is generally meaningful even if no source has been applied
- For targets that have no source assigned:
 - some sort of drop-zone indicator e.g. 'Drop items here'
- For targets that do have a source assigned:
 - the column source name i.e. column name
 - an icon, indicating the column source type
 - depending on the source, a drop-down arrow to allow data aggregation, see 'Pivoting' below

Information about individual chart targets

Primary	Source identifies the row being shown.	✔	Properties actually shows primary axis properties.
Values	Source shows the value of the row.	✔	Properties shows primary axis properties, with a few series properties tacked on. Special case for hero text - has its own properties page here.
End Values	Source shows the other end of a value range.	✘	
Size	Adjusts the size of the data point (bubble chart).	✘	
Associate	Identifies the related data, for hierarchies/networks.	✘	
Colour	Unique values get assigned unique colours.	✔	Or if the report column has conditional formatting, this can be activated in the colour properties.
Text	Show a data label with this source value on all data points.	✘	

Image	The background is painted with this image.	✘ Can only be assigned a report image column.
Symbol	Unique values get assigned unique symbols, until all are exhausted.	✔

Drag and drop

Drag and drop is the only way to assign chart sources to chart targets.

- A source can be dragged from the toolbox to a target. This creates a new chart source entity
- The same source can be dropped in multiple places.
- Sources cannot be removed from the toolbar.
- A source can be dragged from one chart target to another. This creates a copy of the chart source entity
- A source can be removed from a chart target by dragging it onto the background

Line Chart

Last Modified on 15/04/2019 2:34 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Line chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to [Chart Targets](#) to adjust the data source as required.
4. Select **SAVE** to save the chart.

Area Chart

Last Modified on 15/04/2019 2:34 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Area chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Select **+ Add Series**.
4. Drag and drop fields from Left Navigation Area to [Chart Targets](#) to adjust the data source as required.
5. Select **SAVE** to save the chart.

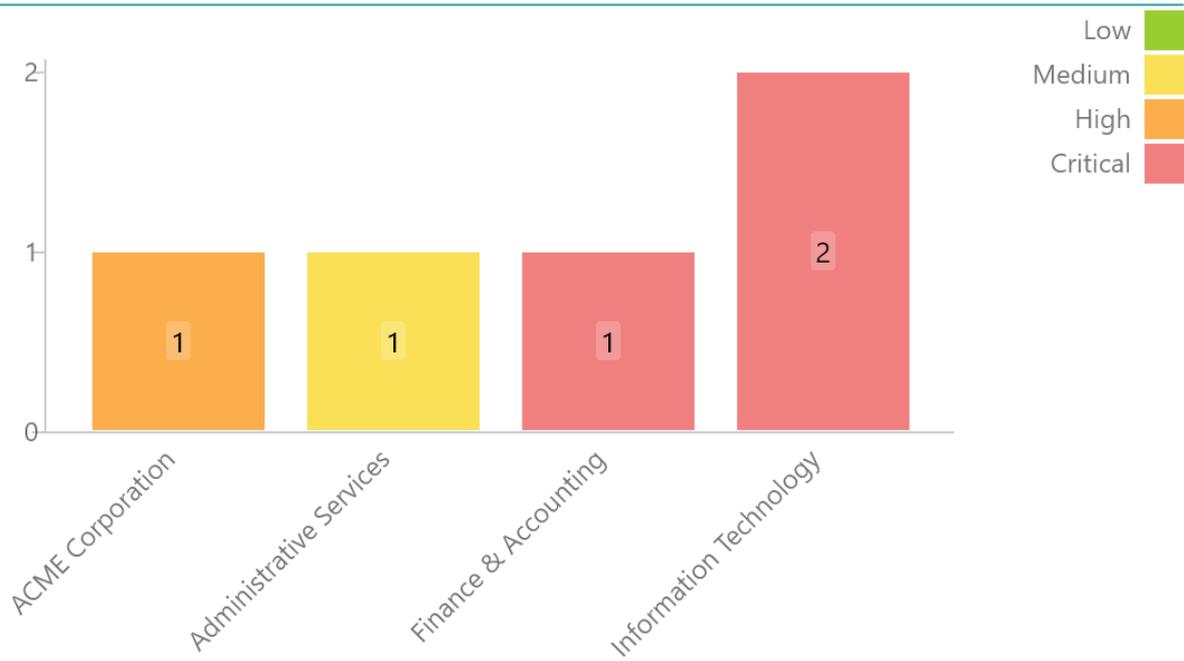
Column Chart

Last Modified on 15/04/2019 2:39 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Column chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to **Chart Targets** to adjust data source as required.
4. Select **SAVE** to save the chart.

BUSINESS BREAK OF OPEN INCIDENT



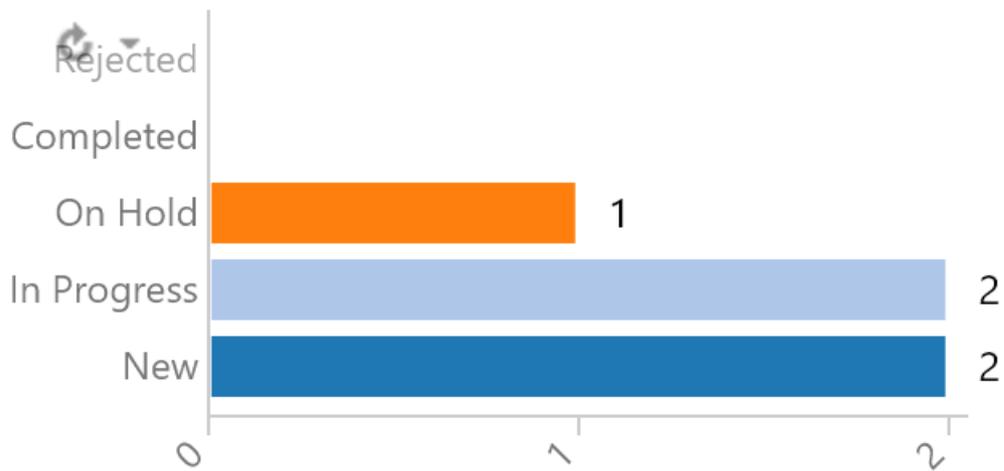
Bar Chart

Last Modified on 15/04/2019 2:38 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Bar chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to **Chart Targets** to adjust the data source as required.
4. Select **SAVE** to save the chart.

BY STATUS



Pie Chart

Last Modified on 15/04/2019 2:41 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Pie chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to [Chart Targets](#) to adjust data source as required.
4. Select **SAVE** to save the chart.

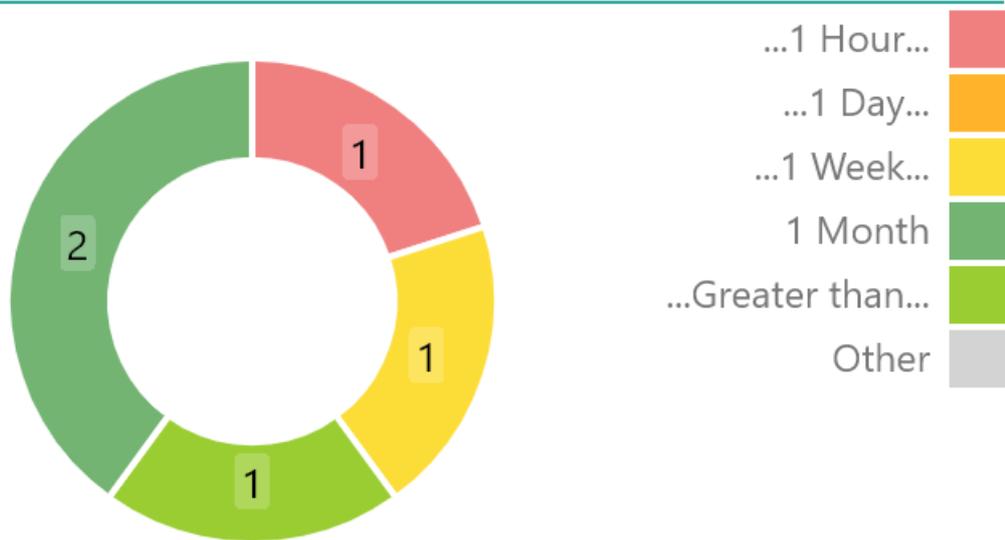
Donut Chart

Last Modified on 18/04/2019 10:19 am AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Donut chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to **Chart target** to adjust data source as required.
4. Select **SAVE** to save the chart.

BY MAO



Matrix Chart

Last Modified on 15/04/2019 2:42 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Matrix chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to [Chart Targets](#) to adjust data source as required.
4. Select **SAVE** to save the chart.

Scatter Chart

Last Modified on 15/04/2019 2:43 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Scatter chart type (or, hover on each type to see the tooltip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to [Chart Targets](#) to adjust data source as required.
4. Select **SAVE** to save the chart.

Bubble Chart

Last Modified on 15/04/2019 2:43 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Bubble chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to [Chart Targets](#) to adjust data source as required.
4. Select **SAVE** to save the chart.

Funnel Chart

Last Modified on 15/04/2019 2:43 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Funnel chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to [Chart Targets](#) to adjust data source as required.
4. Select **SAVE** to save the chart.

Gauge Chart

Last Modified on 04/02/2020 10:06 am AEDT

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Gauge chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to **Chart Targets** to adjust data source as required.
4. Select **SAVE** to save the chart.



Gauge chart example

Custom Color Levels

The minimum and maximum values of the gauge chart and the values of the colored regions can be customised in the Value properties window.

1. Select the Properties button to the right of the Values source:



2. Enter values for minimum, maximum, marker 1, and marker 2.
 - **Minimum** is the numerical value for the lower-left hand side of the gauge.
 - **Maximum** is the numerical value for the upper-right hand side of the gauge.
 - **Marker 1** is the numerical value for the position of the marker between red to yellow.
 - **Marker 2** is the numerical value for the position of the marker between yellow to green.
 - The order of the values should be increasing from minimum, marker1, marker2, maximum.
3. Select OK

For example, a minimum and maximum of -200 and 200 may be specified, with the red/yellow marker at zero and the yellow/green marker at 100, as follows:

Value Axis Properties

Axis label:

Minimum: Auto Manual

Maximum: Auto Manual

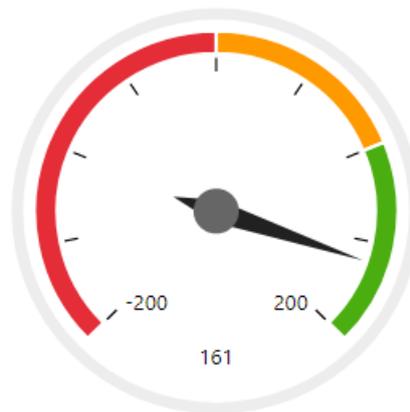
Marker 1: Auto Manual

Marker 2: Auto Manual

OK

Cancel

The above settings will produce the following gauge chart:



Tree Map

Last Modified on 15/04/2019 2:34 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Tree map chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to [Chart Targets](#) to adjust data source as required.
4. Select **SAVE** to save the chart.

Force Graph

Last Modified on 15/04/2019 2:35 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Force graph chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to [Chart Targets](#) to adjust data source as required.
4. Select **SAVE** to save the chart.

Horizontal Tree

Last Modified on 15/04/2019 2:35 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Horizontal tree chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to [Chart Targets](#) to adjust data source as required.
4. Select **SAVE** to save the chart.

Radial Tree

Last Modified on 15/04/2019 2:35 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Radial tree chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to [Chart Targets](#) to adjust data source as required.
4. Select **SAVE** to save the chart.

Sunburst

Last Modified on 15/04/2019 2:36 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

1. Select Sunburst chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to [Chart Targets](#) to adjust data source as required.
4. Select **SAVE** to save the chart.

Arrow Chart

Last Modified on 15/04/2019 2:36 pm AEST

To create a new chart, see [4 Ways to Create a Chart](#).

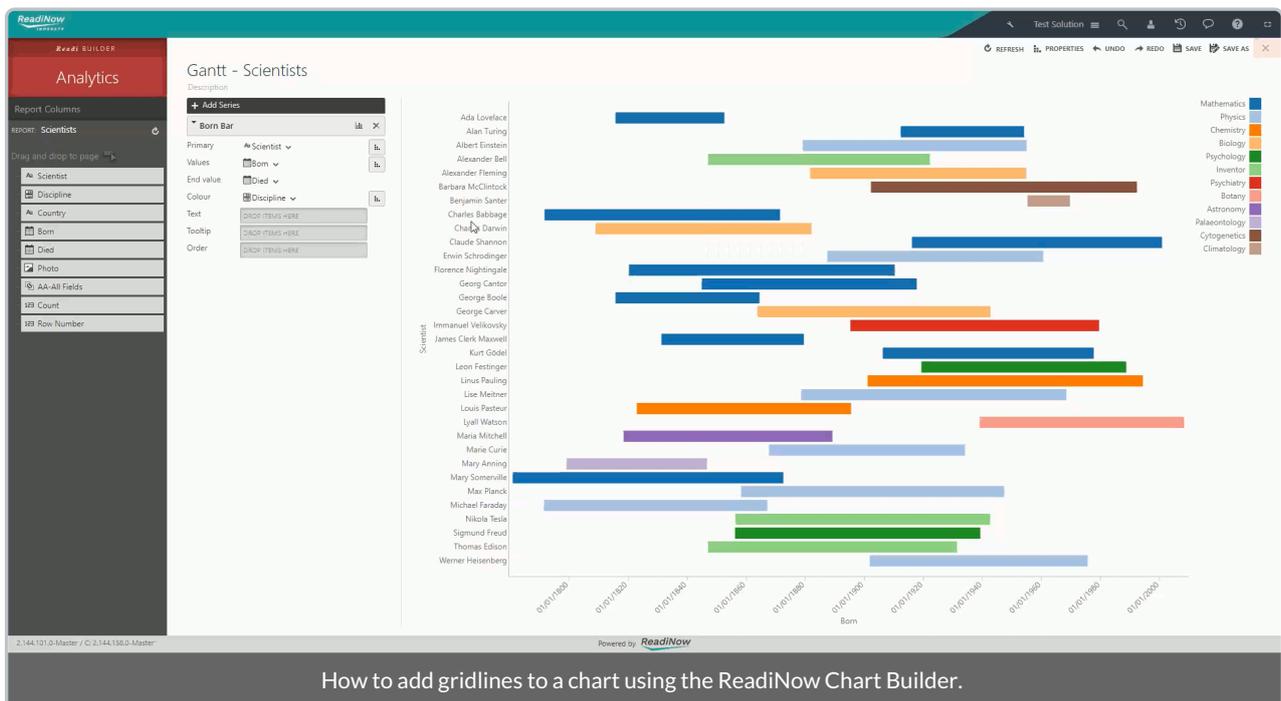
1. Select Arrow chart type (or, hover on each type to see the tool tip).
2. Select **OK**. The chart displays in Chart Builder mode.
3. Drag and drop fields from Left Navigation Area to [Chart Targets](#) to adjust data source as required.
4. Select **SAVE** to save the chart.

Add Gridlines to Charts

Last Modified on 07/09/2020 1:11 pm AEST

It is easy to add gridlines to your charts, here's how:

1. Navigate to the chart you want to edit
2. Open the chart builder (find out about the Chart Builder)
3. Edit the axes properties (click on )
4. Enable 'Show Grid'
5. Click 'OK' > 'Save' > Close the builder



How to add gridlines to a chart using the ReadNow Chart Builder.

Screen Builder

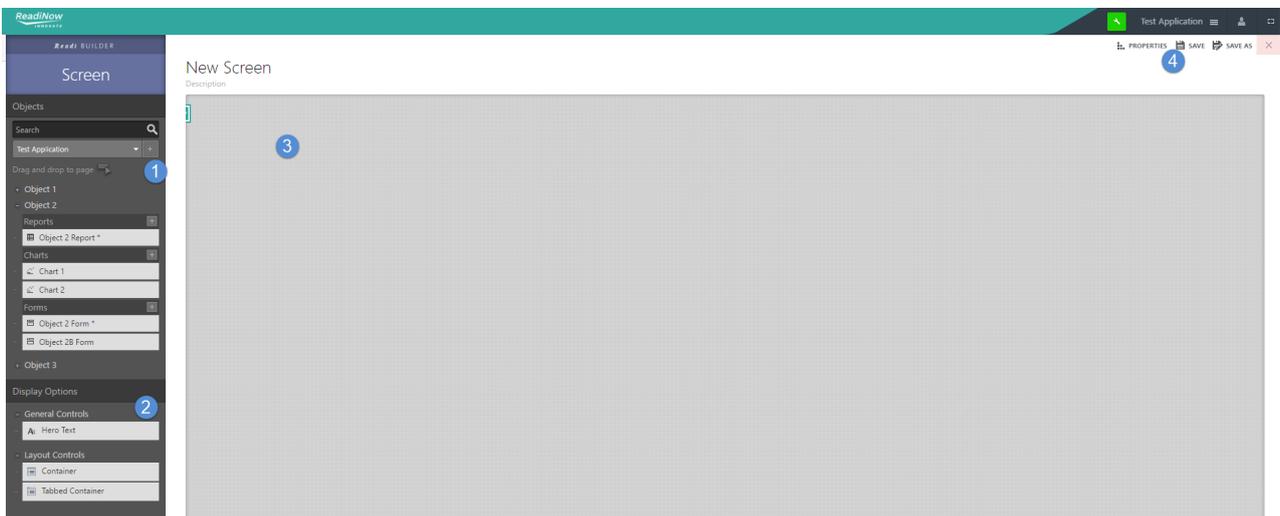
Last Modified on 16/04/2019 7:01 pm AEST

There can be multiple screens with the same name within an application and an application can have as many screens as you want.

Add a screen to the application using the Left Navigation Area.

As a general overview to the Screen Builder, refer to the screenshot below. Screen Builder has four main features:

1. Left Navigation Area: displays the list of Reports, Forms and Charts for the application
2. Display Options: has the controls to create Hero text and organise the screen layout using Containers and Tabbed Containers
3. Screen Canvas: used to design the screen layout
4. Toolbox: view properties and save the screen



Creating and Editing Screens

Last Modified on 12/08/2020 10:45 am AEST

Add a screen to the application using the Left Navigation Area.

To create a new screen:

1. Turn on configuration mode by clicking on the spanner  on top right.
2. Locate the  button in the left navigation area and click once.
3. This should load the Create New Page selection screen.
4. Select **New Screen**
5. Select **Create**
6. Type the name for the screen in the **Name** field.
7. Type the description for the screen in the **Description** field.
8. Select **Options > Format** and assign an Icon to the section.
9. Select **OK** to save. The new screen appears in Screen Builder mode.

To modify an existing screen:

1. Select the Configure icon in the top right corner.
2. Hover on the screen to be edited. The Configure icon appears for the screen.
3. Select the Configure icon.
4. Select **Modify Screen**. The screen appears in Screen Builder mode.

To save the screen:

1. Select **SAVE** to save the screen.

Screen Layout

Last Modified on 17/04/2019 4:08 pm AEST

When designing the screen, items such as [Charts](#), [Reports](#), [Hero Text](#) and [Forms](#) can be either placed directly on the screen or can be added to a Container or Tabbed Container.

Adding items to a Container and a Tabbed Container assists with better screen layout.

Adding a Container

To add a Container to the screen:

1. Open the Screen Builder
2. In Left Navigation Area, Display Options, drag and drop a Container on the Screen

Adding a Tabbed Container

To add a Tabbed Container to the screen

1. Open the Screen Builder
2. In Left Navigation Area, Display Options, drag and drop a Tabbed Container on the Screen.
3. Select + to add additional tabs to the Tabbed Container.

Containers can be placed horizontally next to one another whereas Tabbed Containers can ONLY be placed one beneath another.

Hero Text

Last Modified on 18/04/2019 10:19 am AEST

Hero Text is text added to a screen to highlight features displayed on the screen.

Adding a Hero Text control

1. Open the Screen Builder
2. In Left Navigation Area, Display Options, drag and drop Hero Text on the Screen.

Defining Hero Text

1. Add Hero Text control on Screen as described above.
2. Hover on Hero Text control and select Configure icon. The menu appears.
3. Select **Hero Text Properties**. The Hero Text Properties dialogue appears, see screenshot.
4. In **Report** field select Pencil icon. The Select dialogue appears.
5. Select the report you want.
6. Select the options you want for the other fields from the drop-down lists. (Default settings can be changed.)
7. Select **OK**. The Hero Text appears on Screen.
8. Select **SAVE** to save the screen.

Hero Text Properties

Label:

Report:  

Column: 

Method: 

Style: 

Sample:

Title
102

Defining Hero Text

Action Buttons

Last Modified on 18/04/2019 10:59 am AEST

You are able to create an Action Button to create a record or run a workflow.

To configure action button on a Screen

1. Open the **Screen Builder**
2. Select **+ Actions** button. The menu appears with two options available:
 - **Create Record** (adds a button on the screen to create a record of a specified object)
 - **Run Workflow** (adds a button on the screen to run a specified workflow)
3. If creating a record:
 - **Enter Name**
 - **Select Object**
 - **Select Form to open**
4. If running a workflow, select:
 - **Workflow to run**
5. Select **OK** to save. The activity appears as an action button at the top right of the screen
6. Select **SAVE** to save the screen.

The Action Button is only functional in screen view mode (not Screen Builder mode).

Master Detail

Last Modified on 17/04/2019 5:24 pm AEST

The Master Detail functionality of the screen allows you to select an element as a Parent (or Master) of the other elements on the screen. Using this functionality you can filter the details of the selected entity from master element. (e.g. click on a segment of a chart to filter the contents of a report on the screen)

Examples:

- User selects a segment of a chart to filter the contents of a report on the screen
- User selects a segment of a chart to filter another chart on the screen
- User selects a record in a report to show that record on a form on the screen

Configuring Master Detail

Go to [Screen Builder](#) of the screen you want to setup the master-detail:

- Select the configuration spanner of the element that you want to be the 'Child' (any report, chart or form on the screen).
- Select **Assign Parent**
- Select the element on the screen that you want to be the 'parent' of the current element

- When linking a Chart or Report to a form, both need to be based on the same object.
- A form cannot be made as Parent (Master) to a report.

Creating, Viewing and Editing Boards

Last Modified on 31/07/2020 12:18 pm AEST

To create a Board:

1. Select the Configure icon in the top right corner.
2. Select **+Page Item** icon in the Left Navigation Area.
3. Select **New Board**
4. Select **Create**
5. Type the name for the board in the **Name** field.
6. Type the description for the board in the **Description** field.
7. In the **Report** field, select the Pencil icon. The Select Report dialog appears.
8. Select the report for the board and select **OK**.
9. Select the **Show quick add** checkbox if you want to create new record from the board, otherwise leave it without a tick.
10. Select **OK**. The Board is created with the default template of Name & description.

To view and edit a Board:

1. Select the Configure icon in the top right corner.
2. In the Left Navigation Area, hover on the Board you want to view or edit. The Configure icon appears.
3. Select the Configure icon for the Board. The menu appears.
4. Select **Board Properties**. The **Board Properties** dialog appears. Note: You can view or edit details as shown above.
5. Select **Options**. The options tabs appear with focus on **Advanced** tab.
6. In the **Application** field, select the Pencil icon. The Select Application dialog appears.
7. Select the application you want and select **OK**. Note: Creating a board from the Left Navigation Area associates the board to that application by default.
8. Select the **Format** tab. The Icon field appears.
9. Select the Pencil icon. The Select Icon dialog appears.
10. Select the icon you want and select **OK**. Note: Optional. A default icon appears.
11. Select the **Deploy** tab. The Deploy options appear. Note: By default, the board is deployed in desktop and not in tablet and mobile.
12. Select **OK** to save or **Cancel** to leave.

Boards are not supported on mobile at present.

If a report has 'State', 'Assigned', 'Priority' as the columns, then the 'State' is selected as the column of the

board by default and 'Assigned' is selected as the colour by default (user can change).

If a report has 'State', 'Priority' as the columns, then the 'State' is selected as the column by default and 'Priority' is selected as the colour by default (user can change).

If a report has only 'State' as a column, then it is selected as the column for the board by default and the colour is left blank if no other choice/lookup column is available in report else will pick the next choice column for the colour. (User can select the colour manually.)

If a numeric value like id / auto number / number exists for a record, it appears on the top of the card.

Board Settings

Last Modified on 14/06/2019 2:22 pm AEST

To view and change settings go to the **Administration** applications and select **Boards** under the **Resources** section.

BOARD DETAILS

Name:

Description:

Report:

Child report:

Rank column:

Drilldown Target:

Show quick add:

[Drilldown Target for Boards](#)

DIMENSION DETAILS

Column dimension:

Swimlane dimension:

Style dimension:

TEMPLATE DETAILS

Card template name:

Custom card template:

BOARDS

Name	Description
------	-------------

Board settings in Administration

1. In the **Card template** field, select the down arrow. The options appear as shown below.
 - o All values & labels - Displays the values of all columns with their corresponding column name / label on the card
 - o All values only - Displays the values of all columns but not the label
 - o Name only - Displays only the value of the name column on the card
 - o Name & description - Displays name and description on the card
 - o Approvals - Displays the values for approver and owner on the card (if the report has those columns)
2. **Show column for:** Single select choice field and the lookup field on the report are displayed as the options for the column on the board. The values of the selected column appears as the columns on the board.
 - o For example, if a single select choice field 'State' has values as NSW, VIC, SA, WA, QLD, TAS, NT, ACT then these values appears as the columns on the board. An extra column 'Undefined' also appears as the first column by default on the board.
 - o You can uncheck any value of the selected column for it not to appear on board.
3. **Show rows for:** Single select choice field and the lookup field on the report are displayed as the options for the rows on the board. The values of the selected row appears as the rows on the board.
 - o For example, if a single select choice field 'State' has values as NSW, VIC, SA, WA, QLD, TAS, NT, ACT then these values appears as the rows on the board. Data on the board are grouped under these values.
 - o You can uncheck any value of the selected row for it not to appear on board.
4. **Use colours for:** Single select choice field and the lookup field on the report are displayed as the options for the colours on the board. The values of the selected colour appears as the legend on the board.

5. Select **Save** to save the setting.
6. Select **Close** to close the Settings dialog.

Creating Records on a Board

Last Modified on 14/03/2019 2:46 pm AEDT

To create a record on a Board:

1. Select the Configure icon in the top right corner.
2. In the Left Navigation Area, hover on the board you want and select the Configure icon. The menu appears.
3. Select **Board Properties**. The Board Properties dialog appears.
4. Select the **Show quick add** checkbox.
5. Select **OK**. The New item field appears at the top left of the Board.
6. Type a value in the **New item** field.
7. Select the + icon to add the value to the board.

Board Operations

Last Modified on 14/03/2019 2:47 pm AEDT

1. You can create a new record for the object with the board if the property 'Show quick add' is enabled
2. You can search for any record on the board using search box
3. You can perform drag and drop between the columns on any value of the board and the value for the corresponding field will be changed
4. You can perform drag and drop of the legend on any value and the value for the corresponding field will be changed
5. You can perform drag and drop of the value on any legend and the value for the corresponding field will be changed

Access Control

Last Modified on 12/11/2020 3:14 pm AEDT

Overview

Access Control is the security system that determines which users have permission to:

- view, modify, and delete existing existing records
- create new records
- access screens, reports, and other content

Access control rules that automatically grant per-record permission based on the metadata of those records, or based on how the records relate back to individual users, can be easily achieved by creating an Access Rule report.

See also: [Access Control Security whitepaper](#).

Access Control Terminology

- **User** - Each person typically has one user account. All interactions with the ReadNow server are done in the context of a user account.
- **User Roles** - Users are members of security roles. A user can be in multiple roles. Role can be members of other roles.
- **Permission** - A permission is something that is required to perform an activity, such as View, Modify, Delete, Create. For example, you need the **View** permission to see a record.
- **Access Rules** - An access rule (or simply Rule) grants some permissions for users in a role to interact with records of a particular type.
- **Access Rule Reports** - Access rules typically include a report which acts as a record filter to determine which records are included by the rule. Whether or not an access rule grants access to a report is determined by whether or not the access rule report, and its analyser filter, includes the record as a row.
- **Navigation Access** - Simply makes app content, such as screens and reports, visible to a role
- **Security Relationships** - Allows a relationship to be configured so that permissions for one record flow to related records.

Other Elements of Security

The ReadNow platform supports other security features such as [SSO](#) (single-sign), configurable [Password Policy](#), [IP whitelisting](#), configurable [Record Audit Log](#) and [Security Audit Log](#). These work in tandem with access control, but are not part of access control.

Record Access

Last Modified on 16/08/2021 4:15 pm AEST

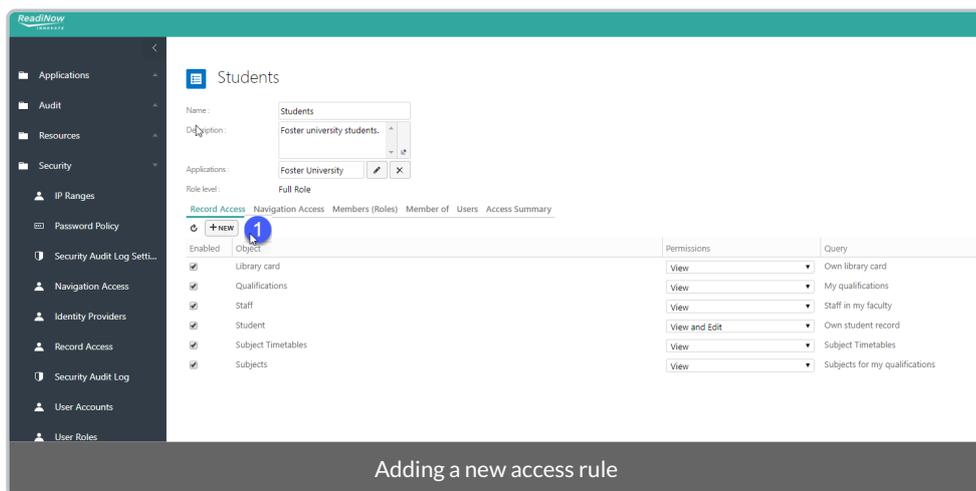
Record Access is used to grant **User Role** data level access.

Record Access is all about data level access. **Navigation Access** should be granted to allow any non-admin user to see the navigation item.

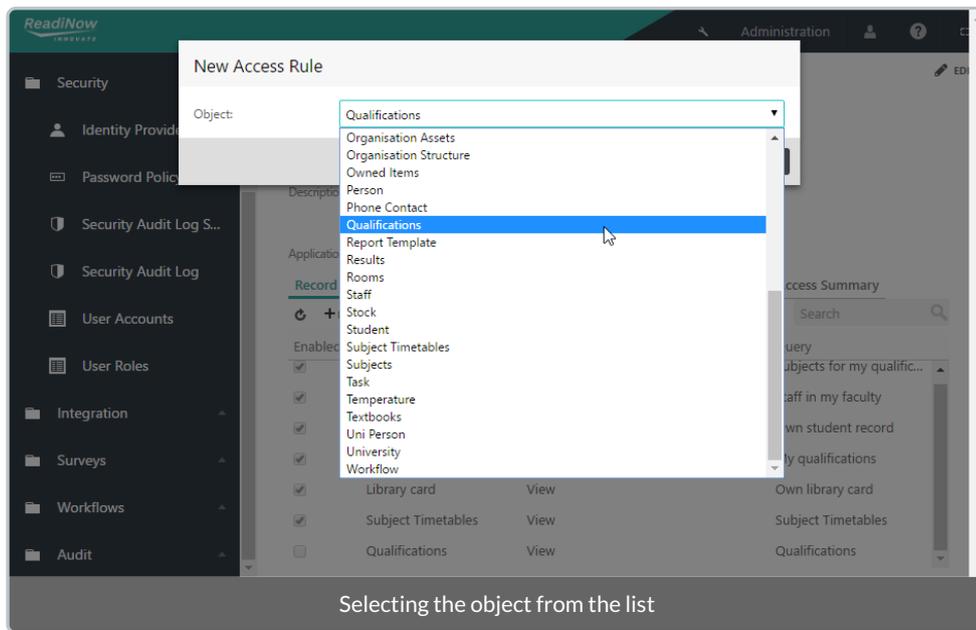
Granting record access

To grant record access:

1. Open the tenant administration page [more](#)
2. In the Left Navigation Area, select **Security**. The Security expands to display list.
3. Select **User Roles**. The existing User Roles display.
4. Select the user role you want and select **ACTION**. The menu appears.
5. Select **Edit**. The user role displays.



6. Select **+NEW**. The **New Access Rule** dialog appears.



Selecting the object from the list

7. In **Object** field select down arrow and select the object from drop-down list.
8. Select **OK** to confirm.
9. Find the new rule just added and select the checkbox.
10. Select **SAVE** to save the user role.

By default, **View** access is granted. However, it can be changed by selecting from **Permissions** drop-down

Navigation Access

Last Modified on 11/08/2020 4:19 pm AEST

Navigation Access grants a User Role the access to see a specific navigation item.

Navigation Access is about access to a navigation item. **Record Access** should be granted to allow any non-admin user to see all or partial records.

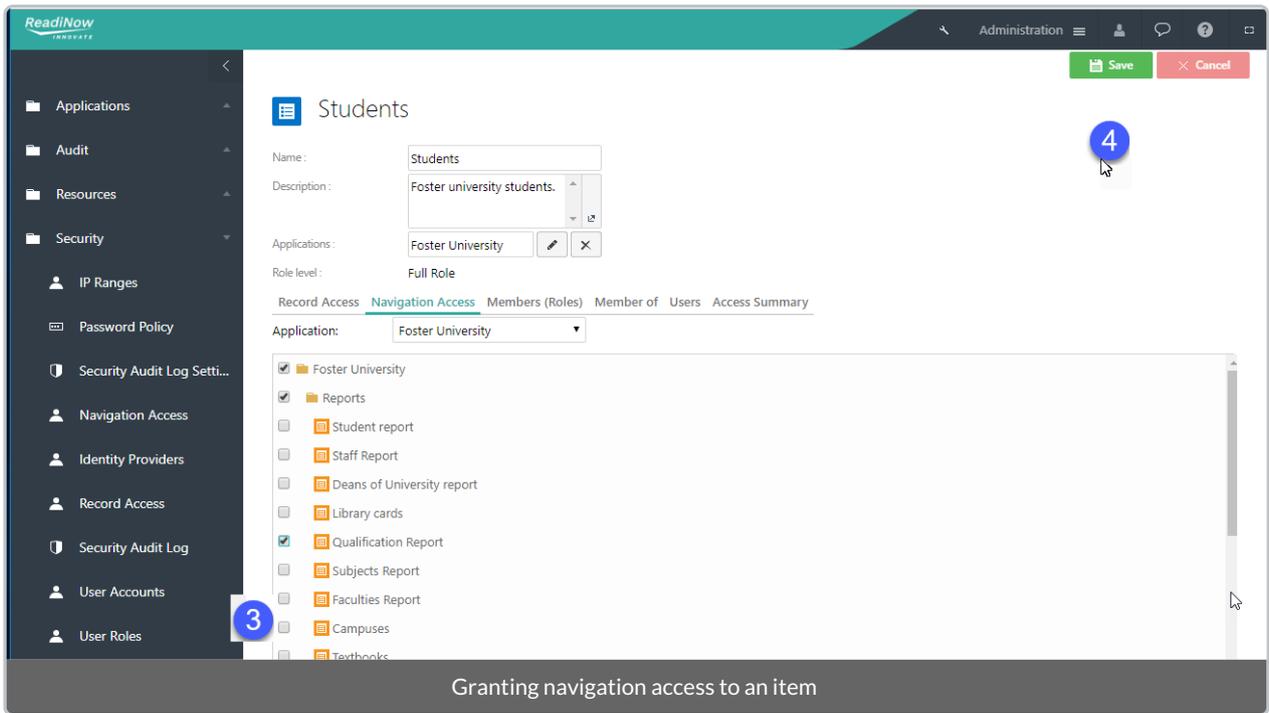
Granting navigation access

To grant navigation access:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Security**. The Security expands to display list.
4. Select **User Roles**. The existing User Roles display.
5. Select the user role you want and select **ACTION**. The menu appears.
6. Select **Edit**. The user role displays.
7. Select **Navigation Access** tab.
8. In **Application** field select down arrow and select the application from drop-down list, e.g. Foster University.

The screenshot shows the Read!Now Administration interface. The left navigation pane is open to 'Security' > 'User Roles'. The 'Students' user role is selected, and the 'Navigation Access' tab is active. The 'Application' dropdown menu is open, showing a list of applications including 'Foster University', 'Reports', 'Student report', 'Staff Report', 'Deans of University report', 'Library cards', 'Qualification Report', 'Subjects Report', 'Faculties Report', 'Campuses', and 'Textbooks'. A blue circle with the number '1' highlights the 'Application' dropdown, and another blue circle with the number '2' highlights the 'Navigation Access' tab.

9. Select the checkbox next to the item you want to grant the navigation access to.



10. Select **SAVE** to save the user role.

User Roles

Last Modified on 17/08/2021 9:07 am AEST

A **user role** defines permissions for users to perform a group of activities.

To create a new User Role

NOTE: Basic and Lite Roles are only available if your subscription is based on Full/Basic/Lite user model. See [Licensing](#)

To create a Lite/Basic user role:

1. Open the tenant administration page [more](#)
2. In the Left Navigation Area, select **Security**. The Security expands to display list.
3. Select **User Roles**. The existing User Roles display.
4. Click on **+ NEW**, choose on of: **Full Role**, **Lite Role**, or **Basic Role** from menu pending on the need. On the form:
 1. Type the name for the user role in the **Name** field.
 2. Type the description for the user role in the **Description** field.
 3. In **Applications** field select Pencil icon. The Select dialogue appears. In Select Application dialogue, select the application you want and click OK button to confirm the selection.
 4. For **Record Access** tab, create access for the role. Please refer to [Record Access](#) for more information.
 5. For **Navigation Access** tab, pick the desired navigation items.
5. Click **Save** to save changes on form.

Alternatively, new user role can be created from Security roles tab of the [User Accounts](#) form.

Assigning an existing user account to a user role

To assign an existing user account to a user role:

1. On User Role form, select the **Users** tab.
2. Select the Link to Existing icon. The Select User Account dialogue appears.
3. Quicksearch for the user account you want.
4. Select **OK** to confirm.

If the user account is not yet created, please refer to the [User Accounts](#) page to create it beforehand.

Alternatively, it can be created by selecting **+NEW** on **Users** tab (see step 1)

Role Access

Last Modified on 15/03/2019 11:04 am AEDT

The **Access Summary** feature gives a summary of the access for a particular role. It shows a list of all objects the current role has access to, the level of permission and a summary of the reason 'why' these roles have access to the specified object.

A user role may be granted access to the records of an object for a variety of reasons, including:

- **Granted by an access rule** - the access rule has been created to explicitly grant a role access to records of an object
- **Granted by an inherited access rule** - the access rule may be inherited from a parent object
- **Granted by a user role** - the access rule may be included from another 'included' role
- **Granted by relationship access** - access may be granted based on implicitly securing a relationship (set in the object relationship properties)

Viewing the Access Summary of a User Role

To view the Access Summary of a User Role:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Security**. The Security expands to display list.
4. Select **User Roles**. The existing User Roles display.
5. Select the user role you want and select **ACTION**. The menu appears.
6. Select **View**. The user role displays.
7. Select the **Access Summary** tab. The Access Summary displays.

Role Nesting

Last Modified on 17/08/2021 9:20 am AEST

You can arrange Security Roles hierarchically. Each role may be include multiple roles, or be included by multiple roles, or both. This is referred to as 'Role Nesting'.

If one role includes a second role as a member - in the **Members (Roles)** tab of the first role – then the first role applies to users that are assigned to the second role. Equivalently, users assigned to the second role receive permissions that are assigned to the first role.

If the second role is shown in the **Members (Roles)** tab of the first role, then conversely the first role will appear in the **Member Of** tab of the second role.

Members (Roles)

- The listed roles are members of the currently role.
- Users assigned to member roles are also effectively in the current role.
- Equivalently, each of the Members (Roles) inherit permissions of the current role

Member Of

- The current role is a member of the listed roles
- Users assigned to the current role are also effectively in the listed roles.
- Equivalently, the current role inherits permissions of the Member Of roles.

Role Nesting is transitive, which means that users and permissions flow through the hierarchy if multiple roles are chained together. For example, if the Members (Roles) tab of role A contains role B, and if the Members (Roles) tab of role B contains role C, then role C is also effectively a member of role A; the users assigned to role C will effectively be in role A; and equivalently permissions assigned to role A are granted to users in role C.

Nesting a user role

To add a user role to another user role:

1. Open the tenant administration page [more](#)
2. In the Left Navigation Area, select **Security**. The Security expands to display list.
3. Select **User Roles**. The existing User Roles display.
4. Select the user role you want to be the parent and select **ACTION**. The menu appears.
5. Select **Edit**. The User Role displays.
6. Select **Members (Roles)** tab.
7. Select the Link to Existing icon. The Select User Role dialogue appears.
8. Quick search for the user role you want.
9. Select **OK** to confirm.

- Applications
- Audit
- Resources
- Security
 - IP Ranges
 - Password Policy
 - Security Audit Log Setti...
 - Navigation Access
 - Identity Providers
 - Record Access
 - Security Audit Log
 - User Accounts
 - User Roles

Staff

Name: Staff
 Description: Foster University Staff

Applications: Foster University
 Role level: Full Role

Record Access Navigation Access **Members (Roles)** Member of Users Access Summary

MEMBERS (ROLES)

User Role	Description	Applications
Deans	Foster University Deans	Foster University

User Accounts

Last Modified on 18/04/2019 10:26 am AEST

A user account allows or does not allow a user to connect to ReadNow.

Only an administrator can create or modify an account for other users.

Creating a user account

To create a user account:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Security**. The Security expands to display list.
4. Select **User Accounts**. The existing User Accounts display.
5. Select **+ NEW**. The User Account form appears.
6. Type the username for the user account in the **Username** field.
7. In **Account holder** field select Pencil icon. The Select dialogue appears.
8. Select the person you want.
9. Select **OK** to confirm.
10. Type the description for the user account in the **Description** field.
11. Select the correct **User level** from drop-down list ( NOTE: This option is only available if your company is on the Full/Basic/Lite subscription model. See [Licencing](#))
12. Complete mandatory fields.
13. Select **SAVE** to save the user account.

Alternatively, a new user account can be created from **Users** tab of **User Role** form.

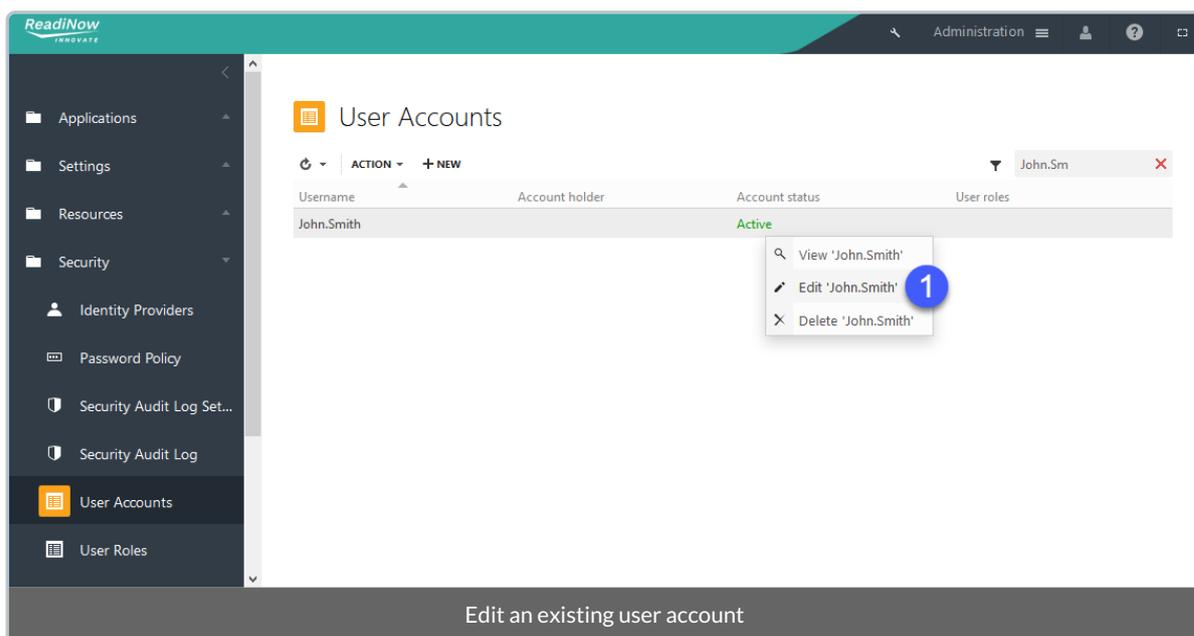
Now the new user account is ready to be linked to a sensible role. By default, the new user account is in Everyone role, which has very limited access.

Editing an existing user account

To edit an existing user account:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Security**. The Security expands to display list.
4. Select **User Accounts**. The existing User Accounts display.

5. Select the user account you want and select **ACTION**. The menu appears.
6. Select **Edit**. The user account displays.

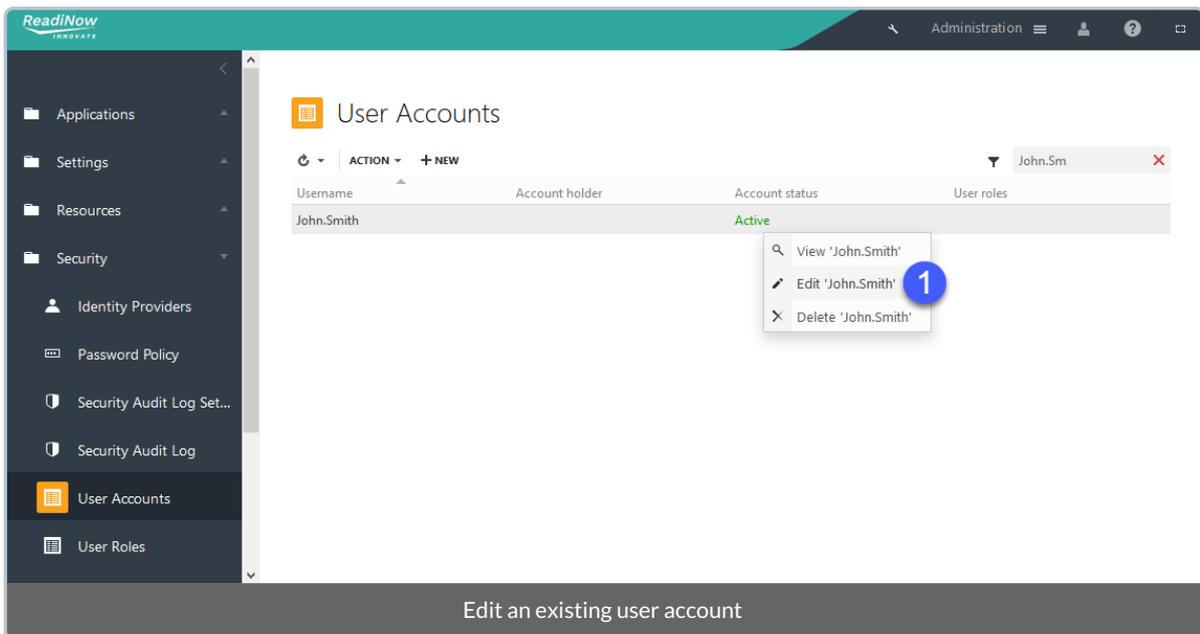


7. Add or modify information as required.
8. Select **SAVE** to save the user account.

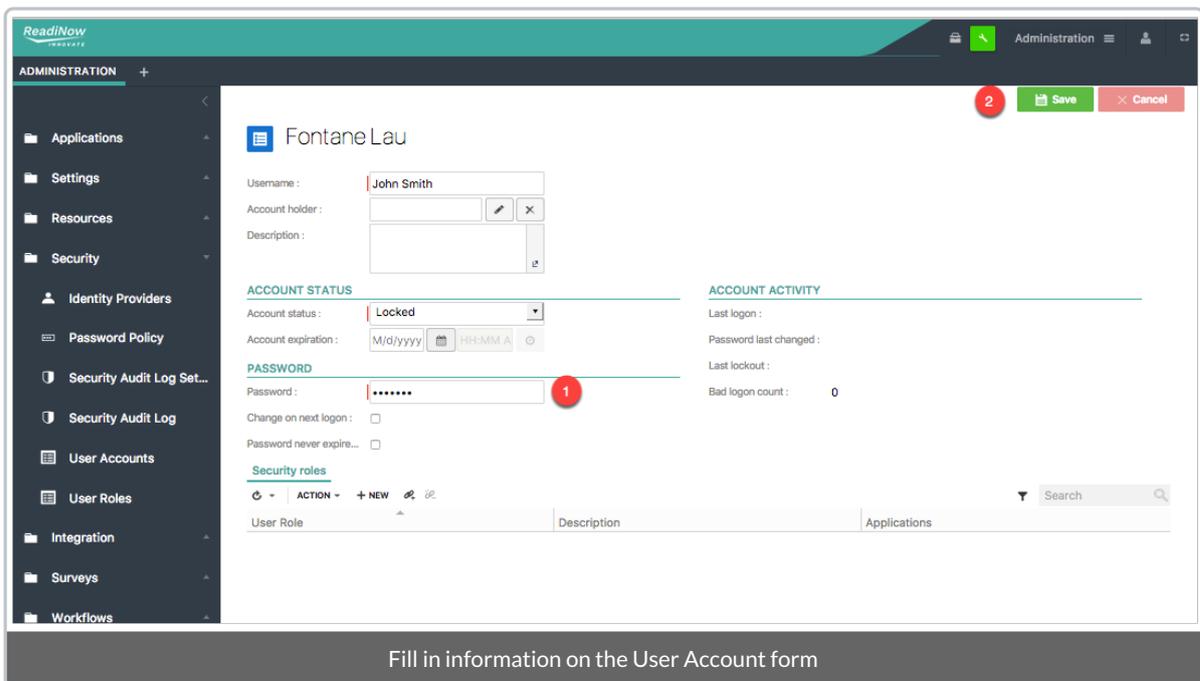
Reset a user's password

To reset a user's password:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Security**. The Security expands to display list.
4. Select **User Accounts**. The existing User Accounts display.
5. Select the user account you want and select **ACTION**. The menu appears.
6. Select **Edit**. The user account displays.



7. In Password field, type the password you want.



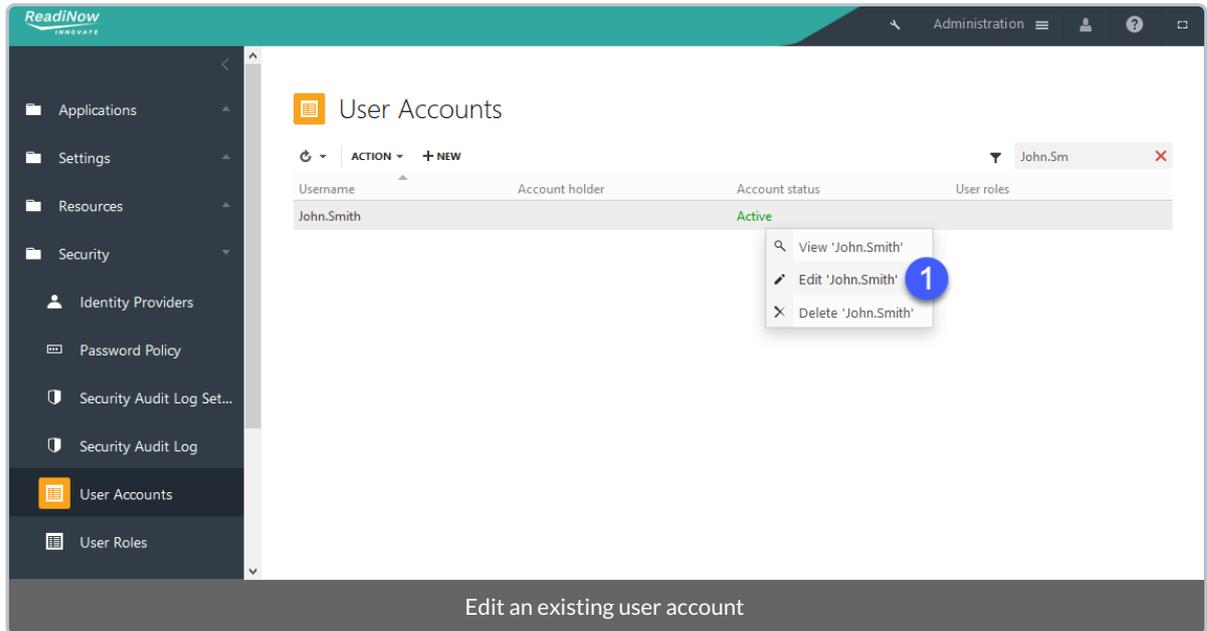
8. Select **SAVE** to save the user account.

Unlock a user account

To unlock a user account:

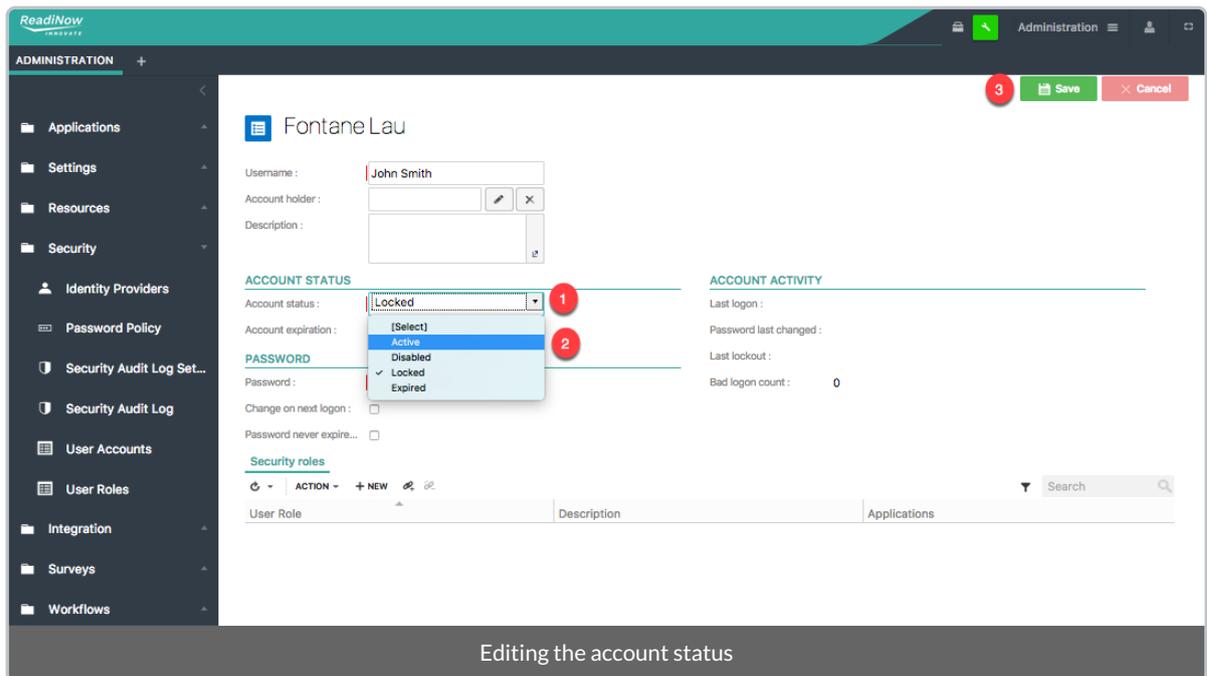
1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Security**. The Security expands to display list.
4. Select **User Accounts**. The existing User Accounts display.
5. Select the user account you want and select **ACTION**. The menu appears.

6. Select **Edit**. The user account displays.



7. In **Account status** field, select the down arrow.

8. In the drop down list, select Active.



9. Select **SAVE** to save the user account.

Self Serve Reports

Last Modified on 15/04/2019 2:49 pm AEST

Self serve is a feature that enables a non-administration user to create their own private reports, charts and screens.

Granting Self Serve

To grant self serve:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Security**. The Security expands to display list.
4. Select **User Roles**. The existing User Roles display.
5. Select Self Serve role.
6. Select **ACTION**. The menu appears.
7. Select **Edit**. Form opens.
8. Select **Users** tab. The existing users with Self Serve display.
9. As required, add a new user, see [User Accounts](#) or link to an existing user account.
10. Select Link to Existing icon. The Select User Account dialogue appears.
11. Quick search for the user role you want.
12. Select **OK** to confirm.
13. Select **Save** to save the user role.

Using Self Serve

To use Self Serve:

1. Login with the self-serve user account added or linked in the steps above.
2. Select Application Menu. The menu appears with available applications.
3. Select **Home**. The Home application displays.
4. Select Configure icon to enable builder mode.
5. Select + in Left Navigation Area to build private reports, charts and screens.

See [Report Builder](#), [Chart Builder](#), [Screen Builder](#)

If the intention is to add private items to other applications rather than Home, then after the user is added to the Self Serve role, the administrator performs the steps:

- Navigate to the Application which you want self serve user to place private item in.
- Create a Personal Section.
- Grant self-serve user the navigation access to the Personal Section, see [Navigation Access](#).

A private item is private, which means other users won't be able to see it including administrators.

Adding Personal Sections

Personal Sections are special sections that can be added anywhere to the navigation that allows users to create Self Service reports, charts and screens.

1. Select the Configure icon in the top right corner.
2. Select the + **Page Item** icon in the Left Navigation Area. The Create New Page dialogue appears.
3. Select **New Personal Section**
4. Select **Create**.
5. In the **Name field**, type name of the personal section.
6. In the **Description** field, type the description.

You will now need to grant [Navigation Access](#) to the roles that require access to this new section.

Password Policy

Last Modified on 18/03/2024 12:47 pm AEDT

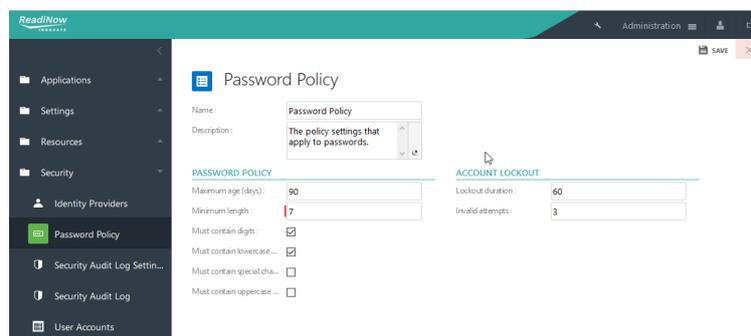
The Password Policy enables Administrators to set limits and restrictions on the types of passwords their users can create. You can use this feature to create a more secure system.

Configuring the password policy

To configure the password policy:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Security**. The Security expands to display list.
4. Select **Password Policy**. The existing Password Policy displays.
5. Select **Edit** and configure the following fields as required:
 - Maximum age (days): type the maximum password age in days
 - Minimum length: type the minimum password length
 - Must contain digits: select the checkbox if a digit is required for the password
 - Must contain lowercase characters: select the checkbox if a lowercase character is required for the passwords
 - Must contain special characters: select the checkbox if a special character is required for the passwords
 - Must contain uppercase characters: select the checkbox if an uppercase character is required for the passwords
 - Lockout duration: type the number of minutes a locked account remains locked
 - Invalid attempts: type the number of invalid logons before accounts are locked
6. Select **Save** to save changes.

Screenshot: Configure the Password Policy



Changing your password

There are two scenarios where the password may need to be reset:

- A user is logged in, but wants to change the password
- A user has forgotten the username or password and can't log in

Changing your password when logged in

See [Changing the Password](#).

Resetting the password from the login page

See [Forgot your username or password](#)

Administrative Roles

Last Modified on 24/08/2021 1:39 pm AEST

From time to time you may require users to perform particular administrative tasks, yet giving users full Administration access is providing too much privilege. The predefined Administrative Roles allow Administrators to grant users access to specific administrative functions.

In addition, further refinement or customisation of the administrative roles can be achieved by creating new roles and specifying access rules.

Predefined Administrative Roles

Roles	Description
Spreadsheet importer	Role that will allow users to import data only.
Spreadsheet administrator	Role that will allow users to add new configurations and import data.
User administrator	Role that will allow users to manage user accounts, such as disabling accounts, resetting passwords, and assigning roles.
Security administrator	Role that will allow users to create roles, define access rules and assign navigation access.
Survey creator	Role that will allow users to create and manage surveys.
Content administrator	Role that will allow users to configure navigation, reports and screens
Workflows & Schedule administrator	Role that will allow users to maintain workflows, triggers and schedules, including the ability to create, modify and delete workflows.

For the following roles, you will also need to create separate access rules that grant "create" access for the objects that require administrating.

- Spreadsheet Importer
- Spreadsheet Administrator
- Content Administrator

For example, if the Spreadsheet Importer requires to import a list of Employees, "create" access to Employee records is required.

Customise Administrative Roles

If the predefined Administrative Roles are not exactly what you are after, Administrators are also able to create their own custom administrative roles. Just like how normal access rules are configured to restrict the permissions (Create, View, Edit and Delete) and/or conditionally set restrictions on records, the same applies to administrative functions when setting up the access rules.

To configure a new administrative role:

1. Decide what type administrative tasks the role will need to perform (such as Spreadsheet importing, user manager, role management etc)
2. Create a new custom admin role
3. Determine which **Administrator Base Roles** are required and then add them to the role.
4. For each administrative task that the role will need to perform, configure the access rules and navigation. See [Access Summary for Administrative Roles](#) for a listing the objects that require record access and the reports that require navigation access.

Administrative Base Roles

In addition to the administrative roles, the base roles below are included by the administrative roles to grant special administrative access.

Administrator Base Roles	Description	Roles including this role
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Administrator Base Roles	Description	Roles including this role
Administrator Base - Core	A role used as the foundation for other administrative roles.	<ul style="list-style-type: none"> • User Administrators • Security Administrators • Spreadsheet Importers • Spreadsheet Administrators • Content Administrators • Workflow & Schedule Administrators
Administrator Base - Navigation	Grants selective view access to the navigation structure for the purpose of making administrative changes.	<ul style="list-style-type: none"> • User Administrator • Security Administrators
Administrator Base - Security	Grants administrative access to accounts and security roles	<ul style="list-style-type: none"> • User Administrator • Security Administrators
Administrator Base - Configure Navigation	Grants access to configure mode and the navigation structure.	<ul style="list-style-type: none"> • Content Administrators

Administrator Base - Core role will need to be included for *all* custom created admin roles.

Access Summary for Administrative Roles

To configure custom administrative roles, you will need to determine the type of administrative tasks a user will need to perform and then define the access rules and also grant the appropriate navigation access for that particular task.

Spreadsheet Importers

Object	Access Type	Description
Import Configuration object	Record Access	Record access to be decided by the user
	Navigation	Import Spreadsheet
Import Runs	Record Access	Record access to be decided by the user

Spreadsheet Administrators

Object	Access Type	Description
Import Configuration object	Record Access	Record access to be decided by the user
	Navigation	Import Spreadsheet
Schedule Import Configuration	Record Access	Record access to be decided by the user
	Navigation	Schedule Import report
Schedule Export Configuration	Record Access	Record access to be decided by the user
	Navigation	Schedule Export report

User Administrators

Object	Access Type	Description
User Account	Record Access	Record access to be decided by the user
	Navigation	User Accounts
Navigation Container	Record Access	Record access to be decided by the user
Full Role	Record Access	Record access to be decided by the user
	Navigation	User Roles
Lite Role *	Record Access	Record access to be decided by the user
Basic Role *	Record Access	Record access to be decided by the user
Person	Record Access	Full (Create/View/Edit/Delete)
Identity Provider	Record Access	Record access to be decided by the user
	Navigation	Identity Providers
Identity Provider User	Record Access	Record access to be decided by the user
OpenID Connect Identify Provider	Record Access	Record access to be decided by the user
SAML Identity Provider	Record Access	Record access to be decided by the user

Security Administrators

Object	Access Type	Description
User Account	Record Access	Record access to be decided by the user
Full Role	Record Access	Record access to be decided by the user
Lite Role *	Record Access	Record access to be decided by the user
Basic Role *	Record Access	Record access to be decided by the user
Logon Audit Log Entry	Record Access	View only
	Navigation	Security Audit Log
Identify Provider	Record Access	Record access to be decided by the user
	Navigation	Identity Providers
OpenID Connect Identify Provider	Record Access	Record access to be decided by the user
SAML Identity Provider	Record Access	Record access to be decided by the user
Identity Provider User	Record Access	Record access to be decided by the user

Content Administrator

Object	Access Type	Description
--------	-------------	-------------

Object	Access Type	Description
Board	Record Access	Record access to be decided by the user
Chart	Record Access	Record access to be decided by the user
Document Folder	Record Access	Record access to be decided by the user
Navigation Section	Record Access	Record access to be decided by the user
Private Content Section	Record Access	Record access to be decided by the user
Report	Record Access	Record access to be decided by the user
Screen	Record Access	Record access to be decided by the user
Top Menu	Record Access	Record access to be decided by the user
	Navigation	Administration → Resources → Boards
	Navigation	Administration → Resources → Charts
	Navigation	Administration → Resources → Reports
	Navigation	Administration → Resources → Screens

Workflows & Schedules Administrator

Object	Access Type	Description
Workflow	Record Access	Record access to be decided by the user
Triggers	Record Access	Record access to be decided by the user
Relationships	Record Access	Record access to be decided by the user
Schedule Daily Repeat	Record Access	Record access to be decided by the user
Schedule One Off	Record Access	Record access to be decided by the user
Workflow Run	Record Access	Record access to be decided by the user
Workflow Run Log Entry	Record Access	Record access to be decided by the user

* Feature only available for specific client plans

Metadata-Based Security

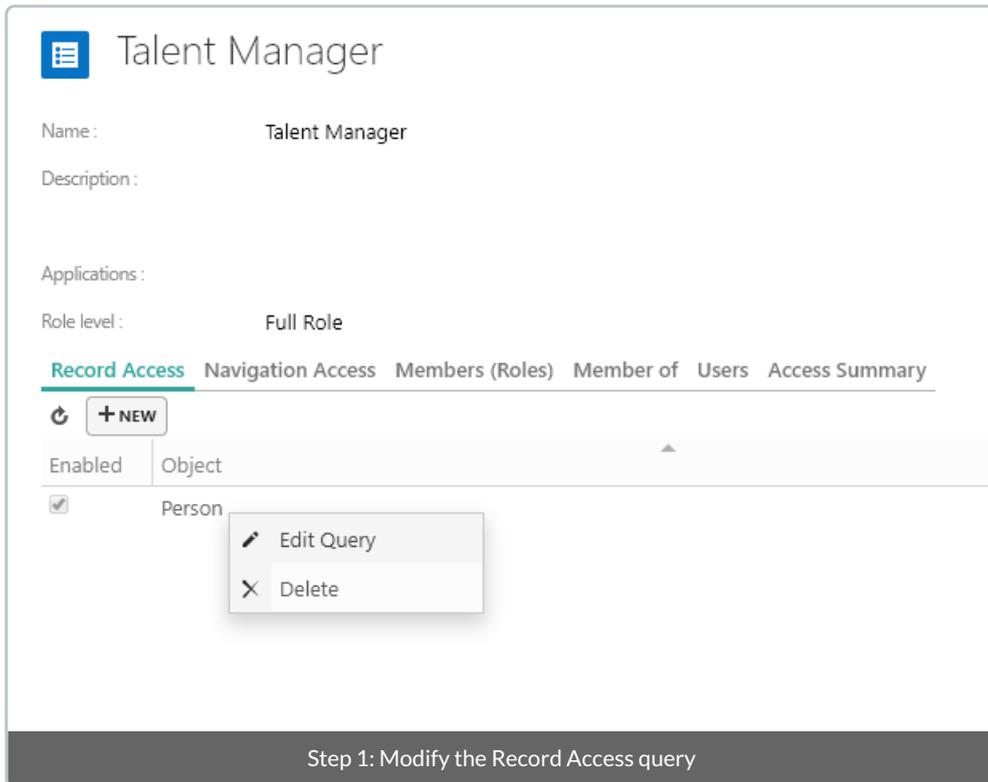
Last Modified on 31/05/2019 4:19 pm AEST

User roles can leverage metadata-based security, which is the ability to secure objects based on metadata. This is done by selecting the **Edit Query** option for **Record Access** and configuring the security as desired.

Example

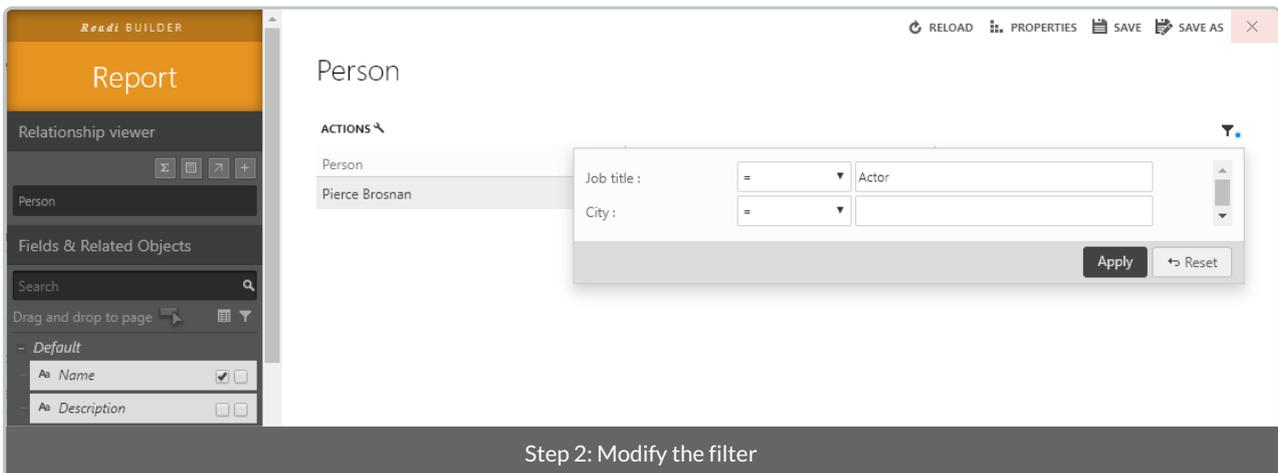
Step 1

Navigate to **User Roles** in the security administration, and open a role that needs to be configured.



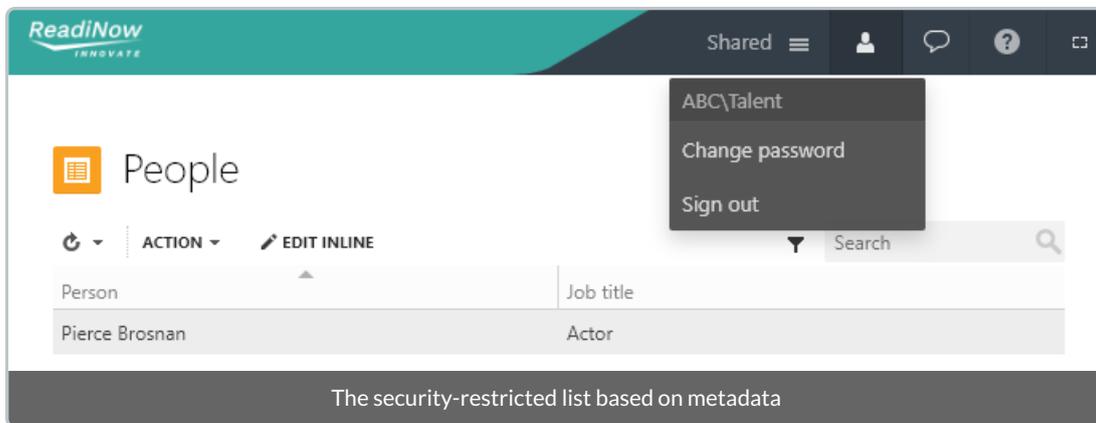
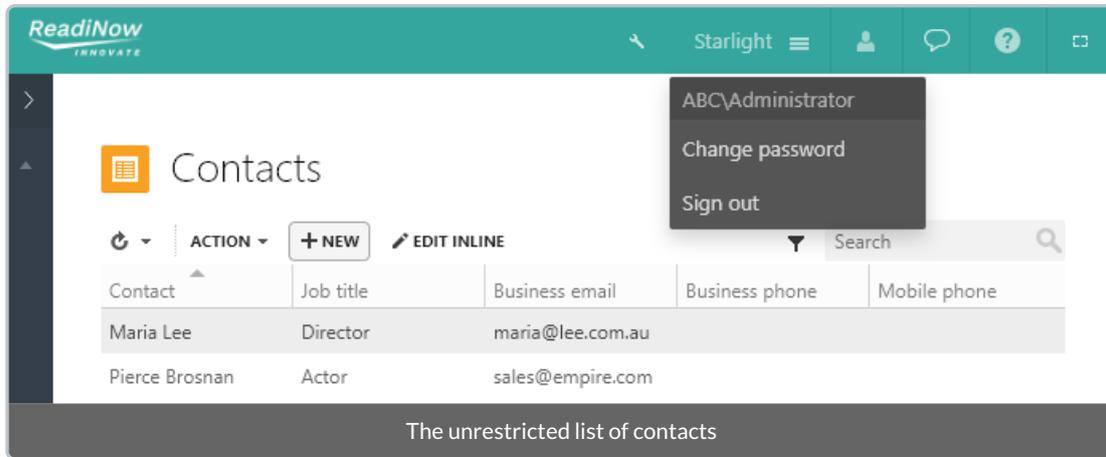
Step 2

A report appears, where the filter can be edited; modify the filter and save.



Step 3: Test

While other users can view the full list of contacts, signing in with the talent manager role will only show Pierce in the list.



Security Relationships

Last Modified on 07/12/2020 4:44 pm AEDT

Overview

The ReadiNow platform lets you define access control policy that takes advantage of the relationships between individual records. Ordinarily this is achieved by using **metadata based security** to define a report that follows some path of relationships between individual records and the users that are trying to access them.

However, it is sometimes convenient to define, for a particular type of relationship that any permission users have on one record should automatically apply to its related record as well.

For example, a "Recovery Plan" object may relate to a "Plan Step" object such that each Recovery Plan record contains several Plan Step records. There may be various access rules that describe who can view or modify a "Recovery Plan", but a desired policy might be that if a user can access a recovery plan, for whatever reason, they should also be able to access the plan step records for that plan.

A relationship configured in this way is called a *security relationship*. In this case, Recovery Plan is acting as the *granting object*, and Plan Step is acting as the *secured object*.

This option is a property of the relationship, and it cannot be configured on a per-role basis.

Types of Security Relationships

A relationship can be configured so that a User who has access to Recovery Plan (but not necessarily the Plan Steps):

- does not gain any access to Plan Steps → Off
- gains ability to see the **Name** of any related Plan Steps → Revealing Name Only
- gain **Read Access** to view any related Plan Steps → Propagating View Permission
- gains the **Same Access** for Plan Steps that they have for Recovery Plan → Propagating All Permission

Note: it may be the case that a User has access to the secured record via some other access rule(s).

Caution: Poorly configured 'propagate view' and 'propagate all' relationships can significantly increase the number of records that need to be checked when calculating access permissions, which can *significant* impact response times across the application. Refer to best practices below.

Revealing Name Only

If relationship is configured as a 'name only' security relationship, and the user has permission to view some *granting* record, then the user will also automatically have permission to view the name of the related record.

For example, consider a "Recovery Plan last reviewed by Employee" lookup relationship between the Recovery Plan and Employee objects. This can be configured as: "If I have access to Recovery Plan then: I can see the **name** of any related Employee."

Tip: Enabling 'name only' security relationships can boost response times in cases where reports only require the name, or a count, of related records, and where there are other access control rules being applied to the secured object.

Propagate View Permission

If a relationship is configured to propagate view permission only, and if the user has permission to view the granting record, then the user will receive view permissions to see the secured record. Permission to modify and delete are not automatically propagated.

For example, consider a relationship "Recovery Plan was used for Recovery Events" in which each recovery plan has related records that represent historical recovery events. It may be required that a user should always be able to see these historical recovery events, but that they should not necessarily be able to modify them. This can be configured as: "If I have access to Recovery Plan then: I have **read access** to any related Recovery Event."

Propagate All Permission

If a relationship is configured to propagate all permissions, then whatever permissions the current user has to view, modify, and delete granting record will also be received by the secured record.

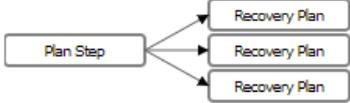
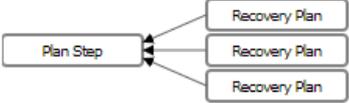
For example, consider a relationship "Recovery Plan has Plan Steps". If the user can view a plan, then they may also view any related Plan Step records. If they can modify the plan, then they may also modify any related Plan Step records. This can be configured as: "If I have access to Recovery Plan then: I have the **same access** to any related Plan Step."

Configuring Security Relationships

To configure a relationship to be a security relationship:

1. Open the Relationship Properties for the relationship or Lookup.
 1. Open Form Builder mode, see [Opening and Using Form Builder](#)
 2. Navigate to the field you want.
 3. Hover on relationship or lookup. The control icons appear.
 4. Select Configure icon. The Relationship Properties dialog displays.
2. Expand the Security tab
3. Options such as the following are presented:

If I have access to **Plan Step** do I also have access to the linked **Recovery Plan(s)** ?

<p>If I have access to Recovery Plan then:</p> <p><input checked="" type="radio"/> Off - I have no implied access to Plan Step</p> <p><input type="radio"/> I can see the name of any related Plan Step</p> <p><input type="radio"/> I have read access to any related Plan Step</p> <p><input type="radio"/> I have the same access to any related Plan Step</p>  <p><input type="checkbox"/> Allow security engine to assume that every Plan Step record will always have a related Recovery Plan record.</p> <p><input type="checkbox"/> Don't explicitly check this relationship in reports.</p>	<p>If I have access to Plan Step then:</p> <p><input checked="" type="radio"/> Off - I have no implied access to Recovery Plan</p> <p><input type="radio"/> I can see the name of any related Recovery Plan</p> <p><input type="radio"/> I have read access to any related Recovery Plan</p> <p><input type="radio"/> I have the same access to any related Recovery Plan</p>  <p><input type="checkbox"/> Allow security engine to assume that every Recovery Plan record will always have a related Plan Step record.</p> <p><input type="checkbox"/> Don't explicitly check this relationship in reports.</p>
---	--

4. Select changes as required.
5. Select **OK** to close the window.
6. Select **Save** to save the form, including the new relationship settings.

Cascading Access

If a securing relationship is configured to use the propagate view or all permissions then these permissions will continue to cascade across other adjoining securing relationships.

For example, in "Recovery Plan has Plan Steps" example, there could be an additional "Plan Steps have Step Revision History" relationship. If both relationships are configured to propagate view or all permissions, and if a user has permission to read a recovery plan record, then they will also receive read permission for the plan step records, and the Step Revision History records related to those plan step records.

Recursive Relationships

A relationship that relates from some object back to the same object is a **recursive relationship** and forms a hierarchy of records.

If a security relationship is recursive, then access control will cascade along the recursive relationship.

Recursive security relationships are permitted but should only be used to propagate permissions from a parent record to a child record. For example, it's OK to configure a recursive "Region contains Region" relationship such that someone with permission to view an 'Australia' record will automatically be able to see the 'Sydney' record.

Tip: At present, the security engine will generally process relationships recursively in access rule reports more efficiently than recursive security relationships.

Caution: Access control configurations that involve checking a large number of descendent records in a hierarchy just in case one of them might cause an ancestor node to become visible can significantly impact response times.

Caution: Take extra care with recursive relationships to ensure that security is being granted in the intended direction, as it can be easy to accidentally select the wrong direction. Verify that records you intend to be visible are visible, and that records you intend to be hidden are hidden.

Bidirectional Security Relationships

It is possible to configure a relationship to be a security relationship in both directions. However, if this is being done then it is recommended that at least one of the directions be set to 'name only'.

Configuring a relationship to propagate view (or all) permissions in both directions is not recommended and can lead to unexpected outcomes. For example, consider a relationship between "Employee is in Department" that has been incorrectly configured to propagate view in both directions. A user who is able to view an employee record will then receive view access to their department, and then this will cascade to other employees in the same department. Platform support for this may be discontinued in future versions.

This effect can be compounded considerably if the relationship is a many-to-many relationship. Consider an "Employees invited to Meetings" relationship: the access will cascade from an employee record, to all of their meetings, to other employees in those meetings, to their meetings, and so on.

Caution: A relationship that is configured to propagate view or all permissions in both directions can result in permission being granted to more records than expected. In the case of many-to-many relationship, the effect can be considerable.

'Assume Always Related' optimiser option

The relationship properties page has a checkbox option:

"Allow security engine to assume that every Object1 record will always have a related Object2 record."

The ReadNow platform allows for lookups to be marked as mandatory on forms but does not presently support enforcing this at an object level. Enable this option if, as an app developer or tenant administrator, you know that this relationship is effectively mandatory and will be set on every record.

The ReadNow report security engine is able to take advantage of this knowledge to perform various optimisations.

For example "Allow security engine to assume that every Employee record will always have a related Department record."

Don't Explicitly Check Relationship In Reports

This option offers a performance optimisation that applies when propagating 'Read Only' and 'All' permissions. The optimisation works by restricting which records are returned to a Report.

Consider 2 Security Access Rules that apply to a User:

- full access to Recovery Plan Records whose Name starts with 'X1'
- full access to Recovery Step Records whose Name ends with '00'

Note: not all Recovery Plan Names start with 'X1' and not all Plan Steps Names end with '00'

In this example there is a securing relationship which grants access as follows:

- Recovery Plans starting with 'X1' grant access to any related Plan Steps
- Plan Steps ending in '00' grant access to any related Recovery Plans

If this option is unchecked (default) the REDINow platform will fully exhaust all opportunities to return Records that a User is implicitly granted access to. This means a User will likely see Recovery Plans that start with something other than 'X1' because a Plan Step ending '00' was found, and permissions were propagated from 'Plan Step' to 'Recovery Plan'.

If this option is checked the REDINow platform will only evaluate securing relationships where the User has explicit access to the Recovery Plan Records. In other words securing relationships that can only ever return Recovery Plan Records via an access grant will not be evaluated. This typically results in fewer Records being returned and can have a significant performance boost.

When to use this option

An ideal situation for using this option is, for example, a general purpose Report of Tasks which can rely on an access control rule such as 'Tasks Assigned to Me'.

In this example consider a system where objects: Risk, Incident, and Remediation all relate to Task. For each of these Objects, if you can access the Record, then you want to have to access to the related tasks. Without this option the Report would need to evaluate the access rules for every security relationship.

Instead, for Reports where it is not necessary for every document to be shown, using this option will significantly improve performance.

Additional Details for Name Only relationships

Name-only security relationships have been introduced to:

- make access control configuration easier by reducing the number of access rules that need to be created for trivial 'name' scenarios.
- improve report performance - the REDINow engines are able to take significant advantage of this setting.

Their use is encouraged; and they may be enabled by default for all lookups in a future version of the REDINow platform.

Advanced users may wish to be aware of the following behaviors of name-only relationships. They are all consequent of the above two objectives.

Name-Only Lookups on Forms

If a Lookup control for this relationship was placed on a form, and the current user happened to have access to the related employee record because of some other access rule, then the Lookup will show the name as a link and the

user can click through to see the related employee record.

However, if the user did not otherwise have permission to view the related employee record, then the form will simply show the name of the employee without it being linked.

Similarly, if a [Lookup](#) control has been used to show a to-many relationship as an inline comma separated list, then it is possible that the user may have name-only access to some records, and view access to other records. In this scenario, the records that can be viewed will be shown as links, and the records that cannot be viewed will be shown as text. These may appear intermixed in the same list in accordance with the security configuration.

Name-Only Relationships on Forms

If name-only is enabled for a to-many relationship, and if there are no other access rules that grant permission to view the related records, then the relationship report on a form will only show values for the name field. Other fields will appear as blank in report columns, and as null in calculations.

Name-Only relationships and record-existence

Ordinarily, the ReadNow access control system causes all features and calculations to treat non-visible records as though they don't exist at all. This is done to ensure that users can't use features such as 'summarize' or 'is defined' to infer information about records that they cannot directly view.

A name-only security relationship causes a user to become aware of the *existence* of related records that they don't otherwise have permission to see.

This means that the following features now act as though they can detect that the related record exists:

- The 'is defined' and 'is not defined' report analyser conditions
- Report summarize as 'count'. Other summarize operations such as max and min that rely on field values will not be able to see those fields.
- Report 'Show Totals' options that relate to count.
- The count calculation function. For example: `count([Name of the security relationship])`
- The **is null** and **is not null** calculation keywords

Name-Only allows the record's object to be accessed

In addition to a record's name, a name-only securing relationship also allows a report or calculation to access a record's type without requiring or checking for view access to the record. All other fields, relationships, and lookups, behave as though they are not set.

Name-Only only shows record names when the security relationship is being followed

The name-only security relationships only make record names visible in reports, forms and calculations where the security relationships is actually being followed.

That is to say, name-only security relationships are not consulted in other cases where a record is being accessed. For example, consider a "Recovery Plan has Reviewer" name-only securing lookup that allows the review's name to be seen if the user has view permission on a plan. The user does not automatically get to see the review's name in other places such as Person picker reports solely on the basis of this name-only relationship. The user will require normal view access to the Person record to see the Person in a picker or Person report.

Using Name-Only for Performance benefits

The name-only security relationship will give a performance benefit when a report or calculation:

- follows the relationship or lookup in the direction towards the secured (name only) record
- and there are multiple or complex access control rules that would otherwise apply to the secured record
- and the only interactions with the record involve:
 - accessing the record's name
 - or its object type
 - or checking for its existence

The improvement in response times can be considerable for some security configurations.

If the report or calculation accesses other fields or relationships on the record, then a full access control check would typically still be performed on the record.

Best Practices for Security Relationships

Security relationships are a double-edged sword. Best practices can be summarised as follows:

Security relationships can significantly simplify configuration and improve response times.

- DO: use name-only security relationships to ensure related lookup names are visible.
- DO: use propagating (view or all) security relationships to make 'sub-component' records visible with their parent records.
- DO: use the Report Diagnostics tool (run as a 'typical' user) to identify potential problems.

Poorly configured security relationships can significantly impact response times and complicate access control configuration.

- DON'T: configure security such that a record access check may need to consult a potentially large number of related records.
- DON'T: make networks of propagating security relationships that connect back to the same object.
- DON'T: propagate security on a relationship unless it makes sense for every user/role.

The same, in more detail means:

1. Name-only security relationships:
 - Can generally always be used with negligible risk of accidental over exposure or response times.
 - Are usually the right choice for lookups to objects that have any access control policy.
2. Securing relationships that propagate 'view' and propagate 'all' permissions are fairly similar:
 - They provide identical access for view/read operations, which is to say most operations.

- They have identical performance considerations
 - They only differ when performing security checks for modifications.
3. Propagating security relationships are a good choice when:
 - The relationship represents some sort of parent-record to subcomponent relationship.
 - So long as the permissions are being propagated from the parent to the child.
 - They can aid performance, even more than name-only relationships, when used in this manner.
 - For similar reasons, relationships that are **Full Ownership** or **Partial Ownership** may be good candidates.
 4. Propagating security relationships will generally cascade efficiently along lookups
 - For example, consider two lookups: "Work Item is for Project" and "Project belongs to Department"
 - These relationships can be configured as "If I have access to Department: then I have read access to any related Project" and "If I have access to Project: then I have read access to any related Work Item" respectively. This configuration will run fairly efficiently as the platform only has to step from a Work Item to its single Project record, to its single Department record, and then evaluate any access rules on the department.
 5. Avoid scenarios where multiple related records need to be checked in order to determine if some record is visible
 - For example, consider a relationship such as "Project has Tasks"
 - If this relationship were configured using "If I have access to Tasks: then I have read access to any related Project" then multiple access rules will need to be calculated for a potentially very large number of tasks for each and every record in a report, which will impact response times.
 6. Consider how many indirectly related records might need to be checked while calculating access control
 - If a large hierarchy of related records need to be checked, this may impact response times.
 - If a securing relationship propagate in both directions, this may impact response times.
 - If a securing relationship is recursive, and many related child records need to be checked, this will impact response times.
 7. Avoid combinations of securing relationships that circle back to the same object to form a cycle
 - When the platform detects a cycle in security relationships, it enters a special processing mode that can handle more complex scenarios but is slower to process access control.
 - For example: Object1 records provide access to Object2 record according to one relationship type; and Object2 (or an object that inherits from it) records provide access to Object3 records; and Object3 records (or an object that inherits from it) provide access to Object1 records.
 - There is also a fixed internal limit for the maximum number of records that may be checked in this way per report run.
 8. Avoid combinations of securing relationships where a secured object might receive access along more than one direct securing relationship
 - For example, a Plan Step is visible because its Recovery Plan is visible or because its Author is visible.
 - The platform is designed to handle this scenario, however it can lead to inconsistent response times in complex tenants.

9. Don't use propagating security relationship relationships unless it is always appropriate for every possible role.
 - The propagation always applies to every role and cannot be conditionally applied or revoked for only certain roles.
 - For example: consider a "Recovery Plan has Plan Steps" relationship. Some users may have permission to no plans, some may have access to some plans, and some may have access to all plans. It's OK to propagate permission from the Recovery Plan to the Plan Steps so long as that's appropriate for every user for whichever plans they can see. However, if there exists even a single role that should have access to the Recovery Plans without having access to the Plan steps, then security relationships should not be used. Define individual access rules to the Plan Steps instead.
10. Use the [Report Diagnostics](#) and [Tenant Health Check](#) tools to help identify problematic configurations.
 - Always run the report diagnostics as a user that is representative of the type of users who are experiencing problems. This ensures that the diagnostics tool considers security configuration that is applicable to that user.
 - Refer to the Active Security Relationships section of the report diagnostics tool.
 - Any warnings in this section should, in the first instance, be treated as likely or possible causes for the slow reports.

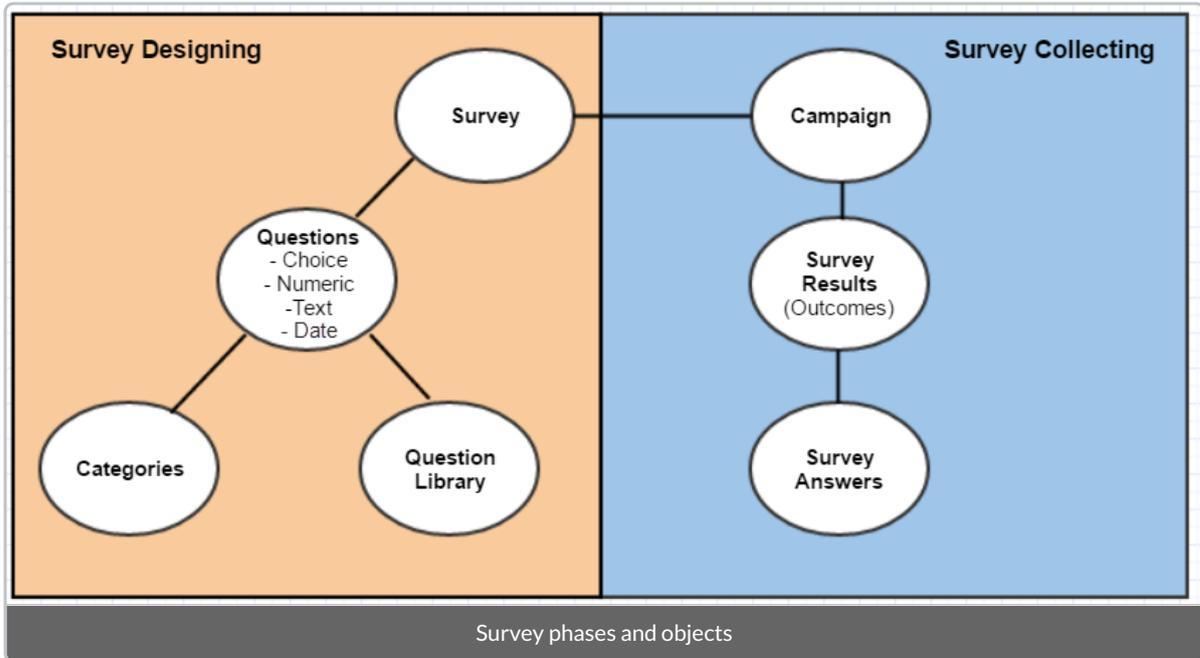
Surveys Overview

Last Modified on 24/01/2022 10:01 am AEDT

Surveys are a tool for collecting and information from individuals.

The survey process can be split into two distinct phases.

- Designing the survey - build a library of questions and survey layouts
- Collecting the survey results - analyse the results of the survey



← BACK EDIT

Application survey

Name: Application survey

Description: Survey provided to all university applications.

Show help text:

Application: Foster University

[Survey Layout](#) [Outcomes](#) [Campaigns](#) [Workflow](#)

+ SECTION + QUESTION + BREAK

SECTION 1

- Between 1 and 10 rate your application experience
- How likely are you to morris dance?
- In your own words describe your first experience with 2/3 Gripple adjustable crescent cams.

Survey form for building survey layouts

Responding to a Survey

Last Modified on 18/04/2019 10:25 am AEST

Survey Tasks are created for each recipient, see [Launching a Survey](#). The survey is accessed via any **Task** report such as **My Tasks** report in the Home application. Alternatively, a notification with a link can be set up to alert survey recipients that a survey is waiting for them.

To respond to a survey:

1. Select the Survey Task from the Task report. This opens the Survey.
2. Click on Pencil icon to drop down list exists, select a record to target the survey against.
3. If a record is displayed at the top of the survey, this is the chosen record that is required to target the survey against.
4. Alternately, there may be no records to target against the survey.
5. The survey can be saved at any time.
6. The user can close and go back to the Survey by selecting the Survey Task in the Task report,
7. Once all the questions have been answered and Progress is 100%, select **Complete**.

Surveys in Workflows

Last Modified on 24/05/2019 1:51 pm AEST

In order to access the survey inside the workflow, the workflow input parameter must be a **Survey Result**.

Input Parameter

Name: Input

Type: Record Argument

Definition: Survey Result

New Input Parameters

Workflow input parameter for survey triggers

Then it is possible to access the survey from calculations, for example:

```
[Input].[Campaign] like '%Data Sensitivity Assessment%'
```

To configure a workflow to run:

1. Open the survey you want, see [Creating or Editing a Survey](#).
2. Select **Workflow** tab.
3. In the **On survey complete** field, select the Pencil icon. The Select Workflow dialogue appears.
4. Select the Workflow you want and select **OK**.
5. In the **On campaign close** field, select the Pencil icon. The Select Workflow dialogue appears.
6. Select the Workflow you want and select **OK**.
7. Select **Save**.

Trigger Event	Event Description
On survey complete	This event triggers when a user completes a survey
On campaign close	This event triggers when the campaign due date elapses OR when all campaign targets (viz. survey recipients) have completed the survey

Creating Surveys

Last Modified on 09/09/2021 11:26 am AEST

Creating a Survey

Note: to create a Survey you need to be a member of the 'Survey Creator' administrative role.

To create a survey:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Surveys**. The Surveys expand to display list.
4. Select **Surveys**. The existing Surveys display.
5. Select **+ NEW**. The new Survey appears.
6. Type the name for the survey in the **Name** field.
7. Type the description for the survey in the **Description** field.
8. Select the checkbox for **Show help text** to enable an information icon that will show the survey description when clicked.
9. In the **Application** field, select the Pencil icon. The Select Application dialog appears.
10. Select the application you want and select **OK**.
11. Select **+SECTION**, **+QUESTION**, **+BREAK** and **+** as required. A section, break or an existing question appears on the survey canvas.

Questions can be added to the survey canvas either by creating a new question or adding an existing question from the library.

For information on what questions to use in the survey, see [Question Types](#).

Creating a New Question

1. Open the survey you want to edit.
2. Select **Survey Layout** tab.
3. Select **+QUESTION**. The menu appears.
4. Select the type of question to add. The Question Properties dialogue appears.
5. Type the question in the **Question** field.
6. Type the description for the question in the **Description** field.
7. Complete the preferred settings. Note: The settings available in the Question Properties dialogue depend on the type of question chosen.
8. Select **OK** to save or **Cancel** to leave.
9. Select **Save** to save the survey.

Adding a Question from the Library

To add a question from the Library:

1. Open the survey you want to edit.
2. Select **Survey Layout** tab.
3. Select the **+** icon. The Select dialogue appears.
4. Select the checkbox for the question you want to add. Note: Use the analyser to filter and find the question you want.
5. Select **OK**. The question appears at the bottom of the survey canvas.
6. Select **Save** to save the survey.

Question Types

Last Modified on 24/05/2019 12:16 pm AEST

Closed-Ended Questions

Closed-ended questions restrict the user to a pre-defined choice of answers.

Available closed-ended question types:

- Single Choice selection
- Multi Choice selection

Open-Ended Questions

Open-ended questions allow users to enter a flexible response without the restrictions of other types such as choice questions.

Available open-ended question types:

- Numerical
- Multi-line text

Question Property Options

Property	Description
Question	Name of the question
Description	Detail defining the question
Id	Used to identify question from an external source
Order	Used to control the order in which questions appear. Smaller value appear before larger ones.
Weighting	The relative importance of the question in the overall survey
Allow Attachments	Allows the user to include attachments with their answer
Allow Notes	Allows the user to include notes with their answer
Allow Multiple Selection	Allows the user to select multiple answers for a question (only applicable for Choice Questions)

Property	Description
Allow Whole Numbers	Restricts the user to enter whole numbers (only applicable for Number Questions)
Mandatory	Allows question to be marked mandatory and survey cannot be completed without the question being answered
Categories	Can be used to group results in reporting
Library	Questions that form part of a library

Importing Questions

Last Modified on 24/05/2019 12:34 pm AEST

Importing Survey data can be used when dealing with a large number of questions or from an existing library.

The following Survey elements are supported for import:

- Choice Option Set (see below)
- Question Category
- Question Library

Importing a Choice Option Set

1. If necessary, first create a new Choice Option Set
 1. Administration → Survey → Choice Options → New button
2. Prepare a spreadsheet with the data
 1. One column called "Name"
 2. One column called "Order"
 3. One column called "Value"
 4. One row for each option to be imported. Note that there are no resource keys presently defined on survey choice options, so take care not to create duplicates.
3. Select **Import Spreadsheet** to start a new import
4. Wizard page 1:
 1. Upload the file created in step 2
5. Wizard page 2:
 1. On the "Select Object" screen, leave the import type as Objects
 2. Open the object picker
 3. In the analyser, set "Advanced objects" to Yes, and apply.
 4. Select the row named "Choice Option"
6. Wizard page 3:
 1. On the "Select Columns" screen, the Name, Order and Value columns should map automatically. If not, map them as usual.
 2. Click on the "Fixed Value" link in the top-right corner.
 3. When the window opens, change the "Fixed Value" setting to the name of the Choice Option Set that you want to import into (e.g. the one created in step 1), and press OK
 4. Observe there is a new mapping row.
 5. Set the "Object Field" drop down for the new row to "Choice Option Set"
7. Proceed with remainder of import as normal.

Viewing Responses

Last Modified on 17/04/2019 5:32 pm AEST

To view survey responses:

1. Open the survey you want, see [Creating or Editing a Survey](#).
2. Select **Campaigns** tab.
3. Select the Campaign you want and select **ACTION**. The menu appears.
4. Select **Edit**. The Campaign form appears.
5. Select **Responses** tab. This lists the responses with an Outcome and Total Score.

- Select a Response to drill down on individual answers.

Launching a Survey

Last Modified on 15/04/2019 3:50 pm AEST

Surveys are launched using campaigns.

Launching a Person Campaign

Surveys can be directly targeted to a group of people.

Additionally, a Person Campaign survey can also set against a target object if required. When the respondent opens the survey, they will select from a list of records that they will need to choose from in order to complete the survey.

To create a Person Campaign:

1. Open the survey you want to send.
2. Select **Campaigns** tab.
3. Select **+NEW**. The menu appears.
4. Select **Person Campaign**. The Person Campaign form appears.
5. Type the name for the Person Campaign in the **Name** field.
6. Type the description for the Person Campaign in the **Description** field.
7. Type the date you want in the **Closes On** field or select the Date icon and select the date. A due date is set on the survey task that is created when the survey is launched.
8. If required, in the **Target Object** field, select the Pencil icon. The Select Object dialogue appears.
9. Select the object you want and select **OK**. The survey is set against the records of the object.
10. In the **Recipients** tab, select **+**. The Select Person dialogue appears.
11. Select the checkbox for the people you want to target for the survey and select **OK**.
12. Select **Launch Campaign** button in the top right corner of the form. This creates survey tasks for each recipient.

Launching a Target Campaign

Surveys can be generated from one or many records. First, a target object is selected following the nominated record(s). The person who receives the survey will be based on the selected relationship, where the relationship based on a 'Person', such as an 'Owner'. When the respondent opens the survey, they see the target record which they need to complete the survey against.

1. Open the survey you want to send.
2. Select **Campaigns** tab.
3. Select **+NEW**. The menu appears.
4. Select **Target Campaign**. The Target Campaign form appears.
5. Type the name for the Target Campaign in the **Name** field.
6. Type the description for the Target Campaign in the **Description** field.
7. Type the date you want in the **Closes On** field or select the Date icon and select the date. A due date is set on

the survey task that is created when the survey is launched.

8. In the **Target Object** field, select the Pencil icon. The Select Object dialogue appears.
9. Select the object you want and select **OK**.
10. In the **Survey Taker** field select the down arrow. The drop down list appears.
11. Select the one you want in the drop down list.
12. In the **Targets** tab, select + . The Select dialogue appears.
13. Select the checkbox for the people you want to target for the survey and select **OK**.
14. Select **Launch Campaign** button in the top right corner of the form. This creates survey tasks for each recipient.

Survey Tasks are created for each record assigned to the nominated people identified in the **Target Object**

Branching

Last Modified on 24/05/2019 12:24 pm AEST

Survey branching (or skip logic) allows you to skip questions and point user to different part of the survey depending on their answers.

For example, you could be asking customers how frequently they use our product, if they are a regular user or if it's their first time you can have different survey questions for each type of customer.

How does branching work

- Branching survey questions is similar to the [Showing/Hiding Elements on form](#) feature
 - Visibility is set on a per question question basis
 - For a given question, if the condition of a previous question is true, then the question will show.
- Questions are referenced by a script name
 - This means that each question that is required as part of the logic will require a script name to be defined
- Mandatory questions that are skipped as a part of the branching logic will be left blank in the survey response

How to show/hide survey questions

1. Assign a **Script** name to the question to be referenced. This can be done one of two way:
 1. Click on the script name label
 2. Open the **Question Properties** dialogue and click on the **Visibility** tab
2. Now go to the the question that requires the branching logic, that you would like to show or hide, depending on the result of an earlier question.
3. Open the **Question Properties** dialogue and click on the **Visibility** tab.
4. Enter the calculation that will result in either true or false.
This could be simply a Boolean field reference, for example:

[Product Used?]

Or any expression with a Boolean result, such as:

[Product Price] > 500

An equation could be used on a Boolean field but it would be redundant and introduce unnecessary complexity. An example would be:

[Product Used?] = True

5. Launch the Survey, and observe that the question will be visible only when the result is true.

Survey Security

Last Modified on 24/05/2019 1:35 pm AEST

Giving users permission to create surveys

Users other than administrators may want to create their own surveys, such as a Marketing Campaign Manager. A **Survey Creator** role is used to grant end users permission. In the Security section of Administration, add the **Survey Creator** role to the nominated User Account.

Survey Layout

Last Modified on 15/04/2019 3:48 pm AEST

Split surveys into logical sections so that respondents see a manageable amount of content, and feel a sense of progress as they complete each section.

Moving a question

To move a question:

1. Open the survey you want to edit.
2. Select **Survey Layout** tab.
3. Click and hold the question you want to move.
4. Drag and drop the question to the preferred place on the survey canvas.
5. Select **Save** to save the survey.

Adding a Section

Sections can be used to break down questions into titled groupings.

To add a section:

1. Open the survey you want to edit.
2. Select **Survey Layout** tab.
3. Select **+ SECTION**. A Section appears at the bottom of the survey canvas.
4. Select **Save** to save the survey.

To move a section:

1. Open the survey you want to edit.
2. Select **Survey Layout** tab.
3. Click and hold the section you want to move.
4. Drag and drop the section to the preferred place on the survey canvas.
5. Select **Save** to save the survey.

Adding a Break

Adding a break will add a page break visual cue to the canvas layout. When a user is responding to the survey, they will see the actual page break and use **Next** and **Back** buttons to navigate through the survey.

To add a break:

1. Open the survey you want to edit.
2. Select **Survey Layout** tab.
3. Select **+ BREAK**. a Break appears at the bottom of the survey canvas.

4. Select **Save** to save the survey.

To move a break:

1. Open the survey you want to edit.
2. Select **Survey Layout** tab.
3. Click and hold the break you want to move.
4. Drag and drop the break to the preferred place on the survey canvas.
5. Select **Save** to save the survey.

Outcomes

Last Modified on 24/05/2019 12:43 pm AEST

Survey outcomes can be used to categorise and summarise survey results based on question weightings.

A survey result has this outcome if the total score is equal to or greater than the threshold value, up to the threshold value of the next highest outcome.

To create an outcome:

1. Open the survey you want, see [Creating or Editing a Survey](#).
2. Select **Outcomes** tab.
3. Select **+NEW**. The Survey Outcome form appears.
4. Type the name for the outcome in the **Name** field.
5. Type the description for the outcome in the **Description** field.
6. Type the threshold value for the outcome in the **Threshold** field.
7. Select **Save** to save the outcome.

The starting threshold is 0, with each additional threshold defining an outcome range.

Example

The following thresholds are defined: "Awful" = 0, "Bad" = 40, "Good" = 60, "Excellent" = 80

The result set is [11, 34, 40, 50, 59, 77, 85, 94, 97]

The results would be the following categorisations:

- Awful: 11, 34
- Bad: 40, 50, 59
- Good: 77
- Excellent: 85, 94, 97

Analytics

Last Modified on 15/03/2019 9:42 am AEDT

Since the survey information is represented as objects in the system, any of the information can be added to any application, in the form of screens, reports and charts through reports. For example, a Marketing application may only want to display survey and survey outcomes that are relevant to them, this can be done by creating custom filtered reports and added to the application.

Creating reports based on survey information

When creating a new Report, remember to filter the **Report based on** to display Advanced Objects to see the survey based objects.

To analyse survey results Administrators can also set up their own Reports and Charts based on the Survey Results object or from the nominated targeted objects used in the surveys and add them to their own applications.

Editing Surveys

Last Modified on 24/05/2019 1:25 pm AEST

Editing a Survey

To open or edit a survey:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Surveys**. The Surveys expand to display list.
4. Select **Surveys**. The existing Surveys display.
5. Double click on an existing survey and the survey will open in edit mode.

Editing a Question

The following properties are specific to each survey's instance of the question, so that editing the property will not affect instances of the question in other surveys:

- Mandatory
- Order
- Visibility

If a question is in a question library then editing the following properties will change all instances of the question in all surveys where it appears:

- Question
- Question ID
- Description
- Guidance
- Weighting
- Allow attachments
- Allow notes
- Allow multiple selection

When editing the choice set on a question, the choice set itself is modified, so all questions where the choice set is used will be affected. It is recommended the each choice set name accurately represents the contents and new set are made when changes are specific a question. For example:

- Changing the Yes/No option set to include "Answered above" would produce undesirable results
- Changing the list of office locations to add a new office location would be desirable because the selection will be consistent and correctly include the new office in all instances

Removing a Question

1. Open the survey you want to edit.
2. Select **Survey Layout** tab.
3. To the right of the question you want to remove, select the X icon. The question no longer appears on the current survey, but will remain in the question library if one was selected.

Calculations in Workflows

Last Modified on 17/04/2019 6:05 pm AEST

Calculations in workflows are used:

- to evaluate a test status based on a business rule and when used, generally they are followed up with an action
- to perform a special calculation on a given set of data
 - the result can be used to continue the current activity
 - the result can be used for other activities within the workflow
 - the result can be saved to a field of an object

Example 1, in the **Gateway activity**, enter a simple test such as `[Task] = 'Completed'` and if the condition is *true* the gateway follows the path of exit.

Example 2, in the **Update activity**, a calculation can be entered to determine the field value on a certain condition, *if*(`[Task Status] = 'Completed', [Task Completed] = true, [Task Completed] = false`).

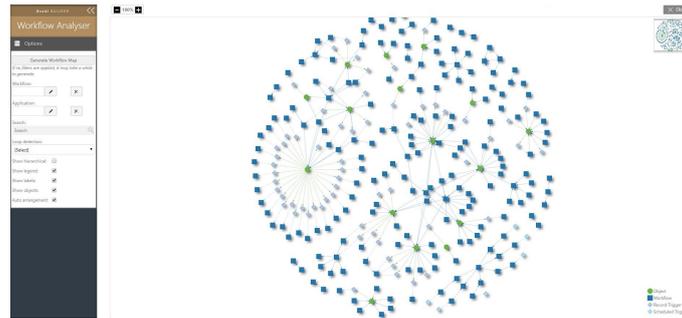
Workflow Analyser

Last Modified on 18/04/2019 10:23 am AEST

Overview

Workflow analyser is visualisation tool that displays the interconnections between triggers and workflows.

As more workflows and triggers are built, it is essential for designers to understand how a trigger or workflow may affect other triggers and workflows.



Screenshot: Workflow Analyser in action

What is the scope of the Workflow Analyser?

When using the workflow analyser network visualiser, it is important to remember that the analyser will not blindly list all the workflows in the system.

Workflow Analyser scope:

- A workflow will only be displayed if:
 - it will run other workflows,
 - it will cause a trigger to fire,
 - it is run by another workflow,
 - it is run by a trigger
- When checking if triggers will fire the system checks if:
 - the trigger is enabled,
 - the object change e.g. create/update matches the trigger condition,
 - the fields or relationships that are changed matches the triggering fields and relationships
- When a single workflow is chosen the analyser will only show other workflows and triggers that the selected workflow starts. This means that if the chosen workflow does not cause other triggers or workflows to fire and is only launched by other workflows or triggers then only the workflow itself will be displayed.
- Triggers are suppressed for the workflow **Change Type** activity, therefore will you not see these.
- Only the latest version of the workflow will displayed
- Objects will only be displayed if their associated triggers will fire
 - for example: a workflow has an update activity on Person - Age field, if no triggers are to be fired with

this update then the Person object will not be shown on the graph

- on the other hand if a trigger is fire because of this action the trigger along with the object will be displayed

How to use the Workflow Analyser?

1. Select **Administration** → **Workflows** → **Workflow Analyser**
2. Choose between either a:
 1. *Full* visualisation displaying *all* workflows that can fire triggers, and triggers that fire workflow
 1. Select **Generate Workflow Map**
 2. *Partial* visualisation filtered by an Application
 1. Filter by **Application**
 2. Select **Generate Workflow Map**
 3. *Single* workflow starting point visualisation, that only shows workflows and triggers connected to the starting workflow
 1. Filter by a particular **Workflow**
 2. Select **Generate Workflow Map**
3. Optional filter - **Loop detection** (workflow/trigger cycles)
 1. Highlight any loops - any loops will be highlighted in red
 2. Show only loops - will zoom on detected loops and drop all other nodes

Creating and Editing Workflows

Last Modified on 26/03/2021 3:17 pm AEDT

- Navigate to the Application Menu  on the top right of your screen and select **Administration**.
- In the Left Navigation Area, expand the **Workflows** menu
- Select **Workflows** (existing Workflows are displayed)
- Select + **NEW WORKFLOW** (the Workflow Builder opens)

To edit an existing Workflow:

1. Right click on a workflow, select **Edit**

Inputs

Last Modified on 17/04/2019 6:04 pm AEST

Overview

Inputs is information that is fed into the workflow to be used by the workflow. For example, if you create a workflow to update the 'employee status' the input would be an employee record.

Inputs can be of the following types:

- String - string of text up to 200 characters
- Record List - a list of references to records like selection of multiple related resources - must define the object type of the record(s)
- Date - Date field
- Decimal - decimal or fraction or real number field
- Record Argument - a single reference to a record - must define the object type of the record
- Date/Time - Date time field
- GUID - (reserved)
- Yes/No - Boolean yes/no or True/False field.
- Time - Time field
- Number - number or Integer field
- Currency - number field represented as a currency

Defining Inputs

To define an input:

1. Open the workflow in Workflow Builder mode, see [Create or Edit Workflow](#).
2. Select the **Start Activity** icon. The Configuration Panel displays properties.
3. In the Configuration Panel, select the **Inputs** tab.

To configure inputs:

1. Select the + icon to add a single input or repeat to add multiple inputs.
2. Type the name for the input.
3. Select the input type (in most cases this will be Record Argument).
4. Select the starting value. If 'Resource Argument is selected' then select the object type.

Triggering Input

When triggering from a [Action buttons on forms](#) or [Action menu](#) (see [Configuring action menus](#)) then this defines which of the inputs will be used to trigger the workflow.

Related Resource

When triggered from a report on a form, this will identify which input is the parent record type.

Outputs

Last Modified on 17/04/2019 6:03 pm AEST

Outputs are used if the workflow is triggered by another workflow. In this case, the output is pushed back into the master workflow for further processing.

Defining an output

To define an output:

1. Open the workflow in Workflow Builder mode, see [Create or Edit Workflow](#).
2. Select the **Start Activity** icon. The Configuration Panel displays properties.
3. In the Configuration Panel, select the **Outputs** tab.

Configuring an output

To configure an output:

1. Select the + icon to add a single output or repeat to add multiple outputs.
2. Type the name for the output.
3. Select the output type.
4. Select the value of the output.

Variables

Last Modified on 18/04/2019 10:22 am AEST

Variables are used to store temporary values within the workflow as a Parameter.

Defining a variable

To define a variable:

1. Open the workflow in Workflow Builder mode, see [Create or Edit Workflow](#).
2. Select the **Start Activity** icon. The Configuration Panel displays properties.
3. In the Configuration Panel, select the **Variables** tab.

Configuring a variable

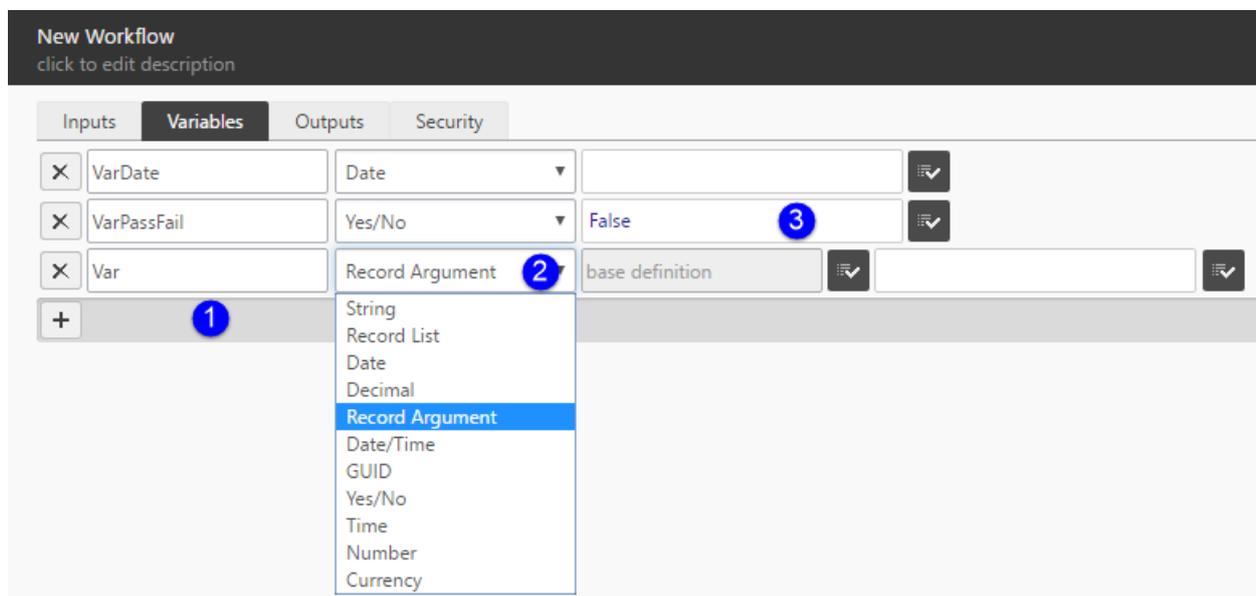
To configure a variable:

1. Select the + icon to add a single variable or repeat to add multiple variables, see screenshot.
2. Type the name for the variable.
3. Select the variable type.
4. Select the value of the variable.

Note

- For some types like Record Argument and Record List you also have to select the object it refers to
- You can set an initial value if you want. Warning - these values are set before the workflow starts so it does not know what the input values are at this stage.

Screenshot: Workflow Start - Variables properties



Security

Last Modified on 17/04/2019 6:02 pm AEST

A workflow has the security option to 'Run as workflow owner'.

Defining the security setting

To define the security setting:

1. Open the workflow in Workflow Builder mode, see [Create or Edit Workflow](#).
2. Select the **Start Activity** icon. The Configuration Panel displays properties.
3. In the Configuration Panel, select the **Security** tab.

Configuring the security setting

To configure the security setting:

1. Select the checkbox for **Run as workflow owner**. A tick appears.
2. Select the checkbox again to remove the tick.

Run as workflow owner OFF	When the workflow is triggered, it will run as if the person who triggered the workflow was performing the steps. Therefore the workflow will only be able to undertake steps that the 'triggering user' would be able to do with their current security permissions
Run as workflow owner ON	When the workflow is triggered, it will run as if the owner of the workflow was performing the steps. In most cases, this would be an administrator role.

Activities Overview

Last Modified on 26/03/2021 5:15 pm AEDT

The table below lists each of the Workflow Activities and provides a short description. For general information about configuring workflows please see [General Workflow Activity Configuration](#).

Data Activities	
Create	Create a new record of a selected object
Update	Update multiple fields or relationships for a selected record
Delete	Delete a selected record
Clone	Clone an record from one object to another
Change Type	Change the Type of an existing Record (used when migrating Records)
Get Records	Get a list of records from a selected object
For Each	Run a sequence of activities down a list of records
Gateway	Make a decision based on a calculation
User Activities	
User Action	Displays a form to the user and creates a user task
User Input	Displays a automatic form to the user for data input
User Message	Send a onscreen message to a user
Send Email	Send an email to a single or list of addresses
Survey Activities	
Launch Person Campaign	Create and launch a person-based survey campaign
Launch Target Campaign	Create and launch a target-based survey campaign
System Activities	
Assign To Variable	Assign a specified value to a predefined variable
Run Workflow	Run another workflow and wait for results

Create Link	Create a link to an entity
Log	Record a message to the system log
Other Activities	
API Callout	
Generate Document	Generate a document based on a report template
Export To	Export the data from a report
FTP Fetch	Fetch a file from a remote server via FTP.
FTP Put	
Import Spreadsheet	Imports an excel or CSV file in to an object
Notify	Send SMS notifications to a list of people
Sequence to End	Shortcut - connects the selected activity to the End Event
End Event	Visual Layout Only - Add an extra end point to the workflow

Activity Settings

Last Modified on 17/04/2019 6:13 pm AEST

When configuring workflow activities, there are various settings that need to be configured for each workflow activity. Depending on the workflow activity and setting being configured, the following are the various options of configuring the workflow settings.

Type	Description
Select Record	Ability to choose a specific record from a selected object. After choosing "Select Record" option, select "choose object" to choose the object type which will then display all records of the chosen object.
Select Parameter	Ability to choose a parameter to use in the workflow activity. See "Understanding Parameters" below
Calculation	Ability to use a calculation to configure the workflow activity. See Calculations in Workflows
Select Object	Ability to select from any object in the system
Select Fields	Ability to select from a list of fields of a given object
Select Relationship	Ability to select from a list of lookups or relationships of a given object

All workflow activity configurations are in the format of a Parameter or Calculation. Therefore, to type in plain text use single quotes. e.g. 'simple text'.

Understanding Parameters

Parameters are used within workflows to pass information from one activity to another. Workflow activities automatically create parameters as an output of that activity.

As an example, a 'create' activity creates a parameter called '[Activity Name].[record]'. This means that that any subsequent activity can use the '[Activity Name].[record]' parameter to perform further tasks. For example, a user can add a 'create' activity to create a new employee, which is then used by a 'Send Email' activity to send that newly created employee an email.

Every workflow starts with three parameters:

- **Triggering Person** - the Person record that triggered the start of the workflow.
 - **Triggering Trigger** - the trigger that triggered the run.
 - **Triggering User** - the user account record that triggered the start of the workflow.
 - **Workflow Owner** - the assigned user account that is set as the 'owner' of the workflow.
-

Create

Last Modified on 17/04/2019 6:12 pm AEST

Purpose

Create a new record of a selected object. Fields and relationships of that new record can also be updated.

Configuration

Setting	Description
Object to create	Select the object type for the record being created Note: if there is resource key associated with object type, option 'Update existing record with matching key' is displayed. if ticked, new instance will merge with existing record if key is matched.
Field or relationship to update	Two part setting. 1. Select the field or relationship to update 2. Select the value to update Note: If updating a relationship, two additional options are displayed 1. Replace: Replace the current linked records 2. Add related record: allows multiple records to be linked via this relationship
Add field or relationship	Add another setting row to update further fields or relationships

Parameters created

Parameter	Type	Description
[Activity Name].resource	Record	The record created by the activity

Update

Last Modified on 17/04/2019 6:13 pm AEST

Purpose

Update multiple fields or relationships for a selected record

Configuration

Setting	Description
Record to update	Select the record to updated
	Two part setting. <ol style="list-style-type: none">1. Select the field or relationship to update2. Select the value to update
Field or relationship to update	Note: If updating a relationship, two additional options are displayed <ol style="list-style-type: none">1. Replace: Replace the current linked records2. Add related record: allows multiple records to be linked via this relationship
Add field or relationship	Add another setting row to update further fields or relationships

Parameters created

None

Delete

Last Modified on 26/03/2021 4:19 pm AEDT

Purpose

Deletes a selected record

Configuration

Setting	Description
Record to delete	Select the record being deleted

Parameters created

None

Clone

Last Modified on 17/04/2019 6:14 pm AEST

Purpose

Duplicate a record or clone an record from one object to another object.

Configuration

Setting	Description
Record	The record that is to be cloned
Object	<p>The object to clone to. This can be the same object as the source object or a different object</p> <p>Note: This destination object can be the same object or a different object. If it is the same object, all fields will be copied across. If its a different object, fields of the same name and type will be copied across automatically.</p>
Field or relationship to update	<p>Update additional fields or relationships. This is in addition to what is automatically copied as above.</p> <p>Two part setting.</p> <ol style="list-style-type: none">1. Select the field or relationship to update2. Select the value to update <p>Note: If updating a relationship, two additional options are displayed</p> <ol style="list-style-type: none">1. Replace: Replace the current linked records2. Add related record: allows multiple records to be linked via this relationship
Add field or relationship	Add another setting row to update further fields or relationships

Parameters created

Parameter	Type	Description
[Activity Name].Record	Record	The record created by the clone activity

Additional Notes

- **Resource Keys** can be set to restrict duplicate records. Ensure the cloned record does not violate any resource keys for that object otherwise it will fail to clone.
- Relationships are clones based on the relationship type. A property called 'Clone' is set based on the following options:
 - Drop - this relationship is dropped when record is cloned so the new record will have this relationship empty
 - Clone References - Will copy the relationship to the same record e.g. if Owner is Clone Reference, then the new record will point to the same Owner.
 - Clone Entities - A copy of the destination is also made and the new record will point to the new destination e.g. If Course has Notes with Clone Entities set, then cloning the Course will also clone all the notes, and the new notes will be linked to the new course.

Change Type

Last Modified on 17/04/2019 6:16 pm AEST

Purpose

The purpose of this activity to change the type of an existing record. This is to avoid having to create a new record and delete the old one.

Configuration

Setting	Description
Record	The record that is to be changed
Object	<p>The object to change the type to.</p> <p>Notes:</p> <p>When using the Change Type activity to change the type of a record from A to B where the type of A is T_A and the type of B is T_B:</p> <ul style="list-style-type: none">• When T_A is a base type of T_B (i.e. T_B inherits T_A) then all the fields and relationships of A will be automatically be present on the updated record• When T_B is a base type of T_A (i.e. T_A inherits T_B) then only the fields and relationships that exist on B should be present on the updated record• When T_A and T_B both derive from a common ancestor type T_C then only the fields and relationships defined for T_C will be present on the updated record
Add field or relationship	Add another setting row to update further fields or relationships

Triggers are suppressed on a **Change Type** activity, therefore no triggers are fired after the conversion.

Parameters created

Parameter	Type	Description
[Activity Name].Record	Record	The record created by the change type activity

Get Records

Last Modified on 31/08/2021 4:30 pm AEST

Purpose

Get a list of records from a selected object (**limits apply**).

Configuration

Configure either Object OR Report

Setting	Description
Object	Gets all records of the selected object
Report	Gets all records of the selected report

Parameters created

Parameter	Type	Description
[Activity Name].First	Record	The first record in the list of records
[Activity Name].List	List of records	A list of all records fetched

When a report is selected, you can also add filters that you require provided that the condition exists in the analyser of the report you have selected.

This will allow:

- Dynamic filtering
- Reducing the number of steps of workflow
- Improvement of workflow performance as result of targeted filtering
- Minimising the reports required

For Each

Last Modified on 17/04/2019 6:15 pm AEST

Purpose

Run a sequence of activities down a list of records.

As an example, an 'update' activity can be placed after the 'Loop' activity to update each record individually. At the end of the list, the activity will process through the 'Finished' exit point.

Configuration

To configure a 'For Each' activity, a list must be provided to the activity from a parameter (see [Parameters of General Workflow Activity Configuration](#)). The 'For Each' activity has two exit points:

- Loop: on each record of the provided list, the 'For Each' activity will process through the 'loop' exit (see example below). This must then be connected back to the entry point of the 'For Each' activity.
- Finished: after the entire list is processed, the activity will process through the 'Finished' exit point

Setting	Description
List	A list or records to loop through

Parameters created

Parameter	Type	Description
[Activity Name].Record	Record	The currently selected record in the 'For Each' loop

Gateway

Last Modified on 15/04/2019 3:36 pm AEST

This activity routes the process based on a calculation.

Multiple conditions can be added (based on a calculation), when a condition is found to be true, then the corresponding exit point is used to progress the workflow. As an example, a 'Gateway' activity can be used to choose a path depending on an expense amount (e.g. if expense is greater than \$1000, then follow path 1. If expense is less than \$1000, then follow path 2).

Properties

Multiple 'Conditions' can be added. Each condition is any calculation that evaluates to a true or false answer. When a condition is found to be true, then the corresponding exit point is used to progress the workflow.

If no conditions are found to be true, then the 'Otherwise' exit point is used to progress the workflow.

Note: if multiple conditions and exit points are used, then the conditions are evaluated from top to bottom.

Setting	Description
	Two Part Setting
Condition & Exit point	<ol style="list-style-type: none">1. Calculation that must be evaluated to a true/false2. Exit point name
Add new condition	Ability to add another condition and exit point

Parameters created

None

User Action

Last Modified on 15/04/2019 2:52 pm AEST

Purpose

Displays a form to the user and creates a user task. Also presents buttons at the top of the form for the user to progress the workflow. For example, a 'User Action' activity can be used to provide a manager with the ability to Approve or Reject an expense.

Behaviour

When a 'User Action' activity is used, it creates an 'Approval Task' for the specified person. This is a special type of task that links to another record. This task will be seen in any 'Task Report' accessible by the user, when the user opens the task, they will be presented with a form (as specified in the activity configuration). The user is also presented with buttons at the top of the form (corresponding to the specified user responses in the activity configuration). When the user selects one of the buttons, it will progress the workflow.

Properties

Setting	Description
For Person	The person who this action intended for
Record	The record that will be presented to the person
Form	The form that will be presented to the person
Priority	The priority of the task that is created
Task name	The title of the task that is created as seen in a task list and user messages. If left blank, the task name will default to the name given on the User Action activity label
Due date/time	The date and time when the user activity is due
Time out date/time	The date and time when the user activity will time-out
Keep completed task history	Enabling this option will keep the completed task in Task report, otherwise completed task is deleted permanently
Wait for next form	If there are multiple user actions in a row (with other activities in the middle), then enabling this option will pause the user's screen until the middle activities are complete, and then take the user to the next user action
Hide comment field	Removes the ability for the responding user to add a comment

Setting	Description
Comment mandatory	If enabled, the comment field is made mandatory and buttons are disabled until the user enters commentary.
Open in edit mode	When the form is presented to the user, automatically put the form in edit mode
User Responses	The name of the buttons presented to the user. Defaulted to 'Approve' and 'Reject', however these defaults can be changed. The 'action summary' is text that can be added to the history log if the corresponding user response is selected

Parameters created

Parameter	Type	Description
[Activity Name].completed by	Person	The person who completed the task
[Activity Name].completed task	Record	The task created by the user action activity

Auditing on User Actions

Every time a user interacts with a user action activity, such as a click of the button, a record is saved to the audit log to track each time the workflow pauses. To view the Audit log on a record, see either [Record Audit Log](#) or [Contextual Audit Log](#).

Auditing on on User Action is a workflow setting rather than an activity setting, enabling the setting will automatically audit all User Action activities for a given workflow.

To enable the audit:

1. Open the **Workflow**
2. Select Workflow **Properties** and tick **Enable audit for user action** option.

The format of the User Action Audit log is described below:

	Format	Example
Name Field:	<Workflow Owner>(<Workflow Triggered by> (<User Action Actioned By>)	Admin(john.smith)(jane.lowe) Updated 'Task 1'

	Format	Example
Description Field	Assigned to: <Acting Person>, Due: <Due date>, Actioned By: <Actioned Person>, Completed: <Completed date>, Action: <Action Summary>	Assigned to: John Smith, Due: 30/05/2017 3:35:42 AM, Actioned By: Jane Lowe, Completed: 30/05/2017 3:36:45 AM, Action: Approve

User Input

Last Modified on 16/04/2019 5:07 pm AEST

Purpose

Presents the user with an auto-generated form or a pop-up picker window, to input data for use in the workflow.

Properties

The 'user input' activity can present the user with a form or a pop-up picker to input data for use in a workflow as **Variables or Inputs**

Setting	Description
For Person	The person who is presented with this input
Record	The record that will be presented to the person when opening the task
Task name	The user input task name in the message box
Prompt	Text to display at the top of the form or in pop-up picker window
Display as	Select either Form or Pop up to display
Add Workflow Inputs or Variables	Add variables or inputs that will be displayed to the user
Save for later	Option for the user to complete the user input at a later time

Parameters created

None

User Input activity has the ability to filter one input variable list based on another. This can be configured between choice fields, lookups or even relationships.

How to set up a filtered list on a User input activity

Whether you are filtering between choice fields, lookups or even relationships, it is all dependant on a parent-child relationship and the set-up on a report and its analyser conditions. The report of the child relationship must contain the parent as a filter on the analyser.

The example below describes how to filter between Campus and Buildings lookups and assumes you already this scenario configured.

1. Open up the child report the in **Report Builder** that you would like to use for the workflow, in this case a

Building report

2. Add the Campus lookup as a condition on the **Analyser**
3. **Save** the report
4. Create a new Workflow
5. Select the **Start** activity and add select **New Input Parameters**
6. Select the object **Definition** of where you would like this workflow to be based on
7. Select **New Variable** and add to Campus details:
 1. **Name:** Campus
 2. **Type:** Record List
 3. **Definition:** Campus
8. Select **New Variable** again and add Building details:
 1. **Name:** Building
 2. **Type:** Record List
 3. **Definition:** Building
9. Add **User Input** activity to the workflow
10. In the **User Input** activity properties select **Add Workflow Inputs or Variables** for Campus:
 1. **Variable Name:** Campus
 2. **Report:** Campus Report
11. Select **Add Workflow Inputs or Variables** for Building:
 1. **Variable Name:** Building
 2. **Report:** Building Report
 3. Select the funnel icon and **Add Filter** and select the parent in **Filter by field** and **Parameter**
12. **Save** the workflow

Send Email

Last Modified on 03/11/2022 9:24 am AEDT

This activity sends an email to a single address or a list of addresses.

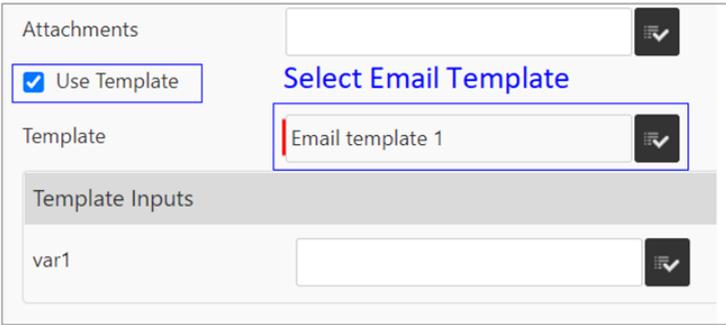
Properties

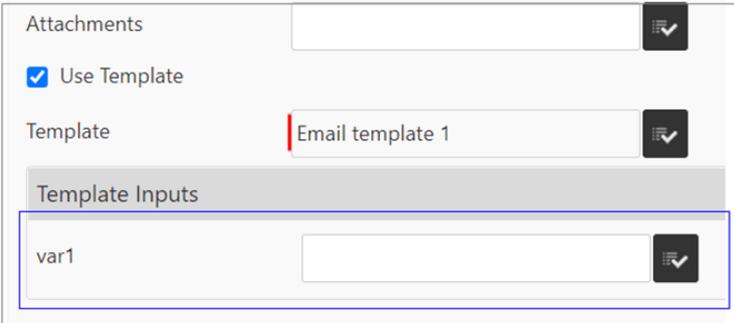
The 'Send Email' activity can be used to send to a list of addresses or an individual email account. Depending on whether sending to a list or individual, the following settings must be configured:

Setting	Description
Email To	<ul style="list-style-type: none">• Email Address - Send to a specific email address• Recipients - send to a single or list of people

Send to a Specific Email Address

Setting	Description
To Address	<p>The email address to send to</p> <p>Note: if typing in an email address directly, enclose the email address in single quotes e.g. 'email@example.com'</p>
CC Address	<p>The email address to CC to</p> <p>Note: if typing in an email address directly, enclose the email address in single quotes e.g. 'email@example.com'</p>
BCC Address	<p>The email address to BCC</p> <p>Note: if typing in an email address directly, enclose the email address in single quotes e.g. 'email@example.com'</p>

Setting	Description
No Reply	<ul style="list-style-type: none"> • Set True: Do not accept replies • Set False: Accept Replies
Reply to Inbox	Which of the Inboxes to reply to
Subject	<p>The subject line of the email</p> <p>Note: if typing in text directly, enclose the email address in single quotes</p>
Body	<p>Body text</p> <p>Note: if typing in text directly, enclose the email address in single quotes</p>
Attachments	<p>Attachments to send with the email. Usually from an Export To activity or Generate Document activity</p>
Use Template	<p>Ticking this box will present the option to select an email template.</p> <p>Note: Subject and Body fields defined in the Email template will be used in the email instead of Subject and Body fields defined above.</p> 

Setting	Description
Template Inputs	<p>This section will show all the input variables defined in the selected Email Template. The value of the variables can be set here.</p> <p>See 'Variables' section under Email Templates page for more information.</p> 

Send to list of person or List of people

Setting	Description
Recipient List	A list of people or single person that you want to send an email to; use where people are represented as records
TO Address	The field on the "Person" record in which to send the email to
CC Address	The field on the "Person" record in which to CC the email to
BCC Address	The field on the "Person" record in which to BCC the email to
No Reply	<ul style="list-style-type: none"> • Set True: Do not accept replies • Set False: Accept Replies
Reply to Inbox	Which or the Inboxes to reply to
Subject	<p>The subject line of the email</p> <p>Note: if typing in text directly, enclose the email address in single quotes</p>

Setting	Description
Body	Note: if typing in text directly, enclose the email address in single quotes
Attachments	Attachments to send with the email. Usually from a Generate Document or Export To activity.

Parameters created

Parameter	Type	Description
[Activity Name].Sent Emails	List of records	A list of emails sent out.

User Message

Last Modified on 18/04/2019 10:20 am AEST

Purpose

The 'user message' activity can be configured to send a message to a particular user (or list of users) as part of a workflow. The message will appear as a pop-up at the bottom right of the users screen (if they are logged in) and also added to the 'Notification Tray' in the top right menu bar.

As an example, a 'User Message' activity can be used to inform the user that a new record has been created as a result of the workflow run.

A 'create link' activity can be used prior to the 'user message' activity to embed a link to the user message that is displayed to the user. As an example, a user message can be used to inform the user that a new record is created and include a link to that record.

Configuration

The 'User Message' activity can be used to send to a list of people or an individual one. Depending on whether sending to a list or individual, the following settings must be configured:

Setting	Description
Sent To	Whether this message intended for 'Specified Person', 'List of People' or 'Workflow Initiator'
Person (Note: this field only appears when 'Send To' field is set to 'Specified Person')	The person who will receive this message
Recipient List (Note: this field only appears when 'Send To' field is set to 'List of People')	A list people who will receive this message

Setting	Description
Message Text	The actual message to be displayed to user. It could be set with specified with fixed message, or referring to an expression by calculation, parameter or a record.

Parameters created

Parameter	Type	Description
[Activity Name].Sent Message	Record	The message sent out by the User Message activity

Launch Person Campaign

Last Modified on 17/04/2019 6:20 pm AEST

Purpose

Create and launch a person-based survey campaign. See [Surveys](#).

Configuration

This activity will create and launch a survey campaign and send a survey task link to a list of nominated people.

Setting	Description
Survey	The survey to use
Recipients	The person or people that this survey is sent to
Target Object	If required, a survey can also be set against records of an object
Target Record	If required, a survey can also be set against records of an object.
Task Name	The title of the task that recipients will see in their task list. If no name is given, the task title will default to the survey name.
Due Date/Time	The date and time by which the survey must be completed
Pause Until Completed	Waits until all surveys have been completed before the workflow continues

Parameters created

Parameter	Type	Description
[Activity Name].Responses	Record	The record linking to the survey responses.

Launch Target Campaign

Last Modified on 17/04/2019 6:21 pm AEST

Purpose

Create and launch a target-based survey campaign. See [Surveys](#).

Configuration

This activity will create and launch a survey campaign based on one or more records and send to a nominated person.

Setting	Description
Survey	The survey to use
Targets	The record(s) that the survey is generated for
Survey Taker	The person that this survey is sent to
Target Object	if required, a survey can also be set against records of an object
Task Name	The title of the task that recipients will see in their task list. If no name is given, the task title will default to the survey name.
Due Date/Time	The date and time by which the survey must be completed
Pause Until Completed	Waits until all surveys have been completed before the workflow continues

Parameters created

Parameter	Type	Description
[Activity Name].Responses	Record	The record linking to the survey responses.

Assign to Variable

Last Modified on 17/04/2019 6:21 pm AEST

Purpose

Assign a specified value to a predefined Variables.

Configuration

Setting	Description
Value	The value to be assigned to the variable
Variable	The variable to be updated

Parameters created

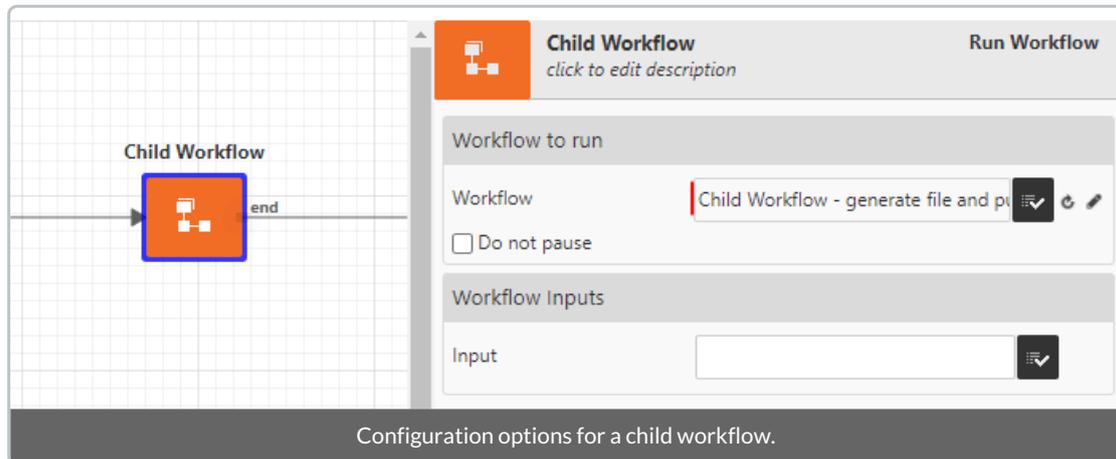
Parameter	Type	Description
[Activity Name].resource	Record	The record created by the activity

Run Workflow

Last Modified on 12/10/2020 3:41 pm AEDT

Purpose

This Activity runs a child workflow from within a parent workflow. Depending on the child workflow chosen the it may require inputs from the parent workflow and/or return a result depending on its outputs.



Time Saving Tip:

When working with child workflows you can navigate directly to the child workflow from the parent workflow by clicking the workflow and then clicking the 'edit' icon next to the workflow picker.

Configuration Options

Setting	Description
Workflow	The workflow to be run
Do not pause	Enable if the parent workflow should continue processing while the child workflow runs. Disable if the parent workflow should wait for the child workflow to finish.
Inputs	Depending on the workflow chosen above, a list of Inputs will be displayed to be configured. These are the inputs required to run the chosen workflow and can be selected from a list of parameters or based on a calculation.

Parameters created

Various parameters may be created, depending on the **Outputs** of the chosen workflow.

Create Link

Last Modified on 17/04/2019 6:23 pm AEST

Purpose

Create a link to record, which then can be embedded in an email

Configuration

Setting	Description
Resource	The selected record that a link will be generated for

Parameters created

Parameter	Type	Description
[Activity Name].link	Record	A link to the chosen record above. Can be used in an email activity

Log

Last Modified on 17/04/2019 6:22 pm AEST

Purpose

Record a message to the system log.

Configuration

Setting	Description
Message	The message to be written to the system log
Object	Optional setting to link this log message to a record. See Audit Log

Parameters created

None

End Event

Last Modified on 23/05/2019 12:38 pm AEST

This will add another exit point to the workflow. All the exit points in a workflow will be visible as exit points in **Run Workflow** activities that call the workflow.

Sequence to End

Last Modified on 23/05/2019 12:37 pm AEST

This is not an activity but rather a shortcut to link the current activity to the default end event. If more than one exit point is required then the appropriate activity is the [End Event](#).

Generate Document

Last Modified on 17/04/2019 9:58 pm AEST

Purpose

Generate document based on a report template. See [Document Generation Templates](#).

Configuration

This activity will create a document based on the settings below. The document is stored in **Documents Library** under **Generated** Section.

Setting	Description
Document Template	The document template to use
Data Source	The starting record used to populate the document template
Generated Name	The name of the generated document

Parameters created

Parameter	Type	Description
[Activity Name].document	Document Record	The document record created by the activity

Export To

Last Modified on 17/04/2019 9:58 pm AEST

Purpose

Export data from a report.

Configuration

This activity creates a document based on the settings below. The document is stored in **Documents Library** under **Documents** Section.

Setting	Description
Report	The report which contains the data to be exported
File Name	The name of the file that will be created
Format	The file format to export. (csv, Excel, Word)

Parameters created

Parameter	Type	Description
[Activity Name].document	Document Record	The document record created by the activity

FTP Fetch

Last Modified on 04/04/2023 10:01 am AEST

Purpose

Fetch a file from a remote server via FTP.

Configuration

Setting	Description
URL	Path of FTP server and file name. The URL protocol must be 'ftp' or 'sftp'.
Credentials	The credentials to use when fetching the file.

Parameters created

Parameter	Type	Description
[Ftp fetch.File]	File	A file that fetched over via FTP Fetch activity. Can also be used in conjunction with Import Spreadsheet Activity .

Output Paths

- Success
- Failure

Unsupported file types

Any files with the following extensions will be blocked from being uploaded.

application, .bat, .cmd, .com, .cpl, .exe, .gadget, .hta, .inf, .jar, .js, .jse, .lnk, .msc, .msh, .msh1, .msh1xml, .msh2, .msh2xml, .mshxml, .msi, .msp, .pif, .ps1, .ps1xml, .ps2, .ps2xml, .psc1, .psc2, .reg, .scf, .scr, .vb, .vbe, .vbs, .ws, .wsc, .wsf, .wsh

FTP Put

Last Modified on 17/04/2019 10:00 pm AEST

Purpose

To be able to schedule the generation of a report that is uploaded to a ftp server

The exported filename can be customised in the URL setting of the activity. For example: FILENAME_YYYYMMDD.csv, where the date is appended each day to the report.

Configuration

Setting	Description
	Choose from either:
File	<ol style="list-style-type: none">1. An existing file from the Document library; or2. A generated report. This also requires Export activity to generate a nominated report and then is passed a parameter into the FTP Put activity
URL	FTP server path and file name. The URL protocol must be 'ftp' or 'sftp'.
Credentials	The credentials to use when uploading the file.

Parameters created

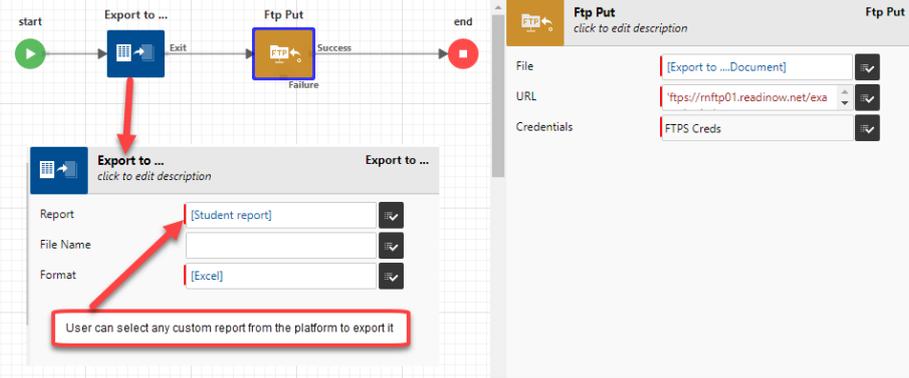
Parameter	Type	Description
[Ftp fetch.File]	File	A file that fetched over via FTP Fetch activity. Can also be used in conjunction with Import Spreadsheet Activity

Output Paths

- Success
- Failure

Screenshot: FTP Put implementation example

Ftp Put*



Import Spreadsheet

Last Modified on 13/06/2019 12:54 pm AEST

This workflow activity is used to import an excel or CSV file into an object.

Purpose

Import data from spreadsheet.

Configuration

Setting	Description
Import Configuration	Configuration used to do spreadsheet import.
Import File	Data file to import.

Parameters created

None.

Prerequisites when using this activity:

- An existing [Import Spreadsheet](#) configuration for the corresponding object must be available
- The excel or CSV file must be in the [Documents](#) library
- Dates should be formatted as [ISO 8601](#) to avoid time zone ambiguity - see [General Settings](#) for time zone settings

This activity can be also used in conjunction with FTP fetch activity to retrieve a file.

Notify

Last Modified on 11/06/2019 11:00 am AEST

Prior to using this activity, a notification provider must be setup. See [SMS Notifications](#)

Purpose

Send SMS notifications to a list of people

Configuration

Setting	Description
People	A list of people to send the message to. Note: the message is sent to the person's 'business email'
Message	The message to be sent. Note: if typing in text, use single quotes e.g. 'This is the message'
Link to record	Optionally link the send records to another record in the system
Wait for replies	If selected, the activity will pause until all respondents have replied. If not selected, the workflow will progress immediately
Accept Replies for	If the above 'wait for replies' is selected, the workflow will wait a set amount of time before progressing the workflow
Workflow to run on replies	Only the first matching workflow will be used. Two part configuration: <ul style="list-style-type: none">• <i>Reply contains:</i> the text to match in the reply message• <i>Workflow to run:</i> the workflow to run if the text matches
Add workflow replies	Add more workflow reply conditions

Parameters created

Parameter	Type	Description
[Activity Name].Notification Record	Record	The record of the notification created by the activity

- If a person replies, the reply is linked to the latest message sent to that person
- Mobile number formats for Australian numbers must be in the format of 04 or +614

API Callout

Last Modified on 16/05/2019 3:23 pm AEST

This is a task that requires technical skills.

The following is necessary to consume an API :

1. API documentation
2. An API account (unless it is a public service that has no authentication)

Step 1: Configuring an API Callout

The API documentation must provide the following:

1. authentication scheme (API key, basic, custom and OAuth are supported)
2. data format (JSON, text and XML are supported)
3. the URL
4. sample requests and responses

See [Configuring an API Callout](#) and for examples and instructions to set up the API; once configured it can be consumed in workflows using the API Callout activity as described in the same article.

Step 2: Consuming the API in a Workflow

After adding the API Callout activity, subsequent activities in the workflow can then access the output of the API callout as variables. If the API Callout activity was not renamed then the output is referenced by [API Callout.Reponse] and any value in the output can be referenced by following the schema as shown in [Configuring an API Callout](#).

Data integration that relies on external systems and third parties can easily stop working. It is worth checking the API response codes in the workflow to ensure that API failures generate notifications or take alternative steps, otherwise a broken integration could go unnoticed.

Triggers Overview

Last Modified on 17/04/2019 10:06 pm AEST

A trigger is something that is used to start a workflow running.

Generally, there are two types of triggers:

- Trigger on Create/Update
- Trigger on Schedule

Object Event Triggers

Last Modified on 16/04/2019 6:55 pm AEST

This type of trigger depends on the create or update event occurring on an object.

Adding a Trigger on Create/Update

To add a trigger on create/update:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Workflows**. The Workflows expand to display list.
4. Select **Triggers**. The existing Triggers display.
5. In TRIGGER ON CREATE/UPDATE, select **+NEW**. The Trigger on Create/Update form displays.
6. Type the name for the trigger in the **Name** field.
7. Type the description for the trigger in the **Description** field.
8. In the **Application** field, select the Pencil icon. The Select Application dialog appears.
9. Select the application you want and select **OK**.
10. Complete the fields, including:
 - Trigger on: choose trigger on Create, Update or both
 - Object to trigger on: choose the object on which the create or update behaviour will trigger relevant event
 - Workflow to run: specify which workflow to run when trigger condition is met
 - Specify Field or Relationship to Trigger On with corresponding tab: select Link to Existing icon.

- The Select dialog appears. Select **OK** to confirm
11. Select **Save** to save the trigger.

Schedule Triggers

Last Modified on 22/05/2019 12:17 pm AEST

This type of trigger is determined on a defined [Schedule](#) in ReadNow.

Adding a new Trigger on Schedule.

To add a new Trigger on Schedule:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Workflows**. The Workflows expand to display list.
4. Select **Triggers**. The existing Triggers display.
5. In TRIGGER ON SCHEDULE, Select **+NEW**. The Trigger on Schedule form displays.
6. Type the name for the trigger in the **Name** field.
7. Type the description for the trigger in the **Description** field.
8. In the **Application** field, select the Pencil icon. The Select Application dialogue appears.
9. Select the application you want and select **OK**.
10. Complete the fields, including:
 - Workflow to run: specify which workflow to run when trigger condition is met
 - Specify schedule: select Link to Existing
 - Select a schedule in the **Select Schedule** dialogue and select **OK** to confirm
11. Select **Save** to save the trigger.

Defining Schedules

Last Modified on 16/05/2022 2:24 pm AEST

This page explains how to setup schedules to run workflows (similar settings can be used for scheduled Import/Export of Configuration). There are three types of schedules:

- Once-off
- Daily
- Cron

Warning: Be aware of the transition hours for daylight saving. Avoid schedules that run between 2:00 AM and 3:00 AM hours during transitions in and out of daylight saving time.

Once-off

Once off schedules are useful for situations where you need to run a workflow a specific time, but (as the name implies) only once. To add a Once Off Schedule:

1. In the **Administration** area select **Workflows > Schedules**.
2. In ONCE OFF SCHEDULE, select **+NEW**. The Schedule One Off form displays.
3. Add a Name and Description for the schedule.
4. In the **Application** field, select the Pencil icon. The Select Application dialogue appears.
5. Select the Application you want and select **OK**.
6. Complete the Date and Time field : a specified date and time
7. Select **Save** to save the schedule.

Daily

To add a Daily Schedule:

1. In the **Administration** area select **Workflows > Schedules**.
2. In DAILY REPEAT SCHEDULE, select **+NEW**. The Schedule Daily Repeat form displays.
3. Add a Name and Description for the schedule.
4. In the **Application** field, select the Pencil icon. The Select Application dialogue appears.
5. Select the Application you want and select **OK**.
6. Complete the fields, including:
 - Days: the days of the week the schedule applies to
 - Time of day: specified time of the day
7. Select **Save** to save the schedule.

Cron

Cron is a highly flexible scheduling tool, ReadiNow uses a 'Quartz Scheduler' and the Quartz variant of cron. To use cron with ReadiNow you need to understand the basics of a 'cron expression'. A workflow can be triggered by multiple schedules.

The following steps explain how to setup a schedule based on a cron expression:

1. In the **Administration** area select **Workflows > Triggers**.
2. Click **+New** from the 'Trigger on Schedule' container. The Trigger on Schedule form displays.
3. Add a Name and Description for the schedule.
4. In the **Application** field, select the Pencil icon. The Select Application dialogue appears.
5. Select the Application you want and select **OK**.
6. Complete the fields, Workflow to run: specify which workflow to run when trigger condition is met
7. Specify schedule: select **+New > Schedule Cron**. The Schedule Cron form displays.
8. Add a Name and Description for the schedule.
9. Enter a cron expression in the 'Cron definition' field.
10. Click **Save** to save the trigger.

Testing Workflows

Last Modified on 16/08/2021 3:52 pm AEST

Workflows can be tested to ensure they perform as expected.

The Run workflow page can be accessed either through Workflow Builder or the Workflow Report.

Accessing the Run Workflow Page

To access the Run Workflow Page:

1. Open the tenant administration page [more](#)
2. In the Left Navigation Area, select **Workflows**. The Workflows expands to display list.
3. Select **Workflows**. The existing Workflows display.
4. Option 1: access via the Workflow Builder
 1. Select the Workflow that requires testing.
 2. Ensure the workflow is saved after any modifications.
 3. Select the **Run** button from the right left hand action menu.
5. Option 2: access via the Workflow Report
 1. Right click on the Workflow that requires testing. The menu appears
 2. Select 'Start <your workflow>'.
6. See Running a Workflow Test, below for how to perform a test.

Running a Workflow Test

Be careful when testing a workflow that modifies or deletes records. It is recommended that test data is entered beforehand to test the workflow where there are records being modified or deleted.

To run a workflow test:

1. In the input text box, select the record that you would like to run the workflow against. If you do not have any, go back and enter test sample data.
2. **Enable Trace**: select this if you would like to see the detailed steps of each activity action. Particularly handy for both troubleshooting issues and when workflows have loops and more complex evaluation to ensure the correct flow is taken.
3. **Open Follow-up tasks**: select this if your workflow contains a [User Action](#), [User Input](#) or [Review Survey](#) activity. This option will open up any tasks that are generated by the workflow by these activities.
4. Select **Run**.

In summary, the results will show whether the workflow run was successful. If the workflow was not successful, use the trace steps to determine where the cause may lie in the workflow.

It is recommended that all possible paths are tested so that any issues can be fixed prior to releasing the workflow.

To assist with troubleshooting a workflow, use the Log activity to write results of a particular action to a log, to help determine the cause. This information can also be used with the [Workflow Runs](#).

Workflow Runs

Last Modified on 23/05/2019 1:01 pm AEST

The Workflow Runs report displays a list of past instances and running instances of workflows that have been triggered. This report is useful in ensuring workflows are running as expected and it is recommended that this be checked on a regular basis. Alternatively, a notification workflow could be set up to send alerts for failing workflows.

Viewing Details of Workflow Runs

To view the details of Workflow Runs:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at landing page.
3. In the Left Navigation Area, select **Workflows**. The Workflows expands to display list.
4. Select **Workflow Runs**. The Workflow Runs display.
5. Select the Workflow Run you want.
6. Select **ACTION**. The menu appears.
7. Select **View**. The Workflow Run displays.

The workflow run record displays all the information of the running workflow such as who triggered, when it was triggered, how many actions its taken and etc. More importantly, it also shows you any **Log Messages** that logged as a result of the **Log activity** if it was used in the workflow. This is helpful when troubleshooting a workflow.

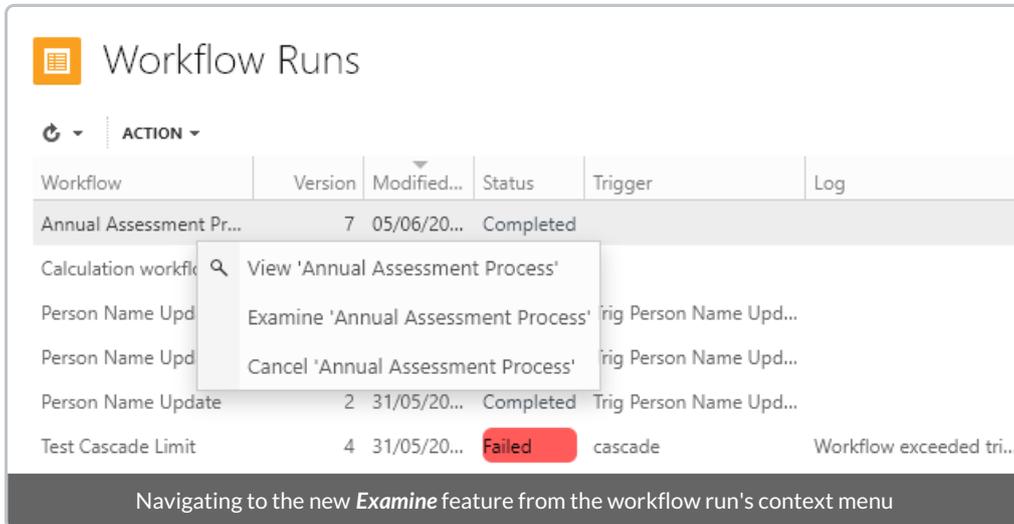
Workflow Run States

Status	Description
Queued	Indicates that the workflow is queued up to run.
Paused	Indicates that the workflow paused because it is waiting on an action from a user.
Failed	Indicates that the workflow has failed.
Completed	Indicated that the workflow has completed.
Long Running	Indicates that the workflow requires significant processing and is running in the background.

Examine Run

Last Modified on 04/12/2019 5:17 pm AEDT

Administrators can trouble-shoot workflow execution by using the **Examine** context menu option.



This will show summary page with details that can be separately enabled. The blue buttons toggle the detail shown below them, and the number of buttons shown depends on what activities are in the workflow, as well as the state of the workflow; for example, a workflow will have state information while if is paused or running that is not available once it is complete. Clicking in the toolbar will toggle the display of the various types of data available, where items with the blue are shown and those with grey are hidden.

Workflow: Annual Assessment Process (27330)

State: Paused

Started at: 6/5/19 1:08 PM

Completed at: 6/5/19 1:08 PM

Last updated: 6/5/19 1:08 PM

Duration (ms): 1076

Correlation code: S07285-P01960:workflowRun:27330-Z354821-051308

Inputs

Variables

Steps taken

Time in activities

Activity outputs

Showing: Activity outputs, Variables

Variables

year: 2019

subject: Expiry Notification

Activity outputs

Launch Person Campaign

Responses: [Unnamed] (27388)

An example of state information for a paused workflow

Workflow: Annual Assessment Process (27330)

State: Completed

Started at: 6/5/19 1:08 PM

Completed at: 6/5/19 1:17 PM

Last updated: 6/5/19 1:17 PM

Duration (ms): 1095

Correlation code: S07285-P01960:workflowRun:27330-Z354821-051308

Inputs

Steps taken

Time in activities

Child runs

Showing: Child runs, Time in activities

Time in activities

Activity	Total evaluate inputs (ms)	Total run (ms)
Launch Person Campaign	608	464
Run Workflow	0	9

Child runs

Calculation workflow (27390)

The same workflow once it is completed

State information

Inputs

This the input parameter(s) to the workflow, which link to the object's view form.

Variables

The current variable values are shown in this section.

Steps taken

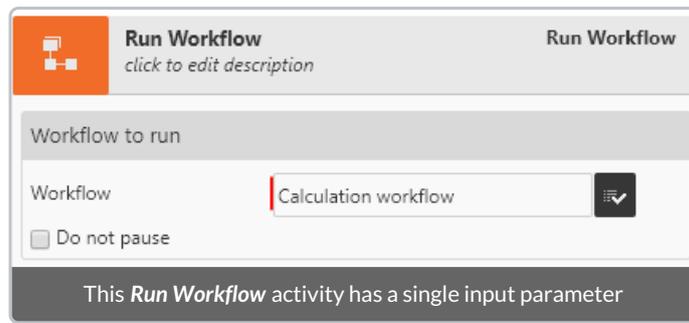
This is the ordered sequence of activities (limited to the last 200).

Time in activities

Summary activity information is shown here in milliseconds, divided into preparation time (**Total evaluate inputs**) and running time (**Total run**).

Total Evaluate Inputs

This is the preparation time taken for all an activity's parameters to be evaluated, including calculation of any calculation parameters.



The **Run Workflow** activity had only one parameter without any calculations, so **Total evaluate inputs** was zero.

Total Run

This is the time take for the execution of an activity, excluding the preparation time. Expect this to be high for user interaction, network communication, or processing numerous records; conversely, it would be low for the **Assign to Variable** or **Gateway** activity.

Activity outputs

These are tasks generated by the workflow, such as from a **Launch Person Campaign** or **User Action** activity.

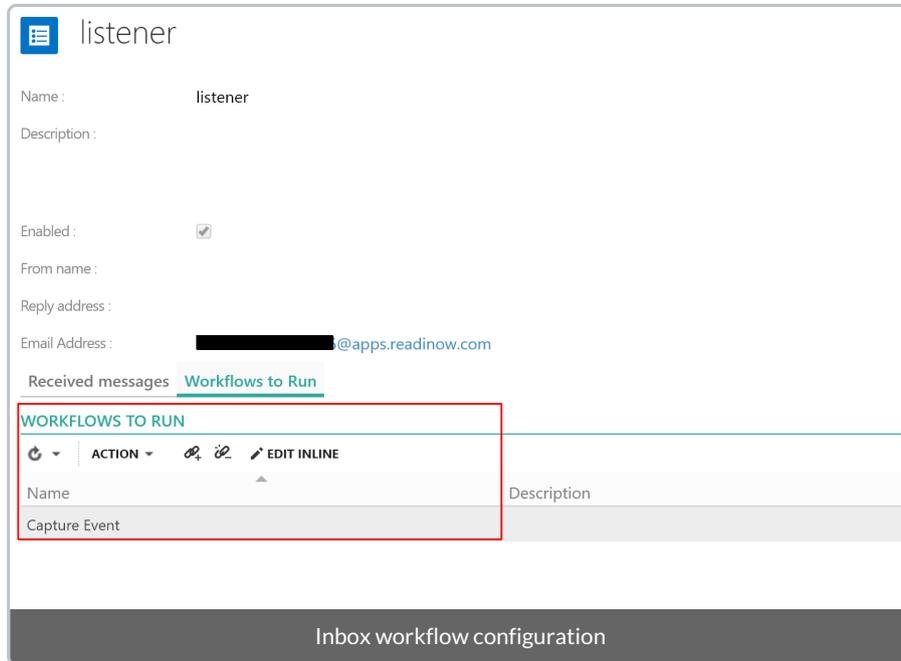
Child runs

This section lists workflows that were initiated from the current workflow by a **Run Workflow** activity. The workflow name can be selected to navigate to the child workflow.

Inbox Workflows to Run

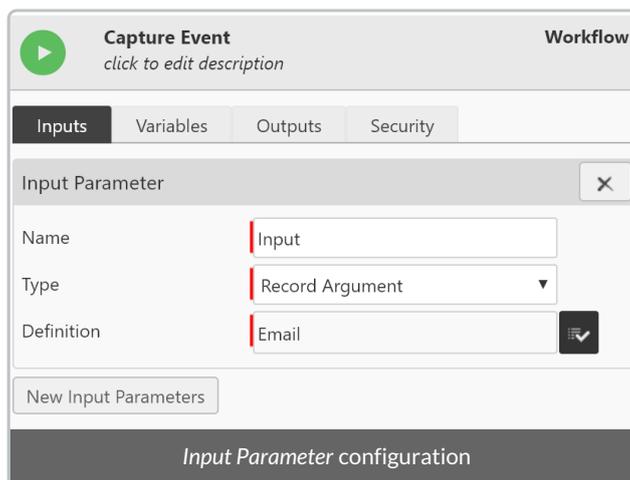
Last Modified on 04/09/2019 3:58 pm AEST

Inboxes support the use of workflows to process the incoming emails, as shown below where a workflow named *Capture Event* will run for every received email.



Input Parameters

In order to access the received email, the *Input Parameter* must be set to an *Email type Record Argument* as shown here. It is then possible to access the email subject, body, attachments and recipients in calculations.

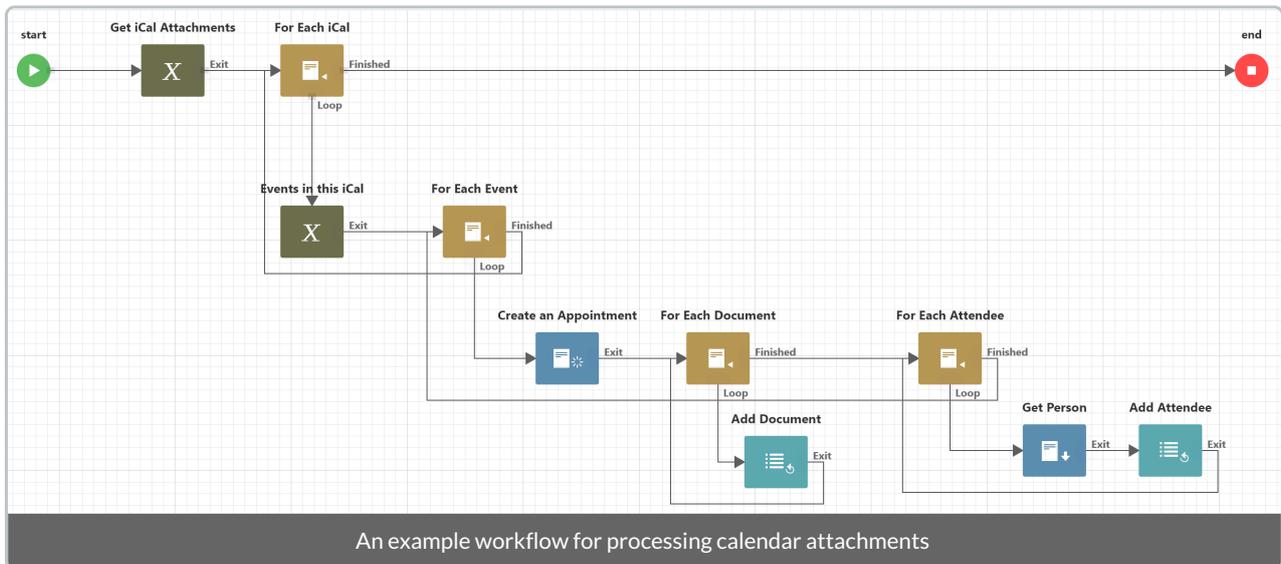


Calendar Attachments

Inboxes will automatically recognise [RFC 5545](#) calendar attachments on incoming emails. This enables the access of the event data through the following calculation:

```
[Input].[Calendar attachments]
```

Each attachment has one or more events, each of which has one or more attendees; this hierarchy can be followed in the calculation editor via the prompts. As an example, the calculation above has [Events] as a possible field choice in the calculation editor.



Use Cases

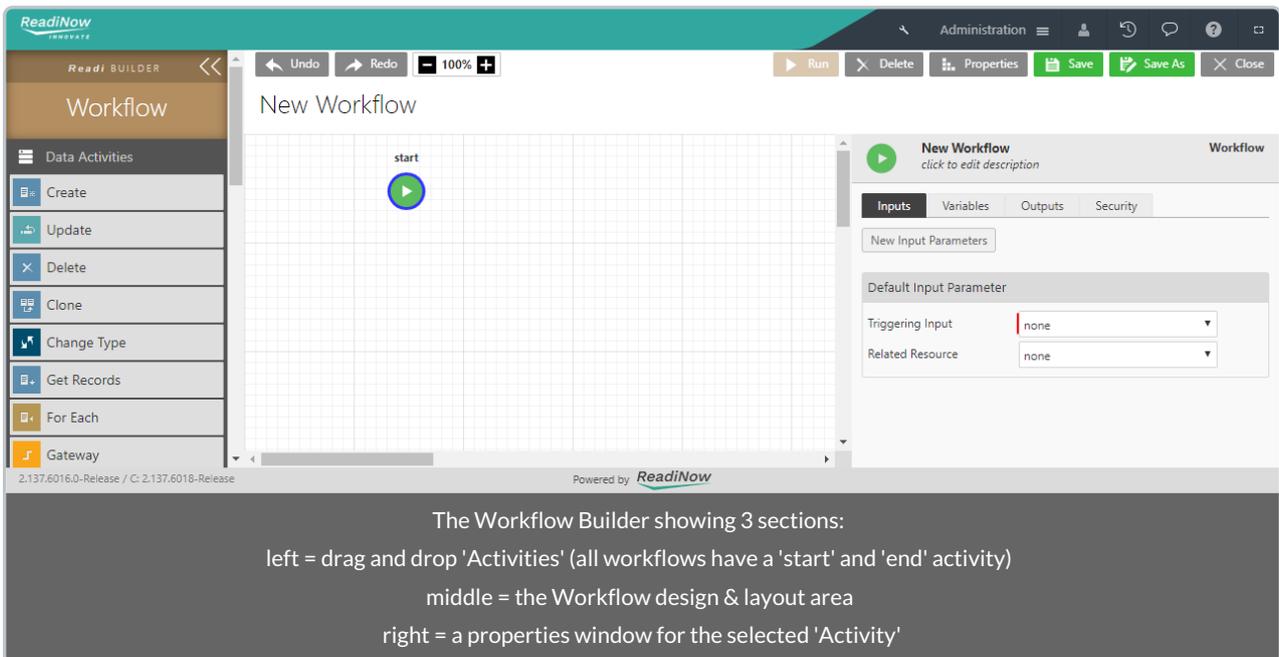
Inbox workflows can be used for automated ticketing on a support email address, or to record meeting requests against companies in an application, using smart matching of the sender email to a company domain.

Connect a Workflow to an API Callout Library

Last Modified on 26/03/2020 2:23 pm AEDT

This article provides a minimal worked example to demonstrate how to add an API Callout to a Workflow. It uses the {{Open Weather Map}} API as an example and assumes the API has already been set up and configured in the API Library.

When you setup a new Work Flow, it will look like this:

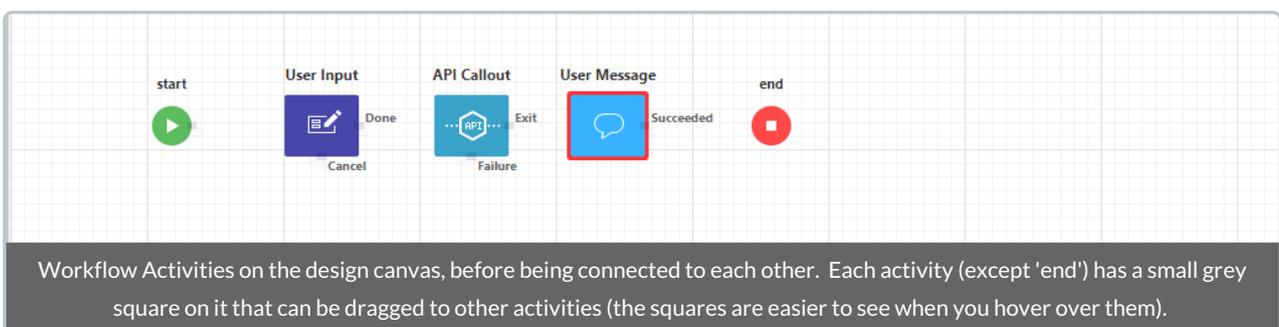


Drag-and-Drop activities onto the design area

In this example the API takes an 'Argument' called {city}, and returns information about the weather in whichever city was 'passed' to the API.

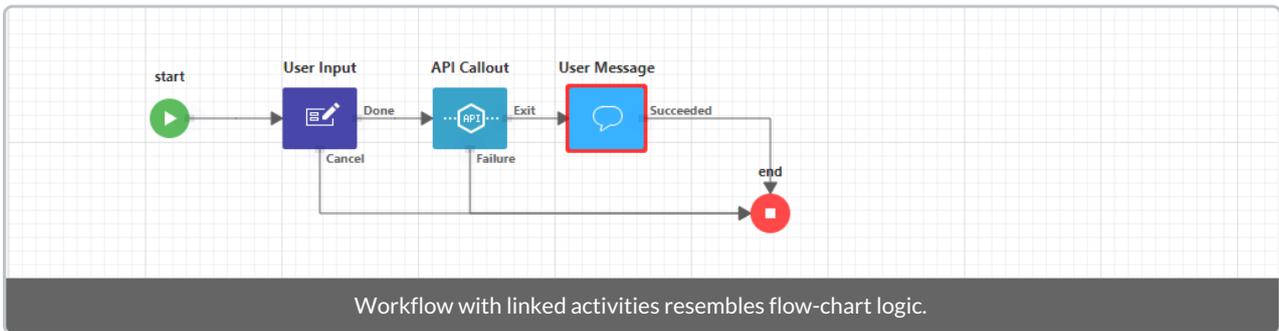
To achieve this we will drag-and-drop the following Activities to the Workflow:

1. User Activities > User Input (*prompts user to enter a city*)
2. Other Activities > API Callout (*calls the API, gets raw data for the city*)
3. User Activities > User Message (*displays specific weather information*)



Link the activities

Once the Activities are linked together the workflow should look something like:

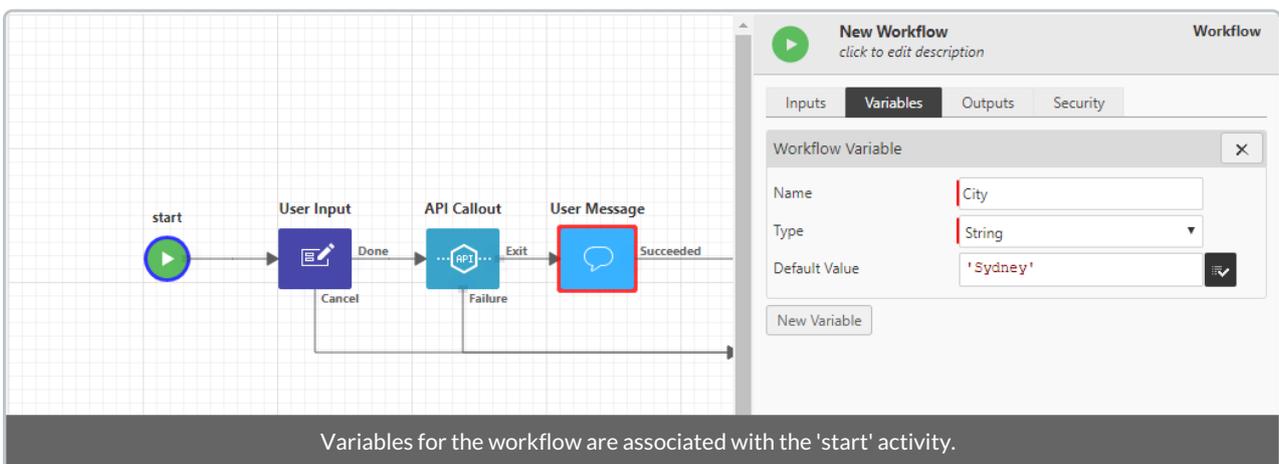


To achieve drag connectors from:

1. 'start' onto 'User Input'
2. 'User Input Cancel' onto 'end'
3. 'User Input Done' onto 'API Callout'
4. 'API Callout Exit' onto 'User Message'
5. 'API Callout Failure' onto 'end'
6. 'User Message Succeeded' onto 'end'

Setup the Workflow Variable for passing the {city} argument to the API

The Workflow needs to have a variable to pass to the API {city} argument, variables can be in the configuration options for the 'start' activity. Once it is set up it should look something like this.



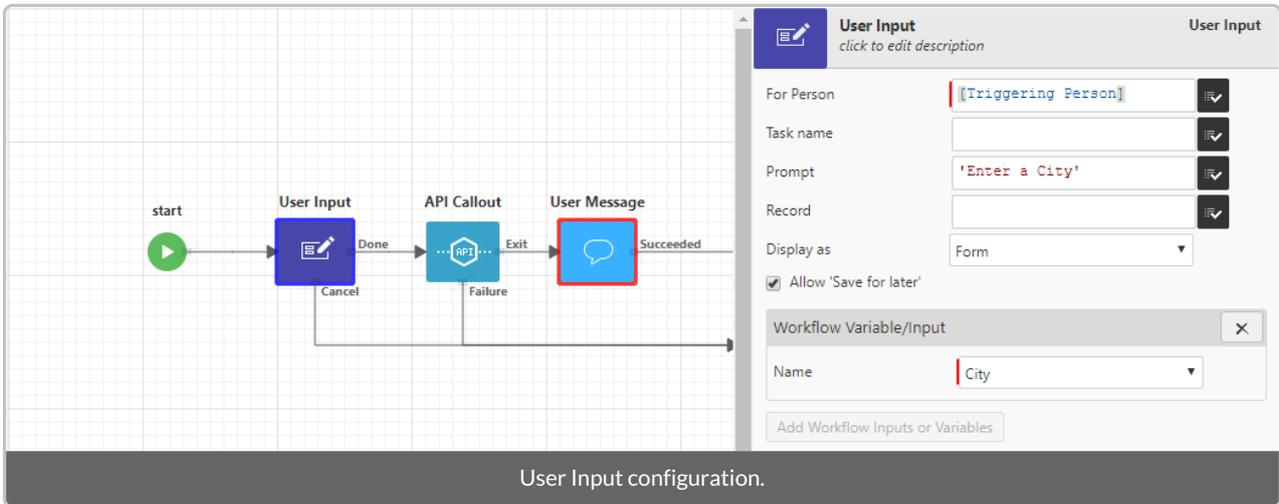
To achieve this, navigate to the 'Variables' tab, then:

1. Click on 'New Variable'
2. Give the variable a Name (it does NOT have to be 'city')
3. Select 'string' as the variable type
4. Optionally, enter a 'default value'

Setup the User Input

The workflow needs to pass a 'city' to the API and since the API can check the weather in any city we thought it would be sensible to ask the user to enter a city. In this example when the workflow is run, a form will appear and the person who initiates the workflow (i.e. the 'Triggering Person' will be prompted to enter a city.

The city that the person specifies will be save to the variable called 'City'.

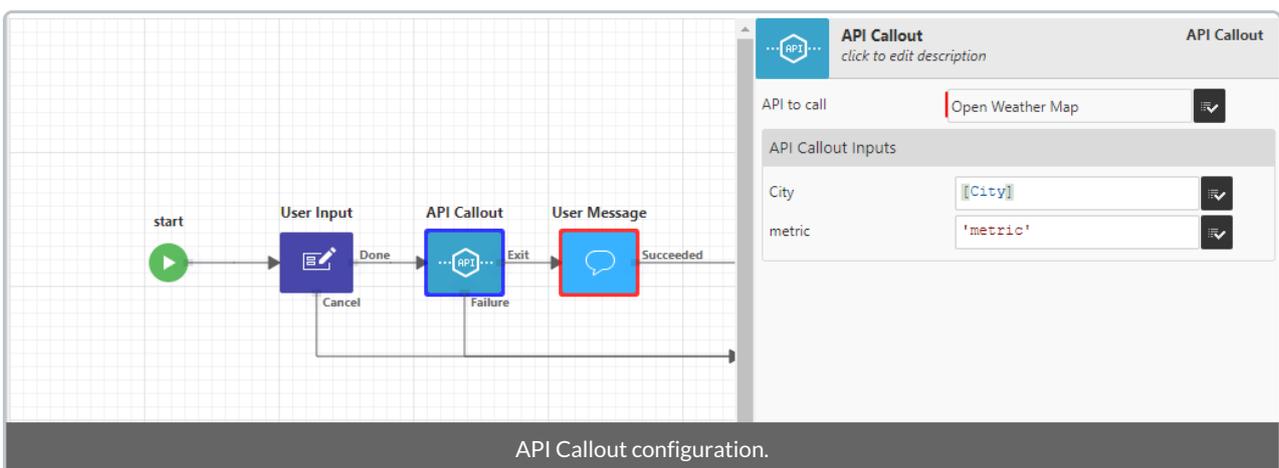


To achieve this, select the User Input activity, and:

1. Click on the for 'For Person' > 'Select Parameter' > choose: [Triggering Person]
2. For the Prompt type the text as shown (must include the 'single quotes')
3. From the 'Display As' drop down, select: Form
4. Associate the input with the variable 'City'

Setup the API Callout

Once configured the API Callout activity should look like:

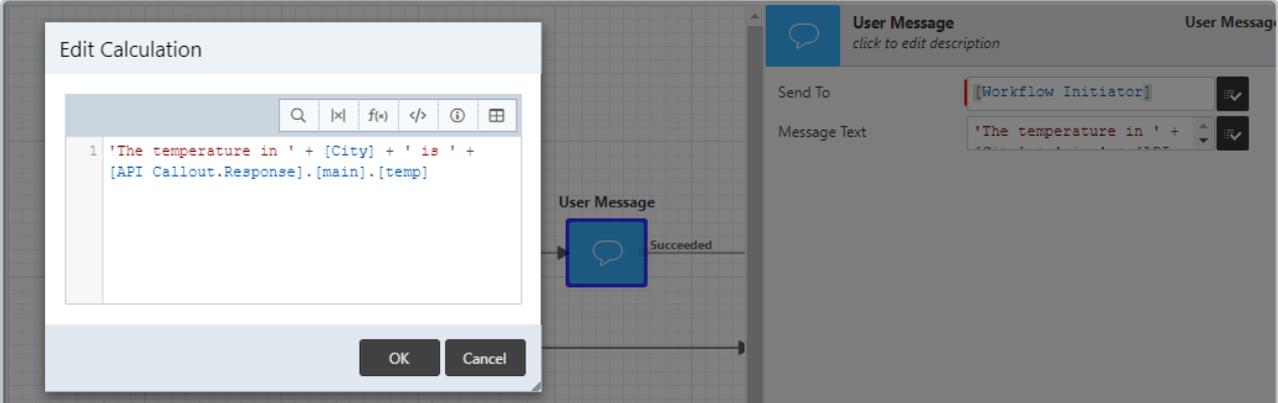


To achieve this:

1. For 'API to call', click on the and select the 'Open Weather Map'
2. For the 'City' input, click on the and select 'Select Parameter' > choose 'City'
3. For the 'metric' input, click on the and select 'Calculation' > type: 'metric'

Setup the User Message

If the API call is successful it will return a response (similar to the one in the response template) AND we will want to display a message that includes the name of the 'city' and the current 'temperature'.



The screenshot shows the workflow editor interface. On the left, the 'Edit Calculation' dialog is open, displaying a code editor with the following text:

```
1 'The temperature in ' + [City] + ' is ' +  
[API Callout.Response].[main].[temp]
```

Below the code editor are 'OK' and 'Cancel' buttons. In the background, a 'User Message' activity is visible on the canvas, with a 'Succeeded' label. On the right, the configuration panel for the 'User Message' activity is shown, with the following settings:

- Send To: [Workflow Initiator]
- Message Text: 'The temperature in ' + [City] + ' is ' + [API Callout.Response].[main].[temp]

At the bottom of the screenshot, a text box contains the following text:

Message Text in the Calculation editor, the user message will display something like:
"The temperature in Sydney is 19.420"

To achieve this:

1. Click on the for 'Send To' and select '[Workflow Initiator]'
2. Click on the for 'Message Text' and:
 - type: 'The temperature in ' +
 - click on the parameters button, select: 'City'
 - type: ' + ' is ' +
 - click on parameters button, select: 'API Callout.Response'
 - type: `[main].[temp]`

Note:

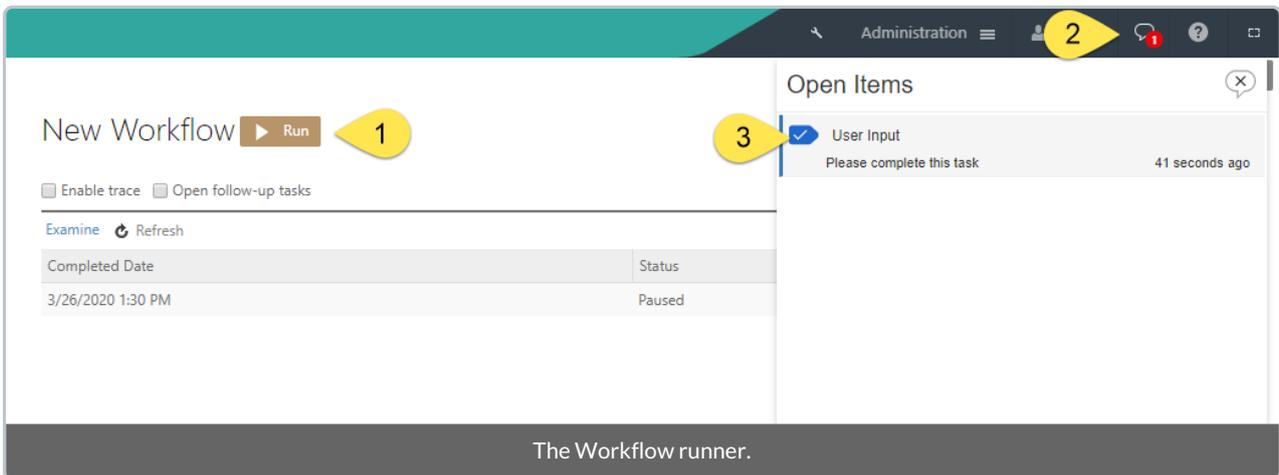
`"[main].[temp]"` is from the API sample response.

Manually Run a Workflow

Last Modified on 26/03/2020 1:55 pm AEDT

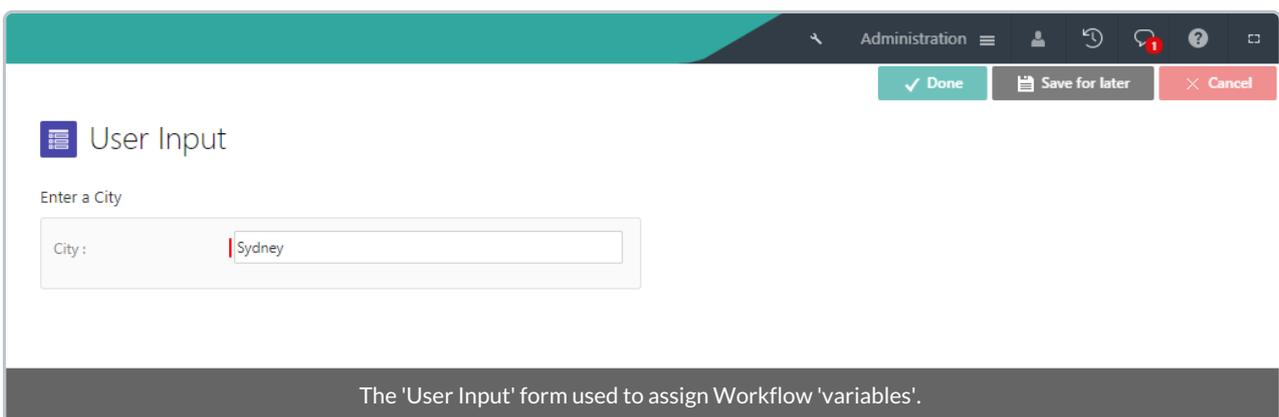
Explains how to 'run' a Workflow manually. This example is based on the {{Open Weather Map}} API Callout example.

From the workflow designer, click: Run (*opens the workflow runner shown below*):



1. click 'Run' (again) (*a message appears*)
2. click on the message icon
3. click on the 'User Input' task (*the 'User Input' form opens*)

Complete the User Input form



1. Enter the name of a city in Australia (or use the default: Sydney)
2. Click: Done (a message appears, see below)

The image shows a screenshot of a workflow message. At the top right, there is a notification box with an orange header labeled "Notification" and a close button (X). The notification text reads "The temperature in Sydney is 19.610". Below the notification, there is a grey bar with the text "Powered by **ReadiNow**". At the bottom, a dark grey bar contains the text "Message from a Workflow displaying the current temperature in the specified city."

Document Generation Overview

Last Modified on 29/05/2020 6:12 pm AEST

ReadiNow lets you export data directly from Reports and Forms into preformatted MS Word documents. The steps involved are:

1. identify the data to export
2. create a document in MS Word
3. add Mail Merge fields to the document
4. upload the document to your 'Documents Library'
5. link the document to a Form, Report, or workflow

The document generator works by starting with a template document that contains various Word merge fields. The inserted macros consisting of Word merge fields control the generation and data insertion.

Macros can:

- render some field data for the current object, or
- select an object (such as a specific object, or related object) into the current context
- if multiple objects are are selected, then that section of the template document is repeated for each object

Document generation macros can also be used to generate text directly from within calculations. Refer to [Text Templates](#) for details.

Screenshot: Sample template document with word merge fields.

Contact Details

Full Name	{ MERGEFIELD [Name] }
Job Title	{ MERGEFIELD [Job title] }
Mobile	{ MERGEFIELD [Mobile phone] }
Email Address	{ MERGEFIELD [Business email] }

Document Templates

Last Modified on 03/04/2019 11:52 am AEDT

Begin with a template document that contains Word merge fields specific to the subject related to objects in ReadNow.

Creating a new template document

To create a new template document:

1. Select Application Menu. The menu appears with available applications.
2. Select **Documents**. The application displays.
3. In the Left Navigation Area, select **Document Library**. The Document Library expands to display list.
4. Select **Documents**. The Documents report displays.
5. Select **+NEW**. The Document form displays.
6. In the **File** field, select the **Browse** button and navigate to the template document you want to upload.
7. Select **Save** to save the form.
8. In the Left Navigation Area, select **Report Templates**. The Report Templates report displays.
9. Select **+NEW**. The Report Template form displays
10. Type a Name for the template. Note: Ideally an action button friendly name as this is where they are used.
11. Select a Document from the document picker.
12. Select the target **Object** which is the start context for the document.
13. Select **Save** to save.

Modifying an existing template document

To modify an existing template document:

1. Select Application Menu. The menu appears with available applications.
2. Select **Documents**. The application displays.
3. In the Left Navigation Area, select **Document Library**. The Document Library expands to display list.
4. Select **Documents**. The Documents report displays.
5. Select the existing template document and select **ACTION**. The menu appears.
6. Select **Edit**. The form displays.
7. In the **File** field, select the **Browse** button and navigate to the updated template document you want to upload.
8. Select **Save** to save the form.

Sample Mail Merge Fields

Last Modified on 24/01/2024 1:53 pm AEDT

Showing Fields

A simple template document loading a single specific instance.

```
{ MERGEFIELD with load Person [Peter Smith] }  
{ MERGEFIELD [Age] }  
{ MERGEFIELD [First Name] }  
{ MERGEFIELD [Last Name] }
```

Style and colour

Any formatting such as bold or colour that is applied to the Word field (when in Field Code mode) is applied to the output result. For example:

```
{ MERGEFIELD [First Name] }
```

Loading all records of an object

To load all records of an object, a block of the template document gets repeated. Start the block that gets repeated with the 'with' command, then follow it with 'all' to indicate we're loading all records. Note: All is a calculation function therefore you need to put the definition name in round brackets ().

```
{ MERGEFIELD with all ([Person]) }  
Name: { MERGEFIELD [First Name] } { MERGEFIELD [Last Name] }  
Age: { MERGEFIELD [Age] }  
{ MERGEFIELD end }
```

The content that gets repeated is whatever is between the starting instruction, and the 'end' instruction.

This includes any paragraph separators. The result may be contained within a single paragraph, or may span multiple paragraphs.

Note that if an 'end' keyword is not specified, then the block will implicitly end at the end of the document (or some other appropriate place).

Repeating within a paragraph

```
{ MERGEFIELD with all ([All Fields]) } { MERGEFIELD Name } { MERGEFIELD end }.
```

Repeated content with exactly one paragraph separator

```
{ MERGEFIELD with all ([Person]) }  
Welcome, { MERGEFIELD [First Name] } { MERGEFIELD [Last Name] }. { MERGEFIELD end }
```

In this example, the start of the instruction is immediately followed by the paragraph break, which is repeated at the start of each paragraph. The 'end' is on the same line as the paragraph itself, to ensure that the following paragraph doesn't get included in repeated content. (So we only get one paragraph break instead of two).

Repeated content in a bullet or numeric list

A bulleted list

```
* { MERGEFIELD list all ([Building]) } { MERGEFIELD Name }
```

A numbered list

```
1. { MERGEFIELD list all ([Building]) }{ MERGEFIELD Name }
```

For bullet lists it is usually more convenient to place the instruction within the bullet using the 'list' instruction. Note that these do not need to be closed with an 'end'.

Note that this example also illustrates the more general pattern for instructions that show repeated content. That is: first the display mode is set, then the data source is set. In this case 'list' is the display mode, and 'all Building' is the data source.

See also: [list](#)

Repeated content in tables

On the first column of a row, specify a repeating instruction with 'rows' as the display mode. If the 'end' instruction is not specified, then it will implicitly end at the end of the row.

First Name	Age
{ MERGEFIELD rows all (Person) }{ MERGEFIELD [First Name] }	{ MERGEFIELD [Age] }

Performing calculations

A variety of calculations can be performed. Refer to the [Calculated Fields](#) documentation.

```
{ MERGEFIELD Quantity * [Cost per Unit] }
```

Table Sums

It is possible to use the Word SUM field feature to perform sums and some other aggregate operations.

First Name	Age
{ MERGEFIELD rows all (Employee) }{ MERGEFIELD [First Name] }	{ MERGEFIELD [Age] }
	{ =SUM(ABOVE) }

Note that the SUM value is not computed by the document generator, rather this is a feature of Word.

After opening the result document, follow these steps:

1. Ctrl+A (select the whole document)
2. F9 (updates the field values, for the whole selection)
3. Alt+F9 (toggle document from viewing field codes to field value ... if you don't see the sum already)

Table of Contents

Similar to using sum-above, the existing Word table-of-contents (TOC) can be used. Follow these steps:

- Include a Word heading in your repeated section.
- Include a Word table of contents at the top of the template.
- When the document is generated, the heading will be repeated - once for each value, but the TOC isn't

updated yet

- Open the result in Word, then (as above) Ctrl+A, F9, and Alt+F9 if necessary.

Following Relationships

If an entity is already in context, you can show the name of a related entity by just using the name (or the from-name or to-name) of that relationship - exactly the same as you would with a field:

Example 1: Simply showing the name of a related entity.

```
{ MERGEFIELD with load Person [Peter Smith] }  
Name: { MERGEFIELD [First Name] }  
Manager: { MERGEFIELD [Manager] }  
Organization: { MERGEFIELD [Works for Organization] }
```

You can switch the content to a related entity by using the 'with' keyword.

Example 2: Following all instances of a relationship of a specific resource. The paragraph is repeated for each related entry.

```
{ MERGEFIELD with load Person [Peter Smith] }  
Direct reports of Peter:  
{ MERGEFIELD with [Direct Reports] }  
{ MERGEFIELD [First Name] } { MERGEFIELD [Last Name] }  
{ MERGEFIELD end }
```

Example 3: Following all instances of a relationship, for all instances of a type. The bullet point is repeated for each related entry.

```
{ MERGEFIELD with all (Manager) }  
Manager name: { MERGEFIELD [First Name] } { MERGEFIELD [Last Name] }  
Direct reports:  
* { MERGEFIELD list [Direct Reports] } { MERGEFIELD [First Name] } { MERGEFIELD [Last Name] }  
{ MERGEFIELD end }
```

Include a block of text, if there are values for a particular relationship

In the above example, the text 'Direct reports:' would appear even if the manager has no direct reports. We can wrap that whole section in an 'if' keyword, to test if there are any related entities first.

```
{ MERGEFIELD with all ([Manager]) }  
Manager name: { MERGEFIELD [First Name] } { MERGEFIELD [Last Name] }  
{ MERGEFIELD if [Direct Reports] }  
Direct reports:  
* { MERGEFIELD list [Direct Reports] } { MERGEFIELD [First Name] } { MERGEFIELD [Last Name] }  
{ MERGEFIELD end }  
{ MERGEFIELD end }
```

Inserting a Chart

Data-driven charts can be generated and inserted into Word documents. Calculations can also be used to filter the chart to only include certain records.

```
{ MERGEFIELD chart([Whatever] with [Created By]: currentuser( ) ) }
```

See: [insert chart](#)

Microsoft Word Mail Merge Fields

Last Modified on 29/05/2020 4:32 pm AEST

The document generator uses Word merge-fields extensively. This page contains tips for working with Merge Fields in Word.

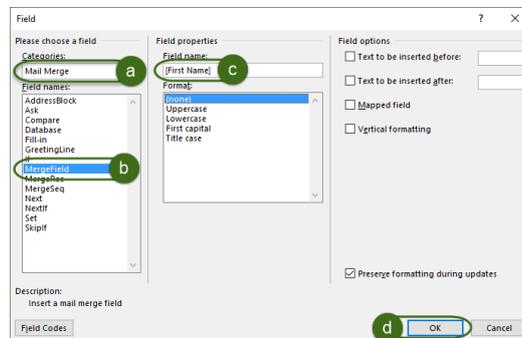
Adding Merge Fields

Merge fields can be inserted into the word document with two different methods:

- Using Words Quick Parts preformatted texts
- Using Document Content for free text MergeField formatting

Using Quick Parts

1. Create a new Word document.
2. On the Ribbon: Insert (tab) > Quick Parts > Field
3. In the Field dialogue:
 - a) select Mail Merge from Categories
 - b) select MergeField from Field Names
 - c) enter document generation macro in Field name (e.g. [First Name])
 - d) click **OK**



Using Field Codes (advanced)

1. Select: **File > Options > Advanced**.
2. Tick **Show field codes instead of their values**.
3. Then press **Ctrl+F9** to insert a new MergeField
4. Type MERGEFIELD between the braces along with your document generation macro, for example, [First Name]

How Merge Fields appear in the document

A merge field may appear in one of two modes:

1. **Result mode**- This shows what value it's currently taking.

- For example: «with load Person Harry Potter»

2. **Field Code mode**- This shows the full Word Field Code and is the view used to insert document generation marcos.

- For example: { MERGEFIELD [First Name] }

Generating Documents

Last Modified on 03/04/2019 1:26 pm AEDT

Using the template documents, documents can be generated from the following:

- Reports
- Forms
- Workflows (Generate Document)

Template documents have a target object starting context. Begin with the target object the template document is based on and choose where the action button will appear either on the form or report.

Generating a document from a form

To generate a document from a form:

1. Select the form where the action button to generate documents will be placed and open in Form Builder.
2. On the top right hand corner of the screen, select **+ Actions**. The Actions dialog appears.
3. Find the report template name and select the checkbox for **Enable**. This provides an action button on the form.
4. Select **OK**.
5. Select **SAVE** to save the form.
6. Open any record in the target object.
7. Select the newly created Action button from on top of the form.
8. The document downloads to your browser. Select to open.

Generating a document from a report

To generate a document from a report:

1. Select the report of where the action button to generate documents will be placed and open it in Report Builder.
2. Select **Actions**.
3. Find the report template name and tick **Enable** and **Show Button** from the actions menu. This will provide an action button on the report.
4. Select **OK**.
5. Select **SAVE** to save the report.
6. Open the report and then single click to highlight a record to generate the document against. The action button is enabled.
7. Select the generated Action button from the top of the form.
8. The document downloads to your browser. Select to open.

Microsoft Word Interoperability

Last Modified on 09/12/2019 9:42 am AEDT

Custom Fonts

If non-standard fonts are being used in the template Word document, then it is recommended that those fonts be embedded into the template file so that generated documents will be correctly viewable by all recipients.

Refer to the [Embed fonts in Word or PowerPoints](#) Microsoft support article.

Table of Contents

Document generation does not support automatically updating data-driven Word content such as the table of contents, table sums, and save date. To update this content:

1. Open the generated document in Word
2. Press Ctrl+A to select the entire document
3. Press F9 to update all Word content fields

Sample Calculations

Last Modified on 03/04/2019 2:59 pm AEDT

Date Manipulation

Returns the Month of when a record was created.

```
DatePart(Month,[Created Date], getdate())
```

Assessing Relationships

Returns the of name of the organisation that a person works for.

```
[Contact].[Organisation]
```

Categorising Data

Returns whether a person is an adult or child.

```
iif([Age] > 17, 'Adult', 'Child')
```

Date and Time Differences

Calculates the difference between when a Task record was created and the current date, only when the Task status is not completed. Otherwise it returns null.

```
iif([Task Status] <> 'Completed', Datediff(day,[Created Date], getdate()), null)
```

Maximum Age

Finds the maximum field value for given a set of data.

```
Max([Age])
```

Text Manipulation

Returns the person's name from an email address.

```
LEFT([Business Email],charindex('@',[Business Email]) -1)
```

Conditional Count

Returns a count of the number of textbooks that are only e-books.

```
Count([Textbooks] where [E-book] = true)
```

Sum with Conditions

Returns sum of the cost of textbooks that are only e-books

```
sum(([Textbooks] where [E-book]=true).[Purchase Price])
```

Variables

Using a variable in a calculation

```
Let a = [Start Date] SELECT iif(a>getdate(),'Future','Past')
```

Calculation Operators

Last Modified on 30/08/2022 12:11 pm AEST

Operation	Token	Arguments	Data Type	Example	Comments
<h2>Maths Operators (more)</h2>					
Add	+	numeric, numeric<	numeric	Age + 10	
Subtract	-	numeric, numeric	numeric	Age - Manager.Age	
Multiply	*	numeric, numeric	numeric	Cost * Quantity	
Divide	/	numeric, numeric	numeric	Cost / Quantity	Result is always a decimal.
Modulo	%	int, int	int	10 % 7 (result is 3)	Remainder of integer division. See details .
Negate	-	numeric	numeric	-Age	
<h2>String Operators (more)</h2>					
Concatenate	+	string, string	string	Title + ' ' + [Last Name]	Joins multiple strings together.
<h2>Logic Operators (more)</h2>					
Not	not	bool	bool	not [Is approver]	'not' has a higher precedence than 'and'
And	and	bool, bool	bool	Cost < 1000 and Quantity < 10	'and' has a higher precedence than 'or'.

Operation	Token	Arguments	Data Type	Example	Comments
Or	or	bool, bool	bool	Cost >= 1000 or Quantity >= 10	
<h2>Comparison Operators (more)</h2>					
Less than	<	comparable, comparable	bool	Cost < 1000	
Less than or equal	<=	comparable, comparable	bool	Cost <= 1000	
Greater than	>	comparable, comparable	bool	Name > 'M'	
Greater than or equal	>=	comparable, comparable	bool	Cost >= 1000	
Equal	=	equatable, equatable	bool	Name = 'Peter Smith'	
Not equal	<>	equatable, equatable	bool	Name <> 'Peter Smith'	
Like	like	string, string	bool	Name like 'Peter%'	Supports % wildcards at either end.
Not Like	not like	string, string	bool	Name not like 'Peter%'	Supports % wildcards at either end.
Is Null	is null	resource	bool	Department is null	Returns true if a resource/relationship is not set
Membership	in	comparable, comparable	bool	[Project],[Tasks] in ('Document', 'Test')	The search and option expressions can be scalar values, choice field values, or records.

Operation	Token	Arguments	Data Type	Example	Comments
<h2>List Operators (Where, Order By)</h2>					
Where	where	entity list, bool	entity list	[Direct Reports] where Name='Peter Smith'	Applies a condition (bool)
Order by	order by	entity list, comparable	entity list	[Direct Reports] order by Name	Note: Currently only a single ascending order can be applied. <i>Note: not supported for reports.</i>

Notes on types:

- Numeric types: number (int), decimal, currency, percent
- Comparable types: All numeric types and date, time, date time, string
- Equatable types: All comparable types and yes/no (bool), GUID

currentuser

Last Modified on 09/03/2020 1:22 pm AEDT

Returns the record that represents the User Account of the current user.

Function

```
currentuser()
```

Arguments

Argument	Data Type
----------	-----------

result	record
---------------	--------

Comments

Returns the record that represents the User Account of the current user.

If a workflow runs is triggered by a change made by a user, then the currentuser function will return that user record, unless the workflow is configured to run as the workflow owner, in which case the currentuser function will return the user who owns the workflow.

Examples

```
currentuser().[Account Holder]
```

context

Last Modified on 09/03/2020 2:37 pm AEDT

Returns the record that will be implicitly used in a calculation.

Function

```
context()
```

Arguments

Argument	Data Type
----------	-----------

result	entity
--------	--------

Comments

The **context** function explicitly returns the record that would otherwise be implicitly used for accessing fields.

Typically a calculation will implicitly be working in the context of some record, so field and relationship names such as [First Name] can be typed directly and are implicitly understood. However, sometimes the record itself is needed and the **context** function provides this. Put differently, **context().[Some field]** is always equivalent to **[Some field]**.

A common use of the **context** function is when a calculation needs to refer to a field or relationship that is defined on some object that inherits the current record.

Examples

Assume that the following is a calculated column on a report of Vehicle records, where:

- Car inherits from Vehicle
- Registration is a field on Car

```
convert(Car, context()).[Registration] -- this will return the registration when the current row is a Car record
```

convert

Last Modified on 09/03/2020 3:23 pm AEDT

Converts a calculation value from one [data type](#) to another.

Function

```
convert(type, input)
```

Arguments

Argument	Data Type
type	data type name
input	any
result	any

Comments

When converting objects, the data-type of the second argument must conform to the data-type given in the first. For example, if the right hand side is a relationship that points to a "Dog" (or a variable of type "Dog") but the author knows from context that thing that is actually being pointed at is a "Poodle", then the left hand side can have the type "Poodle". This allows the author to then get to the "Poodle" specific field and relationships.

For more details, refer to: [Converting between data types](#).

Examples

```
convert(decimal, '10')
```



Last Modified on 09/03/2020 3:17 pm AEDT

Returns one of two values, depending on whether the condition value gives a true result or a false result.

Function

```
iif(condition, true-result, false-result)
```

Arguments

Argument	Data Type
condition	any
true-result	any
false-result	any
result	any

Comments

The *true-result* and *false-result* calculations should both return the same type of data. This may be a record data type.

The calculation `iif(some-condition, true, false)` is always redundant and can be rewritten simply as `some-condition`. Similarly, the calculation `iif(some-boolean-field = true, option1, option2)` can be rewritten as `iif(some-boolean-field, option1, option2)`.

Tip: consider using the `case` feature if you need to select between multiple options.

Examples

```
iif(grade>80, 'good', 'bad')
```

```
iif(hour(gettime())<12, [Morning contact person], [Afternoon contact person])
```

isnull

Last Modified on 09/03/2020 3:19 pm AEDT

Returns its input, or falls back to a default value if the input is null.

Function

```
isnull(input, null-result)
```

Arguments

Argument	Data Type
input	any
null-result	any
result	any

Comments

If *input* is null, then the *null-result* is returned, otherwise the *input* is returned.

Examples

The following calculation will follow a relationship named 'Person' and show the person's name, or the text 'No person' if there was no related person.

```
isnull([Person], 'No person')
```

link

Last Modified on 16/08/2023 2:54 pm AEST

Creates a web address (URL) that will open a page for a specific record or navigation page.

Function

Classic console

```
link(record)  
link(view, record, form)  
link(edit, record, form)  
link(create, object, form)  
link(report, target)  
link(chart, target)  
link(board, target)
```

Nova Form Pages

```
link(view, record, nova shared form)  
link(edit, record, nova shared form)
```

Arguments

Argument	Data Type
record	record
form	(Optional) identifier or form record
nova shared form	form record
object	identifier or form record
target	identifier or form record

Comments

The link function can be used to create URLs pointing to individual records or console pages. This link may then, for example, be emailed to users as part of a workflow. Users who open links will be automatically directed to the login page if they have not already signed in. They will then be redirected to the link.

The result of the link function includes the whole web address, including the https prefix and servername. The **result type** is a URL string.

The user must also have access control permission to view the page/record requested, or they will receive an error message telling them that they do not have permission.

Links are not permalinks. They will generally not change, however links may change if a tenant is moved to a new server.

Record Links

If a record is provided to the link function, then the platform will automatically determine the default page for handling the record, and return a link accordingly.

For example:

```
link( currentUser() )
```

This will create a link that refers to the form, in view mode, for the current user.

Links to view records

Various keywords may be placed in front of the record to control what type of link should be returned, such as whether the link should open the record in view mode or edit mode.

You may explicitly direct the platform to generate a view mode link to a record's form by using the **view** keyword. The default form for the record's object will be used. You may also specify the name of a different compatible form to use. For example:

```
link( view, [My Record Variable] )  
link( view, [My Record Variable], [My Custom Form] )
```

In the above example, 'My Record Variable' may refer to some record variable in the workflow, and 'My Custom Form' refers to the name of an appropriate form.

Links to edit records

Links may similarly be created that automatically open the record in edit mode by using the **edit** keyword.

For example:

```
link( edit, [My Record Variable] )  
link( edit, [My Record Variable], [My Custom Form] )
```

Links to create records

You may create a link that directs the user to create a new record of some object by using the **create** keyword and the object name. You can specify the name of the specific form to use, or the default form for the object will be used if none is provided.

For example:

```
link( create, [Person] )  
link( create, [Person], [My Custom Person Form] )
```

Page Links

You may create links that refer to specific pages by using a keyword that is appropriate for each page.

There must only be a single page that matches the name provided.

Examples:

```
link(report, [My report name])  
link(chart, [My chart name])  
link(board, [My board name])  
link(screen, [My screen name])
```

Notes

- The link function will always try to match a Classic form name before searching for a nova form name. Only if no classic form is found will Nova forms be searched.
 - Where the link function is unable to find a match for the require entity an exception is thrown at runtime.
 - The record type of the form and type of the record must be compatible, if not a exception will be thrown at runtime.
-

Resource Function

Last Modified on 24/08/2022 1:51 pm AEST

Returns the record from an Object by Record Name.

Function

```
resource([Object], 'Record Name')
```

Arguments

Argument	Data Type
----------	-----------

Input 1	Object
---------	--------

Input 2	String
---------	--------

Result	Record
--------	--------

Comments

The **resource** function returns a record with a specified name..

A common use of the **resource** function is when an Record needs to be processed by a workflow, but the name the record is unknown until the workflow runs - this allows records to be processed dynamically.

Example

Assume you need send a Survey (survey is a stored as a Record) using a Workflow, but the survey changes each year. Rather than hard code the name of the survey and change it each year, you can use the context function to retrieve the survey IF you can predict its name.

```
Resource ( [Object] , 'Exact name of Record' )
```

For the sake of this example consider a Workflow with an activity 'Launch Person Campaign' where the name of the Survey is:

```
[BCM Assessment FY23]
```

By extracting the last 2 digits from date year into a Variable called [FY] we can dynamically return the correct survey for any given year:

```
Resource( [User survey] , '[BCM Assessment FY]' + [FY] )
```

To make use of the Resource function the rest of the name must be consistent, that means the spacing in the string is important - the input string **MUST** be an exact match to the Record Name. Perhaps more common use-cases for the Resource function are to return a:

... person without knowing their name

```
Resource( [Person] , 'John Smith' )
```

... choice field option

```
Resource( [Task Status] , 'Active' )
```

Resource function can be used with any [Object] ; it's worth noting that the Resource function also supports dot notation, [Object].[Attribute] - e.g.:

```
Resource( [Configuration] , 'BCM Config' ).[Review Frequency]
```

count

Last Modified on 09/03/2020 1:13 pm AEDT

Returns the number of items in a list.

Function

```
count(input)
```

Arguments

Argument	Data Type
----------	-----------

input	record list
--------------	-------------

result	integer
---------------	---------

Comments

Returns the number of items in a list.

Note: it is also possible to count the number of related records in a report without writing a calculation by using [column totals](#) or by [summarising](#) a report relationship.

Example

The following calculation assumes it is being run in the context of a Manager record, and it returns the number of employees that directly report to the manager.

```
count([Direct Reports])
```

Performance Tip

A common inclination is to use the **count** function to determine whether some particular records exists, such as: `count([Assigned Tasks])>0`. However, it is better to use the **any** function (or **every** function) for this type of calculation. The **count** function will consider (and perform security checks) on every record to calculate a count. Whereas the **any** function and **every** function are able to skip processing records once a positive (or negative) match has been found. In some cases this can lead to a considerable improvement in response times.

```
count([Assigned Tasks] where [Status] = 'In Progress') > 0 -- don't do this
```

```
any([Assigned Tasks].[Status] = 'In Progress') -- this gives the same result, but run more quickly
```

any

Last Modified on 09/03/2020 1:02 pm AEDT

Returns true if some condition is met for any record in a list of records. Or alternatively, can be used to return true if at least one record is found.

Function

```
any(condition)
```

```
any(records)
```

Arguments

Argument	Data Type
----------	-----------

condition	Boolean list
------------------	--------------

records	Record list
----------------	-------------

result	Boolean
---------------	---------

Comments

The any function receives a list of records, and returns a single true/false result. It can be used in two ways:

1. To return true if one or more record meets some condition.
2. Or, to return true if some there is at least one record in some list of records.

In both cases, the **any** function will return false if there are no records.

Examples

The following calculation assumes it is running in the context of a person record. It will return true if the person record is related to one or more task records.

```
any([Assigned Tasks])
```

The following calculation assumes further checks to the status of the tasks. It will return true if the context person has at least one 'In Progress' task. It will return false if they have no tasks, or if none of the tasks have a status of 'In Progress'.

```
any([Assigned Tasks].[Status] = 'In Progress')
```

every

Last Modified on 13/12/2021 12:44 pm AEDT

Returns true if some condition is met for every record in a list of records. Returns true for an empty list.

Function

```
every(condition)
```

```
every(records)
```

Arguments

Argument	Data Type
----------	-----------

condition	Boolean list
------------------	--------------

result	Boolean
---------------	---------

Comments

The **every** function receives a list of records with some condition, and returns true if that condition is met for every record in the list. If there are one or more records that do not meet the condition, then the **every** function will return false.

If there are no records in the list then the every function will return true. Note that this is in deliberate contrast to the **any** function.

Example

The following calculation assumes it is running in the context of a person record. It will return true if every task assigned to that person is completed. It will also return true if the person has no assigned tasks. It will return true if the person has one or more tasks that do not have a state of 'Completed'.

```
every([Assigned Tasks].[Status] = 'Completed')
```

sum

Last Modified on 09/03/2020 1:14 pm AEDT

Returns the sum of all the input values.

Function

```
sum(input)
```

Arguments

Argument	Data Type
input	numeric list
result	numeric

Comments

Returns the sum of all the input values.

Note: The ReadNow platform cannot always handle numbers greater than 2 billion. If large numbers of records are being added, then this may cause a partial calculation result to exceed this limit, which can cause calculations to fail, even if that partial result is then to be subsequently divided by some other number.

Note: it is also possible to calculate the sum of values in a report without writing a calculation by using [column totals](#) or by [summarising](#) a report relationship.

Examples

The following calculation assumes it is run in the context of a hypothetical purchase order record that has multiple items, each with a numeric 'weight' field. It returns the total of the weight values.

```
sum([Items].[Weight])
```

avg

Last Modified on 09/03/2020 1:12 pm AEDT

Returns the average (mean) of all the input values.

Function

```
avg(input)
```

Arguments

Argument	Data Type
input	numeric list
result	decimal

Comments

Returns the average of all the input values. The input data can be any numeric data type. If the input is an integer data type, then the result will have a decimal data type.

Note: it is also possible to calculate the average of values in a report without writing a calculation by using [column totals](#) or by [summarising](#) a report relationship.

Examples

The following calculation assumes it is run in the context of a hypothetical purchase order record that has multiple items, each with a numeric 'weight' field. It returns the average of the weight values.

```
avg([Items].[Weight])
```

stdev

Last Modified on 09/03/2020 1:04 pm AEDT

Returns the statistical standard deviation of all the input values.

Function

```
stdev(input)
```

Arguments

Argument	Data Type
input	numeric list
result	numeric

Comments

Returns the statistical standard deviation of all the input values.

Examples

The following calculation assumes it is run in the context of a hypothetical purchase order record that has multiple items, each with a numeric 'weight' field. It returns the standard deviation of the weight values.

```
stdev([Items].[Weight])
```

max

Last Modified on 09/03/2020 1:15 pm AEDT

Returns the maximum value from a list of values.

Function

```
max(input)
```

Arguments

Argument	Data Type
----------	-----------

input	comparable value list
--------------	-----------------------

result	comparable value
---------------	------------------

Comments

The **max** function can be used with various data types, and behave as follows:

- Numeric
 - **max** returns the highest value.
- Date-only, Time-Only, Date-Time
 - **max** returns the latest value.
- Strings
 - **max** returns the last value, when values are in alphabetical order
- Choice field values
 - **max** returns the choice value that is considered most maximum, which is to say the choice value that appears latest on the list of values in the Choice Field Properties page.

Note: it is also possible to show the maximum value of a column in a report without writing a calculation by using [column totals](#) or by [summarising](#) a report relationship.

Examples

The following calculation assumes it is run in the context of a hypothetical purchase order record that has multiple items, each with a numeric 'weight' field. It returns the numeric weight value of the heaviest item.

```
max([Items].[Weight])
```

The following calculation assumes it is run in the context of a person. It returns the priority level of the highest in-progress task related to that user. For example, if the person has low, medium and high priority tasks in progress, the result will be 'High'

```
max([Assigned Tasks].[Priority] where [Status]='In Progress')
```

min

Last Modified on 09/03/2020 1:15 pm AEDT

Returns the minimum value from a list of values.

Function

```
min(input)
```

Arguments

Argument	Data Type
input	comparable value list
result	comparable value

Comments

The **min** function can be used with various data types, and behave as follows:

- Numeric
 - **min** returns the lowest value. That is, the number closest to negative infinity.
- Date-only, Time-Only, Date-Time
 - **min** returns the earliest value.
- Strings
 - **min** returns the first value, when values are in alphabetical order
- Choice field values
 - **min** returns the choice value that is considered most minimum, which is to say the choice value that appears earliest on the list of values in the Choice Field Properties page.

Note: it is also possible to show the minimum value of a column in a report without writing a calculation by using [column totals](#) or by [summarising](#) a report relationship.

Examples

The following calculation assumes it is run in the context of a hypothetical purchase order record that has multiple items, each with a numeric 'weight' field. It returns the numeric weight value of the lightest item.

```
min([Items].[Weight])
```

The following calculation assumes it is run in the context of a person. It returns the priority level of the lowest in-progress task related to that user. For example, if the person has low, medium and high priority tasks in progress, the result will be 'Low'

```
min([Assigned Tasks].[Priority] where [Status]='In Progress')
```

join

Last Modified on 09/03/2020 1:01 pm AEDT

Joins a list of strings together.

Function

```
join(input, [separator])
```

Arguments

Argument	Data Type
----------	-----------

input	string list
--------------	-------------

separator	string
------------------	--------

result	string
---------------	--------

Comments

Joins a list of strings together using the *separator*. The default separator is a comma.

Consider using the [text template](#) functions for more complicated text generation.

The **join** function is not available in report calculations.

Examples

```
join([Business Email])
```

```
join([Business Email], ';')
```

dateadd

Last Modified on 25/05/2020 12:56 pm AEST

Adds or subtracts a certain duration of time to an existing date or time value.

Function

```
result = dateadd(period, count, input)
```

Arguments

Argument	Data Type
period	datepart
count	integer
input	date or time or datetime
result	date or time or datetime

Comments

Adds *count* of *period* to *input*. To subtract use a negative value for *count*.

datepart can be one of the following, specified as the word without quotes: year, quarter, month, week, day, hour, minute, second

This function operates in the local time-zone if a datetime input is provided. See [Dates, Times and Time Zones](#).

Examples

```
result = dateadd(year, 1, getdate()) /* 1 year from today */
```

datediff

Last Modified on 13/12/2021 12:49 pm AEDT

Returns the duration of time between two date or time values.

Function

```
result = datediff(period, first, second)
```

Arguments

Argument	Data Type
----------	-----------

period	datepart
---------------	----------

first	date or time or datetime
--------------	--------------------------

second	date or time or datetime
---------------	--------------------------

result	integer
---------------	---------

Comments

Counts the number of *period* intervals from *first* to *second*. Returns a positive number if the *second* value is chronologically after the *first* value, and a negative value if it is before.

This function operates in the local time-zone if datetime inputs are provided. See [Dates, Times and Time Zones](#).

Take care when calculating time differences that span across a daylight saving adjustment. The `datediff` result is calculated based on the actual time that has elapsed, therefore a day is not necessarily equal to 24 hours.

Examples

```
result = datediff(year, #2000-12-31#, getdate()) /* result is 19 if the current year is 2019 */
```

```
result = datediff(day, #2019-06-20#, #2019-07-10#) /* result is 20 */
```

```
result = datediff(day, #2019-07-10#, #2019-06-20#) /* result is -20 */
```

datefromparts

Last Modified on 25/05/2020 12:58 pm AEST

Returns a date-only value with given numerical year, month and day values.

Function

```
result = datefromparts(year, month, day)
```

Arguments

Argument	Data Type
year	integer
month	integer
day	integer
result	date

Comments

Converts individual numbers into a date result.

This function operates without regard to the local time zone. See [Dates, Times and Time Zones](#).

Examples

```
result = datefromparts(2019,1,10) /* result is the date 10 January 2019 */
```

datetime

Last Modified on 25/05/2020 1:00 pm AEST

Returns the text name for part of a date, such as the name of a month or the weekday name.

Function

```
result = datetime(part, input)
```

Arguments

Argument	Data Type
----------	-----------

part	datepart
-------------	----------

input	date or time or datetime
--------------	--------------------------

result	string
---------------	--------

Comments

datepart is one of the following words without quotes: year, quarter, month, week, day of month, hour, minute, second

This function operates in the local time-zone if a datetime input is provided. See [Dates, Times and Time Zones](#).

Examples

```
result = datetime(month, getdate()) /* result = 'May' if the current month is May */
```

```
result = datetime(weekday, #2019-07-06#) /* result = 'Friday' */
```

datetimefromparts

Last Modified on 25/05/2020 12:58 pm AEST

Returns a date-time value with given numerical year, month, day, hour, minute, second values.

Function

```
result = datetimefromparts(year, month, day, hour, minute, second)
```

Arguments

Argument	Data Type
year	integer
month	integer
day	integer
hour	integer
minute	integer
second	integer
result	datetime

Comments

Converts individual numbers into a date result.

The values provided to this function are interpreted according to the local time-zone. See [Dates, Times and Time Zones](#).

Examples

```
result = datetimefromparts(2019,1,10,2,55,31) /* result is 02:55:31 on 10 January 2019 */
```

day

Last Modified on 25/05/2020 1:00 pm AEST

Returns the day-of-month part of a date or date-time value.

Function

```
result = day(input)
```

Arguments

Argument	Data Type
----------	-----------

input	date (datetime will be implicitly cast to date)
--------------	---

result	integer
---------------	---------

Comments

Returns the day of a date as a number from 1 to 31.

This function operates in the local time-zone if a datetime input is provided. See [Dates, Times and Time Zones](#).

Examples

```
result = day(#1988-11-25#) /* result = 25 */
```

```
result = day(getdate())
```

dayofyear

Last Modified on 25/05/2020 1:08 pm AEST

Returns the day of the year as a number for a given date or date-time.

Function

```
result = dayofyear(input)
```

Arguments

Argument	Data Type
----------	-----------

input	date (datetime will be implicitly cast to date)
--------------	---

result	integer
---------------	---------

Comments

Returns the day of the year as a number from 1 to 366.

This function operates in the local time-zone if a datetime input is provided. See [Dates, Times and Time Zones](#).

Examples

```
result = dayofyear(#2019-05-30#) /* result = 150 */
```

```
result = dayofyear(getdate())
```

getdate

Last Modified on 25/05/2020 1:08 pm AEST

Returns the current date for the current user as a date-only value.

Function

```
result = getdate()
```

Arguments

Argument	Data Type
----------	-----------

result	date
---------------	------

Comments

The current date in the local time zone. See [Dates, Times and Time Zones](#).

Examples

```
result = getdate()
```

getdatetime

Last Modified on 25/05/2020 1:07 pm AEST

Returns the current date and time as a date-time value.

Function

```
result = getdatetime()
```

Arguments

Argument	Data Type
----------	-----------

result	datetime
---------------	----------

Comments

The current date time determined in UTC, but presented in local time zone.

See [Dates, Times and Time Zones](#).

Examples

```
result = getdatetime()
```

gettime

Last Modified on 25/05/2020 1:07 pm AEST

Returns the current time for the current user as a time-only value.

Function

```
result = gettime()
```

Arguments

Argument	Data Type
----------	-----------

result	time
---------------	------

Comments

The current time in the local time zone. See [Dates, Times and Time Zones](#).

Examples

```
result = gettime()
```

hour

Last Modified on 25/05/2020 1:01 pm AEST

Returns the hour of a time or date-time value as a number.

Function

```
result = hour(input)
```

Arguments

Argument	Data Type
----------	-----------

input	time (datetime will be implicitly cast to time)
--------------	---

result	integer
---------------	---------

Comments

Returns the hour of a time as a number from 0 to 23.

This function operates in the local time-zone if a datetime input is provided. See [Dates, Times and Time Zones](#).

Examples

```
result = hour(#16:43#) /* result = 16 */
```

```
result = hour(getdate())
```

minute

Last Modified on 25/05/2020 1:01 pm AEST

Returns the minute of a time or date-time value as a number.

Function

```
result = minute(input)
```

Arguments

Argument	Data Type
----------	-----------

input	time (datetime will be implicitly cast to time)
--------------	---

result	integer
---------------	---------

Comments

Returns the minute of a time as a number from 0 to 59.

This function operates in the local time-zone if a datetime input is provided. See [Dates, Times and Time Zones](#).

Examples

```
result = minute(#16:43#) /* result = 43 */
```

```
result = minute(getdate())
```

month

Last Modified on 25/05/2020 1:04 pm AEST

Returns the month of a date or date-time value as a number.

Function

```
result = month(input)
```

Arguments

Argument	Data Type
----------	-----------

input	date (datetime will be implicitly cast to date)
--------------	---

result	integer
---------------	---------

Comments

This function operates in the local time-zone if a datetime input is provided. See [Dates, Times and Time Zones](#).

Examples

```
result = month(#1988-11-25#) /* result = 11 */
```

```
result = month(getdate())
```

quarter

Last Modified on 25/05/2020 1:04 pm AEST

Returns the calendar quarter of a date or date-time value as a number.

Function

```
result = quarter(input)
```

Arguments

Argument	Data Type
----------	-----------

input	date (datetime will be implicitly cast to date)
--------------	---

result	integer
---------------	---------

Comments

This function operates in the local time-zone if a datetime input is provided. See [Dates, Times and Time Zones](#).

Examples

```
result = quarter(#1988-11-25#) /* result = 4 */
```

```
result = quarter(getdate())
```

second

Last Modified on 25/05/2020 1:01 pm AEST

Returns the seconds of a time or date-time value as a number.

Function

```
result = second(input)
```

Arguments

Argument	Data Type
----------	-----------

input	time (datetime will be implicitly cast to time)
--------------	---

result	integer
---------------	---------

Comments

Returns the second of a time as a number from 0 to 59.

This function operates in the local time-zone if a datetime input is provided. See [Dates, Times and Time Zones](#).

Examples

```
result = second(#16:43:59#) /* result = 59 */
```

```
result = second(getdate())
```

timefromparts

Last Modified on 25/05/2020 1:05 pm AEST

Returns a time-only value with given numerical hour, minute and seconds values.

Function

```
result = timefromparts(hour, minute, second)
```

Arguments

Argument	Data Type
hour	integer
minute	integer
second	integer
result	time

Comments

Converts individual numbers into a time result.

This function operates without regard to the local time zone. See [Dates, Times and Time Zones](#).

Examples

```
result = timefromparts(22, 15, 32) /* result is the time 10:15:32 PM */
```

week

Last Modified on 25/05/2020 1:02 pm AEST

Returns the week of the year as a number.

Function

```
result = week(input)
```

Arguments

Argument	Data Type
----------	-----------

input	date (datetime will be implicitly cast to date)
--------------	---

result	integer
---------------	---------

Comments

This function operates in the local time-zone if a datetime input is provided. See [Dates, Times and Time Zones](#).

Examples

```
result = week(#2019-05-30#) /* result = 22 */
```

```
result = week(getdate())
```

weekday

Last Modified on 25/05/2020 1:04 pm AEST

Returns the day of the week as a number, where Sunday is the first day of the week and returns 1.

Function

```
result = weekday(input)
```

Arguments

Argument	Data Type
----------	-----------

input	date (datetime will be implicitly cast to date)
--------------	---

result	integer
---------------	---------

Comments

This function operates in the local time-zone if a datetime input is provided. See [Dates, Times and Time Zones](#).

Examples

```
result = weekday(#2019-04-21#) /* result = 1 (Sunday) */
```

```
result = weekday(#2019-04-27#) /* result = 7 (Saturday) */
```

```
result = weekday(getdate())
```

year

Last Modified on 25/05/2020 1:05 pm AEST

Returns the year of a date or date-time value as a number.

Function

```
result = year(input)
```

Arguments

Argument	Data Type
----------	-----------

input	date (datetime will be implicitly cast to date)
--------------	---

result	integer
---------------	---------

Comments

This function operates in the local time-zone if a datetime input is provided. See [Dates, Times and Time Zones](#).

Examples

```
result = year(#1988-11-25#) /* result = 1988 */
```

```
result = year(getdate())
```

concat

Last Modified on 25/05/2020 1:10 pm AEST

Returns a list result that combines two other lists or values.

Function

```
result = concat(first, second)
```

Arguments

Argument	Data Type
first	any or list
second	any or list
result	list

Comments

Returns a single list of items that contains the records of the *first* input followed by the records of the *second* input. Either input may be a list or a single value.

Examples

```
result = concat([Manager], [Direct Reports])  
result = concat([External Contacts], [Employees])  
result = concat([CEO], [CTO])
```

distinct

Last Modified on 25/05/2020 1:10 pm AEST

Removes duplicates from a list of values.

Function

```
result = distinct(input)
```

Arguments

Argument	Data Type
----------	-----------

input	list
--------------	------

result	list
---------------	------

Comments

Returns a list of unique values; the *result* will be the *input* with all duplicates removed.

Examples

```
result = distinct([Post Code])
```

first

Last Modified on 25/05/2020 1:11 pm AEST

Returns the first (or several first) items in a list.

Function

```
result = first([count], input)
```

Arguments

Argument	Data Type
----------	-----------

count	integer
--------------	---------

input	list
--------------	------

result	list or single value of the input list's item type
---------------	--

Comments

The default value for *count* is 1. Returns the first *count* records of the *input* list as a list of values if *count* is greater than 1; if *count* is equal to 1 then the return type is a single value of the same type as the *input* list's values.

This function is usually used with ordering to return a meaningful output. An example of this is shown below.

Examples

```
result = first([Direct Reports])  
result = first(2, [Direct Reports])  
result = first([Direct Reports] order by [Name])
```

last

Last Modified on 25/05/2020 1:12 pm AEST

Returns the last (or several last) items in a list.

Function

```
result = last([count], input)
```

Arguments

Argument	Data Type
----------	-----------

count	integer
--------------	---------

input	list
--------------	------

result	list or single value of the input list's item type
---------------	--

Comments

The default value for *count* is 1. Returns the last *count* records of the *input* list as a list of values if *count* is greater than 1; if *count* is equal to 1 then the return type is a single value of the same type as the *input* list's values.

This function is usually used with ordering to return a meaningful output. An example of this is shown below.

Examples

```
result = last([Direct Reports])
result = last(2, [Direct Reports])
result = last([Direct Reports] order by [Name])
```

reverse

Last Modified on 25/05/2020 1:12 pm AEST

Returns a list result in the reverse order.

Function

```
result = reverse(input)
```

Arguments

Argument	Data Type
----------	-----------

input	list
--------------	------

result	list
---------------	------

Comments

Reverses the order of a list.

This function is usually used with ordering to return a meaningful output. An example of this is shown below.

Examples

```
result = reverse([Direct Reports] order by [Name])
```

skip

Last Modified on 25/05/2020 1:14 pm AEST

Returns a provided list, but with the first, or several first, items omitted.

Function

```
result = skip(count, input)
```

Arguments

Argument	Data Type
----------	-----------

count	integer
--------------	---------

input	list
--------------	------

result	list
---------------	------

Comments

Returns the *input* list starting with the item at position *count* + 1; the number of items in the *result* list and the *input* list will differ by *count*.

This function is usually used with ordering to return a meaningful output. An example of this is shown below.

Examples

```
result = skip(2, [Direct Reports])  
result = skip(2, [Direct Reports] order by [Name])
```

abs

Last Modified on 25/05/2020 1:24 pm AEST

Returns the absolute (non-negative) value of a number.

Function

```
result = abs(input)
```

Arguments

Argument	Data Type
----------	-----------

input	numeric
--------------	---------

result	numeric
---------------	---------

Comments

Absolute value function that converts negative numbers to positive.

Examples

```
result = abs(-35) /* result = 35 */
```

ceiling

Last Modified on 25/05/2020 1:25 pm AEST

Rounds a number up to the next integer.

Function

```
result = ceiling(input)
```

Arguments

Argument	Data Type
----------	-----------

input	numeric
--------------	---------

result	int
---------------	-----

Comments

Rounds up to the next integer. Positive numbers are rounded up. Negative numbers are rounded towards zero.

Examples

```
result = ceiling(100.75)  
/* result = 101 */
```

exp

Last Modified on 25/05/2020 1:27 pm AEST

Calculates the result of raising the natural base 'e' to the exponent specified.

Function

```
result = exp(exponent)
```

Arguments

Argument	Data Type
----------	-----------

exponent	numeric
-----------------	---------

result	decimal
---------------	---------

Comments

Raises the constant 'e' to the exponent specified. That is, the inverse of the natural logarithm.

Examples

```
result = exp(2) /* result = 7.3890... */
```

floor

Last Modified on 25/05/2020 1:25 pm AEST

Rounds a number down to the next integer.

Function

```
result = floor(input)
```

Arguments

Argument	Data Type
----------	-----------

input	numeric
--------------	---------

result	int
---------------	-----

Comments

Positive numbers are rounded down. Negative numbers are rounded away from zero.

Examples

```
result = floor(100.75)  
/* result = 100 */
```

log

Last Modified on 25/05/2020 1:27 pm AEST

Calculates the logarithm of a positive number.

Function

```
result = log(input, [base])
```

Arguments

Argument	Data Type
----------	-----------

input	numeric
--------------	---------

base	numeric (optional)
-------------	--------------------

result	decimal
---------------	---------

Comments

Perform a natural logarithm (base 'e') if the base is not specified. Zero and negative inputs evaluate to null.

Examples

```
result = log(1000) /* result = 6/9077.... */  
result = log(1000,10) /* result = 3 */
```

log10

Last Modified on 25/05/2020 1:28 pm AEST

Calculates the base-10 logarithm of a number.

Function

```
result = log10(input)
```

Arguments

Argument	Data Type
----------	-----------

input	numeric
--------------	---------

result	decimal
---------------	---------

Comments

Base 10 logarithm. Zero and negative inputs evaluate to null.

Examples

```
result = log10(1000) /* result = 3 */
```

power

Last Modified on 25/05/2020 1:28 pm AEST

Calculates the result of raising one number to the power of another number.

Function

```
result = power(input, exponent)
```

Arguments

Argument	Data Type
----------	-----------

input	any
--------------	-----

result	any
---------------	-----

Comments

Raises the input value to the specified exponent.

Examples

```
result = power(2,3) /* result = 8 */
```

round

Last Modified on 25/05/2020 1:35 pm AEST

Rounds a decimal value to the specified number of decimal places.

Function

```
result = round(value, precision)
```

Arguments

Argument	Data Type
----------	-----------

value	numeric
--------------	---------

precision	numeric
------------------	---------

result	decimal
---------------	---------

Comments

If a number is halfway between two rounding values then the result rounds away from zero. For example, if -3.65 is rounded to one decimal place then the result will be -3.7.

Examples

```
result = round(18.3333333, 2) /* result = 18.33 */
```

sign

Last Modified on 25/05/2020 1:35 pm AEST

Returns 1, 0 or -1 for positive, zero and negative respectively.

Function

```
result = sign(input)
```

Arguments

Argument	Data Type
----------	-----------

input	numeric
--------------	---------

result	decimal
---------------	---------

Examples

```
result = sign(-16) /* result = -1 */  
result = sign(5) /* result = 1 */
```

square

Last Modified on 25/05/2020 1:36 pm AEST

Calculates the square of a number.

Function

```
result = square(input)
```

Arguments

Argument	Data Type
----------	-----------

input	numeric
--------------	---------

result	numeric
---------------	---------

Comments

Squares the number, that is multiplies it by itself.

Examples

```
result = square(8)  
/* result = 64 */
```

sqrt

Last Modified on 25/05/2020 1:37 pm AEST

Calculates the square root of a number.

Function

```
result = sqrt(input)
```

Arguments

Argument	Data Type
----------	-----------

input	numeric
--------------	---------

result	decimal
---------------	---------

Comments

If the input number is negative then the result will be null.

Examples

```
result = sqrt(64)  
/* result = 8 */
```

rand

Last Modified on 25/05/2020 1:39 pm AEST

Generates a random number.

Function

There are two distinct calls which output different data types.

```
n = rand(lower, upper)
```

```
x = rand()
```

Arguments

Argument	Data Type
lower	integer
upper	integer
n	integer
x	decimal

Comments

If two integers inputs are provided, then **rand** generates a random integer from lower to upper inclusive.

If no inputs are provided, then **rand** generates a random decimal between zero and one.

The **rand** function is not available for use in reports.

Examples

```
result = rand(1, 100) // example result = 74  
result = rand() // example result = 0.988
```

charindex

Last Modified on 08/05/2019 9:54 am AEST

Function

```
result = charindex(needle, haystack, [start])
```

Arguments

Argument	Data Type
----------	-----------

needle	string
---------------	--------

haystack	string
-----------------	--------

start	integer
--------------	---------

result	integer
---------------	---------

Comments

This function searches for the *needle* string, in the *haystack* string, and returns the starting position if found or zero if not found. If the *start* parameter is less than 1 then the search starts from the beginning of the *haystack* string. *haystack* is limited to 8000 characters.

Examples

```
result = charindex('boson', 'Higgs boson experiment') /* result = 7 */  
result = charindex('boson', 'Milgram experiment') /* result = 0 */
```

len

Last Modified on 25/05/2020 1:15 pm AEST

Returns the number of characters in the input string.

Function

```
result = len(input)
```

Arguments

Argument	Data Type
----------	-----------

input	string
--------------	--------

result	integer
---------------	---------

Comments

If the string is a rich-text string then this will be inclusive of HTML formatting characters.

Examples

```
result = len('Brave New World') /* result = 15 */
```

left

Last Modified on 25/05/2020 1:16 pm AEST

Returns the specified number of characters from the start of a text value.

Function

```
result = left(text, count)
```

Arguments

Argument	Data Type
----------	-----------

text	string
-------------	--------

count	integer
--------------	---------

result	string
---------------	--------

Examples

```
result = left('Falcon Heavy', 6) /* result = 'Falcon' */
```

newguid

Last Modified on 25/05/2020 1:41 pm AEST

Generates a new globally unique identifier (GUID).

Function

```
result = newguid()
```

Arguments

Argument	Data Type
----------	-----------

result	string
---------------	--------

Comments

Generates a new globally unique identifier as a string, without braces.

The **newguid** function is not available for use in reports.

Examples

```
result = newguid()
```

replace

Last Modified on 25/05/2020 1:19 pm AEST

Performs a search and replace over some text and returns the result.

Function

```
result = replace(text, find, replace)
```

Arguments

Argument	Data Type
text	string
find	string
replace	string
result	string

Comments

Finds *find* within *text* and replaces it with *replace*. Note: this does not modify the underlying field - it only returns the resulting text.

Examples

```
result = replace('Old world', 'Old', 'New') /* result = 'New world' */
```

right

Last Modified on 25/05/2020 1:17 pm AEST

Returns to specified number of characters from the end of a text value.

Function

```
result = right(text, count)
```

Arguments

Argument	Data Type
----------	-----------

text	string
-------------	--------

count	integer
--------------	---------

result	string
---------------	--------

Examples

```
result = right('Falcon Heavy', 5) /* result = 'Heavy' */
```

substring

Last Modified on 25/05/2020 1:20 pm AEST

Returns a sub portion of a text value.

Function

```
result = substring(text, start, count)
```

Arguments

Argument	Data Type
text	string
start	integer
count	integer
result	string

Comments

Clips a string, beginning at the start position and selecting count characters. The first character of the text is position 1, and if the specified start parameter is less than 1 then the result will begin with the first character of the specified text parameter. Count must be positive, and if it is greater than the number that can be returned with the given text parameter, then the function will return the input text from the start character onward.

Examples

```
result = substring('Higgs boson experiment', 7, 5) /* result = 'boson' */
```

tolower

Last Modified on 25/05/2020 1:23 pm AEST

Converts the input text to lowercase.

Function

```
result = tolower(input)
```

Arguments

Argument	Data Type
----------	-----------

input	string
--------------	--------

result	integer
---------------	---------

Comments

Text values should not be converted to upper or lower case for the sole purpose of comparing values in a case-insensitive manner as this can reduce performance and text comparisons are automatically case insensitive.

Examples

```
result = tolower('Falcon Heavy') /* result = 'falcon heavy' */
```

toupper

Last Modified on 25/05/2020 1:23 pm AEST

Converts the input text to uppercase.

Function

```
result = toupper(condition)
```

Arguments

Argument	Data Type
----------	-----------

input	any
--------------	-----

result	any
---------------	-----

Comments

Text values should not be converted to upper or lower case for the sole purpose of comparing values in a case-insensitive manner as this can reduce performance and text comparisons are automatically case insensitive.

Examples

```
result = toupper('Falcon Heavy') /* 'FALCON HEAVY' */
```

case

Last Modified on 25/05/2020 1:42 pm AEST

Returns one of several results based on some condition.

Keyword

```
case value
  when option1 then result1
  when option2 then result2
  ...
  else default
end
```

```
case
  when condition1 then result1
  when condition2 then result2
  ...
  else default
end
```

Arguments

Argument	Data Type
----------	-----------

value	any
--------------	-----

option	any single-value
---------------	------------------

condition	bool (true/false)
------------------	-------------------

result	any
---------------	-----

default	any
----------------	-----

Comments

The **case** keywords provides a convenient way to test for multiple conditions. It can be used in one of two ways:

1. An initial *value* calculation is provided immediately after the case keyword, and that calculation result is then matched to one of several possible options.
2. Or, no initial calculation is provided, but several true/false conditions are provided.

If multiple options match the value, or if multiple conditions result in true, then the first match determines the result value.

If a value search calculation is provided, then it may be a single-value or list calculation, resulting in a single bool (true/false) or list of bools respectively.

It is common that the *options* and *results* are simply hard-coded string values, however any single-value calculation

can be used for *option*, *result*, and *default*.

Default 'else' result

Optionally, an **else** keyword can be used to indicate the default result that should be returned if none of the other options were matched. If no **else** keyword is provided, and none of the options are matched, then the result will be **null**.

Case-insensitive

String comparisons are case insensitive for the **case** keyword, and for the ReadNow platform in general.

Output data type

If the output data types do not match then a common data type that matches all the possible results will be used; for example, this will be a string if one of the results are a string data type.

It is recommended that calculations are written such that all outputs are of the same type.

Nulls

Consistent with the way that nulls are treated in calculations (where a null value represents the idea that the value is unknown or unknowable):

1. If an initial value is provided, and it is null, then none of the options will match, even if they also evaluate to null.
2. If a list of conditions is used, and either side of the condition is null, then the condition will be false.

In either case, the default result will be returned.

Examples

```
case
  when [Input].[Country] = 'Australia' then 'citizen'
  when [Input].[City] = 'Sydney' then 'local'
  when [Input] is null then 'unspecified'
  else 'foreign'
end
```

```
case [Input].[Country]
  when 'Australia' then 'citizen'
  when 'New Zealand' then 'resident'
  else 'foreign'
end
```

```
case [Var]
  when 'Australia' then 'citizen'
  when 'Singapore' then 457
end
```

```
case [All Tasks].[Priority]
  when 'High' then 5
  when 'Low' then 1
end
```

```
/* tax bracket calculator - illustrative only */
case
  when [Gross Income] <= 18200 then 0
  when [Gross Income] <= 37000 then 0.19 * ([Gross Income] - 18200)
  when [Gross Income] <= 90000 then 3572 + 0.325 * ([Gross Income] - 37000)
  when [Gross Income] <= 180000 then 20797 + 0.37 * ([Gross Income] - 90000)
  when [Gross Income] >= 180000 then 54097 + 0.45 * ([Gross Income] - 180000)
end
```

in

Last Modified on 25/05/2020 1:43 pm AEST

Returns true if some calculated value is equal to one of several options.

Keyword

search **in** (options)

search **not in** (options)

Arguments

Argument	Data Type
----------	-----------

search	any
---------------	-----

input	comma-separated list of single-value calculations
--------------	---

result	bool (true/false)
---------------	-------------------

Comments

The **in** keyword tests to see if the search calculation matches any of several possible options. It returns true if a match is found, and false if no match is found. The *search* and *input* will be converted to a common data type if possible.

The search input may be a list or single-value, and the result will be a bool (true/false) or list of bools respectively. The individual items specified in the list are typically constant values. They may also be calculations, but each must individually only return a single-value result.

Not in

The **not** keyword may be placed directly before the **in** keyword. This causes the opposite result to be returned, except if a null is provided (in which case false is still returned).

Case-insensitive

String comparisons are case insensitive for the **in** keyword, and for the REDINow platform in general.

Nulls

Consistent with the way that nulls are treated in calculations (where a null value represents the idea that the value is unknown or unknowable):

1. If the search value is null, then an **in** calculation will return false.
2. If the search value is null, then a **not in** calculation will also return false.

Examples

```
[Project].[Project Tasks] in ('Documentation', 'Unit tests')
```

```
'A+' in (85, '79%', 'B+') /* all values are converted to the string data type to be a common type */
```

```
'readinow' in ('ReadiNow') /* returns true - string comparisons are case insensitive */
```

```
1 in (1, 2, 3) /* returns true */  
4 in (1, 2, 3) /* returns false */  
null in (1, 2, 3) /* returns false */  
null in (1, null) /* returns false, but may be reviewed in a future release */
```

```
1 not in (1, 2, 3) /* returns false */  
4 not in (1, 2, 3) /* returns true */  
null not in (1, 2, 3) /* returns false */  
null not in (1, null) /* returns false */
```

```
x in (  
  'Options can be',  
  'spread over',  
  'multiple lines'  
)
```

```
x in (  
  'Options' + 'can' + 'be',  
  [based on] + 'calculations'  
)
```

let select

Last Modified on 25/05/2020 1:44 pm AEST

Assigns a sub-calculation to a variable that can then be used later in the calculation.

Keywords

```
let variable = calculation select result
```

Arguments

Argument	Data Type
variable	a label in the calculation
calculation	any
result	any

Comments

The **let** and **select** keywords can be used together to allow calculations to be simplified and organised into smaller sub-calculations.

The **let** keyword is used to associate some calculation to a with a variable name. That variable name can then be used within the *result* calculation that follows the **select** keyword.

```
let dueDate = [Assessment].[Due date]
select 'The assessment is due ' + dueDate
```

Multiple variables

The **let** keyword may be used multiple times to define multiple variables. A list of **let** keywords is concluded with a single **select** keyword. The calculation for each variable may make reference to other variables that were defined before it (but not after). In the following example, the *reminderDate* calculation may refer to the *dueDate* variable, and the overall result calculation can refer to both variables.

```
let dueDate = [Assessment].[Due date]
let reminderDate = dateadd(day, -7, dueDate)
select 'The assessment is due ' + dueDate + ' and a reminder will be sent ' + reminderDate
```

Variable scope

Typically variables are listed at the top of a calculation, but they may also be declared and used within sub-calculations. Doing so can some times be advantageous when organising a more complicated calculation that contains aggregation calculations. A variable name is *scoped* such that it may only used within the **select** calculation that it corresponds to, and within other **let** calculations that follow it that also belong to the same **select** keyword.

In general, the calculation: (let x = value select result), may be used with or without brackets in most places that any

other calculation can be used. In the following example, variables are defined within the sum function to simplify the calculation of individual items.

```
sum(  
  let x = [Order Items]  
  let discount = iif(x.[Item quantity] >= 10, 20.0, 0)  
  select x.[Item cost] * x.[Item quantity] - discount  
)
```

Variable names

Variables names behave similar to field and relationship names. They:

- May be specified with or without square brackets.
- If there are no square brackets, then they may only consist of letters, numbers, and underscore (and further may not start with a number).
- If square brackets are used, then any name may be used so long as it does not itself consist of square brackets.

Variable names are case-insensitive. By convention, variable names are usually specified without square brackets, and tend to join multiple words together. The following are all legal variable names:

- x
- costOfShipping
- [Cost of shipping]

Variables that hold lists

ReadiNow calculation variables do not hold values as such. Rather, they are associated with sub-calculations. The distinction is subtle, but it can be helpful in understanding how variables will behave in certain circumstances.

For example, variables that return list results generally cannot be used within summarise functions such as **count** and **sum**. The reason for this is that summarise calculations often need to filter some list of records according to some external criteria that needs to be fixed to some constant value while the summarization is being performed. In the following calculation, the x variable is associated with a simple calculation for determining a maximum allowable transaction size. The **select** result then visits all related transactions, testing the amount of each transaction to the fixed value of x. Correspondingly, this calculation could not make meaningful sense if x were to hold a list of numbers instead.

```
let x = [Department].[Maximum allowable transaction]  
select  
count( [Transactions] where [Amount] > x )
```

Precedence

Care should be taken to avoid variable names that coincide with field and relationship names. However, if a variable name ends up being the same as a field name, relationship name, or an externally provided workflow variable, then the **let** keywords variable will be selected with the highest priority over the others to minimise the chance of a calculation becoming broken due to unrelated changes such as new fields being added to an object.

Examples

```
let fullName = [First name] + ' ' + [Last name]
select
'Dear ' + fullName + ', we have received your reservation under the name: ' + fullName
```

order by

Last Modified on 25/05/2020 1:45 pm AEST

The **order by** keyword sorts a list of records by one or more fields, or calculations.

Keyword

```
list order by value
```

```
list order by value desc
```

```
list order by value1 asc, value2 desc
```

Arguments

Argument	Data Type	Remarks
list	record list	
	Any of single-value:	
	<ul style="list-style-type: none">• string• number/decimal/currency• date/time/date-time• choice-field	Typically simply a field name.
value		
result	record list	

Comments

A list calculation (such as requesting all records of a particular type, or following a to-many relationship) is provided to the left of the **order by** keywords. A sorting calculation, typically a field name, is then provided to the right. The sorting calculation must be a single-value calculation, not a list calculation.

For example, you can sort a list of Person records by their names, but not by their related tasks, because a person may have multiple tasks, so that would be considered as a list calculation.

Direction of sort

The **asc** or **desc** keywords may be added directly after the sorting calculation to indicate that the sorting should occur in ascending or descending order. The default is ascending, so the **asc** keyword is redundant, but can aid readability.

A choice field may also be provided as a sort calculation

Sorting on multiple fields

More than one sorting calculation may be provided, separated by commas. If two records have the same value for

the first sorting calculation, then sorting defers to the second calculations, and so on. For example, this can be used to sort Person records by Last Name and then First Name. If two or more people have the same Last name, then they will be then sorted by first name.

Using 'order by' within a function

If you need to sort a some list of records by multiple fields, and then provide the sorted list as an input to some other function, then it is necessary to enclose the whole list, including the ordering, within a separate brackets. This is necessary to prevent the commas of the sorting from becoming mixed up with the commas of the function.

For example, the following calculation will load Person records, sort them by last name, falling back to first name, and then return the first ten records. Note the second and second-last bracket that is required to avoid ambiguity caused by the comma.

```
first(10, (all(Person) order by [Last Name], [First Name]) )
```

Context

The right-hand sorting calculations are evaluated with respect to the records returned by the left-hand side. For example, if you refer to the [Name] field on the right-hand side, then it refers to the name field of the record list being sorted, not the name field of some other parent record that may be applicable to the calculation as a whole.

Availability

The **order by** keyword is not available in reports. Calculated fields that make use of **order by** are similarly not available in reports.

Examples

```
[Incidents] order by [Reported Date]
```

```
all([Person]) order by [Last Name], [First Name]
```

```
all([Person]) order by len([Email address]) desc
```

where

Last Modified on 25/05/2020 1:45 pm AEST

The **where** keyword filters a record list by applying a yes/no condition.

Keyword

```
list where condition
```

Arguments

Argument	Data Type
list	record list
condition	single-value bool (true/false)
result	record list

Comments

A list calculation (such as requesting all records of a particular type, or following a to-many relationship) is provided to the left of the **where** keyword. A filtering calculation, typically some sort of comparison, is then provided to the right.

The filtering calculation must be a single-value calculation, not a list calculation. For example, you can filter a list of Person records by testing whether their name is equal to some value, but not (directly) by testing whether they have a task that is named some value, because a person could have multiple tasks, which would therefore result in multiple true/false results for each person. Note, however, that the **any** and **every** functions can combine multiple yes/no results back into a single result.

Use of true/false fields

The **where** keyword is typically used with a comparison such as [Field] = 'value'. However, any calculation that returns a true/false function can be provided to the right-hand side of a the **where** keyword, including the name of a bool true/false field. For example:

```
all([Task]) where [Is completed]
```

Context

The right-hand sorting calculations are evaluated with respect to the records returned by the left-hand side. For example, if you refer to the [Name] field on the right-hand side, then it refers to the name field of the record list being filtered, not the name field of some other parent record that may be applicable to the calculation as a whole.

If it is necessary to refer to the parent record, then first assign the context to a variable and then refer to the variable within the **where** condition. For example:

```
let parentRecordDueDate = [Project due date]
select
count( [Tasks] where [Estimated task completion] > parentRecordDueDate )
```

Examples

```
[Incidents] where State='NSW'
```

```
all([Person]) where any(not [Assigned Tasks].[Is complete])
```

Comments

Last Modified on 06/04/2020 11:11 am AEST

Comments allow you to keep notes within a calculation.

Overview

Use comments for notes such as:

- how your calculation works, for convenience later
- relevant business logic
- other information or caveats that you may need to remember the next time you revisit a calculation.

Comment notation can be used to indicate that all text between two markers is a comment, or to indicate that the remainder of the current line is a comment. The ReadNow calculation engine skips over comments when processing.

How to add comments

Block comments

Text between `/*` and `*/` pairs will be treated as block style comments.

```
/*  
This is a mult-line  
block comment.  
*/
```

Single-line comments

Using two hyphens (`--`) will treat the text following the hyphens, till the end of the line, as in-line comments.

```
[First name] + ' ' + [Last name] -- this is single line comment, at the end of a line
```

Markup Keywords

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Markup keywords may be placed after elements of code to change how it behaves.

Operation	Use After	Example	Comments
!unsecured	Relationship	[Person has User Account]!unsecured.[Name]	This allows the related records (and their fields) to be accessed even when the user does not have access. See important notes below.
!recursive	Relationship	[Direct reports]!recursive	The relationship will return immediately related values, and recursively related values.
!self	Relationship	[Direct reports]!recursive!self	Must be used after the 'recursive' markup. Causes the initial record to also be returned. This is a common requirement when evaluating recursive functions.

Additional notes for the Unsecured keyword

Use of the unsecured keyword disables access control checks for certain records. This may be done, for example, when:

- an administrator wishes to make aggregates, such as count or sum, available to users who cannot see individual records
- or in cases where the administrator wishes to improve performance by disabling access control checks where the administrator knows (with regard to the purpose and sensitivity of the data) that other aspects of the calculation ensure that only appropriate data is disclosed.

Administrators MUST take care to ensure use of the !unsecured does not result in unintended disclosure of information.

The !unsecured keyword may be used in reports, however non-administrative self-serve users and content administrators may also author report calculations. Therefore the following additional rules apply:

- The report must be saved (last modified) by a security administrator for the !unsecured keyword to work.
- If a content administrator, who is not a security administrator, subsequently modifies the report then !unsecured will no longer be honored in that report.
- However, if the user who saved the report ceases to be a security administrator, or if their account is deactivated, then the report and !unsecured calculation will still run to work as intended for other users.

Text Templates

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Overview

Text templates provide a convenient and safe way to generate **rich-text (HTML)** and **plain-text** within a calculation by using **document generation macros**.

Consider a calculation that adds strings together to form a rich-text email message, such as:

```
'<p>' + 'Dear ' + p.[First Name] + ' ' + p.[Last Name] + ', ' + '</p>' +  
'<p>' + 'You currently have ' + count(p.[Assigned Tasks]) + ' assigned tasks.' + '</p>' +  
'<p>' + 'Please review your tasks' + '</p>'
```

(Assuming that a variable 'p' is present in the Workflow that is assigned to a person.)

This calculation can be rewritten using text templates as follows:

```
html(  
<p>  
  Dear {p.[First Name]} {p.[Last Name]},  
</p>  
<p>  
  You current have { count(p.[Assigned Tasks]) } assigned tasks.  
</p>  
<p>  
  <b>Please review your tasks.</b>  
</p>  
)
```

Plain Text Templates

Plain text templates can be used to generate text by using the **text(|content|)** function. Note that the content within the text function must be contained within two '|' pipe characters.

Free form text, including new lines and (most) special characters, can be used between the pipe characters. Individual calculations and **document generation macros** can then be placed in the content by using a pair of {} braces.

For example, the result of:

```
text(|The question is 1 + 2 + 3|)
```

will literally be 'The question is 1 + 2 + 3', not 'The question is 6'.

Whereas, the result of:

```
text(|The answer is {1 + 2 + 3} |)
```

will be: 'The answer is 6'.

Important - do not use the text function for generating rich text HTML as this may cause your calculation to

introduce a security vulnerability into your app. Use the `html()` function instead.

Note that the results of a text template can themselves be used in a calculation, such as the following, which will calculate the length of the generated message.

```
len( text(|The weather is [Weather]|) )
```

Rich Text (HTML formatted) Templates

Rich text HTML templates can be used to generate rich text content by using the `html(|content|)` functions.

HTML tags, plain text, and macros can be placed within the HTML template content area, such as:

```
html(|A message formatted with bold text: <b>{[Important Message]}</b>|)
```

The `html()` and `text()` functions are similar in use, but the `html` function has the following important differences:

1. **Macro Encoding** - to ensure that content is correctly and securely displayed
2. **Sanitization** - to protect against potentially malicious generated HTML
3. **HTML Result type** - so that other Readiness calculation and platform features know to treat the content as HTML

Refer to the HTML Security Considerations section for more details.

Availability

Plain text and rich text text template are available for use in workflows, calculated fields on forms, and most places that calculations are supported.

They are not, however, available for use in report calculations (either directly or via calculated fields on a report).

Using Document Generation Macros

Most document generation macros can also be used within the `text()` and `html()` functions, except the `MERGEFIELD` keyword is not required. (This keyword is only required in Word document templates).

Conditionally Including Content

For example, the following plain-text template can be used to include some text only if a certain condition is met:

```
text(|
Welcome [First Name],
{ if count(all([Person]))=100 }
You are the 100th person!
{ end }
This part of the message is always shown.
|)
```

The `if` keyword will conditionally include/exclude a section of the template - up to the corresponding `end` keyword - based on whether the condition is true or false respectively. Take note of the difference between the document

generation **if** keyword (one 'f' and no brackets) and the standard **iif**(*condition, result-if-true, result-if-false*) calculation function.

Repeated Content

The following example assumes that a person variable called 'p' has been passed. It uses a HTML template to generate a bullet-point list of tasks:

```
html(|
<ul>
  { with p.[Assigned Tasks] order by [Name] } <li>{[Name]}</li> { end }
</ul>
|)
```

The **** and **** HTML tags indicate the start and end of a bullet point list.

The **{with p.[Assigned Tasks]}** macro is a template macro that visits each task record related to the person record. The content between a macro (such as this one) that returns a list of records - and its corresponding **{end}** macro is then repeated - once for each task.

In this case, the repeated content is **{[Name]}**, where **** and **** are the HTML tags to start and end each individual bullet point. The repeated content section gets repeated once for every record that was returned by the list calculation - that is once for every task in this example. On each repeat, the current task record become the context record for any further macros within. So the **{[Name]}** macro will show the name of the current task.

A simple list with separators

A common requirement is a comma-separated list of names. Or a list with a HTML line break between each item. These can be achieved respectively by using the **{sep}** keyword:

```
text(|All tasks: {with p.[Assigned Tasks]}{[Name]}{sep}, {end}|)
```

```
html(|All tasks: {with p.[Assigned Tasks]}{[Name]}{sep}<br>{end}|)
```

In each case, the content between the **{p.[Assigned Tasks]}** list calculation and the **{sep}** keyword is the content that gets repeated, and the content between the **{sep}** keyword and the **{end}** keyword gets used as a separator between each item of content. Note that **
** is a HTML tag that inserts a line-break.

HTML tables

A HTML table can be generated by repeating the **<tr>** row tags of a table. For example:

```
html(|<table>
  <tr>
    <th>Task Name</th>
    <th>Due Date</th>
  </tr>
  {p.[Assigned Tasks]}
  <tr>
    <td>{[Name]}</td>
    <td>{[Due Date]}</td>
  </tr>
  {end}
</table>|)
```

HTML Security Considerations

HTML Macro Encoding

When the `html` function is used, the *result* of any calculation macros that are used within the `html` function will automatically have any special characters encoded to HTML to ensure that they are correctly and securely represented. For example, characters such as apostrophes and angle brackets needs to be converted to HTML encodings such as `'` and `<`; in order for email programs and web browsers to treat them correctly.

For example, if a workflow had a variable called `'message'`, and the content of message was:

```
We've got a surprise for you! <limited time only>
```

Then the calculation:

```
html(|The <b>message</b> is: {message}|)
```

Will give a correct HTML response of:

```
The <b>message</b> is: We&apos;ve got a surprise for you! &lt;limited time only&gt;
```

Which, in turn, will correctly be shown in an email program.

HTML Sanitization

The `html` function provides additional security protection by running a *sanitization check* over the generated rich-text HTML.

The sanitization check ensures that the generated content does not contain any potentially malicious HTML instructions. For example, if a malicious user were to edit some record data to contain the HTML `<script>` tag with the hopes of running the script on the recipients computer (known as a *cross site scripting attack*), then the sanitization step would detect and remove the script tag.

The sanitization works as follows:

- a whitelist of known safe HTML (and SVG) tags and attributes is used.
- sanitization is applied on the overall result of the `html` function, not just to individual macros, to protect against malicious tags being splits across multiple macros.
- the sanitizer uses a 'parse and reconstruct' approach, which gives added protection, but does mean that the

output HTML may not be character-for-character identical to what is specified in the template.

Sanitization of HTML Headers: `html()` vs `htmlDoc()`

Ordinarily the HTML sanitizer will also discard HTML header tags (such as `<title>` and `<style>`) as these are invalid in most contexts. However, if you are intending to perform whole-of-document generation, then a separate **`htmlDoc(|content|)`** function is also available, which works identical in every respect except that it allows (and ensures) HTML header tags.

In general, prefer the **`html(|content|)`** function unless headers are shown to be needed.

Escape Sequences

In the unlikely scenario that you need to use the `|` pipe character within the content of a `text()` or `html()` template, this can be achieved by typing the pipe character twice. For example the calculation:

```
text(|Left of pipe || Right of pipe|)
```

Will give a result of:

```
Left of pipe | Right of pipe
```

Calculation Names and Identifiers

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Names are used in a calculations to refer to various data values such as field names, variable names and so on.

Overview

Names, also called *identifiers*, are the text labels within a calculation that refer to different sources of information.

Names may refer to:

- Field names
- Relationship names
- Calculation Variable names
- Workflow Variable names
- Object names
- Record names

Representing names in calculations

Simple names may be used directly in calculations. More complex names that contain spaces or certain special characters need to be enclosed in square brackets.

For example, consider the calculation:

```
[Last Name] + ' ' + Status
```

In this example, **Status** is a simple name and may be used directly, whereas **Last Name** must be surrounded by square brackets because it contains a space. Note that square brackets may also be used around simple names, so [Status] is also valid.

More details about simple and complex are described later on this page.

Case Insensitive

Names are *not* case sensitivity, which is to say that you do not need to have correct or consistent upper and lower case capitalization.

However, it is recommended that you try to use capitalization consistently because it will make your calculation easier to read.

Relationship Names

Relationships between records can be following from either record to the other. However, typically the natural name of a relationship in one direction is different to the name of the relationship in the other.

For example, the relationship from an employee to their manager might be **Employee's manager**, or simply **Manager**. Conversely, the same relationship from the manager back to their team members would more

appropriately be **Direct Reports**.

ReadiNow calculations require that the correct name be used for the direction that is being followed.

See [Relationships](#) to learn more about relationship names.

Tip: When you create a new relationship, the default reverse name of the relationship is the name of the object that the relationship comes from. For example, if you create a relationship from the Incident object to the Employee object, the default reverse name is Incident. In many cases this is a suitable name - but it should be reviewed to make sure it does not cause later confusion.

Changing Name - Script Names

Fields and relationships have a setting (located in the field or relationship properties window within the form builder) called Script Name. The Script Name is the name that must be used in a calculation. Relationships have one Script Name for each direction.

When a field or relationship is first created, the Script Name is initially set to be the same as the name that is entered. However, if the name is later modified to something else then the script name does not automatically change. This allows fields and relationships to be renamed without risking problems for any existing calculations, workflows or APIs.

However, only the script name may be used in calculations.

If you wish to change the Script Name for a field or a relationship, then you may do so, however you will need to update the name in any calculations, workflows that are referring to it.

Non-Unique Names

Precedence for different types of names

If the same name could refer to a field name, variable name, or workflow variable name, then the following precedence rules are applied:

1. **Calculation Variable name** - highest precedence, so that if a new field (conflicting) field is added to an object or workflow then existing calculations are not impacted. Calculation Variables only have meaning within the calculation so can be easily changed you wish to refer to something else.
2. **Workflow Variable name** - next highest precedence, so that if a new field (conflicting) field is added to an object then existing workflows are not impacted. Workflows Variables meaning within the workflow so can be changed if you need to refer to a field or relationship, but need to be changed throughout the workflow.
3. **Field or Relationship name** - lowest precedence.

Explicitly referring to a particular type of name

Consider a calculation, such as the following, that has a calculation variable called status, within a workflow that also has a variable called status, and the calculation is working with an object that also has a field called status

```
let status = 'x'  
select all([Employee] where Status = 'Available')
```

In this example, the second usage of the name Status is ambiguous, but the precedent rules would mean that it would refer to the calculation variable defined on the line above. If we want to access the status choice field, then the most natural option is to change the variable name:

```
let somethingElse = 'x'  
select all([Employee] where Status = 'Available')
```

However, another option is to use the `context` function to select the record, which then makes it clear that we intend to access the choice field:

```
let status = 'x'  
select all([Employee] where context().Status = 'Available')
```

Or, if there is a workflow parameter called status, then we can prefix the name (and any square brackets) with the `@` symbol to explicitly specify that a workflow variable is being referenced:

```
let status = 'x'  
select all([Employee] where @Status = 'Available') -- explicitly refer to a workflow variable called 'Status'
```

Field and Relationship names must be unique

When referring to fields, relationships, objects and records, the name must be uniquely identify. If a name is used in a calculation that does not uniquely identify the item (in the context that the name is being used) then the calculation builder will show an saying that the name is not valid.

For example, if an object named ChildObject has a field named Status, but the object inherits another object, ParentObject, that also has a field named Status, then a calculation in a ChildObject report cannot refer to the status field because it is ambiguous.

However, if the report is based on the ParentObject, then the calculation can refer to the status field because the fields of the child object are not available in that context (unless the calculation uses the `convert` function to treat the record as a ChildObject).

Name conflicts can be resolved by giving the two fields different Script Names. See below for details.

Simple and Complex Names in detail

Simple Names

A name is a simple name and can be used directly in a calculation if:

- it starts with a letter
- and it only contains letters and numbers - i.e. with no spaces or other characters

If a name is the same as a calculation keyword, then - depending on the scenario - it may not be possible to use it as a simple name.

Complex Names

If a name contains spaces or special characters then it must be enclosed within square brackets within the calculation.

Once a square bracket is encountered, all characters are then treated as part of the name until a closing square bracket is found.

Examples:

```
[Name with spaces]
```

```
[This & that character.]
```

Escape Sequence

Most special characters are allowed within square brackets. Very rarely you may need to refer to a field name that actually contains a square bracket in the name itself. In this scenario, the square bracket must be represented (*escaped*) by typing the square bracket twice.

For example, to represent the name **A [slightly] complicated name** use:

```
[A [slightly]] complicated name]
```

Comparison Operators

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Less than '<'

Returns True if:

- the first numerical value is less than the second
- the first text value alphabetically comes before the second
- the first date or time is before the second
- the first choice field value is ordered before the second

Less than or equal to '<='

Returns True if:

- the first numerical value is less than or equal to the second
- the first text value alphabetically comes before or is equal to the second
- the first choice field value is ordered before or is equal to the second

Greater than '>'

Returns true if:

- the first numerical value is greater than the second
- the first text value alphabetically comes after the second
- the first date or time is after the second
- the first choice field value is ordered after the second

Greater than or equal to '>='

Returns true if:

- the first numerical value is greater than or equal to the second
- the first text value alphabetically comes after or is equal to the second
- the first date or time is after or is equal to the second
- the first choice field value is ordered after or is equal to the second

Equal '='

Returns true if two values are equal, or if two record calculations refer to the same record.

```
[Department] = 'Sales'
```

Not equal '<>'

Returns true if two values or records are different to each other. For example:

```
[Price] <> 0
```

Like

Used to compare text to a pattern. The text (on the left of Like) can be a string literal (e.g. a fixed value) however it is more common to provide the string text via a string variable (i.e. text from a field such as [Name]). The Like operator returns True if the text value matches the pattern.

A percentage symbol can be used as a wildcard at the start or end of the pattern.

For example, the following calculation will return True if the Name starts with Peter:

```
[Name] Like 'Peter%'
```

Note that you can search for square brackets literally by escaping the opening square bracket, like this:

```
[SomeFieldText] Like '%[[Person]]%'
```

The above will match any string that literally contains the text "[Person]".

Not Like

Used with Like, the Not operator (Not Like) changes a True to a False. Not Like will return False if the text value matches the pattern. For example the following calculation will return False if the Name starts with Peter:

```
[Name] Not Like 'Peter%'
```

Is null

Checks if a relationship, record, or value is equal to null (not set).

```
[Quantity] Is null
```

In (membership)

Determines if the first value is equal to one of several options.

Logic Operators

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Logical NOT

The **not** operator converts a true result to false, and a false result to true.

For example, the following will return true if x is not equal to 5.

```
not x = 5
```

The following calculation will return true if the boolean field 'Report submitted' has not been ticked:

```
not [Report Submitted]
```

NOT has the highest precedence of the three logical operators. For example, the following calculation will return true:

```
not false and true
```

Logical AND

The **and** operator returns true if both of its inputs are true.

Example:

```
[Department] = 'Marketing' and [Quantity] > 100
```

AND has the second highest precedence of the three logical operators, after negation. For example, the following calculation:

```
a and b or c and d
```

is equivalent to:

```
(a and b) or (c and d)
```

Logical OR

The **or** operator returns true if either or both of its inputs are true.

Example:

```
[Cost] > 1000 or [Description] like '%urgent%'
```

OR has the lowest precedence of the three logical operators. For example, the following calculation:

```
a or b and c or d
```

is equivalent to:

a or (b and c) or d

Mathematical Operators

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Add

Adds two numbers.

Example:

```
[Invoice Total] + [Delivery Cost]
```

Subtract

Subtracts the second number from the first number.

Example:

```
[Invoice Total] - [Discount]
```

Multiply

Multiplies two numbers.

Example:

```
[Unit Price] * [GST Percentage]
```

Divide

Returns a decimal result of a numeric division.

Example:

```
[EBITDA] / 12
```

Modulo

Returns the remainder of an integer division.

Example:

```
10 % 7 /* result = 3 */
```

Negate

Reverses the sign of a number.

Example:

-[Discount]

String Operators

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Concatenate

Joins multiple strings together.

For example:

```
[Title] + ' ' + [Last Name]
```

Data Type Limits and Field Limits

Last Modified on 19/06/2019 12:34 pm AEST

Data Type	Minimum	Maximum
Currency	-1 000 000 000.00	+1 000 000 000.00
Decimal	-1 000 000 000.000	+1 000 000 000.000
Number	-1 000 000 000	+1 000 000 000
Date	01/01/1753	31/12/9999
Text	Empty	300 characters
Multi-line Text	Empty	10 000 characters including formatting
Rich Text	Empty	10 000 characters including formatting
Field	Minimum	Maximum
Form Field Name	1 character	300 characters - 20 shown
Form Field Display Name	Empty	300 characters - 20 shown
Survey Question	Empty	300 characters
Survey Guidance Text	Empty	10 000 characters including formatting

Data types within calculations

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Introduction to data types in calculations

Every calculation produces a result of a particular data type, such as a numeric result or a particular type of record, for example. Understanding how ReadiScript considers data types can be helpful in understanding how to create and trouble-shoot calculations.

Escape characters

Text data is delimited by a single quote, which means that this character will cause an error if it appears in a literal parameter. To use a quote in literal text it is necessary to employ the escape character before the quote character. The escape character is defined as a backslash.

```
result = len('Roger's new scooter') /* invalid calculation */  
result = len('Roger\'s new scooter') /* valid calculation */
```

Result types are based on the calculation structure

ReadiScript determines the result data type of a calculation by considering the calculation itself, and without regard to the specific results that are calculated on a particular run. This approach is often referred to as *static typing*. For example: a calculation that returns all employees who have a status of "On Leave" will have a 'list of Employee record' data type - even if there is only one employee that is on leave.

Calculations are usually made up of smaller sub-calculations, often referred to as *expressions*. Each sub-calculation also has a result type. The result types of these sub-calculations can influence how ReadiScript interprets a calculation.

In the following example, the sub-calculations [Quantity in inventory] and [Quantity received] may both represent number fields. The plus operator will perform a numeric addition if presented with two sub calculations that both have a number result type.

```
[Quantity in inventory] + [Quantity received]
```

Whereas, in the following combination, each sub-calculation has a text result type, so the plus operator will combine the two text values into a single long text value.

```
[First name] + ' ' + [Last Name]
```

List of data types

ReadiScript supports the following data types:

string	Represents text, including formatted text.
int	Represents a whole number.

decimal	Represents a number with a decimal component.
currency	Represents an amount of money.
bool	Represents a yes/no, or true/false, value.
datetime	Represents a date and time, and is time-zone aware.
date	Represents a date only, and is <i>not</i> time-zone aware.
time	Represents a time of day only, and is <i>not</i> time-zone aware.
record	Represents a record of a particular type.

In addition to the above, a result data type also includes:

- for strings, encoding information (for example if the string is JSON or XML for use in API callouts).
- for decimal, the number of decimal places.
- for records, the type (object) of record that is returned.
- for all of the above, the result type may be a single value or a list of values.

For example, the following calculation has a result type of "List of employee". That is the result type, regardless of whether there are zero, one, or many records returned; and also regardless of whether the actual records returned are exactly 'Employee', or of some other object that inherits from 'Employee' such as 'Manager'.

```
all( Employee )
```

Type conversion

Each function and operator accepts particular data types for input, and also a particular result type for the larger calculation that is formed. When a sub calculation is not of the correct type for use with a function, or when two sub calculations of different types are combined together, an automatic conversion may occur.

In the following calculation, the [Manager] sub expression may return a Manager record. The len function accepts a string, and returns a number (specifically, the length of the string). The manager record will be automatically converted to a string by using the name of the record. The len function, which returns a number is then added to the decimal 1.234. In order for this addition to occur, the whole number is automatically converted to a decimal, and so the overall result type is decimal.

```
len( [Manager] ) + 1.234
```

See [Converting between data types](#) for more details.

Record types

If a sub expression returns a **record** result data type, then the result data type also keeps track of which object

might be returned. This always includes any inheriting types, but it may be necessary to use the convert function to access fields and relationships that only apply to those inheriting records.

The following calculation may, for example, have a result data type of **Person record**. But when the calculation runs, a more specific type of inheriting record, such as a Manager record may be returned.

```
[Process Document].[Last Reviewed By Who]
```

Expected result data types

In some REDINow features, such as when adding a calculated column to a report, a calculation of any result type may be used.

In other REDINow features, there may be specific constraints on what result data type a calculation may have. For example, the calculation for a calculated field may only return a single value, not a list. Attempting to use a calculation that is determined to have a **list** result data type will result in a calculation error.

A challenge can arise when a calculation is designed such that the author/administrator knows there is only one result, but REDIscript has determined that the calculation returns a list result. In these cases, **aggregate** functions such as **any**, **count**, and **first** can be used to guide REDIscript.

Converting between data types

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Implicit and explicit conversion

A calculation or sub calculation with a particular result type will often need to be used in a place that requires a different data type.

For example, a record field that contains a date, or number, may need to be combined with other text in order to generate an email message. In this example, the date sub calculation needs to first be converted to text.

There are two ways that conversion may occur between types.

Implicit conversion

For many data type conversions, the meaning of the data conversion is clear, and there will be no loss of information. In such cases, conversion will happen automatically.

In the following calculation, the **decimal** 0.5 is being added to the whole **number** 120. In this case, the whole number would be implicitly converted to a decimal before being added to the other decimal, and further returning a decimal result data type.

```
0.5 + 123
```

Explicit conversion

For some data type conversions, a way of converting the data may be imagined, but it may not be the kind of conversion that one wants to perform accidentally. In these cases, conversion must be explicitly performed using the **convert** function.

In the following example, the decimal 5.1 is being passed to the second parameter of the **left** function, which only accepts whole numbers. On its own, this will cause a calculation error to be shown because the data types do not match, and decimal does not implicitly convert back to **int**. However, a conversion can be imagined - namely to round the decimal. The **convert** function can be used to explicitly force this.

```
left( "Welcome", 5.1 ) -- error  
left( "Welcome", convert( int, 5.1 ) ) -- OK
```

Permitted conversions

The following table shows what type conversions are implicitly and explicitly allowed.

★ **Implicit** conversion allowed from the type on the left to the type on the top

★ **Explicit** conversion allowed from the type on the left to the type on the top

```
string int decimal currency date time datetime record bool
```

	string	int	decimal	currency	date	time	datetime	record	bool
string	n/a	★	★	★	★	★	★		★
int	★	n/a	★	★					★
decimal	★	★	n/a	★					★
currency	★	★	★	n/a					
date	★				n/a		★		
time	★					n/a	★		
datetime	★				★	★	n/a		
record	★							n/a	★
bool	★								n/a

Specific conversions

Converting from record to string

A record will implicitly convert to a string. When this is done, then name of record is returned.

For example, the following calculation will retrieve the name field of each record, and prefix it with the text provided.

```
'Hello ' + all(Person)
```

Converting between record objects

If a result data type is **record**, then the record object is also tracked.

Record calculations can be *implicitly* converted from an object to a parent object. For example, an expression that returns a list of Employees can then be used to access fields that are defined on Person, because Employee derives from Person.

Record expressions can be *explicitly* converted from a object to a derived object. Explicit conversion is done by specifying the object script name. For example, the following calculation will get all Employees, but then treat the result as manager:

```
convert([Manager], all([Employee]))
```

That is, this expression can now access fields and relationships that are now only available on managers. If employees are encountered that are not managers, then the conversion will turn them into null.

Converting from datetime to string

If a calculation that has a **datetime** result data type is converted to a **string**, then the date/time value is firstly transformed into the time zone of the user who is currently viewing the calculation result (or running the workflow), and the date/time is then formatted using Australian date format.

Time zone adjustments are not, however, made for **date**-only or **time**-only data types.

Implicit conversion and comparisons

If two different data types are compared (for example to check whether one is larger than the other) then implicit conversion can contribute to accidental calculation errors. For example, if a **number** were to be accidentally compared to a **string** then this could cause unintended behavior. So help prevent this type of error, the calculation builder will give warnings and/or errors for suspicious conversions - including some scenarios where implicit conversion would ordinarily otherwise apply.

Dates, Times and Time Zones

Last Modified on 07/06/2019 12:50 am AEST

Date and Time Data Types

ReadiNow supports three related data types:

- Date only
- Time only
- Date and Time

The date-time data type is time zone aware. The date-only and time-only data types are not time zone aware.

Date only type

A date-only field holds a year, month and day. Date only fields are not time zone aware, which is to say that if a record has a particular date stored in a date-only field, then all ReadNow users will see the same year, month and day for that record, irrespective of what time zone was active when the record was created, or what time zone they are in when viewing the record.

Calculations and sub calculations can also return date-only values, and they are similarly (mostly) time zone unaware. For example, a calculation may refer to a date-only field on a record.

A constant date-only value can be added to a calculation using the ISO format: #yyyy-mm-dd#. For example:

```
[Review date] > #2015-10-21#
```

The one manner in which date-only data type is aware is when using the `getdate()` function. This will return a today's date, according to the current user's time zone, as date-only value.

```
getdate()
```

Time only type

A time-only field works in a similar manner, holding a hour, minute, and second. Note that the second value is recorded, even if it is often not visibly presented. This can cause some confusion with time calculations that perform 'equals' comparisons.

Time only fields and calculations are similarly not time zone aware, and all users will see the same hour, minute and second, regardless of their local time zone. (Time zone adjustments are not possible without a date in order to determine daylight savings offsets).

A constant time-only value can be added to a calculation using the ISO format: #hh:mm# or #hh:mm:ss#, where the hour is expressed in 24 hour time.

```
[Start time] < #17:15#
```

Time-only is similarly time-zone aware when the `gettime()` function is used. This function will return the current time, according to the current user's time zone, as a time-only value.

```
gettime()
```

Date time type

A date-time field represents a specific moment in history. It has the appearance of holding a date and a time. But it is time-zone aware, and its value will always be presented using the local time zone of each user. It does not, however, store a timezone in itself. Time zones are discussed below.

A constant date-time value can be added to a calculation using the following formats, all equivalently giving a result of 31st December 2019, 1:30pm and 59 seconds.

```
#2019-12-31T13:30:59# -- ISO format
```

```
#2019-12-31 13:30:59# -- 31st December 2019, 1:30:59pm
```

```
#2019-12-31 1:30 PM# -- 31st December 2019, 1:30:59pm
```

The `getdatetime` function always returns the current moment in time as a date-time value, which is then always presented in the user's local time in the same manner as any other date-time value.

```
getdatetime()
```

Time zones and the date-time type

When a date-time field value is entered into a record through a form, or some other manner, the date and time numbers entered are understood to be in the local time zone region of the current user. When the record is then later used on a form or report, the values are then converted back to the user's local time zone region.

However, a different user viewing the same record from a different time-zone region will see different values - the same moment in time, but represented according to their time-zone region.

The general principle, however, is that any one user (operating within one time zone) will always see a consistent view of date-time record data, throughout the year, in their own local time zone.

Internally stored as UTC

The ReadNow platform internally converts any date-time values entered to UTC (GMT) date-times for storage and processing. When the record is then later used on a form or report, the values are then converted back to the user's local time zone region.

Note that time-zone region, rather than time-zone offset, is used because different regions have different historical timings for the start and end of daylight saving. When a date-time value is being converted to local time, the date in that date-time value is used to determine whether daylight time is used (not whether the present time is currently in daylight saving). This similarly ensures a consistent view of the data year around.

In this manner:

- a user who enters a date-time value into a record, will see the same date-time value for that record throughout the platform. (assuming they do not change the time-zone of their computer).

- and will continue to see the same value presented throughout the year, even as their local offset adjusts for daylight saving.
- a different user who views the date-time record from a different time zone, will see the same moment in time - but converted to their own time zone.

For example:

- if a date-time value of 10am on 6/6/2019 is set on a record by a user in Sydney (GMT+10)
- then a user in California (GMT-7) viewing the same record will see a value of: 5pm on 5/6/2019
- six months later, the Sydney user will still see that record showing 10am on 6/6/2019.

Determining the time zone

All calculations are run in the context of a time zone.

Web Browsers

For calculations that are performed in the web user interface, the time-zone region information provided by the user's operating system and browser is used to determine the time-zone offsets.

Default Time Zone Region and Scheduled Workflows

For calculations that are performed in a workflow that is run on a schedule, or similarly triggered by a background operation, the time zone region is based on the Time Zone setting, located under Administration / Settings / General Settings.

Note that the general settings page shows an hours offset. However, it is the region, not the present offset, that is recorded as the setting, for the reasons above.

Date and Time Calculations

General principles

The following general principles guide the treatment of time zones for date-time values (but not date-only, nor time-only) in calculations:

1. whenever a date-time value gets created from individual parts, those parts are understood to be in the local time zone.
2. whenever a date-time value gets dissolved into its parts, or the parts shown, those parts will represent the local time zone.
3. whenever a function could be impacted by the time zone, that function is performed in local time.

Examples

1. Principle 1 - the following are all understood to be 9:30am on 30th June 2019, *in local time*:
 - #2019-06-30T09:30:00#
 - datetimefromparts(2019, 6, 30, 9, 30, 0)

- `convert(datetime, '2015-07-27 09:30:00')`

2. Principle 2 examples:

1. `hour(getdatetime())` returns the current hour as a number, according to local time
2. `'The time is ' + getdatetime()` creates a string that includes the current date time, according to local time.
3. `datename(month, getdatetime())` returns the name of the current month, according to local time

3. Principle 3 example:

1. `dateadd(month, 1, getdatetime())` the result of adding one month can be slightly different depending on the time zone.

Impact of time zone on various date and time functions

<code>getdate</code>	returns the current date, according to the local time zone, as a date-only value.
<code>gettime</code>	returns the current time, according to the local time zone, as a time-only value.
<code>getdatetime</code>	returns the current moment, as a date-time value.
<code>year</code>	gets the year number of a date-only or date-time value (for the latter, according to the local time zone)
<code>month</code>	gets the month number from 1 to 12 of a date-only or date-time value (for the latter, according to the local time zone)
<code>day</code>	gets the day number from 1 to 31 of a date-only or date-time value (for the latter, according to the local time zone)
<code>hour</code>	gets the hour number from 0 to 23 of a time-only or date-time value (for the latter, according to the local time zone)
<code>minute</code>	gets the minute number from 0 to 59 of a time-only or date-time value (for the latter, according to the local time zone)
<code>second</code>	gets the second number from 0 to 59 of a time-only or date-time value (for the latter, according to the local time zone)

quarter	gets the quarter number from 1 to 4 of a date-only or date-time value (for the latter, according to the local time zone)
dayofyear	gets the day of the year from 1 to 366 of a date-only or date-time value (for the latter, according to the local time zone)
week	gets the week number of the year from 1 to 53 of a date-only or date-time value (for the latter, according to the local time zone)
weekday	gets the day of the week as a number from Sunday=1 to Saturday=7 of a date-only or date-time value (for the latter, according to the local time zone)
datefromparts	composes a date-only value from a year, month, and day, number, without regard to time-zone.
timefromparts	composes a time-only value from a hour, minute, and second number, without regard to time-zone.
datetimefromparts	composes a date-time value from year, month, day, hour, minute, and second numbers, interpreting those numbers with regard to the current time zone.
dateadd	add (or subtracts) a specified number of units to a date-only or date-time value. The former is performed without regard to time-zone. The latter is performed in the context of the current time zone.
datediff	calculates the difference between two date-only values, or two date-time values. The former is performed without regard to time-zone. The latter is performed in the context of the current time zone.
datename	returns a part of a date-only or date-time value as text (such as the month name). The former is performed without regard to time-zone. The latter is performed in the context of the current time zone.

Impact of time zone on conversion functions

A date-time can be implicitly converted to:

- a date-only
- a time-only
- text

In each case, the date-time is converted to local time, and the local components of the date and/or time are used to make up the new value.

A date-only can be implicitly converted to:

- a date-time - in which case, the date-time is constructed by taking midnight, according to the local time zone, of the date-only value and using that as the date-time value.
- text - in which case the time zone takes has no effect.

A time-only can be implicitly converted to text, and similarly has no effect.

A text string can be explicitly converted to:

- a date-time - in which case the text is processed as though it is representing a local date-time.
 - a date-only - in which case, the numerical values of year, month, date are used directly, irrespective of time zone
 - a time-only - in which case, the numerical values of hour, minute, second are used directly, irrespective of time zone
-

insert chart

Last Modified on 25/05/2020 12:47 pm AEST

Calculation to insert a chart into a [generated document](#), such as a Word document.

Function

```
insert chart([chart-name])  
insert chart([chart-name], optional-settings)  
insert chart([chart-name] with column-filters)  
insert chart([chart-name], optional-settings with column-filters)
```

Arguments

Argument	Data Type
chart-name	The name of a uniquely named chart, surrounded with square brackets.
optional-settings	Optional display arguments, which must include the name of the argument. See below.
column-filters	Optional filters that can be applied to column values. See below.

Optional Named Arguments

Argument	Data Type
WidthCm	The width of the chart in a generated Word document, in centimeters.
HeightCm	The height of the chart in centimeters.
Rotate	The clockwise rotation of the chart in degrees.
PixelsPerInch	The pixels-per-inch (PPI) resolution to use when drawing the chart.

Comments

The **insert chart** keywords are used in [document generation macros](#) to insert a chart image into a generated Word document.

The chart function requires a chart name to be provided. The chart name typically requires square brackets (it is an identifier). There must be exactly one chart with a name that matches the name provided.

For example:

```
{ MERGEFIELD insert chart([My Chart Name]) }
```

Column Filters

Every chart is based on a report. You may provide a list of one or more column names, along with a value, to *drill down* or filter the chart to only consider matching records.

To use column filters, use the **with** keyword inside the function, and then follow it with a comma separated list of filters. Each field includes has the column name, followed by a colon, and then the value. Use square brackets if the column name contains spaces or special characters.

For example:

```
{ MERGEFIELD insert chart([Task Chart] with [Priority]:1) }
```

```
{ MERGEFIELD insert chart([Task Chart] with [Priority]:1, [Status]:'Open', [Owner]:currentuser()) }
```

These example macros assume that there exist exactly one chart named "Task Chart", and that it is based on a report that contains (at least) a "Priority" column that contains numbers and an "Owner" column that displays Person records.

The calculation **data type** provided to each column needs to match the data type of the report column. For example, a text value cannot be passed to a number column.

Report name columns, and related name columns are record data types to ensure that the exact records match, rather than just all records with the same name. The value provided may be either:

- a calculation that returns a record of the appropriate type. For example, the `context` function or a calculation that follows a relationship.
- or the name of the record, surrounded in single quotes. There must be exactly one record of the required type that matches the name.

Typical Usage Example for Column Filters

Use column filters to achieve within a document the same type of drill down effect that you may use on screens.

For example, consider a scenario of tasks assigned to employees in departments. You may have an existing report of Departments and wish to be able to right-click on one department record and generate a Word document that includes a chart showing the number of tasks assigned to each employee in the department. This can be achieved as follows:

1. Create a new report for the chart called "Department Tasks Report"
 - Create the report to be of type Department
 - Follow the Employees relationship to show the employees in the department
 - Follow the Tasks relationship to show the Tasks for each employee
 - You should have a report that contains columns "Department", "Employee" and "Task"
 - Save the Report
2. Create a new chart named "Department Tasks Chart"
 - Create a new column chart based on the "Department Tasks Report"
 - Drag the "Employee" column onto the Primary chart input

- Drag the "Count" source onto the Count chart input
 - You should see a column chart that shows the number of Tasks for each employee across all Departments
 - Save the Chart
3. Create a new Word document template
- Include the macro: **{ MERGEFIELD insert chart([Department Tasks Chart] with [Department]:context()) }**
 - Upload the template document to the REDINow documents folder
 - Create a new Document Template record that Department as its Object, and the new document template selected.
 - Save the Document Template

The `context` function will return the department record that was right-clicked to generate the document. It should now be possible to right-click any Department record in any report of Departments and generate a document. The generated document will be filtered to only include records for the department that was right-clicked.

Display Settings

After the chart name you may optionally provide several settings to control the sizing of the chart and other aspects of how the chart is drawn. Unlike most functions, both the name and value of these settings need to be provided, with the name, followed by a colon, then a value. A calculation may be used for the values. Each of the display settings is optional.

WidthCm and HeightCm

The `WidthCm` and `HeightCm` options allow the size of the chart, as it appears in the generated Word document, to be adjusted. You may also specify one without the other. If only one value is specified, then the other is selected automatically to maintain a consistent aspect ratio.

For example:

```
{ MERGEFIELD insert chart([My Chart Name], WidthCm:8, HeightCm:6) }
```

Rotate

The chart may be rotated by providing a clockwise rotation in degrees.

For example, to rotate to the right:

```
{ MERGEFIELD insert chart([My Chart Name], Rotate:90) }
```

PixelsPerInch

The `PixelsPerInch` the resolution that is used when drawing the chart. It affects the width of lines, size of text, and how many grid lines will appear.

The document generation engine uses the `WidthCm`, `HeightCm`, and `PixelsPerInch` settings to calculate a pixel

width and height, which is then used to generate a chart as though it had that much space available.

Using Display Settings and Column Filters together

If you need to include display settings and column filters, place the display settings before the with keyword, and column filters after the keyword.

For example:

```
{ MERGEFIELD insert chart([Task Chart], WidthCm:6, HeightCm:5 with [Owner]:currentuser() ) }
```

list

Last Modified on 25/05/2020 12:46 pm AEST

Template macro to insert a bullet-point or numbered list into a generated Microsoft Word document.

Function

```
list [list-of-values]
```

Arguments

Argument	Data Type
----------	-----------

list-of-records	A calculation that returns a list of records.
-----------------	---

Comments

The **list** macro keyword is used as the first keyword after MERGEFIELD in document generation macros. The macro should be the first macro inside of a bullet-point or numbered list to indicate that the calculation will return a list of results, with each result generating one item in the list.

Calculations that subsequently appear within the list item are recalculated for each record that is returned - and the record currently being processed acts as the context record for those calculations. The list macro essentially works in the same manner as the repeat macro, except that it signals that the list bullet or number also needs to participate in the repeated block.

A {MERGEFIELD end} macro may be placed at the end of a list item to indicate the end of the repeated section. For simple lists that only a single line of text this is optional - and the end of the repeated section will automatically be determined, but more complicated scenarios may require this.

Example

The following document template could be used to generate the following result. Note that any calculation that returns a list of records can be used in place of the **all** function.

```
{ MERGEFIELD list all([Fruit]) } { MERGEFIELD [Quantity] } x { MERGEFIELD [Name] }
```

```
{ MERGEFIELD list all([Recipe Steps]) order by [Step Number] } { MERGEFIELD [Name] }
```

Document template:

Ingredients:

- { MERGEFIELD list all([Fruit]) } { MERGEFIELD [Quantity] }x { MERGEFIELD [Name] }

Recipe:

1. { MERGEFIELD list all([Recipe Steps]) order by [Step Number] } { MERGEFIELD [Name] }

Generated document:

Ingredients:

- 2x Apple
- 1x Orange
- 3x Banana

Recipe:

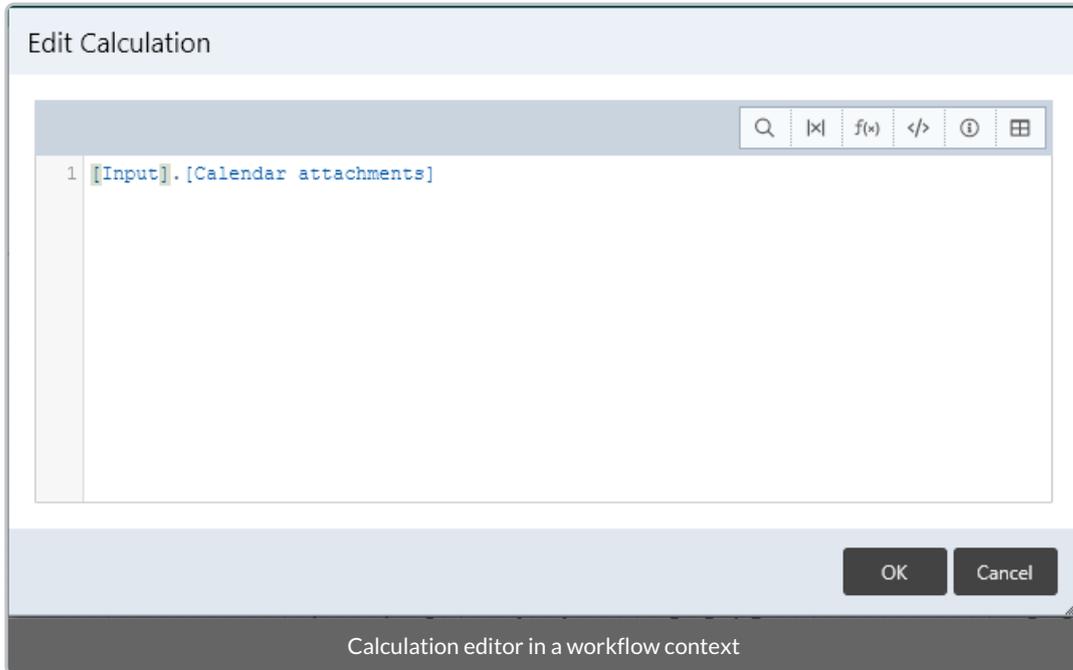
1. Peel orange and banana
2. Chop fruit
3. Mix and serve

Calculation Editor

Last Modified on 25/05/2020 11:59 am AEST

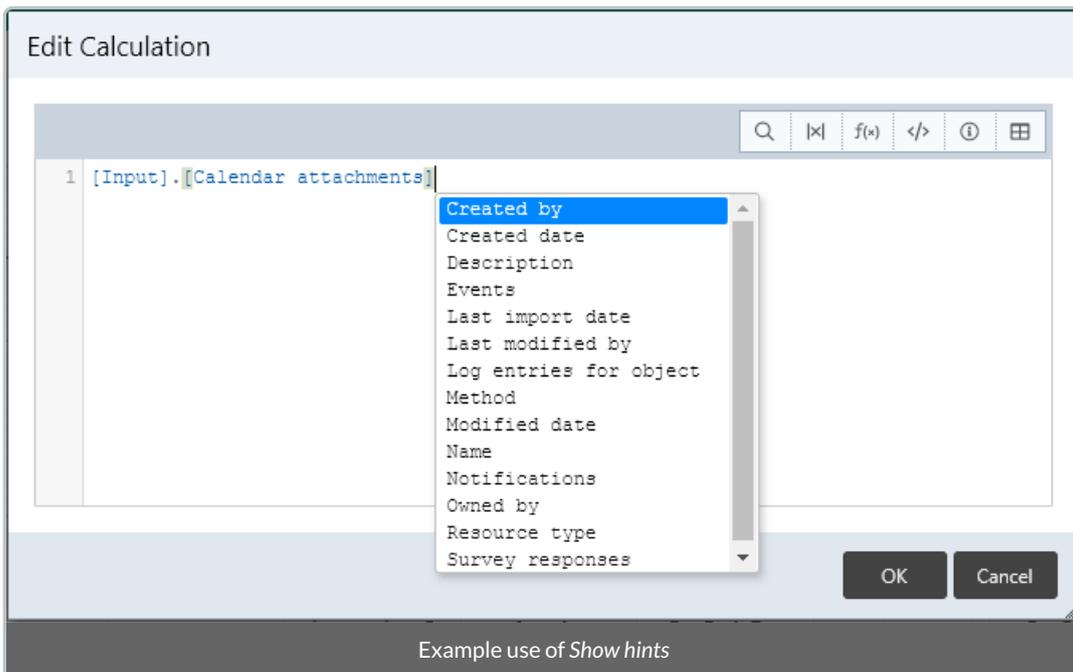
Toolbar Buttons

The calculation editor will appear with different toolbar buttons visible depending on where it is used.



Show hints

Selecting this (or using the keyboard shortcut ctrl + space) shows the list of object fields in context in the same way that typing a dot does, and adds the dot and field name when a field is selected.



Parameters

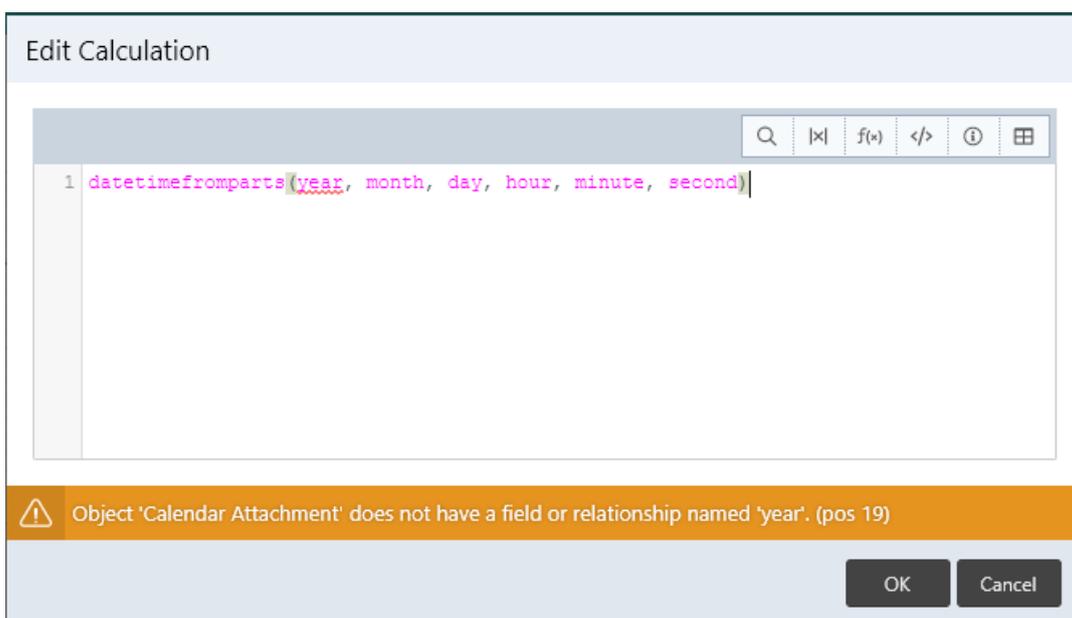
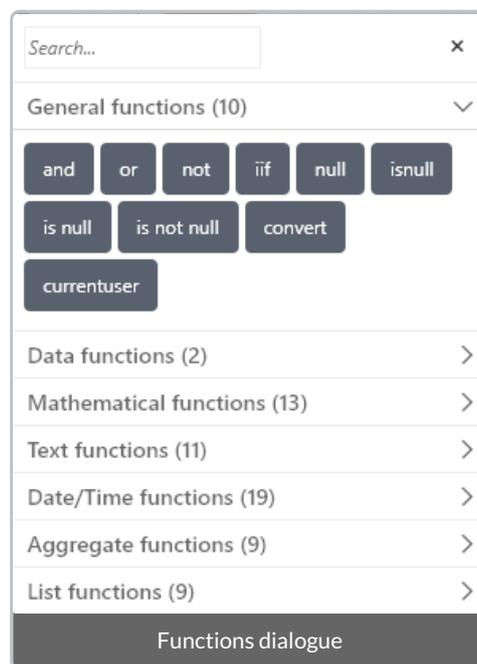
Opens a selection dialogue with accessible context information, including workflow variables and the output of previous workflow activities.

The dialogue appears over the calculation window.

Functions

The function reference can be used to find a function name and parameters without going to the help documentation. The selected function will paste it into the current calculation when double-clicked.

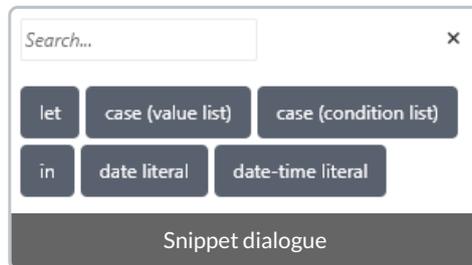
The functions dialogue appears below the calculation window by default, but can be moved and will re-open in its previous position. Positioning is reset to default when the calculation window is closed.



Snippets

Snippets are commonly used components of calculations. The snippet dialogue shows predefined snippets, which paste into the current calculation when double-clicked. Users cannot modify the available snippets or add more.

The snippets dialogue appears below the calculation window by default, but can be moved and will re-open in its previous position. Positioning is reset to default when the calculation window is closed.



Properties

Opens a selection dialogue that shows the list of object fields available for selection.

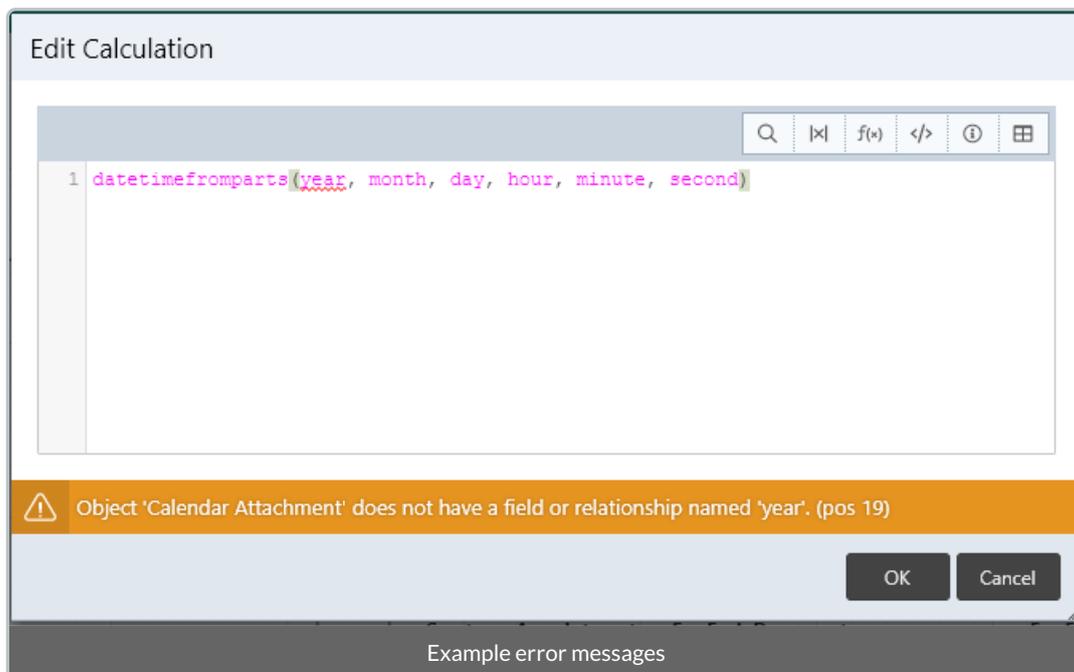
The dialogue appears over the calculation window.

Records

Opens a dialogue to search for and select records.

The dialogue appears over the calculation window.

Messages



Error messages, warnings and suggestions are shown with a red underline in the calculation itself, and the corresponding error description in an orange bar below the editing area. Suggestions will be shown when there is a possible alternative to the current calculation which will be more efficient.

It is important to always understand how a calculation works before making changes.

Actionable Emails

Last Modified on 15/04/2019 1:49 pm AEST

This is a feature of Microsoft Office 365 and only available to users with the relevant licenses and services.

This is a complex task that will require technical skills.

Office 365 users have the option of receiving actionable emails, which they can respond to in Outlook.

Microsoft reference documentation and tools:

- <https://docs.microsoft.com/en-au/outlook/actionable-messages/adaptive-card>
- <https://docs.microsoft.com/en-au/outlook/actionable-messages/email-dev-dashboard>

The email can be created by API Callout in a Workflow or by a specially crafted email to the user, provided that actionable emails are enabled on their mailbox or for their organisation. It will be automatically approved when set up by an individual on their own mailbox.

Methods for sending actionable emails:

- <https://docs.microsoft.com/en-us/outlook/actionable-messages/send-via-email>
- <https://docs.microsoft.com/en-us/outlook/actionable-messages/send-via-connectors>

An example implementation using connectors would contain the following components:

1. An Office 365 mailbox with actionable emails enabled.
2. REST API enabled on the tenant to receive button actions.
3. A workflow with an API Callout to call the connector webhook which sends the email.
4. JSON for the API Callout that specifies buttons which do HTTP POST to update a User Action task.

It is recommended to test the emails before connecting to the REST API. There are cloud services and client software suited for this task.

Smart Email Handling

Last Modified on 05/04/2019 12:02 pm AEDT

ReadiNow has the ability to receive incoming emails with **Inboxes** and then process those emails with **Workflows**. There are many ways this can be used, for example:

- automated responses to emails
- automated support ticket creation from support emails
- logging sales activities automatically
- logging requests automatically
- or even giving approvals via email

By way of example, the first four of these use cases can be covered in this article.

The assumed requirements are that incoming support emails need to get an automated response and create a support ticket. For simplicity the update will not be covered, but typically the ticket number is put into the email subject of the response, and any further replies will allow the workflow to update the existing ticket provided the logic is captured.

Step 1: Create an Inbox

Start by creating an Inbox with the reply email set to the same email that will receive the initial message.

The screenshot shows a form titled "Inbox" with the following fields and values:

- Name: Support Inbox
- Description: (empty text area)
- Enabled:
- From name: (empty text field)
- Reply address: support@readinow.com
- Email Address: (empty text field)

Below the form, there are two tabs: "Received messages" (selected) and "Workflows to Run". Under "RECEIVED MESSAGES", there is a table with columns "To" and "From". At the bottom of the form is a button labeled "Create an Inbox".

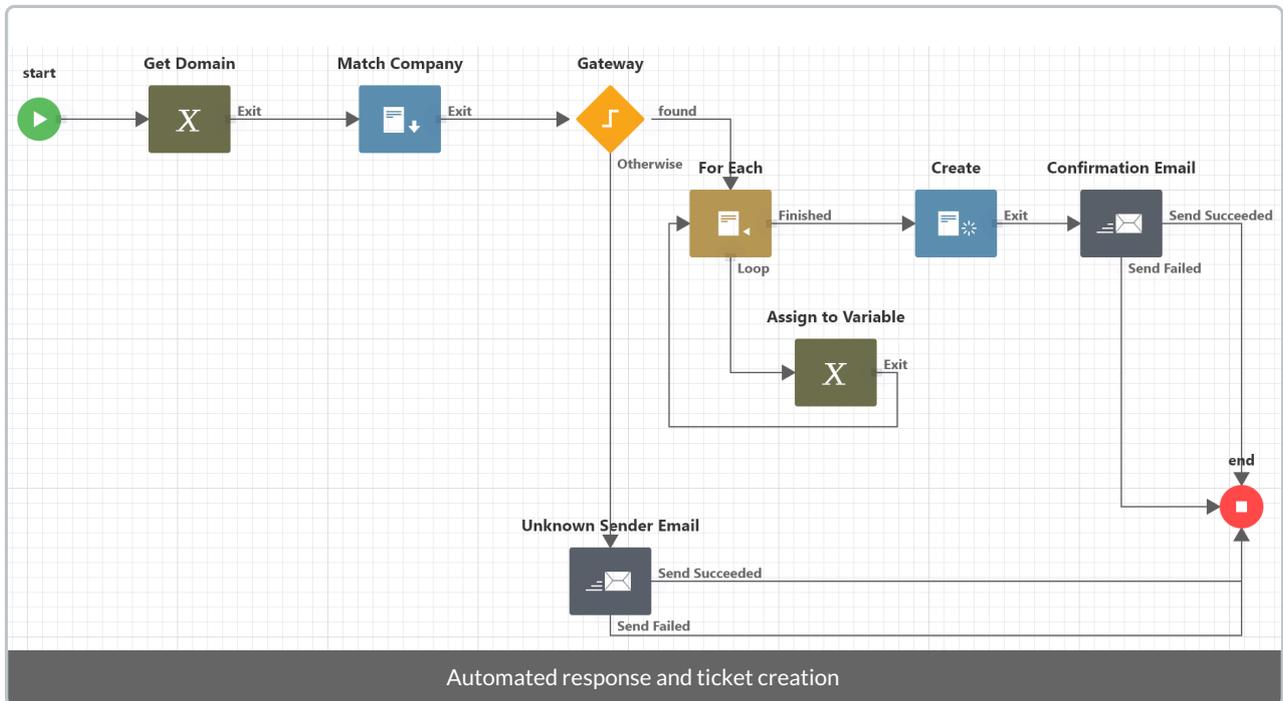
On saving, the incoming email address is shown in the **Email Address** field. In this example it will look similar to `SupportInbox89257298@readinow.com`.

Step 2: Email Redirection

This part is a corporate mail system configuration that must be done outside of ReadNow. Make sure to configure mail redirection to redirect emails from the incoming address to this email address - it is the same as the reply address. In this example the email address is `support@readinow.com` and this mail must redirect to `SupportInbox89257298@readinow.com`.

Step 3: Workflow

A workflow must be created to handle the emails.



Here's a brief description of each activity.

Start

Set the input parameter to the **Received Email** definition.

Process incoming email Workflow
click to edit description

Inputs Variables Outputs Security

Input Parameter

Name Input

Type Record Argument

Definition Received Email

New Input Parameters

Set the input parameter

Get Domain

This calculation retrieves part of the sender's email address to determine what company they are from.

```
let pos=charindex('@',[Input].[From])
select substring([Input].[From],pos+1,len([Input].[From])-pos-1)
```

Match Company

The company form has the company domain captured on it, and the company report has this domain in a column, so this activity uses the company report with a filter set to the variable from the previous activity. This way the loop will only need to iterate through one company at most.

Gateway

The gateway simply guards against the event where the domain does not match any existing companies.

For Each

This loops through the result set, which should contain only a single result. It is possible it may contain more than one, and that scenario is not covered in this article. It is recommended that additional safeguards be put in place to ensure only one ticket is created from one email.

Assign to Variable

This is a variable containing the matching company.

Create

Create the ticket! The ticket has a lookup to company, which uses the company variable set during the **For Each** loop. The object could be anything from a support incident or a sales activity.

Confirmation Email

Send a confirmation email, and put the ticket number in the subject to later support updating existing tickets. The field can be referenced from the **Create** activity as follows:

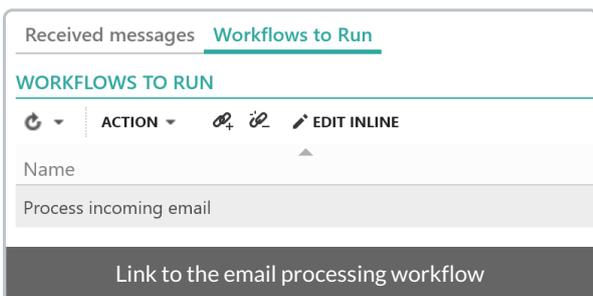
```
[Create.Record].[Ticket Number]
```

End

Nothing special here!

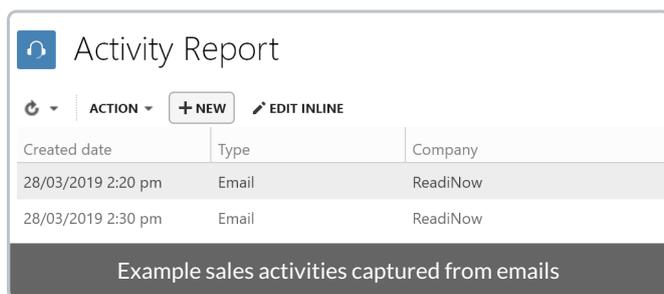
Step 4: The Trigger

Go back to the Inbox settings and click on the tab **Workflows to Run**. Click on the  icon to link to an existing workflow and select the appropriate workflow.



Test

Now check the records that have been created - and the email replies that are sent out.



The screenshot shows a software interface titled "Activity Report". At the top left is a refresh icon. Below the title are several controls: a refresh icon with a dropdown arrow, the text "ACTION", a "+ NEW" button, and an "EDIT IN LINE" icon. Below these controls is a table with three columns: "Created date", "Type", and "Company". The table contains two rows of data. At the bottom of the interface is a dark grey bar with the text "Example sales activities captured from emails".

Created date	Type	Company
28/03/2019 2:20 pm	Email	ReadiNow
28/03/2019 2:30 pm	Email	ReadiNow

Example sales activities captured from emails

Managing Events and Invitations

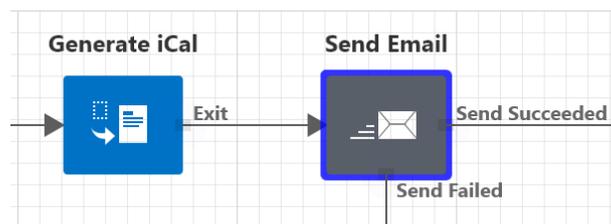
Last Modified on 16/04/2019 6:42 pm AEST

There are a number of ways to manage events and invitations, some of which are through integration with third party cloud services.

Send an Invitation via Email

An iCal is a file format which stores events. Typically these are sent as email attachments to invite attendees to an event. A workflow can be created for an Appointment object as follows:

1. Set the input parameter to the Appointment object (or your custom Meeting object)
2. Use a Generate Document activity; for the Document Template reference an iCal template that has been uploaded to Report Templates in the Documents application
3. Use a Send Email activity with the attachments set to the formula `[Generate iCal.Document]`; if your meeting has Documents (such as agenda documents or reference material) then use `concat([Input].[Documents], [Generate iCal.Document])`



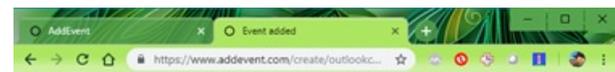
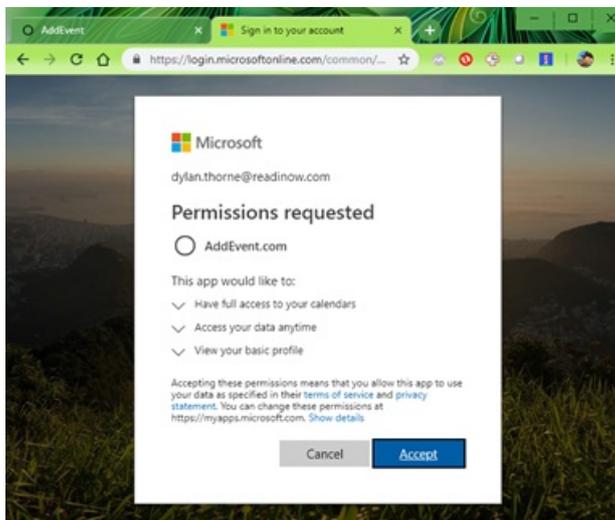
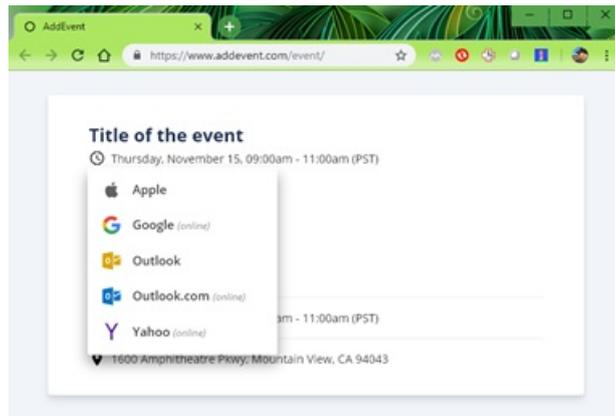
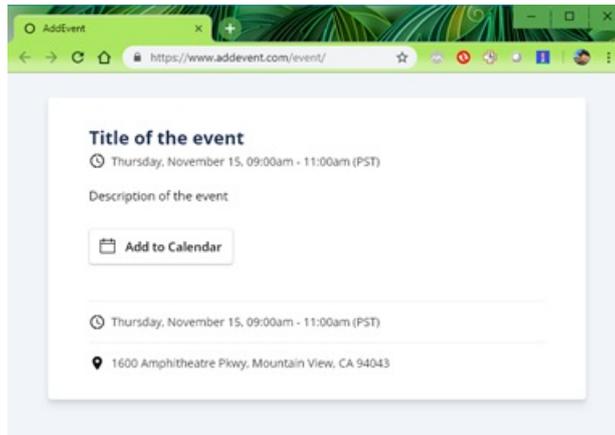
Send an Invitation via AddEvent

Attendees can be sent invitations via the cloud service AddEvent .

1. Sign up for an account at AddEvent (you cannot use Hobby tier)
2. Insert your AddEvent client id and event details into the link below to replace all the values in brackets
3. Add the resulting link to an email notification in a workflow

[https://www.addevent.com/dir/?client=\[id\]&start=\[start\]&end=\[end\]&title=\[title\]&description=\[description\]&location=\[address\]&timezone=Australia%2FSydney&service=stream](https://www.addevent.com/dir/?client=[id]&start=[start]&end=[end]&title=[title]&description=[description]&location=[address]&timezone=Australia%2FSydney&service=stream)

The last parameter ("stream") directs the service to create a downloadable iCal. Removing the last parameter ("stream") will allow the users to land on an event page, which is a better experience.



Event added

The event was added to your Outlook Calendar.

Proceed to the [event](#), or close the window.

By proceeding to the event, please notice that some Android devices may fail to open the event. If you have more than one Outlook account, you may need to switch account.

Synchronise with an Office 365 Calendar

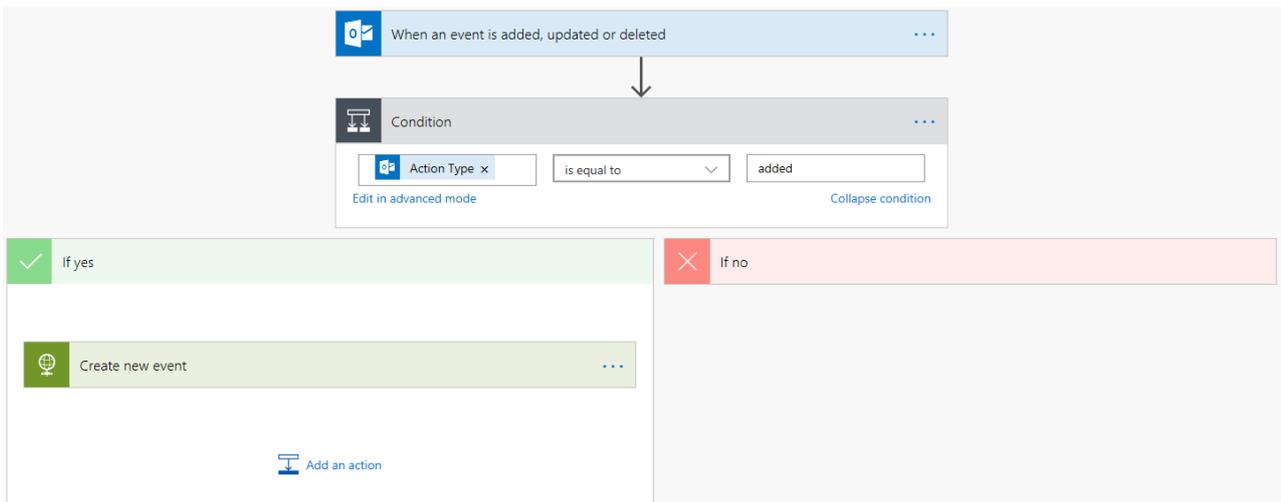
Microsoft Flow is an integration service which can be leveraged for a broad range of automation tasks. Here is an example of automatically saving each event created in an Outlook calendar into an Event record in ReadNow. Note that the JSON body needs to be of type Object and not String for the Flow to succeed.

The screenshot displays a Microsoft Flow workflow with the following steps:

- Trigger:** When a new event is created (V2) 2
- Action 1:** Set API URL
- Action 2:** Set Token
- Action 3:** Initialize variable
 - Name:** JSON
 - Type:** Object
 - Value:**

```
{
  "description": "",
  "name": "Subject x",
  "startdate": "Start time x"
}
```
- Action 4:** HTTP
 - Method:** POST
 - URI:** {API URL} /event?key={Token}
 - Body:** {JSON}

The trigger in this example above is a new calendar event, but this approach can be extended to also synchronise deletes and updates made in Outlook. The following example uses a trigger that will fire on add, update and delete of a calendar event.



These examples will only trigger if the event is edited in Office 365. To have a ReadNow event saved to Office 365 will require use of a workflow with the API Callout activity.

Smart Survey Handling

Last Modified on 05/04/2019 12:01 pm AEDT

A survey has an outcome, which is a representation of all the answers, but individual answers can also be identified and used to conditionally trigger additional processes. Workflow is used for this purpose, and this article explains how this can be achieved, using a simple contrived example.

The Workflow

Create a new workflow and use a **Survey Result** as the input definition. In the picker the filter on **Advanced Object** needs to be cleared to see the **Survey Result** object.

The screenshot shows a workflow configuration window titled "Process survey results" with a "Workflow" tab. It has tabs for "Inputs", "Variables", "Outputs", and "Security". Under the "Inputs" tab, there is an "Input Parameter" section with a close button (X). The "Name" field is "Input", the "Type" is "Record Argument", and the "Definition" is "Survey Result" with a checkmark icon. A footer bar reads "Input definition for processing a survey".

The Calculation

Inside workflow activities,

```
max([Input].[Answers].[Single choice answer].[Name] where  
[Input].[Answers].[Question].[Question ID] = 'Question 6')='Yes'
```

The Survey

Finally, the survey needs to be edited to set the **On survey complete** property; select the workflow just created and save.

The screenshot shows the "Workplace Survey" configuration window. It has a "SURVEY DETAIL" section with fields for "Name" (Workplace Survey), "Description", and "Show help text" (unchecked). Below this are tabs for "Survey Layout", "Outcomes", "Campaigns", and "Workflow". Under the "Workflow" tab, there are two dropdown menus: "On survey complete" (set to "Process survey results") and "On campaign close". A footer bar reads "Survey configuration for the completion workflow".

Public Forms

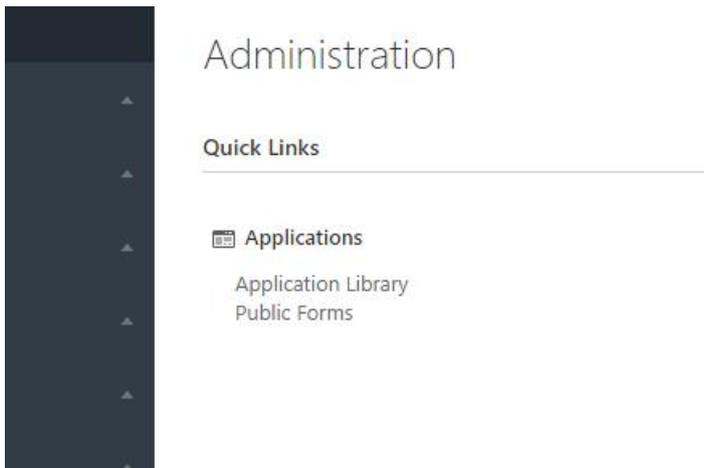
Last Modified on 20/04/2021 10:32 am AEST

Getting Started with Public Forms

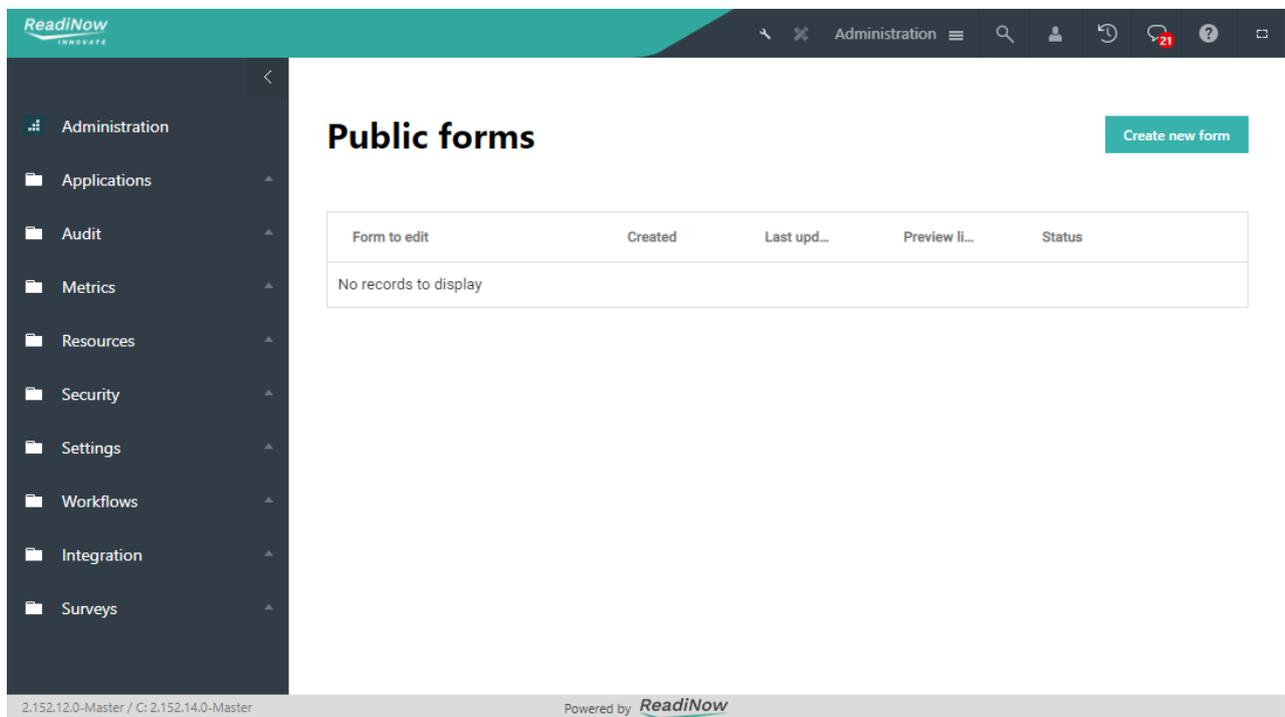
Please read [Public Forms best practices](#) and [Public Forms Security Overview](#) before starting with Public Forms.

To create a new Public Form you first need to create the Form using the Classic Form Builder (or use an existing Form).

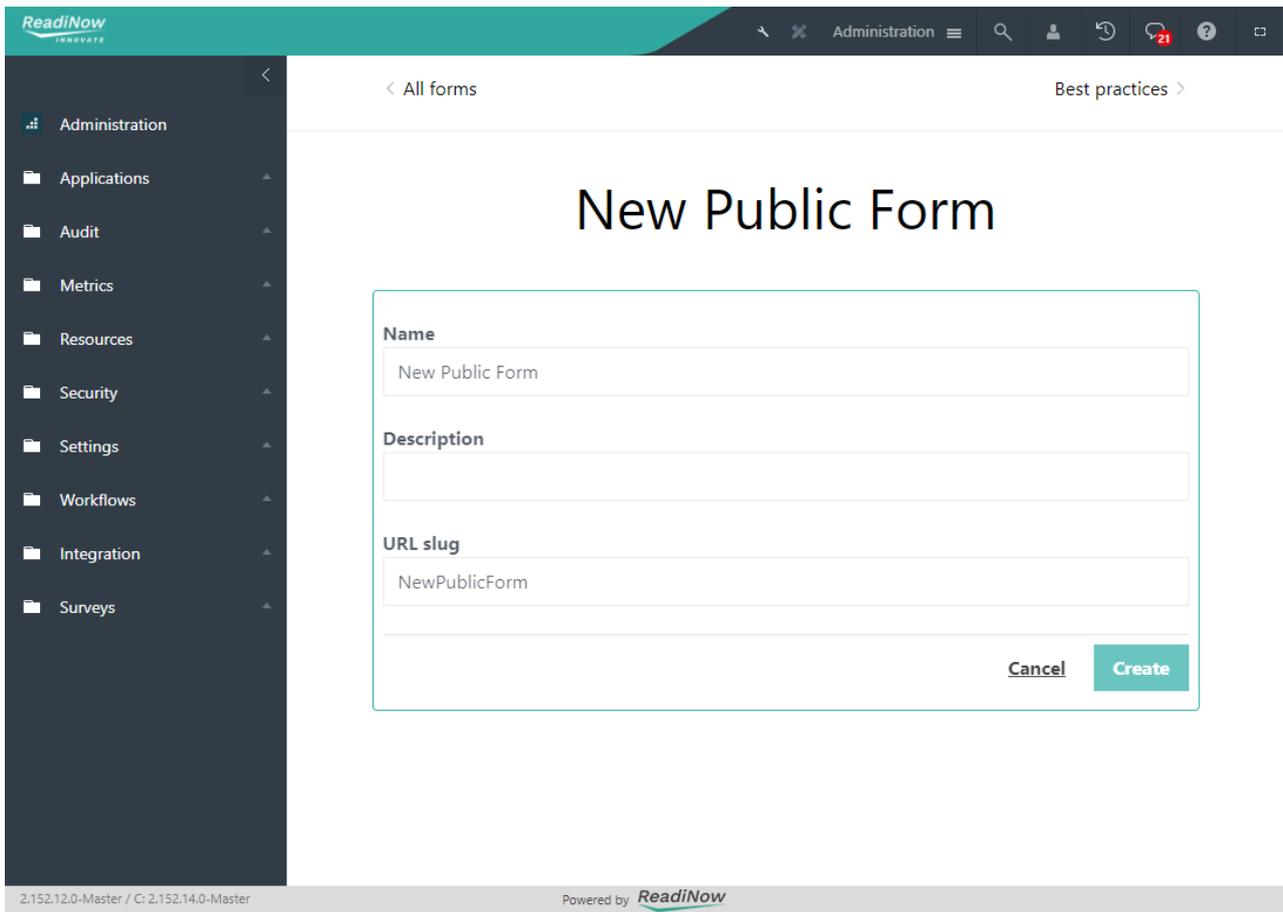
Open the Public Forms editor from the Tenant Administration page:



The Public Forms Page looks like this:



Click on 'Create new form' and a form creation wizard opens:



Clicking 'Create' opens a configuration page where you can configure Public Form. The configuration areas are:

- Form Information - change the name, description, and slug.
- Header & Footer - includes page logo, heading, and background colours.
- Form Page - preamble text (e.g. guidelines or instructions) and select form to display.
- Finish Page - text which can be used to say thank you or provide further information to the user.

- Administration
- Applications
- Audit
- Metrics
- Resources
- Security
- Settings
- Workflows
- Integration
- Surveys

< All forms

Best practices >

Incident Report

Preview Form

Enabled

- Form Information >
- Header & Footer >
- Form Page >
- Finish Page >

Save

Email Templates

Last Modified on 03/11/2022 9:23 am AEDT

Overview

Sending emails as part of workflows is very useful and widely used feature in ReadiNow. The Email Templates feature provides a central place to define and manage the content and style of emails. I.e. define the content of the email once (with variables) and then use it in multiple 'Send Email Workflow' Activities.

Most emails will have common elements like headers and footers that can be defined and managed separately.

Configuring an email template

To define an email template:

- Select **Administration** from the Application Menu.
- Select **Email Templates**, located under the **Email** section.
- Select **+NEW** to show the Email Template form.
- Complete the following details
 - **Name** - the name you want to give this Email template
 - **Description** - any additional description for the Email template
 - **Application** - select the application you want
 - **Variables** - variables can be used to refer to some information that can be used in expressions (see Variables section below for more information)
 - **Images** - images can be used in email body (see Images section below for more information)
 - **Subject** - the subject line for the email. This can be static text or combination of text or expression using variables (see Subject section below for more information)
 - **Body** - the body of the email. This can be static text or combination of text, images, expression using variables (see Body section below for more information)
 - **Header** - select a header (see Header section below for more information)
 - **Footer** - select a footer (see Footer section below for more information)

Name	Last modified date	Last modified by	Used in workflows	Application
Incident approval	10/10/2022	.admin	1	Incident Management

Email template components

Following are the main components of an email template:

- General details - name, description, application
- Variables
- Images
- Subject
- Body
- Header
- Footer

← Back Discard Save

Edit email template

Details

Name: Incident approval

Description: This email template is used for email requesting incident approval.

Application: Incident Management
Selected Application is used for packaging and deployment

Email template

Header: [Empty]

Subject: Incident approval for: + [IncidentName]

Email body: Dear + [IncidentApprover].Name + ', ' +

 + An incident has been submitted for approval.
 + Please click the following link to view the incident details: ' + [IncidentLink] +

Incident photo:
 + %%Water contamination%%

Footer: [Empty]

Variables + Add new

IncidentLink	Text	[Edit] [Delete]
IncidentApprover	Record argument Person	[Edit] [Delete]
IncidentName	Text	[Edit] [Delete]

Images + Add new

Water contamination	[Edit] [Delete]
---------------------	-----------------

Email template form

Variables

Emails are sent using workflows. Sometimes the information that is to be included in the email, is only accessible during the workflow run. To access this information, variables can be defined in the email template and the value of these variables can be set in the workflow.

In the Email template form image above, a link to the given incident is to be included in the email body. This link is generated during the workflow run.

To make this work, a text variable 'IncidentLink' is defined in the email template. And the value of this variable is set in the workflow.

Variables			+ Add new	
IncidentLink	Text			
IncidentApprover	Record argument	Person		
IncidentName	Text			

Defining a variable in email template form

Value of 'IncidentLink' variable defined in the email template is set here

Setting the variable value in workflow

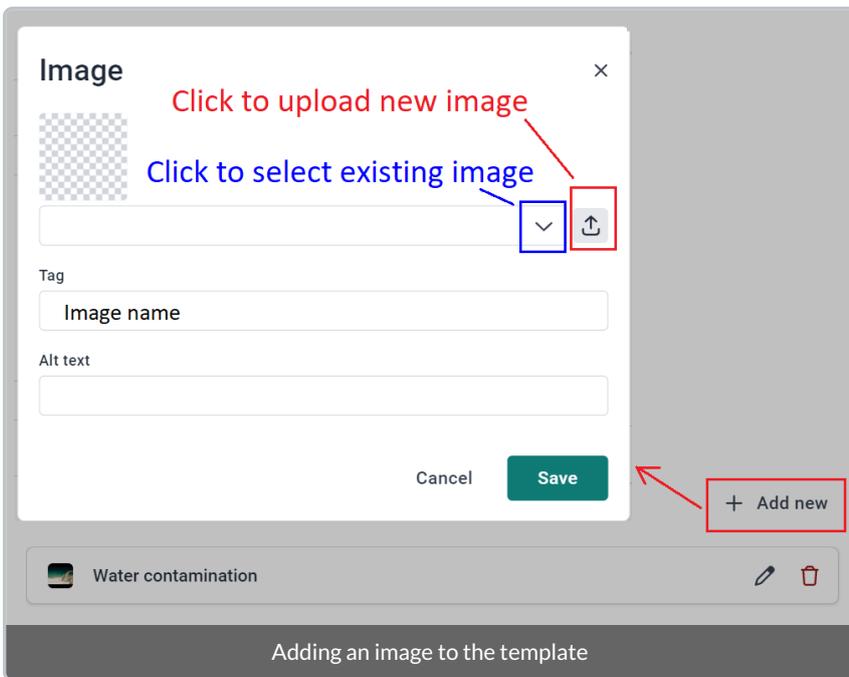
Images

Images can be included in the email body. New images can be uploaded or existing images that are already uploaded in REDINow can be used.

Images can be referenced in email body with syntax '%ImageName%' (not including the file extension).

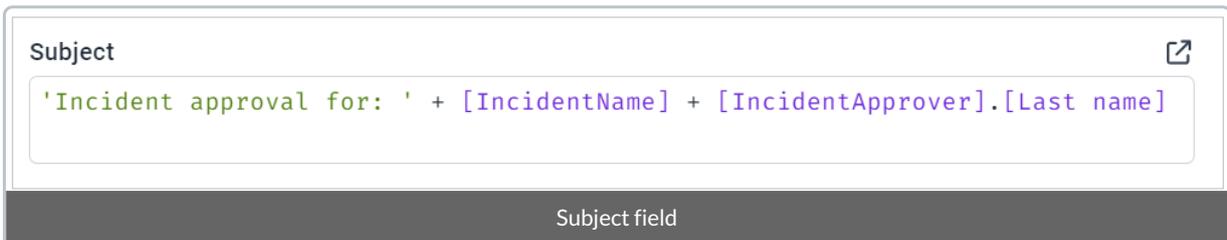
For example if the name of image is 'Water contamination', the syntax to use the image in body would be '%Water contamination%'

Only the images selected for the email template can be referenced in email body.



Subject

Subject can include a combination of text, variables, functions.



Email body

Email body can include a combination of text, variables, functions, images.



Both subject and email body fields can be edited in expression editor by clicking on popup icon available on top right corner of the field.

Email body

```
'Dear ' + [IncidentApprover].[Name] + ', ' + '<br><br>' +
'An incident has been submitted for approval.<br>' +
'Please click the following link to view the incident details: ' + [IncidentLink] +
'<br><br>Incident photo:<br>' + '%%Water contamination%%'
```

click this icon to open up expression builder

Body expression

image functions snippets variables

1 2

```
1 'Dear ' + [IncidentApprover].[Name] + ', ' + '<br><br>' +
2 'An incident has been submitted for approval.<br>' +
3 'Please click the following link to view the incident details: ' + [IncidentLink] +
4 '<br><br>Incident photo:<br>' + '%%Water contamination%%'
```

Cancel Apply

Expression builder

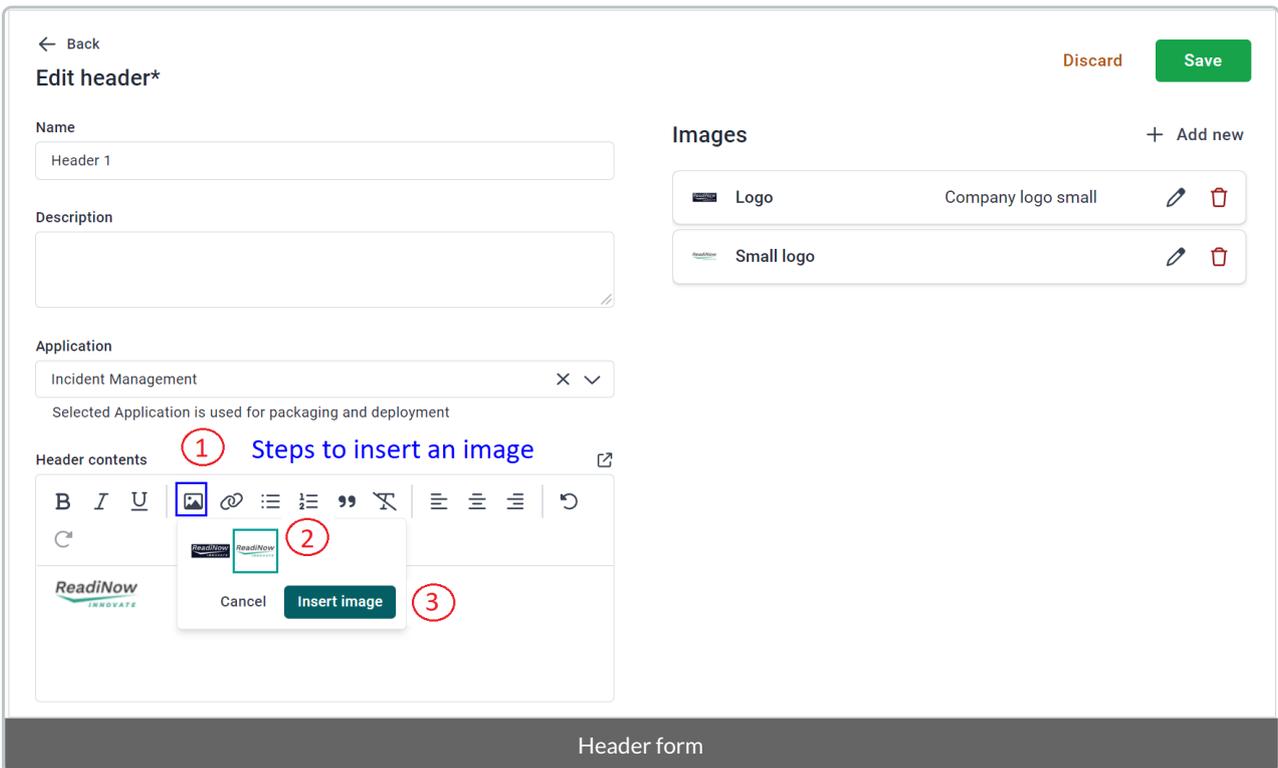
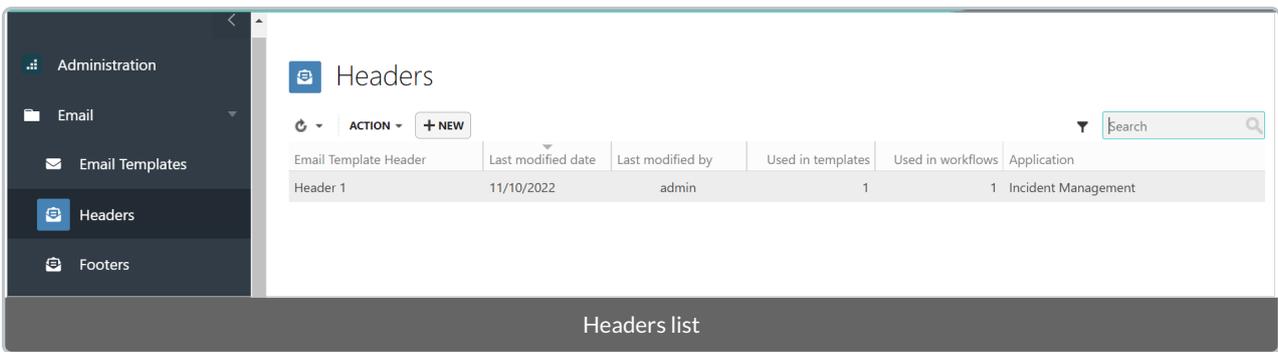
Header

A header is an optional element that can be used in an email template. In a typical case, a header may contain a company logo and some static information and links etc. that is to be displayed at the top of the email.

A header can be used in multiple email templates that require the same information.

To define a header:

- Select **Administration** from the Application Menu.
- Select **Headers**, located under the **Email** section.
- Select **+NEW** to show the Header form.
- Complete the following details
 - **Name** - the name you want to give this Header
 - **Description** - any additional description for this Header
 - **Application** - select an application
 - **Images** - upload new images or select existing images (see Images section above for more details)
 - **Header contents** - header for the email. It can be static text or combination of formatted text, images, web links.



Footer

A footer is an optional element that can be used in an email template. In a typical case, a footer may contain images, some static information and links etc. that is to be displayed at the bottom of the email.

A footer can be used in multiple email templates that require the same information.

To define a footer:

- Select **Administration** from the Application Menu.
- Select **Footers**, located under the **Email** section.
- Select **+NEW** to show the Footer form.
- Complete the following details
 - **Name** - the name you want to give this Footer
 - **Description** - any additional description for this Footer
 - **Application** - select an application
 - **Images** - upload new images or select existing images (see Images section above for more details)

- **Footer contents** - footer for the email. It can be static text or combination of formatted text, images, web links.

Email Template Footer	Last modified date	Last modified by	Used in templates	Used in workflows	Application
Footer 1	11/10/2022 2:26 pm	anurag.admin	1	1	Incident Management

Footers list

← Back Discard Save

Edit footer

Name

Description

Application
 ✕ ▾
Selected Application is used for packaging and deployment

Footer contents 🔗

***Disclaimer:** This email and any file attached are intended solely for the use of the individual or entity to whom they are addressed. If you receive this email by mistake, please notify the author and do not make any use of the email.*



Images + Add new

- 🍏
Apple

✎
🗑️
- 🚗
Car

✎
🗑️

Footer form

Using Email Templates

An email can be sent using Send Email Activity in workflows. Send Email activity can now use Email Template to send email. See [SEND EMAIL ACTIVITY](#) for more information.

Platform Capacities

Last Modified on 24/04/2023 4:29 pm AEST

Overview

The table below summarises the limits of any one tenant. The stated limits are not a commitment that the resources are allocated, rather provide an upper limit in a tenant and the storage capacity is as listed in a Work Order. Other factors may prevent these limits from being reached (e.g. load, performance, contract restrictions & licence restrictions). In addition, whilst not all limits are technically enforced, ReadiNow may monitor usage to ensure adherence to these limits.

ReadiNow Platform Capacity Table

Applications & Data Model	
Custom applications	50
Relationships per object	50
Custom fields per object	100
Custom objects	200
Choice field values	500
Maximum of records per object	2 000 000
Maximum of records per tenant	20 000 000
Maximum number of security rules per object	20
Maximum number of security rules per role	50
Maximum number of security rules per user per object	10
Maximum content size per field	100 000 characters
Combined content size all fields on a single record	200 000 characters
Files	
Maximum files per tenant	50 000
Maximum file size (per file)	200MB
Total Max file storage	1TB

Theme images/logos/icons size	20kb
-------------------------------	------

Audit

Maximum fields to audit per object	15
------------------------------------	----

Maximum age of record change audit history	18 months
--	-----------

Maximum number of configuration log entries	10 000
---	--------

Maximum number of security log entries	10 000
--	--------

Calculations

Maximum length of calculation	5 000 characters
-------------------------------	------------------

Time to run	2 seconds (elapsed server time)
-------------	---------------------------------

Screens & Reports

Analysers items on a report	20
-----------------------------	----

Calculations per report	5
-------------------------	---

Columns per report	10
--------------------	----

Time to run a report	10 seconds (elapsed server time)
----------------------	----------------------------------

Scheduled screen refreshes	50
----------------------------	----

Maximum elements on a screen	12
------------------------------	----

Workflows

Maximum number of concurrent running workflows	30
--	----

Maximum number of workflows	500
-----------------------------	-----

Maximum number of workflow runs per day	5 000
---	-------

Total number of activities in a workflow	50
--	----

Maximum number of steps per workflow	100 000
--------------------------------------	---------

Maximum workflow processing time	10 hours
----------------------------------	----------

Maximum age of workflow run	18 months
Maximum paused workflows	20 000
Integrations	
Records through excel/csv import (does not include when triggers are enabled) per day	100 000
Records through API import (does not include when triggers are enabled) per day	100 000
Maximum number of Records fetched using get-record activity (per call)	10 000
Active import schedules	25
Email attachment maximum size	20MB
Email content size	1MB
Inbound Email messages processed per hour	500
Outbound Email messages processed per day	50/full user ¹
Inbound SMS processed per day	100 000
Outbound SMS processed per day	100 000
Other	
Documents Generated per day	300
I/O (bandwidth)	1 TB per month

Notes:

1. This may require use of client's email server to send emails

Defined Terms

"**Capacities**" means the defined limits or restrictions on the use or access to elements of the Software including but not limited to file and data storage, number of records, number of workflows processes, usage limits, bandwidths limits, service request time, or other such variables as defined by ReadNow or outlined in Documentation for the Tenant or Non-Production Tenant.

"**Tenant Usage limits**" are as detailed in the Documentation. An example of these (but not limited to) are the usage limits for custom applications, files, screens, reports, workflows, integration, the number of GB capacity and records allocation per tenant, whether as described in a Performance Pack, Capacities or other variables that are

relevant to the tenant allocation.

"Performance Pack" means the allocation of the User package (type of Users, type of applications purchased) together with the corresponding allocation of Capacities, file and data storage allocation, number of records, App Objects, number of workflows, usage limits, bandwidths limits, service request time, or other such variables as defined by REDINow from time to time and updated in this Documentation.

Exporting and Importing Resources

Last Modified on 23/05/2019 12:50 pm AEST

Applies to:

- Objects
- Reports
- Forms
- Boards
- Screens
- Charts
- Records
- Hierarchies of structure view
- Choice fields and their options
- Relationships
- Photos and Icons
- Documents and Document templates
- Resource Keys

Overview

- Import/Export XML allows components such as reports, screens, charts, boards, workflows, etc., to be exported to XML.
- Any resource can be exported/imported, including user data
- The XML file can be imported into a different tenant.
- If the item being imported already exists, it will be replaced by the imported file.

Exporting to XML

1. The user first must be assigned the 'Import/Export' role
2. Navigate to a report (or create a report) that displays the element you are trying to export. (e.g. if trying to export a report, navigate to the "Reports" report in Administration)
3. Right click on the row and select '**Export**'
4. The XML file will download

Importing through the console

Note: Only administrators with the *Import/Export* role can import XML files

1. The user first must be assigned the 'Import/Export' role
2. Go to Administration
3. Select **Resources**

4. Select **Import Resources**

5. Select **Upload** and select the file to upload

If there are dependency errors when importing a resource then this can be resolved by adding the relevant resources to a new application. A new application can be created expressly for this purpose if necessary, and the whole application can be exported.

Relationship Rules

- To import related instance, the relationship must be imported first, meaning the relationship should exist on both the tenants.
- The relationship must be set to full ownership on both the tenants.
- Full ownership can be set on following fields:
 - 1-1 lookup
 - Many-1 lookup
 - 1-Many relationships
 - Image field
- Once the full ownership is set and the relationship is made available on both the tenants, user would be able to import related instance

Import Rules

- When importing a file, if the content does not already exist, then the imported content is added to the system.
- If the content being imported does already exist, then it replaces the existing one

Tenant Health Check

Last Modified on 29/09/2020 1:01 pm AEST

What is a Tenant Health Check?

The Tenant Health Check is a static analysis of the application functionality in a tenant. It analyses Access Rules, API Callouts, Calculated Fields, Forms, Reports, Report Templates and Workflows. However, it does not predict problems that occur as a result of data, such as a division by zero.

Why Use It?

The Tenant Health Check gives an indication of the integrity of a tenant, so it is particularly useful as a validation checkpoint when changes have been made to Applications.

Running a Tenant Health Check

To run a Tenant Health Check:

1. Select Application Menu. The menu appears with available applications
2. Select **Administration**. The application displays at the landing page
3. In the Left Navigation Area, select **Metrics** to expand to list
4. Select **Health Check** to display the **Health Check** page
5. Start the check by clicking the **Start Scan** button. The status will update to show that a scan is running. The blue status box will turn green when the scan is complete. Once the scan has completed click the refresh icon on the **Health Check Summary** report.

The screenshot shows the 'Health Check' page. At the top right is a 'Start Scan' button. Below it is a 'Health Check Scan Status' section with a 'Refresh' link. The status is 'Running - Finding items to process.' with a start date of 5/14/2019 12:05 PM and a duration of 12 secs. Below this is a 'HEALTH CHECK SUMMARY' table and an 'ITEMS BY TYPE' section.

Health Check Type	OK	Errors	Warnings	Suggestions
Access Rules	0	0	0	0
API Callouts	0	0	0	0
Calculated fields	0	0	0	0
Forms	0	0	0	0
Report Templates	0	0	0	0
Reports	0	0	0	0
Workflows	0	0	0	0

The 'ITEMS BY TYPE' section shows 'No records found'. A legend on the right indicates: Error (Red), Warning (Yellow), Suggestion (Blue), OK (Green), and Other (Grey). A footer message states 'A health check in progress'.

Health checks are run on demand by an administrator. The check may take a significant amount of time depending on the number of items in the tenant - the number of Reports, Report columns, Workflows, Workflow Activities, Action Buttons, Objects, Forms and Access Rules. The check is affected by the number of Definition and not Instances; for example, the number of Records and Workflow runs do not matter, but the number of Objects and Workflows matter.

Typically the check will take between 10 and 60 minutes depending on the tenant complexity, but the time taken will be consistent for each tenant. Please note that running a Tenant Health Check will not impact system performance.

Interpreting Results

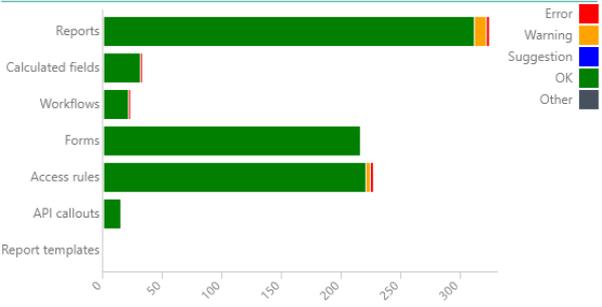
The results are categorised as suggestions, warnings or errors, but the health check has no real understanding of how applications need to work, so the results need to be reviewed to validate them in context.

 Health Check
Start Scan

HEALTH CHECK SUMMARY

Health Check Type	OK	Errors	Warnings	Suggestions
Access rules	222	2	4	0
Action buttons	0	0	0	0
API callouts	16	0	0	0
Calculated fields	32	1	0	0
Forms	217	0	0	0
Report templates	2	0	0	0
Reports	313	7	10	0
Workflows	22	2	0	0

ITEMS BY TYPE



HEALTH CHECK RESULTS

Health chec...	Item checked	Details	Application	Message...	Messages	Subcomponent
Reports	H_Country Report		Test Solution	Error	Invalid column: H_City	
Reports	H_Country Report		Test Solution	Error	Invalid relationship: H_City	

Results of a completed health check

Errors

This is the place to start when checking the results. Invalid columns are the first errors to address, along with Calculation errors. If these are fixed and the scan is run again, many of the invalid condition errors will also be resolved. Only start checking warnings when there are no errors. Try to fix as many as possible before running the scan again, and remember to refresh the report again afterwards.

Warnings

Warnings are generated where a recommendation will affect the functionality of an Application, such as when Calculations may not seem to be logical according to the Health Check rules. If the warning does not raise any concerns then it may be a false positive, and there is no need to make any changes.

Suggestions

Suggestions are specific recommendations for improving Applications for better maintainability or performance, but have no functional impact. A good example of this is when a new Calculation operator is released and existing Calculations may benefit from from using the new operator.

Troubleshooting

Last Modified on 04/12/2019 5:15 pm AEDT

Application errors are managed by the platform, but both application builders and users should be aware of how errors are handled.

Application errors are handled according to where the error occurs and the nature of the error. For instance, a column in a report may reference a deleted field or have a calculation that is invalid under specific conditions - e.g. a division by zero - and each of these situations are handled in different ways. If this same exception were to happen in a workflow it would necessarily be managed differently to how it was managed in the report.

Calculations

Calculations are a common source of errors because changing data can cause unexpected situations, so that the calculation may be valid for some data and yet cause errors with other data, such as the example of a division by a field that is sometimes zero.

Compilation Errors

In the case where the calculation contains an error such as a typo on a function name, the error will be highlighted in the calculation editor but the calculation can still be saved. This is convenient so that the calculation can reference a field before the field is created, but if the field is never created then the calculation will have an error.

Run-time Errors

Run-time errors are usually caused by unexpected data. When certain data causes an error, the calculation result will be blank. This means that a report might have some rows where the value is blank.

Imagine a stock inventory report where there are columns for *numbers of units*, *total value*, and a *unit value* that is calculated by dividing the *total value* by the *number of units*. If the *number of units* is zero then the *unit value* column will be blank on those rows.

Schema Changes

Over time there will be changes to the definition of various objects and fields will be deleted. This will have an effect on the behaviour of the application.

Forms

Form Builder is the interface to edit objects, so changes to an object will immediately update the current form; where there are multiple forms for an object an error will appear when the form is opened.

Reports

Reports that were created before the deletion may still have these fields as columns in the report definition. When this happens, the report will run for users but the affected column will be missing because it cannot be resolved when the report runs. This will continue to happen until the report definition is edited; when report builder is

opened then a message appears saying that the affected columns will be deleted when the report definition is saved, thereby automatically resolving the problem.

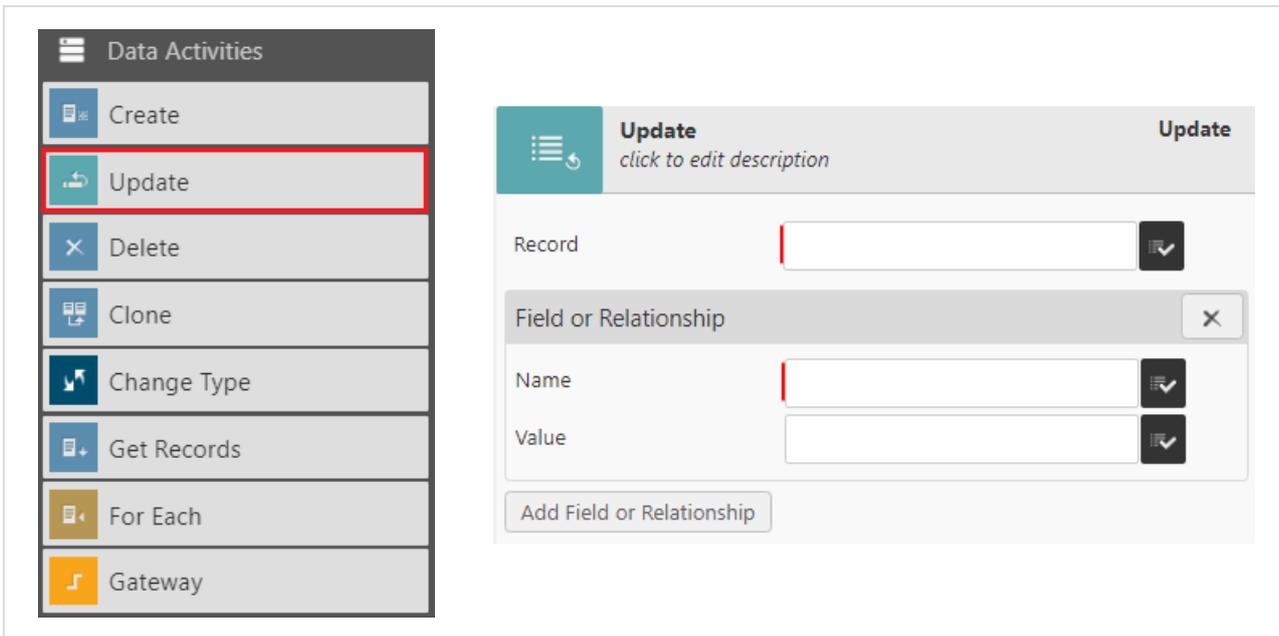
Workflow Errors

An error in a workflow will result in the workflow ending with a failed state, even if only a single record causes the failure. An example is a [Get Records](#) loop, where an error on one record will cause the entire workflow to fail. The [Workflow Runs](#) page has a history of workflow execution and the state of each, where **Completed** indicates success and **Failed** denotes a failure.

Some workflow activities contain timeout routing, which is a method for the application builder to manage how expiry conditions are handled.

Update

Last Modified on 27/05/2020 10:27 am AEST



Purpose

Update Field(s) or Relationship(s) for a selected Record.

Configuration

Setting	Description
Record	Select the Record to updated. This can be set via: <ul style="list-style-type: none">• Record• Parameter• Calculation

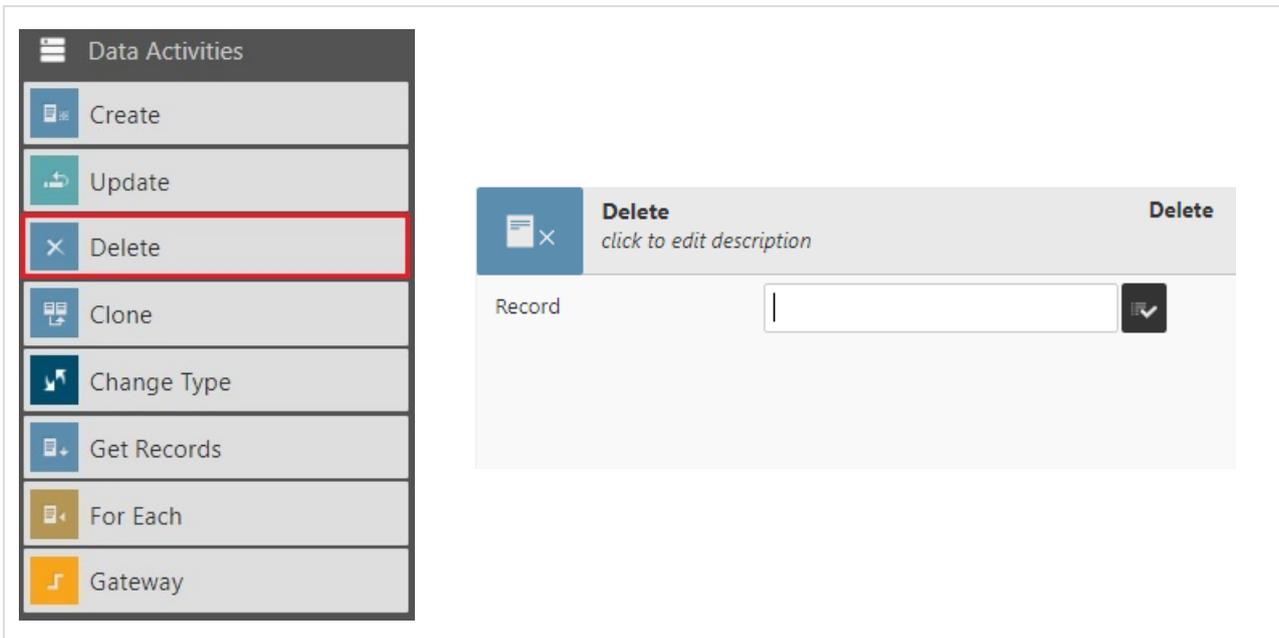
Setting	Description
Field or Relationship	<p>Click on <i>Add Field or Relationship</i> for each entry to create.</p> <p>Name The Name of the Field or Relationship to be updated in this entry. This can be set via:</p> <ul style="list-style-type: none"> • Field • Relationship • Calculation <p>If updating via a Relationship, two additional options are displayed</p> <ol style="list-style-type: none"> 1. Add related record - used to link multiple Records via this Relationship 2. Replace existing record - Replace the currently linked Records <p>Value The Value to set the Field or Relationship to. This can be set via:</p> <ul style="list-style-type: none"> • Parameter • Calculation

Parameters created

None

Delete

Last Modified on 27/05/2020 1:33 pm AEST



Purpose

Delete the specified record(s).

Configuration

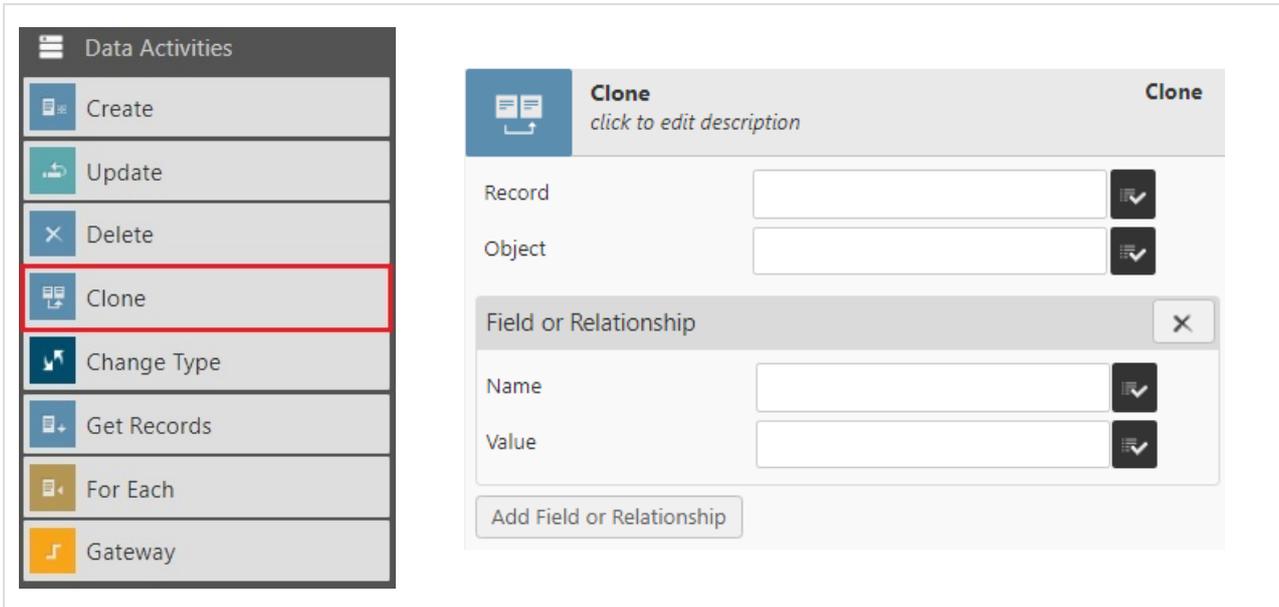
Setting	Description
Record to delete	<p>Specify the Record(s) to be deleted. This can be set via:</p> <ul style="list-style-type: none">• Record• Parameter• Calculation

Parameters created

None

Clone

Last Modified on 28/05/2020 3:40 pm AEST



Purpose

Clone a Record from one Object to another.

Configuration

Setting	Description
Record	<p>The Record to be cloned. This can be set via:</p> <ul style="list-style-type: none">• Record• Parameter• Calculation
Object	<p>The destination Object that the Record(s) will be cloned to. This can be the same object as the source object or a different object</p> <p>Note: The destination Object may be the same or a different Object. If it is the same Object, all Fields will be copied across. If its a different object, only Fields of the same Name and Type will be copied across automatically.</p>

Setting	Description
Field or Relationship	<p>Update additional fields or relationships in addition to what is automatically copied as above.</p> <p>Click on <i>Add Field or Relationship</i> for each additional entry to create.</p> <p>Name The Name of the Field or Relationship to be updated in this entry. This can be set via:</p> <ul style="list-style-type: none"> • Field • Relationship • Calculation <p>If updating via a Relationship, two additional options are displayed</p> <ol style="list-style-type: none"> 1. Add related record - used to link multiple Records via this Relationship 2. Replace existing record - Replace the currently linked Records <p>Value The Value to set the Field or Relationship to. This can be set via:</p> <ul style="list-style-type: none"> • Parameter • Calculation

Parameters created

Parameter	Type	Description
[Activity Name].Record	Record	The record created by the clone activity

Additional Notes

- **Resource Keys** can be set to restrict duplicate records. An attempt to clone a Record that violates any Resource Keys for that Object will not be allowed to clone.
- Relationships are clones based on the Relationship Type. A property called 'Clone' is set based on the following options:
 - *Drop* - this Relationship is dropped when record is cloned so the new record will have this relationship empty
 - *Clone References* - Will copy the relationship to the same record e.g. if Owner is Clone Reference, then the new record will point to the same Owner.
 - *Clone Entities* - A copy of the destination is also made and the new Record will point to the new

destination e.g. If *Course* has *Notes* with Clone Entities set, then cloning the *Course* will also clone all the *Notes*, and the new *Notes* will be linked to the new course.

Change Type

Last Modified on 28/05/2020 3:40 pm AEST

The image shows the configuration for the 'Change Type' activity. The left sidebar lists various data activities, with 'Change Type' highlighted. The main configuration area includes:

- Record:** A dropdown menu to select the record type.
- Object:** A dropdown menu to select the object.
- Field or Relationship:** A section with a close button (X) containing:
 - Name:** A dropdown menu to select the field or relationship name.
 - Value:** A dropdown menu to select the value.
 - Add Field or Relationship:** A button to add a new field or relationship.

Purpose

To change the Type of an existing Record, used to avoid having to create a new Record and delete the old one when migrating Records. Triggers are suppressed on a **Change Type** activity - no Triggers are fired after the conversion.

Configuration

Setting	Description
Record	<p>The Record to change Types. This can be set via:</p> <ul style="list-style-type: none">• Record• Parameter• Calculation

Setting	Description
Object	<p>The Object to change the Type to.</p> <p>Note: When using the Change Type activity to change the type of a record from A to B where the type of A is T_A and the type of B is T_B:</p> <ul style="list-style-type: none"> • When T_A is a base type of T_B (i.e. T_B inherits T_A) then all the Fields and Relationships of A will be automatically be present on the updated Record • When T_B is a base type of T_A (i.e. T_A inherits T_B) then only the Fields and Relationships that exist on B should be present on the updated Record • When T_A and T_B both derive from a common ancestor type T_C then only the Fields and Relationships defined for T_C will be present on the updated Record
Field or relationship	<p>Click on <i>Add Field or Relationship</i> for each entry to create.</p> <p>Name The Name of the Field or Relationship to be additionally updated in this Activity. This can be set via:</p> <ul style="list-style-type: none"> • Field • Relationship • Calculation <p>If updating via a Relationship, two additional options are displayed</p> <ol style="list-style-type: none"> 1. Add related record - used to link multiple Records via this Relationship 2. Replace existing record - Replace the currently linked Records <p>Value The Value to set the Field or Relationship to. This can be set via:</p> <ul style="list-style-type: none"> • Parameter • Calculation

Parameters created

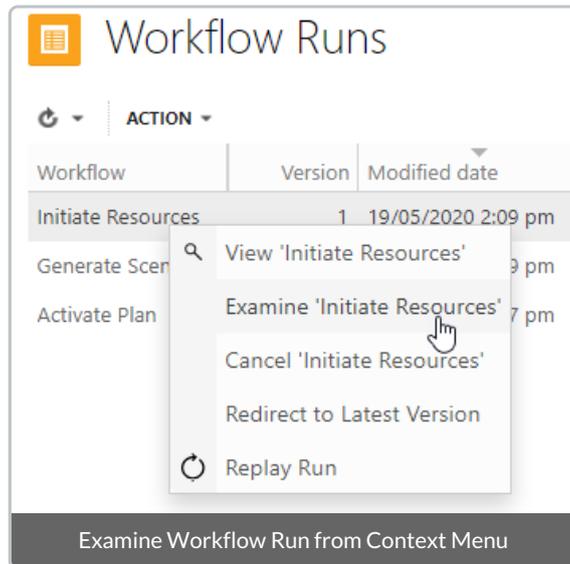
Parameter	Type	Description
[Activity Name].Record	Record	The record created by the change type activity

Examining Workflow Runs

Last Modified on 27/05/2020 2:04 pm AEST

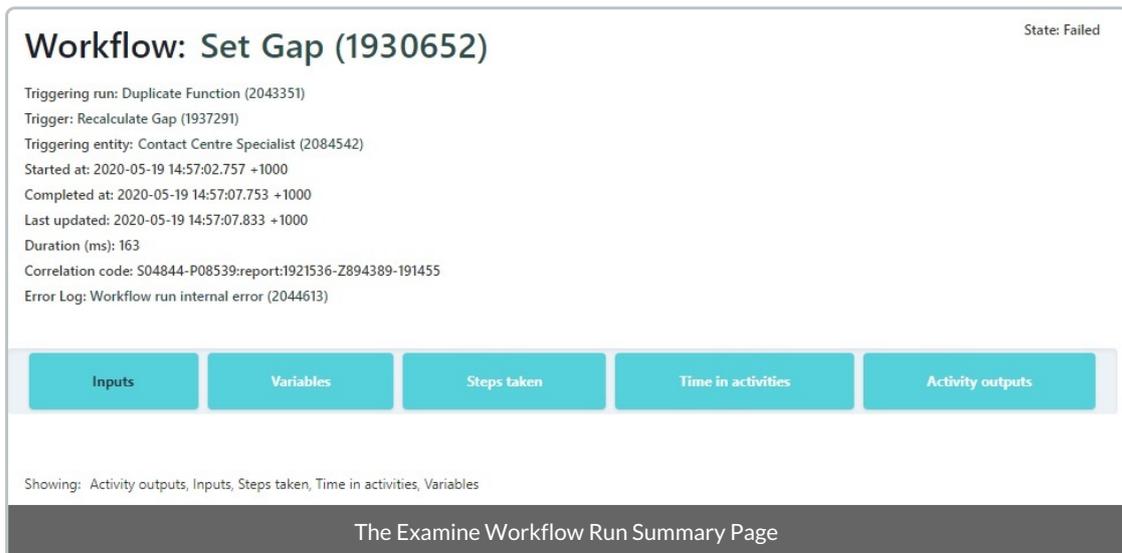
Examining Workflow Runs

Examine Workflow Run assists Tenant Administrators in troubleshooting or fine tuning workflow execution. The **Examine** option is available via the Right Click context menu, or via selecting the Workflow Run record and selecting **Examine** from the Action list.



This will show summary page with details that may be toggled on (blue) or off (gray). The number of tabs shown depends on what activities are in the workflow, as well as the state of the workflow; for example, if there are no *Variables* in the Workflow, then the *Variables* tab will not be present.

Below is an example page of **Examine Workflow Run** on a failed Workflow.

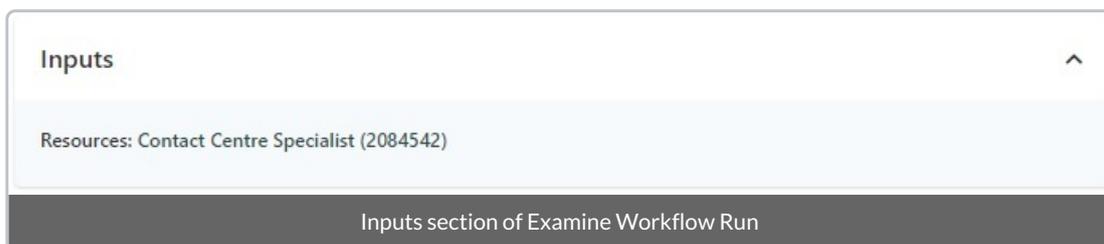


State information

There are up to six potential information tabs that will be available in the Examine page. At the bare minimum, *Steps Taken* and *Time in Activities* will always be available.

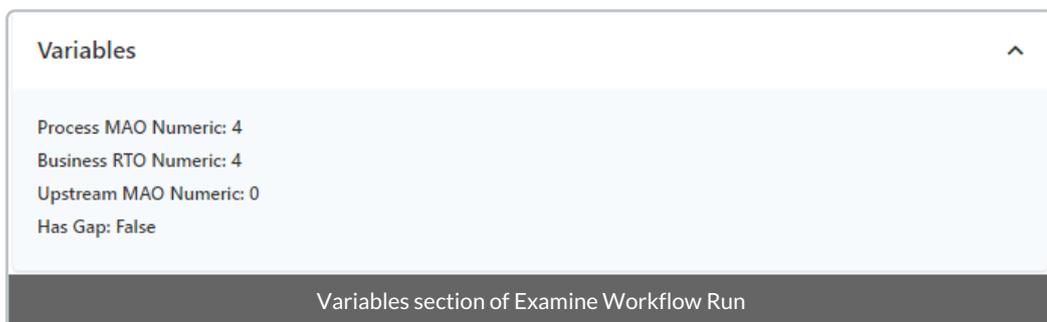
1. Inputs
2. Variables
3. Steps Taken
4. Time in Activities
5. Activity Outputs
6. Child Runs

Inputs



This is the input parameter(s) to the workflow, which links to the object(s) view form. Tenant Administrators may check here to verify that the expected Input is being passed into the Workflow - should this be unexpected, the flow must be traced upstream to determine why.

Variables



The current state of *Variable* values are shown in this section. If the Workflow run has produced some unexpected results, knowing what the Variable values are will assist in correctly tracing through the execution path.

Steps taken

Steps taken				
Timestamp	Step	Activity	Evaluate inputs (ms)	Run (ms)
2020-05-19 14:57:07.583 +1000	1	Gateway1	0	0
2020-05-19 14:57:07.583 +1000	2	Is a People Resource with Key Person Risk	0	0
2020-05-19 14:57:07.614 +1000	3	Update	0	28
2020-05-19 14:57:07.630 +1000	4	Gateway	1	1

Steps Taken section of Examine Workflow Run

This is the ordered sequence of activities (limited to the last 200). This information is used to determine the exact path this Workflow Run is or has taken to assist in troubleshooting a Workflow Run, such as:

1. Walking through the Workflow to check that given the understood *Inputs, Variables* and expected state of fields on which Workflow Calculations are dependent that the Workflow is following the intended path
2. Using the Timestamp to interleave the execution history of Activities across multiple concurrently running Workflows. This is of significant importance where changes effected by one Workflow may impact other running Workflows. For example, Workflow A makes a change to a field value on Record X, and Workflow B using using that value from Record X as an evaluator in a Gateway Activity.
3. The Run (ms) metric will assist in identifying performance bottlenecks at the individual Step level. Conversely, the *Time in Activities* tab provides aggregated time metrics.

Time in Activities

Time in activities				
Activity	Count	Evaluate inputs (ms)	Run (ms)	Total time (ms)
User Message	1	8	70	78
Update Business	1	0	35	35
Update	1	0	28	28
Assign Bus	1	1	1	2
Gateway	1	1	1	2

Time in Activities section of Examine Workflow Run

Summary activity information is shown here in milliseconds, divided into preparation time - *Evaluate inputs(ms)* and running time - *Total time (ms)*. This information is useful when Tenant Administrators are seeking to optimise the run time of Workflows by providing direction as to where the most time is being spent by the Workflow Run under inspection.

By comparing the *Time in Activities* in several Workflow Runs of the same Workflow, Tenant Administrators may be able to infer additional information such as whether it has been degrading over time (which may be symptomatic of

growth of the volume of data the Workflow is interacting with), or if a particular Workflow Run is an outlier (Workflow Runs before and after are similar, but the one under inspection is significantly greater - which may be symptomatic of varying Platform load over the course of the day).

Activity outputs

Activity outputs

Create Link
URL: <https://us.readinow.com/sp/#/Dev/1968847/viewForm?formId=196514966>
Link:

For Each Asset
Record: (1951089)

Security Doc
Document: Security Report (1967571)

Risk Manager
Completed task: Property Works: Complete - BROWNS PLAINS (1967577)

Activities Outputs section of Examine Workflow Run

These are Entities that have been generated by the workflow, such URL Links, new Records, User Messages/Inputs, or Tasks from a Launch Person Campaign or User Action activity.

Check here to verify that the expected Outputs were created by the Workflow.

Child runs

Child runs

Start Assessment (1938893)

Child Runs section of Examine Workflow Run

This section lists Workflows that were initiated from the current workflow by a Run Workflow activity. Each Workflow Run in the list is a link to the Examine Workflow Run page for that specific Child Run.

Note that if any Child Workflow Run fails, the Parent Workflow Run will also be marked as failed.

Introduction

Last Modified on 26/05/2020 5:36 pm AEST

The ReadNow Platform affords Tenant Administrators extraordinary power and freedom to build bespoke applications that meet their precise requirements. At the heart of the Platform resides the Workflow Engine, which allows for the creation of ever increasingly complex Workflows, wide scale automation of processes and the manipulation of large volumes of data. While this level of freedom is where the power of the Platform shines through, it comes with a degree of responsibility and accountability that Tenant Administrators should be prepared to take ownership.

It is not possible to provide a simple Troubleshooting FAQ that lists common problems mapped to their solutions, as any given problem could manifest in a myriad of ways, and it all depends on how the application is designed and built.

The articles contained within this section are based on real life case studies whose purpose is to provide a framework and mindset to Tenant Administrators as to how they might investigate issues on their applications. They chronicle in detail the kinds of troubleshooting that is required and showcase how finding the root cause of issues are not black and white affairs.

A Workflow has started to fail despite the Workflow was unchanged

Last Modified on 25/05/2020 12:17 pm AEST

Assuming that the Workflow is unchanged and that the Platform has not changed since the last successful Workflow run, consider that a Workflow is not a discrete entity but rather a potentially highly complex set of Activities that has the potential to touch upon nearly every aspect of the Platform.

While the Workflow may itself remain unchanged, any changes made to any entity which the Workflow interacts with has potential impact.

Below are a few potential causes to illustrate this:

- The volume of data with which one of the Workflow Activities is interacting has increased beyond documented Platform capacities. This may be the result of a gradual increase over time that has reached a critical point, or a recent and significant data injection
- A Report which the Workflow relies on is timing out. This may be an example of data growth as above, or that some aspect of the Report has changed since the last Workflow Run, or one of the Report calculations has been altered in a way that degrades performance.
- There was a change to the security rules that leads to Reports timing out, or blocking access to certain entities that was required for the Workflow to execute successfully. It may be happening across or users, or only a subset of users.

This is by no means an exhaustive list but serves as an example of the potential complexity behind the cause of a Workflow that had run successfully in the past, even for a long period of time, may suddenly stop with no clear reason.

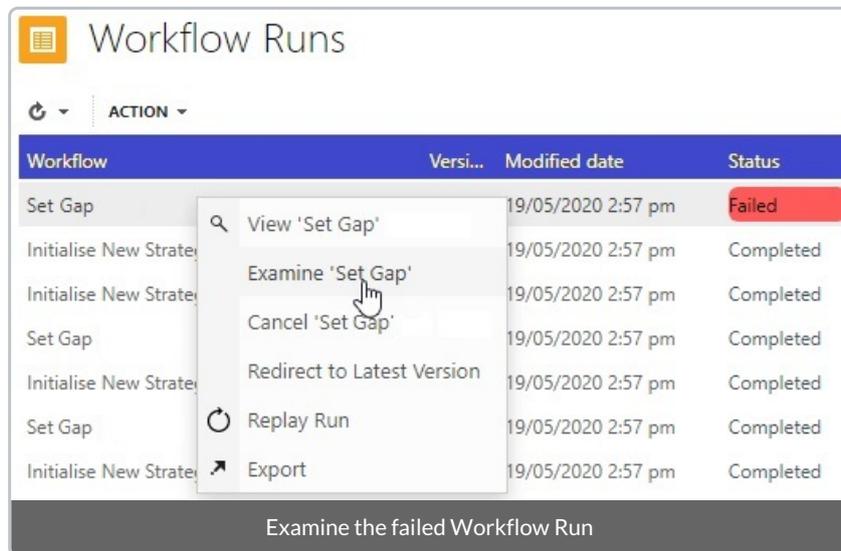
If this should happen, a good place to start is selecting the failed Workflow Run record in the **Workflow Runs** report and select **Examine** - please refer to [Examining Workflow Runs](#) for more detail.

Below is a Sample Case Study to demonstrate how an investigation of a failing Workflow could be undertaken, and primarily serves as a guideline as to how Tenant Administrators might perform such troubleshooting.

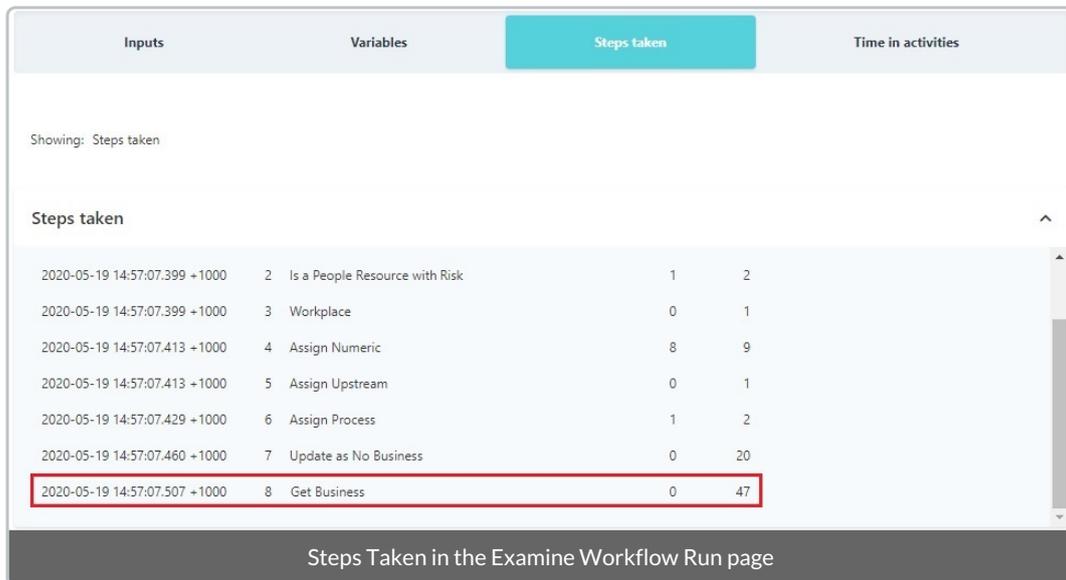
Sample Case Study

There was a Workflow called *Set Gap* which had been running without an issue when it suddenly started to fail. It had been verified that the Workflow has not changed since the last successful run.

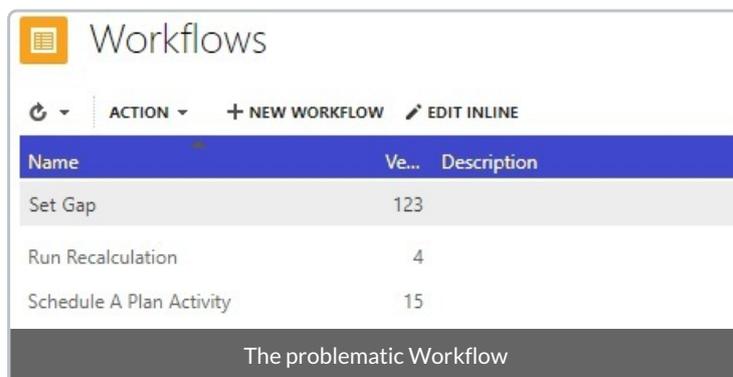
The Tenant Administrator opens the Workflow Run report by navigating to **Administration > Workflows > Workflow Runs** and locates the record for the failed run, and selects **Examine** from the Context Menu.



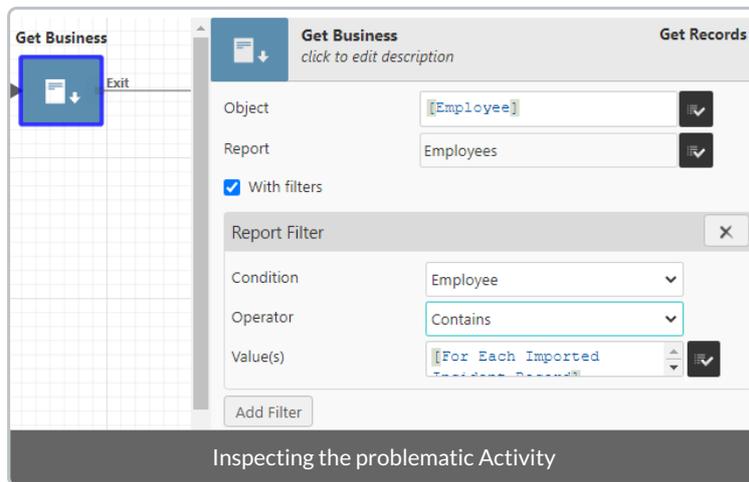
This opens the **Examine Workflow Run** page. The Tenant Administrator toggles on *Steps Taken* to see at which Workflow Activity the run had reached when it failed.



The Tenant Administrator scrolls down to see what the last step was and sees that it reached Step 8 - *Get Business*. He/she then navigates to **Administration > Workflows > Workflows**, locates the Workflow *Set Gap* and opens it in the Workflow Editor by double clicking.

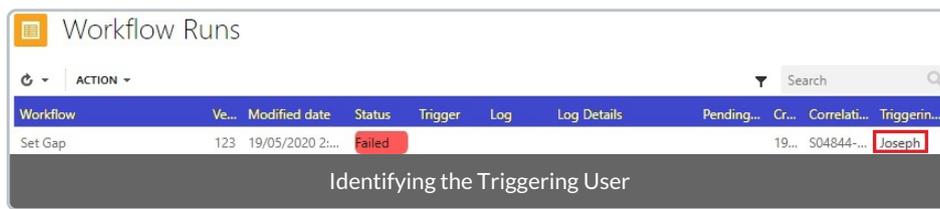


The Tenant Administrator locates the last Workflow Activity registered in the *Steps Taken* tab of the Examine Workflow Runs page, above and inspects what this activity is doing.

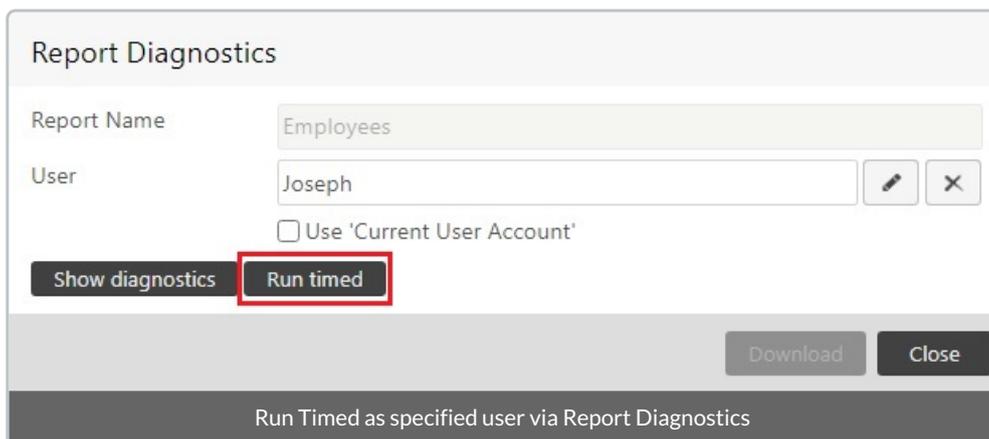


The Tenant Administrator sees that this Activity is running the Report Employees against the Object Employee with filters. He/she navigates to **Administration > Resources > Reports** to load the Report and apply the same filters - which it does successfully.

The Tenant Administrator navigates back to **Administration > Workflows > Workflow Runs** and locates the record for the failed Workflow Run and checks who the Triggering User was.



Using **Report Diagnostics**, the Tenant Administrator attempts to run the Report as that user and this time the Report times out.



At this point it has become clear that the Workflow itself does not have a problem, but this Report with which the Workflow is using is has an issue, specifically when being run as the user 'Joseph'.

The Tenant Administrator then runs *Show Diagnostics* and attempts to identify the root cause.

Refer to **Report Diagnostics** documentation for further information on how to interpret *Diagnostics*.

My Workflow Runs are not running in the order I expect

Last Modified on 26/05/2020 5:49 pm AEST

While Workflow Runs are triggered on a first come, first serve basis, the order in which the Workflow Runs will be executed is not guaranteed to adhere to that order. This is not a Platform shortcoming but simply the case where potentially hundreds of Workflows may be queued to run or currently running cannot be handled in an enforced consecutive manner. In the vast majority of cases this will not have any impact on the correct functioning of the application, but it can present a potential issue if the Workflows have been designed in such a manner that timing down to the millisecond level becomes important - and should be a foremost design concern in the application architecture.

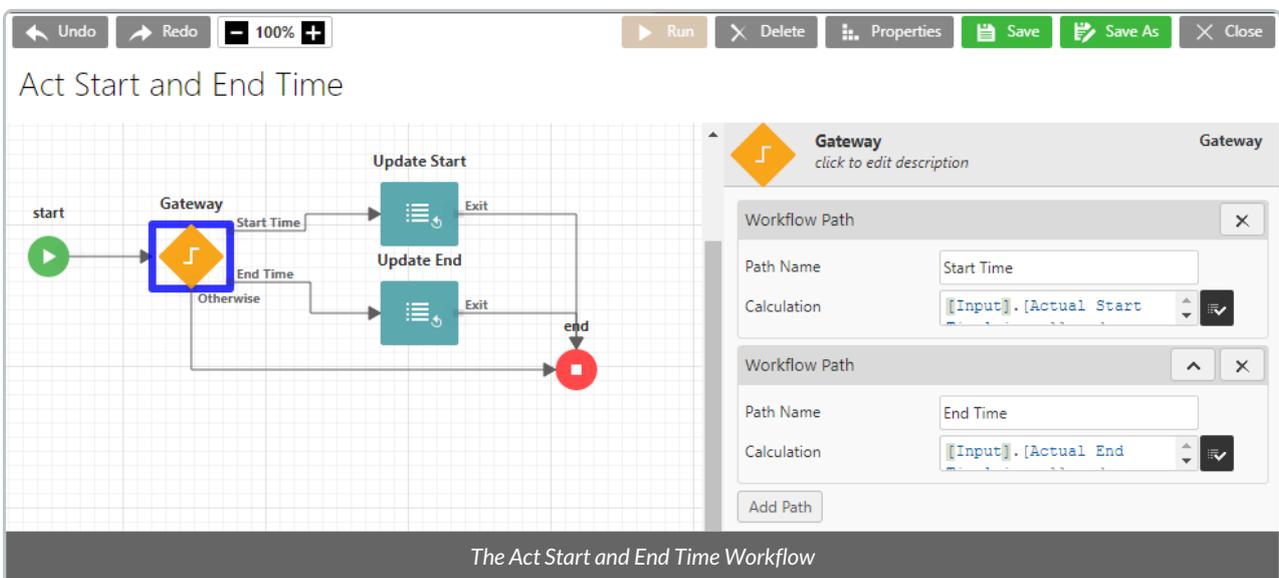
Consider a Parent Workflow A, which itself contains Child Workflows X, Y, Z and there are numerous Activities that result in firing off Triggers which in turn start their associated Workflows, each of which may have their own Child and Triggered Workflows. When designing a series of coordinated Workflows, and walking through all the possible paths and triggering events, there may be a scenario where the value of a particular Field in particular Record is used for a Calculation in another Workflow, and that value may not be the expected value at the time the latter Workflow executes.

Sample Case Study

The Tenant Administrator had noticed that on a very few Records, an important piece of data was missing which was meant to be populated by a Workflow. These Records were for *IT Recovery Scenarios* which included the fields *Actual Start Time* and *Actual End Time*, which are in turn used in calculating the real elapsed time taken to execute that *IT Recovery Scenario*.

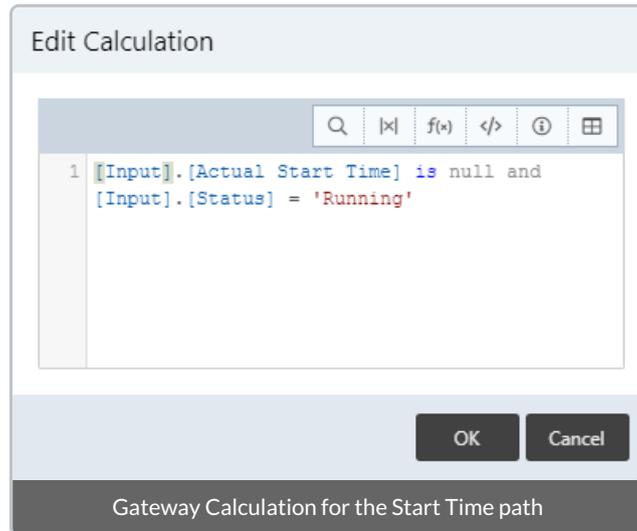
However, out of thousands of *IT Recovery Scenarios*, there were 6 that were missing *Actual Start Time*. As such, the elapsed time could not be calculated.

The Tenant Administrator knows which Workflow is responsible for setting the *Actual Start Time* and opens it in the Workflow Builder to commence troubleshooting. This Workflow is called *Act Start and End Time*, and the Input is an *IT Recovery Scenario* record. *BELOW*



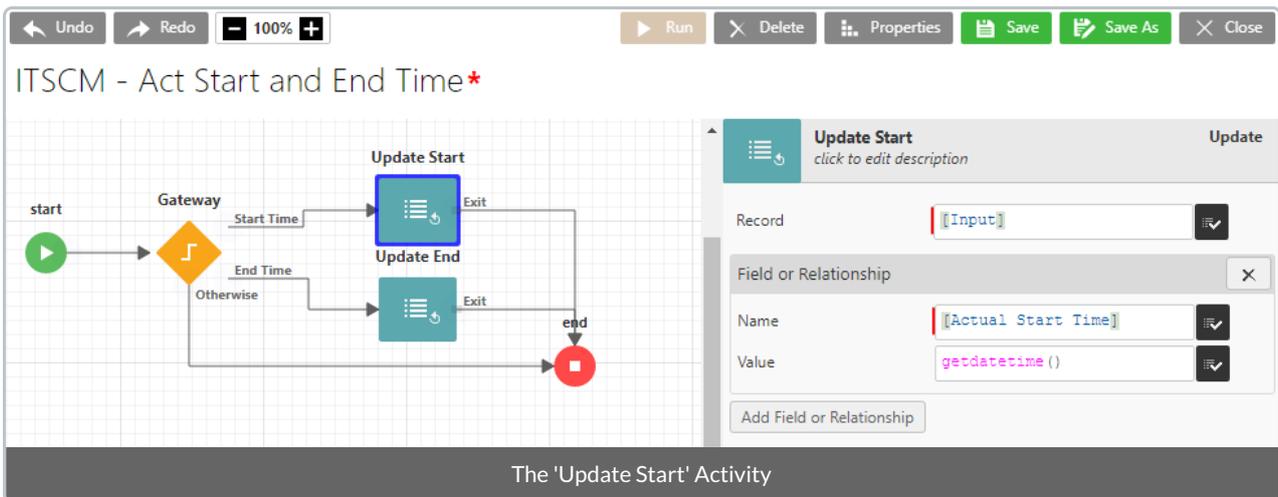
The Tenant Administrator inspects the Gateway Activity and opens the Calculation used to determine the criteria

that the Gateway will take the *Start Time* path.



This Calculation is saying "if the *IT Recovery Scenario* has no *Actual Start Time* value and the value for the field *Status* on this *IT Recovery Scenario* is equal to *Running*, then take this path".

The Tenant Administrator inspects the *Update Start Activity* - this appears to be straight forward.



It simply updates the value of *Actual Start Time* on the Input Record (*IT Recovery Scenario*) with the current date and time.

There is nothing that looks complicated about this Activity, and it has worked for the vast majority of Records that have been passed through it. Using the **Examine Workflow Run**, the Tenant Administrator views the *Steps Taken* tab for the *Act Start and End Time* Workflow for the record that was missing the *Actual Start Time* and notices a key piece of information - the Gateway did not take the *Start Time* path, and instead went straight to the End Activity.

Steps taken					
Timestamp	Step	Activity	Evaluate inputs (ms)	Run (ms)	
2020-05-25 14:39:43.777 +1000	1	Gateway	2	4	

The Gateway was the only Activity executed

For some reason, based on the available evidence, the Calculation:

[Input].[Actual Start Time] is null and [Input].[Status] = 'Running'

... is returning FALSE (for the sake of accuracy, both paths evaluate as FALSE since neither path was taken, but we are focusing on Start since the expectation is that this returns TRUE). For that to occur, either the *Actual Start Time* is not empty, or the value for the *Status* field on the Input *IT Recovery Scenario* is not *Running*. Given that the problem the Tenant Administrator is troubleshooting is that the *Actual Start Time* is empty, that leaves only the other alternative - that the value for the field *Status* is not set as *Running* when this Gateway was evaluated.

The Tenant Administrator determines that the *Act Start and End Time* Workflow has a Trigger for it.

Triggers						
TRIGGER ON CREATE/UPDATE						
Trigger on Create/Update	Workflow to Run	Object to Trigger on	Enabled	Applications	Last im...	Modifie...
Trig Step Start and End Time	Act Start and End Time	IT Recovery Scenario	✓			

The Trigger responsible for Act Start and End Time

Inspecting the Trigger, it is seen that the *Act Start and End Time* Workflow will be run whenever the Relationship *Status* on a Record of type *IT Recovery Scenario* has been updated.

TRIGGER DETAILS

Enabled:

Triggered on: **Update**

Object to trigger on: IT Recovery Scenario

Workflow to run: ITSCM - Act Start and End Time

Run in foreground:

Allow self triggering:

Fields to Trigger on Relationships to Trigger on Running Workflows

↻ ACTION ↻ EDIT INLINE

Name	From Object	Secure...	Clone ...	Secure...	To Object	Cardinality
Status	IT Recovery Scenario	No	Clone R...	No	Status	Many to one

Trigger definition for when to run 'Act Start and End time'

The Tenant Administrator opens the Form for the IT Recovery Scenario to check in what ways the *Status* Field may be changed. When editing a Record, it can be seen that the *Status* Field is not directly editable from the Form. However, there is an Action Button labelled Start.

Step #4

Save Cancel

Start

STEP EXECUTION DETAIL

Step ID: 4

Name: Step #4

Recovery Instructions: DBA team will execute the job

Execution Order: Sequential

IT RTO: [Select]

RTO Start?:

RTO End?:

EXECUTION METRICS

Ready to start?:

Status: ● Not Started ⓘ

Exp Duration (Mins): 45

Actual Duration (Mins):

Business Constraint: None (As soon as possible)

Estimated Start Time:

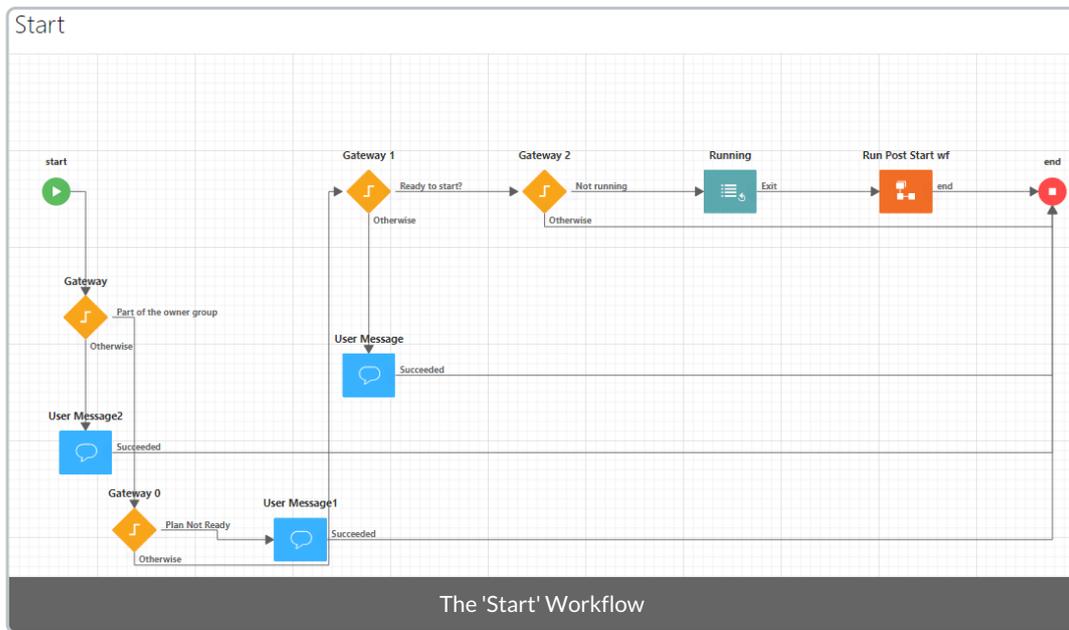
Actual Start Time:

Estimated End Time:

Actual End Time:

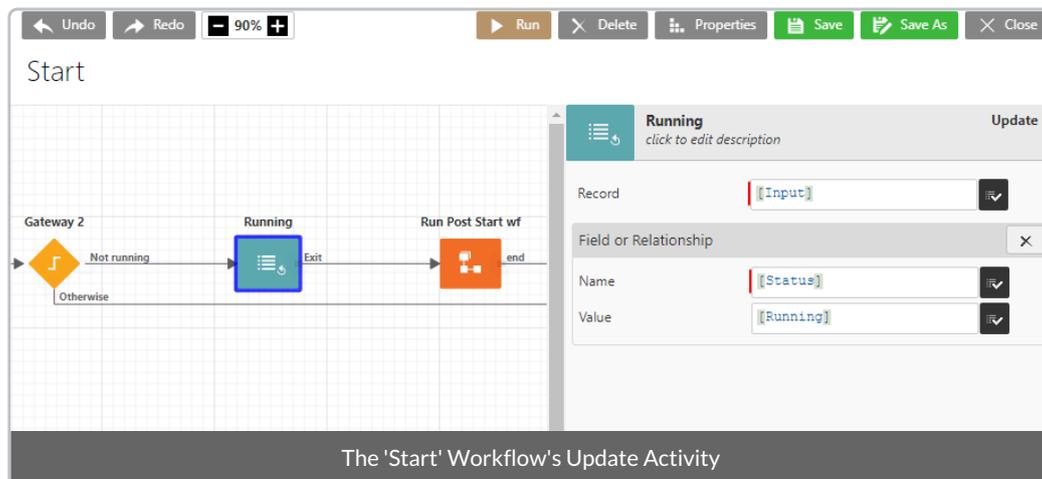
An IT Recovery Scenario Record

The Tenant Administrator then opens the *Start* Workflow in the Workflow Builder.



There are several Gateways which provide validation checks to ensure that this *IT Recovery Scenario* may be started - whether the initiator is part of the group that owns this *IT Recovery Scenario*, whether it has been marked as ready, whether it has been allowed to be started, and whether it was already marked as *Running*.

Inspecting the sole Update Activity in the Workflow reveals that this is how the Trigger to run *Act Start and End Time* is fired - an update to the *Status Relationship*.



The scenario is as follows:

1. A user is viewing an *IT Recovery Scenario* who is a member of the group that owns it
2. The *IT Recovery Scenario* is marked as both ready and allowed to start, and it is not marked as *Running*
3. The user presses the Start Action button, and the *IT Recovery Scenario* Record is passed into the Start Workflow
4. It passes all of the Gateway checks contained within the Start workflow and reaches the *Update* Activity
5. The *Running* Update Activity changes the value of the Status Field from *Not Started* to *Running*
6. This change triggers the *Act Start and End Time* Workflow to execute, which takes the same *IT Recovery Scenario* Record as input

7. The Gateway in *Act Start and End Time* evaluated to FALSE, and by elimination it is because the value of the Status Field is not *Running*
8. The *Act Start and End Time Workflow* proceeds directly the End activity, and the value for *Actual Start Time* is not set

Due to the way that Workflows are queued, and depending on the precise timing, it is possible that the *Act Start and End Time* workflow runs to completion before the change to the value of the *Status* Field has been propagated to the database. In the vast majority of the cases this does not happen - when the *Act Start and End Time Workflow's* Gateway evaluates, the *Status* Field has been changed to *Running*.

However, in a very small number of cases this condition does occur, and as such the way these Workflows are implemented needs to be changed.

Consider that there are two Fields which are being acted on - the *Status* Field and the *Actual Start Time* field. Both of these values are on the same *IT Recovery Scenario* Record, and yet the updates are in two separate Workflows. The second Workflow, *Act Start and End Time* serves no other function than to set the *Actual Start Time* (and *Actual End Time*).

There is no reason to split the updates into two Workflows - there is an existing *Update Activity* in the *Start Workflow* that is already making a change to one Field. The solution is set the *Actual Start Time* in the same *Update Activity* that changes the *Status* Field.

Before the Tenant Administrator is moves the update to the *Actual Start Time* out of the *Act Start and End Time* Workflow, the impact needs to be considered. The *Act Start and End Time* had Gateway conditions to dictate when to set the *Actual Start Time*:

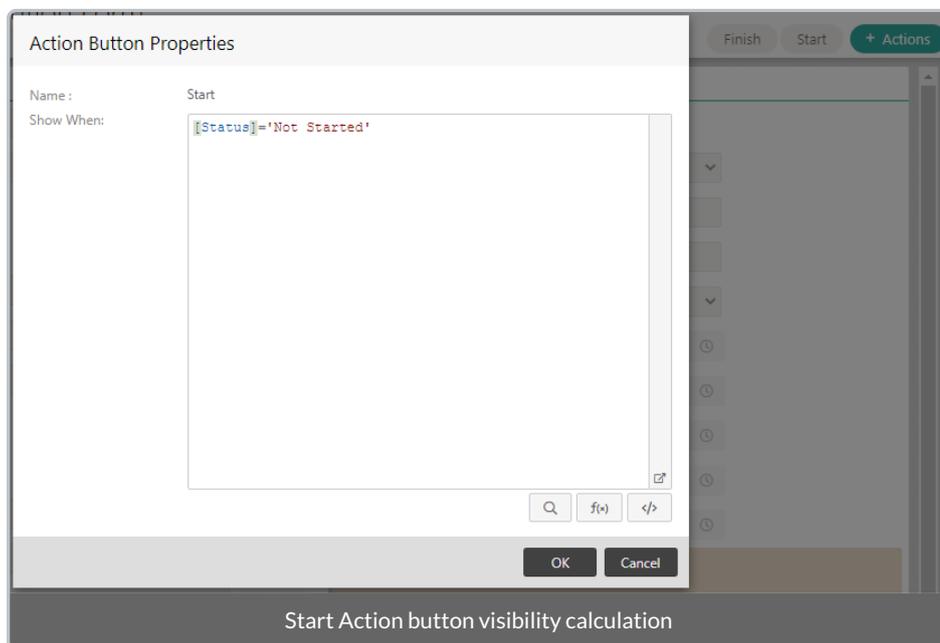
[Input].[Actual Start Time] is null and [Input].[Status] = 'Running'

The second condition is checking whether the *Status* Field is set to *Running*, and given that the *Running Update Activity* is setting *Status* Field to *Running*, this does not represent a problem - there is no need to check as that condition is being set in that *Update Activity*.

The first condition is checking that there is no *Actual Start Time* value. This could be a problem if someone is able to

run the *Start Workflow* using an *IT Recovery Scenario* that is already *Running* or *Completed* where there is an existing value for *Actual Start Time* - the original value would be overridden with an incorrect value.

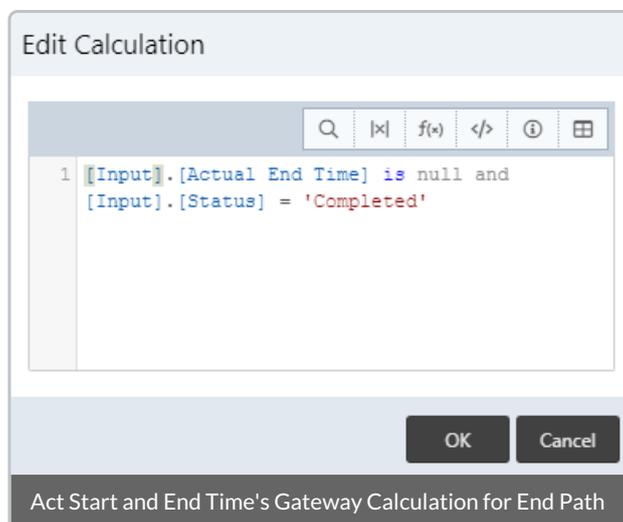
The Tenant Administrator revisits the *IT Recovery Scenario* Form and checks the Start Action Button. It is only visible when the *Status* Field is set to *Not Started*.



As long as the following criteria are met, it is safe to make the change:

1. There is no other valid path to populate *Actual Start Time* apart from the *Start Workflow*
2. The *Start Workflow* can only be initiated on an *IT Recovery Scenario* Record via the Start Action button on the Form
3. That the default value for all *IT Recovery Scenario* Records for the *Status* Field is *Not Started*

Once this is done, the Tenant Administrator knows there is another avenue to check, even though there is not yet an issue arising from it - the Act Start and End Time Workflow, as the name states, does both the Start and End times. It is possible that the Gateway that evaluates the condition for the End path may be vulnerable to the same problem.



The Tenant Administrator now follows a similar analytical approach as they did with the Actual Start Time to determine if there is a safer way to implement this.

Welcome to the ReadiNow platform

Last Modified on 05/10/2020 11:02 am AEDT

Before we begin

The ReadiNow platform makes it easy for anyone to create business applications that automate processes across the organisation. Beautiful, professional applications can be created without the need for programmers or heavy configuration effort. Simply drag and drop to create forms, reports, charts and workflows.



This starting guide provides a high-level overview of the ReadiNow platform, its major components and how these components interconnect with each other to provide a fully functioning solution. If you are new to ReadiNow, or if you want a refresher on the basics of the platform capabilities, then this guide is for you.

Points to note

- The ReadiNow platform is web-based. All you need to get started is your browser and an internet connection. Check out the supported browsers [here](#)
- Ensure you have your URL and login details handy.
- You can access your application anywhere at anytime using your PC, tablet or mobile phone.

Training

- ReadiNow offers online platform training and it is recommended that any user undertaking any administration or configuration activity complete this [training course](#) .

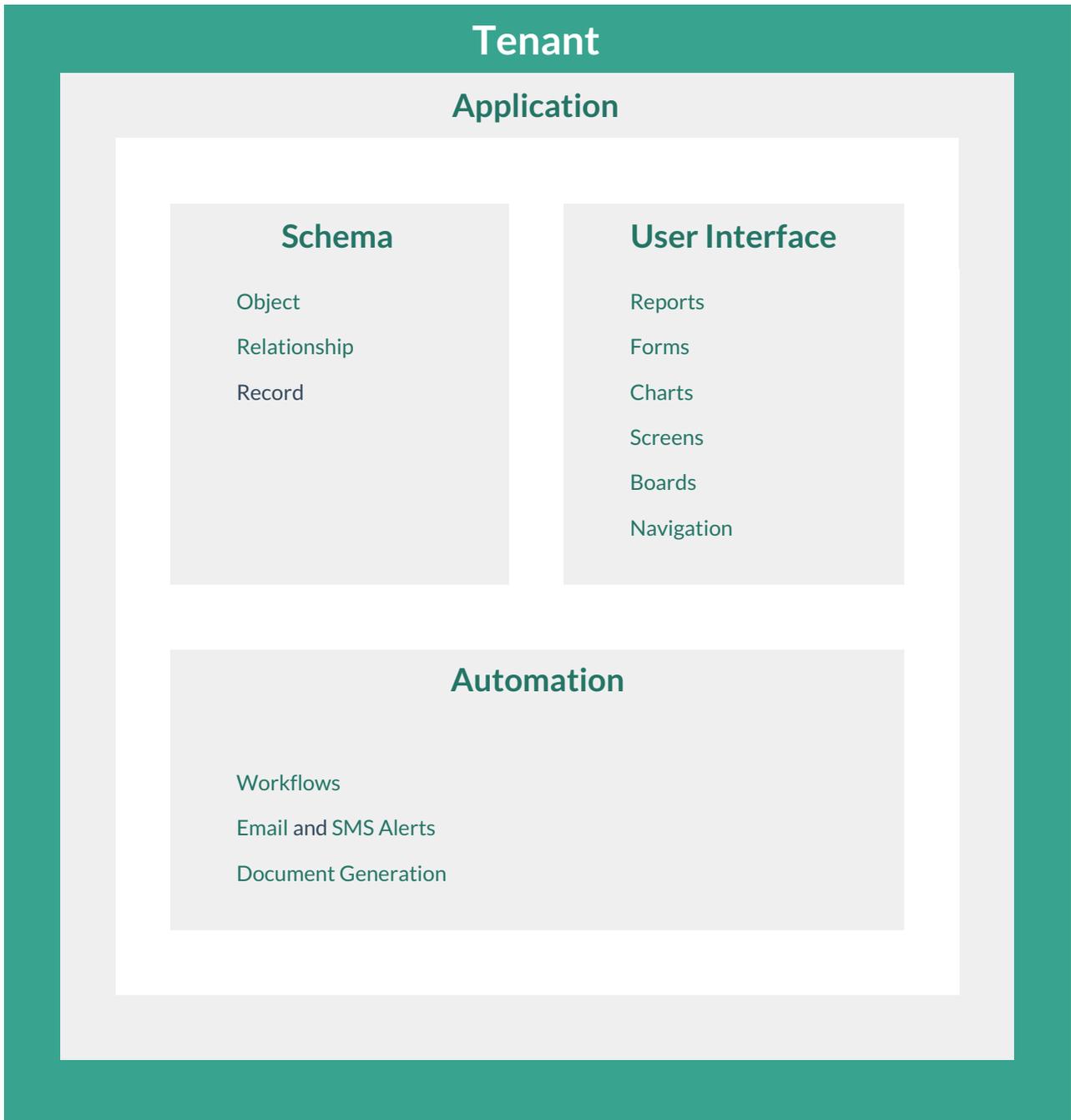
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Introduction to ReadiNow Terminology

Last Modified on 22/12/2021 12:58 pm AEDT

As a ReadiNow customer, you are provided with a Tenant you can use to create multiple applications. Each application you create will include three major components: *Schema*, *User Interface*, and *Automation*. These three components play important roles in all applications .

Familiarize yourself with the following terminology as it will be used throughout this guide. Simply hover on the icon to view the corresponding description.

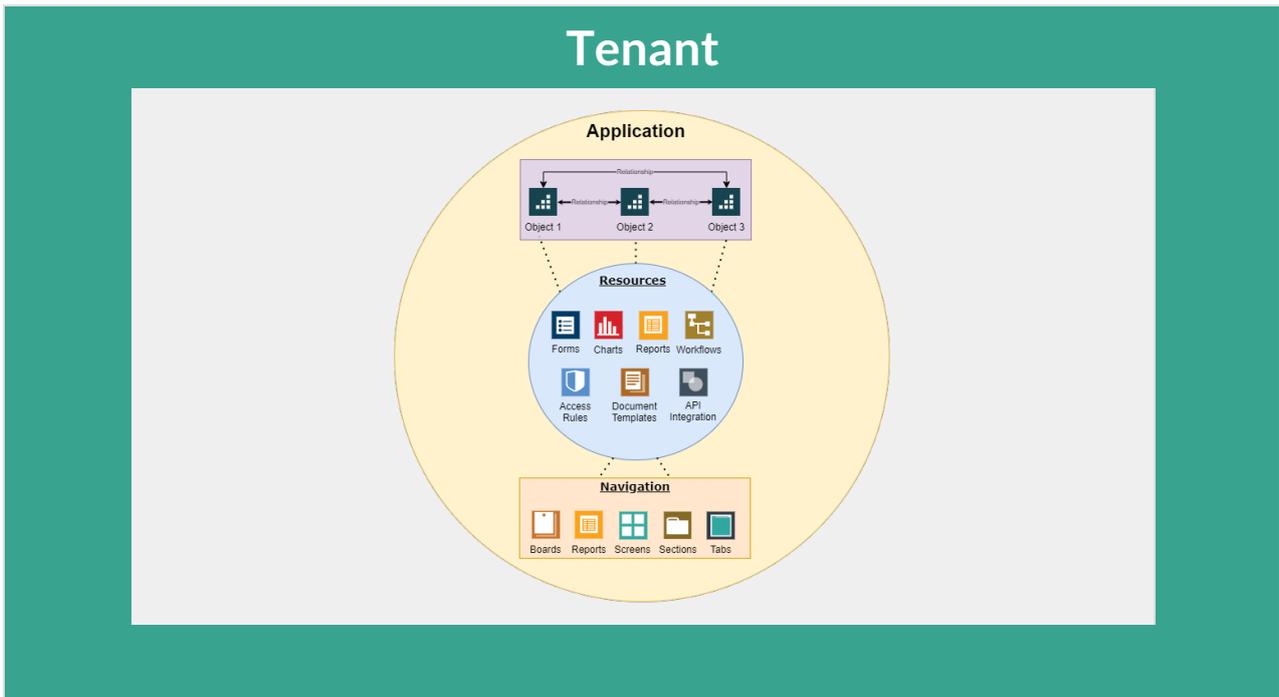


Introduction to ReadiNow Application Components

Last Modified on 05/10/2020 11:43 am AEDT

ReadiNow tenants can host multiple applications. Depending on the design of the applications, it is possible to allow data to flow between the applications. This helps to prevent the development of departmental silos.

The diagram below is an example of a single application showing the different platform components and how they relate to each other.



The outer yellow circle represents your **Application**. You may like to think of this as a container that holds the collection of platform resources used for your solution.

The top purple box shows your **Objects**. An object is used to define something, like a person or a building. You add fields to the object to specify the details that you are interested in. For example, Person might have Address, Email and Phone. Building might have Address and Number of Floors. It is possible to create links between your objects. These links are called **Relationships**. For example, Person might have a relationship to Building, to show which people work in which building.

The blue circle is titled **Resources**. Resources can be thought of as all those things that help you work with your data. For example, a Form allows you to view an existing record or create a new one. Reports show information about multiple records. Charts are a graphical representation of reports. Workflow allow you to automate your business processes, by manipulating data for you.

Finally, the bottom orange box is your **Navigation**. Navigation allows you to display your resources in line with your application design. For example, a Screen (or dashboard) can display Reports, Forms and Charts. A Board allows you to display a report in a Kanban style. Sections and Tabs allow you to group your application resources into a logical flow.

Introduction to Objects

Last Modified on 09/11/2022 11:57 pm AEDT

Objects are the foundations of your application, they are used to define something, like a *person* or a *building*. The ReadiNow platform comes with built-in (out of the box) Objects. You can build on top of these and/or create your own Objects. The following table explains differences between these Objects:

Object	Description
Out of the box Object	<p>Any object included as part of an 'out of box' application.</p> <p>Note: An 'out of box' object cannot be 'repurposed' if not utilised as it may subsequently cause issues for future upgrades or compromise the design of the out of the box application.</p> <p>Licence Fees associated with Out of Box Objects are included with the application licence.</p>
Abstract Object	<p>An object that acts only for the purpose of schema modelling and acts as a parent for other derived objects. Abstract objects do not hold any records themselves. Abstract objects are defined in the object properties where 'abstract property' is set to 'true'.</p> <p>Abstract Objects are not chargeable</p>
Reporting Object	<p>An object that is used to summarise existing records for displaying existing Objects data, usually in the form of reports or dashboards etc.</p> <p>Reporting Objects are not chargeable.</p>
Custom Object/Expansion Block	<p>An object created to hold business data (eg applications) and typically used for new use cases or expansion of out of the box applications. These objects are separately chargeable.</p> <p>Also known as an Expansion Object or Application Building block.</p>

For instructions on creating an Object, visit [Creating an Object](#).

When creating objects, by default they are tagged as 'Custom Objects' and will be counted in your license metrics if the object is created in or moved to your production tenant. If you believe the object you create should not be chargeable as it falls within the definitions of Abstract or Reporting object, please contact your account manager.

You add fields to Objects to specify the details that you are interested in. When adding a new field, you select the type of field that is most appropriate for your data. Some examples to field types include:

- boolean (yes/no)
- choice
- numeric
- text

You might, for example, have an object called Library with fields called Address and Collection. And you might have an object called Book. Fields for Book might include Type, Cost and Location.

Objects are linked to each other through relationships. For example, a relationship between Library (Address) and Book (Location) would allow you to specify which books were located in which libraries.

If we add another object called Member, we could add more relationships to show which library a member belonged to and which books the member had borrowed.

There are three types of relationships:

- one to one (one book can be on loan to one member)
 - one to many (one library can have many members)
 - many to many (many libraries can have many books)
-

Introduction to Reports

Last Modified on 05/10/2020 11:07 am AEDT

Reports are used to list a set of records and to access the forms of individual records.

A report is based on an object, called the base object. The report can include some or all of the fields from the object. If the base object has relationships to other objects, then you may add fields from those objects to your report.

e.g. You could create a report based on Library that showed Members (from the Library Object) and postcode (from the Members object).

Different kinds of formatting can be applied to the columns of a report. Some of the formatting options are simple (alignment) and some are more complex (conditional formatting). You can also perform operations such as totals and subtotals, or group-by (roll up). To learn more about a report's basic capabilities, [click here](#).

After you have created and configured your report, creating a record is easy. Simply click on the  NEW button to open a blank form in edit mode. Now you can fill out the fields with the necessary information.

Introduction to Forms

Last Modified on 05/10/2020 11:08 am AEDT

Forms are used to manipulate data. They display a single record at a time.

Forms are based on an object and have two modes:

- **View Mode** - Fields are read only.
- **Edit Mode** - Fields are editable. Edit mode allows you to create a new record or edit an existing record.

When you create or edit a form you will be able to see all the fields that have been added to the object. You can choose which fields you need to add to the form. This means different forms based on the same object can show different information. If you need a piece of information that is not already present, you will be able to add a new field to the form and to the object.

Fields come in different types to help you record your data easily and accurately. For example, a numeric field will not accept a text input.

To learn more about configuring forms, see [Form Builder](#) .

Introduction to Charts

Last Modified on 05/10/2020 11:10 am AEDT

A Chart is a graphical representation of the data in a report. This means, like a report, a chart has a base object. And like a report, a chart can contain fields from related objects. However, the chart can only include the fields shown in the chart's base report. If you want to add an additional field from the object you will either have to add the extra field to your existing report, or create a new report that includes the field.

There are many different types of chart available. Pick the type of chart that is responsible for the shape of the data you have.

To learn more about a chart's basic capabilities, [click here](#) .

Introduction to Screens

Last Modified on 05/10/2020 11:11 am AEDT

Screens, or dashboards, are used to combine multiple reports, forms and charts into a single page. They are great for providing a snapshot of your data.

Screens use the concept of "master-detail". A master resource will determine what is displayed in a detail resource.

For example, lets say we have a report of libraries that included the state for each library along with the number of books by category. In the accompanying column chart we might show the number of books by category by state. Next we make the chart the master (parent) of the report. If we click on a particular state in the chart, the report will change to show information from only the same state.

See a screen sample [here](#) .

Introduction to Boards

Last Modified on 05/10/2020 11:12 am AEDT

Boards are special reports that can be used to visualise records as 'cards' in a kanban style. Cards are represented visually on a kanban board, allowing team members to see the state of every piece of work at any time.

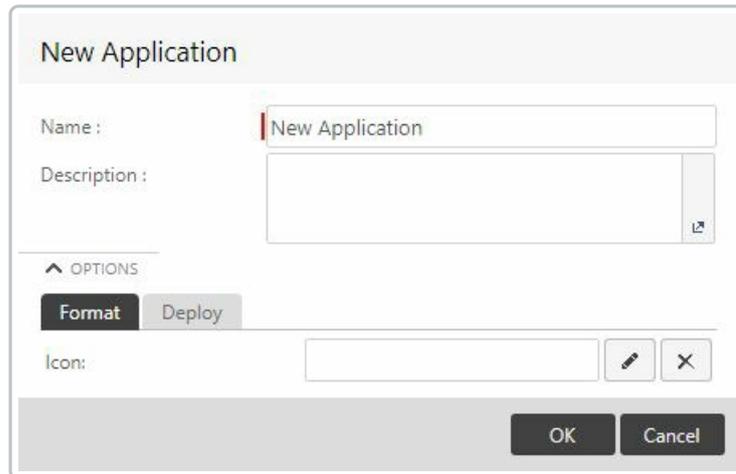
Another advantage of the kanban board is that data can be updated with 'drag and drop'. For example, your kanban board might have three columns representing three status types: planning; in progress and completed. As you drag a card from one column to the next, the status field on each record will be updated.

To learn more about a board's basic capabilities, [click here](#).

Creating an Application

Last Modified on 05/10/2020 10:41 am AEDT

1. Login to your tenant using your administrator credentials.
2. After successfully logging in, you will be redirect to your tenant landing page.
3. Turn on configuration mode by clicking on the spanner  on top right. This will enable the "New Application" option.
4. Click on **New Application** to start the application creation process.



The screenshot shows a 'New Application' dialog box. It has a title bar with the text 'New Application'. Below the title bar, there are two input fields: 'Name' and 'Description'. The 'Name' field contains the text 'New Application'. Below these fields is an 'OPTIONS' section with two tabs: 'Format' and 'Deploy'. The 'Format' tab is selected. Below the tabs is an 'Icon' field with a selection icon and a close icon. At the bottom right of the dialog are 'OK' and 'Cancel' buttons.

5. Enter a **Name** for your application.
6. **Description** is optional but it is a good practice to add one especially if you are planning to build multiple applications.
7. Under **Options** -> **Format** tab, choose an icon from the list that suits your application name.
8. If you want to use your own custom icon, here is the process to upload it.
 - From your landing page, click on **Documents**. This will open up your Document Library.
 - On the left menu, click on Document Library to expand the sub-folders.
 - Click on **Icons** -> **New**.
 - Upload your icon and click **Save**.
9. Finally, under **Options** -> **Deploy** tab, select Desktop, Tablet, and Mobile as appropriate.
10. Click **OK** to save and exit.

Creating an Object

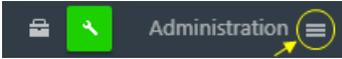
Last Modified on 05/10/2020 10:42 am AEDT

There are two methods of creating an object.

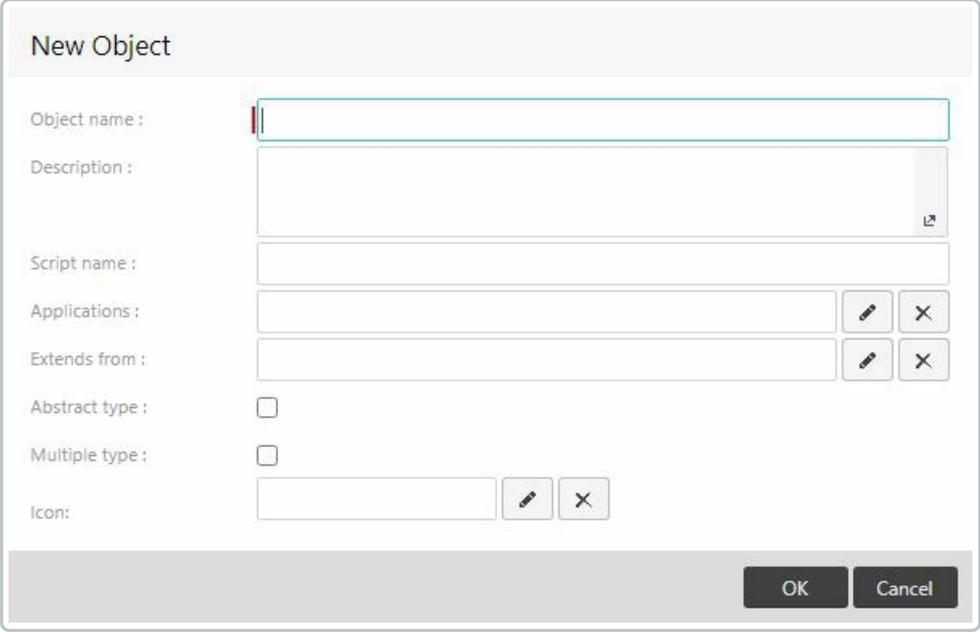
Option 1:

- After creating your application, you will be presented with a blank canvas. Ensure that *configuration mode* is on. (The green spanner  icon on the top right is enabled.) locate the  button and click once.
- This will load the **Create New Page** selection screen.
- Select **New Object** -> **Create**.

Option 2:

- Navigate to the Application Menu  Administration  on the top right of your screen and select **Administration**.
- Locate **Resources** -> **Objects**.
- Click **New** to create a new Object.

The New Object dialog box



The 'New Object' dialog box contains the following fields and controls:

- Object name :** A text input field with a red cursor.
- Description :** A larger text area with a scroll bar and a small icon in the bottom right corner.
- Script name :** A text input field.
- Applications :** A text input field with a pencil icon and an 'X' icon to its right.
- Extends from :** A text input field with a pencil icon and an 'X' icon to its right.
- Abstract type :** A checkbox.
- Multiple type :** A checkbox.
- Icon :** A text input field with a pencil icon and an 'X' icon to its right.

At the bottom right of the dialog are **OK** and **Cancel** buttons.

1. Enter a value for your Object name.
2. Briefly describe the usage of this object in to the description field.
3. The *Script name* is automatically populated as you key in your Object name. Both Object and Script names should match.
4. Link this object to your newly created Application. Click on the pencil icon beside the Applications field, search and select your new application from the list.
5. Click **OK** when done or **Cancel** to start over again.

Note: The creation of the object triggers the automatic creation of a default form and default report for that object. In addition, after the object has been created, to streamline the configuration process, the created form will automatically be loaded in Edit Mode for you to add fields.

Creating a Report

Last Modified on 05/10/2020 10:42 am AEDT

Note: When an object is created, the system will automatically create a default report for this object. If you intend to create additional reports, please follow the steps below.

- Navigate to the Application Menu  on the top right of your screen and select **Administration**

- On the left hand menu -> Locate **Resources** -> **Objects**
- Search for and double click your Object name
- On the right hand side of your screen, locate and click the **+ Report** button

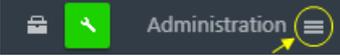


- This will open the New Report dialog box
- Give your new report an appropriate name and click **OK**
- This will open a new report in report builder
- You can now add fields to the new report
- Click **Save** when done.

Creating a Form

Last Modified on 05/10/2020 10:43 am AEDT

Note: When an object is created, the system will automatically create a default form for this object. If you intend to create additional forms, please follow the steps below.

- Navigate to the Application Menu  on the top right of your screen and select **Administration**.
- On the left hand menu -> Locate **Resources** -> **Objects**.
- Search for and double click your Object name
- On the right hand side of your screen, locate and click the **+ Form** button 
- This will create a new form in Form Builder
- Click the Name at the top of the form to edit the name as per your requirements
- Add fields and related objects to the form
- Click **Save** when done.

Creating a Chart

Last Modified on 05/10/2020 10:43 am AEDT

Note: When an object is created, the system will automatically create a default form and a default report for this object. But a default chart will not be created automatically.

- Navigate to the Application Menu  on the top right of your screen and select **Administration**.

- On the left hand menu -> Locate **Resources** -> **Objects**.
- Search for and double click your Object name.
- On the right hand side of your screen, locate and click the **+ Chart** button



- This will open the new chart dialog box
- Give your new chart a name
- Select the type of chart you wish to have
- Click OK when done
- This will open a new chart in chart builder
- You can now drag and drop fields from the left-hand column to the series panel
 - The fields in the left-hand column are the same fields that are shown on your report. If a field you want is missing, check that the field has been added to the report.
- Click **Save** when done.

Creating Relationships

Last Modified on 05/10/2020 10:44 am AEDT

Using Form Builder

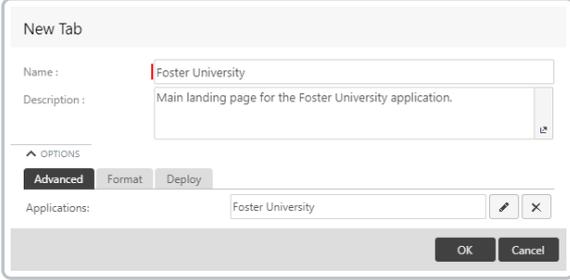
1. Navigate to the Application Menu   **Administration**  on the top right of your screen and select **Administration**.
2. Navigate to **Resources > Forms**
3. Search for your form > Right click > **Edit**
4. Locate the + to add a field / relationship
5. Click on **Other > Relationship** > Hold and drag and drop to the Form canvas.
6. Select which **Object** you wanted to connect to (this will auto populate the Name field).
7. Add a description explaining what the relationship is used for and where
8. Click **OK** when done.

Configuring Navigation

Last Modified on 05/10/2020 10:45 am AEDT

Creating Tabs

- Ensuring that the *configuration mode* is **ON** with the green spanner  icon on the top right is enabled
- Locate the  button and click once.
- This will load the create new tab dialog box.



- Add a tab name and description.
- Ensure that the new tab is linked to your application.
- Click **OK** when done.

Adding Sections and Resources to the Left Menu

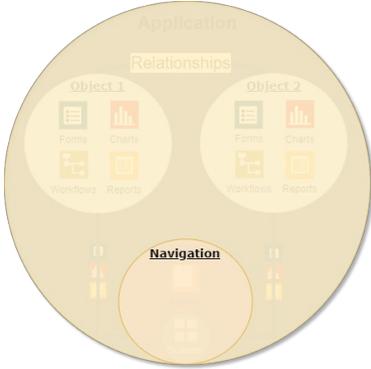
- Still on configuration mode, locate the  button and click once.
- This will load the **Create New Page** selection screen.
- Select the elements you would like to display.

Navigation Access

Navigation Access grants a User Role the access to see a specific navigation item, to configure this, [click here](#)

13. Application Breakdown - Navigation - leave this one

Last Modified on 02/10/2020 7:26 am AEST



Navigation

The inner orange circle is your **Navigation**, a container that holds the main user interface for you to display your selected components (i.e. *Charts, Reports, Boards, Screens etc.*).

Key areas of a ReadiNow navigation page can be seen [here](#).

Full Application Diagram

Best Practices

Configure

Videos

Naming Conventions

- When choosing a navigation tab, pick a name that is relevant to its use. Use descriptive titles in the left navigation panel, especially if the purpose of a screen is to specifically create something. For example,



- Use title case for your tab names.

Description

- It is recommended to add a description of the tab usage.

Tabs to Align to Process

- Where possible, use the 'left to right' navigation of tabs in a module.
- When you are inside a tab, the left navigation panel should align with the logical steps of a process.

Simplify Navigation

- Access to information in ReadiNow is not modular. You can simplify the way users interact with the platform. For example, 'Reporting Only' users can have all they need in a single screen, rather than needing to navigate to the different modules.

Application Linking

- It is important to check that your tabs are linked to the correct applications.

Combining all your user interface resources together into your navigation completes your application. You have done the basics and congratulations on completing ReadNow's Getting Started and Best Practices Guide.

Our knowledge base is full of helpful resources to guide you learn and improve your application. As you progress on adding more functionalities on your application, you will learn to use advanced features and we are here to assist you.

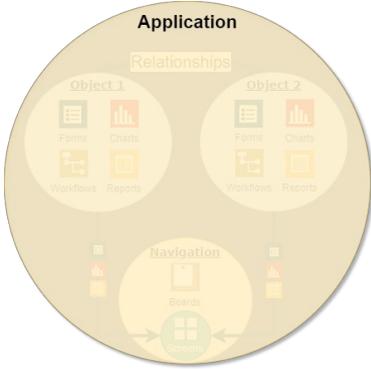
For now, get back into that application and improve it as you see fit. Happy building!

[← Previous](#)

[Finish →](#)

4. Application Breakdown - Application - leave this one for now

Last Modified on 30/09/2020 7:37 pm AEST



Application

Relationships

Object 1

Object 2

Forms Charts

Workflows Reports

Navigation

Boards

Full Application Diagram

Application

An application is the outer container that holds a collection of platform resources including objects, forms, reports, workflows, screens, charts, boards and navigation.

Best Practices

Configure

Videos

Application name

- The best application names are short and simple. Try to pick a name that reflects the application's purpose.

Application icon

- Choose an icon that provides clarity and aligns to your application name.
- The file types can be svg or png.
- A square icon works best (e.g. 256 x 256 pixels).

Deploy type

- It is recommended to select all **deploy options** (Desktop, Tablet, Mobile) to cover all device types.

Single solution

- If you have several related solutions in mind, create them individually as smaller applications. Smaller applications run faster than one large application. Do not worry about creating silos as the REDINow platform makes it easy to integrate applications.

After creating your application, you will be presented with a blank canvas and you can now start creating your platform resources needed for your application.

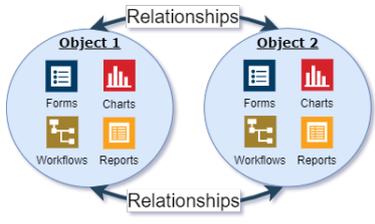
The next stage is to guide you through the best practices in creating and managing your objects.

[← Previous](#)

[Introduction to Objects →](#)

6. Application Breakdown - Relationships - leave this one

Last Modified on 30/09/2020 8:14 pm AEST



Relationships

A Relationship represents a connection between objects. Relationships allow records to be associated with each other.

For a more detailed documentation on relationships, [click here](#).

Full Application Diagram

Best Practices

Configure

Videos

Naming Conventions

- Use title case on your fields and titles.
- When creating relationships, use unique names for the following:
 - Relationship Name
 - Script Name
 - Reverse Name

Relationship Properties

Name : Contract

Display Name :

Description :

Object: Contract

▼ RELATIONSHIP TYPE

▼ OWNERSHIP

▼ SECURITY

▲ OPTIONS

Form Detail Form Behaviour **Object Detail** Format

Default Value:

Relationship Name : Person - Contract

Script Name : Contract

Reverse Name : Person

Hide in Reverse:

Show Properties in Reverse Direction

OK Cancel

Description

- A description of what that relationship is used for can be extremely useful for audit purposes and peer review tracking.

Cardinality

- Think about how the cardinality is structured. For example, the relationship between Department and Employees is a one to many relationship, and the name should reflect this. A good name would be Department - Employees. The "one" end of the relationship has a singular name and the "many" end has a plural name.

It is important that you fully understand the concept of an object and creating relationships as this will help you fully appreciate the power of the platform and enjoy building applications.

The next stage of the guide is to introduce you with forms, a very important resource used to create records.

[← Previous](#)

[Introduction to Forms →](#)

7.Introduction to Forms - leave this one

Last Modified on 30/09/2020 8:42 pm AEST



Full Application Diagram

Forms

Forms are used to access, edit and create new records.

Forms are the main way to view and edit data. Forms are based on an object and have two modes:

- **View Mode** - Fields are read only.
- **Edit Mode** - Fields are editable.

To configure forms, see [Form Builder](#) .

Best Practices

Configure

Videos

Naming Conventions

- When choosing a form title, pick a title that is relevant to its use and what information you are presenting to your users.
- Use title case on your titles.

Description

- A description of what and where the form is used can be extremely useful for audit purposes and peer review tracking.

Fields

- *Name* and *lookups* are set to **Autofill** horizontally to give more visibility.
- Other fields default to **Compact** but may be changed to **Autofill** if required.
- **Choice fields** should be alphabetically sorted unless they are sorted by a categorisation (i.e. priority, severity, critical etc.)

Field Groups

- Consider using **field groups** to categorise fields and relationships .

Form Container

- Typically, the first left hand container will be titled *<Object Name> Details*.

Form Layouts

- Forms with **multiple Reports** can be slow to open. Place Reports in Tabbed Containers to reduce the overall loading time of the Form. By default the first Tab of a Tabbed Container will be 'active' (the 'default Tab') and

its content will load immediately. Content (including Reports) placed in other Tabs only loads when the Tab is activated.

- **Mandatory fields** should be placed directly on the Form, in non-tabbed containers, or in the 'primary Tab' of a tabbed container. In other words, mandatory fields should be visible without having to search through Tabs. In situations where a field in a 'non-primary tab' must be mandatory there are 2 approaches to consider:
 - Custom Form Validation
 - Conditional Mandatory

Relationships

- Consider which relationships you want to show. There is an option: "**Do not show in reverse**". This does exactly what the name suggests
 - For example: **Last Approved By** may have little value in the other direction and would just clutter the report and form builder.

Application Linking

- It is important that you link your form to your application as this is the main requirement for you to properly package and publish your application later on.

After you have completed adding all your fields and relationships, your form is now ready to be used. There are a few ways on how to access your form. The most common way is through reports.

The next stage of this guide is to introduce you on the best practices to configure your report.

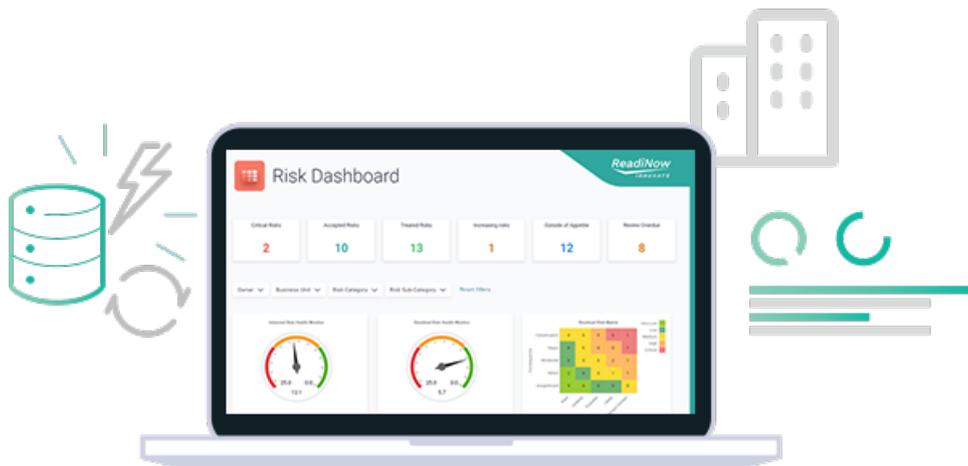
[← Previous](#)

[Introduction to Reports →](#)

What Is a Nova Application?

Last Modified on 24/01/2024 8:42 am AEDT

Nova represents the evolution and enhancement of Readinow's platform, introducing a new and improved interface that includes updated design elements and improved user experience. As a term, "Nova application" encapsulates the second version of applications offered by Readinow, highlighting its innovative features and the revamped interface that users can expect when utilizing this new version. Users can anticipate a more modern, user-friendly, and efficient experience when interacting with the Nova application for their tasks.



Points to note: 

- Nova is an improvement to the user interface tools. Existing structural elements such as Objects are still used.

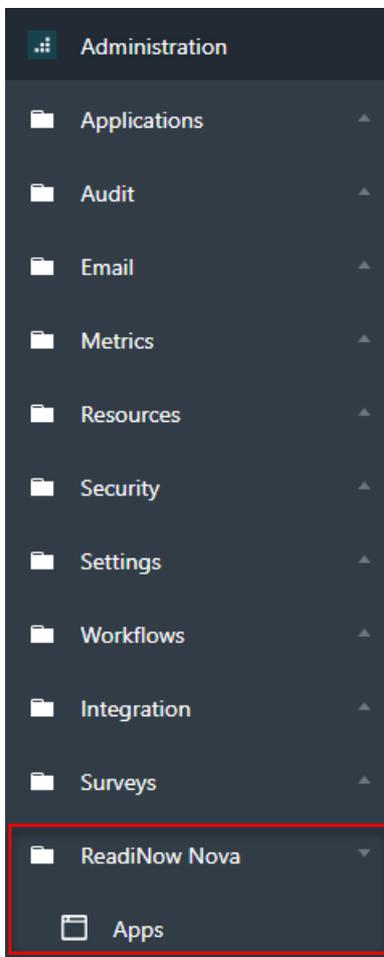
Creating a Nova application

Last Modified on 12/04/2024 10:49 am AEST

1. Log in to your tenant using your administrator credentials.
2. After successfully logging in, you will be redirected to your tenant landing page.
3. Go to **Administration**



4. In the left menu, click on **ReadiNow Nova** and then click on **Apps**



5. An **Apps** page will appear. In the upper right side of the screen, click on the **Create new** button to start the creation process.



6. In the **New App** pop-up screen, complete the following information:

- **App Name** - this is the unique identifier assigned to the application.
- **Description** - the concise and informative piece of text that introduces and highlights the key features, and functionalities of the application.
- **URL Slug** - the part of a URL that identifies a particular application. It is the segment of the URL that comes after the domain name and any subdirectories.
- **Display menu** - if enabled, this will add the top menu to all new pages in the app by default.

New App ×

App name

Description (optional)

URL Slug

<https://psbuild.readinow.com/sp/#/ITSCMNova1/0/apprunner?app=NewUIApp>

Display menu
 Menu enabled by default on new pages

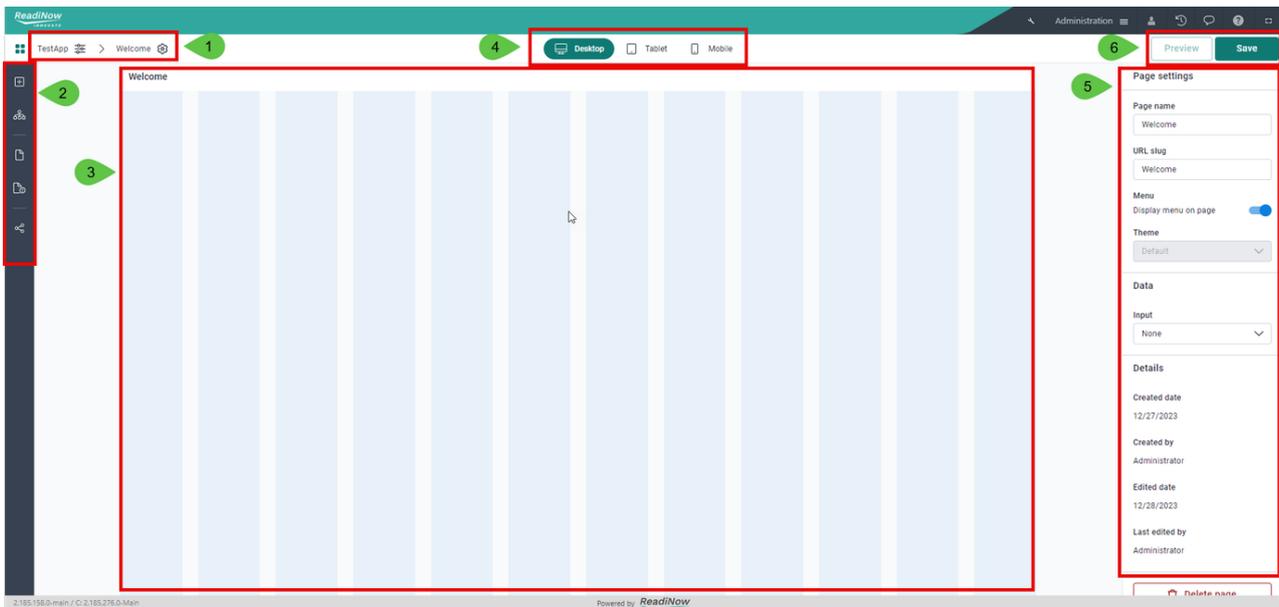
Cancel Create app

7. Click the **Create App** button.



This will open the Nova **Page Builder** where you can create and design your page using different components and settings.

Parts of the Page Builder:



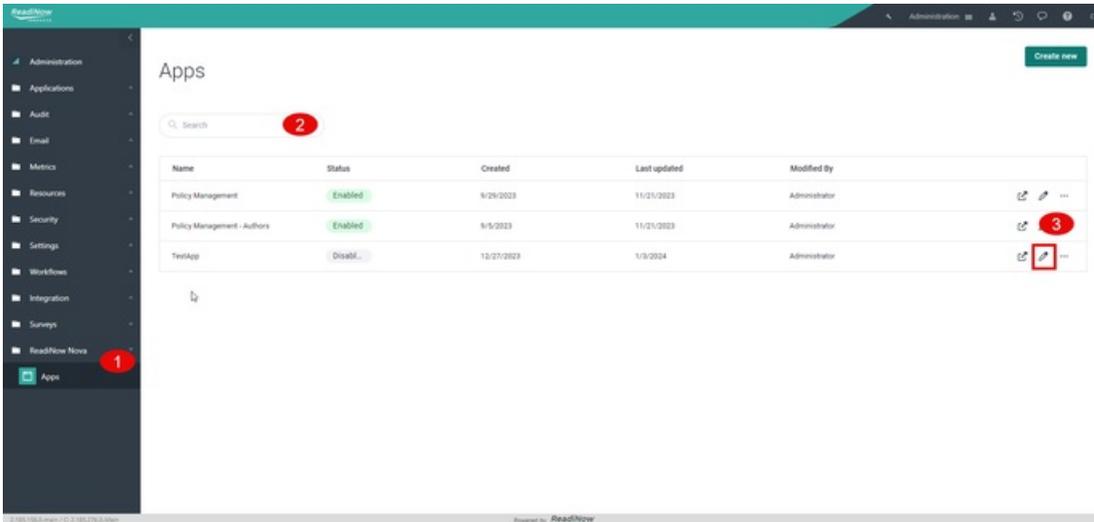
1. **Application properties** - used to access application properties.
2. **Tools Section** - used to access all available tools to create a Nova application.
3. **Builder canvas** - the workspace where you can visually structure the layout of your application.
4. **View mode** - used to switch between Desktop view, Tablet view, or Mobile view.
5. **Settings section** - shows all available properties or settings of the selected element.
6. **Preview and Save** - click the **Preview** button to preview the current state of the canvas. Click the **Save** button to save current changes.

Editing an Existing Nova Application

Last Modified on 24/01/2024 8:48 am AEDT

Editing an existing application typically involves making changes, updates, or improvements to meet new requirements, fix issues, or enhance functionality.

To edit an existing application:



1. Go to **Administration** → **Readinow Nova** → **Apps**.

2. In the Apps menu look for the application that you want to edit. You can either scroll down through the list of applications or type in the name of the application in the **Search bar**.

3. Lastly, on the right-hand side, click the application's corresponding edit



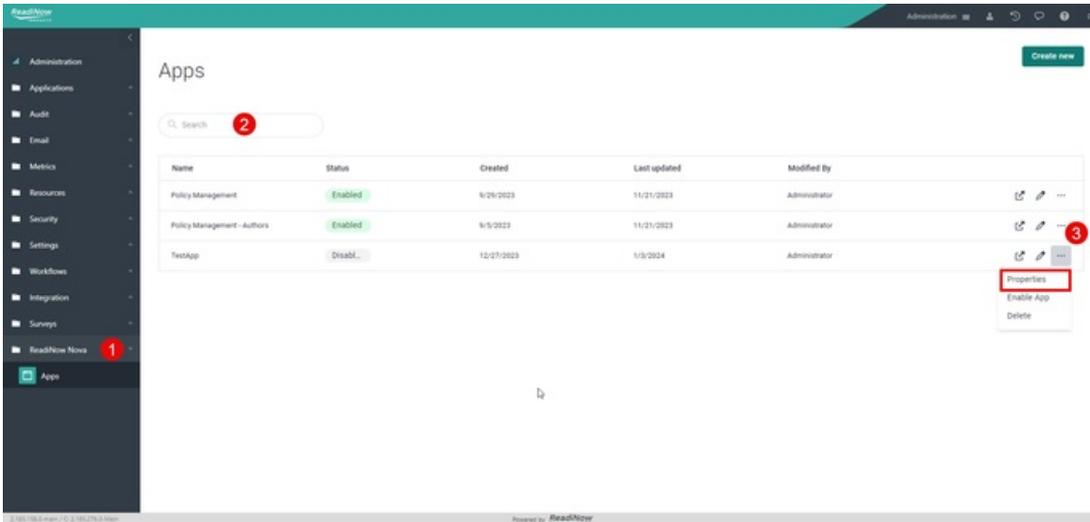
icon

Properties of a Nova Application

Last Modified on 24/01/2024 8:47 am AEDT

Application properties generally refer to the configurable settings or parameters that define the behavior, appearance, and functionality of the application.

To navigate to the application properties:



1. Go to **Administration** → **Readinow Nova** → **Apps**.
2. In the Apps menu look for the application that you want to edit. You can either scroll down through the list of applications or type in the name of the application in the **Search bar**.
3. On the right-hand side, click the application's corresponding **Options**

...

icon and select **Properties**.

Available properties: 

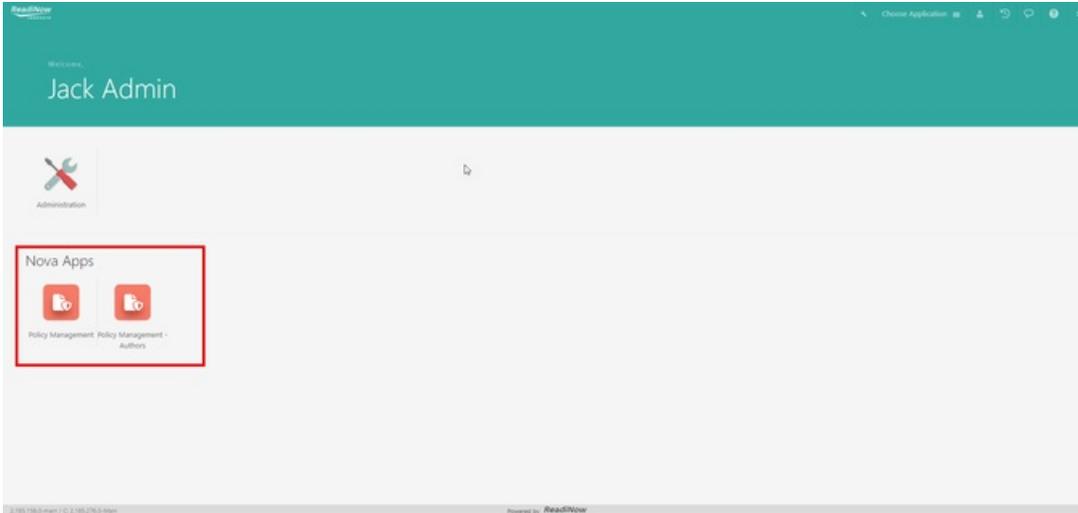
Section	Property	Function
General	App name	The unique identifier assigned to an application.
	Description	The concise and informative piece of text that introduces and highlights the key features, functionalities of the app.

Section	Property	Function
	URL Slug	The part of a URL that identifies a particular application. It is the segment of the URL that comes after the domain name and any subdirectories.
	Application	Selected application is used for packaging and deployment.
Security	Status	Toggle to give the selected users right to access the app.
	Access rights	The user roles that will have right to access the app.
Appearance	Icon	The visual representation or symbol used to represent application.
	Show menu by default	Toggle to show menu will be by default on new pages.

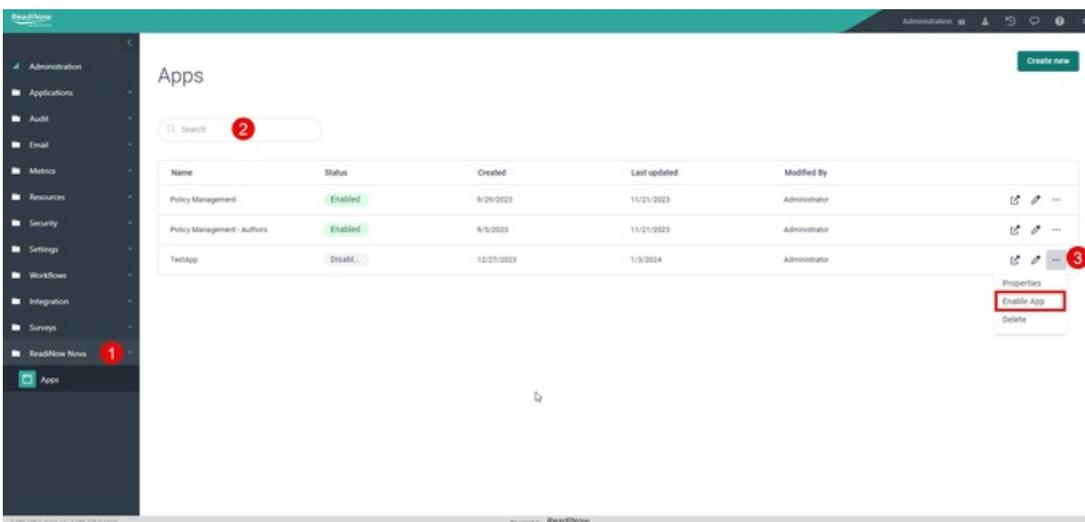
Enabling and Disabling a Nova Application

Last Modified on 24/01/2024 8:48 am AEDT

Enabling and disabling an application refers to the ability to turn the application on or off. Nova applications that are enabled will be available on the Homepage.



To Enable or Disable an Application:



1. Go to **Administration** → **Readinow Nova** → **Apps**.
2. In the Apps menu look for the application that you want to edit. You can either scroll down through the list of applications or type in the name of the application in the **Search bar**.
3. On the right-hand side, click the application's corresponding **Options**
...
 icon and select **Enable App** to enable or **Disable App** to disable the application.

What Are Nova Pages?

Last Modified on 24/01/2024 8:51 am AEDT

In the context of Nova, Pages are its backbone. "Nova Pages" work like **Screens** in classic where users can create and design their application by adding various components. These components could include elements like text, images, data tables, or other interactive features. Essentially, pages in Nova act as the primary interface where users can arrange and customize these components to build their desired application structure. Meanwhile, **Shared pages** serve as your **Forms** while still retaining the functionality of a page.

Creating a Nova Page

Last Modified on 24/01/2024 8:52 am AEDT

To create a Nova Page:

1. Go to the Nova application builder.
2. On the left-hand side expand the **Pages** section by clicking



icon.

3. Click on the Create New Page icon



4. In the pop-up screen, enter the appropriate Page name and URL Slug.



New Page ×

Page name
Page name

URL slug
Pagename

https://psbuild.readinow.com/sp/#/Nova_Policy/0/apprunner?app=TestApp&page=Pagename

Cancel Create Page

5. Click on **Create Page** button to create the page.



New Page ×

Page name
Page name

URL slug
Pagename

https://psbuild.readinow.com/sp/#/Nova_Policy/0/apprunner?app=TestApp&page=Pagename

Cancel Create Page

Page Properties

Last Modified on 24/01/2024 8:53 am AEDT

Page properties refer to the configurable settings and options that allow users to customize the characteristics and behavior of a Nova page.

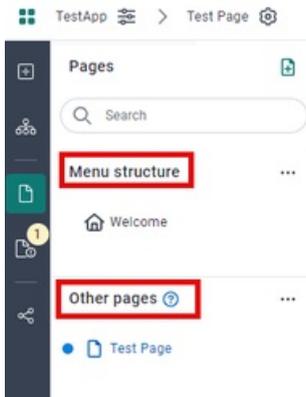
Property	Function
Page name	The unique identifier assigned to a page.
URL slug	The part of a URL that identifies the particular page.
Display menu on page	Toggle switch to display menu on page.
Theme	A page theme refers to a set of design elements, styles, and visual components that define the overall look and feel of a page.
Input	Defines the input object for the page.
Details	<ul style="list-style-type: none">• Created date• Created by• Edited date• Last edited by

Configuring the Menu structure

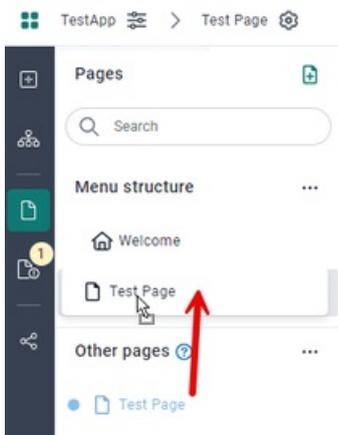
Last Modified on 24/01/2024 8:56 am AEDT

The Pages section has two parts:

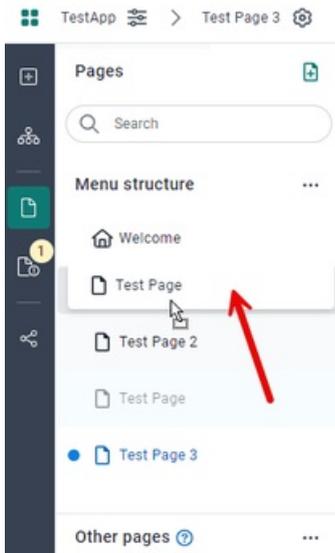
- Menu structure - arrangement of navigational elements within the application.
- Other pages - this is where your newly created page will show. All pages located here will be automatically hidden in the app's actual menu.



To make a page appear in the app menu, simply drag the page upward and drop it in the menu structure.



Similarly, you may rearrange the menu structure by dragging the page either up or down.

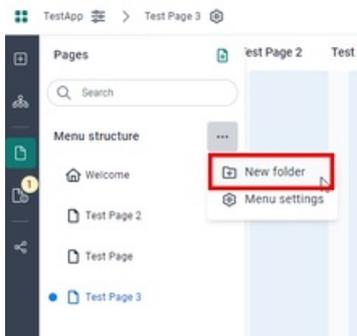


To create a hierarchy structure: 

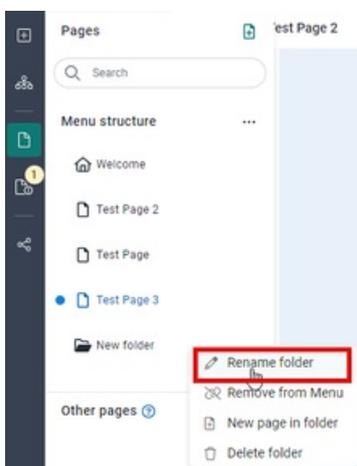
1. Simply create a page folder by clicking on the Menu structure's options icon

...

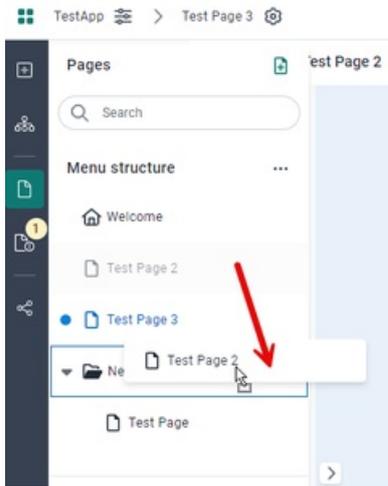
2. Select **New folder**.



3. A new folder will be created at the bottom of the structure. To rename it, right-click the **New folder**, and select **Rename folder**.



4. Enter the desired name and hit **Enter**.
5. Drag and drop the page onto the folder.



All changes are automatically saved by the app builder.

Desktop/Tablet/Mobile

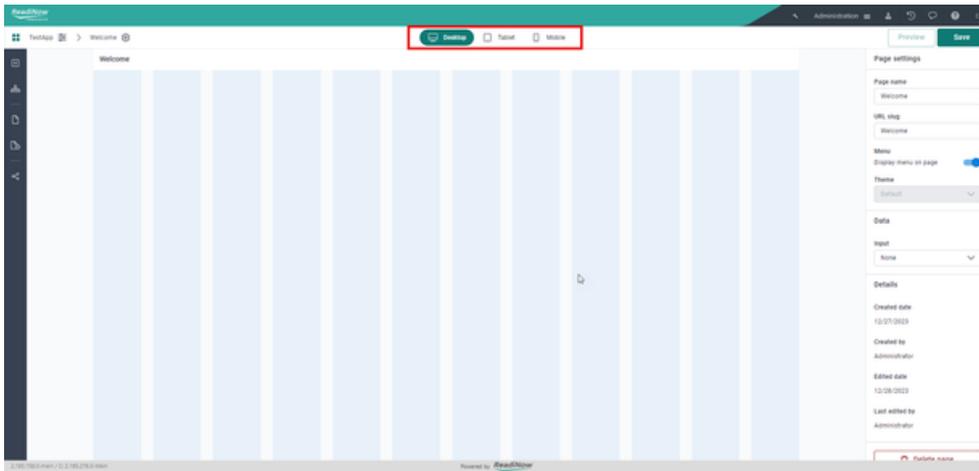
Last Modified on 24/01/2024 8:58 am AEDT

Desktop, tablet, and mobile views refer to the different layouts and presentations of an application designed to accommodate various screen sizes and devices. Responsive design aims to ensure a seamless and user-friendly experience across a range of devices, from large desktop monitors to tablets and smartphones. Each view is optimized for the specific characteristics of the device it is intended for:

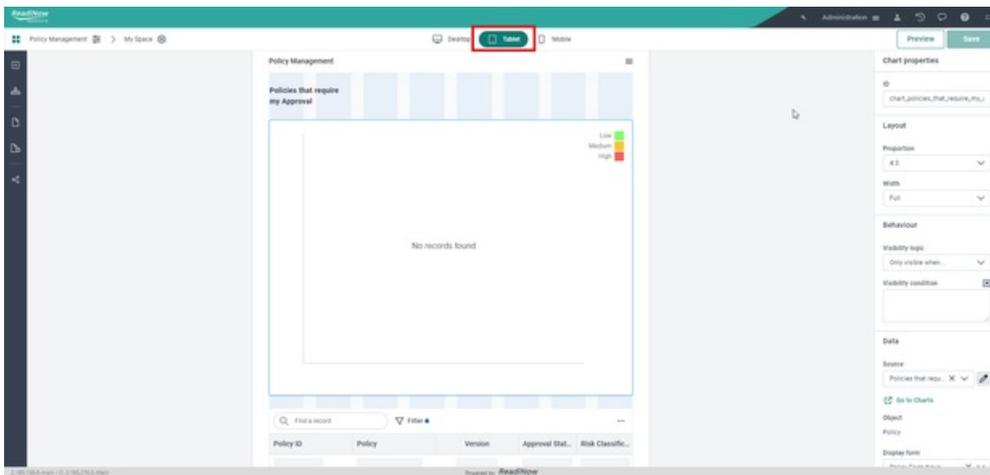
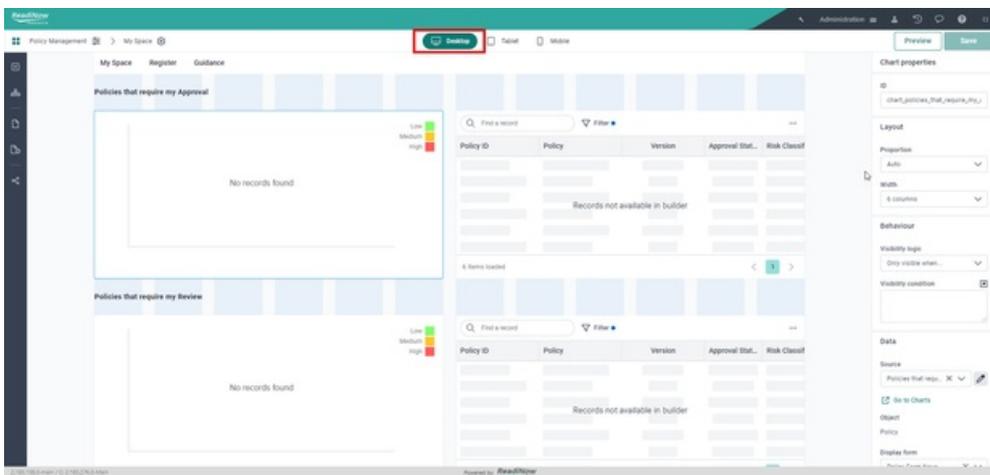
- Desktop View:
 - Designed for larger screens, such as desktop monitors and laptops.
 - Utilizes a spacious layout, often with multiple columns and a navigation bar.
 - May include additional features or content that take advantage of the larger screen real estate.
- Tablet View:
 - Tailored for mid-sized screens, typically tablets.
 - Adjusts the layout to accommodate the smaller screen size while maintaining readability and usability.
 - May reorganize content and navigation to fit a more compact space.
- Mobile View:
 - Optimized for smaller screens found on smartphones.
 - Typically a single-column layout to simplify navigation and readability on small screens.
 - May prioritize key content and interactions, hiding non-essential elements.

To change the view mode: 

1. Go to the Nova application builder.
2. Navigate to the top section of the builder.



3. Click **Desktop** to switch into desktop mode, **Tablet** to switch to tablet mode, and **Mobile** to switch to mobile mode.



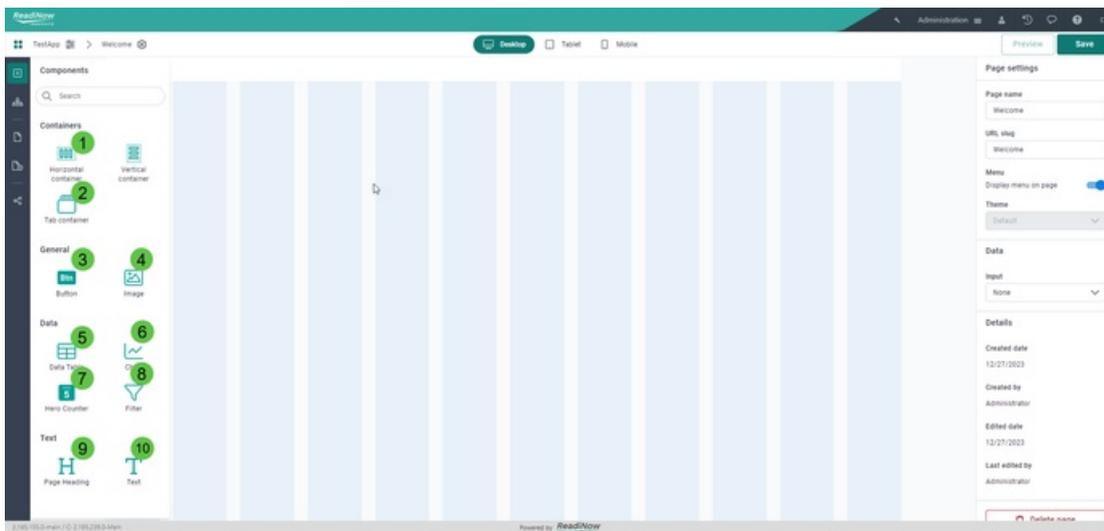
The screenshot displays a web application interface for Policy Management. The main content area features a chart titled "Policies that require my Approval" which currently shows "No records found". Below the chart is a table with columns for "Policy ID" and "Policy", but it is empty and displays the message "Records not available in builder". A search bar labeled "Find a record" is positioned above the table. In the top navigation bar, a "Make" button is highlighted with a red box. The right sidebar contains "Chart properties" and "Data" sections. The "Chart properties" section includes fields for ID, Layout, Properties, Width, and Behaviour. The "Data" section includes a "Source" dropdown set to "Policies that require my Approval" and a "Display form" option.

What are page components?

Last Modified on 24/01/2024 9:52 am AEDT

A Page Component generally refers to a modular and reusable unit of a user interface that is part of a Nova application. It is a self-contained module that performs a specific function or displays specific content. These components can be combined to create more complex and feature-rich pages.

Types of Page Components



1.  Horizontal & Vertical Container
2.  Tab Container
3.  Button
4.  Image
5.  Data Table
6.  Chart
7.  Hero Counter
8.  Filter
9.  Page Heading
10.  Text

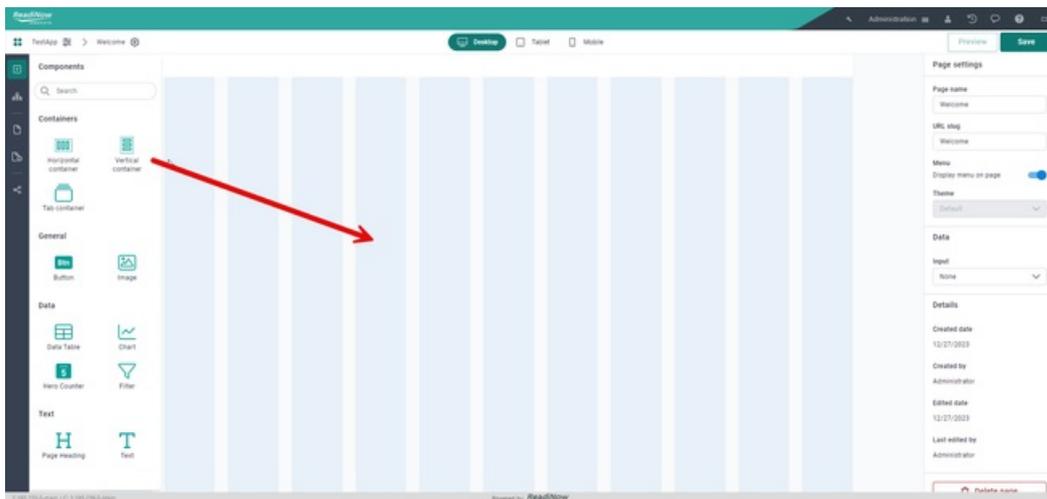
To add components in a Nova application: 

1. First, create a new Nova application or edit an existing one.
2. Then, in the app builder create a new Nova page or go to an existing Nova page where you want to add the component.
3. On the left-hand side expand the components section by clicking



icon.

3. Click, drag, and drop the component onto the builder canvas on the right side of your screen.



4. Select **SAVE** to save the changes.

Review the component's properties and update if necessary. Feel free to experiment and combine more components to create your desired pages.

Horizontal & Vertical Container

Last Modified on 25/07/2024 11:45 am AEST

Horizontal and vertical containers are page components used in the Nova application to organize and structure content on a page.

- A horizontal container, referred to as a "row" - is a layout element that arranges its child elements or components in a horizontal line, side by side.
- A vertical container, referred to as a "column" - is a layout element that arranges its child elements or components in a vertical stack, one on top of the other.

This layout structure allows for a flexible and responsive design, adapting well to different screen sizes and orientations. It's a fundamental concept in creating well-organized and visually appealing user interfaces.

Container Properties

Section	Property	Function
	Name	The unique name of the container.
		Sets the background of a container.
Styling	Background	<ul style="list-style-type: none">• Transparent - makes the background transparent• Card - makes the background card-like visual
Layout	Width	Sets the width of the container, minimum value is 1 and maximum is 12(Full).

Section	Property	Function
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	Gap	<p>The gap between the next component.</p> <ul style="list-style-type: none"> • Extra-small • Small • Medium • Large • Extra large • Extra extra large
	Direction	<p>Changes the type of the container to either:</p> <ul style="list-style-type: none"> • Horizontal • Vertical
	Alignment	<p>Sets how the contents are alligned.</p>
Behavior	Display on Desktop	<p>Toggle to hide the component on the Desktop view.</p>
	Visibility logic	<p>Defines when the component is visible</p> <ul style="list-style-type: none"> • None - always visible • Only visible when - only visible when the set condition is met • Not visible when - not visible when the set condition is met

Tab Container

Last Modified on 24/01/2024 9:53 am AEDT

A Tab Container is a page component that organizes content into tabs, allowing users to switch between different sections or views of information without navigating to separate pages. Each tab typically represents a distinct category or set of related content. Users can click on the tabs to switch between the different views or sections within the same space.

Tab Container Properties

Section	Property	Function
	ID	The unique ID or name of the component.
		Manage all tabs within the container.
Tabs	Tab	<ul style="list-style-type: none">• Add tab• Rename tab• Delete tab
Container	Width	Sets the width of the container, minimum value is 2 and maximum is 12(Full).
		Defines when the component is visible
Behavior	Visibility logic	<ul style="list-style-type: none">• None - always visible• Only visible when - only visible when the set condition is met• Not visible when - not visible when the set condition is met

Button

Last Modified on 24/01/2024 9:54 am AEDT

A Button is a page component with a clickable area to initiate a specific action.

Button Properties

Section	Property	Function
	ID	The unique ID or name of the component.
	Text	The text label of the button.
Style	Style	Sets the button style <ul style="list-style-type: none">• Primary• Outline• Subtle
		Sets the button size <ul style="list-style-type: none">• Small• Standard• Large
Layout	Width	Sets the width of the button, minimum value is 1 and maximum is 12(Full).

Section	Property	Function
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		<p>Defines when the component is visible</p> <ul style="list-style-type: none"> • None - always visible
Behavior	Visibility logic	<ul style="list-style-type: none"> • Only visible when - only visible when the set condition is met • Not visible when - not visible when the set condition is met
		<p>Sets what action to perform when button is click:</p> <ul style="list-style-type: none"> • Create record with classic form • Create record with form page
Actions	Action type	<ul style="list-style-type: none"> • Export document • Navigate to page • Navigate to form page • Run workflow

Image

Last Modified on 24/01/2024 10:00 am AEDT

An Image component is a visual representation or depiction of an object, scene, concept, or idea. It plays a vital role in conveying information and enhancing the overall user experience.

Image Properties



Section	Property	Function
	ID	The unique ID or name of the component.
	Caption	Adds an optional caption at the bottom of the image
	Alt text	Alternative text is meant to convey the “why” of the image. It also displays on the page if the image fails to load.
Layout	Width	Sets the width of the image, minimum value is 1 and maximum is 12(Full).
Behavior	Visibility logic	Defines when the component is visible <ul style="list-style-type: none">• None - always visible• Only visible when - only visible when the set condition is met• Not visible when - not visible when the set condition is met

Section	Property	Function
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Styling	Proportion	Sets image proportion:
		<ul style="list-style-type: none"> • Auto
		<ul style="list-style-type: none"> • 1:1
		<ul style="list-style-type: none"> • 3:2
		<ul style="list-style-type: none"> • 4:3
		<ul style="list-style-type: none"> • 16:9
		<ul style="list-style-type: none"> • 21:9

	Scaling	Sets the scale of the image:
		<ul style="list-style-type: none"> • Fill • Fit

Data	Source	Sets the image source
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Data Table

Last Modified on 24/07/2024 12:18 pm AEST

A Data Table is a page component that displays a **Report**. The same as reports it shows a structured arrangement of information in rows and columns, to organize, and present data in a systematic format. Each row in a data table represents a specific record, while each column represents a different attribute.

Data Table Properties

Section	Property	Function
	ID	The unique ID or name of the component.
	Title	Adds an optional title for the table.
Layout	Width	Sets the width of the table, minimum value is 3 and maximum is 12(Full).
	Height(rows)	Sets how many rows to show, minimum of 1 and maximum of 20.
Behavior	Visibility logic	Defines when the component is visible <ul style="list-style-type: none">• None - always visible
		<ul style="list-style-type: none">• Only visible when - only visible when the set condition is met• Not visible when - not visible when the set condition is met
Data	Source	Sets the source report.
	Object	Automatically shows what object is the selected report.

Section	Property	Function
	Display form	Sets what form to use when viewing a record.

Chart

Last Modified on 24/07/2024 12:22 pm AEST

Chart is a page component that allows you to display a **Chart** from a specified resource.

Chart Properties

Section	Property	Function
	ID	The unique ID or name of the component.
Layout	Width	Sets the width of the chart, minimum value is 1 and maximum is 12(Full).
	Proportion	<p>Sets chart proportion:</p> <ul style="list-style-type: none">• Auto• 1:1• 3:2• 4:3• 16:9• 18:6• 21:9
Behavior	Visibility logic	<p>Defines when the component is visible</p> <ul style="list-style-type: none">• None - always visible• Only visible when - only visible when the set condition is met• Not visible when - not visible when the set condition is met

Section	Property	Function
Data	Source	Sets the chart source.
	Object	Automatically shows what object is the selected chart.
	Display form	Sets what form to use when viewing records.

Hero Counter

Last Modified on 27/09/2024 11:33 am AEST

A Hero Counter is a prominent and large text displayed on a page to highlight features.

Hero Counter Properties

Section	Property	Function
	ID	The unique ID or name of the component.
	Text	The title text of the hero counter.
Styling	Size	Sets the size: <ul style="list-style-type: none">• Small• Standard• Large
	Text Position	Sets the text position: <ul style="list-style-type: none">• Top• Bottom

Section	Property	Function
	Value Color	<p>Sets the value's color:</p> <ul style="list-style-type: none"> • Black • Primary brand • Danger • Warning • Success • Informative
Layout	Width	Sets the width of the hero counter, minimum value is 1 and maximum is 12(Full).
Behavior	Visibility logic	<p>Defines when the component is visible</p> <ul style="list-style-type: none"> • None - always visible • Only visible when - only visible when the set condition is met • Not visible when - not visible when the set condition is met
Data	Source	Sets the source report.
	Column	Sets what column to calculate.

Section

Property

Function

Sets the calculation method:

- Count
- Count (Unique)
- Min
- Max

Method

Object

Automatically shows what object is the selected report.

Display form

Sets what form to use when viewing records

Page Filter

Last Modified on 25/07/2024 11:51 am AEST

Filter is used to filter the report data based on some values to narrow down or focus on specific information. To filter the report based on any value of a field, the corresponding field needs to be added to the Analyzer.

Filter Properties

Section	Property	Function
	ID	The unique ID or name of the component.
Layout	Width	Sets the width of the filter, minimum value is 1 and maximum is 12(Full).
	Overflow	Can be set to: <ul style="list-style-type: none">• Scrollable• Wrap
Behavior	Visibility logic	Defines when the component is visible <ul style="list-style-type: none">• None - always visible• Only visible when - only visible when the set condition is met• Not visible when - not visible when the set condition is met
Filters	Active filters	Shows all active or applied filters.
	Available filters	Shows all available filters from the selected report analyzer.

Page Heading

Last Modified on 24/01/2024 10:06 am AEDT

A Page Heading is the title or main heading at the top of a page. It serves as a brief, concise description of the content or purpose of the page, providing users with a clear indication of what to expect.

Page Heading Properties

Section	Property	Function
	ID	The unique ID or name of the component.
	Format	Sets the content format: <ul style="list-style-type: none">• Expression - content is derived from an expression formula.• Plain text - content is plain text only.
	Expression formula	Visible when expression is selected as format type - input your formula here.
	Text	Visible when plain text is selected as format type - input heading content here.
Styling	Heading Style	Sets the heading size: <ul style="list-style-type: none">• Heading 1• Heading 2• Heading 3• Heading 4
Layout	Width	Sets the width of the heading, minimum value is 1 and maximum is 12(Full).

Section	Property	Function
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	Truncate text	Toggle to truncate text.
--	---------------	--------------------------

	Maximum Lines	Sets the maximum lines for the page heading, minimum of 1 line and maximum of 15 lines.
--	---------------	---

Behavior	Visibility logic	<p>Defines when the component is visible</p> <ul style="list-style-type: none">• None - always visible• Only visible when - only visible when the set condition is met• Not visible when - not visible when the set condition is met
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Text

Last Modified on 24/01/2024 10:07 am AEDT

A Text is a basic text control that enables the user to display multiple lines of plain text.

Text Properties

Section	Property	Function
	ID	The unique ID or name of the component.
	Format	Sets the content format: <ul style="list-style-type: none">• Expression - content is derived from an expression formula.• Rich text - content is plain text only.
	Expression formula	Visible when expression is selected as format type - input your formula here.
	Text	Visible when plain text is selected as format type - input your text content here.
Styling	Text size	Sets the text size: <ul style="list-style-type: none">• Extra large• Large• Medium• Small
Layout	Width	Sets the width of the text, minimum value is 1 and maximum is 12(Full).

Section Property

Function

Sizing

Can be set to:

- Fit content
- Fixed height

Height lines

Sets the number lines for the text, minimum of 1 line and maximum of 20 lines.

Behavior Visibility logic

Defines when the component is visible

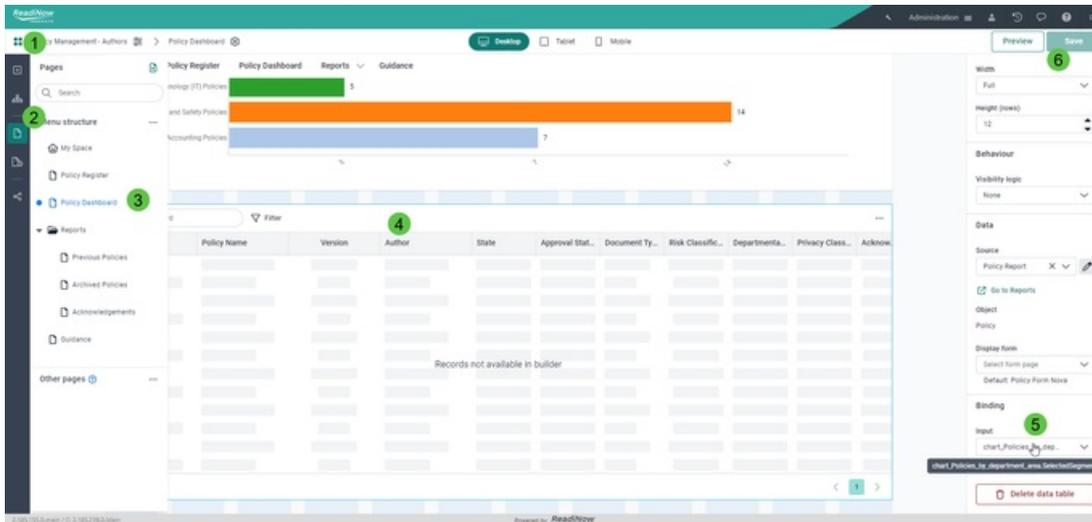
- None - always visible
- Only visible when - only visible when the set condition is met
- Not visible when - not visible when the set condition is met

Binding

Last Modified on 24/01/2024 10:08 am AEDT

Binding is a component property that enables the automatic, one-way filtration of component content based on the provided source input.

To perform binding on a page component:



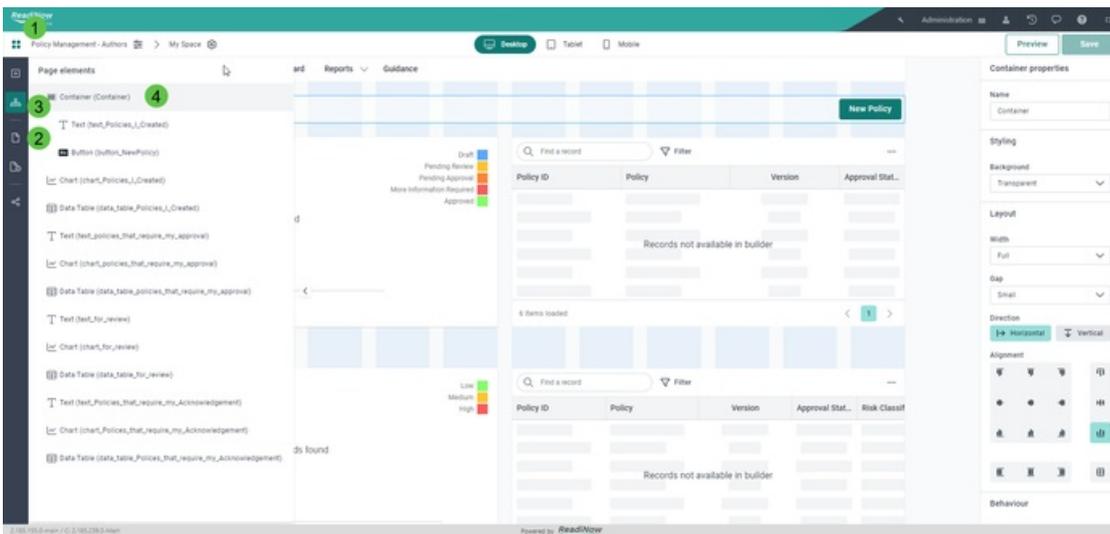
1. Go to the Nova application builder.
2. On the left-hand side expand the pages section by clicking  icon.
3. Select the page that has the component to which you want to apply the binding.
4. Select the component you want to apply the binding.
5. On the right-hand side, scroll down the **Properties** section. Go to **Binding** → **Input**, click the dropdown, and select the appropriate binding component. Alternatively, you can expand the calculation field and use the formulas and other tools to create more specific binding.
6. Click **Save** to save the changes.

Selecting Page Elements

Last Modified on 24/01/2024 10:09 am AEDT

The Page Elements section serves as a helpful organizational feature for users dealing with the complexities of crafting intricate Nova applications. In the process of designing and editing pages, the multitude of components can be challenging to manage efficiently. This section is designed to alleviate this challenge by providing a centralized repository where users can easily locate and manage all components associated with the selected or currently edited page. This feature aims to enhance the overall user experience by simplifying the retrieval and organization of components, ensuring a smoother and more efficient development process.

To easily retrieve and navigate between page elements:



1. Go to the Nova application builder.
2. On the left-hand side expand the pages section by clicking  icon and select the page you want to edit.
3. Then, on the left-hand side expand the page element section by clicking  icon.
4. Select the component you want to retrieve or edit and view its properties on the right-hand side.

Notice that all components are sorted by container and the component's name is enclosed in a parenthesis.

Creating a Shared Page

Last Modified on 24/01/2024 10:12 am AEDT

Shared Pages acts like Forms in Nova and these are available to use across different apps. Shared pages can be a long form or a Multistep form.

To create a long form - shared page: 

1. Go to the Nova application builder.
2. On the left-hand side expand the **Shared Pages** section by clicking



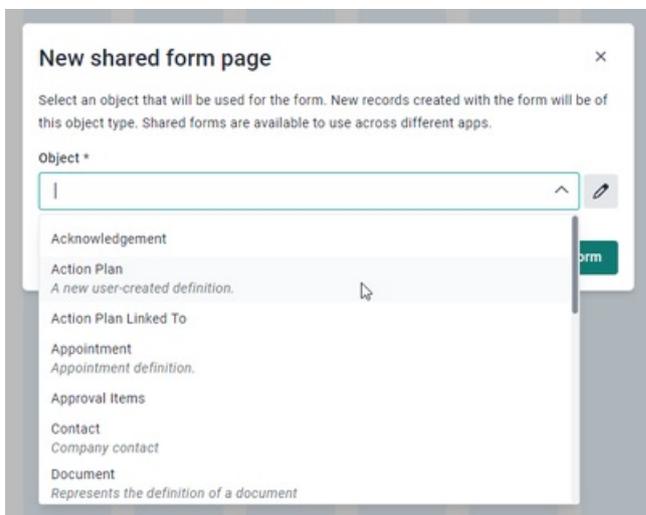
icon.

3. Click the add Shared Page icon



and select **Long form**.

4. An object selector should pop up. Expand the dropdown and select the object that will be used for the form.



5. Then, click **Create form**.
6. Lastly, based on your application requirement add the necessary page components, fields, or relationships.

New records created with the form will be of the selected object type. Just like classic forms, you may create multiple versions of shared pages per object.

Shared Page Settings

Last Modified on 24/01/2024 10:13 am AEDT

Page settings refer to the configurable properties and options that allow users to customize the characteristics and behavior of a Nova page.

Available Properties

Section	Property	Function
	Page name	The unique ID or name of the page.
	Shared	Ticked by default if page is shared.
	Type	The page type, which can be: <ul style="list-style-type: none">• Long form• Multistep form
	Form Title	The title heading of a form or page when viewing a record. <ul style="list-style-type: none">• Record name• Expression - title is derived from an expression formula.• Plain text - title is the inputted text only.
	Multistep alternative	The alternative multistep form of the page.
Data	Object	Automatically shows what object the form is derived.
	Preview test record	Set the preview test record you want to use.

Section	Property	Function
---------	----------	----------

Details	<ul style="list-style-type: none"> • Created date 	General information about the page.
	<ul style="list-style-type: none"> • Created by 	
	<ul style="list-style-type: none"> • Edited date 	
	<ul style="list-style-type: none"> • Last edited by 	

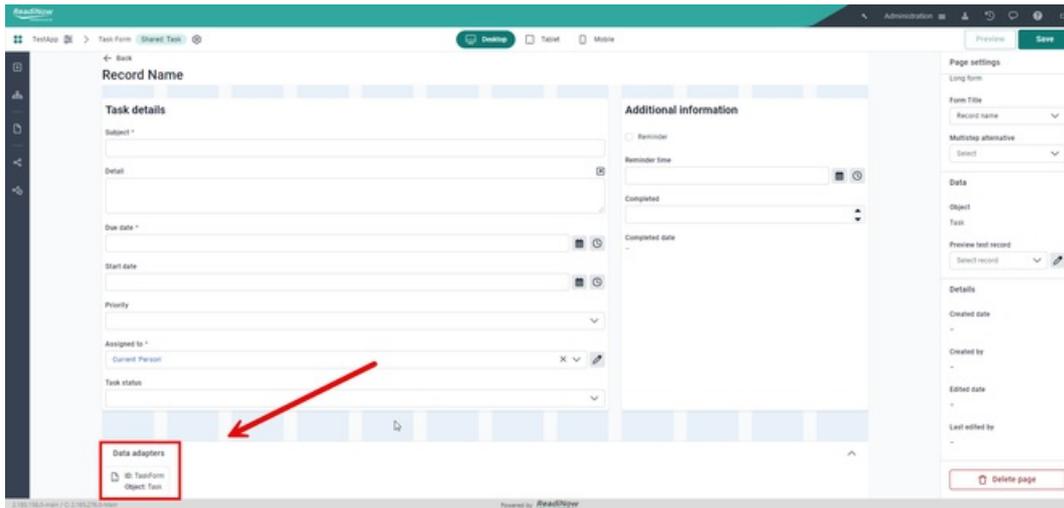
Adding Fields/Relationships to a page

Last Modified on 24/01/2024 10:14 am AEDT

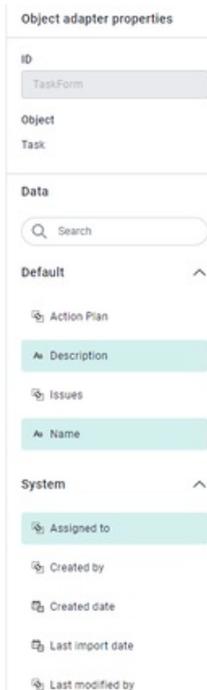
To show fields or relationships on a shared page, you need to create them within the **form builder**. Once they are on the object, you can access them using the Data adapter and place them on a NOVA shared page.

To add Fields or Relationships to a page: 

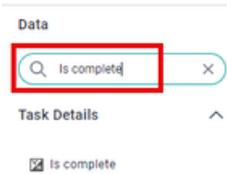
1. After creating a shared page, in the app builder click **Data adapters**



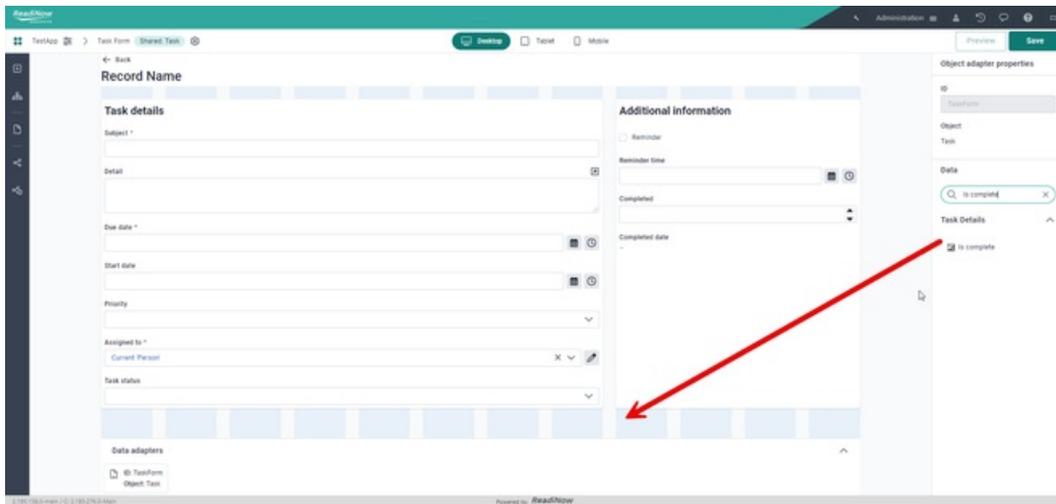
2. Notice on the right-hand side all the available fields and relationships for that particular object. These are sorted by field groups that were declared when the object was created.



3. Find the field or relationship you wish to add, by scrolling down or searching the name in the search bar.



4. Click, drag, and drop the field onto the builder canvas on the left side of your screen.



5. Drag the field to your desired position, and resize it if needed by dragging the right corner.



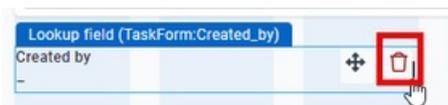
6. Review its properties, and update if necessary.

7. Click the **SAVE** button to save the changes.

To remove Field or Relationship to a page: 

1. Select the field or relationship you wish to remove.

2. Click on the delete icon.



3. Click the **SAVE** button to save the changes.

Creating a Multi-Step Page

Last Modified on 24/01/2024 10:22 am AEDT

A multi-step page allows you to break down a complex form into a series of smaller, more manageable steps. Instead of presenting all the form fields or information at once, users navigate through a sequence of steps, completing one set of inputs before moving on to the next. Multi-Step forms streamlines complex processes and improves user engagement by reducing apprehension and anxiety for new or infrequent users.

To create Multistep page:

1. Go to the Nova application builder.
2. On the left-hand side expand the **Shared Pages** section by clicking



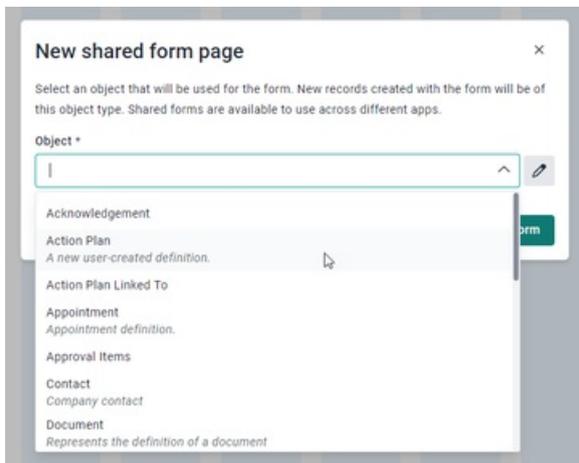
icon.

3. Click the add Shared Page icon

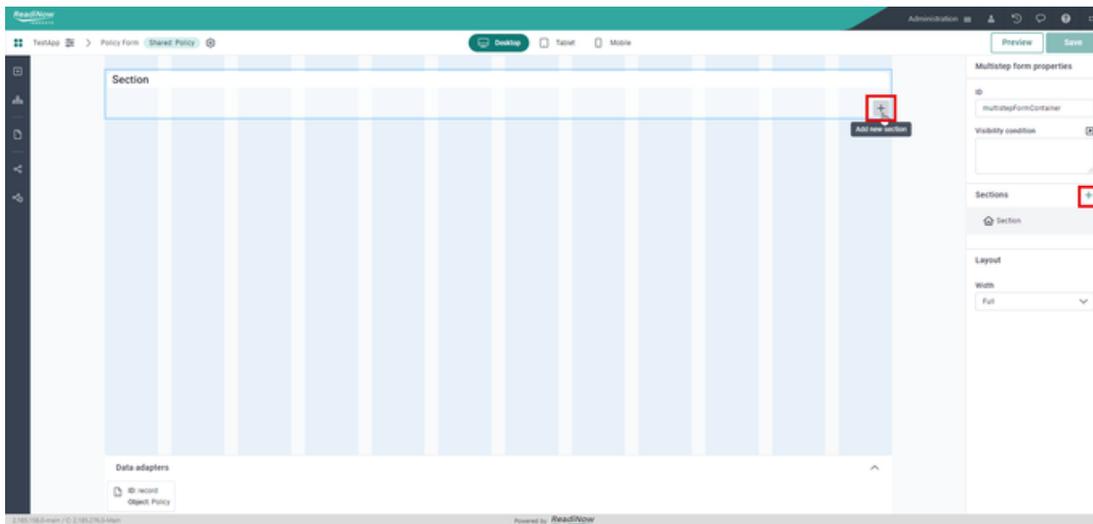


and select **Multistep form**.

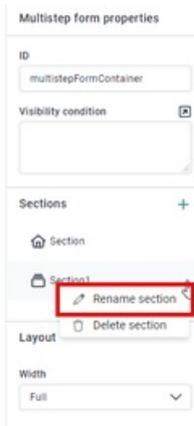
4. An object selector should pop up. Expand the dropdown and select the object that will be used for the form. New records created with the form will be of the selected object type.



5. Click **Create form**.
6. A default section should be created right after. To add more sections click on the plus icon. Each section will be presented to the user as a separate page in the multistep form. you can move sections around to set the desired order for your users.



7. To rename a section, right-click the section → select **Rename section**.



8. Enter the name, press **Enter**, and click on **Save**.

Based on your application requirement, add the necessary [page components](#), [fields](#), or [relationships](#) in the form.

Section Properties

Property	Function
ID	The unique ID or name of the component.
Visibility condition	Optional expression formula to set the section's visibility.

ID The unique ID or name of the component.

Visibility condition Optional expression formula to set the section's visibility.

Property

Function

Sections

Use to add, remove, rename, and rearrange all sections.

Width

Sets the width of the section, minimum value is 2 and maximum is 12(Full).

Identifying Issues on the page

Last Modified on 02/08/2024 2:29 pm AEST

The Issues Page is your go-to destination for identifying and resolving any errors in your Nova applications. It plays a crucial role in the debugging process, offering a comprehensive view of all issues associated with your page. This is designed to streamline your debugging efforts and is divided into two main sections for added clarity: "Issues in Pages" and "Issues in Shared Pages." With these dedicated spaces, it aims to empower users with a systematic and organized approach to debugging, facilitating a smoother and more efficient development experience.

To navigate to Issues in Pages:

1. Go to the Nova application builder.
2. On the left-hand side expand the **Pages** section by clicking

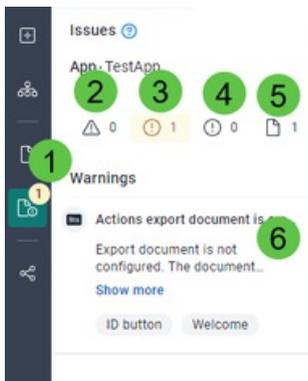


icon and select a page.

3. The **Issues in Pages** section will be available. To open, click on the



icon.



Name

Purpose

1 Issues in pages icon

Click to view all issues. Also indicates the number of issues within the page.

- | | | |
|---|------------------|--|
| 2 | Error icon | Click to show all errors that needs to be addressed. |
| 3 | Warning icon | Click to show all warnings that needs review. |
| 4 | Information icon | Click to show useful information about the page. |
| 5 | Pages icon | Click to show all issues sorted by page. |
| 6 | Description | Shows the detailed information of the issue which is useful for debugging. |

To navigate to Issues in Shared Pages: 

1. Go to the Nova application builder.
2. On the left-hand side expand the **Shared Pages** section by clicking

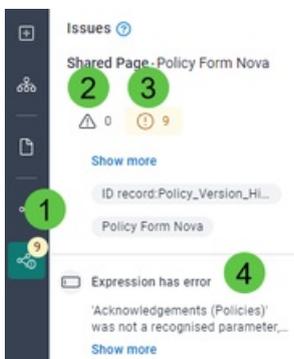


icon and select a page.

3. The **Issues in shared pages** section will be available. To open, click on the



icon.



Name	Purpose
1 Issues in shared pages icon	Click to view all issues. Also indicates the number of issues within the page.
2 Error icon	Click to show all errors that needs to be addressed.
3 Warning icon	Click to show all warnings that needs review.
4 Description	Shows the detailed information of the issue which is useful for debugging.

ReadiNow Responsible AI

Last Modified on 15/08/2024 10:32 am AEST

Overview

At ReadiNow, we are committed to innovation, empowering our customers to fully harness the potential of our AI features both now and in the future. We believe that the transformative power of AI, when combined with the ReadiNow no-code platform, will deliver significant value for our clients.

However, we acknowledge the critical importance of data security and the responsible use of AI technologies. To ensure this, all ReadiNow AI features developed and deployed will comply with relevant data protection standards, privacy regulations, and ethical considerations.

This document outlines the relevant AI features and their implementation, ensuring transparency and providing customers with the information they need to build trust in ReadiNow.

Generative AI

What is Generative AI

Generative AI is a technology that creates original content in response to user prompts. It leverages Large Language Models that have been trained on extensive datasets sourced from the internet. See [here](#) to read more about Generative AI.

How we use Generative AI

ReadiNow utilizes a private Microsoft Azure tenancy to host an instance of Azure OpenAI for running ReadiNow Generative AI, all within Australia. All communications to and from the ReadiNow platform and the Microsoft instance are fully encrypted.

User prompts (inputs) and completions (outputs) in this private instance:

- Are NOT available to non-ReadiNow customers.
- Are NOT shared across ReadiNow tenants.
- Are NOT accessible to OpenAI.
- Are NOT used to improve OpenAI models.
- Are NOT used to enhance any Microsoft or third-party products or services.
- Are NOT used for automatically improving Azure OpenAI models unless explicitly fine-tuned with user-provided training data.

Any fine-tuned Azure OpenAI models are exclusively for ReadiNow's use. The Azure OpenAI Service is fully hosted within the ReadiNow environment on Azure and does not interact with any services operated by OpenAI. (e.g. ChatGPT, OpenAI API)

For more details on the Azure Data, privacy, and security for Azure OpenAI Service, please click [here](#).

Data Privacy and Security

Tenant Isolation

A detailed explanation of the ReadNow Tenant Isolation Model can be found [here](#).

The ReadNow AI features build on the foundational Tenant Isolation model. Specifically:

- Prompts and completions from a specific ReadNow tenant are **not** utilized to serve requests or generate prompts for other tenants.
- Tenant data is **not** shared between tenants for query prompts or completion determinations.
- Tenant data remains confidential and is **not** publicly exposed during the use of the AI Suggest service.
- Usage metrics are collected individually for each tenant to monitor for any unauthorized or malicious access and usage.

Data Security

ReadNow employs multiple layers of industry standard practices, protocols and techniques to mitigate the risk of unauthorised access or modification to data or systems. Refer [here](#) for more information on the ReadNow platform security.

The Azure AI service infrastructure protects user data from web exposure through stringent security measures. These measures include industry-standard encryption protocols, access controls, rate limiting, and continuous monitoring to detect and mitigate potential threats or vulnerabilities.

Responsible AI

Microsoft, through its Azure OpenAI services, places a strong emphasis on responsible AI practices. The Microsoft Responsible AI model is guided by six core principles:

- Fairness and inclusiveness: AI systems should treat everyone fairly and ensure non-discrimination.
- Reliability and safety: AI systems should operate reliably, safely, and consistently.
- Transparency: AI systems should provide clarity and openness regarding how the AI operates.
- Privacy and security: AI systems must protect privacy and secure personal and business information .
- Accountability: Stakeholders must be held accountable for AI deployment and usage.

These principles are not merely theoretical constructs; they are actively integrated into the design and functionality of Azure OpenAI models. By using the Azure OpenAI model, these principles are incorporated into the AI Suggest feature offered by the ReadNow platform.

Content Filtering

The Azure OpenAI Service features a robust content filtering system that analyses both prompts and completions using classification models to detect and prevent harmful content. This system targets categories such as hate speech, sexual content, violence, and self-harm, with filters set to a medium severity threshold to ensure a safe and appropriate user experience. Additionally, the content filtering models are specifically trained and tested in

multiple languages, including English, German, Japanese, Spanish, French, Italian, Portuguese, and Chinese.

For more details, refer to [Azure OpenAI Service content filtering](#).

Abuse Monitoring

The Azure OpenAI Service detects and mitigates instances of recurring content and/or behaviours that suggest use of the service in a manner that may violate the Microsoft Code of Conduct or other relevant product terms.

Full details of the Azure OpenAI Service abuse monitoring can be found on the Microsoft website:

<https://learn.microsoft.com/en-us/azure/ai-services/openai/concepts/abuse-monitoring>

Configuring and using AI Suggest

Last Modified on 08/08/2024 10:48 am AEST

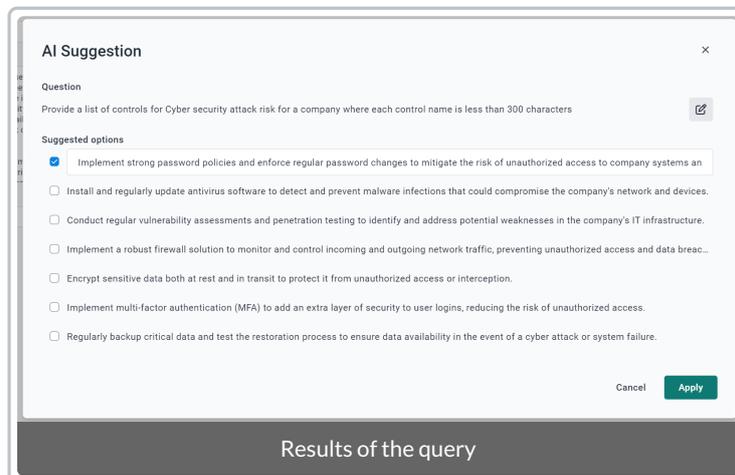
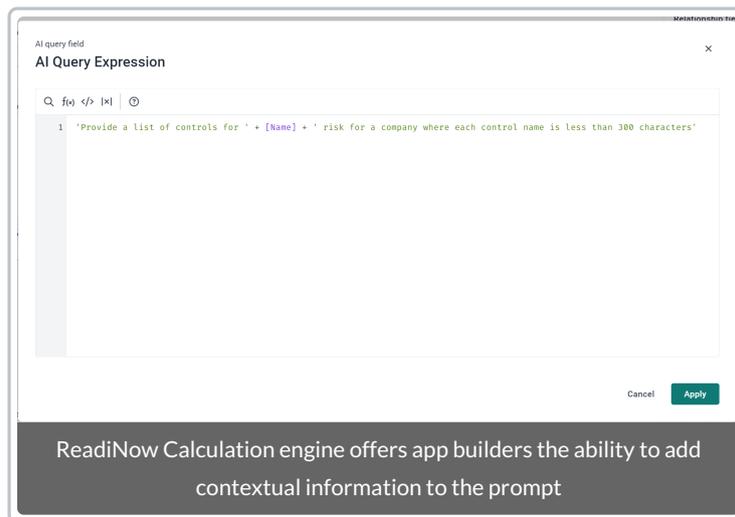
An AI prompt is a specific input or instruction given to the ReadNow AI Engine to elicit a desired response or output. The ReadNow AI query language leverages the power of the ReadNow calculation engine. App builders can easily create engaging and interactive prompts that will assist users to accomplish their data entry.

Prompts can be added to the following **Nova Page forms** fields:

- Multiline text field
- Lookup field
- Relationship field displayed as both:
 - data table
 - inline

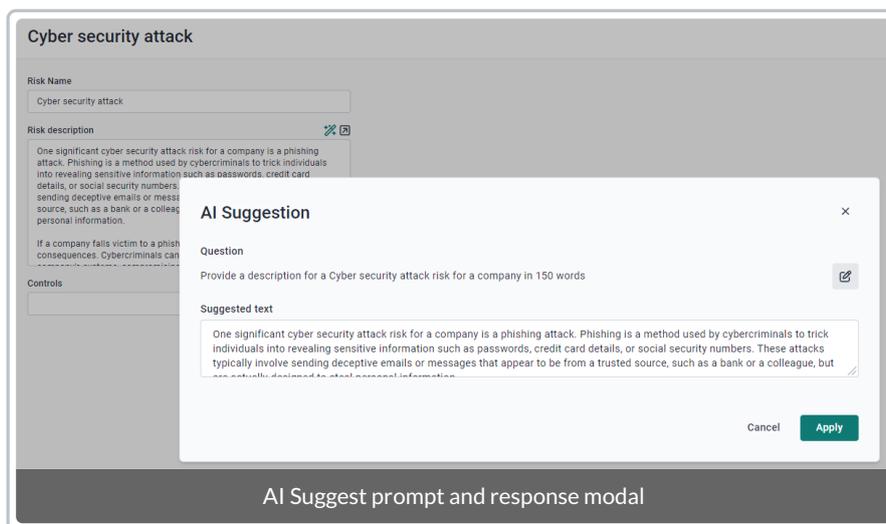
Here is an example of a ReadNow AI query expression:

'Provide a list of controls for ' + [Name] + ' risk for a company where each control name is less than 300 characters'



Configure and run an AI query:

1. Locate a **Shared page** where you want to incorporate the AI query.
2. Locate one of the supported **AI Suggest** field type properties:
Multiline text fields. Lookup fields. Relationship fields displayed as both data table and inline fields.
3. Find the **AI Query** expression in the properties panel.
4. Input the prompt as a calculation and click **Apply**.
5. **Save** the form.
6. Access the **Page form** through an app.
7. Click on the magic icon for **AI Suggest**.
8. In the AI Suggest modal dialog, review the response text or list returned. You may want make modifications to the suggestions and then click **Apply** to input the data into the field(s).
9. Optionally, you can amend and refine the prompt to improve your response.



If you would like to provide feedback on this feature e.g limits or usage, please connect with ReadNow Support

Tips for effective AI Suggest prompts

Last Modified on 26/08/2024 11:55 am AEST

- Ensure that your prompt is concise, easy to understand, and written in natural language
- For lookup and relationships, use words such as 'list' or 'itemise' to prompt responses that provide a list of items:
'List 5 actions that are immediately required after a cyber attack where each action name is less than 300 characters'
- For multiline fields, use words such as 'describe', 'report', or 'summarise' to elicit descriptive responses:
'Provide a description for a Business Impact Analysis for Payroll'
- Specify a word or character limit in your prompt to maintain succinctness in the given context.
- Be mindful of field limits: lookup and relationship names have a 300-character limit, while multiline fields have a 10,000-character limit.
- Collect feedback from end-users to assess the effectiveness of your prompt in generating the desired responses.
- Ensure that you provide business or operational specific context within your query to ensure the response is relevant and beneficial.
- Utilize your data context fields such as "Category" or "type" etc to provide dynamic context to your query.
 - e.g. "Suggest sequential '+[Recovery Strategy type]+' tasks to respond and recover from a loss of '+[Asset name]+' Which is a '+[Asset Type]+' type asset"

If you would like to provide feedback on this feature, including suggestions for enhancements or identifying limitations, please reach out to REDI Now Support.

Best Practices Index

Last Modified on 28/08/2020 9:52 am AEST

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Applications Best Practices

Last Modified on 11/09/2020 9:52 am AEST

Application name

- The best application names are short and simple. Try to pick a name that reflects the application's purpose.

Application icon

- Choose an icon that provides clarity and aligns to your application name.
- The file types can be svg or png.
- A square icon works best (e.g. 256 x 256 pixels).

Deploy type

- It is recommended to select all **deploy options** (Desktop, Tablet, Mobile) to cover all device types.

Single solution

- If you have several related solutions in mind, create them individually as smaller applications. Smaller applications run faster than one large application. Do not worry about creating silos as the ReadNow platform makes it easy to integrate applications.

Boards Best Practices

Last Modified on 02/09/2020 9:45 am AEST

Naming Conventions

- When choosing a board title, pick a title that is relevant to its use and what information you are presenting to your users.
- Use title case for your names.

Description

- A description of what and where the board is used can be extremely useful for audit purposes and peer review tracking.

Filters

- Boards are based on reports. As there is a 100-limit on the number of cards displayed, consider filtering the report to reduce the number of records displayed.

Application Linking

- It is important that you link your boards to your application as this is the main requirement for you to properly package and publish your application later on.

Calculations Best Practices

Last Modified on 11/09/2020 10:05 am AEST

Calculations in reports

If a calculation is used in a report, then any relationships that are followed in the calculations are internally converted to report nodes in the report. Similarly, any aggregates that appear in the calculation also get turned into aggregates in the report. This also applies to the use of Calculated Fields. These can be viewed in the [Report Diagnostics](#) tool.

Aggregates

Aggregates, such as sum, max, min and count, in calculations can cause a very large number of records to be accessed (and secured) in the process of generating a report. If aggregation is required, then be mindful of the number of records that may be accessed and of the security rules that will apply to those records.

Calculations that follow relationships

Every calculation relationship node must be secured in the same way as for following a relationship normally.

If you follow the same relationship more than once, then in some very limited scenarios the calculation engine is able to share the same node in the generated report, which is more efficient. For this to be possible, the same relationship path needs to be followed from the root, and there cannot be any where clause.

⚠ If you need to access something more than once, then assign it to a variable using "let". This makes it much more likely that the calculation engine will be able to generate an efficient report.

Date functions

⚠ As with the analyser, any calculations that refer to the current time will cause the report result to not be cached. Therefore use the `getdate` function in preference to the `getdatetime` function.

Charts Best Practices

Last Modified on 02/09/2020 9:46 am AEST

Charts use the reporting engine. Running a pivoted chart is equivalent to running a rollup (grouped) report.

Naming Conventions

- When choosing a chart title, pick a title that is relevant to its use and what information you are presenting to your users.
- Use title case for your names.

Description

- A description of what and where the chart is used can be extremely useful for audit purposes and peer review tracking.

Unused columns in Reports

In general, it is best to use a report that has only the columns required for the chart.

Data in Charts

Where possible show the value on the graph as a **label** to simplify the analysis for the User. Labels should be shown:

- outside bars and columns
- inside pie charts

Displaying the Legend

- If chart colours do not reflect the labels, show the legend on top right hand corner.

Charts - Axis label

- Avoid using axis labels for '**Count**'.
- If the chart is on a screen, and the container already states what the chart is showing, it is recommended to hide the axis label.
- Only show the axis label when the data is not obvious.

Application Linking

- It is important that you link your boards to your application as this is the main requirement for you to properly package and publish your application later on.

Forms Best Practices

Last Modified on 18/05/2022 11:17 am AEST

Naming Conventions

- When choosing a form title, pick a title that is relevant to its use and what information you are presenting to your users.
- Use title case on your titles.

Description

- A description of what and where the form is used can be extremely useful for audit purposes and peer review tracking.

Fields

- *Name* and *lookups* are set to **Autofill** horizontally to give more visibility.
- Other fields default to **Compact** but may be changed to **Autofill** if required.
- **Choice fields** should be alphabetically sorted unless they are sorted by a categorisation (i.e. priority, severity, critical etc.)

Field Groups

- Consider using **field groups** to categorise fields and relationships.

Form Container

- Typically, the first left hand container will be titled *<Object Name> Details*.

Form Layouts

- Forms with **multiple Reports** can be slow to open. Place Reports in Tabbed Containers to reduce the overall loading time of the Form. By default the first Tab of a Tabbed Container will be 'active' (the 'default Tab') and its content will load immediately. Content (including Reports) placed in other Tabs only loads when the Tab is activated.
- **Mandatory fields** should be placed directly on the Form, in non-tabbed containers, or in the 'primary Tab' of a tabbed container. In other words, mandatory fields should be visible without having to search through Tabs. In situations where a field in a 'non-primary tab' must be mandatory there are 2 approaches to consider:
 - Custom Form Validation
 - Conditional Mandatory

Relationships

- Consider which relationships you want to show. There is an option: "**Do not show in reverse**". This does exactly what the name suggests
 - For example: **Last Approved By** may have little value in the other direction and would just clutter the report and form builder.

Application Linking

- It is important that you link your form to your application as this is the main requirement for you to properly

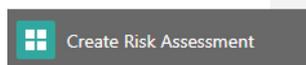
package and publish your application later on.

Navigation Best Practices

Last Modified on 02/09/2020 9:47 am AEST

Naming Conventions

- When choosing a navigation tab, pick a name that is relevant to its use. Use descriptive titles in the left navigation panel, especially if the purpose of a screen is to specifically create something. For example,



- Use title case for your tab names.

Description

- It is recommended to add a description of the tab usage.

Tabs to Align to Process

- Where possible, use the 'left to right' navigation of tabs in a module.
- When you are inside a tab, the left navigation panel should align with the logical steps of a process.

Simplify Navigation

- Access to information in ReadNow is not modular. You can simplify the way users interact with the platform. For example, 'Reporting Only' users can have all they need in a single screen, rather than needing to navigate to the different modules.

Application Linking

- It is important to check that your tabs are linked to the correct applications.

Objects Best Practices

Last Modified on 02/09/2020 9:54 am AEST

Naming Conventions

- A singular noun
- Exception: Aggregate abstract objects (e.g. Owned Items, Approval Items etc.)
- The *Script Name* should match the Object name
- Use title case on your fields and titles.

Description

- Add a description explaining the purpose of the object and where the object is used. This is really helpful for audit purposes; peer review tracking and workflow identification.

Application Linking

- It is important that you link your objects to your application as this is the main requirement for you to properly package and publish your application later on.

Public Forms Best Practices

Last Modified on 27/05/2021 10:53 am AEST

Overview

Public Forms provide a lightweight, low friction solution that allows you to collect information from unauthenticated users, i.e. members of the public. Generally Public Forms are for data entry and do NOT support retrieval and/or editing of existing Records.

Use cases for Public Forms include:

- hazard/incident reporting
- collecting customer feedback

Public Forms are 'public' in the sense that they do not support user authentication; it is important to appreciate that by necessity Public Forms allow anyone on the internet (subject to your configured **IP Whitelist**) to create Records in your tenant. Furthermore Public Forms support the use of relationship pickers and can be configured to trigger Workflows.

This article is general in nature and does NOT intend to cover any specific use-case for Public Forms; rather it outlines some of the best practices and key points to consider when using Public Forms.

Also see:

- [Public Forms Security Overview](#)
- [Getting Started with Public Forms](#)

Public Forms should only be implemented by experienced tenant administrators who understand tenant security and data integrity.

Requirements & recommendations

The following are key recommendations for implementing Public Forms, they are not currently enforced. Public Forms allows unauthenticated users to create records in your tenant, therefore to ensure data integrity and avoid potential data leakage ReadNow strongly recommends adopting the following precautions:

1. Use dedicated objects
2. Use dedicated workflows
3. Avoid resource keys
4. Review IP Ranges

Use dedicated Objects

Failure to implement dedicated Objects for each Public Form introduces a risk of data contamination and increases a risk of data leakage. Dedicated Objects provide a means of quarantining dirty data.

Rationale

Data contamination could be the result of low quality form submissions. Using a dedicated Object for Public Forms provides the cleanest solution for segregating potentially dirty data from clean data. Dedicated Objects also make it easier to implement a dedicated workflow to triage/sanitise data submitted using Public Forms.

Public Forms support Relationships. For example: by setting up a relationship, an incident report form can expose a list of locations where an incident may have occurred. This necessarily exposes a subset of the information in your tenant to members of the public so they can select a location. However data leakage could occur if a relationship containing sensitive data is inadvertently added to the Public Form.

Comments

The potential for data leakage has been minimised by restricting the Relationship pickers so that they ONLY expose a single field, specifically the first text field in the Picker Report.

In addition to using dedicated Objects, the potential for inadvertently modifying Objects that are publicly exposed can be further reduced by adopting a naming convention that highlights the Object's association with Public Forms.

Use dedicated Workflows

Submitting a Public Forms results in a Record being created, this provides an opportunity to trigger workflows. Workflows that are triggered by Public Forms should be simple and they should be dedicated to the Public Form's underlying Object.

Workflows that run when a Public Form is submitted should focus on validating the integrity of submitted data and moving validated records from quarantine to operational data.

Triggering a Workflow from Public Form submissions requires the Workflow Security to be: *'run as workflow owner'*.

Avoid Resource Keys

Resource Keys can be defined by one or more Form Fields, their purpose is avoid duplicate records. Failure to avoid Resource Keys in Public Forms introduces a risk that Form submission will fail silently.

Ordinarily when an authenticated user creates a Record that violates a Resource Key constraint they receive a message: 'resource key already exists'. However, in the context of Public Forms that message effectively leaks data to an unauthenticated user. Therefore if form submission fails due to a Resource Key violation the submission will necessarily fail silently.

Review IP Ranges

Public Forms respects the IP Ranges for your tenant. Users will be unable to access your Public Forms if they are using an IP address that is outside of the whitelisted IP Ranges. Whitelisted IP Ranges can be configured for your Tenant.

Support for Field Features and Form Layout

Public Forms supports most fields and various functional configuration.

Fields that are NOT supported (and *not displayed*) by Public Forms are:

- calculated fields
- autonumber fields
- relationships
- documents

Fields that are supported but have restricted functionality are:

- lookups
 - *picker is restricted to a single string field*
 - *manual entry is not supported*
 - *analyser is not shown*
 - *create new is not supported*
 - *display as dropdown is not supported*
- choice fields
 - *cascading choice is not supported*
- images
 - *image value can not be used in a calculation*
 - *default image not supported*
- date & date-time
 - *keyboard entry is not supported for date entry*
 - *time does not support a default value*

All other fields are supported with some general configuration limitations as outlined below.

Support and limitations for field configuration

Supported field configuration:

- Mandatory fields are supported however non-mandatory are marked as optional
- Calculated visibility and read-only are supported (*except for calculations based on the presence of an image*)
- Min, Max values for number and date-time values are supported
- Min, Max values for string length are supported
- Default values are supported
- Text pattern validation is supported
- Show Help is supported

Public Forms do NOT support the following field configurations:

- Form level validation
- Conditional formatting
- Horizontal and Vertical size
- Background colour
- Layout & position

Notes:

Layout controls such as containers are not supported. The Public Form runner supports basic layout by arranging form fields in a single column. When creating a form to be exposed as a Public Form, the best practice is to arrange fields in a single column without using containers.

Behaviour for containers has not been defined and containers should be considered as NOT supported.

Relationships Best Practices

Last Modified on 02/09/2020 9:47 am AEST

Naming Conventions

- Use title case on your fields and titles.
- When creating relationships, use unique names for the following:
 - Relationship Name
 - Script Name
 - Reverse Name

Relationship Properties

Name : Contract

Display Name :

Description :

Object: Contract

▼ RELATIONSHIP TYPE

▼ OWNERSHIP

▼ SECURITY

▲ OPTIONS

Form Detail Form Behaviour Object Detail Format

Default Value:

Relationship Name : Person - Contract

Script Name : Contract

Reverse Name : Person

Hide in Reverse:

Show Properties in Reverse Direction

OK Cancel

Description

- A description of what that relationship is used for can be extremely useful for audit purposes and peer review tracking.

Cardinality

- Think about how the cardinality is structured. For example, the relationship between Department and Employees is a one to many relationship, and the name should reflect this. A good name would be Department - Employees. The "one" end of the relationship has a singular name and the "many" end has a plural name.

Reports Best Practices

Last Modified on 07/12/2020 4:43 pm AEDT

Naming Conventions

- When choosing a report title, pick a title that is relevant to its use and what information you are presenting to your users.
- Use title case on your titles.

Description

- A description of what and where the report is used can be extremely useful for audit purposes and peer review tracking.

Analyser text search

When searching for records, the following methods work from fastest to slowest:

1. Where ever possible, use the "**Any of**" analyser condition to match a resource rather than searching for it by **Date**.
2. If searching text, use equals (=) wherever possible.
3. Where ever possible, avoid using "**Starts with**", "**Contains**" and "**Ends with**" when searching for records on large reports.

Use Analyzer Conditions to Optimize Performance

In some situations the performance of Reports can be significantly improved by using Analyzer conditions as opposed to relying solely on security access rules. This optimisation requires the access rules to be defined on the same object, or a parent object, as the report (but not a derived object).

If a report has analyser conditions that cause the (root node) records of the report to be filtered, then (as long as the filter is in place) the Report can be optimised if the following conditions are true:

- the user has at least one access rule that applies to that type of record (other than 'grant read to all records')
- the filters on the report imply that at least one of the access rules will always be fulfilled

Examples:

The optimization can be used if:

- an access rule says that 'status' must be any of: "medium", "large", "x-large"; and the report Analyzer says that the status must be any of "medium", "large", OR
- an access rule applies to "employees" and says that status must be any of: "available", "on leave"; and the report is of "managers" with the same Analyzer condition

However, the optimization does not apply if:

- the access rule applies to "managers" and says that status must any of "available", "on leave"; but the report is of "employee" with the same Analyzer condition, OR
- the access rule has the "exact type only" advanced option set, and the report does not have "exact type only" advanced option set, and the object has derived types

Conditional formatting

Only use conditional formatting when it adds value to the report.

Ordering

Ideally, order the report in a way that the user will find useful (e.g. **by Name**). If users are continually re-ordering a report then this means more delays for the user.

However, when performance tuning a report, it is a good idea to check the advanced ordering option and remove any unnecessary sorting.

Application Linking

- It is important that you link your reports to your application as this is the main requirement for you to properly package and publish your application later on.

Security Rules Best Practices

Last Modified on 11/09/2020 12:22 pm AEST

The design of security rules can have an enormous impact on system responsiveness and scalability.

Relationship Security

Significant performance advantages can be achieved by judicious use of Security Relationships. Conversely, poorly configured security relationships can significantly impact performance.

Refer to [Security Relationships](#) for a list of best practices for configuring security relationships.

Security rules that relate to the current user

If any part of a report refers to 'current user', or if any of the security rules that apply to any part of the report refer to 'current user', then the results may change from user to user. This means that the cached report results cannot be shared across users, which can impact scalability.

Security rules that are optimised well by reports

A security rule will be detected as granting access to all records of a particular type 'T' if its report satisfies *all* of these conditions:

- The root node is *not* set to 'exact type only' in the advanced properties. (the default setting is the preferred setting)
- The report does not follow any relationships
- The report has no analyser conditions
- The root type of the report is either 'T' or an ancestor of 'T'
- The security rule itself applies to type 'T' or an ancestor of 'T'

While this is a pretty tight set of requirements, it's a fairly common scenario to say that (either for some roles or all roles), the user has access to all records of a particular type. For example, all users may have read permissions to see the record that represent departments or geographic locations so that they can select them in various forms. (But not necessarily the records that are associated with those departments or locations).

The ReadiNow reporting engine optimises this specific scenario.

A report is created for a particular object. However, most reports also follow relationships that lead to other objects (either in the report relationship tree, or by referring to them in calculations or calculated fields).

The reporting engine will determine all security rules that must be considered for all objects referenced in the report. However, if for a particular object, *any* of the rules are determined to satisfy the above conditions then reports know that it does not need to calculate and of the other security rules for that object - including ones that might be for inherited types.

However, this optimisation only applies if the security rule type is the same as, or a parent of, the node type. For example, if you have a relationship that points to records of the 'Person' object, and you have a rule that grants access to all 'Employee', then the optimisation cannot apply because it may be the case that some of the records linked by the relationship are of some type other than 'Employee', and therefore do not automatically receive

access according to that security rule. If possible, consider tightening the relationship to only point to employee, or loosen the rule to grant access to all Persons. (Assuming of course that this makes sense for the rest of the business logic)

⚠ Make as many of these rules (that grant access to all instances of a type) as you can - and as broadly as you can.

Security rules apply to derived types

Security rules that do not grant access to all records of a type, however, also apply to derived types - and may even slow reports down.

For example, if a security rule says you can access a person if their email address contains @readinow, then that security rule will also apply to employees, customers, suppliers, or anything else that derives from person.

So make these rules apply to the tightest type possible. In this example, if you're only expecting the rule to only ever grant access to employees, then set employee as the rule type - so that way it can be ignored for other types.

If reports determines that a particular resource type has *no* rules that would grant access then it knows that the user can never see any records of that type, and will similarly optimise that case. However a stray rule applied to a parent type, such as the one above, would prevent this from happening.

⚠ Don't create general rules that apply to resource or editable resource. These rules will be brought to bear on every relationship of every reports.

Sharing of report preparations

Prior to performing the task of gathering and securing records, the ReadNow reporting engine automatically performs a number of preparatory steps. This preparation work will be cached and shared among multiple users so long as those users are in the same roles. The roles must be the same, not just partially overlapping.

Report Object

A report is based on a particular object. Try to create reports using the most specific type of object for your purpose. For example, if the the purpose of the report is to show employee records, then ensure the report is created using the 'employee' object, and not the 'person' object. Even though the 'person' object is inherited by employee, using 'person' means all security rules that apply to the 'person' object, and every object that inherits from the person object, will be taken into consideration. This will impact performance. When designing applications, use objects and inheritance to classify different types of records, rather than choice fields (unless the classification is likely to be changed). This allows for more targeted access control rules to be created and reduces the number of access control rules that are applied when running a report.

Screens Best Practices

Last Modified on 02/09/2020 9:49 am AEST

General

- Limit the number of forms, reports and charts on a screen. The fewer the resources, the faster the loading time.
- Consider creating smaller targeted screens.

Naming Conventions

- When choosing a screen title, pick a title that is relevant to its use and what information you are presenting to your users.
- Use title case for your titles.

Description

- A description of what the screen is used for can be extremely useful for audit purposes and peer review tracking.

Application Linking

- It is important that you link your screens to your application as this is the main requirement for you to properly package and publish your application later on.

Workflows Best Practices

Last Modified on 02/09/2020 9:50 am AEST

General

Single Application

- Avoid workflows that cross applications.

Naming Conventions

- Use title case for your names.
- Consider whether this workflow will be visible on a form as a button or run in the background. Workflows that are accessible from user forms should have short and meaningful names that explain their purpose such as 'Submit for Approval' or 'Activate Plans'.
- If the workflow will be run in the background, use a longer name which can be helpful to differentiate between workflows. For example 'Finance: Create Kanban Status Summary'.

Workflow Properties

The screenshot shows a 'Workflow Properties' dialog box with the following fields and values:

- Name :** Enroll for Approval
- Description :** Risk approval for Enterprise Risk
- Applications :** Enterprise Risk Management
- Owned by :** svc_GRC_Professional
- Enable audit for user action :**

Buttons at the bottom right: OK, Cancel

- **Description:** Use the Description field to describe what the workflow does. ReadNow consultants normally put a specific label on the first line of the Description such as the form name where the workflow will be used or any specific area which makes it easy to know where the workflow will be used.
- **Applications:** This is the application that the workflow belongs to. Do not leave this blank unless the workflow is actually generic and does not belong to any particular application.
- **Owned By:** By default this will take the name of the creator. The best practice is to then change it to the name of an Administrator user that will always be present and not disabled or deleted as admins leave the company. The user account must have adequate privilege to run any task required by the workflow such as deletion or access to secured records.

Break complex workflows into multiple workflows

- Workflows are often used to model multi-step business processes. Each step may in turn require multiple

workflow activity steps to be completed. Consider creating individual workflows to model individual business process steps, with a master workflow to call each of them in turn using the [Run Workflow](#) activity.

Use the Workflow Analyzer to review interdependencies between workflows

- Workflows may cause other workflows to run, either by use of the [Run Workflow](#) activity, or implicitly by modifying records that in turn have a trigger set up to run another workflow. Take care to ensure that workflows are not designed in a loop that causes them to call each other.
- The [Workflow Analyser](#) tool can be used to graphically show which workflows may cause other workflows to be started.

Designing Efficient Workflows

There is often more than one way to achieve a particular outcome. However, some patterns will tend to run more efficiently than others. The following patterns will generally result in workflows that run more quickly.

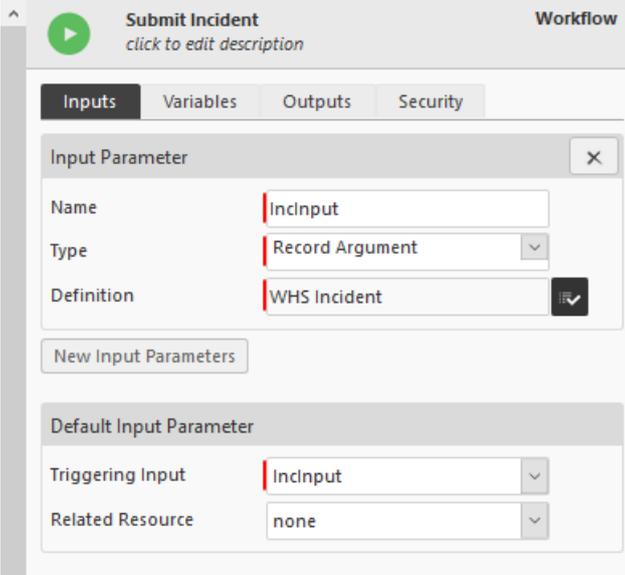
Use the Workflow Examine Run tool to investigate workflow efficiency

The [Examine Run](#) tool allows you to view the amount of time spent processing each activity in the workflow, and to drill down into the contents of variables.

The Start Activity

Workflows are used to automate tasks or manipulate selected records or a group of them. The workflow can either work on a selected record which is either the open record in a form, or the selected record in a report, or it can work on a collection of records that are read from a report.

To tell the workflow that you want to work on the selected record use the Input Parameter:

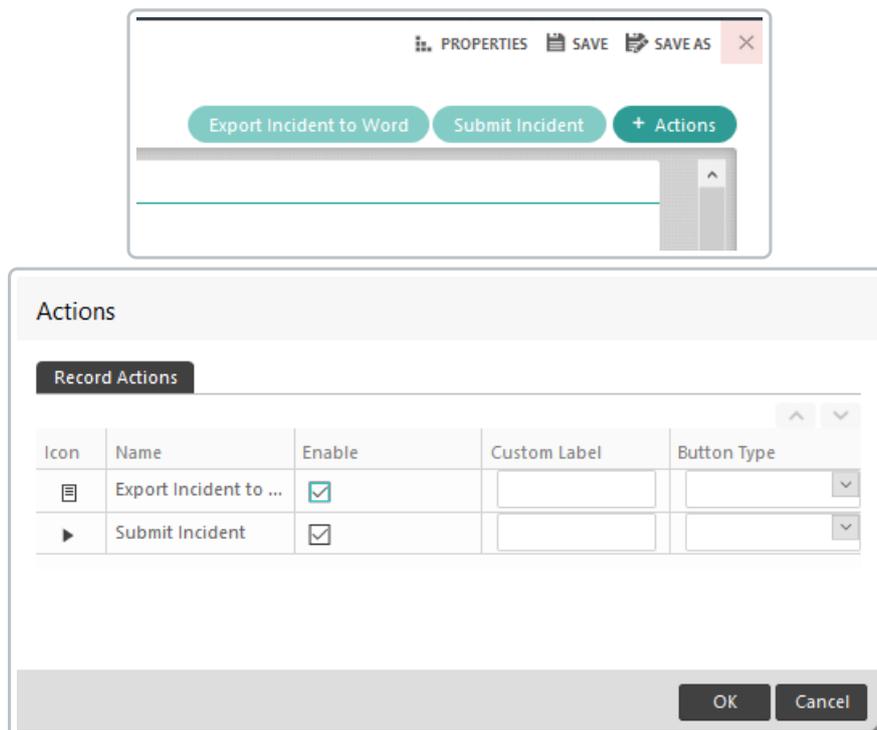


The screenshot shows the configuration interface for a workflow named "Submit Incident". The "Inputs" tab is selected, and the "Input Parameter" section is expanded. The "Name" field is set to "Inclinput", the "Type" is "Record Argument", and the "Definition" is "WHS Incident". Below this, the "Default Input Parameter" section is visible, with "Triggering Input" set to "Inclinput" and "Related Resource" set to "none".

- **Name:** if you have only one record source then you can remain with the default name of 'Input'. Otherwise give this a name that would help distinguish the input parameter from another. For example you can use 'Incident Input' or 'Risk Input' to indicate that one parameter is related to an Incident and the other to a Risk

object.

- **Type:** The Type tells the workflow what kind of input the workflow is dealing with. The workflow can operate on a selected record or on information passed on from other workflows. The most common use of the Input Parameter is a Record Argument which means the Input value will be a selected record. If you want to handle a set of records then set the Type to Record List. The other types, can be used to specify what is the nature of the value passed to the workflow. This is when the value is passed from yet another workflow.
- **Definition:** This is where you specify what object will the record source hold. If you want to run the workflow on an Incident form then your Definition should have Incident in it. Note that once the workflow is saved you can show the workflow as a button on the object form by using Actions.



The Submit Incident workflow (second line in Record Actions list) will appear in this list because the workflow has the same object as the form.

Note: there is no need to add any Input Parameter if the workflow will not get any input from a selected record. For example when all the records fetched will come from a 'Get Records' activity.

Use the Get Records activity to get a filtered list of records

When to use:

If you need to need to process all records of a particular object that meet some criteria, such as having a particular status or field value, then use the [Get Records](#) activity to load the records from that report.

This is particularly helpful for objects that have a very large number of records, even if only a small number of those records will match the criteria. At present this approach will generally run more quickly than writing an equivalent calculation in a workflow.

How to use:

1. Create a report and add analyser conditions to perform the required filtering.
2. Add the [Get Records](#) activity to the Workflow to load the records.
 - Optionally, Workflow variables can be used to control analyser conditions to perform filtering relevant to the current workflow run.
3. Use the [Get Records.List] output of the Get Records activity as needed, for example in an Update activity or Loop.

Provide a list of records to the Update and Create activities to update multiple records at once

When to use:

If multiple records are being processed and having fields and lookups set, then it is possible to provide a list of records as the input to the [Update](#) activity. The calculations used for setting field and relationship values may make reference to other fields and relationships on the individual record.

When the update activity is used in this manner, the records will be processed in batches and this is typically more efficient than writing an equivalent workflow that uses the loop activity to check each record in turn.

How to use:

1. Provide a list parameter or list calculation to the Records input of the [Update](#) activity.
 - The [Get Records].List output of a Get Records, as described above, can be used here.
2. The calculations for each field and relationship may make direct reference to existing fields and relationship on the record.
3. For example, the Name record of a person record could be updated with the calculation: [First Name] + ' ' + [Last Name]

The same technique can be used with the [Create](#) activity by providing a list of records to the 'Based On' input of the Create activity.

Use the Create Activity in combination with Resource Keys to create/update records

When to use:

A common workflow requirement is to retrieve data from an external source, such as by making an API call, or processing a spreadsheet. This data is then used to create and/or update records. Typically there is some form of identity field or ID number, and if a pre-existing record has the same number then it needs to be updated, but if there is no pre-existing record then one needs to be created.

The most efficient way to perform the combined task of: checking for an existing record, updating the existing record, or creating one if it does not already exist, is to use a [Create](#) activity in conjunction with a [Resource Key](#).

How to use:

1. Create a [Resource Key](#) for the object that indicates that a particular ID field on the record will uniquely identify records.
2. In the Workflow, add a [Create](#) activity (not an update activity) to create records of the required object.

3. Enable the Create activity option "Update existing record with matching key". Note: this option will only appear if an object is selected that has a resource key defined on it.
4. Set a value for the field (or all of the fields and relationships) that make up the resource key.
5. Set any other field or relationship values that need to be set.
6. Optionally:
 1. As described above, a list of record can be provided as the input to the Create activity, which will cause the create/update operations to be performed in batches.
 2. And ideally this list input should be the List output of an earlier Get Records activity.

Take care when using loops

If a workflow has a loop that runs over a large number of records, then the workflow may take a long time to run.

- Where possible, use techniques such as those described above to avoid needing to use loops.
- If a loop is unavoidable, then examine activities and calculations that are within the loop. If there are any calculations - or parts of calculations - that are essentially the same for each record in the loop, then consider performing those calculations before entering the loop, and assigning the result to a workflow variable.
- This means that the calculation does not need to be performed for each record in the loop. This can save considerable time.

Take extra care when using nested loops

If a workflow has a loop that in turn contains another loop, then the time required to run the workflow may be proportional to the number of records in the outer loop *multiplied* by the number of records in the inner loop. This can be a large number in some cases.

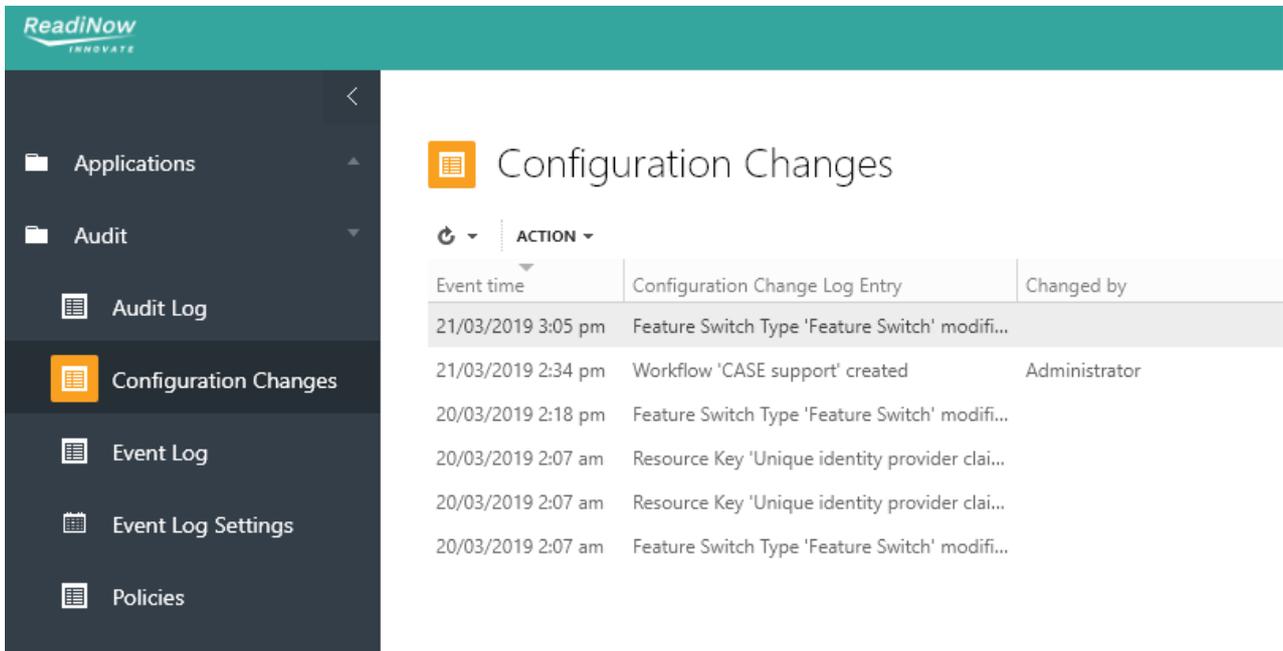
If this type of nesting cannot be avoided then, minimally, carefully examine each calculation and activity as described above. Ideally move common calculations to before the outer loop. However if this cannot be done, then minimally move common calculations from within the inner loop to just before the inner loop.

Configuration Auditing

Last Modified on 03/04/2019 1:57 pm AEDT

System configuration changes are logged as shown for:

- object definitions
- charts
- forms
- reports screens
- resource keys
- email settings
- schedules
- triggers
- workflows



The screenshot shows the ReadinessNow interface with a teal header. A dark sidebar on the left contains navigation items: Applications, Audit, Audit Log, Configuration Changes (highlighted), Event Log, Event Log Settings, and Policies. The main content area is titled 'Configuration Changes' and features a table with columns for Event time, Configuration Change Log Entry, and Changed by. The table contains several entries, with the most recent one highlighted in grey.

Event time	Configuration Change Log Entry	Changed by
21/03/2019 3:05 pm	Feature Switch Type 'Feature Switch' modifi...	
21/03/2019 2:34 pm	Workflow 'CASE support' created	Administrator
20/03/2019 2:18 pm	Feature Switch Type 'Feature Switch' modifi...	
20/03/2019 2:07 am	Resource Key 'Unique identity provider clai...	
20/03/2019 2:07 am	Resource Key 'Unique identity provider clai...	
20/03/2019 2:07 am	Feature Switch Type 'Feature Switch' modifi...	

There is no prior configuration required to use this feature.

Record Auditing

Last Modified on 03/04/2019 1:59 pm AEDT

It is often necessary to capture the history of changes made to a record for auditing purposes.

For example, a user may update a record with new values or delete an existing record. The updated or deleted record is saved along with the entire activity log such as old value, modified value, user who modified/deleted the record etc. This serves as documentary evidence for the sequence of activities taking place on application records.

Please note that the retained records are only for viewing/auditing purposes and **cannot be restored**.

Record Change Auditing

Last Modified on 04/09/2020 4:46 pm AEST

Record Change Audit Policies define what changes are tracked on Records; auditing can be enabled on Fields and Relationships.

To configure an audit policy:

1. Navigate to the **Administration** landing page.
2. In the Left Navigation Area, select **Audit**. The Audit expands to display list.
3. Select **Record Change Policies** (existing Record Change Policies display)
4. Select **+NEW** (Record Change Audit Policy form displays)
5. Complete the necessary information, e.g. **Name**, **Object to trigger on**, **Fields to Audit** (or, **Relationship to Audit**).
6. Select **Save**

Notes:

- Multiple fields or relationships can be defined in one audit policy
- Multiple policies can be defined on the same object. However, it may lead to multiple audit log entries
- If an audit log has more than 10,000 characters , then it is truncated and added to the next line.

Record Audit Log

Last Modified on 14/07/2020 12:14 pm AEST

The record audit log allows administrators to look back at changes that have been made. This is useful when a problem has occurred, or a record of important events needs to be kept, such as when a record is deleted.

Audit log is not intended to record all activity in ReadNow. For example, it does not track whether a record is being viewed by any user. Rather, it is intended to record the data changes for a field or relationship, given the field or relationship is configured in [Record Auditing Policies](#)

Only an Administrator has the permissions to view the audit log report in Administration application

Non-administrator users can view audit log on target record if they have been granted access.

To view the audit log:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Audit**. The Audit expands to display list.
4. Select **Audit Log**. The Audit Log displays.

There are no records on the report unless [Record Auditing Policies](#) are enabled for an object and the audited activities have taken place since the auditing was enabled.

For archiving of record audit logs, see [Retention Policies settings](#).

Event Log

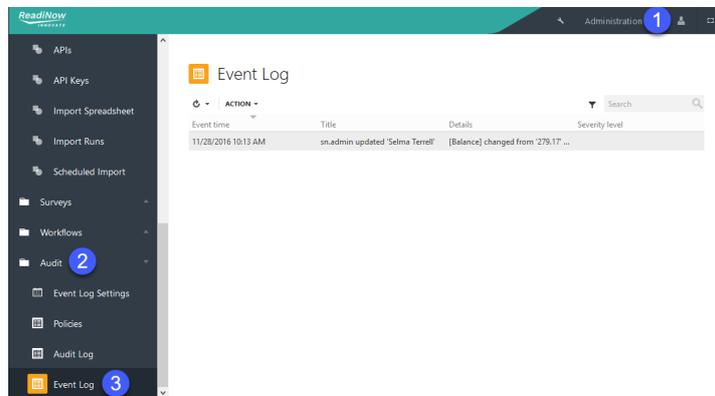
Last Modified on 16/04/2019 6:49 pm AEST

The Event Log is a place where events are tracked.

To view the event log:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Audit**. The Audit expands to display list.
4. Select **Event Log**. The Event Log displays.

Screenshot: View event log



By default, the event log has newest on top. However it can be changed by modifying the report in Report Builder

Event Log Settings

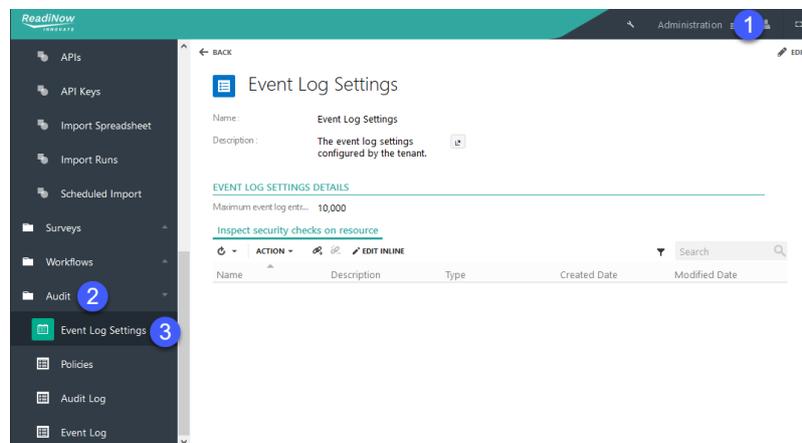
Last Modified on 17/04/2019 10:08 pm AEST

Viewing the event log settings

To view the event log settings:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Audit**. The Audit expands to display list.
4. Select **Event Log Settings**. The Event Log Settings display.

Screenshot: View event log setting



Editing the event log settings

To editing the event log settings:

1. Navigate to the Event Log Settings.
2. Select **Edit** at top right corner to modify settings.
3. Select Link to Existing

the Select Resource dialogue appears.
4. Select the resource you want so that system logs the security check events.
5. Select **OK**.
6. Select **Save** to save changes.

Contextual Audit Log

Last Modified on 18/04/2019 10:34 am AEST

The **Record Audit Log** is the place to see log entries for all objects, but log entries for a record can also be viewed on the form for that particular record.

Adding the object audit log to its form

To capture an audit log on a record:

1. Open the form for any object.
2. Add a new tab in the tabbed container, see screenshot.
3. Quick search for 'log' in Left Navigation Area and drag and drop **Log entries for object** onto the form.
4. Select **SAVE** to save the changes.
5. Select **X** to exit form builder mode.

Viewing the audit log for a target record

1. Set up audit log to appear for the record you want,
2. Find any record and make a change.
3. Navigate to **Log entries for object** tab.
4. Select Refresh to view new log entries.

If a log entry does not appear as expected, navigate to **Record Auditing Policies** and make sure the audit policy is created, or enabled, or if the field (or relationship) being edited is set on trigger.

Security Audit Log

Last Modified on 18/04/2019 10:15 am AEST

A security audit log is a tamper resistant record of security sensitive occurrences that affect a system. It is used as a deterrent to prevent administrators maliciously or accidentally abusing their privileges when they otherwise have few restrictions. It can also be used to detect malicious activity (e.g. use of a compromised account).

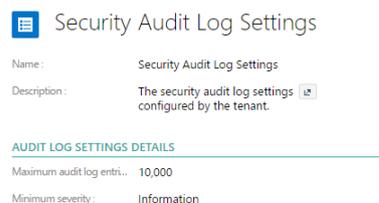
Unlike the existing [Event Log](#), the audit log is mainly aimed for administrators and their auditors.

Security Audit Log Settings

This page is about viewing or configuring the security audit log.

To view or edit Security Audit Log settings:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Security**. The Security expands to display list.
4. Select **Security Audit Log Settings**. The existing Security Audit Log Settings display.
5. Select **Edit** and configure the following fields as required:
 - o **Maximum audit log entries** - Type the maximum number of audit log entries. There is a minimum value of 1 and a maximum value of 10,000
 - o **Minimum severity** - Type the minimum message severity to log to the audit log
6. *Screenshot: View security audit log setting*



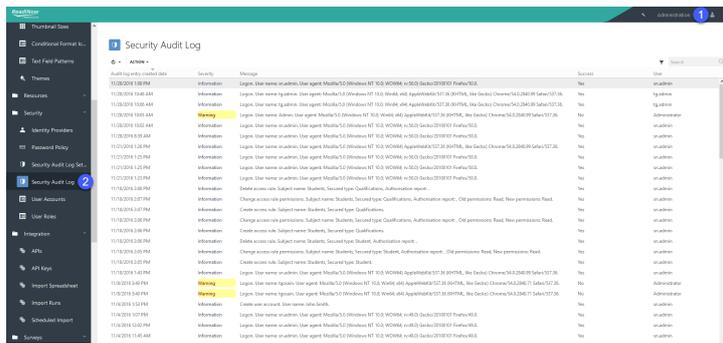
7. Select **Save** at the top right corner.

Viewing Security Audit Log

To view Security Audit log:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Security**. The Security expands to display list.
4. Select **Security Audit Log**. The Security Audit Log displays.

Screenshot: View security audit log



- The entries are sorted by Date Time by default with most recent events first
- Custom formatting shows error entries in red and warnings in yellow
- Customers can use the export feature to get a downloadable copy
- Auditors can periodically download the audit log and clear it

Security Audit Log Messages

The following security events are captured in the security audit log. Messages include whether the event was successful, or failed, along with relevant details.

Record change events can be logged using **Record Auditing**, not security audit messages.

Security Event	Notes
User account creation	
User account deletion	
User account rename	
User account expiry	This is logged at the first attempt to use the expired account, not the actual time of expiry.
User account password change	
Change user account expiration	
Change of user account status	
Locked user account	Logged when a user has too many incorrect attempts.
Logon	
Logoff	Not all logoffs may be audited, since a user may not explicitly log off.
User role creation	

Security Event

Notes

User role deletion

User role rename

User role membership change

Application creation

Application deletion

Application deployment

Application publish

Password policy change

Access rule creation

Access rule enabling

Access rule query change

Access rule permission change

Access rule deletion

Tenant rollback

Credentials

Last Modified on 15/03/2019 2:19 pm AEDT

Overview

Centrally manage credentials for the following integration configurations:

- Scheduled Exports
- Scheduled Imports
- FTP Fetch workflow activity
- FTP Put workflow activity

Creating a new Credential

To create a Credential:

1. Select **Administration**.
2. In the Left Navigation Area, select **Integration**.
3. Select **+NEW**.
4. Type in the name of the credential
5. Type in a Username and password and save.

The **Configuration** report on the Credential form displays in which configurations the credentials are used.

Scheduled Import

Last Modified on 17/08/2021 9:51 am AEST

ReadiNow allows users to schedule various data import jobs so that they are executed at regular time intervals.

Preconditions

- Prepare a sample file to be uploaded.
- Set up FTP server and address, e.g. <https://rnftp01.example.com/Testdatafile.csv>
- Scheduled Import is supported on both SFTP and FTPS protocols

Configuring scheduled import

1. Open the tenant administration page [more](#)
2. In the Left Navigation Area, select **Integration**. The Integration expands to display list.
3. Select **Scheduled Import**. The existing Scheduled Imports display.
4. Select **+NEW**. The Scheduled Import configuration form appears.
5. Complete fields as required.
6. Select checkbox for **Enabled**.
7. Select the Import configuration you want (or set up [Import Spreadsheet](#), if not already done).

Scheduled Export

Last Modified on 18/11/2021 2:23 pm AEDT

ReadiNow allows users to schedule various data export jobs so that they are executed at regular time intervals.

Preconditions:

- Set up FTP server and address, e.g. `ftps://rnftp01.example.com/Testdatafile.csv`
- Scheduled Export is supported on both SFTP and FTPS protocols

Configuring scheduled export

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Integration**. The Integration expands to display list.
4. Select **Scheduled Export**. The existing Scheduled Exports display.
5. Select **ACTION** > **New**. The Scheduled Export configuration form appears, see screenshot.
6. Complete fields as required.
7. Select checkbox for **Enabled**.
8. Select the Report you want to export data from.
9. Select the File type.
10. Type the FTP address along with the filename to be created as part of the export configuration (e.g. `ftps://rnftp01.example.com/ExportedStudentInfo.xlsx`). Note: If a file already exists with the same name in the FTP location, it will be overridden with every export run.
11. Set up a schedule to run, see [Schedules](#).
12. Select **Save** to save the configuration.

Once the export run is complete, there is a log entry in the **Log** tab of the export configuration.

At present, there's a limit of 100,000 records that can be exported at a time from a report.

Import Spreadsheet

Last Modified on 12/10/2020 9:57 pm AEDT

This page describes how to import object data from a file (while tenant administrator is logged in to console). ReadiNow supports the following types of files:

- Excel in .xlsx format (Note: .xls is not supported)
- Comma separated .csv file
- Tab separated .csv file

If the intention is to import object data from third-party web interface, please refer to [Configuring API](#) page.

Dates should be formatted as [ISO 8601](#) in the import file to avoid time zone ambiguity. See [General Settings](#) for the time zone setting.

Importing Process

Object Data

1. Open the Import Spreadsheet wizard
 1. Select Application Menu. The menu appears with available applications.
 2. Select **Administration**. The application displays at the landing page.
 3. In the Left Navigation Area, select **Integration**. The Integration expands to display list.
 4. Select **Import Spreadsheet**. The existing Import configurations display.
 5. Select **+NEW**. The Import Spreadsheet wizard displays, see screenshot.
2. Import the data:
 1. **Upload Document**, select **Upload** button and navigate to the sample spreadsheet file, comma separated .csv file or a tab separated .csv file you want, set row numbers, sheet to import etc as required, select **Next**.
 2. **Select Object**
 1. Select **Objects** for the **Import type**
 2. Choose the object from picker
 3. Select **Next**.
 3. **Select Columns**
 1. Map spreadsheet columns and object fields (or relationships) as required
 2. Select **Next**.
 4. For **Options**:
 1. Name the configuration for future use

2. Select **Test Import** if this run is a trial
3. Select **Workflows** to prevent events from being triggered
4. Select **Next**
5. Select **Import**. The configuration proceeds and verifies records.

Choice Options

If the choice field has been created already then skip step 1.

1. Define a new choice field type
 1. Go to a form in an application
 2. Open Form Builder
 3. Add a new choice field
 4. Add a new option by selecting "New"
 5. Select OK to save
 6. Open the choice field properties. The choice field type is now defined. It will say "Use existing", and show the name for the choice type. Note this name.
 7. Save the form
2. Prepare a spreadsheet for import
 1. One column must contain names
 2. One column of numbers to specify ordering is *highly* recommended
3. Import the spreadsheet
 1. Select "Choice Field Values"
 2. Then select the name of the choice type, from step 1.f
 3. Assign the two columns to the name field and the order field
 4. Import
4. Open the Import Spreadsheet wizard
 1. Select Application Menu. The menu appears with available applications.
 2. Select **Administration**. The application displays at the landing page.
 3. In the Left Navigation Area, select **Integration**. The Integration expands to display list.
 4. Select **Import Spreadsheet**. The existing Import configurations display.
 5. Select **+NEW**. The Import Spreadsheet wizard displays, see screenshot.
5. Import the data
 1. **Upload Document**
 1. Select the **Upload** button and navigate to the spreadsheet file and set options as required
 2. Select **Next**
 2. **Select Object**
 1. Select **Choice field values** for the **Import type**
 2. In the picker select the name of the choice type from step 1.f
 3. Select **Next**

3. Select Columns

1. Map the name and sort order spreadsheet columns to their corresponding fields
2. Select **Next**.

4. Options

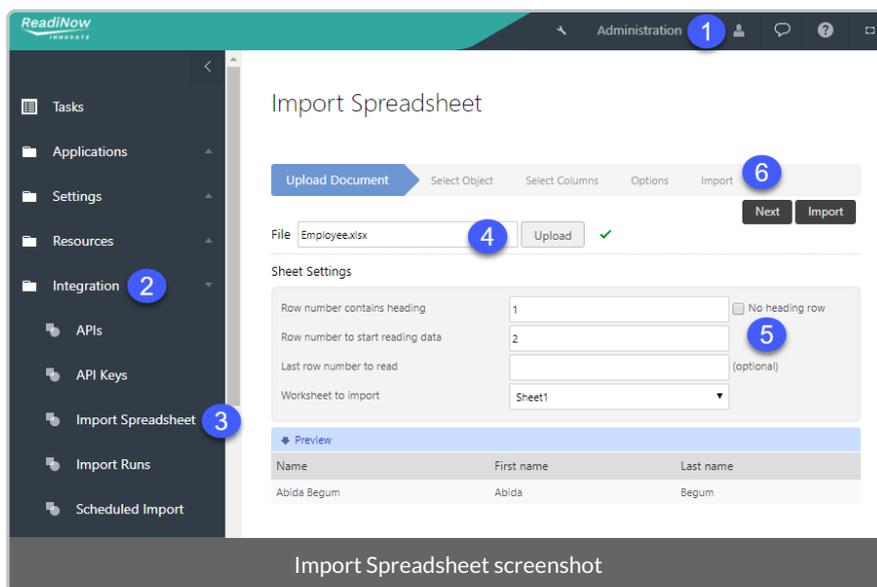
1. Name the configuration for future use
2. Select **Test Import** if this run is a trial
3. Select **Workflows** to prevent events from being triggered
4. Select **Next**
5. Select **Import**. The configuration proceeds and verifies records.
6. Delete the initial value record ("New Option") created in step 1.d

Dates and Times

Dates must be formatted as ISO 8601 in the import file before importing.

Configuration Settings

- The configuration file can be saved for later use. As a result, file name is not saved as part of the configuration.
- Preview on **Upload Document** is limited to 10 rows only.
- Preview can be reloaded after changing settings to make sure the settings are right before you start importing.
- You can cancel the data import at any time while the import is in progress.
- The import spreadsheet can handle trailing and leading spaces of the excel data and is not case sensitive.



Add fixed value to field and relationships

You can set a fixed value for any column using **Add a fixed value** option in the column mapping page. Once a fixed

value is created, it needs to be mapped with a field / column in the object. The mapped column cannot be mapped again with any other column in the import file.

Ability to Append or overwrite

APPEND or OVERWRITE can be set on relationships and multi-select choice fields. When a column in the import file is mapped with a relationship field two options are provided; Append and Overwrite. **Append** will add the data to the existing data for the corresponding record. **Overwrite** will overwrite the data on the corresponding record.

Ability to Ignore or Clear blanks on lookups

Ignore or Clear blanks can be set on lookups and single choice fields. When a column in the excel is mapped to a lookup field, two options are provided; Ignore blanks and Clear blanks. **Ignore blanks** ignores the blank cell in the excel and keeps the value on the lookup or single select choice field. **Clear blanks** clears the value of the lookup or single select choice field if the corresponding row in the excel is blank.

Import Runs

Last Modified on 17/04/2019 10:12 pm AEST

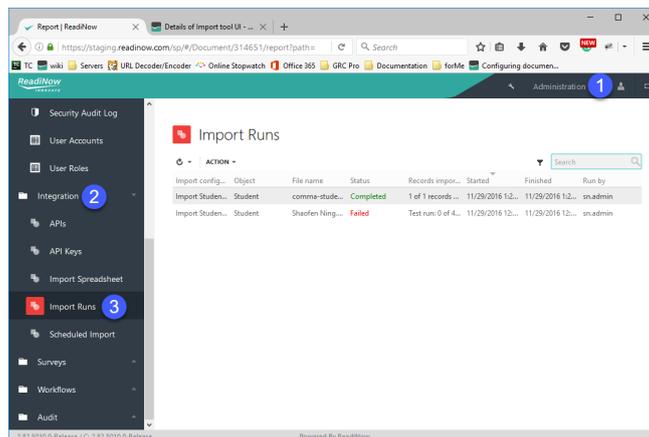
For each **import spreadsheet**, the run result is not only displayed on the last screen of the wizard, but also saved into import runs for future checks.

Viewing the import run report

To view the import run report:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Integration**. The Integration expands to display list.
4. Select **Import Runs**. The Import Runs display.

Screenshot: View import run report



To change the default look of the report, please go to **report builder mode** and make changes according to preference.

User can also cancel an import from Import Runs page. Select the Correct Import Configuration , do a right click and select **Cancel 'Import Run'** to stop the Import progress

API Callouts Overview

Last Modified on 15/03/2019 2:25 pm AEDT

Overview

API Callouts is the Readiness Platform feature that enables calling out to external third-party web APIs.

Data payloads can be included in both the request and response. In this way, Readiness can:

- Push data to external systems
- Pull data from external systems

Usage

When should I use API callouts?

Situations where using API Callouts would be appropriate can include:

- Pushing data from a Readiness application into a third-party system
- Pulling data from a third-party system into a Readiness application
- Requesting that one or more operations be performed on a third-party system as part of a Readiness workflow
- Notifying a third-party system of something that has occurred in a Readiness application

What kinds of APIs can Readiness APIs communicate with?

To communicate with a third-party system, Readiness and the third-party system must be compatible in the following ways:

- **Transport**
Readiness supports HTTP and HTTPS web requests
- **Message Format**
Readiness supports JSON, XML, and plain text message formats
- **Authentication**
Readiness supports unauthenticated APIs, OAuth 2.0, HTTP Basic authentication, API key authentication, and custom authentication (any authentication scheme that utilises the HTTP "Authorization" header)

Providing that these requirements are met, Readiness can connect to most web APIs (including REST-style APIs).

Connectivity

Finally, third-party APIs must be accessible over the public internet; if it is not physically possible for the Readiness servers to reach the third-party system (for example if it is an on-premises system), then it is not possible for API Callouts to be used.

Configuring an API Callout

Last Modified on 27/01/2021 3:07 pm AEDT

To configure an individual API Callout endpoint, the following information is required:

- The HTTP Method
- The endpoint address
- Information about the data being sent (optional)

HTTP Method

The HTTP method is a part of how HTTP requests work. It will typically be one of "GET", "POST", "PUT", or "DELETE" and should be identified in the documentation for the API being called.

If the method is not specified by the documentation then, as a rule of thumb:

- Assume that the method is `GET` if there is no data (XML or JSON) being sent as part of the request
- Assume that the method is `POST` if there is data (XML or JSON) being sent as part of the request

Endpoint address

The endpoint address is the web address of the individual third-party API being called. For ReadiNow API Callouts, a base address can be configured as part of the API Callout Library, such as `http://thirdparty.com/`. Individual endpoints then specify their address relative to this base address (enter this information into the Relative URL field). For example: `/someapi`

Before calling the API, the base address is prepended to the relative address (e.g. `http://thirdparty.com/someapi`).

It is common for web APIs to receive certain information as part of their address. This information may take the form of part of the path, or as part of the parameter. You may include static parameters as part of the address by directly typing those values.

For example: `/someapi?settings=somevalue`. Information that is provided in this way must be correctly encoded as per normal URL encoding rules so that it will form a valid URL.

You may also include values that are provided by the calling workflow by embedding them as parameters. For example, Relative URL may be: `/api/department/{[Department Code]}/staff.`

If an API Callout activity is added to a workflow, then the above URL will automatically case a "Department Code" string input to be provided, and information received from the workflow activity will be included into the URL. The system will automatically perform the relevant URL encoding in this case. See below for more details.

Request Body

If the HTTP Method is one of `POST`, `PUT`, or `DELETE`, then an additional "Request Template" input is shown. This is where XML, or JSON, or other data may be defined that will be sent to the server. The third-party API documentation will describe the format of data that it is expecting.

Text Templates

As described above, a web request consists of various components, including:

- A web address - that is, a URL
- A request body
- HTTP Headers (additional metadata)

For each of these, the data is text. To allow complete flexibility over what text is offered, REDINow APIs use a text template system, which is very similar to REDINow document templates.

You enter what the request message needs to look like, and then embed additional macros that can be used to:

- Insert data values
- Conditionally include/exclude certain parts of the message
- Generate repeated content in the message

The macros to do this are very similar to those for document generation.

Simple example

A JSON request URL and body might look like this:

URL : <http://hostname.com/api/department/sales/staff>

```
{
  "firstName":"Jack",
  "lastName":"Smith",
  "status":"NewHire",
  "hoursPerWeek":38,
  "startDate":"2017-01-09"
}
```

The corresponding templates for the request URL and body could look like this:

URL: <http://hostname.com/api/department/{{Department Code}}/staff>

```
{
  "firstName": { [Firstname] },
  "lastName": { [Lastname] },
  "status": "NewHire",
  "hoursPerWeek": { input(int, [Hoursperweek]) },
  "startDate": { dateadd(day, 14, getdate()) }
}
```

In the above example, the API Callout would detect 4 inputs that can be passed in from a workflow:

- Department Code (Text)

- First Name (Text)
- Last Name (Text)
- Hours per week (Integer)

It would also calculate the date 14 days into the future and specify that as the start date. The system will automatically perform URL and JSON string encoding as necessary.

Encoding inputs

As illustrated above, any unrecognised identifier is treated as an input. By default, these are treated as string inputs but by using the "input" function, it is possible to also specify the type of input. For example, `input(currency, [Balance])` will expose an input called "Balance" of type currency.

Records can also be passed as inputs by using the object name as the input type. For example, `input([Person], [Owner])` will create an input called "Owner" that receives a Person record. This can then be used to access individual fields in the same manner as other calculations.

Note that the type of an input only needs to be specified the first time that an input is used in the document. For example:

```
{
  "ownerName": { input([Person], [Owner].[Firstname])+ ' '+[Owner].[Lastname] },
  "department": { [Owner].[Department] }
}
```

Repeated Content

Repeated content can be written in API requests in the same way that it can be done for document generation. For example:

```
{
  "ownerName": {
    input([
      Person
    ],
    [
      Owner
    ].[
      Firstname
    ])+' '+[
      Owner
    ].[
      Lastname
    ])
  },
  "department": {
    [
      Owner
    ].[
      Department
    ]
  }
}
```

The `{sep}` instruction can also be used to create separation lists:

```
{with all(Student)} {[First Name]} {sep},{end}
```

Which yields the result: "Adam, Belinda, Charles, Diana"

For JSON data, the API requests can also use the special `array` keyword as follows (it automatically handles the square brackets and commas):

```
{
  "students": {
    arrayall(Student)
  }{
    "firstName": {
      [
        Firstname
      ]
    },
    "lastName": {
      [
        Lastname
      ]
    },
    "subjects": {
      array[
        Subjects
      ]
    }{
      [
        Name
      ]
    }{
      end
    }
  }{
    end
  }
}
```

Which yields the following result:

```

{
  "students": [
    {
      "firstName": "Alex",
      "lastName": "Zeo",
      "subjects": [
        "Accounting",
        "Economics"
      ]
    },
    {
      "firstName": "Belinda",
      "lastName": "Yang",
      "subjects": [
        "Linguistics",
        "Maths"
      ]
    }
  ]
}

```

The example above generates an array of student as objects. For each student it also follows the "subjects" relationship and creates an array of subject names as strings for that student.

Output encoding

When building XML / JSON templates using calculation, the system will automatically attempt to encode values as required; this is achieved by setting the expected result type to URL, XML or JSON respectively. When building URLs, the system will also attempt encode values as required.

Calculations will implicitly convert strings, and other values, to these encodings by applying the standard escaping rules for each format.

Additionally, for JSON strings and dates, the encoding will add enclosing double-quote marks. This is necessary so that JSON encoding can appropriately encode nulls.

For example:

- Before: `I have one" double quote`
- After: `"I have one\" double quote"`

Note the addition of the surrounding quote marks.

When dates, times, and date-times are converted (explicitly or implicitly) to URL, XML or JSON encodings, they will automatically assume an ISO8601 format:

- **Dates:** 2012-07-31
- **Times:** 23:30:00
- **Date-times:** 2012-07-31T23:30:00

In all the above cases, automatic encoding can be bypassed by using the explicit `donotencode` encoding. For example, `convert(donotencode, getdate())`

Escape sequences for braces

In the case of JSON, curly braces define both the macros, and the object syntax. Curly braces have been used as they are a common delimiter for documentation in how APIs describe URLs, and they are also used in Word for document generation macros.

The API callout will generally be able to decide the meaning of the curly brace from context, but it can be explicitly controlled using the following rules:

- If the first non-whitespace character after an opening curly brace is a double quote, or if the enclosed sequence contains a colon, then the text is assumed to be a JSON object (otherwise it is assumed to be a template macro)
- The syntax `${..}` can be used to explicitly enforce the template syntax.
- The syntax `${{` can be used to mark a literal '{' within plain text
- The syntax `}${}` can be used to mark a literal '}' within a macro string
- The syntax `$$` can be used to mark a literal '\$' in either context

The goal of these rules is that explicit escape sequences are seldom used but are available in case some obscure combination of text is required.

Responses

An API Callout makes a web request to some remote third-party service. In most cases the service will reply with some form of response, either to indicate the success/failure of the call, or to return some form of requested data (REST APIs typically return their results in either JSON or XML format).

API Callouts are accessed via a workflow activity and this activity makes response information available through output parameters.

Activity Output Parameters

API Callout activities return the following output parameters, which can then be used in calculations for other activities:

Parameter Name	Type	Description
Response	Dynamic type	A record that represents the root JSON or XML item that can be used to directly access properties and arrays from the parsed response. The platform uses the response template to work out what type of field should be made available in the response.

HTTP Status Code	Integer	The HTTP Response code, such as 200 for OK. See list of typical response codes.
------------------	---------	---

HTTP Response Body	String	The raw unprocessed text response (e.g. raw JSON or XML) from the server.
--------------------	--------	---

HTTP Request URL	String	The web address that was called. This can be useful when troubleshooting, to see how parameters were encoded into the URL.
------------------	--------	--

HTTP Request Body	String	The content that was sent as part of the web request. This can be useful when troubleshooting, to see how parameters were encoded into the request template.
-------------------	--------	--

Setting a Response Template

The system uses the `Message format` setting on the API Callout to determine what type of response to expect. Options are:

- JSON
- XML

When an API Callout endpoint is created, a “typical” expected response (the response template) must be provided.

The template provides the platform with an example of what a response will look like. The platform uses the template to discover what types of fields and relationships it should expose via the `Response` parameter.

For example, a response template may be:

```

{
  "fullName": "Whatever",
  "birthday": "2000-01-01T00:00:00",
  "shirtSize": 1,
  "address": {
    "line1": "whatever",
    "line2": "whatever",
    "suburb": "whatever"
  },
  "hobbies": [
    "a",
    "b"
  ],
  "pets": [
    {
      "name": "whatever",
      "age": 1
    }
  ]
}

```

From the above information, the platform will deduce the following:

- There is a string field called `fullName`
- There is a date-time field called `birthday`
- There is an integer field called `shirtSize`
- There is a lookup called `address`
 - The related data has string fields called `line1`, `line2` and `suburb`
- There is a relationship called `hobbies`
 - The related data has a string field called `Value`
- There is a relationship called `pets`
 - The related field has a string field called `name`, and an integer field called `age`

The general idea is that a response template can be filled in by copying and pasting the "example response" from the third-party service's API documentation. In practice, example documentation often contains non-standard notation that must be removed or adjusted to make the message valid. The sample response entered into the ReditNow response template must be valid JSON or XML and match the message format.

The actual data values specified in the template are used to determine the field types and are then replaced with the actual response data when the API itself is called.

Accessing Response Information

A workflow activity calculation can access response data via the `Response` output parameter. For example, if there is an API Callout activity called "Api Callout1", then response data for the above example template can be accessed using any of the following expressions

- `[API Callout1.Response].[fullName]`
- `[API Callout1.Response].[birthday]`

- `[API Callout1.Response].[shirtSize]`
- `[API Callout1.Response].[address]`
- `[API Callout1.Response].[address].[line1]`
- `[API Callout1.Response].[address].[line2]`
- `[API Callout1.Response].[address].[suburb]`
- `[API Callout1.Response].[hobbies]`
- `[API Callout1.Response].[pets]`

This information can be used in the same way that normal fields and relationships can in calculations. For example:

```
let r = [API Callout1.Response]
```

```
select r.[fullName] + (r.[shirtSize]*2) + count(r.[hobbies])
```

Note that, as with all calculations, the square brackets are optional if the field name only contains letters/numbers, and starts with a letter.

These dynamic types cannot be assigned to workflow variables.

Accessing response arrays using the For Each activity

The response data can be used inside **For Each** activities.

For example, a **For Each** activity could be created in an example workflow with its **List** input parameter set to:

`[API Callout1.Response].pets` and would then iterate over the items in the JSON response, assigning each in turn to the

`[For Each.Record]` output parameter. Activities within the **For Each** loop can then further access JSON properties on each individual entry. For example by using `[For Each.Record].[age]`.

If the array is an array of strings, numbers or some other simple data type, then the information is made available via a special 'Value' property. It can be accessed, for example, by using `[For Each.Record].[Value]`.

If the JSON template refers to an embedded object, or an array, such as this example does for `address`, `hobbies`, and `pets`, then the value acts like a record that has a dynamic type.

If it is a single embedded object (like `address` in this example), then it behaves like a lookup to a single related record. If it is an array, then it acts like a relationship to many related records.

Rules for Interpretation of Field Types

The platform uses the following rules when interpreting the response template to infer field types.

For JSON

- `true`, `false` (without quotes) → yes/no field
- numbers (without quotes) that do not contain decimal points → `Number` (integer) field
- numbers (without quotes) that do contain decimal points → `Decimal` field
- quoted strings where the example data contains a datetime → `DateTime` field (the date must be in one of the

following formats):

- `2014-12-31T00:00:00`
- `2014-12-31 00:00:00`
- `2014-12-31T00:00:00.123`
- `2014-12-31T00:00:00.123Z`
- quoted string where the example data contains a date only → `Date` field
 - The date must be in following format: 2014-07-31
- embedded objects using { curly braces } → treated as lookups
- embedded arrays using [square brackets] → treated as relationships
- embedded arrays of simple types:
 - If an embedded array contains only strings, then the related object will have a single string field called "Value".
 - If an embedded array contains only one other type of data, as per the rules above, then the related object will have a single field called "Value" of that type.
 - If an array contains a mixture of types, then the platform will attempt to find the most general type. (numbers and decimals mixed will result in array of decimals; most things mixed with strings will result in array of strings).
- Embedded arrays of objects:
- If the sample template has multiple example records, then their contents are effectively "unioned". Or, if there are conflicting types, then the most general type is selected
- Root level arrays
 - Return an object that contains a single relationship called values
 - e.g. for a root object array: `[{"myfield":1}, {"myfield":2}]`, you can access individual objects via the special 'Values' relationship.
 - e.g. For each: `[Values]`
 - Or sum individual items using `sum([Values].[myfield])`
 - e.g. for root scalar array: `[1,2,3,4]` can access the individual values via `[Values].[Value]`
 - e.g. `sum([Values].[Value])`
- `null` is generally ignored
 - If the example response template contains a `null`, then the user should change the example to show what type of data might be expected
 - A `null` in arrays will merge with other types in the array without affecting them
- A special `[JSON]` string field can be used on any dynamic JSON object to get its JSON representation as text

For XML

- XML attributes appear as fields
 - Same detection rules as for XML, namely:
 - true, false → yes/no field
 - Whole numbers → Number (integer) field
 - Decimal numbers → Decimal field
 - Same date and date-time formats as for JSON
- XML elements appear as relationships
- The text content of an element can be accessed via a [Text] string field.
 - E.g. [API Callout.Response].rootElement.childElement.text
- If an element appears once, then it behaves like a to-one lookup
- If an element appears more than once in the same parent, then it behaves like a to-many relationship. It may be convenient to use the <item/> shorthand notation to specify the second instance.
 - For example:
 In this instance, the books can be accessed via [API Callout.Response].books.book, then the titles accessed via [For Each.Record].title.text
- A special [XML] string field can be used on any dynamic XML element to get its XML representation as text

- XML attributes appear as fields
 - Same detection rules as for XML, namely:
 - true, false → yes/no field
 - Whole numbers → Number (integer) field
 - Decimal numbers → Decimal field
 - Same date and date-time formats as for JSON
- XML elements appear as relationships
- The text content of an element can be accessed via a [Text] string field.
 - E.g. [API Callout.Response].rootElement.childElement.text
- If an element appears once, then it behaves like a to-one lookup
- If an element appears more than once in the same parent, then it behaves like a to-many relationship. It may be convenient to use the <item/> shorthand notation to specify the second instance.
 - For example:
 In this instance, the books can be accessed via [API Callout.Response].books.book, then the titles accessed via [For Each.Record].title.text
- A special [XML] string field can be used on any dynamic XML element to get its XML representation as text

- XML attributes appear as fields
 - Same detection rules as for XML, namely:
 - true, false → yes/no field
 - Whole numbers → Number (integer) field
 - Decimal numbers → Decimal field
 - Same date and date-time formats as for JSON
- XML elements appear as relationships
- The text content of an element can be accessed via a [Text] string field.
 - E.g. [API Callout.Response].rootElement.childElement.text
- If an element appears once, then it behaves like a to-one lookup
- If an element appears more than once in the same parent, then it behaves like a to-many relationship. It may be convenient to use the <item/> shorthand notation to specify the second instance.
 - For example:

dads

In this instance, the books can be accessed via [API Callout.Response].books.book, then the titles accessed via [For Each.Record].title.text
- A special [XML] string field can be used on any dynamic XML element to get its XML representation as text

- XML attributes appear as fields
 - Same detection rules as for XML, namely:
 - true , false → yes / no field
 - Whole numbers → Number (integer) field
 - Decimal numbers → Decimal field
 - Same date and date-time formats as for JSON
- XML elements appear as relationships
- The text content of an element can be accessed via a [Text] string field.
 - E.g. [API Callout.Response].rootElement.childElement.text
- If an element appears once, then it behaves like a to-one lookup
- If an element appears more than once in the same parent, then it behaves like a to-many relationship. It may be convenient to use the <item/> shorthand notation to specify the second instance.
 - For example:

```
<?xml version="1.0" encoding="UTF-8"?>
<books>
  <book id="123">
    <title>Harry Potter</title>
  </book>
  <book />
  <!-- second element to indicate repetition -->
</books>
```

In this instance, the books can be accessed via [API Callout.Response].books.book , then the titles accessed via [For Each.Record].title.text

- A special `[XML]` string field can be used on any dynamic XML element to get its XML representation as text

API Callout in a Workflow

Last Modified on 18/04/2019 11:01 am AEST

API Callouts allow ReadNow workflows to call out to third-party web-based APIs in order to send or receive data. The third-party API must first be configured in the API administration section.

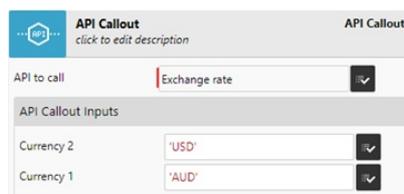
Once the API Callout record is set up, it can be readily reused in various workflows.

Designing the workflow

1. Create a new **Workflow**
2. Drop the **API Callout** activity onto the workflow design area
3. The **Exit** path will be followed if the report server returned an HTTP status code of **OK (200)**
4. The **Failure** path will be followed if the report server an HTTP status code indicating an error, if the service could not be reached, or if the API Call timed out
5. Provide logic for each of the "Exit" and "Failure" paths

Configuring the API Callout activity

1. Select the **API Callout** activity
2. In the properties pane on the right-hand side, select the desired **API Callout**
3. If the **API Callout** used any parameters in its **Request URL**, or its **Request template**, then those inputs will be shown
4. For each of the **API Callout** inputs, enter a calculation or select an input
5. Remember that the inputs are calculations, so you will need quote marks around any text
6. These parameter values will be evaluated, and the system will use the templates to formulate a request



Using standard output parameters

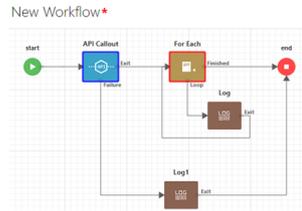
- The outputs of an API Callout activity can be used in the same manner as the outputs of other activities.
- For API Callouts that also include a Response Template, the properties that appear in the response template can be accessed as part of the calculation via the `[API Callout.Response]` output or similar (e.g. `[API Callout.Response].query.results.rate.Name + ' ' + [API Callout.Response].query.results.rate.rate`) where `query.results.rate.Name` corresponds to a path of property values in the response template.
- The failure path may be used to inspect information about the actual request and response. For example, `[API Callout.HTTP Response Body]`

Processing List Responses

Last Modified on 16/04/2019 6:36 pm AEST

Designing the workflow

1. Set up a workflow and include a **For Each** activity after the exit



2. Configure the **API Callout**
3. Configure the **For Each** activity
4. Set the List input to:

```
[API Callout.Response].query.results.channel.item.forecast
```

5. This will follow the JSON response as far as the forecast array, and then loop over each item

1. Configure the loop **Log** activity

2. Set the message to:

```
[For Each.Record].Date + ' ' + [For Each.Record].High + ' ' + [For Each.Record].Low
```

3. This will access the JSON results for each item in the array

1. Finish and run
2. Configure the failure log activity (see steps from previous section)
3. Save and run the workflow (see steps from previous section)

Scroll to the bottom of the log and you should see a list of forecast high/low temperatures for each day.

31/07/2017 5:34 PM	Log	02 Aug 2017 62 40
31/07/2017 5:34 PM	Log	03 Aug 2017 63 40
31/07/2017 5:34 PM	Log	04 Aug 2017 62 44
31/07/2017 5:34 PM	Log	05 Aug 2017 65 37

Authentication and Encryption

Last Modified on 15/03/2019 2:34 pm AEDT

Authentication

Although some third-party systems will allow public anonymous interaction most do not. Instead, most systems require that you establish some form of account. Then at the time the API is called, some form of authentication information is passed so that the third-party server knows that the API is being called on behalf of that account.

ReadiNow supports the following authentication models:

- None
 - No authentication information is passed
- OAuth 2.0
 - This is a widely used authentication standard.
 - The main benefit of OAuth is that permission can be delegated to ReadiNow without providing your third-party username and password to ReadiNow
 - However, it is also the most complex authentication system to configure
 - OAuth 2.0 can only be used with encrypted (HTTPS) requests
That is, unencrypted (HTTP) APIs are explicitly prohibited for OAuth 2.0.
 - ReadiNow stores the OAuth details encrypted (specifically, the client secret, the access token and the refresh token)
- Basic authentication
 - This is an old part of the HTTP standard, but still widely used
 - A username and password must be provided to the ReadiNow platform
 - These are stored, and sent with every call to the API
 - Basic authentication is not encrypted in transmission unless it is used in conjunction with HTTPS
 - If the account password is changed with the third-party provider, then the new password needs to be entered into ReadiNow (the password is stored in encrypted form)
- API Key authentication
 - This is a simple authentication technique that is widely used by third-party services
 - The third-party provider provides some piece of text called a key
 - This key is then passed as part of the URL for example:
 - ReadiNow API keys allow you to specify the parameter name (for example apikey) and the key value for the library, which it then includes for every API in the library
 - API keys are not encrypted in transmission unless used in conjunction with HTTPSReadiNow stores API keys encrypted in the database - but only if they are entered properly in the proper API Key password field (API keys that have been typed into the web address directly are not stored encrypted)
- Custom authentication
 - For more use in advanced scenarios (e.g. APIs whose authentication mechanism does not utilise one of the standards listed above).API callout library uses a specific API callout to perform an authentication

request and retrieve an access token

- The API callout library specifies expressions that can be used to extract an access token and/or error messages from an authentication response

Failure Responses

All APIs return an output called the "HTTP Response Status". This is the response code according to the list of HTTP response codes. If there is a problem during authorization, then the remote server will typically return a response status of `401`, which means `Unauthorized`.

The third-party server might also provide a message describing the reason for failure, which can be accessed via the "HTTP Response Body" string output.

Possible causes for authentication failure include:

- The wrong authentication method was used, or it was configured incorrectly
- The password may be incorrect
- The third-party account may have an invalid status, such as expired, or locked
- The account may not have permission to use the API
- Refer to the documentation and support of the third-party API service

Alternatively, the API may authorize successfully, which is to say it correctly identifies who the caller is, but that caller may be disallowed from performing the specific task that was requested. In that case, the server would typically respond with a `403` (`Forbidden`) response code.

Note that a poorly implemented third-party API may also give some other unpredictable result, such as returning a 200 OK message, or an internal error, when everything is not OK with authentication.

Encryption

Web requests may be made using HTTP or HTTPS addresses. For HTTPS requests, the communication between ReadNow and the third-party server will be encrypted (whereas HTTP is unencrypted).

ReadNow API Callouts will only communicate with HTTPS APIs if they have a valid publicly-recognised certificate.

Depending on the type of authorisation method, the ReadNow server needs to store confidential data. The following are stored encrypted in the database: password, API key, OAuth secrets / tokens, and custom authentication tokens.

Connecting to Azure APIs

Last Modified on 06/12/2019 7:25 pm AEDT

ReadiNow API Callouts can connect to Microsoft Azure APIs by using OAuth 2.0 authentication. This page describes how to set up an API Callout Endpoint to call the Microsoft Graph Service; and a workflow retrieve a list of uses.

Configure authentication

Azure offers two permission models:

- Application - where a software application such as ReadiNow connects to an API service on its own behalf
- Delegated - where a software application is connecting to an API service on behalf of a specific end user

Generally the application model is recommended and most suitable for use by ReadiNow API Callouts. However, certain APIs may only be made accessible via the delegated model.

Before proceeding, set up authentication and permissions by following the steps at either:

- [Configuring Azure with Application Permissions](#) (recommended)
- [Configuring Azure with Delegated Permissions](#)

Additional information can also be found in the Microsoft Azure reference at: [Configuring a client application to access web APIs](#)

Add an endpoint in ReadiNow that can query for all objects

The following example shows how to create an API Callout that will call the Active Directory users API to return a list of users.

1. Click on the **APIs** tab and click **New**
2. Name: Get AD Users (or some other suitable name)
3. Set the **Method** to **GET**
4. Set the **Query string** to `https://graph.microsoft.com/v1.0/users`
5. On the **Response Template** tab, enter: (note: the data values do not matter. The template just requires an example of the expected reply format.)

```
{
  "value": [
    {
      "id": "b6168b8e-d059-4a60-b4e3-f17f7eb746d8",
      "businessPhones": [],
      "displayName": "Sample",
      "givenName": "Sample",
      "jobTitle": "Sample",
      "mail": "sample@sample.com",
      "mobilePhone": "123123123",
      "officeLocation": null,
      "preferredLanguage": null,
      "surname": null,
      "userPrincipalName": "sample@sample.com"
    }
  ]
}
```

7. Save the API

Create a workflow to use the API

The following provides an example of how to create a workflow that will call the above API Callout, and display the results to a log message.

1. Go to **Workflows** and create a new workflow
2. Drop on the **API Callout** activity
3. Select the "Get AD Users" API, or whichever name was given to it previously
4. Drop a log activity after it
 1. Set the message to: **[API Callout.HTTP Response Body]**
5. Drop a For Each activity after it
 1. Set the List parameter to: **[API Callout.Response].[Value]**
 2. Connect the Finished exit to the end
6. Drop a log activity after the for loop exit
 1. Set its message parameter to be, for example: **[For Each.Record].displayName + ' ' + [For Each.Record].mail**
 2. The data can similarly be accessed from the For Each record to create new records.
7. Save and run the workflow
 1. Run with Show Trace turned on so that the log messages will be displayed

Azure Application Permissions

Last Modified on 06/12/2019 7:09 pm AEDT

ReadiNow API Callouts can connect to Microsoft Azure APIs by using OAuth 2.0 authentication.

Azure offers two permission models:

- Application - where a software application such as ReadiNow connects to an API service on its own behalf
- Delegated - where a software application is connecting to an API service on behalf of a specific end user

This page describes how to configure API Callouts to connect using the **Application** model, which is the recommended approach. However, certain APIs may only be made accessible via the delegated model. See [Azure Delegated Permissions](#) for details on configuring delegated permissions.

Additional information can also be found in the Microsoft Azure reference at: [Configuring a client application to access web APIs](#)

Overview

The following sample demonstrates how to:

- configure Azure to receive connections using the application permission model
- configure ReadiNow API Callouts to authenticate with Azure

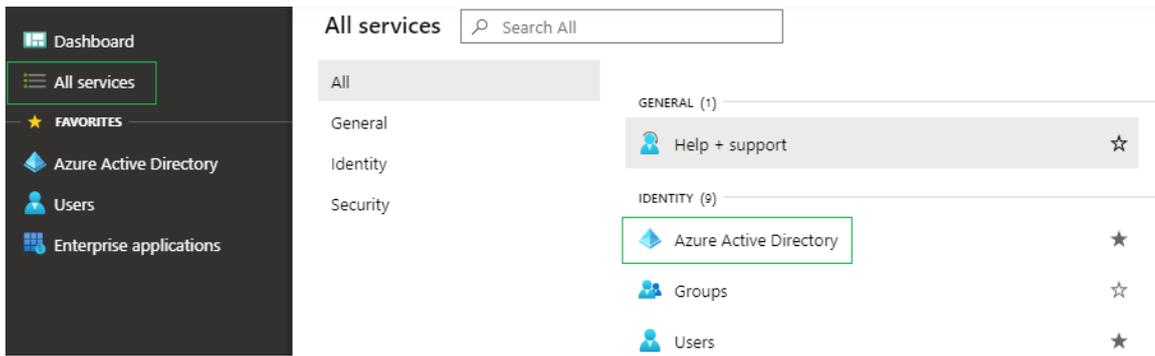
Once complete, refer to [Connecting to Azure APIs](#) to extend the sample to set up specific API endpoints and call them using a workflow.

Note: the following is provided as an example to illustrate connecting to the Azure APIs in general, and use the Azure 'users' API as an example. If you wish to achieve automatic provisioning, then use the single-sign-on provisioning mechanism.

Configure Azure

The following steps will configure Azure to receive a connection from the ReadiNow platform, and grant sufficient permission for the ReadiNow API Callout to request information about users.

1. Register an application
 1. Log into the [Azure portal](#)
 2. Select **Azure Active Directory** on left, or locate it under **All services**



3. Select **App Registrations**
4. Click the **New Application Registration** button
5. Enter a name for the application registration, such as "ReadiNow - Application Permission Sample"

Register an application

* Name

The user-facing display name for this application (this can be changed later).

[1. Select an application name](#)

ReadiNow - Application Permission Sample ✓

Supported account types

Who can use this application or access this API?

[2. Select the first, default, option](#)

- Accounts in this organizational directory only (ReadiNow - Single tenant)
- Accounts in any organizational directory (Any Azure AD directory - Multitenant)
- Accounts in any organizational directory (Any Azure AD directory - Multitenant) and personal Microsoft accounts (e.g. Skype, Xbox)

[Help me choose...](#)

Redirect URI (optional)

We'll return the authentication response to this URI after successfully authenticating the user. Providing this now is optional and it can be changed later, but a value is required for most authentication scenarios.

[3. Leave blank. This is not required when using 'Application Permissions'.](#)

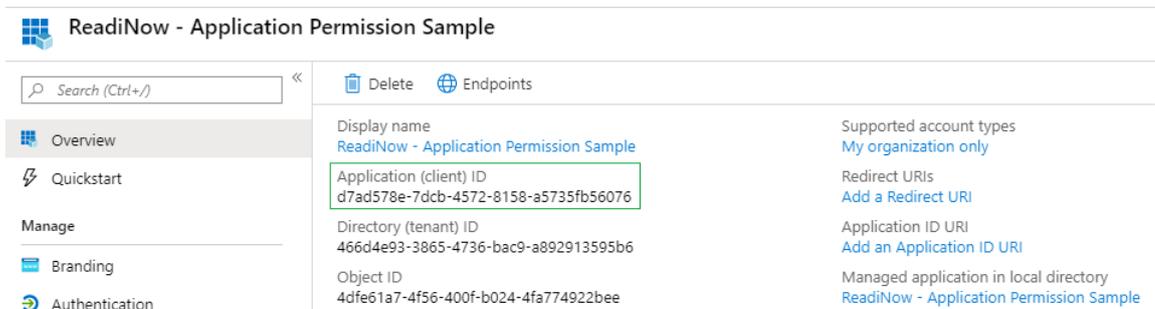
Web

e.g. <https://myapp.com/auth>

6. Leave **Supported account types** and **Redirect URI** as their default and blank options respectively.
7. Click the **Register** button at the bottom of the screen

2. Configure the application

1. An application information screen such as the following will be presented



2. Make a note of the **Application (client) ID** - you will need this in a later step

3. Configure a Client Secret

1. A *client secret* can be thought of as a password for an application, such as the ReadiNow platform, rather

than a person.

2. Click **Certificates & secrets** on the left hand margin
3. Click the **New Client secret** button
4. Select an expiry date and click the **Add** button
5. A new value will appear such as: LjVYHK9r0oCUCMutAN5QUU4vzgu@X= _: in the client secrets table

Client secrets

A secret string that the application uses to prove its identity when requesting a token. Also can be referred to as application password.

[+ New client secret](#)

Description	Expires	Value
Password uploaded on Fri Dec 06 2019	12/6/2020	LjVYHK9r0oCUCMutAN5QUU4vzgu@X= _:

6. Immediately copy it to a notepad document, or similar. This is the *OAuth client secret*. It cannot be recovered later.
4. Configure permissions that are needed to access the API
 1. Click on **API permissions** in the left margin
 2. Click the **Add a permission** button
 3. Click on the **Microsoft Graph** tile (or whichever API service you wish to access via ReadNow API Callouts)
 4. Select **Application permissions**
 5. Locate and enable the **User.Read.All** permission (or whichever permissions are required for the API you intend to call)

▼ **User (1)**

- User.Export.All
Export user's data ⓘ
- User.Invite.All
Invite guest users to the organization ⓘ
- User.Read.All
Read all users' full profiles ⓘ
- User.ReadWrite.All
Read and write all users' full profiles ⓘ

[Add permissions](#) [Discard](#)

6. Click the **Add permissions** button at the bottom of the panel
7. The new permission will appear in the permissions table
- 8.

[+ Add a permission](#) [Grant admin consent for ReadNow account](#)

API / Permissions name	Type	Description	Admin Consent Requir...	Status
▼ Microsoft Graph (2)				...
User.Read	Delegated	Sign in and read user profile	-	...
User.Read.All	Application	Read all users' full profiles	Yes	⚠ Not granted for ReadIN... ...

9. The new permission will have a status of not granted. It must be explicitly given consent because it is an

Application permission granted to a software system (namely the ReadNow API Callouts) rather than a delegated permission acting on behalf of a person.

10. Click the **Grant admin consent for account** button
11. A Microsoft login window will appear
12. Login, review the permissions granted, and click the **Accept** button

Configure ReadNow API Callouts

The following steps will start to prepare a new API Callout library in ReadNow to connect to Azure.

1. Log into ReadNow
2. Go to Administration / Integration / API Callouts
3. Create a new API Callout
4. Name it "Azure" or similar
5. Leave the **Base URL** blank
6. Set the message format to JSON
7. On the Authentication tab, set the **Authentication method** to **OAuth 2.0**
8. Ensure that the **Grant Type** is set to **Client Credentials** - this corresponds to the Azure 'Application permission' type

BASIC SETTINGS

Base URL :

Message format : JSON

Ignore certificate error :

APIs **API Categories** **Authentication** **Shared Headers** **Shared Inputs**

Authentication method : OAuth 2.0

Grant type : Client Credentials

Client Id : d7ad578e-7dcb-4572-8158-a573...

Client secret : *****

Token URL : https://login.microsoftonline.com/**yourdomain.com**/oauth2/token

Scope (optional) :

Additional params : resource:https://graph.microsoft.com/

9. Set the **Client ID** to the **Application (client) ID** value provided by Azure above
10. Set the **Client Secret** to the value provided by Azure above
11. Set the **Token URL** to: https://login.microsoftonline.com/yourdomain.com/oauth2/token (where yourdomain.com is your ActiveDirectory domain, such as company.com)
12. Set the **Additional params** to: resource:https://graph.microsoft.com/ This indicates to Azure which Azure API service the authentication token will be allowed to access.

Next Steps

Azure and ReadNow are now both configured so that ReadNow callouts can connect to Azure.

Continue with [Connecting to Azure APIs](#) to extend the sample to:

- create a API Callout endpoint to request user details
- create a workflow that uses the API Callout and processes results

Azure Delegated Permissions

Last Modified on 06/12/2019 7:07 pm AEDT

ReadiNow API Callouts can connect to Microsoft Azure APIs by using OAuth 2.0 authentication.

Azure offers two permission models:

- Application - where a software application such as ReadiNow connects to an API service on its own behalf
- Delegated - where a software application is connecting to an API service on behalf of a specific end user

This page describes how to configure API Callouts to connect using the **Delegated** model.

Note that ReadiNow API Callout requests are made on behalf of a fixed nominated account, not on behalf of the currently logged in users. As such they are not truly delegated, and it is generally more appropriate to use the **Application Permission** model. However, the delegated model is still supported to handle cases where the API being called only offers support for delegated permissions.

Additional information can also be found in the Microsoft Azure reference at: [Configuring a client application to access web APIs](#)

Overview

The following sample demonstrates how to:

- configure Azure to receive connections using the delegated permission model
- configure ReadiNow API Callouts to authenticate with Azure

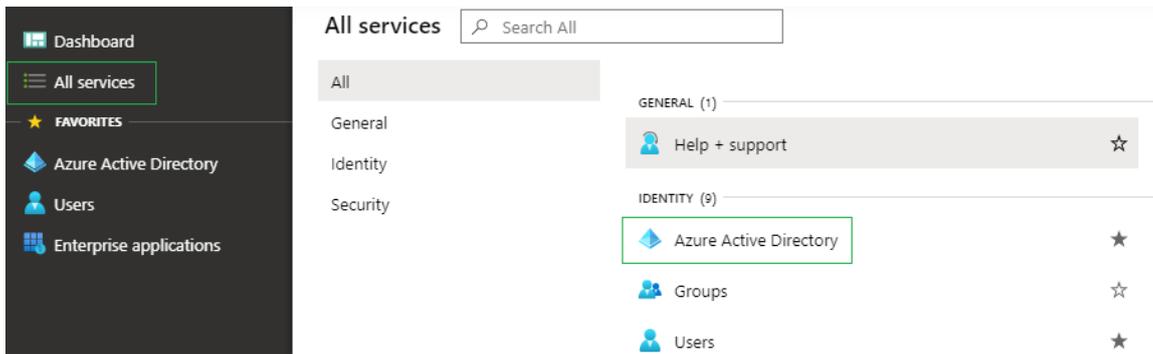
Once complete, refer to [Connecting to Azure APIs](#) to extend the sample to set up specific API endpoints and call them using a workflow.

Note: the following is provided as an example to illustrate connecting to the Azure APIs in general, and use the Azure 'users' API as an example. If you wish to achieve automatic provisioning, then use the single-sign-on provisioning mechanism.

Configure Azure

The following steps will configure Azure to receive a connection from the ReadiNow platform, and grant sufficient permission for the ReadiNow API Callout to request information about users.

1. Register an application
 1. Log into the [Azure portal](#)
 2. Select **Azure Active Directory** on left, or locate it under **All services**



3. Select **App Registrations**
4. Click the **New Application Registration** button
5. Enter a name for the application registration, such as "ReadiNow - Delegated Permission Sample"

Register an application

*** Name**

The user-facing display name for this application (this can be changed later).

Supported account types

Who can use this application or access this API?

- Accounts in this organizational directory only (ReadiNow - Readisoft account only - Single tenant)
- Accounts in any organizational directory (Any Azure AD directory - Multitenant)
- Accounts in any organizational directory (Any Azure AD directory - Multitenant) and personal Microsoft accounts (e.g. Skype, Xbox)

[Help me choose...](#)

Platform configuration (Optional)

Depending on the platform or device this application is targeting, additional configuration may be required such as redirect URIs, specific authentication settings, or fields specific to the platform.

- Client Application (Web, iOS, Android, Desktop+Devices)
- Background process and Automation (Daemon) Application
- Web API

6. Leave **Supported account types** as the default option and blank options respectively.
 7. Select **Client Application** for the Platform configuration - this corresponds to
 8. Click the **Register** button at the bottom of the screen
2. Configure the authorization
 1. You should automatically be redirected to the Authentication page (or select **Authentication** on the left)
 2. Click the **Add a platform** button (under the Platform configurations section)
 3. On the right, click the **Web** tile (Single page apps, Web apps)
 4. Enter a Redirect URL value of: <https://tenantname.readinow.com/sp/oauth.html> (where tenantname is your ReadiNow tenant name, or more generally use the same host name that you use to connect open ReadiNow in a web browser)

Redirect URIs

The URIs that we will accept as destinations when returning authentication responses (tokens) after successfully authenticating users. Also referred to as reply URLs. [Learn more about redirect URIs](#)

5. Click the **Configure** button at the bottom right
3. Configure the application
 1. An application information screen such as the following will be presented

ReadiNow - Delegated Application Sample

Search (Ctrl+/) Delete Endpoints

Overview

Quickstart

Manage

Branding

Authentication

Display name
ReadiNow - Delegated Application Sample

Application (client) ID
a02582eb-6570-4dcc-acaa-64c0ca127aeb

Directory (tenant) ID
466d4e93-3865-4736-bac9-a892913595b6

Object ID
624e6717-a53a-4afb-b77b-04b5aa8eff67

Supported account types
My organization only

Redirect URIs
Add a Redirect URI

Application ID URI
Add an Application ID URI

Managed application in local directory
ReadiNow - Delegated Application Sample

2. Make a note of the **Application (client) ID** - you will need this in a later step
4. Configure a Client Secret
 1. A *client secret* can be thought of as a password for an application, such as the ReadNow platform, rather than a person.
 2. Click **Certificates & secrets** on the left hand margin
 3. Click the **New Client secret** button
 4. Select an expiry date and click the **Add** button
 5. A new value will appear such as: LjVYHK9r0oCUCMutAN5QUU4vzgu@X= _: in the client secrets table

Client secrets

A secret string that the application uses to prove its identity when requesting a token. Also can be referred to as application password.

[+ New client secret](#)

Description	Expires	Value
Password uploaded on Fri Dec 06 2019	12/6/2020	LjVYHK9r0oCUCMutAN5QUU4vzgu@X= _:

6. Immediately copy it to a notepad document, or similar. This is the *OAuth client secret*. It cannot be recovered later.
5. Configure permissions that are needed to access the API
 1. Click on **API permissions** in the left margin
 2. Click the **Add a permission** button
 3. Click on the **Microsoft Graph** tile (or whichever API service you wish to access via ReadNow API Callouts)
 4. Select **Delegated permissions**
 5. Locate and enable the **User.Read.All** permission (or whichever permissions are required for the API you intend to call)

▼ **User (1)**

User.Export.All
Export user's data ⓘ

User.Invite.All
Invite guest users to the organization ⓘ

User.Read.All
Read all users' full profiles ⓘ

User.ReadWrite.All
Read and write all users' full profiles ⓘ

Add permissions Discard

6. Click the **Add permissions** button at the bottom of the panel
7. The new permission will appear in the permissions table
- 8.

+ Add a permission Grant admin consent for ReadNow account

API / Permissions name	Type	Description	Admin Consent Requir...	Status
▼ Microsoft Graph (2) ...				
User.Read	Delegated	Sign in and read user profile	-	...
User.Read.All	Application	Read all users' full profiles	Yes	⚠ Not granted for ReadNow... ...

9. Certain API permissions, such as User.Read.All, require explicit consent to be granted by an administrator.
10. Click the **Grant admin consent for account** button
11. A Microsoft login window will appear
12. Login, review the permissions granted, and click the **Accept** button
13. Keep the Azure window open for further configuration steps later

Configure ReadNow API Callouts

The following steps will start to prepare a new API Callout library in ReadNow to connect to Azure.

1. Create a new API Callout
 1. Log into ReadNow
 2. Go to Administration / Integration / API Callouts
 3. Click the **New** button to create a new API Callout
 4. Name it "Azure Delegated Sample"
 5. Leave the **Base URL** blank
 6. Set the message format to JSON
2. Configure authentication
 1. On the Authention tab, set the **Authentication method** to **OAuth 2.0**
 2. Ensure that the **Grant Type** is set to **Client Credentials** - this corresponds to the Azure 'Application permission' type

3. Set the **Client ID** to the **Application (client) ID** value provided by Azure in previous steps
 4. Set the **Client Secret** to the value provided by Azure in previous steps
 5. Set the **Token URL** to: `https://login.microsoftonline.com/yourdomain.com/oauth2/token` (where `yourdomain.com` is your ActiveDirectory domain, such as `company.com`)
 6. Set the **Authorization URL** to: `https://login.microsoftonline.com/yourdomain.com/oauth2/authorize` (where `yourdomain.com` is your ActiveDirectory domain, such as `company.com`)
 7. Set the **Additional params** to: `resource:https://graph.microsoft.com/` This indicates to Azure which Azure API service the authentication token will be allowed to access.
 8. Click the **Save** button - do not click the Update Access button yet
 9. Check that the **OAuth Redirect URL** shown is the same as was provided to Azure in previous steps
3. Perform the OAuth grant
 1. Click on the green **Grant access** button
 2. An Azure login page might pop-up (or more likely it will remember that you are already logged into the portal).
 3. Log in using the account that should be used for the purpose of making API calls (which is ideally not the same as your admin account).
 4. If you are not prompted for login details, and you need to use a different account, then log out of the Azure portal now and try again.
 5. You should then be presented with an Azure "Allow Access?" screen.
 6. Click **Accept**, at the bottom. Note: this might not appear either if you're re-granting.
 4. You should see a message saying that you are now authorized.

BASIC SETTINGS

Base URL :

Message format : JSON

Ignore certificate error :

APIs **API Categories** **Authentication** **Shared Headers** **Shared Inputs**

Authentication method : OAuth 2.0

Grant type : Authorization Code

Client Id : a02582eb-6570-4dcc-acaa-64c0...

Client secret :

Token URL : `https://login.microsoftonline.com/yourdomain.com/oauth2/token`

Authorization URL : `https://login.microsoftonline.com/yourdomain.com/oauth2/authorize`

Scope (optional) :

Additional params : `resource:https://graph.microsoft.com/`

OAuth Redirect URL: `https://tenantname.readinow.com/sp/oauth.html`

Grant status: Access granted - expires 6/12/2019 7:58 PM

Grant access:

 Update access for Azure Delegated Sample
 Revoke

Next Steps

Azure and REDINow are now both configured so that REDINow callouts can connect to Azure.

Read [Connecting to Azure APIs](#) to continue building the sample to:

- create a API Callout endpoint to request user details
- create a workflow that uses the API Callout and processes results

Connect a Workflow to an API

Last Modified on 26/03/2020 2:34 pm AEDT

This article demonstrates how to connect a Workflow to an API (*Application Programming Interface*). Key concepts include:

- Workflows (*like an automated flowchart*)
- API Callouts (*a web address used by programs*)

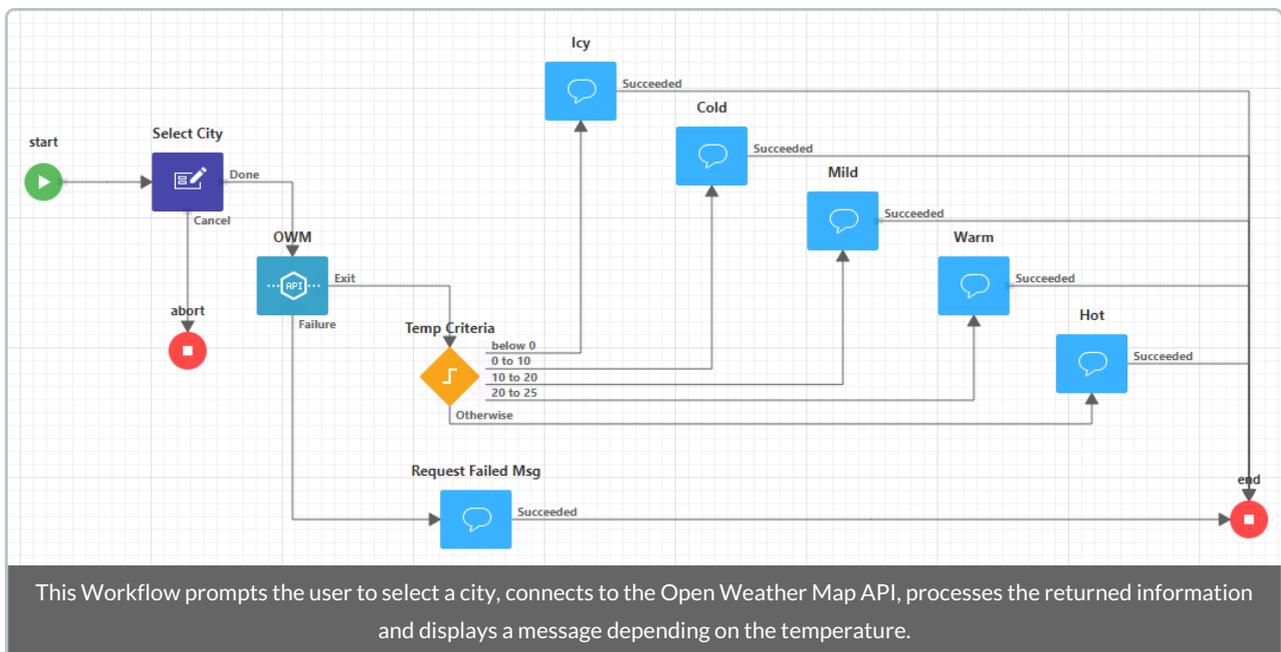
The example is based on the [Open Weather Maps' API](#), but is also generally applicable. You will need an [Open Weather Maps account](#) to practice this example yourself.

Overview

The Workflow will:

- prompt for a 'city of interest' where we want to: check the weather
- connect to a 'weather-API-endpoint' and wait for a 'response'
- process the response by Open Weather Maps' server
- display and log the weather information for our city of interest

The finished Workflow could look something like:



This Workflow connects to the Open Weather Map API via an 'API Callout Library'. Using a library means all the API information is located centrally and can be used by an Apps, which in turn can be used by other Apps (*this makes working with, and reusing APIs really easy*).

To achieve this we will:

1. Setup a new API Callout Library for the Open Weather Map 'current weather' API:

1. Create an 'API Callout Library' called "Open Weather Map"
2. Setup the API-key (*provided by Open Weather Map*) in the API Callout Library
3. Add an 'API endpoint' and 'sample response' to the API Callout Library

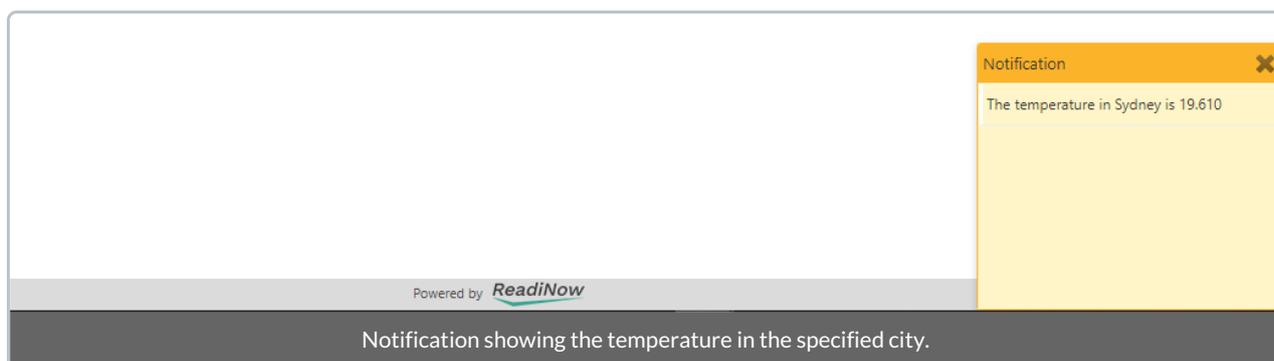
Advanced users see: [Configuring an API Callout](#)

2. Setup and configure a new Workflow to 'consume' the weather information:

1. Create a new Workflow
2. Connect the Workflow to the API Callout Library

3. Test the Workflow

1. Open the Workflow runner and click: Run
2. Enter the name of a city (*or use the default: Sydney*)
3. Click: Done



Open Weather Map API Example

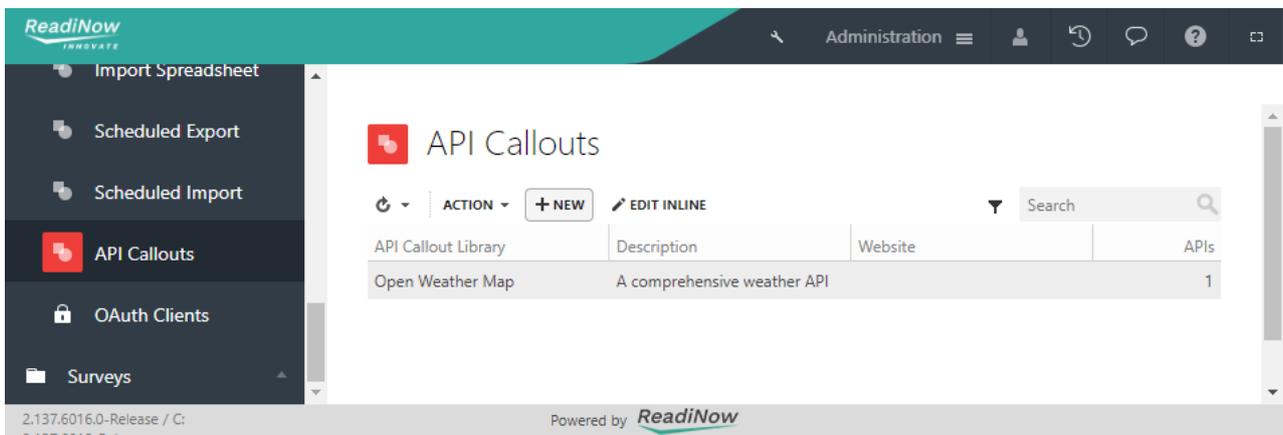
Last Modified on 23/08/2022 2:56 pm AEST

This article shows you how to setup a new API Callout Library and is based on the 'Open Weather Map' API. APIs solve the problem of how to connect an App to the internet - specifically 3rd party data source like: a weather forecast, sports-statistics, anything really.

The next sections outlines the basics of setting up an API (and provide links to more advanced information).

Create an 'API Callout Library' called "Open Weather Map"

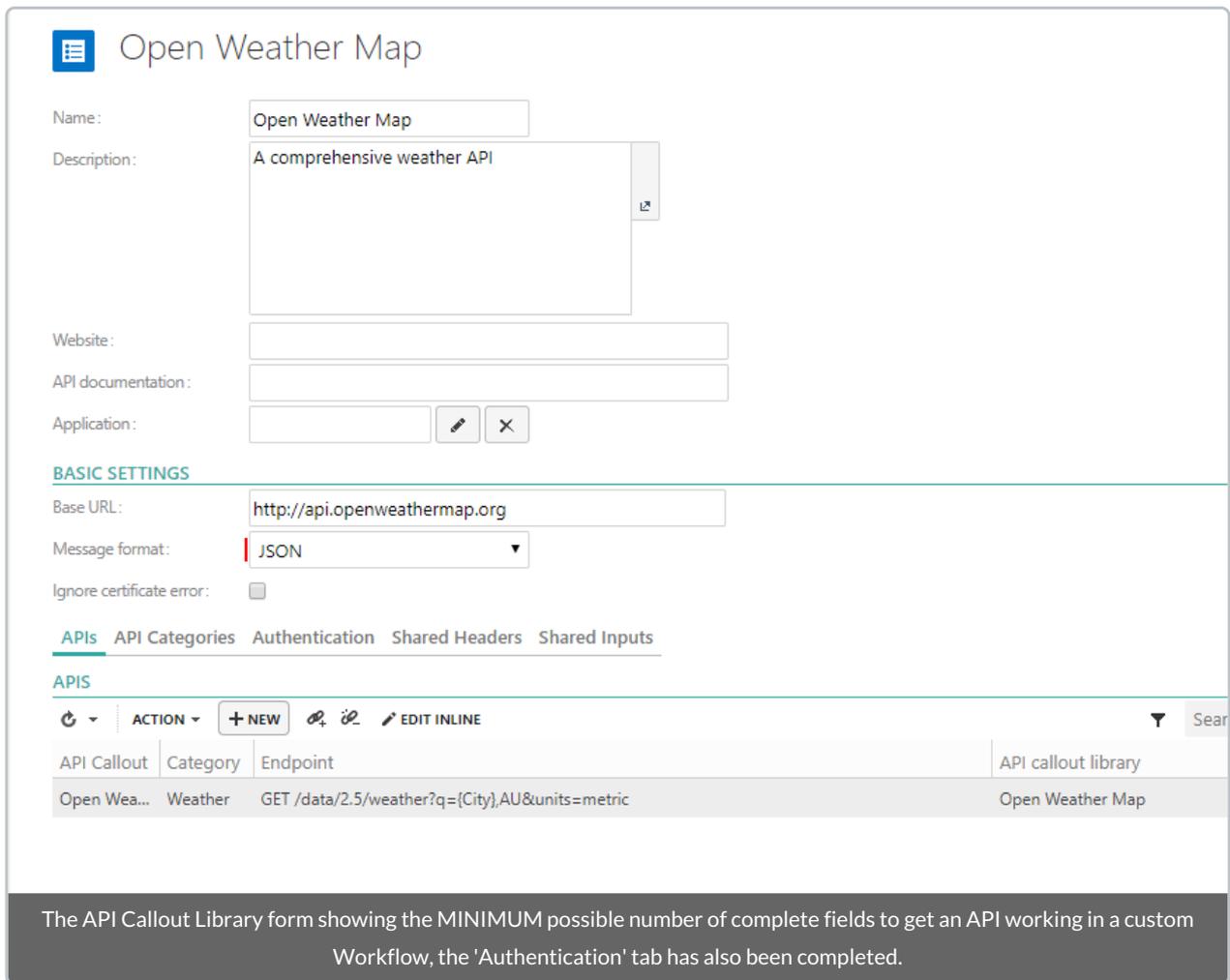
When this step is completed the API Callouts form will look something like:



To achieve this:

- navigate to the API Callouts Page:
Choose Application > Administration > Integration (left hand panel) > API Callouts
- Click on '+ New' (a blank Library form opens)

Once the minimum required information is completed, the completed 'Library Form' will look something like this:



The 'tabs' at the bottom section that we need to set up include: Authentication and APIs. These are covered in the remaining sections.

Learn about: [advanced API configuration](#).

Setup the API-key (*provided by Open Weather Map*) in the API Callout Library

Learn about: [other methods of authentication](#).

Before anything else we prefer to setup the API-key, this is how your Apps will Authenticate with the Open Weather Maps server.

In the image below, the 'parameter name' and 'API key' are provided by Open Weather Map; they also specify the authentication method.

The 'Authentication' tab is where you store your user credentials for the API, each of the API endpoints will use the same 'credentials'.

Add an 'API endpoint' and 'sample response' to the API Callout Library

Learn about: using APIs.

API endpoint

An API endpoint is basically a website for Apps. The base address was set as a general library setting and all other URLs are relative to the base address. There are two points worth mentioning:

You can pass arguments to your endpoints; an argument is denoted by curly braces. For example if the endpoint could check the weather in any city in the world then you would create an argument like: {city}

The open tab 'APIs' shows our API Callout; it is named "Open Weather Maps", categorized as "Weather", and ends at a specified endpoint (of type 'GET').

The 'APIs' tab showing all the API endpoints in the selected 'Callouts Library' (in this case there is only 1 API endpoint). API Callouts are added by clicking on the '+New' button.

API Callout	Category	Endpoint	API callout library
Open Wea...	Weather	GET /data/2.5/weather?q={City},AU&units={metric}	Open Weather Map

On the other hand, since our App is specially tweaked for 'Australian conditions' we do want

- to restrict the country code to "AU", and
- insist on using 'the metric system'

By the time the request is sent {city} will have a value, for example the user may have entered: "Nhulunbuy"; in that case, the API call looks like:

```
/data/2.5/weather?q=nhulunbuy,AU&units=metric
```

However, we don't always want to know the weather in Nhulunbuy so we can add a placeholder for the City Name {city}, this is shown below:

The API Callout form - open by double clicking on an existing API Callout OR create a new API Callout by pressing the '+New' button (on the parent form, not shown)

Configure Inputs

The inputs are created automatically when you use the curly braces { } when specifying the 'request url'. If they are not showing up press the refresh button.

The 'Inputs' tab allows you input arguments to be assigned to a specific API Callout endpoint, the inputs were created automatically when "{city}" was typed into the 'Relative URL' in the previous image.
 Note: Inputs ONLY apply to the selected API Callout - use 'Shared Inputs' for situations where Inputs apply to all APIs in the Callout Library.

Sample response

An API endpoint is basically a website for your App (except all the information is passed using a system of notation called JSON). In this example the 'Response template' is a JSON Object.

The sample response is literally *dummy-data*. What it does, however, is let you base decisions on the weather (or your own real-time analysis of your data) AND it helps with calculations.

Request **Response** Advanced Inputs

Response template:

```
{
  "coord": {
    "lon": 151.21,
    "lat": -33.87
  },
  "weather": [
    {
      "id": 801,
      "main": "Clouds",
      "description": "few clouds",
      "icon": "02d"
    }
  ],
  "base": "stations",
  "main": {
    "temp": 299.24,
    "feels_like": 297.87,
    "temp_min": 296.48,
    "temp_max": 301.48,
    "pressure": 1006,
    "humidity": 69
  },
  "visibility": 10000
}
```

The 'Response' tab showing the structure of the data returned by the API Call.

Record APIs - Getting Started

Last Modified on 17/01/2023 8:07 pm AEDT

ReadiNow allows you to integrate your tenant data with other systems. You can query and update data from outside the platform by exposing your data through Record APIs.

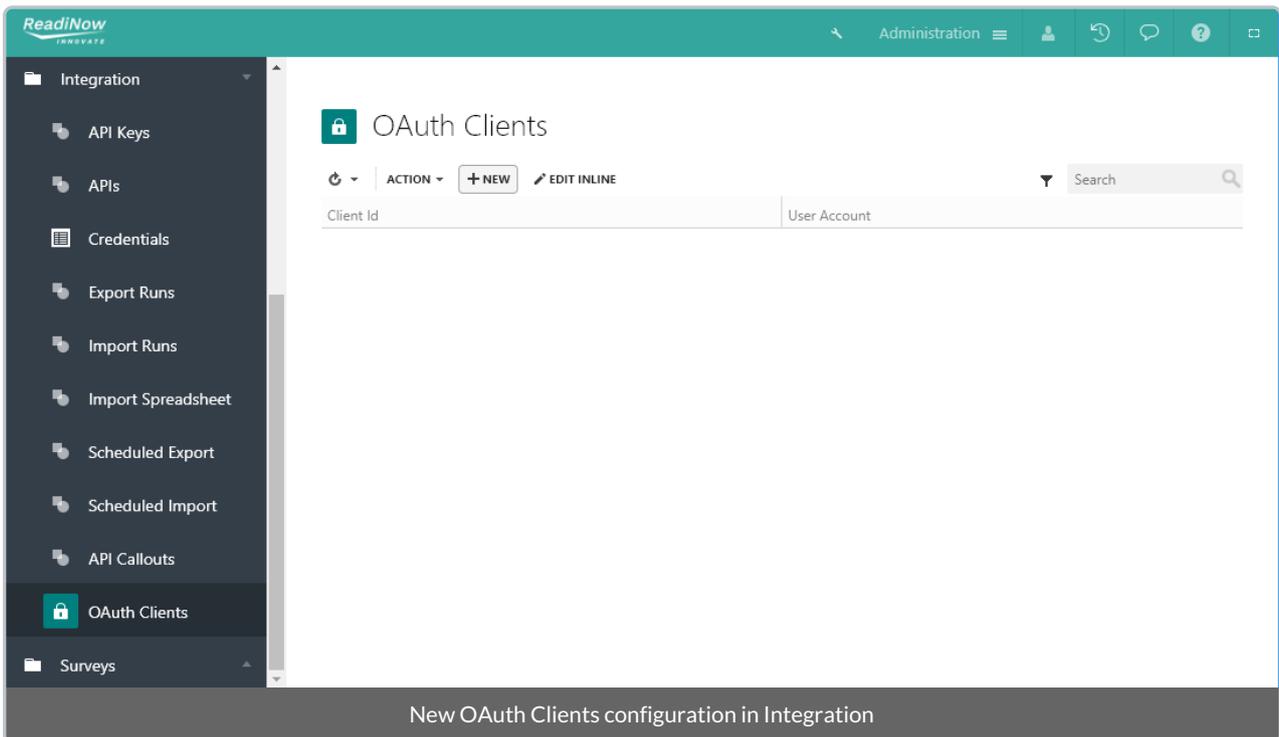
Authentication

The platform's APIs use OAuth 2.0 authentication with the [Client Credentials Grant Flow](#), which generates a token from a client identifier and a shared secret.

Client and Secret Configuration

To obtain an access token for the platform's APIs, it is necessary to create a Client Identifier and a Shared Secret. Each Client Id is linked to a user account, and access tokens issued against this client Id will cause API operations to be performed in the context of this user account. It is security best practice that a new account is created for each integration, as well as a new OAuth Client definition; in this way it is easy to identify the origin of requests and disable one integration without affecting others.

This configuration is done in **Administration > Integration > OAuth Clients**.



Step 1: Creating a new client

Select +NEW and the following dialogue appears, where the associated user account must be selected.

OAuth Client

Client Id :

User account :

SECRETS

Secret

Select the associated *User account* and save

Once the user account is selected, select **Save** and the *Client Id* will be automatically generated and populated on the form.

OAuth Client

Client Id : e0aff5ac-e729-44a8-86f4-2bd96f...

User account : Administrator

SECRETS

Secret

The automatically-generated *Client Id*

Step 2: Creating a new secret

After the *Client Id* has been created, select **+NEW** under **SECRETS**; in the dialogue that appears simply select **Save** and a secret will be automatically generated. Secrets do not expire.

OAuth Client Secret

Secret:

Save

Creating a new secret

OAuth Client

Client Id : e0aff5ac-e729-44a8-86f4-2bd96f...

User account : Administrator

SECRETS

ACTION + NEW [Icons] EDIT INLINE

Secret
+/LHsk2r7OdtcNPsVDBkyJ64N4valObOd+YxXqiR7v8=

An automatically-generated secret

Requesting an Access Token

The Client Id and Client Secret can be used to generate a token; this step will usually be done in the calling software, but for clarity a tool such as [Postman](#) can be used, as shown below.

A POST method call to the token service will respond with the access token and validity period if successful, and an error message if unsuccessful.

The *client_id*, *client_secret*, *scope* and *grant_type* must be sent in the body of the POST using the "x-www-form-urlencoded" content-type. The URL for the token service is <https://{domain}.readinow.com/sts/v1/{tenant}/connect/token> , replacing "domain" and "tenant" as appropriate.

You can select the application that an *Object* is attached to via its properties window in the form builder:

□

Publishing Record APIs

When you are satisfied that your API is stable (i.e. is not likely to change) then you can publish it. It will then become available for use at a well-known URL which will not change unless you re-publish the API. Any changes made to the *Preview* API (i.e. the API form) after the API has been *Published* will not be reflected in the *Published* API until you publish it again.

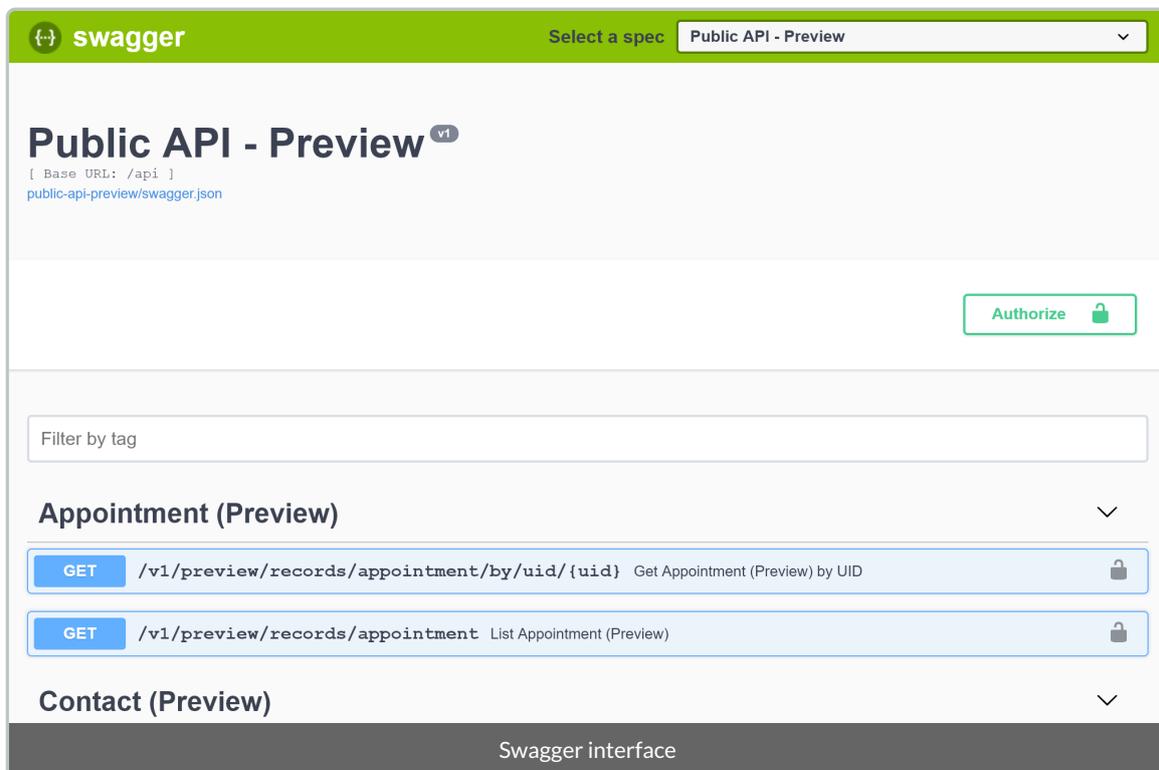
Each time APIs are published for a *Record Type*, its *Revision Number* is incremented (so its path changes from "records/my-record-type/r1" to "records/my-record-type/r2", etc).

Sandbox (Swagger) Interface

A sandbox (*Swagger UI*) is available for the platform's public APIs. This UI provides documentation for each API and its operations, as well as a facility for invoking those operations.

Open a web browser and navigate to <https://{domain}.readinow.com/api/swagger/{tenant}/index.html> replacing "domain" and "tenant" with the appropriate values.

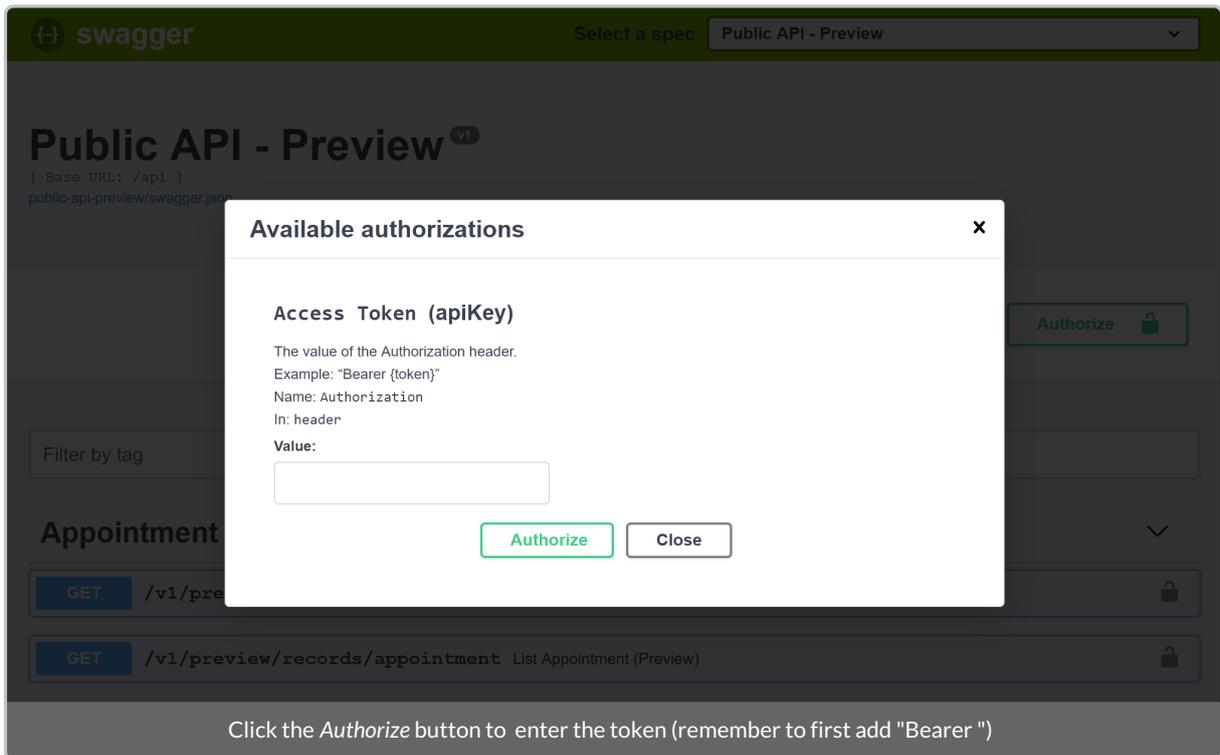
From the **Select a spec** drop-down, you can choose to view the documentation for either your *Preview* or your *Published* APIs.



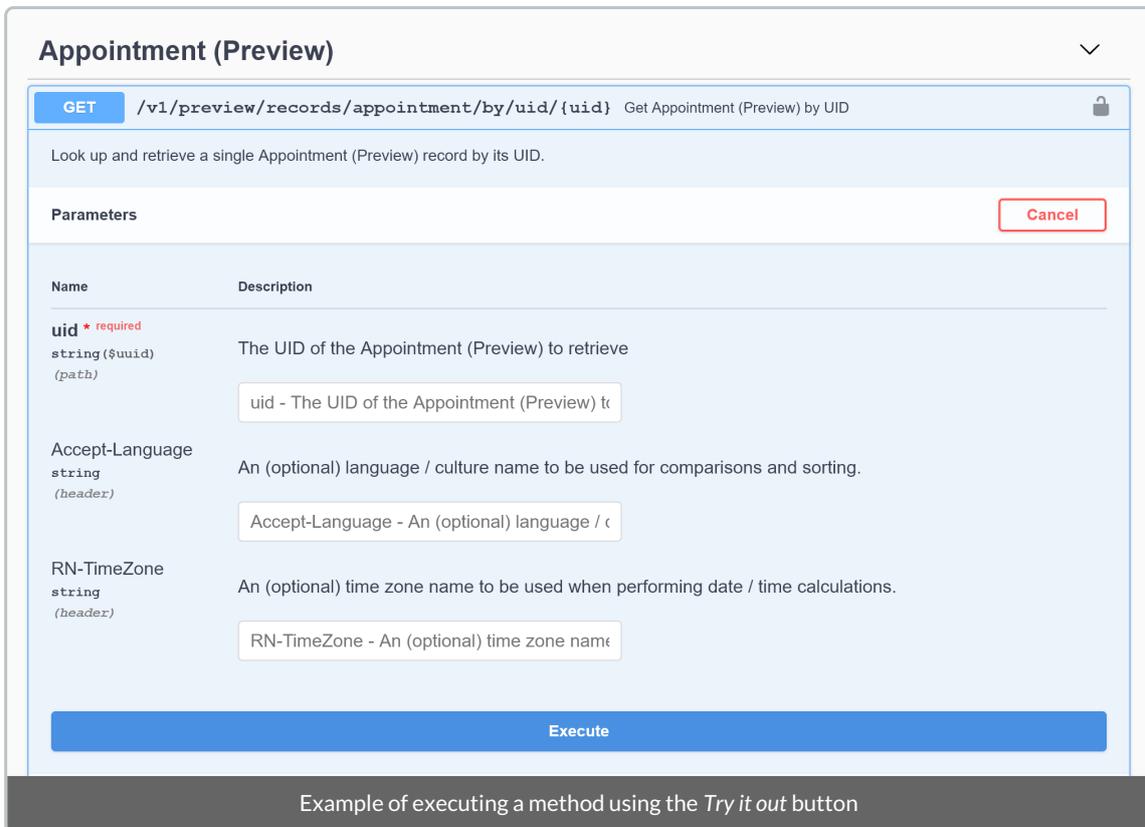
The screenshot shows the Swagger UI interface for a "Public API - Preview". At the top, there is a green header with the "swagger" logo and a "Select a spec" dropdown menu currently set to "Public API - Preview". Below the header, the main title "Public API - Preview" is displayed with a "v1" version indicator. Underneath, the base URL is shown as "/api" and the Swagger JSON file path is "public-api-preview/swagger.json". An "Authorize" button with a lock icon is visible on the right. A "Filter by tag" input field is located below the header. The interface lists two API endpoints under the "Appointment (Preview)" tag:

- GET** `/v1/preview/records/appointment/by/uid/{uid}` Get Appointment (Preview) by UID
- GET** `/v1/preview/records/appointment` List Appointment (Preview)

Below these, the "Contact (Preview)" tag is visible. At the bottom of the interface, the text "Swagger interface" is displayed.



With a valid token it is possible to execute any of the API methods directly in the Swagger interface; where parameters are required these can be entered in the Swagger interface.



Record APIs - Record Types

Last Modified on 23/04/2020 2:52 pm AEST

Record Types

Data for most types of *Object* in the platform can be exposed via Record APIs (subject to a couple of basic restrictions listed in [Getting Started](#)). Each *Object* will correspond to a *Record Type* in the Record APIs.

API Naming Conventions

The platform places few, if any, restrictions on the naming of objects, fields, and relationships. In order to reliably use these as part of APIs, however, some basic rules are used to create "safe" equivalents for these names.

It is the *Script Name* of an *Object*, *Field*, or *Relationship* that is used in APIs.

Names in Paths

When used as part of a path (i.e. URL), names are converted to "snake case" (e.g. "Hello, BeautifulWorld!" becomes "hello-beautiful-world").

1. Names are split into chunks wherever there is whitespace or an upper-case letter followed by a lower-case letter
2. Each chunk's letters are converted to lower-case
3. The chunks are joined together again using the "-" character

Names in JSON

When used as in JSON (e.g. to represent the value of a field or relationship), names are converted to "camel case" (e.g. "Hello, BeautifulWorld!" becomes "helloBeautifulWorld").

- Names are split into chunks wherever there is whitespace or an upper-case letter followed by a lower-case letter
- The first letter of each chunk (except the first one) is converted to upper-case
- The remaining letters of each chunk (including the first one) are converted to lower-case
- The chunks are then directly joined together

As a general rule, if you're not sure of the naming of a *Record Type*, *Field*, or *Relationship*, take a look at the [Swagger Sandbox](#) to see details of the expected request / response format(s).

API Forms

When Record APIs are enabled for an *Object*, an *API Form* is created. This is a special type of *Edit Form* whose controls describe the fields and relationships exposed via the *Object's* Record API.

In other words, the API Form defines the schema for its Object's Record APIs.

Note: fields and/or relationships that are marked as mandatory at the object level *must* be included on the API form, or you will not be able to create new records.

Preview APIs

Preview APIs are "live" reflections of the current system configuration. If you make changes to an Object's API Form, they are immediately reflected in the API.

The general URL pattern for Preview APIs is:

```
https://{domain}.readinow.com/api/v1/preview/records/{record-type-name}
```

Preview APIs are for use during the API-design phase, and are not supported for production usage.

Published APIs

Published APIs are a "snapshot" of the current system configuration. They are produced by publishing (or re-publishing) an existing preview API. If you make changes to an Object's API Form, they will not be reflected in the published API until you re-publish.

```
https://{domain}.readinow.com/api/v1/preview/records/{record-type-name}/{record-type-revision-number}
```

Record-type Revision Numbers

Each time a record type is published, its revision number is incremented. This means that publishing changes to a record type will change the URL (slightly) and clients will need to be updated to match. This behaviour is by design as modifying the API usually means clients will need to be updated anyway.

Record APIs - Reading Data

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The platform's Record APIs can be used to retrieve data in the form of individual records, or pages of multiple records.

Listing records

The platform can be used to retrieve a page of matching records of a specific type (a "Record Type").

The pattern for the URL used to list records of a specific (preview) record type is:

```
GET https://{mydomain}.readinow.com/api/v1/preview/records/{record-type-name}
```

The pattern for the URL used to list records of a specific (published) record type is:

```
GET https://{mydomain}.readinow.com/api/v1/records/{record-type-name}/r{record-type-revision}
```

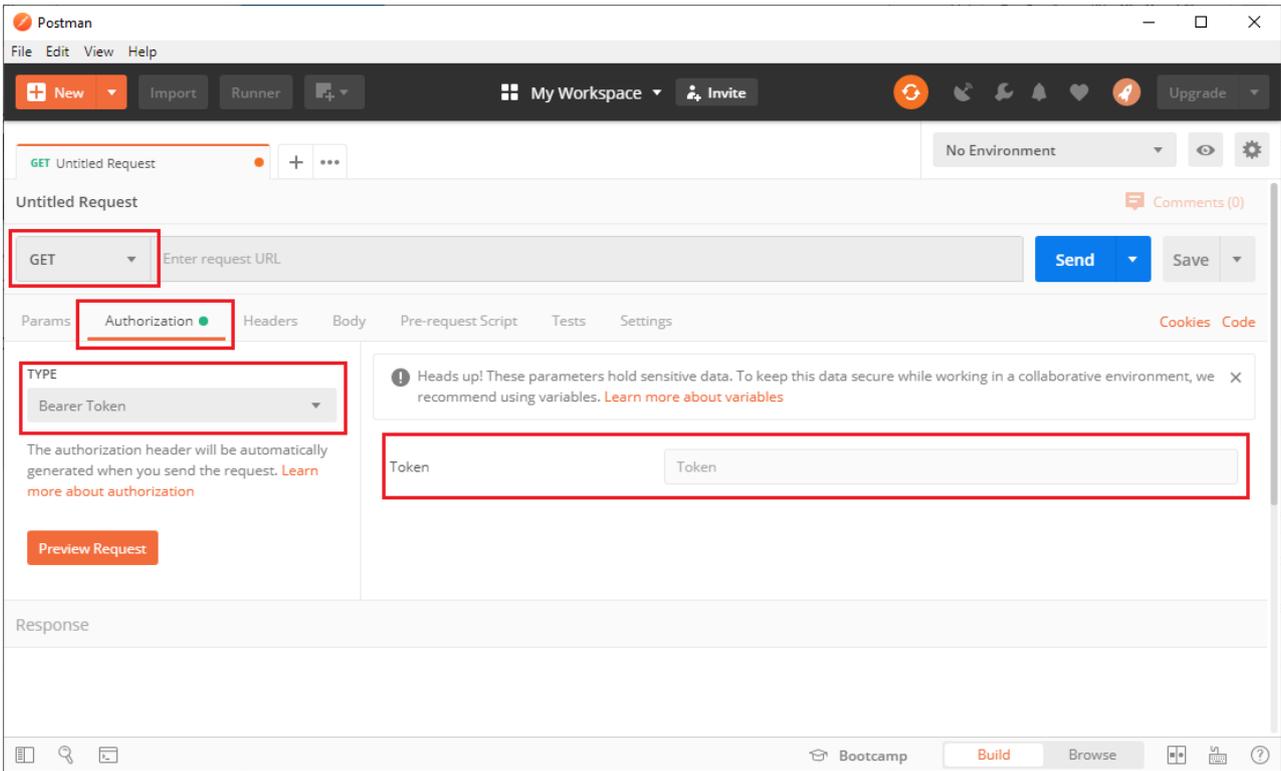
The following query parameters are supported:

Parameter	Description
\$filter	A Calculation expression used to filter the returned records
\$sort	A comma-separated list of field names used to sort the returned records
\$skip	The (0-based) index of the first record to return. If omitted, defaults to 0 (i.e. the first record).
\$take	The number of records to return. If omitted, the system default is used (usually 25).

Example

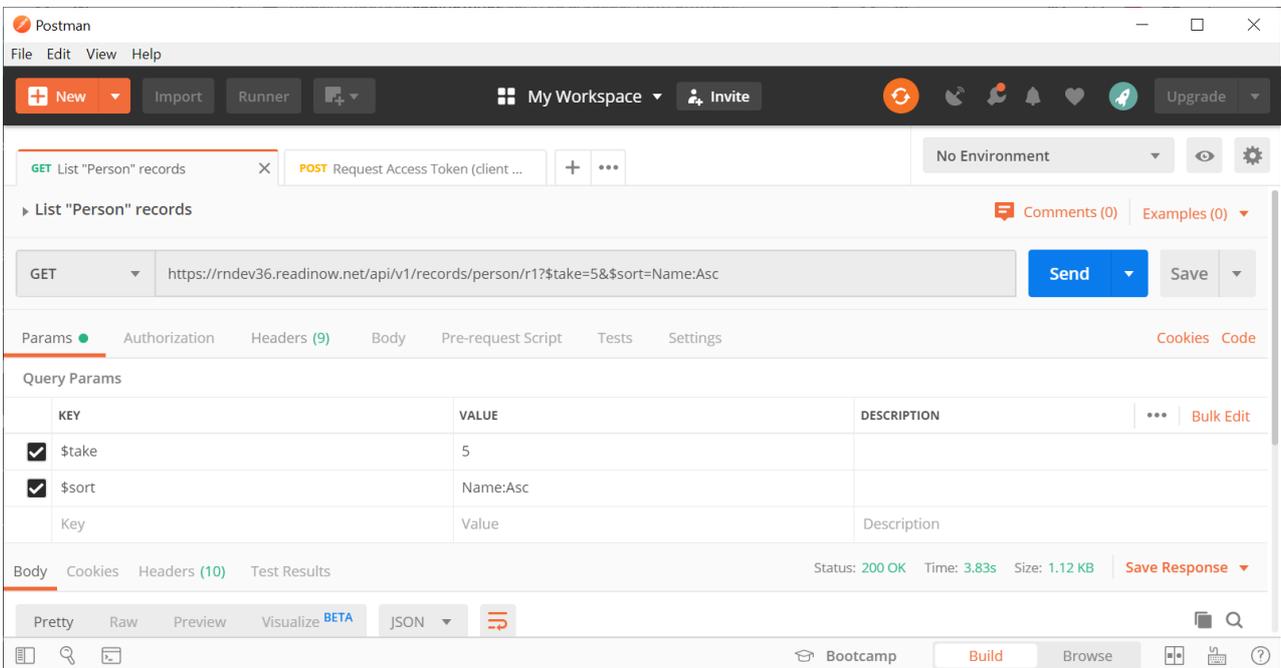
Using [Postman](#), a new request was created and GET was selected from the method drop down.

Selected the *Authorization* tab and for the Type drop down, *Bearer Token* was selected.



The value of the Response Payload attribute called “*access_token*” generated using the token service was pasted into the *Token* field (Refer to [Record APIs - Getting Started](#), under *Requesting an Access Token* for instructions on how to generate the Access Token).

The *Params* tab was selected and populated as shown in the screenshot below. This example lists all matching *Person* records.



In this case there are only 2 *Person* records that exist, which results in the following response:

```

{
  "status": "Success",
  "message": "2 record(s) returned.",
  "correlationCode": "Z564973-070925",
  "type": {
    "id": 16017,
    "name": "Person",
    "slug": "person",
    "application": {
      "name": "ReadiNow Core"
    },
    "revision": 1
  },
  "sort": [{
    "field": "Name",
    "direction": "Ascending"
  }],
  "count": 2,
  "first": 1,
  "last": 2,
  "data": [{
    "uid": "f70aa441-f9ba-470a-986b-26959e759cd6",
    "lid": 16318,
    "name": "Jack Admin",
    "firstName": "Jack",
    "lastName": "Admin"
  },
  {
    "uid": "38614861-6593-4044-bb33-b1876b4b343c",
    "lid": 27465,
    "name": "Shared Service Account",
    "firstName": "Shared",
    "lastName": "Service Account"
  }
  ]
}

```

Retrieving a specific record

The platform can be used to retrieve a specific record of a specific type (a "Record Type"). Each record has a unique identifier (UID) which is fixed for the lifetime of that record.

The pattern for the URL used to retrieve a specific record of a specific (preview) record type is:

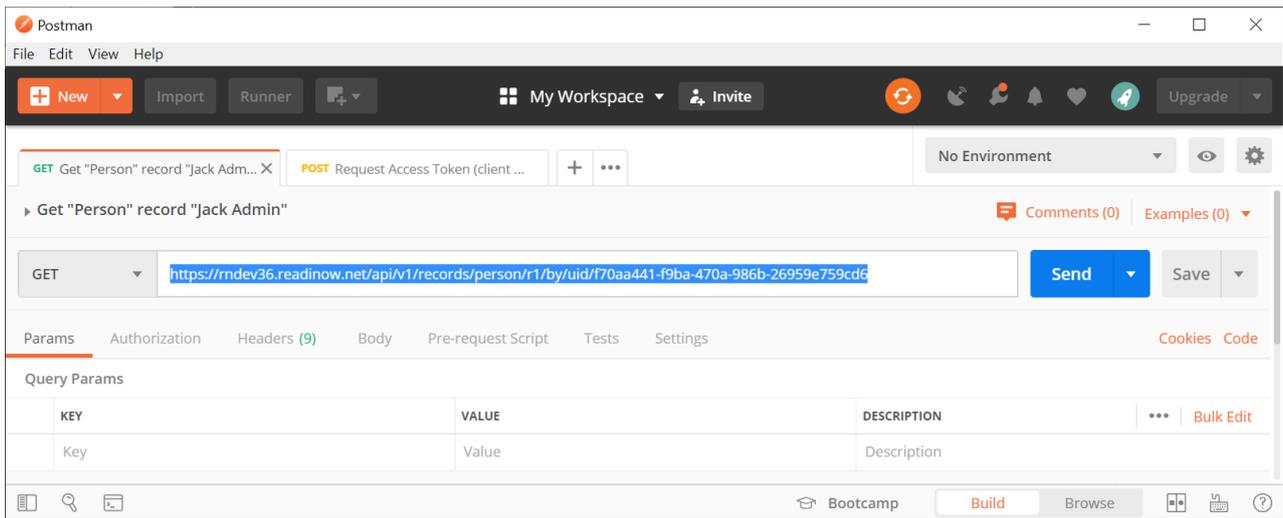
```
GET https://{mydomain}.readinow.com/api/v1/preview/records/{record-type-name}/by/uid/{record-uid}
```

The pattern for the URL used to retrieve a specific record of a specific (published) record type is:

```
GET https://{mydomain}.readinow.com/api/v1/records/{record-type-name}/r{record-type-revision}/by/uid/{record-uid}
```

Example

The following example uses [Postman](#) to retrieve the *Person* record with UID "f70aa441-f9ba-470a-986b-26959e759cd6".



Which returns the following response:

```
{
  "status": "Success",
  "correlationCode": "Z403181-071244",
  "type": {
    "id": 16017,
    "name": "Person",
    "slug": "person",
    "application": {
      "name": "ReadiNow Core"
    },
    "revision": 1
  },
  "data": {
    "uid": "f70aa441-f9ba-470a-986b-26959e759cd6",
    "lid": 16318,
    "name": "Jack Admin",
    "firstName": "Jack",
    "lastName": "Admin"
  }
}
```

Record APIs - Creating And Modifying Data

Last Modified on 23/04/2020 3:35 pm AEST

The platform's Record APIs can be used to create and modify data in the form of individual records.

Creating a new record

The platform's record APIs can be used to create a record of a specific type (a "Record Type").

The pattern for the URL used to create a new record of a specific (preview) record type is:

```
POST https://{mydomain}.readinow.com/api/v1/preview/records/{record-type-name}
```

The pattern for the URL used to create a new record of a specific (published) record type is:

```
POST https://{mydomain}.readinow.com/api/v1/records/{record-type-name}/r/{record-type-revision}
```

The request body must be JSON (Content-Type "application/json") in the following format:

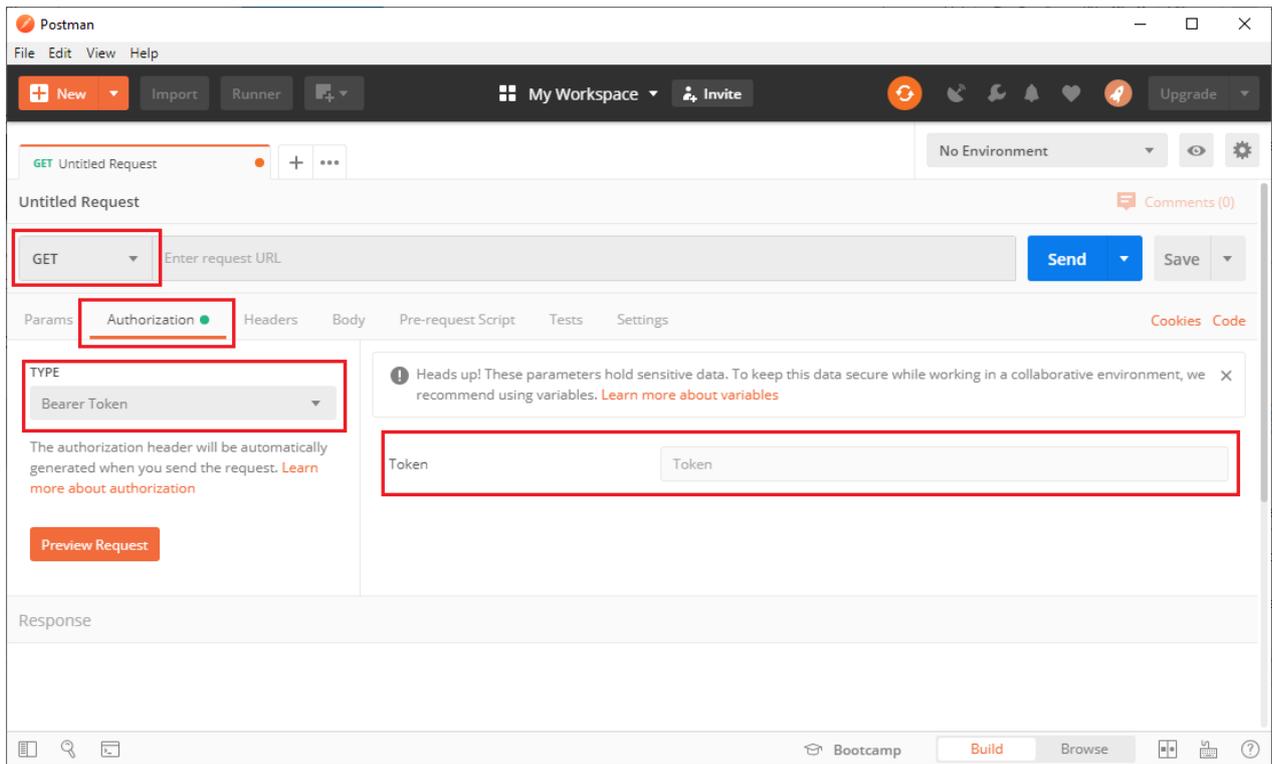
```
{
  "data": {
    "field1": "Hello",
    "field2": "World",
    "field3": 12345,
    "relationship1": [
      { "id": "f0c5b86d-d021-4c87-9213-1b9c1b5e3ed2" },
      { "id": "963afbe3-1376-429d-9e1c-6ae0af787747" }
    ]
  }
}
```

Note that the exact request body format for a given *Record Type* can be viewed in the Sandbox (Swagger) interface for that *Record Type*.

Example

Using Postman, a new request was created and GET was selected from the method drop down.

Selected the *Authorization* tab and for the Type drop down, *Bearer Token* was selected.



The value of the Response Payload attribute called “*access_token*” generated using the token service was pasted into the *Token* field (Refer to [Record APIs - Getting Started](#), under *Requesting an Access Token* for instructions on how to generate the Access Token).

The *Params* tab was selected and populated as shown in the screenshot below. This example is how to create a new *Person* record.

□

The *Person* record is created, which results in the following response:

```
{
  "status": "Success",
  "message": "Created new 'Person' (R1) record with UID '6bb04efa-dfc5-41cc-86cd-c32c6db818a3'.",
  "correlationCode": "Z067214-081002",
  "type": {
    "id": 16017,
    "name": "Person",
    "slug": "person",
    "application": {
      "name": "ReadiNow Core"
    }
  },
  "revision": 1
},
{
  "data": {
    "uid": "6bb04efa-dfc5-41cc-86cd-c32c6db818a3",
    "lid": 62120,
    "firstName": "Jill",
    "lastName": "Admin",
    "businessEmail": "jill.admin@admin.com",
    "primaryPhone": "Business",
    "primaryEmail": "Business"
  }
}
}
```

Updating an existing record

The platform can be used to modify an existing record of a specific type (a "Record Type"). Each record has a unique identifier (UID) which is fixed for the lifetime of that record.

The pattern for the URL used to modify an existing record of a specific (preview) record type is:

```
PATCH https://{mydomain}.readinow.com/api/v1/preview/records/{record-type-name}/by/uid/{record-uid}
```

The pattern for the URL used to modify an existing record of a specific (published) record type is:

```
PATCH https://{mydomain}.readinow.com/api/v1/records/{record-type-name}/r{record-type-revision}/by/uid/{record-uid}
```

The request body must be JSON (Content-Type "application/json") in the following format:

```
{
  "data": {
    "field1": "Hello",
    "field2": "World",
    "field3": 12345,
    "relationship1": [
      { "id": "f0c5b86d-d021-4c87-9213-1b9c1b5e3ed2" },
      { "id": "963afbe3-1376-429d-9e1c-6ae0af787747" }
    ]
  }
}
```

When updating a record, you only supply values for fields or relationships that you want to modify.

Note that the exact request body format for a given *Record Type* can be viewed in the Sandbox (Swagger) interface for that *Record Type*.

Example

The following example uses Postman to modify the *Person* record with UID "6bb04efa-dfc5-41cc-86cd-c32c6db818a3".

□

Which returns the following response:

```
{
  "status": "Success",
  "message": "Updated 'Person' (R1) record with UID '6bb04efa-dfc5-41cc-86cd-c32c6db818a3'.",
  "correlationCode": "Z829511-081026",
  "type": {
    "id": 16017,
    "name": "Person",
    "slug": "person",
    "application": {
      "name": "ReadiNow Core"
    },
    "revision": 1
  },
  "data": {
    "uid": "6bb04efa-dfc5-41cc-86cd-c32c6db818a3",
    "lid": 62120,
    "firstName": "Jillian",
    "lastName": "Administrator",
    "businessEmail": "jill.admin@admin.com",
    "primaryPhone": "Business",
    "primaryEmail": "Business"
  }
}
```

REST API for POST and PUT method calls

Last Modified on 16/04/2020 2:42 pm AEST

The REST API for POST and PUT feature will be deprecated.

Consider using the [Record APIs](#) feature instead.

Overview

ReadiNow allows third party systems to connect to ReadNow to Create, Update or Delete records of any object within ReadNow. This is achieved through configurable API endpoints where the Administrator specifies which object to expose to an API.

Definitions:

- **API:** An application programming interface. Within ReadNow this is a collection of endpoints that are grouped and secured together in order for third party systems to perform actions on records within ReadNow
- **API Endpoint:** An endpoint is a web address that the remote system can use to connect to our system. Each endpoint does either a create, update or delete of a particular record of a nominated object. These Endpoints can be created and configured by the ReadNow Administrator
- **API Key:** The authentication mechanism for calling endpoints in an API.

Process:

- Decide which object needs to be exposed to an API
- Create an API (see below)
- Configure the Endpoint which specifies the object and allowed actions (create, update, delete via API)
- Create API key (see below)
- Use the details generated to configure the third party system (or integration tool) to POST, PUT or DELETE (which corresponds to create, update and delete) action to ReadNow

Creating an API

To create an API:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Integration**. The Integration expands to display list.
4. Select **APIs**. The existing APIs display.
5. Select **+NEW**. The API form displays.

6. Type the Name in the **Name** field
7. Type the Address in the **Address** field, e.g. the name of application in one word. Please refer to step 4 of creating endpoint.
8. Select the checkbox for **Enabled**.
9. Select **Save** to save the details.

Creating an Endpoint for any object

To create an Endpoint for any object:

1. On the **Endpoints** tab of the newly created API, select **+NEW**. The menu appears.
2. Select **API Resource Endpoint**. The API Resource Endpoint form displays.
3. In the **Object** field, select the Pencil  icon and select from the list e.g. Student.
4. Type the Address in the **Address** field, e.g. the name of the object in one word.
(<https://yourseveraddress/spapi/api/yourtenant/yourapiaddress/yourendpoint>)
5. Select the checkbox for **Enabled**.
6. Select fields as required.
7. Select **Save** to save the details.

Creating an API Key

To create an API Key:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Integration**. The Integration expands to display list.
4. Select **API Keys**. The existing API Keys display.
5. Select **+NEW**. The API Key form displays.
6. In the **API Key** field, enter a guid. E.g. b9c91534-7cc1-4e09-b22f-2808072e333e, or generate one at <https://www.guidgenerator.com/>.
7. Select the checkbox for **Enabled**, if not ticked.
8. For **Run as user**, select a user account such as Administrator (The user account must have access control permission to do whatever you expect the API to do).
9. Under **APIs Granted** tab, link to the New API (or other API as required).
10. Select **Save** to save the details.

Using a tool that can simulate making web requests

To get a tool that can simulate making web requests:

1. Use a tool that can simulate making web requests e.g. the *Postman Plugin* for Chrome.
2. Alternatively, see getpostman.com , or just navigate in the Chrome app store.

Running a request to create a new data record

To run a request to create a new account:

1. Use Postman to issue a request like this: (see image below).
2. Use the 'POST' verb.
3. Use key that is generated (e.g.

```
https://yourserveraddress/spapi/api/yourtenant/yourapiaddress/yourendpoint?key=b9c91534-7cc1-4e09-b22f-2808072e333e).
```

4. Select the Body tab.
5. Select 'Raw'. The textbox appears.
6. Enter this (case sensitive) query:

```
{ "field1 of string type": "value of field1", "field2 of decimal type": 234.0 }
```

7. Set the type to JSON (application/json).
8. Select Send.

Notes

- A **201 Created** response appears.
- Navigate to your report of your object, a new data record with specified field values is created.

Response Codes

When an API call is made, the server will response with a HTTP response code as follows:

HTTP Response Codes

HTTP Response Code	Meaning
200/201 - OK	(200 or 201 as applicable). Everything worked.

HTTP Response
Code

Meaning

Something about the request received from the client was invalid.

400 - Bad Request

- There was something invalid about the request received from the client.
- I.e. not a server problem, configuration problem, or internal error.
- Body of a 400 reply should contain a message and an ID (in the E1xxx range). See error codes below.

Any of the following:

401 - Unauthorized

- An API key was not provided
- The API key was an invalid format
- The API key was not found in the specified tenant
- The specified tenant not exist (to be indistinguishable from the above)
- The API key is not attached to a user account
- The API key is attached to a user account that is disabled, locked, or expired
- There are multiple API key objects with the same key name (which is invalid)

Any of the following:

403 - Forbidden

- The API key does not have permission to access the requested API
- The API key is attached to a user account that does not have permission to perform the requested task

405 - Method not
allowed

Caller attempted to use a verb that was not supported or allowed or enabled by that endpoint.

HTTP Response Code	Meaning
--------------------	---------

Either of the following:

- | | |
|-------------------------|--|
| 500 - Server-side Error | <ul style="list-style-type: none"> • A platform server error - for example with IIS • A platform unhandled exception - includes a E0001 message. Raise a bug ticket if you see these. • A connector configuration error (such as a misconfigured API mapping) - <i>not a platform bug</i> |
|-------------------------|--|

Ideally all 500 errors will also include an Exxxx error number in their message. See table below.

Error Codes

In addition to the standard HTTP response codes, the body of the response message may contain an error code. Note that error codes do not form part of the HTTP standard.

Errors in the range E0xxx represent platform errors. Errors in the range E1xxx represent request errors. Errors in the range E2xxx represent tenant configuration errors.

Error Code	Message
E0001	Platform internal error.
E1001	Property "name" was formatted incorrectly.
E1002	No resource of the correct type matched the GUID 'guid'.
E1003	No resources were found that matched 'value'.
E1004	Multiple resources were found that matched 'value'.

Error Code	Message
------------	---------

E1005	Identifier list contained nulls.
-------	----------------------------------

E1006	Expected an array of identities for 'property'.
-------	---

E1007	Cardinality violation.
-------	------------------------

E1008	Field validation rules were not met.
-------	--------------------------------------

E1009	The message body was empty.
-------	-----------------------------

E1010	Mandatory property 'property' was not provided.
-------	---

E2001	Multiple API keys have the same value.
-------	--

E2002	Multiple APIs matching "name".
-------	--------------------------------

E2003	Multiple APIs endpoint matching "name".
-------	---

E2004	Endpoint has no resource mapping.
-------	-----------------------------------

E2005	Resource mapping has no resource type.
-------	--

E2006	Resource mapping identity field cannot be write-only.
-------	---

E2007	Resource mapping identity field was not set.
-------	--

Error Code	Message
E2008	Field mapping "name" did not point to a field.
E2009	Relationship mapping "name" did not point to a relationship.
E2010	Field mapping "name" did not have a mapped name.

REST API for GET method calls

Last Modified on 09/01/2020 10:06 am AEDT

Relationships

Last Modified on 14/07/2020 5:53 pm AEST

What is a Relationship?

Relationships allow records to be associated with each other.

Depending on context, the word relationship might refer to:

- a type of relationship
 - that defines a particular type of association between two objects
 - For example: there is an "Assigned tasks" relationship defined between the Person object and the Task object.
- an instance of a relationship
 - that represents a concrete association, of a particular relationship type, between two particular records
 - For example: 'Susan has been assigned the Q1 2020 Procurement Risk Assessment task'.

To-one and To-many relationships

Every relationship type has a *cardinality*, which simply describes whether each record can relate to one or multiple related records.

Relationships types that only allow a record to point to a single related record are referred to as a *lookup*.

The following relationship cardinalities are possible:

- one-to-many
- many-to-one
- many-to-many
- one-to-one

One-to-Many relationships

For a one-to-many relationship, each record on the first side of the relationship can be related to multiple records on the second side. However, in the other direction, this is an exclusive relationship, and the second record can only be related from one record.

For example: a "Building has Rooms" relationship would be one-to-many.

To define a one-to many relationship: add a relationship control to a form. Refer to [Relationship Control](#) for more details.

Many-to-One Relationships

Each record on the first side relates to a single record on the second side. For example: an "Employee is in a Department".

You will notice this is equivalent to a one-to-many relationship, but defined in the other direction. The platform does not distinguish between the two, so use whichever feels most natural in context.

To define a many-to-one relationship: add a lookup control to a form. Refer to [Lookup Control](#) for details.

Many-to-Many Relationships

Records can be associated with multiple records in either direction.

For example: "Employee is invited to Meeting".

To define a many-to-many relationship: add a relationship control to a form, then change the **Relationship Type** setting to relate to many records in both directions.

One-to-One Relationships

Each record, on either side, can only be associated to only a single record. The relationship is exclusive in both directions. For example, "Person has Payroll Details".

It is uncommon to require this type of relationship, but it can be useful to secure access to certain information, such as allowing Person records to be visible to certain users without also making Payroll Details accessible.

To define a one-to-one relationship: add a lookup control to a form and then change the **Relationship Type** settings to relate to one record in both directions.

Relationships are Bi-Directional

Relationships have meaning in both directions and can be used in both directions.

For example, consider a relationship between the Employee object and the Employee object that represents the employee-manager relationships.

- in one direction it may simply be called "Manager", and is considered as being a lookup. That is, each employee has (at most) one manager.
- in the other direction it may be called "Direct Reports", and in this direction is considered a to-many relationship.

Any association made between records in one direction is immediately present in the other direction as well.

When a new **Relationship** or **Lookup** is first added to a form, the control will initially only appear on that form. However, the relationship is now available to use in all application building features, such as forms, reports, workflows, and calculations, in both directions. That is to say, from either of the two objects that the relationship connects.

Relationship Names

Relationship types can be named in both directions. The relationship as a whole can also be named. Typically the name that is displayed is the name that is relevant to the direction that the relationship is being followed.

For example, consider a relationship between departments and their employees.

- When viewed from a Department object, it might be called "Employees"
- When viewed from an Employee, it might be called "Employee's department"
- The overall relationship might be named "Department - Employees"

When a relationship is created, a reverse name and overall name will be automatically selected based on the selected object.

Lookup Properties

Name : ← name, when accessed from the Employee object

Display Name :

Description :

Object: ✎ ✕

Debug: Click 'Esc' key to close debug info popup

▼ RELATIONSHIP TYPE

▼ OWNERSHIP

▼ SECURITY

▲ OPTIONS

Form Detail
Object Detail
Visibility
Format
Custom Form Validation

Default Value: ✎ ✕

Relationship Name : ← name of overall relationship without regard to direction

Script Name : ← name for use in calculations

Reverse Name : ← name when used in opposite direction

Hide in Reverse: this link will allow all relationship properties to be viewed as though
Show Properties in Reverse Direction ← they had been accessed from the opposite object.

Relationship can connect an object to itself

A relationship type can be defined so that both ends point to the same object. A relationship between Employee and Employee to represent the employee-manager relationship is a good example of this.

The direction that the relationship is being followed remains significant, and platform features such as the report builder and form builder will present both direction. It is important to always clearly name such relationships in both direction to avoid confusion.

Relationship can form hierarchies and be followed recursively

If a relationship type connects an object to itself (or to an inherited object), then, depending on its cardinality, the relationship effectively describes a network of records as follows:

- a many-to-one (or one-to-many) relationship describes a *hierarchy* or *tree* of records

- a many-to-many relationship describes a *directed graph* of records

The ReadNow platform has various application features for working with hierarchies and directed graphs, including:

- ability to define a hierarchy picker control
- ability to follow relationships recursively in calculations and report
- ability to filter to sub-trees in reports
- additional display options in reports
- security access control rules can be defined to take advantage of *hierarchy* and *directed graph* relationships

Relationships and Object Inheritance

Relationships are aware of object inheritance.

If a relationship type is defined between objects A and B, then that relationship type is also automatically available from any object that (directly or indirect) inherits from A or B.

For example, consider a relationship between an Asset object and a Location object. Any hypothetical object that inherits Asset, such as Computer, or Laptop, will automatically have this relationship. This means that:

- any Asset record, any Computer record, any Laptop record, etc, can be associated with a location
- any form, report, calculations, etc, that is based on any of Asset, Computer, or Laptop can all make use of this relationship

Relationship Ownership

Each relationship type has an *ownership* setting. This influences how various ReadNow features treat the relationship.

Relationship ownership, described below, can be set to one of:

- Full ownership
- Partial ownership
- No ownership

The exact options and phrasing shown in the relationship properties will vary depending on the cardinality of the relationship.

Caution: Full and partial ownership levels enable cascade deleting of records. Take care to ensure that configurations are correct and understood to avoid unintended record deletion.

Full Ownership Relationships

A full ownership relationship is also known as a component/subcomponent relationship. It means that the owned

child record is a part of its *parent* record.

For example, a "Recovery Plan" record may have individual "Recovery steps" record. The steps are logically a subcomponent of the plan.

A full ownership relationship behaves as follows:

- if the parent record is deleted, the child record will be deleted. This delete will also cascade to any subcomponents of the subcomponents and so on.
- if the parent record is cloned in a workflow, then a full (deep) clone is made of subcomponents.
- if the parent record is exported to XML, or included in an application, then child records are recursively included in full as well.

Partial Ownership Relationships

A partial ownership relationship is also known as a dependency relationship. It means that the child record depends on the parent record being present - but the child record isn't logically part of the parent record.

An "Employee has Performance Review" relationship might be an example of a partial ownership relationship. This would allow a workflow, for example, to create clones of Person records, without any linked performance reviews being copied to the new record. However, if the Person record gets deleted, then so does their Performance Review records.

A partial ownership relationship behaves as follows:

- a child record will be cascaded deleted when its parent is deleted.
- neither record is processed in full when the other is exported or cloned, however references may be, depending on the cardinality.

No Ownership Relationships

For a no ownership relationship:

- neither record is deleted when the other record is deleted
- neither record is processed in full when the other is exported or cloned, however references may be, depending on the cardinality.

Security Relationships

Relationships can be configured such that either:

1. If a user has permission to a record, then they can always see the name (only) of the related record
2. or, if a user has permission to a record, then they automatically have view permission for the related record
3. or, if a user has permission to a record, then they automatically have the same permissions for the related record

Relationship security can offer significant benefits (or disadvantages if configured incorrectly) for administration

convenience, and for system performance.

Refer to [Security Relationships](#) for details.

Resource Keys

Last Modified on 20/02/2020 1:00 pm AEDT

Overview

Resource Keys describe how to uniquely identify records. For example, a contact record could be uniquely identified by their email address. The Resource Key will be functional once its **Generating hashes** flag is "No". It may take a few minutes for the flag to turn from "Yes" to "No" if there are numerous records to process.

One or more properties of the record are selected when creating a resource key and ReadNow ensures that no two records have the same values for those records.

Configuring a resource key

Resource keys are applied to an Object. That is, a type of record. If a resource key is applied to an Object, then it will also automatically apply to any other Objects that inherit from that object.

To define a resource key:

1. Select **Administration** from the Application Menu. The menu appears with available applications.
2. Select **Resource Keys**, located under the **Resources** section. This will list all resource keys for all objects.
3. Select **+NEW**. The Resource Key form appears.
4. Type a name in the **Name** field.
5. Type a description in the **Description** field.
6. If the resource key should automatically merge records, then select the checkbox for **Merge duplicate**.
7. Type a message that should be shown if someone attempts to create a duplicate record (optional).
8. Select the Object that the resource key applies to.
9. On the **Resource Key Fields** tab, select **ACTION**. The menu appears.
10. Select **Link to existing**. The Select dialog appears.
11. Select the field you want to include in the resource key - ensuring that the field belongs to the correct object.
12. On the **Resource Key Relationships** tab, select **+NEW**. The Resource Key Relationship form displays. Note:
You can add a new relationship, choice field, or lookup to the resource key.
13. In the '**Resource key relationship**' field, select the relationship. Note: Make sure either the From Object or To Object refers to the current object.
14. Select 'Forward' from the dropdown if the relationship is being followed in the forward direction (e.g. if the From Object matches the current object).
15. Or select 'Reverse' from the dropdown if the relationship is being followed in the reverse direction (e.g. if the To Object matches the current object).
16. Select **Save** to save the resource keys.

To manage resource keys, navigate to Administration > Resources > Resource Keys

Create a new Resource Key and select the object that it applies to.

Enforcing Resource Keys

The platform enforces that each record is unique, and it can do this in one of two ways.

- The resource key can be configured to disallow two records with the same key. If a new record is created to have the same value as an existing record, then the new record cannot be saved. For example, in this mode, it would not be possible to create a new contact record if there is already another contact record with the same email address.
- The resource key can be configured to merge records with the same key. If a new record is created to have the same value as an existing record, then the details of the two records are merged together into a single key.

Resource keys that use multiple fields

A resource key may be set up to allow more than one field to be specified. If multiple fields are specified, then no two records can exist that have the same value for all of the fields. It is still allowable to create multiple records that have the same values for some fields, and not others.

For example, a resource key could be created on the First Name and Last Name fields. This would enforce that no two records have the same First Name and Last Name. Two records could exist that share the same first name, but have different last names. Similarly two records could share the same last name if they have different first names. However, the combination of the two must be unique. In practice this example is not recommended, as sometimes people have the same name.

Multiple resource keys

In addition to specifying multiple fields on a resource key, it is also possible to specify multiple resource keys. A second resource key might be desirable to enforce uniqueness on unrelated fields. For example, one resource key could ensure that First Name and Last Name are together unique, while a second resource key could ensure that every contact has a unique email address. In this way, no two records can share the same first/last name combination, nor can they share the same email address.

Resource Keys that include relationships

In addition to including fields, a resource key can also include one or more lookups or relationships. For example, consider a Plan record that relates to Plan Step records. Each Plan Step might have a step number field. We can enforce that the number of each step is unique within the plan, (but not unique across all steps) by creating a resource key that includes both the step number field and the lookup to the Plan. In this way, the step number field must be unique, but only within the plan.

Existing Data

If a resource key is set up for an object that has existing data, then that existing data is not automatically consolidated. However, anyone attempting to subsequently save those duplicate records will be prompted to resolve the problem.

Importing Data

Ensure that the **Generating hashes** flag is false before importing data. If data is being imported using a spreadsheet, then the spreadsheet import feature will match imported data to existing data by using resource keys. The import spreadsheet feature has an option to automatically merge records, even if the resource key is not set up to support merging.

Sensitive Data

Last Modified on 02/10/2024 4:15 pm AEST

What is sensitive data?

Many customers must ensure that confidential or sensitive data remains within their production tenant during operations such as tenant refreshes or exports. This is a critical compliance requirement, particularly when individuals working in Development or Test environments may not have the necessary permissions to access this sensitive information.

By default, any data marked as sensitive will be obfuscated (masked) during a tenant refresh.

What data can be marked as sensitive?

To achieve this goal, clients now have the ability to flag fields as sensitive at the object level. The following field types can be marked as sensitive:

- Text
- Multiline Text
- Rich Text
- Number
- Decimal
- Currency
- DateTime
- Date
- Time
- Yes/No

Additionally, special consideration has been given to the Person object. The following fields for Person are marked as sensitive by default:

- Name
- Address 1
- Address 2
- Address 3
- Business Email
- Business Phone
- Direct phone
- First Name
- Last Name
- Mobile phone
- Personal email

How can fields be flagged as sensitive?

The process involves modifying the fields on the object properties itself. This can be achieved by modifying a form based on the object; or by using the application toolbox. (Refer to <https://readinow.knowledgeowl.com/docs/creating-an-object> for more details on the application toolbox).

1. Open a form for the desired object in builder mode.
2. Navigate to the field to be configured.
3. Click the configuration icon.
4. In the properties dialog, expand Options and click Object Detail
5. Check the box labelled Sensitive
6. Click OK to close the properties dialog
7. Repeat the process to mark further fields as sensitive, if required.
8. Remember to save the form. This saves both the form and the object itself.

What happens to sensitive data during the obfuscation process?

The method of data obfuscation varies depending on the type of field. Below are the details for each field type:

- **Text, Multiline Text, and Rich Text Fields:** The existing data will be transformed into a hashed string using the SHA2_256 hashing algorithm. Please note that the length of the hashed string will differ from the original string. Any defined minimum and maximum values for these fields will be disregarded during this process.
- **Number, Decimal, and Currency Fields:** If a minimum value is specified for the field, the obfuscation process will set the new value to this minimum. If no minimum value is defined, the new value will default to 0.
- **Date and DateTime Fields:** For fields with a defined minimum value, the new value will be set to this minimum. If no minimum is specified, the date will default to January 1, 1753.
- **Time Field:** For a time field with a defined minimum value, the new value will be set to this minimum. If no minimum is specified, the time will be set to midnight.
- **Yes/No Fields:** The value will be replaced with a randomly generated Boolean.

Anything else I should know?

Marking a field as sensitive in a parent object will mark the field as sensitive for any child object, as expected with object inheritance. (More information on object inheritance can be found [here](#).)

Sensitive data will be obfuscated (masked) by default during any operations that involve copying or exporting data from a production tenant. This option can be disabled upon request. If you prefer that your data not be obfuscated during a tenant refresh, please ensure to include this request in your tenant refresh ticket.

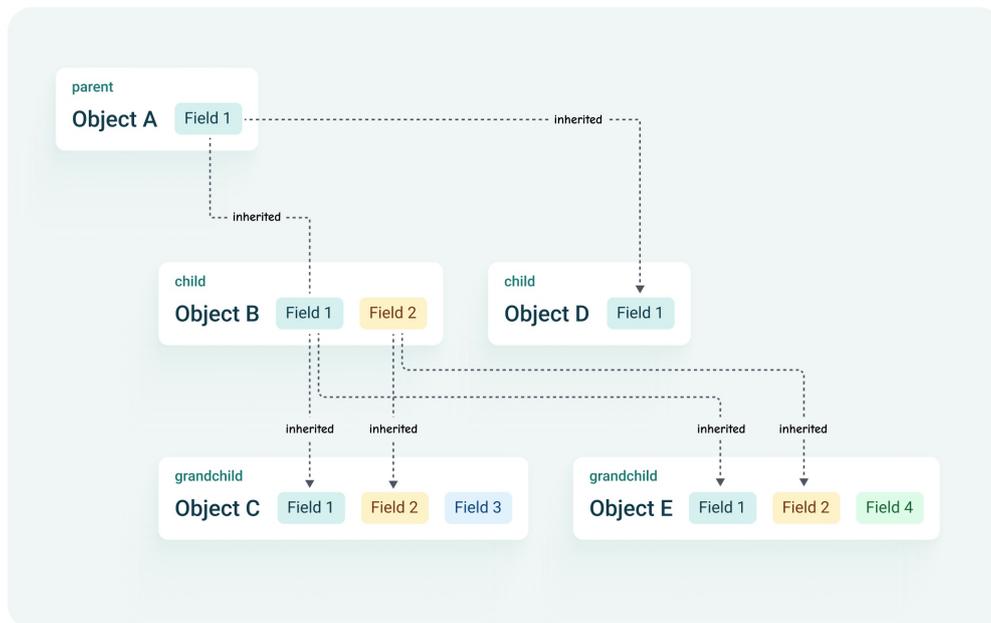
[link to article on tenant refresh]

Object Inheritance

Last Modified on 02/10/2024 4:15 pm AEST

What is object inheritance?

Object inheritance is a key feature of the ReadiNow platform that enables the creation of object hierarchies. This functionality allows a child object to inherit all the fields and relationships defined in its parent object, which is also known as a "derived type."



Key features of object inheritance

- **Field Inheritance:** A child object automatically inherits all fields and relationships from its parent object. This ensures consistency across related objects, as all child objects will have the same essential fields and relationships as defined in the parent.
- **Adding Unique Fields:** While a child object inherits fields from its parent, you can also add additional fields that are not present in the parent object. This allows for customization while maintaining the foundational structure.
- **Field and Relationship Properties:** Any properties applied to fields or relationships in the parent object are inherited by the child object. These inherited properties cannot be modified at the child level, ensuring uniformity.
- **Automatic Updates:** Changes made to the parent object, such as adding or removing fields and relationships, or marking the object as sensitive, will automatically replicate to all child objects. This feature simplifies maintenance and ensures that all related objects remain up-to-date.
- **Display Options:** Although inherited fields and relationships are part of the child object, they do not have to be displayed in forms and reports. This flexibility allows the app builder to highlight the information most relevant to the child object.

Text Field Properties

Field Name : Parent Mandatory

Display Name :

Description :

^ OPTIONS

Form Detail Form Behaviour **Object Detail** Format Custom Form Validation

Script Name : Parent Mandatory

Mandatory:

Inherited property cannot be changed on child object

How to create an inherited (child) object

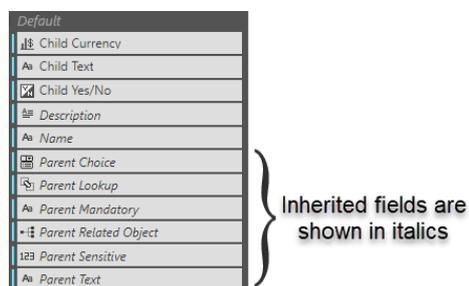
Note: Creating an object may incur additional license costs. For further details please contact your Readiness Account manager before creating a child object.

First, create your parent object. Once you are satisfied with your parent object, save the parent and move onto creating a child object:

1. Navigate to Administration > Resources > Objects.
2. Click the +New button and select Object.
3. Choose the required parent object for the "Extends from" field. More than one parent object can be selected if required.
4. Continue creating the object following your normal process.
5. Remember to save your new child object.

In the Report Builder, there are two ways to identify inherited fields in the left-hand navigation pane:

1. The names of inherited fields are displayed in italics.
2. An inherited field will not show a delete icon when you hover over it.



Anything else I should know?

It is not recommended to change inheritance after an object has been created, and this cannot be done through the UI. Reach out to Readiness Support to discuss your options should it become necessary to update inheritance.

Deleting a field that contains data will delete the data along with the field. Exercise caution when deleting fields from parent objects.

Conditional Format Icons

Last Modified on 15/03/2019 12:08 pm AEDT

Conditional format icons are used to apply conditional formatting for a column in Reports.

You can use the existing icons or upload a new icon.

Uploading a new conditional format icon

To upload a new conditional format icon:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Settings**. The Settings expand to display list.
4. Select **Conditional Format Icons**. The existing Conditional Format Icons display.
5. Select **+NEW**. The Conditional Format Icon form displays.
6. Type the name for the Conditional Format Icon in the **Name** field.
7. Type the description for the Conditional Format Icon in the **Description** field.
8. In the **Application** field, select the Pencil icon. The Select Application dialog appears.
9. Select the application you want and select **OK**.
10. Select **Upload** and upload an icon from your computer.
11. Select **Save** to save the form.

The Icon appears in the Conditional Format Icon report and can be used to apply conditional formatting for a column.

Add a Document Type

Last Modified on 08/12/2023 3:16 pm AEDT

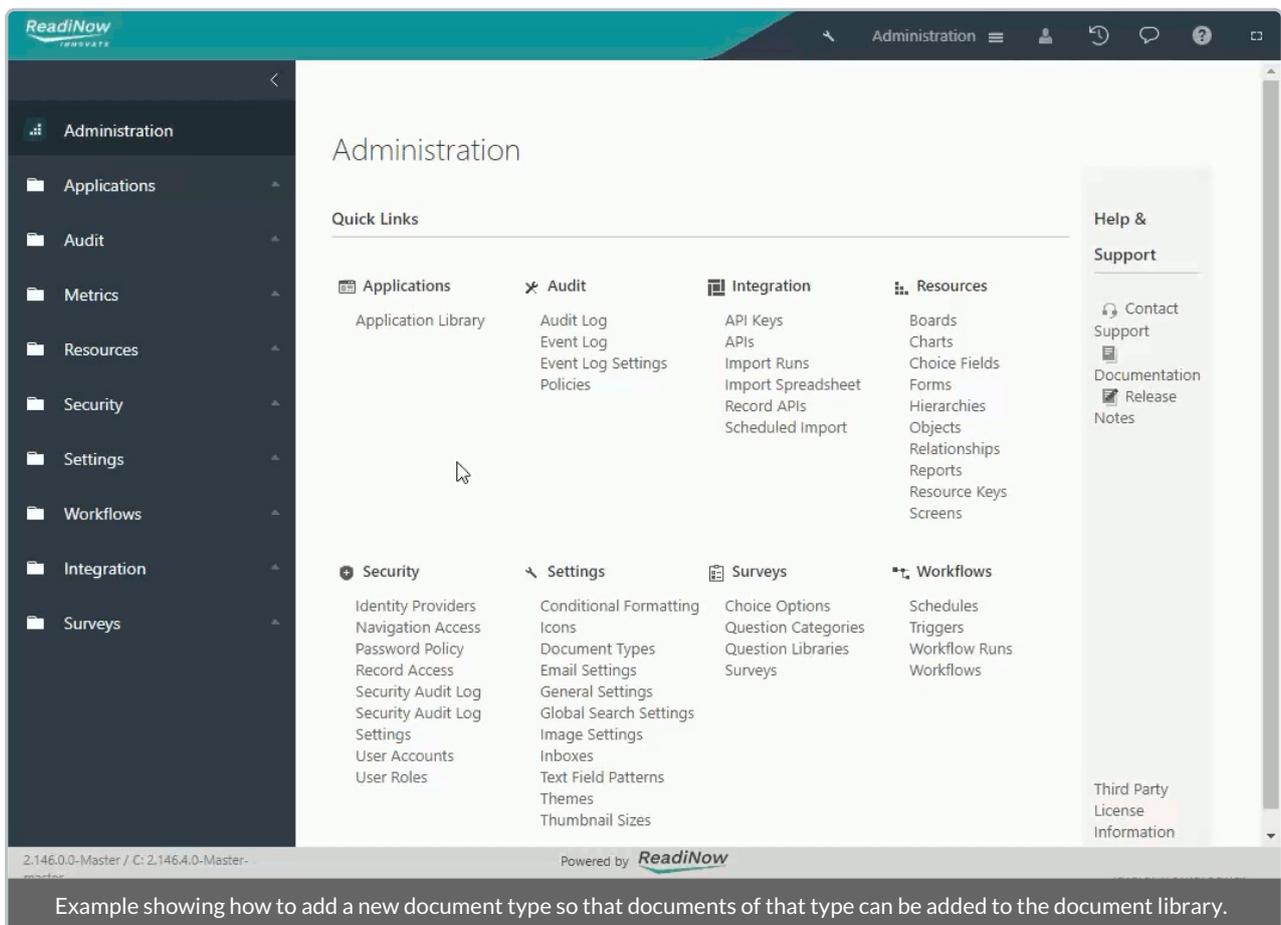
Any file type (e.g. images, text, e-mail attachment) can be treated as a 'document', and stored in the document library or attached to an object. However, for security reasons, the document types first have to be added to the document types list by an Administrator (the most frequently used file types come pre-configured out of the box).

Whenever needed, an Administrator can add a new document type to the document types list by specifying:

- valid file extensions for the document type
- a file type description
- the document MIME type

The process for adding a new document type (in this case an XML document) is shown below.

1. navigate to: Administration > Settings > Document Types
2. click the '+ New' button
3. enter file type details
4. optional add a document type image (document icon)



Detailed information about MIME Types is available at [MDN Webdocs](#).

Unsupported file types

Any files with the following extensions will be blocked from being uploaded.

application, .bat, .cmd, .com, .cpl, .exe, .gadget, .hta, .inf, .jar, .js, .jse, .lnk, .msc, .msh, .msh1, .msh1xml, .msh2, .msh2xml, .mshxml, .msi, .msp, .pif, .ps1, .ps1xml, .ps2, .ps2xml, .psc1, .psc2, .reg, .scf, .scr, .vb, .vbe, .vbs, .ws, .wsc, .wsf, .wsh

Email Server Settings

Last Modified on 16/04/2019 6:27 pm AEST

All outbound email is sent via SMTP. New tenants use Readinow's SMTP service by default. This allows the new tenant to be able to generate email (such as password reset) without further configuration.

ReadiNow's SMTP service is restricted to conservative limits. It is therefore recommended that the administrator change the configuration to use the corporate SMTP servers.

Viewing or Editing Email Server Settings

To view or edit Email Server Settings:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Settings**. The Settings expand to display list.
4. Select **Email Server Settings**. The existing Email Server Settings display.
5. Select **Edit** in top right corner.
6. Complete the fields, including:
 - o Server
 - o Port
 - o Use SSL - Select the checkbox if required, else leave it
 - o Account
 - o Password
 - o No-reply address
7. Select **Save** to save the settings.

Sent Email Messages

Emails are logged in Sent Email Messages tabbed report.

The screenshot shows the 'Email Server Settings' page. Under 'SMTP SERVER DETAILS', the following information is displayed:

- Server: mail.readinow.com
- Port: (blank)
- Use SSL:
- Account: (blank)
- Password:
- No-reply address: noreply@readinow.com

Below this is the 'SENT EMAIL MESSAGES' section, which contains a table with the following data:

To	From	Subject	Sent
rt_test@readinow.com	noreply@readinow.com	Sending Mail Test	19/12/2016 11:29 AM

A red box highlights the 'From' column of the table, with a red arrow pointing to it. The text inside the box reads: 'Email sent from Readinow software platform will be logged here'.

General Settings

Last Modified on 14/10/2024 4:47 pm AEDT

General Settings allow you to set general tenant wide settings

Viewing or Editing General Settings

To view or edit General Settings:

1. Open the tenant administration page [more](#)
2. In the Left Navigation Area, select **Settings**. The Settings expand to display list.
3. Select **General Settings**. The existing General Settings display.
4. Select **Edit** in top right corner.
5. Make the desired change (see settings below):
6. Select **Save** to save the settings.

General Settings

Setting	Description
Currency symbol	The currency symbol set here will reflect in all the places where currency is displayed within ReadNow
Tenant theme	The general theme for the entire tenant. See Themes
Financial year start month	Set the financial year start month which affects the "FY" Analyser conditions
Disable communication	Disabling communications effectively prevents the tenant from sending out any data. This includes: email, SMS; API Callouts: exporting of files to endpoints through FTP/SFTP.
Disable console session timeout	<p>When checked, the console session timeout will be disabled (i.e session timeout will not occur).</p> <p>Note: applies when logging on using standard ReadNow credentials or any external identity providers such as OpenID Connect or SAML.</p> <p>Note: session timeout is 60 mins.</p>

Setting	Description
Disable API Callouts	<p>Workflows are not permitted to call external APIs when Disable API Callouts is checked.</p> <p>However, if communications are disabled, API callouts will also be disabled, regardless of the setting of the Disable API Callouts checkbox</p>
Time zone	<p>Tenant time zone setting is used in situations where there is no time context given.</p> <p>For example, when a workflow is scheduled rather than being triggered manually certain workflow activities default back to the default time zone, unless a tenant time zone has been set.</p> <p>The following operations use the tenant time zone:</p> <ol style="list-style-type: none"> 1. Right-click actions 2. Calculations 3. Workflow: API Callout activity 4. Workflow: Export to activity 5. Workflow: Generate Document activity 6. Workflow: Get Records activity <p>Please contact support to verify the default time zone, when this setting is not selected.</p>

Image Settings

Last Modified on 15/03/2019 11:27 am AEDT

Image settings is used to set the maximum file size allowed to upload the image.

Viewing or Editing Image Settings

To view or edit image settings:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Settings**. The Settings expand to display list.
4. Select **Image Settings**. The existing Image Settings display.
5. Select **Edit** in top right corner.
6. Type the maximum file size you want in the **Maximum file size (MB)** field.
7. Select **Save** to save the settings.

Inboxes

Last Modified on 28/08/2019 3:45 pm AEST

Overview

Inboxes are email listeners, which can be used in workflows to process incoming emails.

ReadiNow creates and maintains a catch-all mailbox under *apps.readinow.com* that captures all emails sent to this domain. Hence all emails sent to *xxxxx@apps.readinow.com* (where *xxxx* is anything) will end up in this mailbox.

When an Inbox is created within a tenant in ReadiNow, it is given a random and unique Email Address (e.g. *[NAME]56743353@apps.readinow.com*). When ReadiNow sweeps the catch-all mailbox it uses this Email Address to match each email to a tenant's Inbox and routes it accordingly.

In order for end users to be able to send emails to a tenant's inbox, the customer creates an inbox on their own Email server (e.g. *support@organisation.com*) and creates a forwarding rule that routes any email from this inbox to the corresponding ReadiNow tenant's Inbox address (e.g. *[NAME]56743353@apps.readinow.com*). In this way any email sent to *support@organisation.com* would end up in the tenant's inbox in the ReadiNow.

Creating an Inbox

To create an Inbox:

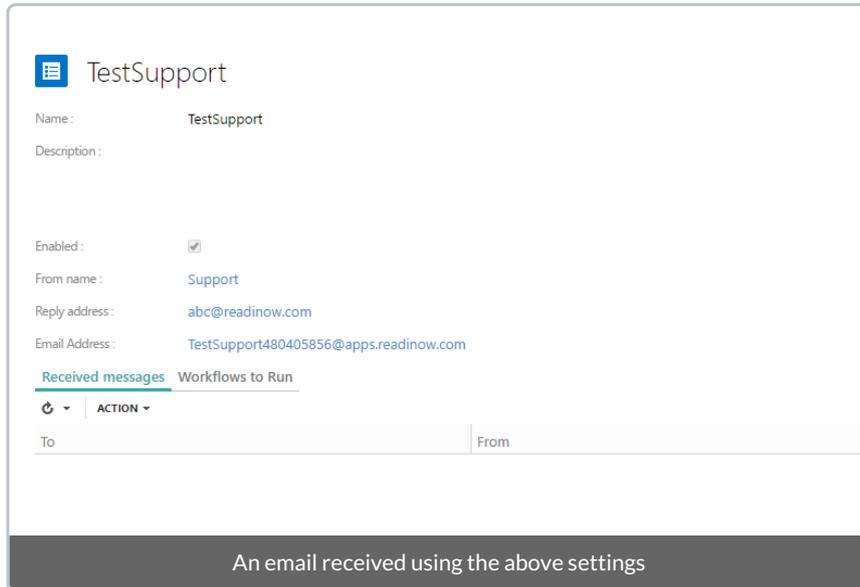
1. Select Application Menu. The menu appears with available applications
2. Select **Administration**. The application displays at the landing page
3. In the Left Navigation Area, select **Settings**. The Settings expand to display list
4. Select **Inboxes**. The existing Inboxes display
5. Select **+New** and the new Inbox form displays
6. Type the name for the inbox in the **Name** field
7. (Optional) Type the description for the inbox in the **Description** field
8. By default, the Inbox will be **Enabled**
9. Type the **From name** - this is the name in the received email. For example: Support.
10. Type the **Reply Address** - emails will be received from this address, and replies will route to this address. For example: *abc@readinow.com*. Customer creates a forwarding rule on this email address to receive it in the email address in the next step.
11. **Email Address** - this is random generated email address under *apps.readinow.com* which is automatically created on saving this save. This is created using the value entered in the **Name** field, all invalid characters and spaces stripped, and adding a random generated integer. For example, if Name was set to "Test Support @#\$%" the generated email address would look like:
TestSupport480405856@apps.readinow.com
12. **Received Messages** - This report maintains a log of any email received in the above email address. Please

note that Inboxes will be unable to receive emails where they have been set only as a BCC recipient

13. **Workflows to Run** - Link existing workflow(s) to be run whenever this Inbox receives an email

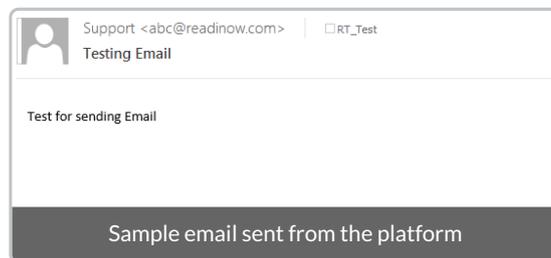
14. Click **Save** to create the new Inbox

Screenshot: View Inbox



An email received using the above settings appears as shown in the screenshot.

Screenshot: View Test email



Editing an Inbox

To edit an Inbox:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Settings**. The Settings expand to display list.
4. Select **Inboxes**. The existing Inboxes display.
5. Select the inbox you want to edit and select **ACTION**. The menu appears.
6. Select **Edit**. The Inbox form displays.
7. Make the changes you want and select **Save** to save changes.

Notification Provider

Last Modified on 17/08/2021 8:59 am AEST

Notification Provider is where the administrator configures the SMS gateway integration. SMS messages can be sent to end users and replies from end users can be received by ReadNow. ReadNow integrates with the Twilio SMS gateway: <https://www.twilio.com/>

A new 'Notify' workflow activity can be utilised to send SMS at any point in a workflow.

Creating a Twilio Account

To set up a Twilio account:

1. Go to <https://www.twilio.com/>
2. Select 'Sign up' to create a new account.
3. Follow the prompts to create and verify your account.
4. Once your account is created, from the left menu select 'Phone Numbers'.
5. Select 'Get Started'.
6. Select 'Get your first Twilio phone number'.
7. Follow the prompts to buy a phone number. (Note: ensure the phone number that is purchased has SMS capabilities.)

By default, Twilio creates an initial trial account which restricts messages to only be able to be sent to the verified account holders phone number. Select "Upgrade" from the top right menu to add funds to your account to leverage the full capabilities.

Configuring Twilio integration

To configure the Twilio integration:

1. Open the tenant administration page [more](#)
2. In the Left Navigation Area, select **Settings**. The Settings expand to display list.
3. Select **Notification Provider**. The existing Notification Provider displays.
4. Select **Edit** in top right corner.
5. Complete the fields and copy in the following details:
 - Account SID: found on the home page of your Twilio account.
 - Auth Token: found on the home page of your Twilio account.
 - Sending Number: the phone number you just purchased in the format of +61412345678.

- Enable Test Mode: by default this is enabled. This means that you are able to configure and test your notification workflow without sending messages to Twilio. When you are ready to send messages to Twilio, deselect this checkbox.

6. Select **Save** to save the details.

 Notification Provider

Name : Notification Provider

Description : The Twilio account used for sending notifications.

Account SID : Enter SID

Auth token : *****

Sending number : 12345-12345

Enable test mode :

Enable Test Mode, when enabled you can configure and test your notification workflow without sending messages to Twilio. When you are ready to send messages to Twilio, deselect this checkbox.

When the Twilio configuration in our product is updated or re-enabled, Software Platform automatically connects to Twilio and updates these details with the correct information. No manual configuration is required in Twilio.

Tenant Rollback

Last Modified on 26/11/2020 9:56 am AEDT

Overview

The Tenant Rollback feature enables you to rollback changes to your tenant to a selected Restore Point. You may rollback up to 28 calendar days or until the last ReadNow platform upgrade, whichever is more recent.

To access Tenant Rollback:

1. Select the **Application Menu** to display the available options
2. Select **Administration** to view the Administration landing page
3. In the Left Tree Navigation Area, select **Settings** to expand the list
4. Select **Tenant Rollback**

Tenant Rollback Page

When you arrive at the **Tenant Rollback** page, you will see all available Restore Points on the left pane. When you select a Restore Point, the right pane will display showing the first 1000 changes made since that selected Restore Point.

Restore Points		Changes since 9/12/2019, 10:16:45 AM (first 1000)		
Date	Name	Date	User	Details
9/12/2019, 10:19:45 AM	Manual Restore Point 2	9/12/2019, 10:21:05 AM	Administrator	WebApi - Entity.PostGet S09033-P07171:createForm:2039622-Z094922-121021->Save
9/12/2019, 10:16:45 AM	Manual Restore Point 1	9/12/2019, 10:20:46 AM	Administrator	WebApi - Entity.Post S09033-P09638:workflowNew:2014696-Z940859-121020->Save
9/4/2019, 10:08:32 AM	Platform Install/Upgrade (SoftwarePlatformSetup_2.132.5008.0) Restore Point	9/12/2019, 10:19:15 AM	Administrator	WebApi - Workflow.UpdateWorkflow S09033-P04841:workflowEdit:2338593-Z602223-121019->Save
9/3/2019, 8:34:45 PM	Platform Install/Upgrade (SoftwarePlatformSetup_2.132.5008.0) Restore Point	9/12/2019, 10:18:36 AM	Administrator	WebApi - Entity.Post S09033-P04240:workflowNew:2014696-Z642223-121018->Save
9/3/2019, 8:34:23 PM	Upgrading tenant 2013297	9/12/2019, 10:17:59 AM	Administrator	WebApi - Entity.PostGet S09033-P08629:createForm:2037746-Z146724-121017->Save
8/29/2019, 5:29:40 PM	Platform Install/Upgrade (SoftwarePlatformSetup_2.132.5004.0) Restore Point			
8/29/2019, 5:29:18 PM	Upgrading tenant 2013297			
8/23/2019, 5:58:58 PM	Platform Install/Upgrade (SoftwarePlatformSetup_2.132.5000.0) Restore Point			
8/22/2019, 9:29:37 AM	Platform Install/Upgrade (SoftwarePlatformSetup_2.132.5000.0) Restore Point			

Start Rollback New Restore Point

The Tenant Rollback page

To initiate a Tenant Rollback:

1. Select the desired **Restore Point**
2. Select **Start Rollback**
3. The **Database Rollback Job Status** will appear, providing information about the rollback and its progression

Database Rollback Job Status Refresh

Rollback to 2019-09-12 00:28:21 UTC

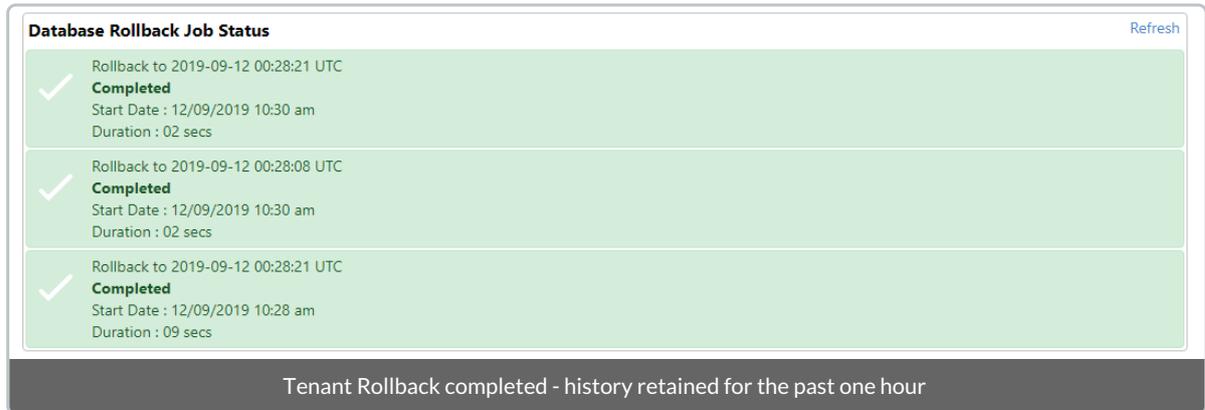
Running

Start Date : 12/09/2019 10:28 am

Duration : 08 secs

Tenant Rollback in progress

- When it completes, the **Database Rollback Job Status** will update to reflect accordingly. Please note that it will display all Rollback history for the past hour. Rollback jobs that are older than an hour expire and are removed



The screenshot shows a 'Database Rollback Job Status' window with a 'Refresh' button in the top right. It contains a list of three completed jobs, each with a green checkmark icon. The first job is 'Rollback to 2019-09-12 00:28:21 UTC', 'Completed', 'Start Date : 12/09/2019 10:30 am', and 'Duration : 02 secs'. The second job is 'Rollback to 2019-09-12 00:28:08 UTC', 'Completed', 'Start Date : 12/09/2019 10:30 am', and 'Duration : 02 secs'. The third job is 'Rollback to 2019-09-12 00:28:21 UTC', 'Completed', 'Start Date : 12/09/2019 10:28 am', and 'Duration : 09 secs'. A dark grey banner at the bottom of the window reads 'Tenant Rollback completed - history retained for the past one hour'.

Please note that only a single Tenant Rollback operation may be run at a time. Any attempt to start a Tenant Rollback while one is already in progress will be denied and you will be notified in the console that another rollback task is running.

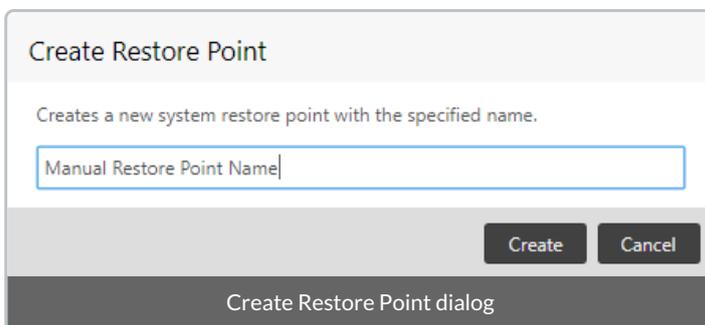
Restore Points

Restore Points represent the platform database state at the time of creation, allowing the system to be reverted to that state. **Restore Points** are kept for a maximum of 28 calendar days before they expire and are removed.

Restore Points may either created manually or automatically.

To manually create a **Restore Point**:

- Navigate to the **Tenant Rollback** page
- Select **New Restore Point**
- The **Create Restore Point** dialog will appear - enter in the desired name and select **Create**



The screenshot shows a 'Create Restore Point' dialog box. It has a title bar 'Create Restore Point' and a subtitle 'Creates a new system restore point with the specified name.' Below the subtitle is a text input field with the placeholder text 'Manual Restore Point Name'. At the bottom right of the dialog are two buttons: 'Create' and 'Cancel'. A dark grey banner at the bottom of the dialog reads 'Create Restore Point dialog'.

Restore Points are created automatically when:

- The Platform is installed/upgraded
- Deploying an Application
- When a Tenant Rollback is initiated

Please note that performing a **Tenant Rollback** to a **Restore Point** that was created on a previous version of the platform is not supported.

Text Field Patterns

Last Modified on 17/04/2019 10:15 pm AEST

Supported Text Field Patterns

The following text field patterns are supported by ReadiNow.

Name	Description
Cron Pattern	Valid pattern for a Cron schedule definition
Default	All text fields must match this pattern, if no other pattern is specified.
Email Address	An email address. Fairly broad.
FTP Address	FTP web address.
Host Name	The network address of a device.
Instance's Name	Valid resource name
Person's Name	A person's name. Allows international characters. Excludes only numbers and a few characters.
Phone Number	A phone number. Allows digits and applicable punctuation.
Script Name	A valid name for use in scripts.
Secure FTP Address	Security FTP web address.
Secure Web Address	HTTPS web address.
Unrestricted	All text is allowed.
Web Address	HTTP web address.

Viewing text field patterns

To view text field patterns:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Settings**. The Settings expand to display list.

4. Select **Text Field Patterns**. The existing Text Field Patterns display.
5. Select the Text Field Pattern you want to view and select **ACTION > View**. The Text Field Pattern form displays.
6. Select **Back** to go back.

- To set any pattern for a text field, you need to select the corresponding pattern in the text field properties in Form builder, see [Form Builder](#).

Themes

Last Modified on 24/05/2024 9:54 am AEST

Themes can be applied to a specific application or to the entire platform.

Creating a new theme

To create a new theme:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Settings**. The Settings expand to display list.
4. Select **Themes**. The existing Themes display.
5. Select **+NEW**. The Console Theme form appears.
6. Type the name for the Console Theme in the **Name** field.
7. Type the description for the Console Theme in the **Description** field.
8. In the **Application** field, select the Pencil icon. The Select Application dialog appears.
9. Select the application you want and select **OK**.
10. Complete the details as described in the next steps and select **Save** to save the Console Theme.

Applying a Theme

To apply a theme, go to **General Settings** and specify the "Tenant theme" .

Themed Areas of ReadiNow

There are four areas of the platform and you can select the required images / logo / colour for the platform / application.

- Header area
- Top Navigation area
- Left Navigation area
- General Content area

Complete the details as described in the next steps for each area.

Header Area

1. Background colour - Colour for the header of the platform / application
2. Background Image - Image appears at the header of the platform / application
3. Background image repeat - Enable this if the background image needs to be repeated
4. Text colour - Colour of the text on the header of the platform / application. Generally an application name

which sits on the header area is displayed with this colour

- If both background image and background colour is set, then only the background image is displayed on the header

- If you want to display a background colour, then leave the background image field empty.

Top Navigation Area

1. Background colour - Colour for the top navigation part of the platform / application
2. Background image - Image appears at the top navigation of the platform / application
3. Background image repeat - Enable this if the background image on the top navigation needs to be repeated
4. Tab style - User can select a style for the tabs in the platform / application
5. Selected tab colour - Colour for the selected tab
6. Selected tab border colour - Colour of the border of the selected tab
7. Selected tab font colour - Colour of the title of the selected tab on the top navigation
8. Unselected tab colour - Colour for the unselected tab on the top navigation
9. UnSelected tab font colour - Colour of the title of the unselected tab

Left Navigation Area

1. Background colour - Colour for the left navigation part of the platform / application
2. Mobile Background colour - Colour appears on the left navigation part of the platform on Mobile only
3. Background image - Image appears at the left navigation of the platform / application
4. Background image repeat - Enable this if the background image on the left navigation needs to be repeated
5. Font colour - Colour of the title of the elements appearing on the left navigation
6. Selected element colour - Colour of the selected element on the left navigation
7. Selected font colour - Colour of the title of selected element on the left navigation

General Content Area

1. Title font colour - Colour of the Form and Report title
2. Container heading font colour - Colour of the heading of the container
3. Container heading line colour - Colour of the line of the container
4. Form selected tab colour - Colour of the selected tab on the form
5. Form selected tab font colour - Colour of the title of selected tab on the form
6. Form unselected tab colour - Colour of the unselected tab on the form
7. Form unselected tab font colour - Colour of the title of unselected tab on the form
8. Report header colour - Colour for report header

9. Report header font colour - Colour for the title of the columns

- You need to refresh the browser to see the changes.

Log Retention Policies

Last Modified on 04/09/2020 5:01 pm AEST

Log Retention Policies provide a transparent way to manage the archiving frequency of your Record Audit Logs on a per log-type basis. When logs are automatically 'archived', they are consolidated into files which are saved as zip files in a secure admin only section within the document library.

Out of the box settings

Out of the box there are 5 log-types, they have the following settings (*Max Days & Max Records show upper limits*):

Name	Type	OOTB Days	Max Days	Max Records
Alert Log Entry Retention Policy	Alert Log Entry	180	365	10,000
Log Entry Retention Policy	Log Entry	365 x 3	365 x 5	5,000,000
Managed Object Log Entry Retention Policy	Managed Object Log Entry	365 x 3	365 x 5	5,000,000
Security Audit Log Retention Policy	Audit Log Entry	30	90	100,000
Workflow Run Log Entry Retention Policy	Workflow Run Log Entry	30	90	100,000

Log Retention Policy Administration

In addition to configuring the OOTB audit settings, additional retention policies can be specified for specific audit types. The Administration screen for Audit Settings is located: [Administration > Settings > Retention Policies](#). Any additional retention policies will inherit upper-limits from the policy they derive from.

Retention Policies Administration: The columns 'Maximum days' and 'Maximum records' show the current settings and can be adjusted from a minimum of 1 (day / record) up to the maximum for the policy type.

Retention Policy	Enabled	Type	Maximum days	Maximum records	Last run	Status
Alert Log Entry Retention Policy	Yes	Alert Log Entry	180	10,000		
Log Entry Retention Policy	Yes	Log Entry	1,095	5,000,000		
Managed Object Log Entry Retention ...	Yes	Managed Object Log Entry	1,095	5,000,000		
Security Audit Log Retention Policy	Yes	Audit Log Entry	30	100,000		
Workflow Run Log Entry Retention Pol...	Yes	Workflow Run Log Entry	30	100,000		

Viewing Archived Logs

Archived logs are stored indefinitely and Administrators can view them via the Document Library which is located: Documents > Document Library > Purge Backups . The Purge Backup files can be identified by purge date and log type, and downloaded by clicking on the file name. Downloaded log files can be opened with any 'zip' utility. To protect the integrity of the archived logs, the 'Purge Backups' folder can only be written to by the system and can be treated as a source of the truth.

Viewing Archived Logs: Archived logs are stored indefinitely in the documents library as zip files and can only be accessed by Administrators.

Purge Backup	Total Purge Count	Size	Created date
Log Entry Retention Policy	1,000	4,275,810	02/06/2020 8:47 am
Log Entry Retention Policy	4	18,472	04/06/2020 8:18 am
Log Entry Retention Policy	20,000	85,586,220	04/06/2020 8:22 am

Thumbnail Sizes

Last Modified on 18/04/2019 10:30 am AEST

Thumbnail sizes are the pixels set for Image field. You can create different Thumbnail sizes for the [Image Field](#).

The created thumbnail sizes are reflected in the [Image Field](#) properties.

Creating or editing Thumbnail Sizes

To create or edit Thumbnail Sizes:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Settings**. The Settings expand to display list.
4. Select **Thumbnail Sizes**. The existing Thumbnail Sizes display.

Screenshot: Thumbnail Sizes

Thumbnail size	Description	Thumbnail width (pixels)	Thumbnail height (pixels)	Applications
Small	150 x 150 (pixels)	150	150	Read/Now Console
Large	300 x 300 (pixels)	300	300	Read/Now Console

5. Select **+NEW** if you want to create a new Thumbnail Size. The Thumbnail Size form displays.
6. Or, select the Thumbnail Size you want to edit and select **ACTION > Edit**. The Thumbnail Size form displays.
7. Complete the form and select **Save** to save the details.

Image Field Properties

For details see [Image Field](#).

Screenshot: Image Field Properties

Image Field Properties

Name: Photo

Display Name:

Description:

OPTIONS

Form Detail | Object Detail | Visibility | Format

Mandatory:

Read Only:

Thumbnail Size: **Small** (selected)

Thumbnail Scaling:

Fit to size
Resize image to fit inside the item

Crop
Crop image to fit inside the item

OK Cancel

IP Ranges

Last Modified on 15/03/2019 12:25 pm AEDT

IP Ranges restricts access to the specified IP range, which means only traffic from given IP range are allowed to access ReadNow. This is also known as **whitelisting**.

To avoid being locked out, the administrator must add their current IP range as first step. ReadNow stops you from moving forward if user chooses not to do so.

Adding a New IP Range

To add new IP range:

1. Select Application Menu.
2. Select **Administration**.
3. In the Left Navigation Area, select **Security**.
4. Select **IP Range**.
5. Click **+NEW** button, and provide the following details:
 1. Name: the name used to identify this IP range in your tenancy.
 2. Start address: the starting IP address that is allowed to access your tenancy.
 3. End address: the ending IP address that is allowed to access your tenancy, it can be the same as the start address, in which case, only access from given IP address is allowed to your tenancy.
6. Click **Save**.

Password Policy

Last Modified on 16/04/2019 6:26 pm AEST

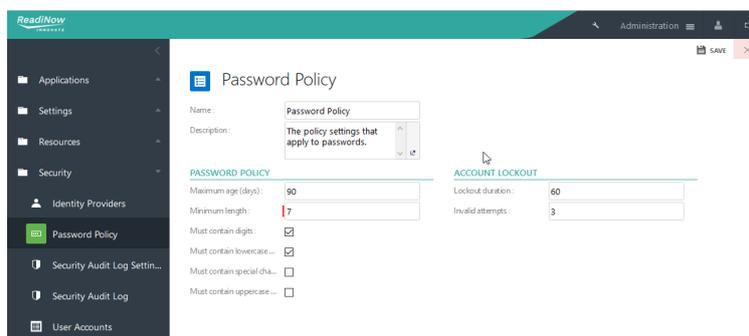
The Password Policy enables Administrators to set limits and restrictions on the types of passwords their users can create. You can use this feature to create a more secure system.

Configuring the password policy

To configure the password policy:

1. Select Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Security**. The Security expands to display list.
4. Select **Password Policy**. The existing Password Policy displays.
5. Select **Edit** and configure the following fields as required:
 - Maximum age (days): type the maximum password age in days
 - Minimum length: type the minimum password length
 - Must contain digits: select the checkbox if a digit is required for the password
 - Must contain lowercase characters: select the checkbox if a lowercase character is required for the passwords
 - Must contain special characters: select the checkbox if a special character is required for the passwords
 - Must contain uppercase characters: select the checkbox if a uppercase character is required for the passwords
 - Lockout duration: type the number of minutes a locked account remains locked
 - Invalid attempts: type the number of invalid logons before accounts are locked
6. Select **Save** to save changes.

Screenshot: Configure the Password Policy



Changing your password

There are two scenarios where the password may need to be reset:

- A user is logged in, but wants to change the password
- A user has forgotten the username or password and can't log in

Changing your password when logged in

See [Changing the Password](#).

Resetting the password from the login page

See [Forgot your username or password](#)

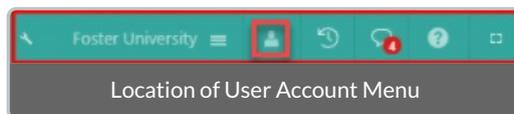
Changing Password

Last Modified on 17/04/2019 5:26 pm AEST

You can change your password at any time.

To change your password:

1. Navigate to the User Menu in the top right corner
2. Select the User Account icon. The menu appears.
3. Select **Change password**. The Change password dialog appears.
4. Type the old password, and then type the new password. Re-enter your new password in the **Confirm password** field.
5. Select **OK** to save changes.



The new password can only be set as defined in the Password Policy rules.

Configure Single Sign On

Last Modified on 24/02/2022 10:03 am AEDT

Single sign-on (SSO) allows centralised user management via an identity provider such as 'OpenID Connect' and 'SAML' (permissions are still configured in the REDINow tenant).

Note: SSO configuration is done on a per tenant basis, customers with multiple tenants can repeat the configure for each tenant as required.

This article explains how to:

- configure new identity providers
- update expired certificates
- troubleshoot common errors

Terminology

Identity Provider (IDP)

An identity provider is a service that stores and verifies user identities, such as Microsoft Azure, Okta or Ping. REDINow cannot assist with the configuration of your identity provider.

SAML and OIDC

Identity providers can be configured to use different protocols. REDINow supports both SAML and OIDC (OpenID Connect). The team responsible for your identity provider will advise you which protocol to use when configuring your REDINow tenant.

Internal versus external Identity Providers

When configuring your REDINow tenant you will need to know if your identity provider is internal or external as this changes the configuration. Internal and external are defined as follows:

- Internal - cannot be accessed by REDINow's servers, e.g. an ADFS server behind a company's firewall.
- External - is accessible by REDINow's servers, e.g. Microsoft Azure.

When configuring an internal provider, the identity provider's metadata must be entered in REDINow during the identity provider creation. An administrator will need to download the metadata from the identity provider and save it as a document.

Automatic Login

If automatic login is enabled and the user cannot log in, then navigating back to the login page again will present the user with an option to select a different identity provider. This is useful for users with multiple accounts, such as administrators. SSO will only fail if the identity provider is unavailable, or the user has been disabled by the identity provider.

SSO Auto Provisioning

Automatic user provisioning means that when an administrator creates or modifies a user account in your identity provider, then a corresponding account for that user will be created or modified within your REDINow tenant.

SP- vs IDP-initiated SSO

Service Provider Initiated (SP-initiated) SSO gives your users the ability to sign into the REDINow login page. REDINow then sends an authorisation request to your IDP to authenticate the user. With Identity Provider Initiated (IDP-initiated) SSO, the user must first log into your IDP's SSO page and then click an icon to log into REDINow.

Claim Mappings

In SSO, a claim is an assertion that a particular user has a particular property. Claim or attribute mappings are used to map values that exist in your identity provider to the corresponding values within REDINow during user auto provisioning. For example, your identity provider may have a field called "Surname". The claim will map this field to the corresponding field in REDINow called "Last Name".

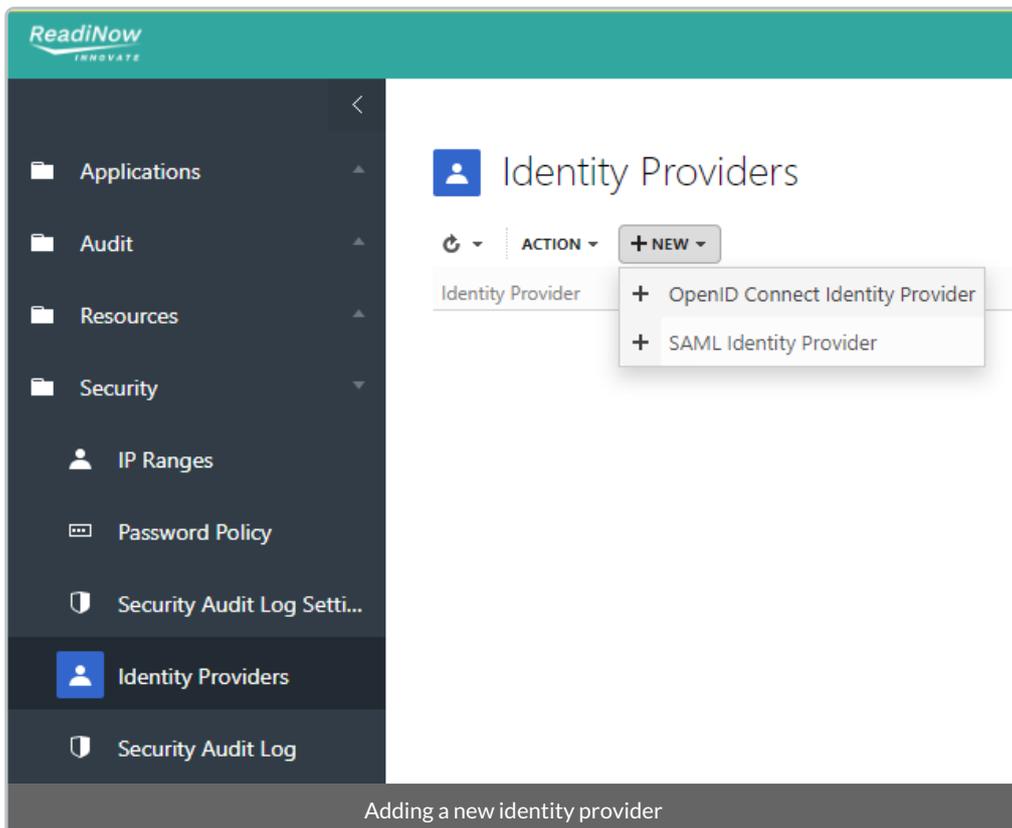
Quick Start Guide

Open the Identity Provider configuration screen

In the left menu, go to: **Administration > Security > Identity Providers > New**

Select the identity provider type:

- OIDC – OpenID Connect
- SAML



Common Options

Regardless of whether your identify provider uses SAML or OIDC:

- The identity provider will need a Name, use a descriptive name of your choosing
- Add a Description to include any notes required to describe this configuration
- The identity provider will be enabled by default (to disable, uncheck: Is provider enabled).
- You can specify the Order of preference of the identity providers, if you have multiple providers configured.

SAML quick start

To configure your RediNow tenant for SAML SSO, the following information is necessary. Typically, this is provided by the team responsible for your IDP.

1. Whether your IDP is internal or external
2. Decide if users should be logged in automatically or prompted
3. Decide if users should be auto provisioned
4. Decide if SSO will be SP or IDP initiated
5. App Id (sometimes referred to as the Entity ID)
6. A copy of the federation metadata document if your IDP is internal OR the URL for the metadata if your IDP is external

Use this information to configure the SAML Identity Provider in your RediNow tenant

The screenshot shows a configuration form for a SAML Identity Provider, divided into two sections: 'IDENTITY PROVIDER DETAILS' and 'SAML IDENTITY PROVIDER DETAILS'. The form includes various input fields and checkboxes, with numbered callouts (1-6) pointing to specific elements. Callout 1 points to the 'Is provider internal' checkbox. Callout 2 points to the 'Is auto login enabled' checkbox. Callout 3 points to the 'Auto provision users' checkbox. Callout 4 points to the 'Allow IdP initiated logon' checkbox. Callout 5 points to the 'App Id' input field. Callout 6 points to the 'Metadata document URL' input field. The 'Name' field is highlighted with a red vertical bar. The 'Order' field contains the value '1'. There are two information icons (i) next to the 'Auto provision users' and 'Allow IdP initiated logon' checkboxes. The bottom of the form has a dark grey bar with the text 'Configuring SAML Identity Provider'.

IDENTITY PROVIDER DETAILS		SAML IDENTITY PROVIDER DETAILS	
Name:	<input type="text"/>	Always prompt:	<input type="checkbox"/>
Description:	<input type="text"/>	App Id:	<input type="text"/>
Is provider enabled:	<input type="checkbox"/>	Metadata document URL:	<input type="text"/>
1 Is provider internal:	<input type="checkbox"/>		
Order:	<input type="text" value="1"/>		
2 Is auto login enabled:	<input type="checkbox"/>		
3 Auto provision users:	<input type="checkbox"/>		
4 Allow IdP initiated logon:	<input type="checkbox"/>		

Once your tenant has been configured to connect to your identity provider, the next step is to configure your users unless auto provisioning has been enabled.

OIDC quick start

To configure your RediNow tenant for OIDC SSO, the following information is necessary. Typically, this is provided by the team responsible for your IDP.

1. Whether your IDP is internal or external
2. Decide if users should be logged in automatically or prompted
3. Decide if users should be auto provisioned
4. Client Id (sometimes referred to as the Application ID)
5. Client Secret (sometimes referred to as the Application Key) for external IDPs
6. Identity claim
7. The URL for the metadata if your IDP is external OR copies of the configuration document and JSON web key set document

Use this information to configure the OIDC Identity Provider in your ReadNow tenant

The screenshot shows a configuration form for an OIDC Identity Provider, divided into two sections: 'IDENTITY PROVIDER DETAILS' and 'OPENID CONNECT IDENTITY PROVIDER DETAILS'. The form includes various input fields and checkboxes. Seven green callout boxes with numbers 1 through 7 point to specific fields: 1 points to 'Is provider internal', 2 to 'Is auto login enabled', 3 to 'Auto provision users', 4 to 'Client Id', 5 to 'Client secret', 6 to 'Identity claim', and 7 to 'Configuration URL'. A blue information icon is located below the 'Auto provision users' field. The form title 'Configuring OIDC Identity Provider' is displayed at the bottom.

Once your tenant has been configured to connect to your identity provider, the next step is to configure your users unless auto provisioning has been enabled.

Users

Manual user provisioning

Note: This section can be ignored if 'auto provision users' is enabled.

The lower part of the configuration page contains mappings for the identity provider users. All users that login with SSO need to be added to this section.

To add a user, enter their 'email address' in the 'Name' field and select the Associated account

IDENTITY PROVIDER USER DETAILS

Name:

Description:

Associated account:

Identity provider:

Example user mapping

Automatic User Provisioning

Automatic user provisioning will create or modify user accounts. Roles must already exist in ReadNow. The auto-provisioning process does not create roles.

Users may not be able to log in if automatic provisioning is incorrectly configured. It is recommended to initially configure this in a non-production environment to verify the configuration.

Enable automatic user provisioning by checking Auto provision users. This will reveal the 'Update existing users' option and the Claim mappings and Claims tabs.

IDENTITY PROVIDER DETAILS

Name:

Description:

Is provider enabled:

Is provider internal:

Order:

Is auto login enabled:

Auto provision users:

Update existing users:

Identity provider users **Claim mappings** Claims

Claim name

Configuration items for automatic user provisioning

'Update existing users'

- If unchecked, only user accounts that do not exist will be created using the specified claim mappings.
- If checked, existing user accounts will also be updated based on the specified claim mappings.

Claim Mappings

Claim mappings need to be configured so that a user account can be successfully provisioned. Typically, this means

that mappings are required for:

- email address
- first name
- last name
- security role

Mappings are used to map, or translate, between your identity provider and your RediNow tenant. For example, a field called 'Designation' in your identity provider may be called 'Title' in your RediNow tenant. The difference in the labels is not an issue, provide you create a mapping between the two values.

The names for these claims are typically as follows, although note that not all identity providers are configured in the same way. For example, although the list of [OpenID Connect standard claims](#) doesn't include the role, an additional field can sometimes be configured for that. Unfortunately, it must be observed that cloud identity providers may not give sufficient control to make that type of change. Note that without a role specified, the user will have very little permissions until the administrator can assign proper permissions manually.

OpenID Connect	SAML
email	http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress
given_name	http://schemas.xmlsoap.org/ws/2005/05/identity/claims/givenname
family_name	http://schemas.xmlsoap.org/ws/2005/05/identity/claims/surname
-	http://schemas.microsoft.com/ws/2008/06/identity/claims/role

To create the mappings, use the appropriate name from the table above- depending on whether the provider is OpenID or SAML - and create a row for each claim-field pair that is required. Note that the SAML names appear to be internet links.

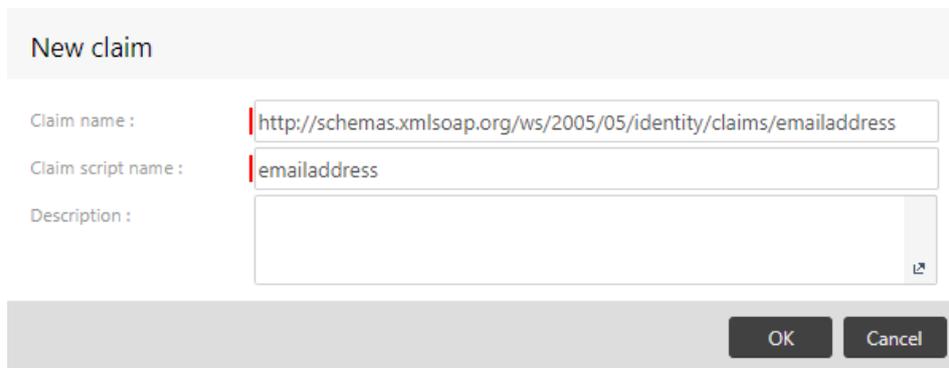
Claim name	Claim script name	Field
Mapped object: Person , Condition: [!Person] = '1'		
http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress	EmailAddress	Business email*
Department	Department	Departments
http://schemas.xmlsoap.org/ws/2005/05/identity/claims/givenname	GivenName	First name*
http://schemas.xmlsoap.org/ws/2005/05/identity/claims/surname	Surname	Last name*
Mapped object: User Account		
http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress	EmailAddress	Name*
http://schemas.microsoft.com/ws/2008/06/identity/claims/role	roles	Security roles

A typical configuration for SAML

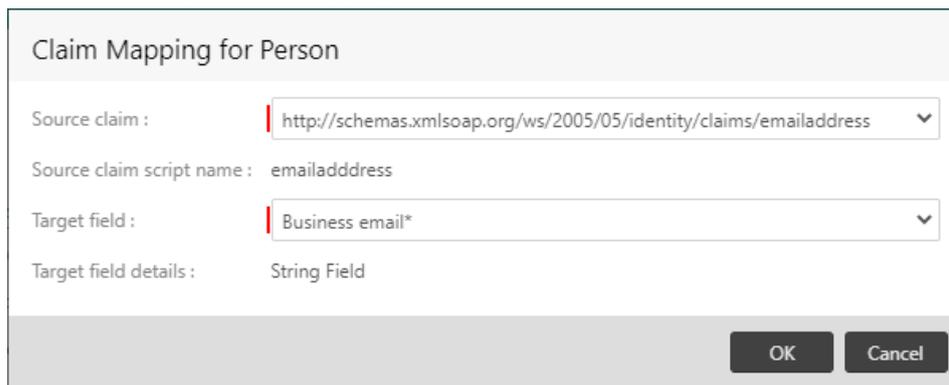
Note that the Name field on the *User Account* must be mapped to the unique identifier for each user. Typically this is the email address, but in some cases it may be a staff number or some other unique identifier; be sure to use the claim name that matches the existing users otherwise new accounts will be created when they attempt to log in.

Process to create claims and claim mappings

1. Navigate to the 'Claims mappings' tab. Click New.
2. Select the type of mapping to create. In this example, we will use Person
3. The 'Claim Mapping for Person' dialog appears. Under 'Source Claim' select [New Claim]
4. The 'New claim' dialog appears
5. For 'Claim name' field use the value for SAML or OIDC as appropriate.
e.g. For SAML email address we would use
<http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress>
6. For 'Claim script name' enter a value that can be used to refer to this claim. This is used only if you are adding conditions to your claim import rules
7. 'Description' is optional
8. Click OK to save your new claim



9. You are returned to the 'Claim Mapping for Person' dialog. The 'Target field' is the corresponding field in your ReadNow tenant. E.g. 'Business email'
10. Click OK to save your new mapping



Further Notes on Claims and Claim Mappings

1. As the NameID is always first, the code will always use the value which is in the NameID field. The code will only look for the <http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress> if the NameID claim is missing.
2. (SAML) The claim for email must be named
<http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress>

3. The Person mapping must have all the default fields mapped. This includes First Name, Last Name and Business Email. Other fields/claims may be defined but they are not required.
4. If a mapping is added for the Account Holder relationship for User Account, then the provisioning code will search to see if there are any existing Account Holders that match the mapped field.
For example, the Business Email field of the User Account -> Account holder can be mapped to the email claim. If an Account Holder is found with the mapped field, this Account Holder will be assigned to the User Account. If no matching Account Holder is found, one will be created ONLY if claim mapping rules exist for Person.
If there is no **Account holder** relationship from the **User Account** and claim mappings for **Person** exist, the code will attempt to lookup **Account holders** whose **Name = First name + " " + Last name**
5. REDINow supports multiple claims. For example, in your identity provider users may have been migrated from different systems. Some users may have an email address while others have an employee ID. Both these fields can be mapped to name.
6. Provided the mapping is correct, email address may have different domains. For example, as the result of a merger some users may have emails address from @salt.com while other users have @vinegar.com

Login Process for a New User

If the user account does not exist, then the provisioning process will run synchronously until the user account, account holder, and identity provider user entities have been created and the claim mappings have been applied. Once this is completed then the user will be signed in.

If there are errors when mapping fields for the user account or account holder the provisioning will fail and the user will not be signed in.

Login Process for an Existing User

If the 'Update existing users' check box is checked then existing User Account and Account Holder records may be updated if their mapped claims values differ from their field values.

If 'Update existing users' is unchecked then the User Account and Account holder records may get out of sync with the claim values.

NOTE: As long as a User Account is found based on the claim mappings the user will be allowed to login.

Update expiring/expired certificates

By design SSL certificates expire. Typically, before a certificate expires it will be replaced with a new one - this happens within the identity provider (i.e. external to your REDINow tenant). It is the tenant administrators' responsibility to update the metadata documents in their tenant. REDINow does not have access to the identity provider, and does not provide these documents or certificates.

The steps required for updating SSL certificates depends on whether your tenant is configured to use SAML or OpenID, and whether the certificate is accessible externally or only internally (see above). However, it is generally necessary to replace the metadata document. The following steps are an overview, for additional information refer to the configuration section.

NOTE: prior to replacing the metadata document, clear the existing documents from the picker using the 'X' button - this will ensure they are removed properly.

For an **internal SAML** provider updating a certificate involves replacing the metadata document in the document library and linking the new document in the identity provider configuration.

SAML Identity Provider

IDENTITY PROVIDER DETAILS

Name:

Description:

Is provider enabled:

Is provider internal:

Order:

Is auto login enabled:

Auto provision users: [i](#)

Allow IdP initiated logon: [i](#)

SAML IDENTITY PROVIDER DETAILS

Always prompt:

App Id:

Metadata document:  

For an **external SAML** provider the metadata document is found by URL - it may use the same URL. Check the metadata URL is still valid and update as necessary.

SAML Identity Provider

IDENTITY PROVIDER DETAILS

Name:

Description:

Is provider enabled:

Is provider internal:

Order:

SAML IDENTITY PROVIDER DETAILS

Always prompt:

App Id:

Metadata document URL:

For an **internal OpenID** provider updating a certificate involves replacing the configuration document and the web key set document and linking the new documents in the identity provider configuration.

OpenID Connect Identity Provider

IDENTITY PROVIDER DETAILS	OPENID CONNECT IDENTITY PROVIDER DETAILS
Name: <input type="text"/>	Always prompt: <input type="checkbox"/>
Description: <input type="text"/>	Client Id: <input type="text"/>
Is provider enabled: <input type="checkbox"/>	Identity claim: <input type="text"/>
Is provider internal: <input checked="" type="checkbox"/>	Configuration document: <input type="text"/> <input type="button" value="edit"/> <input type="button" value="x"/>
Order: <input type="text" value="1"/>	Web key set document: <input type="text"/> <input type="button" value="edit"/> <input type="button" value="x"/>
Is auto login enabled: <input type="checkbox"/>	

For an **external OpenID** provider the metadata document is found by URL - it may use the same URL. Check the 'Configuration URL' is still valid and update as necessary.

IDENTITY PROVIDER DETAILS	OPENID CONNECT IDENTITY PROVIDER DETAILS
Name: <input type="text"/>	Always prompt: <input checked="" type="checkbox"/>
Description: <input type="text"/>	Client Id: <input type="text"/>
Is provider enabled: <input checked="" type="checkbox"/>	Client secret: <input type="text"/>
Is provider internal: <input type="checkbox"/>	Identity claim: <input type="text"/>
Order: <input type="text" value="1"/>	Configuration URL: <input type="text"/>
Is auto login enabled: <input type="checkbox"/>	

OpenID Connect configuration

Further Information

SAML

Basic example of SAML identity provider configuration

Log into the identity provider administration and perform the following steps:

1. Create a new application registration
2. Select 'SAML-based Sign-on' for the Single Sign-on mode
3. Set the identifier (Entity ID) to be the host part of the tenant URL
e.g. https://
The Entity ID must match the App Id in the REDINow tenant.
4. Set the reply URL to:
 - SP Initiated logon:

https://[company].readinow.com/spapi/data/v1/login/saml/authresponse/[tenant]

Or

- IDP Initiated logon:

https://[company].readinow.com/spapi/data/v1/login/saml/authresponse/[tenant]/[identity_provider_name]

where [identity_provider_name] is the name of the identity provider within the ReadNow tenant.

5. Set the Relay State to the URL (*note: loginRedirect is case sensitive and '/' is required*):

https://[company]/sp/index.html#[tenant]//loginRedirect

6. Leave the Logout URL blank
7. Select the email address as the user identifier
8. Adjust any attributes or claims as necessary for your use case
9. Grant access to the appropriate users and groups
10. Save the application registration

The identity provider will provide a metadata document URL which must be used to configure the tenant. If your identify provider is internal, download the metadata document as this will be needed to configure your ReadNow tenant.

Configure the tenant for SAML SSO

Log into your ReadNow tenant.

Go to: Administration > Security > Identity Providers > New. Select SAML.

1. Provide a name. This will be displayed to users on the login screen
2. [Optional] Enter a description
3. Check 'Is provider enabled'
4. Check 'Is provider internal' if required
5. If more than one identity provider is used, specify the Order of preference
6. Check 'Is auto login enabled' if required
7. Check 'Auto provision users' if this has been enabled in your identity provider
8. Check 'Allow IdP initiated logon' if this has been enabled in your identity provider. (Note: you can use SP and IdP initiated logon at the same time.)
9. Check 'Always prompt' if the user should always be prompted to re-enter their SSO credentials
10. Enter the App Id. This must match the Entity ID configured in the identity provider. For this example it would be: https://[company].readinow.com
11. For an external identity provider enter the metadata document URL
12. For an internal identity provider upload the metadata document itself

SAML Identity Provider

IDENTITY PROVIDER DETAILS

Name:

Description:

Is provider enabled:

Is provider internal:

Order:

Is auto login enabled:

Auto provision users: [?](#)

Allow IdP initiated logon: [?](#)

SAML IDENTITY PROVIDER DETAILS

Always prompt:

App Id:

Metadata document URL:

SAML configuration

OIDC

Basic example of OIDC identity provider configuration

Log into the identity provider administration console and perform the following steps:

1. Create a new application registration
2. Select 'OIDC-based Sign-on' for the Single Sign-on mode
3. Set the application ID URI (Entity ID) to be the host part of the tenant URL
e.g. `https://[company].readinow.com`
The application ID must match the App Id in the ReadNow tenant.
4. Set the reply URL to: `https://<sign-in-url>/spapi/data/v1/login/oidc/authresponse/<tenant>`
e.g. `https://[company].readinow.com/spapi/data/v1/login/oidc/authresponse/[tenant]`
5. Leave the Logout URL blank
6. Create the client secret (password)
7. Grant access to the appropriate users and groups
8. Save the application registration

The identity provider will provide a metadata document URL which will be used to configure the tenant. If your identify provider is internal, download the configuration document and JSON web key set document as these will be needed to configure your ReadNow tenant.

Configure the tenant for OIDC SSO

Log into your ReadNow tenant.

Go to: Administration > Security > Identity Providers > New. Select OIDC.

1. Provide a name. This will be displayed to users on the login screen
2. [Optional] Enter description

3. Check 'Is provider enabled'
4. Check 'Is provider internal' if required
5. If more than one identity provider is used, specify the Order of preference
6. Check 'Is auto login enabled' if required
7. Check 'Always prompt' if the user should always be prompted to re-enter their SSO credentials
8. Enter the Client Id. This must match the Entity ID configured in the identity provider. For this example it would be: `https://[company].readinow.com`
9. Enter the Client secret. This is the password or app key used in the configuration of the identity provider
10. Enter the identity claim. The name of the claim to use to map identity provider users to user accounts. The value of the claim must match the name of the identity provider user. For example, upn (user principal name) or email. (Refer to: <https://docs.microsoft.com/en-us/azure/active-directory/develop/active-directory-optional-claims>)
11. For an external identity provider enter the Configuration URL
12. For an internal identity provider upload the configuration document and JSON web key set document

OpenID Connect Identity Provider

IDENTITY PROVIDER DETAILS

Name:

Description:

Is provider enabled:

Is provider internal:

Order:

Is auto login enabled:

OPENID CONNECT IDENTITY PROVIDER DETAILS

Always prompt:

Client Id:

Client secret:

Identity claim:

Configuration URL:

The Configuration URL for commonly used identity providers are:

Identity Provider	Example configuration URL (note: replace [xxx] as appropriate)
Google	<code>https://accounts.google.com/.well-known/openid-configuration</code>
Microsoft	<code>https://login.microsoftonline.com/[xxx]/.well-known/openid-configuration</code>
Okta	<code>https://[instance].okta.com/.well-known/openid-configuration</code>

Failure Logging

Errors will be written to the Event Log during the SSO login process.

Login page messages

The end user may see one of the following error messages on the login page.

The user name may be incorrect or the account may be locked, disabled or expired.

This indicates that the user successfully logged into the IDP and that the response was sent back successfully, however a valid identity provider user could not be found. The tenant event log will have a message containing the name of the user that the IDP has found. This name should match the name of the identity provider user. The log message is of the form **The request context could not be found for identity provider user '<username>'. The user name may be incorrect or the account may be locked, disabled or expired.**

The identity provider configuration appears to be invalid, please contact your administrator.

This indicates that an error occurred during the processing of the authentication request to IDP or the or the processing of the response from the IDP.

Event log messages

SSO event log messages will have the following titles:

Failed to process SAML authorization response.

Failure occurred processing the SAML response. The error may have occurred at the IDP or ReadNow. Details will have more information.

Failed to process SAML authorization request.

Failure occurred processing the SAML request.

Failed to process OpenID Connect authorization response.

Failure occurred processing the OpenID Connect response. The error may have occurred at the IDP or ReadNow. Details will have more information.

Failed to process OpenID Connect authorization request.

Failure occurred processing the OpenID Connect request.

List of common errors and possible causes

Error	Solution
The SAML auth cookie does not exist. Ensure the ReadNow URL is correct.	Cookies are used during the SSO login process so all user and IDP requests must be on the same domain.
The request context could not be found for SAML identity provider user '<username>'. The user name may be incorrect or the account may be locked, disabled or expired.	The user successfully logged into the IDP and the response was sent back successfully. However a valid identity provider user could not be found. Check that a identity provider user whose name is <username> exists and is not locked, disabled or expired.

Error	Solution
The RelayState was not specified. Parameter name: RelayState	The SAML identity provider needs to be configured to return relay state.
The OpenID Connect auth cookie does not exist. Ensure the ReadNow URL is correct.	Cookies are used during the SSO login process so all requests must be on the same domain.
The identity provider configuration appears to be invalid. The remote server returned an error: (404) Not Found.	This indicates that the server did not find the metadata at the specified URL. Verify that the Metadata document URL is valid and accessible.
An error occurred validating the SAML response. The Saml2Response must have status success to extract claims. Status: Responder.	This message indicates that there is a configuration error on the IDP. Check that it is returning the NameID claim of type emailAddress or nameidentifier
An error occurred validating the SAML response. The Saml2Response must have status success to extract claims. Status: Requester. Second Level Status: urn:oasis:names:tc:SAML:2.0:status:InvalidNameIDPolicy.	This message indicates that there is a configuration error on the IDP. Check that it is returning the NameID claim of type emailAddress or nameidentifier

SFTP Credentials

Last Modified on 22/02/2022 9:42 am AEDT

Overview

This article covers the configuration of credentials for:

- Scheduled Imports & Exports
- FTP Put & Fetch activities in Workflows

The platform supports:

1. Username + Password
2. Username + SSH Key

Username and Password

Username and Password credentials are supported for FTP, FTPS, and SFTP connections.

SSH Keys

SSH Key credentials are supported for SFTP connections only.

Paste the contents of your SSH private key file (e.g. `~/ssh/id_rsa`) into the "Private key" field on the credential form.

Note:

- Password-protected SSH keys are not supported (SSH keys are encrypted within the platform).
- The platform only supports SSH keys in "PEM" OpenSSH format (not the new OpenSSH or `.ppk` format).
- to create a new Private Key (in the classic OpenSSH PEM format) use the command:

```
ssh-keygen -t rsa -m PEM
```

- to convert an existing key file to the classic OpenSSH PEM format, use the command:

```
ssh-keygen -p -f my_key_file -m pem -P "my password" -N ""
```

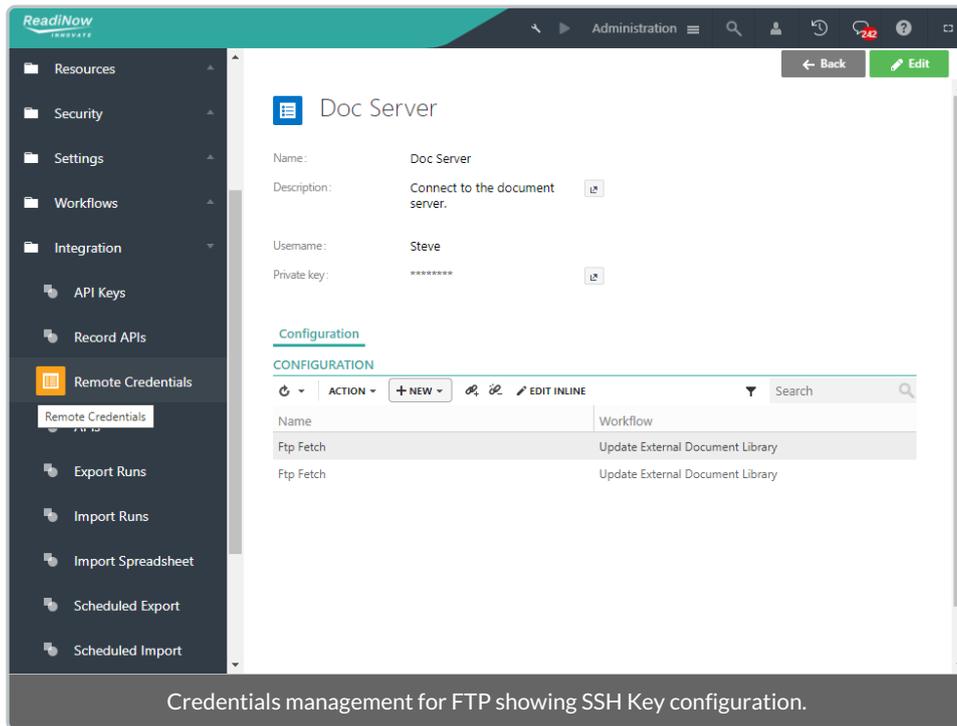
(if your key is not password-protected, replace "my password" with "").

FAQ: Can ReadNow provide my company with a SSH Key?

No. Private keys must remain private therefore ReadNow can not create or manage private or public keys for your tenant. Private Keys are entered as plain text and immediately encrypted when the security settings are saved.

Add a Credential

You must be logged in with Administrator privileges to create and manage credentials.



The steps to configure credentials are:

1. Navigate to: Administration > Integration > Remote Credentials.
2. Select +NEW and choose a credential type (or open an existing credential).
3. Enter a descriptive name for the credential
4. Enter the 'user name' for the credential.
5. Enter other information as/if required (depends on credential type).
6. Save.

The Configuration report on the Credential form lists where the credentials are used.

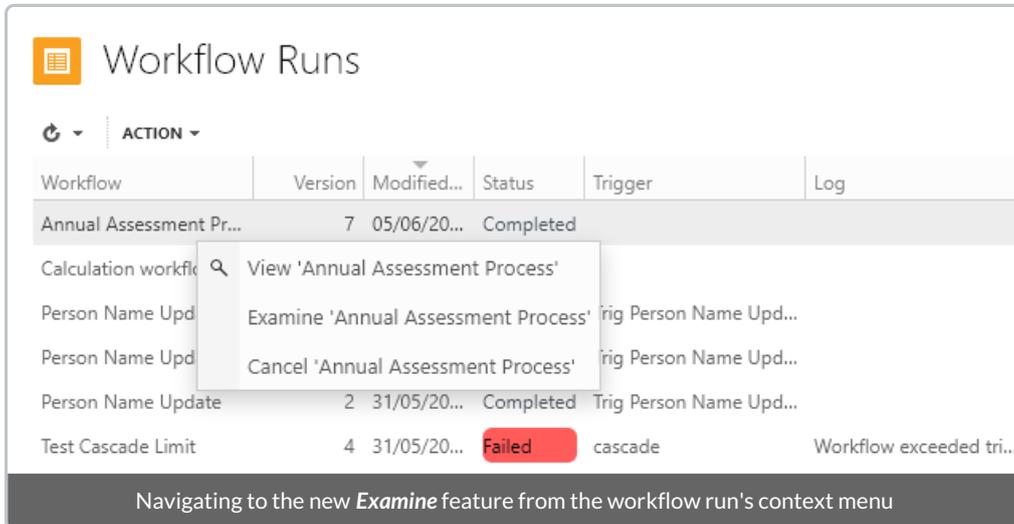
Note:

- When updating configuration for a SSH Key Credential (e.g. changing the name of the configuration record) you will be required to re-enter the Private SSH Key.

Examining Workflow Runs

Last Modified on 04/12/2019 5:17 pm AEDT

Administrators can trouble-shoot workflow execution by using the **Examine** context menu option.



This will show summary page with details that can be separately enabled. The blue buttons toggle the detail shown below them, and the number of buttons shown depends on what activities are in the workflow, as well as the state of the workflow; for example, a workflow will have state information while if is paused or running that is not available once it is complete. Clicking in the toolbar will toggle the display of the various types of data available, where items with the blue are shown and those with grey are hidden.

Workflow: Annual Assessment Process (27330)

State: Paused

Started at: 6/5/19 1:08 PM

Completed at: 6/5/19 1:08 PM

Last updated: 6/5/19 1:08 PM

Duration (ms): 1076

Correlation code: S07285-P01960:workflowRun:27330-Z354821-051308

Inputs

Variables

Steps taken

Time in activities

Activity outputs

Showing: Activity outputs, Variables

Variables

year: 2019

subject: Expiry Notification

Activity outputs

Launch Person Campaign

Responses: [Unnamed] (27388)

An example of state information for a paused workflow

Workflow: Annual Assessment Process (27330)

State: Completed

Started at: 6/5/19 1:08 PM

Completed at: 6/5/19 1:17 PM

Last updated: 6/5/19 1:17 PM

Duration (ms): 1095

Correlation code: S07285-P01960:workflowRun:27330-Z354821-051308

Inputs

Steps taken

Time in activities

Child runs

Showing: Child runs, Time in activities

Time in activities

Activity	Total evaluate inputs (ms)	Total run (ms)
Launch Person Campaign	608	464
Run Workflow	0	9

Child runs

Calculation workflow (27390)

The same workflow once it is completed

State information

Inputs

This the input parameter(s) to the workflow, which link to the object's view form.

Variables

The current variable values are shown in this section.

Steps taken

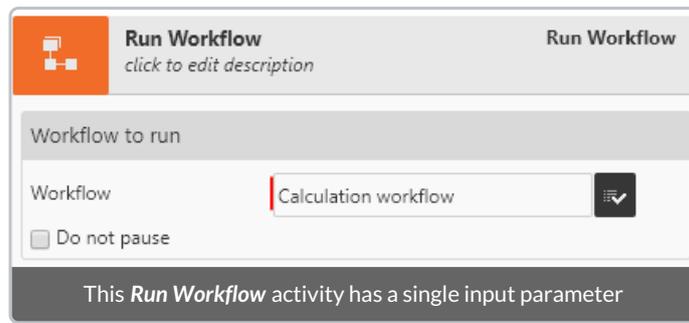
This is the ordered sequence of activities (limited to the last 200).

Time in activities

Summary activity information is shown here in milliseconds, divided into preparation time (**Total evaluate inputs**) and running time (**Total run**).

Total Evaluate Inputs

This is the preparation time taken for all an activity's parameters to be evaluated, including calculation of any calculation parameters.



The **Run Workflow** activity had only one parameter without any calculations, so **Total evaluate inputs** was zero.

Total Run

This is the time take for the execution of an activity, excluding the preparation time. Expect this to be high for user interaction, network communication, or processing numerous records; conversely, it would be low for the **Assign to Variable** or **Gateway** activity.

Activity outputs

These are tasks generated by the workflow, such as from a **Launch Person Campaign** or **User Action** activity.

Child runs

This section lists workflows that were initiated from the current workflow by a **Run Workflow** activity. The workflow name can be selected to navigate to the child workflow.

File Download Audit Report

Last Modified on 05/09/2024 8:23 am AEST

File Download Audit Report

A new type of audit log has been added to the REDINow Platform to assist customers with their Data Loss Detection and Prevention (DLP) requirements. This new log, known as the File Download Audit Log, is generated each time a document is downloaded from the platform. The purpose of this log entry is to provide an auditable record of every instance in which a document stored on the REDINow platform is downloaded by a user.

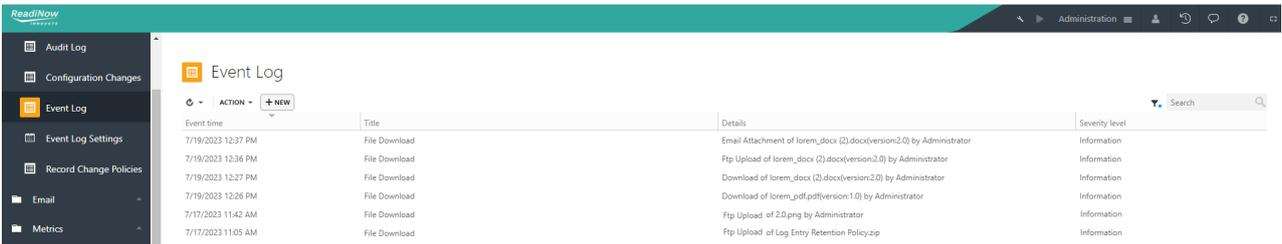
Why use it?

A File Download Audit Log is created where the following occur;

- Download of a document from the Document library
- Download of a document from a Form
- Sending of a document as an Email attachment
- Uploading of a document from the REDINow platform to an FTP server

How to find audit entries?

File Download Audit Log entries appear in the Event Log report that can be found under Administration -> Audit in the REDINow console. Filter the Event Log by "File Download" to restrict the search to only these log entries.



Event time	Title	Details	Severity level
7/19/2023 12:37 PM	File Download	Email Attachment of lorem_docx (2).docx(version:2.0) by Administrator	Information
7/19/2023 12:36 PM	File Download	Ftp Upload of lorem_docx (2).docx(version:2.0) by Administrator	Information
7/19/2023 12:27 PM	File Download	Download of lorem_docx (2).docx(version:2.0) by Administrator	Information
7/19/2023 12:26 PM	File Download	Download of lorem_pdf.pdf(version:1.0) by Administrator	Information
7/17/2023 11:42 AM	File Download	Ftp Upload of 2.0.png by Administrator	Information
7/17/2023 11:05 AM	File Download	Ftp Upload of Log Entry Retention Policy.zip	Information

What is captured in the log entry?

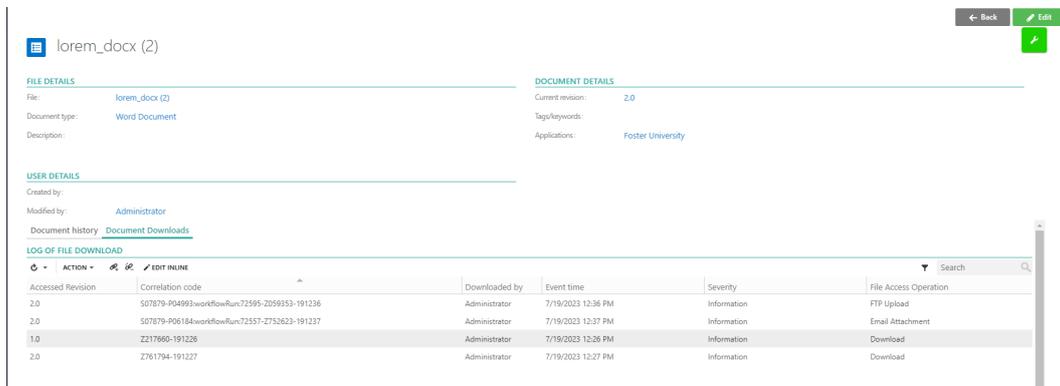
Each of these log entries contains the following properties:

- Accessed file - link to the document that was downloaded
- Accessed revision - the version/revision of the document that was downloaded
- Correlation code - the correlation code of the download request
- Downloaded by - link to the user who performed the download
- Event time - the time of the download
- File access operation - the type of document access that was performed.

Options are: Download, Email Attachment, FTP Upload

Where else can I view this information ?

If you are looking for information on a document stored in the Document Library, you will find the information on the Document Downloads tab of each document.



The screenshot shows a document page for 'lorem_docx (2)'. It features several sections: 'FILE DETAILS' (File: lorem_docx (2), Document type: Word Document, Description:), 'DOCUMENT DETAILS' (Current revision: 2.0, Tags/keywords: Foster University), and 'USER DETAILS' (Created by: Administrator, Modified by: Administrator). The 'Document Downloads' tab is active, displaying a 'LOG OF FILE DOWNLOAD' table with columns for Action, Correlation code, Downloaded by, Event time, Severity, and File Access Operation.

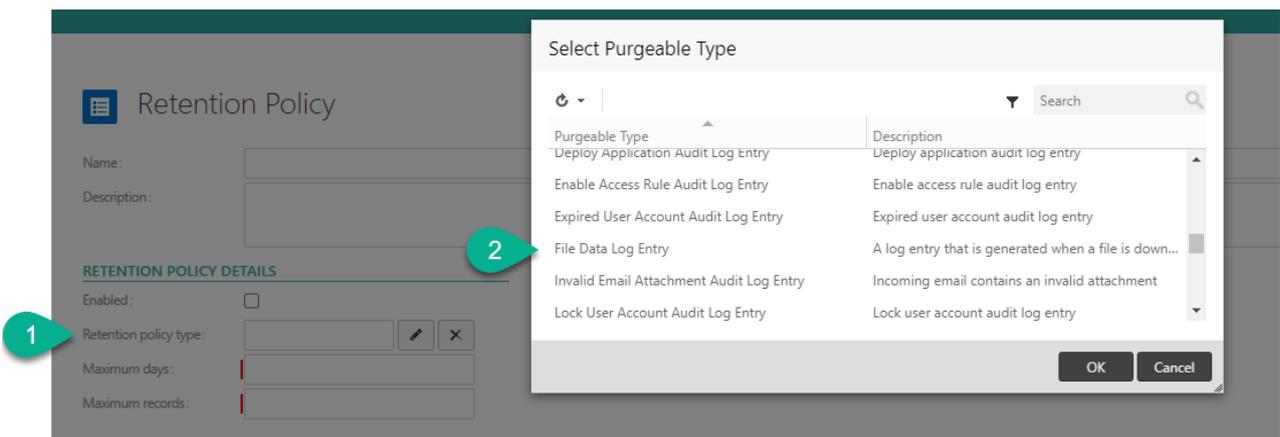
ACTION	Correlation code	Downloaded by	Event time	Severity	File Access Operation
2.0	S07879-P04993:workflowRun:72595-2059353-191236	Administrator	7/19/2023 12:36 PM	Information	FTP Upload
2.0	S07879-P06184:workflowRun:72557-2753623-191237	Administrator	7/19/2023 12:37 PM	Information	Email Attachment
1.0	Z317660-191226	Administrator	7/19/2023 12:26 PM	Information	Download
2.0	2761794-191227	Administrator	7/19/2023 12:27 PM	Information	Download

What setup is required?

The File Download Audit Log feature is enabled by default: no configuration is necessary to record the log entries into the Event Log.

If business requirements call for a specific retention period for the download audit report, a retention policy with the required settings will need to be configured. (To learn more about the retention policy feature, please check out this article on [Log Retention Policies](#).)

Create a new retention policy for the file download audit report by selecting 'File Data Log Entry' for 'Retention Policy Type' Field.



The screenshot shows the 'Retention Policy' configuration page. A dialog box titled 'Select Purgeable Type' is open, displaying a list of purgeable types. A red callout '1' points to the 'Retention policy type' field on the main page, and a red callout '2' points to the 'File Data Log Entry' option in the dialog.

Purgeable Type	Description
Deploy Application Audit Log Entry	Deploy application audit log entry
Enable Access Rule Audit Log Entry	Enable access rule audit log entry
Expired User Account Audit Log Entry	Expired user account audit log entry
File Data Log Entry	A log entry that is generated when a file is down...
Invalid Email Attachment Audit Log Entry	Incoming email contains an invalid attachment
Lock User Account Audit Log Entry	Lock user account audit log entry

Maintenance Periods

Last Modified on 03/08/2022 2:21 pm AEST

Overview

The ReadNow platform allows administrators to place a tenant into a 'maintenance' mode.

The purpose of this feature is to allow tenant administrators to define their own maintenance periods and place the tenant in 'maintenance' mode.

When a tenant is in maintenance mode non-admin users are prevented from interacting with the tenant - this may be necessary during large data migrations or schema changes, for example.

Users who are members of the administrators role will be able to use the console as normal.

Reminders and notifications are used to inform all users about the current status of the tenant, including start and end times for the maintenance period.

Note: 'Maintenance Periods' performed by tenant administrators are different to [Scheduled Maintenance & Updates](#) performed by ReadNow.

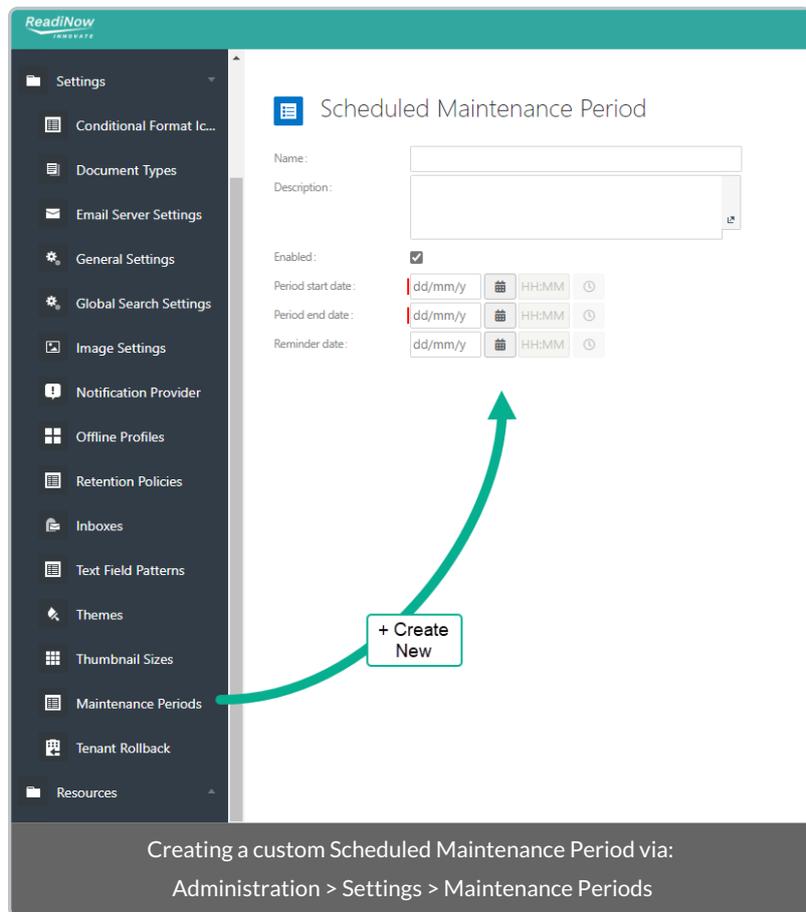
Setting a Maintenance Period

Tenant administrators can create, edit, delete their own Maintenance Periods via:

Administration > Settings > Maintenance Periods

A scheduled maintenance period settings Form has the following fields :

- Name : An optional name for the maintenance period
- Description: An optional description of the maintenance period - displayed in messages & reminders relating to the maintenance period.
- Enabled: Must be checked to activate the maintenance period.
- Start date: The date and time of the start of the maintenance period (required)
- End date: The date and time of the end of the maintenance period (required)
- Reminder date: An optional reminder notification sent to all users currently logged into the tenant.



What users experience

Once a maintenance period has been set and enabled by an administrator the following events will take place:

- if configured a reminder will be sent at the specified time to all users currently logged into the tenant
- prior to the scheduled maintenance, a reminder will be sent* to all users currently logged into the tenant with:
 - 10 minutes notice
 - 5 minutes notice
- the tenant will enter maintenance mode at the scheduled time
 - all logged-in users will see a notification stating the tenant is in maintenance
 - users will NOT be logged out
 - admin-users will be able to dismiss the notification
 - the maintenance start & end times will be specified
 - non-admin users will be unable to interact with the platform
 - users with tenant administrator roles will be able to use the platform normally (after dismissing the notification)
- when the maintenance period ends all logged-in users will receive a notification that the scheduled maintenance period has finished

*NOTE: if maintenance period is created with less than 10 (5) minutes notice the 10 (5) minute reminder will not

be sent.

Notifications

Last Modified on 12/04/2024 4:14 pm AEST

Overview

Notifications is a ReadiNow Platform feature that allows an administrator to configure the Platform to notify users when specific conditions are met.

The currently supported notification mechanism is via email. SMS notifications may be available in a future release.

Creating a new Notification

To create a new Notification:

1. Select **Administration** from the Application Menu. The menu appears with available applications.
2. Select **Administration**. The application displays at the landing page.
3. In the Left Navigation Area, select **Notifications**. The **Notifications** expand to display list.
4. Select **Notifications**. The existing Notifications display.
5. Select **New** to display the drop down and select the type of Notification to create. The appropriate Notification form appears.
6. Complete the details as described in the next sections and select **Save** to save the Notification.

Scheduled Notification

This notification type enables users to receive notifications about records on a set schedule.

Note: Scheduled notifications can be triggered manually from the **Notifications** report page. This can be done by selecting the **Run** option from the right-click context menu or the report actions menu.

Section - General

Property	Description
Type	The type of Notification. This will display Scheduled Notification after the record is saved.
Name	The name of the Notification.
Description	An optional description for this Notification.
Application	The selected application. This is used for packaging and deployment.
Enabled	This determines whether the notification is enabled.

Property	Description
Object	The object that this notification relates to.
Notify person	An expression that should evaluate to a Person this notification is being sent to.

Section - Source details

Property	Description
Report	The report used to select records for generating notifications.
Filters	<p>When a report is selected, this section will list any analyzer conditions that are defined on the selected report.</p> <p>Any filters that are defined only apply to the current notification and allows for dynamic filtering to be applied to the selected report.</p> <p>The Override checkbox will be shown for any configured analyzer conditions. It allow for any existing values to be overridden with local values.</p>

Section - Schedules

This section lists the related schedule records that define when the notification will be run.

The **New** button will display a drop down that allows a new schedule to be created.

Creating or modifying schedules will display a dialog that allows the schedule to be updated.

Section - Targets

The related target records that define the targets for this notification.

At the moment only Email Notifications are supported.

Creating or modifying targets will display a dialog that allows the target to be updated.

Trigger Notification

This notification type enables users to receive notifications when records are updated or created.

Section - General

Property	Description
Type	The type of Notification. This will display Scheduled Notification after the record is saved.
Name	The name of the Notification.
Description	An optional description for this Notification.
Application	The selected application. This is used for packaging and deployment.
Enabled	This determines whether the notification is enabled
Object	The object that this notification relates to
Notify person	An expression that should evaluate to a Person this notification is being sent to.

Section - Trigger

Property	Description
Trigger on	<p>Choose when to trigger. Available options are:</p> <ul style="list-style-type: none">• Create - run only when record is created• Update - run only when specified fields or relationships are updated• Create or Update - runs when record is created or specified fields or relationships are updated
Fields	Specify the fields of the selected object to trigger on.
Relationships	Specify the relationships of the selected object to trigger on.

Section - Targets

The related target records that define the targets for this notification.

At the moment only Email Notifications are supported.

Creating or modifying targets will display a dialog that allows the target to be updated.

Schedule Dialogs

Cron

Property	Description
Name	The name of the schedule.
Description	The description of the schedule.
Cron definition	The cron expression defining when the schedule will trigger. See Cron Trigger Tutorial for details regarding cron expressions.

Daily Repeat

Property	Description
Name	The name of the schedule.
Days	Specify the days of the week the schedule will trigger on.
Time of day	Specify the time of the day the schedule will trigger on.

One Off

Property	Description
Name	The name of the schedule.
Description	The description of the schedule.
Date and time	Specify the date and time the schedule will trigger.

Email Target Dialog

Property	Description
Name	The name of the email target. Entries that are written to the tenant event log will show this name.
Enabled	This determines whether the email target is enabled.
Email field	Specify which text field on person object represents the email field.
Email template	Specify which email template to use.
Object variable	Select which variable defined in the email template references the object.
CC	Provide an expression that evaluates to a string of email addresses separated by semicolons, or that evaluates to a Person for use in the CC field.
BCC	Provide an expression that evaluates to a string of email addresses separated by semicolons, or that evaluates to a Person for use in the BCC field.
Person variable	Select which variable defined in the email template references the person.
Aggregate notifications	Specify whether to aggregate notifications. <ul style="list-style-type: none"> • False - Per Notification Run: sends an email per record associated with the notification run • True - Per Notification Run: sends a a single email for all records associated with the notification run for a given person

Spreadsheet Import

A new option has been added to the spreadsheet import options called Suppress Notifications.

If this is true, trigger based notifications will not be raised during an import.

Logging

The **Sent Email Messages** report in **Administration → Settings → Email Server Settings** will list all emails that were sent from notification runs.

The tenant event log in **Administration → Audit → Event Log** will list notification run failures along with a reason for the failure.

Tenant Health Check

Last Modified on 29/09/2020 1:01 pm AEST

What is a Tenant Health Check?

The Tenant Health Check is a static analysis of the application functionality in a tenant. It analyses Access Rules, API Callouts, Calculated Fields, Forms, Reports, Report Templates and Workflows. However, it does not predict problems that occur as a result of data, such as a division by zero.

Why Use It?

The Tenant Health Check gives an indication of the integrity of a tenant, so it is particularly useful as a validation checkpoint when changes have been made to Applications.

Running a Tenant Health Check

To run a Tenant Health Check:

1. Select Application Menu. The menu appears with available applications
2. Select **Administration**. The application displays at the landing page
3. In the Left Navigation Area, select **Metrics** to expand to list
4. Select **Health Check** to display the **Health Check** page
5. Start the check by clicking the **Start Scan** button. The status will update to show that a scan is running. The blue status box will turn green when the scan is complete. Once the scan has completed click the refresh icon on the **Health Check Summary** report.

The screenshot shows the 'Health Check' page. At the top right, there is a 'Start Scan' button. Below it, the 'Health Check Scan Status' section shows a running scan with the message 'Running - Finding items to process.' and details: 'Start Date : 5/14/2019 12:05 PM' and 'Duration : 12 secs'. A 'Refresh' link is also present. The 'HEALTH CHECK SUMMARY' table has columns for 'Health Check Type', 'OK', 'Errors', 'Warnings', and 'Suggestions'. The 'ITEMS BY TYPE' section shows 'No records found'. A legend on the right indicates colors for Error (red), Warning (orange), Suggestion (yellow), OK (green), and Other (grey). A footer message states 'A health check in progress'.

Health Check Type	OK	Errors	Warnings	Suggestions
Access Rules	0	0	0	0
API Callouts	0	0	0	0
Calculated fields	0	0	0	0
Forms	0	0	0	0
Report Templates	0	0	0	0
Reports	0	0	0	0
Workflows	0	0	0	0

Health checks are run on demand by an administrator. The check may take a significant amount of time depending on the number of items in the tenant - the number of Reports, Report columns, Workflows, Workflow Activities, Action Buttons, Objects, Forms and Access Rules. The check is affected by the number of Definition and not Instances; for example, the number of Records and Workflow runs do not matter, but the number of Objects and Workflows matter.

Typically the check will take between 10 and 60 minutes depending on the tenant complexity, but the time taken will be consistent for each tenant. Please note that running a Tenant Health Check will not impact system performance.

Interpreting Results

The results are categorised as suggestions, warnings or errors, but the health check has no real understanding of how applications need to work, so the results need to be reviewed to validate them in context.

 Health Check
Start Scan

HEALTH CHECK SUMMARY

Health Check Type	OK	Errors	Warnings	Suggestions
Access rules	222	2	4	0
Action buttons	0	0	0	0
API callouts	16	0	0	0
Calculated fields	32	1	0	0
Forms	217	0	0	0
Report templates	2	0	0	0
Reports	313	7	10	0
Workflows	22	2	0	0

ITEMS BY TYPE

Item Type	OK	Warning	Error
Reports	313	0	7
Calculated fields	32	0	1
Workflows	22	0	2
Forms	217	0	0
Access rules	222	0	4
API callouts	16	0	0
Report templates	2	0	0

HEALTH CHECK RESULTS

Health chec...	Item checked	Details	Application	Message...	Messages	Subcomponent
Reports	H_Country Report		Test Solution	Error	Invalid column: H_City	
Reports	H_Country Report		Test Solution	Error	Invalid relationship: H_City	

Results of a completed health check

Errors

This is the place to start when checking the results. Invalid columns are the first errors to address, along with Calculation errors. If these are fixed and the scan is run again, many of the invalid condition errors will also be resolved. Only start checking warnings when there are no errors. Try to fix as many as possible before running the scan again, and remember to refresh the report again afterwards.

Warnings

Warnings are generated where a recommendation will affect the functionality of an Application, such as when Calculations may not seem to be logical according to the Health Check rules. If the warning does not raise any concerns then it may be a false positive, and there is no need to make any changes.

Suggestions

Suggestions are specific recommendations for improving Applications for better maintainability or performance, but have no functional impact. A good example of this is when a new Calculation operator is released and existing Calculations may benefit from from using the new operator.

Tenant Refresh

Last Modified on 10/01/2025 12:22 pm AEDT

A tenant refresh is a process that involves copying data from a source tenant to a target tenant. Please note that if a target tenant already exists prior to the refresh, it will be replaced during this operation. Therefore, it is important to ensure that your production tenant is never designated as the target tenant for a tenant refresh.

Typically, a tenant refresh is used to create a copy of the production tenant that can be used for:

- developing and modifying solutions
- testing and troubleshooting

For details on how sensitive data is obfuscated (masked) during a tenant refresh, please refer to the following article:

<https://readinow.knowledgeowl.com/docs/sensitive-data>

Before refresh

If the target tenant already exists, replacing it through a tenant refresh will impact other users currently utilizing that tenant. Before requesting a tenant refresh, please verify whether the target tenant exists. If it does, check the following:

- Are all users in agreement with the proposed refresh date?
- Is there data or users that need be retained by XML export?
- Are there any special integrations, such as API or SSO, that need to be recorded or exported via XML?
- Are there specific mail settings, including an email forwarding address, that should be recorded?
- Navigate to Administration > Settings > General settings. Record the current general settings in the existing tenant.

Post refresh

You will receive notification from ReadNow once your tenant refresh request has been actioned. The target tenant is now ready for your post-refresh actions:

- Import any data that was exported during your preparation
- Re-create any special integrations, such as API or SSO, from your notes or via XML import
- Update specific mail settings, including an email forwarding address, as required

Regardless of whether the target tenant existed before the tenant refresh, you should verify the General Settings match your requirements. Navigate to Administration > Settings > General settings. Update these settings as necessary.

Our recommendation is to disable communications, API callouts and scheduled workflows to prevent confusion caused by any overlap with your production tenant. For this reason, enabling communications does not automatically enable API callouts. To enable API callouts you must first enable communications and then explicitly enable API callouts.

How to request a tenant refresh

Tenant refreshes can be requested via [ReadiService](#), the [ReadiNow Service Desk](#).

Create a ticket with the title "Tenant Refresh", including the name of the target tenant and the preferred date for the refresh.

In the ticket description:

- Clarify the 'source' tenant, typically your production tenant (*i.e. a production tenant*) and 'target' (*i.e. a non-production tenant*). Remember the tenant refresh process will delete any existing target tenant.
- Indicate if sensitive data should be obfuscated during the refresh. See [here](#) for information on obfuscation.
 - Data is not obfuscated by default
- Indicate if internal data should be included in the refresh. See [here](#) for an explanation of internal data.
 - Internal data is excluded by default.

Standard Maintenance & Support allows customers up to 2 tenant refreshes per month free-of-charge with a minimum of 3 days notice to ReadiNow.

Release Notes 2.197 (09 January 2025)

Last Modified on 21/01/2025 2:21 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

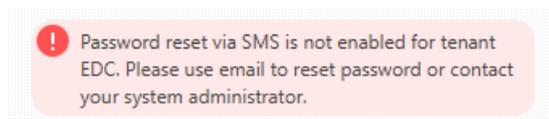
Features

Platform Feature Enhancements

Security Upgrade: Disable Password Reset via SMS

Administrators now have the option to disable password resets through SMS. This new setting can be found in Administration > Settings > General Settings and applies to all user accounts. The ability to reset passwords via email remains unchanged.

If a user attempts to reset their password using SMS, the following warning message will be displayed:



Nova Feature Enhancements

Data Table Refinements

- **Refresh:** A manual refresh option has been added to the data table component, allowing users to easily refresh the table and view the most current information without needing to reload the entire browser tab.
- **Multiselect to Delete:** Users can now select and delete multiple rows in data tables with a single action. This feature simplifies the deletion process, enabling quicker management of large datasets and enhancing the overall user experience for bulk data handling.
- **Pagination:** Improved pagination now clearly indicates when additional pages are available. This enhancement also boosts responsiveness, providing a more intuitive user experience when navigating through large datasets.
- **Footer Updates for Non-Grouped Reports:** The data table footer has been enhanced to provide clear information about the user's current position and the total number of records. Users can now view both the range of displayed records and the total record count. Additionally, the data table component retains the records range and count when navigating through records, ensuring a seamless experience.

Page Builder Enhancements:

- **Object Creation:** Admins can now create new objects in all types of forms within Page Builder, including multi-step forms.

- **Preventing Accidental Deletions:** To prevent unintentional deletion of components in Page Builder and to make it easy to revert to the last saved state, two new features have been introduced:
 - **Discard Button:** The "Discard" button allows users to quickly revert their work to the last saved state, clearing unsaved changes with a single click.
 - **Delete Confirmation Modal:** A confirmation prompt now appears before deleting a component, helping to safeguard against accidental deletions.

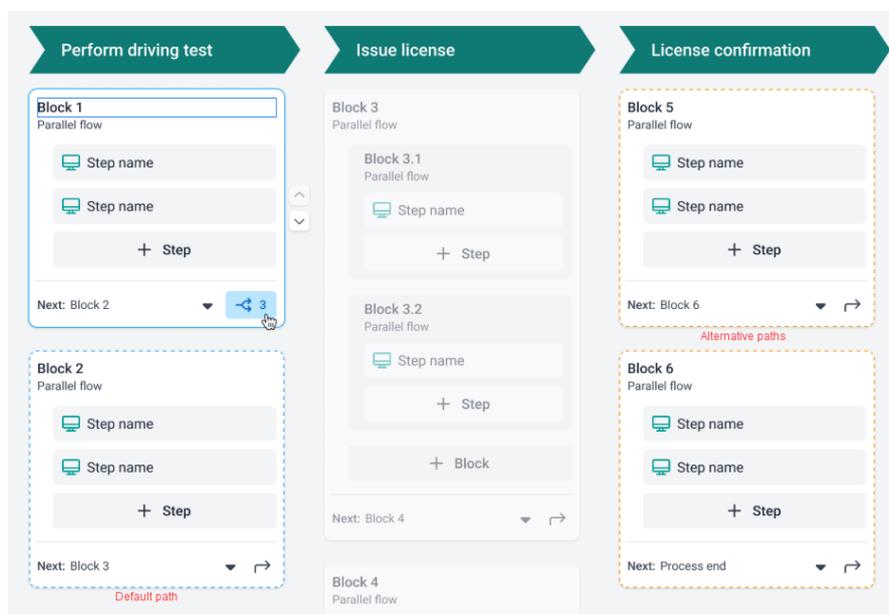
Display Improvements:

- **Tooltips** have been added to truncated field labels and data table titles. The tooltip will automatically display the full text of the label or title when hovering over it, with no configuration necessary.

Nova Features available in Beta

The RediNow Process engine is an exciting development in the realm of business process automation. It offers a highly configurable and user-friendly approach to designing and implementing business processes. The Process feature entered the beta phase in Release 2.189 and will be accessible to customers interested in joining the early access program. If you would like to try out the Process feature, please submit a support ticket

- **Path signifiers:** An enhancement to path signifiers in Release 2.197 provides a clear visual of alternative and default paths, making it significantly easier to understand the overall process structure. Users can configure and maintain processes with greater efficiency and clarity, reducing complexity and improving accuracy in setup and troubleshooting.



Bug Fixes

Nova Resolved Issues

- **Containers on Forms Expanding in View Mode:** Field values for text, lookup, and choice fields now truncate correctly in view mode, preventing containers from expanding unexpectedly.

- **Inline Edit Fixes:**
 - **Visibility Conditions Respected:** A validation error will no longer appear when a mandatory field is hidden on a form during inline editing. The mandatory field value will again be enforced if the visibility condition is removed in the future.
 - **Read-Only Respected:** It is no longer possible to edit a read-only field while using inline edit.
 - **Display and Picker Reports:** Resolved an issue where inline edit was not available in display and picker reports.
- **Scrollbars:**
 - Flickering has been resolved.
 - The scrollbar experience has been enhanced, improved hover states, a better scrolling experience with trackpads or cursors, and larger scrollbars in data tables.
- **Display:**
 - Improved text wrapping and truncation in Heading and Text components. Previously, long headings or values would cause the container to expand, affecting the layout of the form.
 - Fixed a bug in container paddings in the Page builder, to provide a consistent layout for both admins and users.
- **Warning Message for Choice Field Value Deletion:** The delete confirmation popup for deleting a value in a choice field has been clarified to avoid confusion about the deletion of the entire page.

Release Notes 2.196 (28 November 2024)

Last Modified on 28/11/2024 1:52 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Features

Nova Feature Enhancements

Redesigned Date, Time, and DateTime Form Fields:

The new design introduces user-friendly pickers for app builders. These enhancements will be noticeable when working with pages, process builders, and scheduled notifications.

Refinements to Multiline and Rich Text Fields:

Both multiline and rich text fields now feature an increased height, providing a more spacious and comfortable editing experience.

Object Properties Enhancements:

- **Choice Fields:**
 - Improved the drag-and-drop experience for choice field values within the field schema modal during creation or editing. The mouse cursor and drag/drop icon are now properly aligned.
 - Added a drop indicator to clearly show users where a choice value will be placed.
- **Lookup, Relationship, and Document Fields:**
 - Resolved minor issues in the properties for Lookup, Relationship, and Document fields, including:
 - Hide in Reverse
 - Ownership
 - Security
 - Use Current Person

Improved File Upload Security:

The file upload area has been improved to enhance security and user experience. Users without create permissions for a document object will no longer see the file upload area, effectively disabling the upload functionality. This change ensures that users cannot attempt to upload files to documents they do not have permission to modify, thereby streamlining the interface and preventing unauthorized actions.

Car Documents

Find a record Filter

Allowed files

Drop your files here to upload, or Choose files

Type	Name	Extension	Size	Modified date	Last modified by
	rent a car banner (1)	.png	831,653	11/20/2024 12:19 AM	Administrator

With Create Permission

Car Documents

Find a record Filter

Type	Name	Extension	Size	Modified date	Last modified by
	rent a car banner (1)	.png	831,653	11/20/2024 12:19 AM	Administrator

Without Create Permission

Remembering applied sorting:

- The data table component will remember sorting applied when drilling through to a record.

Bug Fixes

Nova Resolved Issues

- File Name Sanitization During Upload:** File names are now properly sanitized during the upload process. This allows files with multiple periods in their names to be uploaded successfully. Any extra periods will be replaced with underscores, while a single period is still permitted to separate the file name from its extension.
- Back Navigation Button Update:** The back navigation button will no longer be displayed when there is no context to return to, such as when a user clicks a link from an email.
- Container Expansion Fix:** Resolved an issue that caused containers to expand unexpectedly when long text was entered into Lookup, Choice, Single Line, or Rich Text fields.
- Form Field Label Truncation:** Labels within vertical containers will now truncate when the maximum width of the container is reached, preventing the container from expanding unexpectedly.

Release Notes 2.195 (31 October 2024)

Last Modified on 30/10/2024 11:54 am AEDT

ReadiNow reserves the right to update these release notes at any time.

Features

Nova feature enhancements

AI Explain

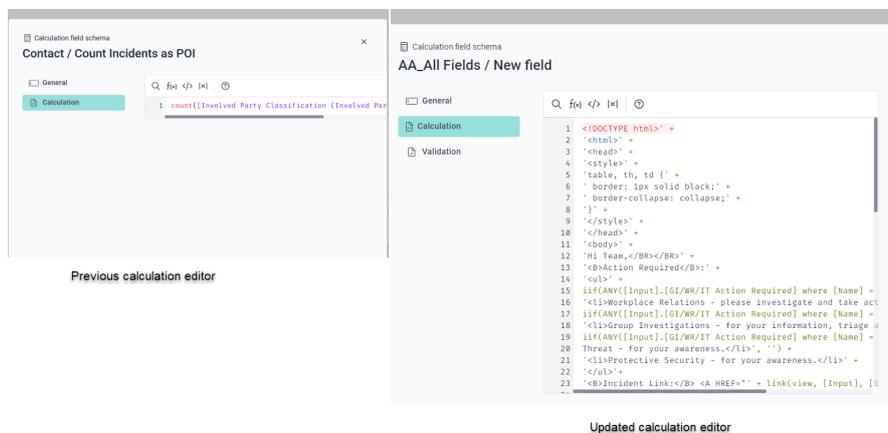
AI Explain is a powerful new feature for app developers that effortlessly translates calculations and expressions into natural language descriptions. This tool provides both concise summaries and detailed step-by-step breakdowns, making complex expressions easier to understand. By leveraging generative AI, AI Explain not only streamlines knowledge transfer but also simplifies the maintenance of calculations, ultimately saving developers valuable time.

Enhanced File Upload Area

We are excited to announce an improvement to the file upload area within the document object. Previously, this area was visible to all users, regardless of their access rights. With the new show/hide functionality, administrators now have the ability to configure the file upload area independently of the 'New Document' button. This enhancement allows for greater flexibility in user interface customization, reducing potential confusion for users and ensuring a more tailored experience.

Calculation Editor Update

The Calculation Editor, located in the Calculation Field schema modal, has been enhanced for improved usability. Previously, the editor had a fixed height, which made it challenging to enter or read long calculations. We have now adjusted the editor's height to be dynamic, depending on the modal's height. Additionally, horizontal and vertical scrollbars have been added to facilitate easier navigation through lengthy calculations. These improvements aim to provide a more user-friendly experience when working with complex expressions.



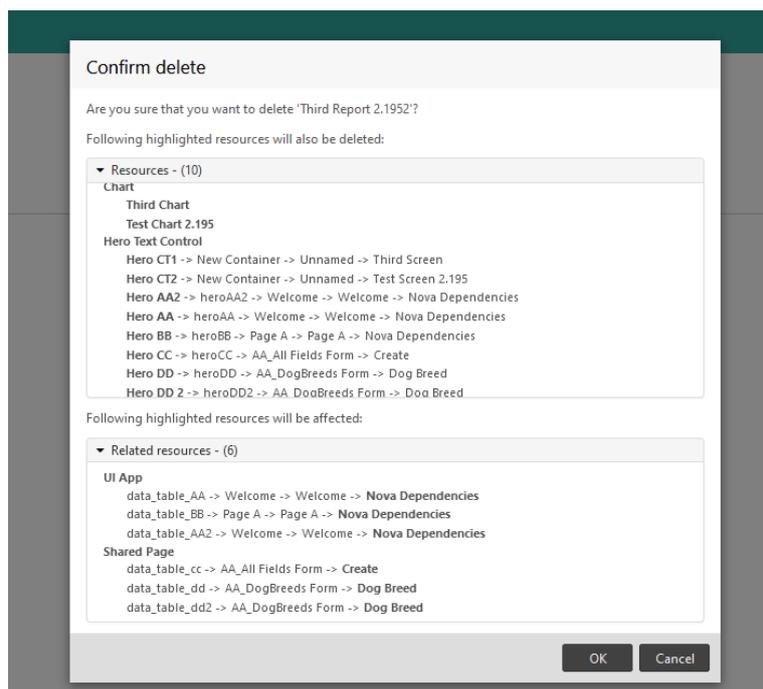
Platform feature enhancements

Delete Modal

We have enhanced the Delete Modal to provide clearer visibility into which configurations may be affected when an item is deleted.

Review the modal for detailed information about potential impacts on functionality when attempting to delete an item. For example, if a user wants to clean up unused workflows but is uncertain about their current usage, the Delete Modal will list the items slated for deletion and highlight any functionalities that could be affected, such as a Nova form page that may cease to function.

Further enhancements to this feature will be included in future upgrades. These improvements aim to provide users with comprehensive insight into all areas of their application that might be impacted.



General Enhancements

Rebranding of AI Suggest

The visual design of our AI Suggest feature has been refreshed with a new logo and updated colors. This rebranding will provide a more cohesive and visually appealing user experience.

Cyber security attack

Discard Save

Risk Name

Cyber security attack

Risk description

One significant cyber security attack risk for a company is a phishing attack. Phishing is a method used by cybercriminals to trick individuals into revealing sensitive information such as passwords, details, or social security numbers. These attacks typically involve deceptive emails or messages that appear to be from a trusted source such as a bank or a colleague, but are actually designed to steal information.

If a company falls victim to a phishing attack, it can have severe consequences. Cybercriminals can gain unauthorized access to sensitive data, financial information, and customer details.

Controls

Investigation

Business Resilience

Find a record

Filter

+ New

✎

🔗

🔄

✂️

⋮

Business Resilience

Owner

Status

List: Impact T...

Financial...



Question

Provide a description for a Cyber security attack risk for a company in 150 words



< 1 >

Release Notes 2.194 (03 October 2024)

Last Modified on 02/10/2024 4:17 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Features

Nova feature enhancements

Cascading Fields

The data entry experience for cascading fields has been improved. No options are displayed in a child field before the parent value has been selected. (Cascading fields for Nova were introduced in [Release 2.193](#).)

Hero Counter

The width control for the Hero text now has three versatile options to choose from:

- **Fill container:** This option ensures that the Hero text expands to fill the container alongside other components, creating a cohesive look.
- **Compact:** With this setting, the Hero text will truncate once it reaches the specified width, keeping your design neat and tidy.
- **Dynamic:** This flexible option allows the Hero text to resize based on the content, ensuring it always fits perfectly.

Remembering applied filters

Search filters are now retained when drilling through to a record and then returning back to the original page.

- The data table component will remember applied filters, search results, selected record, and active pagination when drilling through to a record
- The page filter component will remember the applied filter when drilling through from the page filter to a hero counter, chart or data table.

Process

We have three enhancements for Process in Release 2.194.

1. **Streamlined Action Buttons:** Users can now save and complete forms in one step, eliminating the need to click the save button separately. This simplifies the form submission process.
2. **Flexible Form Configuration:** Admins can now set the form to open in View, Edit, or Create mode when configuring a process step. This enhancement allows tasks to be opened for data review, thereby streamlining the workflow experience.

3. **Run Condition Signifiers:** Run condition signifiers are now displayed in every step or block where a run condition is configured. This improvement helps users quickly identify which steps or blocks have run conditions, enhancing navigation and understanding of the overall process.

Operations Enhancement

By default, any data marked as sensitive will now be obfuscated during a tenant refresh.

- Details of sensitive data are given here: <https://readinow.knowledgeowl.com/docs/sensitive-data>
- The process for raising a tenant refresh request is covered here: <https://readinow.knowledgeowl.com/docs/tenant-refresh>

Release Notes 2.193 (05 September 2024)

Last Modified on 05/09/2024 8:19 am AEST

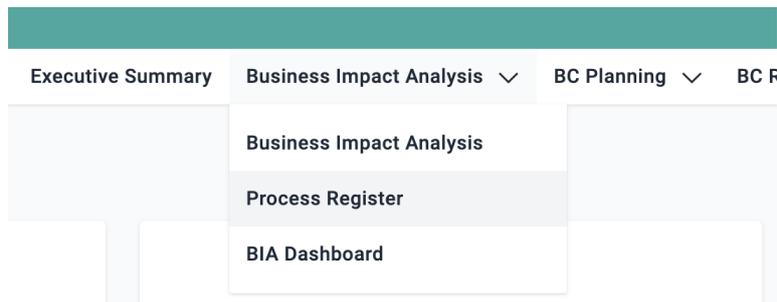
ReadiNow reserves the right to update these release notes at any time.

Features

Nova features

Navigation: Menu Enhancements

The menu in Nova applications has been improved to clearly indicate the currently active page within folders.



Additionally, the overall look and feel of the menu have been enhanced for better usability. For menus with a large number of items, navigation is now more intuitive. If the menu bar exceeds the screen width, arrow icons will appear at both ends. Hovering over these arrows will allow users to scroll the menu left and right seamlessly.



Process: Enhanced Looping to Parent Blocks

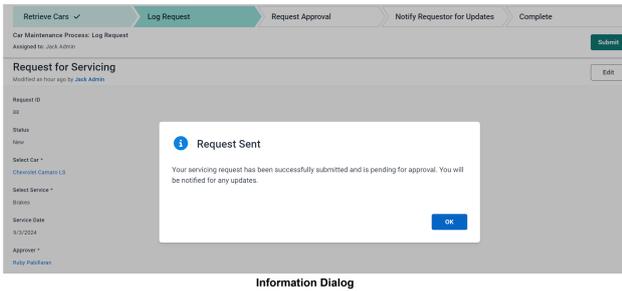
Previously, the Process feature only allowed navigation back to a stage level, limiting your ability to return to specific blocks within a stage. With this new enhancement, you can now configure your process to loop back to a specific parent block within a stage. Each stage can contain multiple parent blocks, and you can easily set up your process to navigate back to any of these blocks as needed.

Process: Action Dialog

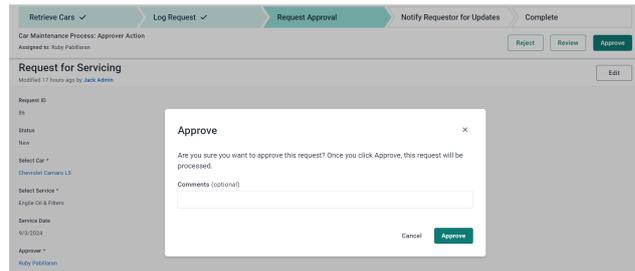
The new Action Dialog feature enhances user interaction by allowing users to confirm actions, input additional details, or view specific information before proceeding to the next step. You can now configure customizable dialogs that appear as modals when users perform actions, such as clicking a button. This feature enables you to display information and gather user input directly within the process, creating a more interactive and user-friendly experience.

- **Information Dialogs:** Display relevant information or details after a step, providing users with additional context, instructions, or updates.

- **Confirmation Dialogs:** Gather user confirmation or input, ensuring that users verify actions or provide necessary information before moving forward.



Information Dialog



Confirmation Dialog

Forms: Cascading Fields

Cascading fields allow you to filter one field based on the selection of another. This functionality can be configured between the following field types:

- Choice and Lookup fields
- Choice and Inline Relationship fields
- Two Choice fields (displayed as Radio or Checklist)
- Lookup and Choice fields
- Inline Relationship and Choice fields
- Inline Relationship and Lookup fields
- Two Inline Relationship fields

For detailed guidance on setting up cascading fields, please refer to this article in our documentation. <https://readinow.knowledgeowl.com/docs/cascading-fields>

Inline Editing: General Availability

The inline editing feature, introduced in **Release 2.191**, is now generally available with the following improvements:

- Fixed an issue where records with errors were being saved alongside records without errors.
- Updated custom validation to respect the 'Always Validate' settings during the saving process.

Nova Bug Fixes

- The error message displayed when the input binding does not match the column or filter analyzer in the data table has been enhanced to provide clearer and more meaningful information.

Deprecated Features

Withdrawal of Calendar Feature in Classic

ReadiNow is withdrawing the classic calendar feature, resulting in the removal of calendar functionalities, including the creation and selection of calendar items and navigation views. Your data will remain intact and accessible via an alternative report view.

For more details, including timing, please refer to this notice: [Withdrawal of Calendar Feature in Classic](#)

Release Notes 2.192 (08 August 2024)

Last Modified on 07/08/2024 9:41 am AEST

ReadiNow reserves the right to update these release notes at any time.

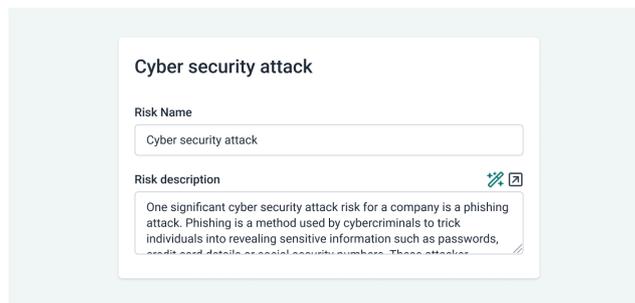
Features

Nova features

AI Suggest

AI Suggest brings the power of AI to data entry

Users can utilize ReadiNow AI Suggest to create their own prompts, enhancing the efficiency and accuracy of their data entry process. This intelligent assistance provides valuable suggestions that add important context to the data being entered.



Prompts can be added to the following Nova Page forms fields:

- Multiline text fields
- Lookup fields.
- Relationship fields displayed as both data table and inline fields.

More documentation about the ReadiNow AI Suggest feature can be found [here](#).

Choice Fields

Choice fields can be modified via the Nova app builder.

We are streamlining the app configuration process to help you customise your app more efficiently. The object schema can be modified to add new Choice fields without the need to use the classic form builder. ☐☐

These updates will occur over several releases. Our sixth release focuses on creating and modifying Choice fields.

Previous releases of this feature have improved:

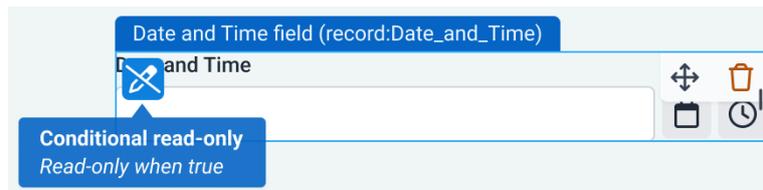
1. Text and numeric fields. See [here](#).
2. All the datetime fields. See [here](#).
3. Calculation and lookup fields. See [here](#).

4. Relationships. See [here](#).
5. Document fields. See [here](#).

Signifiers

Signifiers have been added to to the read-only condition in Page builder.

When adding read-only conditions in the Page Builder, an indicator will appear when hovering over a form field on the canvas. A slashed pencil icon indicates that the field has read-only conditional properties applied. Hovering over the icon will reveal the specific condition that has been applied.



Previous releases have introduced signifiers for fields and components. See [here](#).

Inline editing

Inline editing available in Beta availability - update

The ability to edit inline was introduced in [Release 2.191](#). The following improvements have been made to this feature:

- Saving with a mix of errors and successful changes now allows the Save button to save only the successful rows.
- The overall user experience of keyboard control has been enhanced, enabling users to use the up and down arrows to edit multiple rows while remaining in the same column.
- Image, Calculation, and AutoNumber fields are now appropriately labeled as non-editable fields.
- Mandatory fields now display an error icon when validation occurs.
- The behavior of double-clicking to edit a cell in Inline Edit has been adjusted to align with Classic behavior, changing it to a single click.
- Custom validation behavior has been updated to validate only after the Save action.

Bug Fixes

Classic & Platform resolved issues

- Under specific circumstances, users would encounter an error message stating, "The writer is in closed or in error state" while accessing a record. This issue has now been resolved.

Nova resolved issues

- Users are now redirected back to the report after clicking the Discard button for a new record.

Release Notes 2.191 (11 July 2024)

Last Modified on 02/09/2024 1:19 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Features

Nova features

Inline editing available in Beta availability

Users will now have the ability to edit inline just like in Classic, which allows them to bulk edit information within the data table component. Inline Edit action button will be displayed as available Actions within Shared Pages properties panel.

Known issues:

1. Saving with a mix of errors and successful changes prevents the bulk edit feature from saving the successful changes..
2. The user experience of highlighting successful and unsuccessful rows will be improved.
3. The keyboard controls (up and down arrow keys and tab key) are not yet functioning as expected.
4. An image field will incorrectly appear as editable when editing inline.
5. Mandatory fields are shown as required, but there is no error icon displayed when validation occurs.

If you would like to try out the inline editing feature, please submit a support ticket.

Group titles in a data table

The group title in a grouped report within a data table will expand across all columns to show the full title. If the text is too long or if a subtotal is included in the same row as the group title, a tooltip will appear when hovering over the text.

Page builder refinements: save flow

Users will not need to search through the app to find errors that prevent saving. The panel containing the property with an error that presents saving will be locked until the issue is resolved. A toast and an inline message is shown to inform the user what errors must be resolved.

When attempting to navigate away without saving changes using the top bar, a confirmation dialog will appear. If the page encounters an error that prevents saving, the confirmation dialog will display a disabled save button and provide a tooltip explaining why the user is unable to save the changes.

Properties that prevent saving are:

- Page name

- URL slug
- Input
- Component ID
- Container name

Bug Fixes

Classic & Platform resolved issues

- Fixed an issue where a Visio file could not be uploaded after the tenant administrator added the file extension. (See [here](#) for information on adding allowed file types.)
- Fixed an issue that was preventing users from logging into a tenant under specific circumstances.
- Auto-generated secrets now exclude the use of the + or / characters, as required by certain OAuth providers.
- Process can be launched from an iOS device.
- The form now loads during a debug run of a process when utilizing a Multistep form in a Process Display Step assigned to a non-administrator role.

Nova resolved issues

- Fixed a form relationship issue that removes a linked record when refreshing for a specific scenario

Release Notes 2.190 (13 June 2024)

Last Modified on 08/07/2024 10:25 am AEST

ReadiNow reserves the right to update these release notes at any time.

Features

Nova features

Document fields can be modified via the Nova app builder

We are streamlining the app configuration process to help you customise your app more efficiently. The object schema can be modified to add new Document fields without the need to use the classic form builder. ☐☐

These updates will occur over several releases. Our fifth release focuses on creating and modifying Document fields.

Previous releases of this feature have improved:

1. Text and numeric fields. See [here](#).
2. All the datetime fields. See [here](#).
3. Calculation and lookup fields. See [here](#).
4. Relationship. See [here](#).

Cancelling file uploads during document upload

Users have greater control over [document uploads](#) with the introduction of a cancellation feature. Whether uploading a single file or multiple files, users now have the flexibility to cancel uploads that are in progress or queued.

Within the document upload modal dialog, a "Cancel" button is now accessible for files labeled as "In progress" or "In queue". By clicking the "x" button associated with the respective file, users can promptly cancel the upload or remove the file from the queue. The cancel feature allows for quick adjustments based on changing requirements.

Platform features

Assign to Variable workflow activity has been improved

The [Assign to Variable](#) workflow activity has been updated to better support list variables. This activity can now add to or remove records from a list variable.

A new dropdown called **Action** has been added to the Assign to Variable configuration panel. This dropdown appears only when the variable is of type Record List.

Action controls how the variable is updated. The following options are supported:

1. Replace List. The variable is overwritten or replaced with the record(s) from the Value field.
2. Append To List. The record(s) from the Value field are appended to the record(s) in the variable.
3. Remove From List. The new record(s) are removed from the record(s) in the variable.

Modifications to the User Message workflow activity

The workflow activity [User Message](#) has been enhanced:

- **Improved Management of Message Status:**
Clicking on an individual user message icon in the header no longer marks all messages as read, providing a more intuitive experience.
- **Enhanced Functionality:**
A new icon has been introduced, empowering users to mark all messages as read with ease. This addition streamlines the process, ensuring efficient management of message status.
- **Persistent Unread Messages:**
Messages will retain their unread status until either the specific message or the "read all" icon is clicked, ensuring users can prioritize their attention effectively.

Bug Fixes

Classic & Platform resolved issues

- Debug runs now display complete information of the run when accessed from the Process runs list.
- A process with active process version runs can now be deleted.

Nova resolved issues

- Fixed the "Filter by Relationship" to filter correctly when using hierarchies.
-

Release Notes 2.189 (16 May 2024)

Last Modified on 22/01/2025 10:22 am AEDT

ReadiNow reserves the right to update these release notes at any time.

Features

Nova features

- **Relationships** can be modified via the Nova app builder

We have streamlined the app configuration process to help you customise your app more efficiently. You can now modify the object schema and add new fields without the need to use the classic form builder. [?](#)[?](#)

We will be releasing these updates over several releases. Our fourth release of this feature focuses on creating and modifying the **Relationship** field.

Previous releases of this feature have focused on:

1. Text and numeric fields. See [here](#).
2. All the datetime fields. See [here](#).
3. Calculation and lookup fields. See [here](#).

- **Signifiers** are automatically displayed on fields and components on canvas and page elements panel.
 - Signifiers (or indicators) serve as aids for app developers.
 - Fields display a signifier if the field has a visibility condition.
 - Components display a signifier if the component has a visibility condition or has been hidden completely.
- **Display options** for choice fields.
 - The multi-select and single-select choice fields now offer the option to be displayed as a checklist and radio button, respectively.
- **Custom Validation** for fields.
 - Custom validation can be defined for all fields, except for relationship data table fields.
 - Custom validation properties, including Validation Expression, Error Message, and Always Validate, have been integrated into the field properties panel.
 - The Always Validate feature is controlled by an on-off toggle switch.

ReadiNow Process - beta availability

The ReadiNow Process engine is an exciting development in the realm of business process automation. It offers a highly configurable and user-friendly approach to designing and implementing business processes.

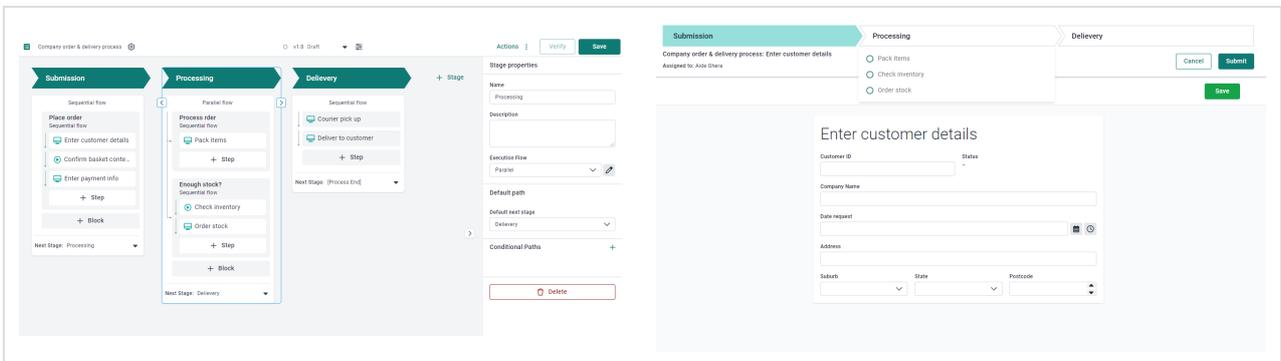
- **Configurability:** Easily configure end-to-end business processes.

- **Flexibility:** Supports both sequential and parallel paths for complex process implementation.
- **Extendibility:** Complements the existing Workflow engine, which provides data transformation and API integration
- **Visual Guidance:** Provides users with visual cues to indicate their progress within a process.
- **Task Notifications:** Users receive task notifications as part of the process flow.
- **Digital Transformation:** Aims to streamline time-consuming and complex processes, enhancing efficiency.

Use Cases

- **Approval Processes:** Streamlines approval procedures.
- **Vendor Management Procurement:** Simplifies vendor interactions and procurement steps.
- **Complaint Handling:** Manages and resolves complaints effectively.

From Release 2.189, the Process feature will enter the Beta phase and will be accessible to customers interested in joining the early access program. If you would like to try out the Process feature, please submit a support ticket.



Known issues

- Cannot launch process from an iOS device.
- The form does not load during a debug run of a process when using a Multistep form in a Process Display Step that is assigned to a non-administrator role.
- Some debug runs may not show complete run information when opening from Process runs list.
- Cannot delete a process with an active process version launched runs
 - Workaround - Create a new version, make it active, ensure you do not launch any runs, then attempt to delete process.

Release Notes 2.188 (18 April 2024)

Last Modified on 10/05/2024 12:00 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Features

Nova features

- **Modifying object schema via the Nova app builder - Calculation & Lookup**

We have streamlined the app configuration process to help you customise your app more efficiently. You can now modify the object schema and add new fields without the need to use the classic form builder. ☐☐

We will be releasing these updates over several releases. Our *third* release of this feature focuses on creating and modifying the **Calculation** and **Lookup** fields.

See the first release notes [here](#) and the second release notes [here](#).

- **Data table - added the ability to save data table column width**

Users can now adjust the column width of a Data table and save the adjusted width as configuration in local storage. If no adjustments are made, the column width behavior will remain unchanged and match the Classic report definition of column width.

- **Data table filter - added a None option operator**

A **None** option has been added to Data table filter operators to allow any operator to be selected. The None option achieves the same results as the Classic report analyzer operator [Select] option.

Platform features

- **Notifications**

Notifications is a new ReadNow Platform feature that allows an administrator to configure the Platform to notify users when specific conditions are met. See here for the article explaining this feature:

<https://readinow.knowledgeowl.com/docs/notifications>

- **Option to turn off CSV Injection escaping during Export to CSV**

Provides an option for the administrator to control escaping of CSV injection attack variables when exporting data to CSV from the ReadNow platform.

The default behaviour of the ReadNow platform is to escape all CSV injection attack variables when exporting data to a CSV file. Export to CSV is provided on the Report UI and in the Workflow Export activity. However, there are situations where the default behaviour is not desirable. A new option to turn off escaping of CSV injection attack variables has been added to the General Settings dialog under Administration.

- **Option to strip Rich Text Markup tags during Export.**

Provides an option for the administrator to strip Rich Text Markup tags when exporting data from the

ReadiNow platform.

This option gives an administrator the ability to remove all Rich Text Markup tags on export and applies to all export formats: CVS, Excel and Word. The new setting has been added to the General Settings dialog under Administration.

Bug Fixes

Classic & Platform resolved issues

- Resolved an issue where under certain situations the screen would continuously resize when the browser zoom was set above 100%

Release Notes 2.187 (21st March 2024)

Last Modified on 04/07/2024 11:50 am AEST

ReadiNow reserves the right to update these release notes at any time.

Features

Nova features

Modifying object schema via the Nova app builder - Date time & boolean

We have streamlined the app configuration process to help you customise your app more efficiently. You can now modify the object schema and add new fields without the need classic form builder. ☐☐

We will be releasing these updates over several releases. Our *second* release of this feature focuses on the creating and modifying **date and date** and **boolean** fields.

- Date and Time
- Time
- Date
- Boolean

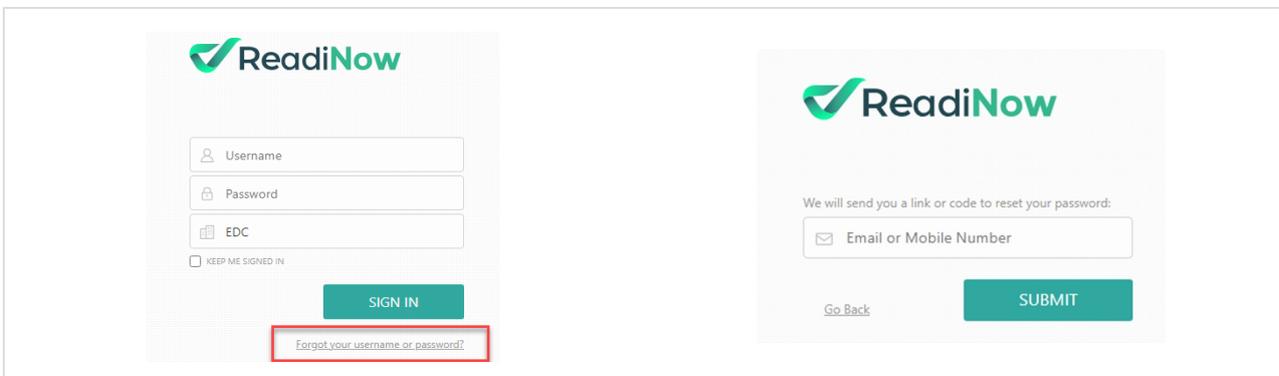
See first release [here](#).

Platform features

Reset password of ReadiNow native account via SMS as well

Users can now reset their password using SMS. Simply click on the *Forgot your username or password?* link and follow the step.

See [Logging In](#) for more details.



Release Notes 2.186 (22nd February, 2024)

Last Modified on 22/02/2024 4:40 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Features

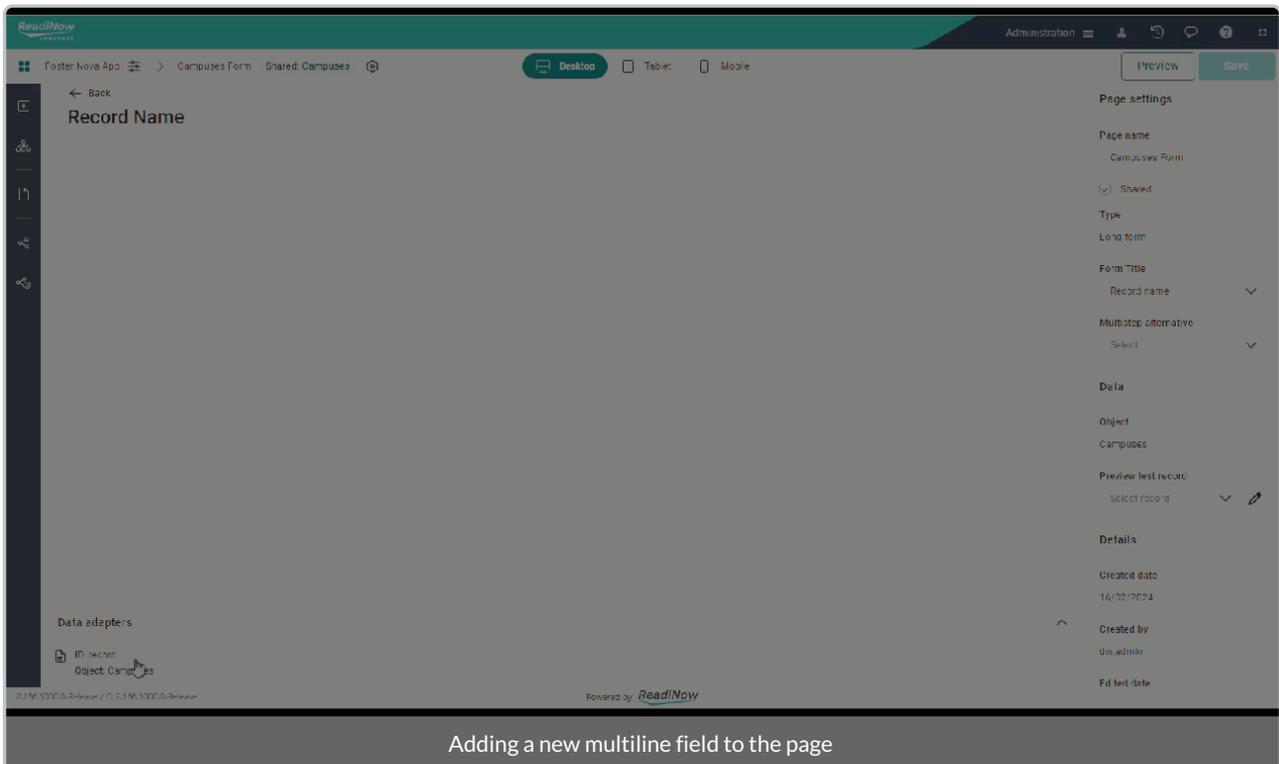
Nova features

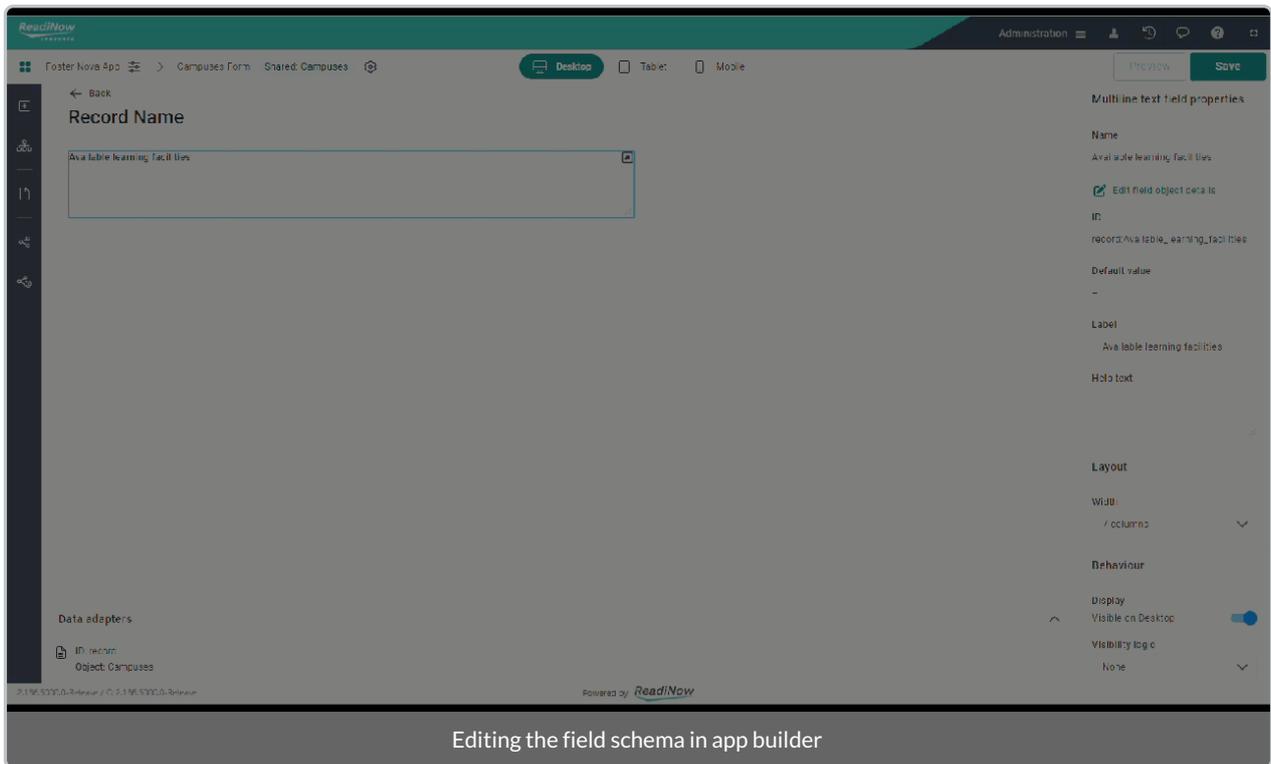
Modifying object schema via the Nova app builder - Text & numeric fields

We have streamlined the app configuration process to help you customise your app more efficiently. You can now modify the object schema and add new fields without the need classic form builder. [??](#)

We will be releasing these updates over several releases. Our first release of this feature focuses on the creating and modifying **text** and **numeric** fields.

- Text field
- Multiline field
- Rich text
- Number
- Decimal
- Autonumber
- Currency





Bug Fixes

Nova resolved issues

- Choice Fields - Multiselect no longer displays the selected fields after discarding
- Form pages - **Save and New** functionality now ensures that fields are cleared even when the form loads slowly

Release Notes 2.185 (25th January 2024)

Last Modified on 04/07/2024 11:50 am AEST

ReadiNow reserves the right to update these release notes at any time.

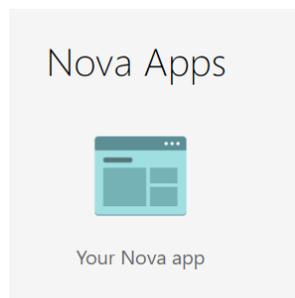
Features

Nova features

Nova is live!

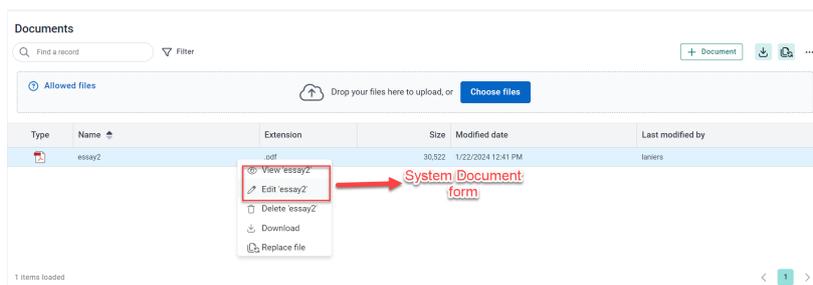
Based from our announcement on [Release 2.169](#), Nova applications is now officially part of the Platform. Access your custom apps and benefit on the features available and start creating your own via "Administration" > "ReadiNow Nova" > Apps. The 'Beta' label is removed in the application list.

Read all about it in the [press release here](#).

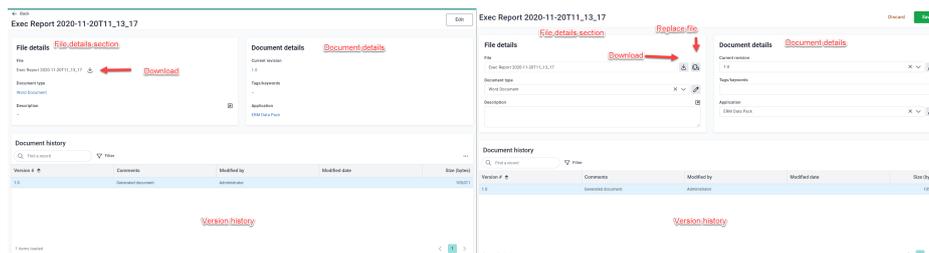


System document form

The system document form is a new feature to update and view document properties. From record's file attachments, select either 'View' or 'Edit' to navigate the system document form.



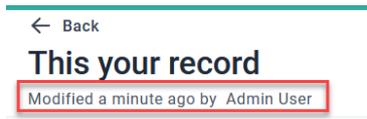
System document form on view and edit mode respectively.



Extended features such as Download and Replace file are available in edit mode and Download only on view mode.

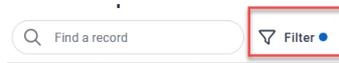
Record's modified date and modified by

Display updates on record showing the last user and date modified.



Notification badge on report filter

On report's filter, a new feature which displays a badge which indicates that there are filters applied on the report. The badge will be automatically removed when the custom filters are cleared or reset.



Bug Fixes

Classic & Platform resolved issues

- Aligned the display of date value on report and form

Release Notes 2.184 (14th December 2023)

Last Modified on 04/07/2024 11:51 am AEST

ReadiNow reserves the right to update these release notes at any time.

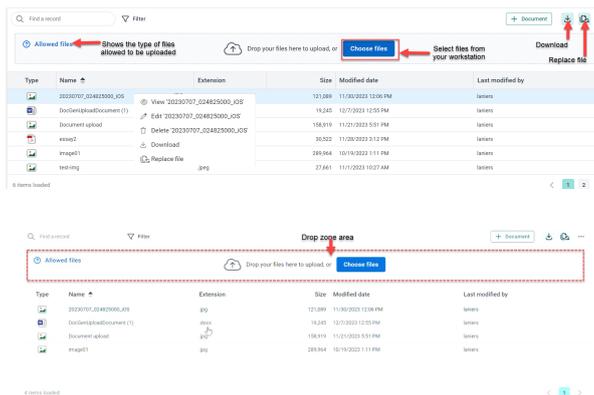
Features

Nova features

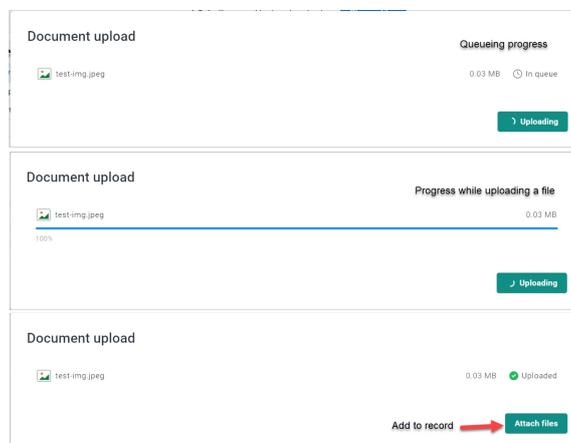
Document upload

Introducing the Document upload feature which allows users to store documents connected to a record. Other than the standard View, Edit and Delete features, below are the additional functionalities:

- Choose files : select a file or files from your local workstation
- Drag and drop: Drag a file and drop to specific area on the report
- Download: Download an existing file and save to local workstation
- Replace file: Replace an existing file



A document upload modal dialog appears to show the progress of the upload procedure for single and multiple files.



Bug Fixes

Classic & Platform resolved issues

- Organization Structure: The Hierarchy report for Organisation structure no longer appears in the Admin Toolbox. Other uses for the organisational structure Hierarchy report remain unchanged including use in a picker report; use in an analyzer condition; and applying the column value formatting in the report builder
- Forms: The action menu responds to the OK button which was previously failing under specific circumstances
- Workflow activity: Fixed a workflow issue where the send mail activity would not consistently follow the failed path when appropriate.
- Password: The error shown to a user when incorrectly resetting a password has been improved.

Nova resolved issues

- Chart: Fixed the tooltip display on chart segment

Release Notes 2.183 (16th November 2023)

Last Modified on 04/07/2024 11:56 am AEST

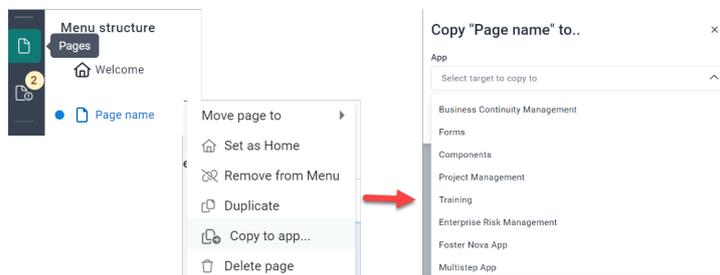
ReadiNow reserves the right to update these release notes at any time.

Features

Nova features

Copy to app

A feature to copy a page from one application to another, this is accessible via context menu of the page on the Pages panel. This makes a copy of the page to the target application instead of creating a page from scratch with the same functionality.



Visibility logic and conditions

When loading the page, fields with conditions or exceptions will be evaluated first before showing or hiding them on the page.

Workflow

Recognizes the value of the nominated related resource parameter when executing the workflow in a record

Filter

User input remains on the filter component after search result.

Bug Fixes

Classic & Platform resolved issues

- Health check: showing the "Last Health Check Run" on top of the report always
- Extended the Record API call to accept more than 40 fields

Nova resolved issues

- Multiple choice: Intermittent behavior of fields dependent to the visibility conditions or exceptions of multiple choice field is fixed.

- Text field: Displays the content of a text which ends in numeric is fixed
- Page: Redirecting to new mode when page refreshes on view after creating a record is fixed.
- Risk rating: result evaluation appears after form submission is fixed
- Button: fixed the intermittent issue when a workflow is running after form submission

Release Notes 2.182 (19th October 2023)

Last Modified on 04/07/2024 11:56 am AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

Classic and Platform resolved issues

- Fixed the chart builder's result on fields having no order dimension such as date and time and numeric fields.

Nova resolved issues

N/A

Release Notes 2.181 (21st September 2023)

Last Modified on 04/07/2024 11:56 am AEST

ReadiNow reserves the right to update these release notes at any time.

Features

Classic & Platform features

FTP Put workflow activity limits

When the FTP Put workflow activity is used to upload multiple documents, the rate of upload is now throttled. This helps to prevent document uploads from exceeding the connection rate limit of FTP endpoints.

Nova features

Text styling

A new feature for text component to show the text sizing between “Small”, “Medium”, “Large” and “Extra Large”.

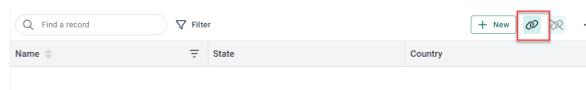
Process

The data table for task report now supports opening the following workflow UIs:

- Approval task
- User survey task
- Prompt task
- Navigate to task

Picker modal

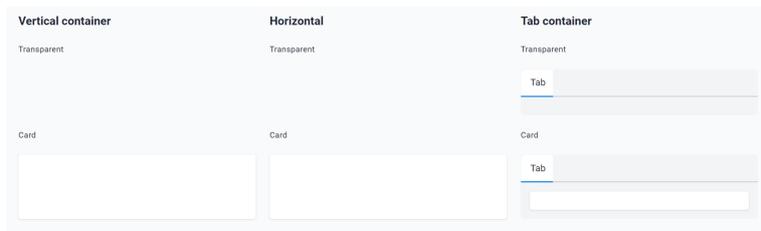
Updates the item selection(s) via “Link to existing” or the paper clip icon on report



Vertical and horizontal containers

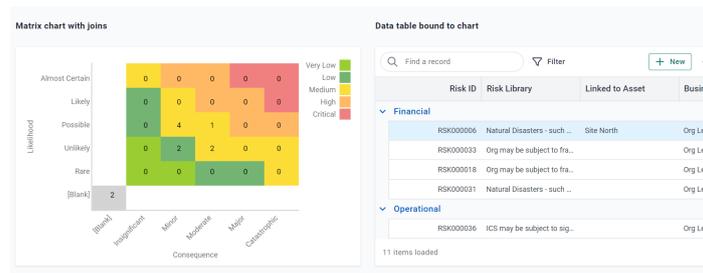
Additional styling under properties panel Styling > Background > to show either “Transparent” or “Card”

- “Transparent” background shows transparent
- “Card” background shows white in color, shadow and rounded corners



Data table grouped report

- Grouped report's load more icon to display next to each group label
- Report bound to a chart component shows related records



Supporting remembering where you are when signing out from Nova pages

Signing out from a Nova page is remembered once the user signs in again when the default page is not configured under a user's account. However, if this will not not override any default that you have previously set for a user account.

Bug fixes

Nova resolved issues

- Fixed text rendering of rich text field type via expression builder

Release Notes 2.180 (24th August 2023)

Last Modified on 04/07/2024 11:57 am AEST

ReadiNow reserves the right to update these release notes at any time.

Classic and Platform

Features

File download and audit log features

In order to assist customers with Data Loss Detection and Prevention a new type of audit log has been added to the ReadiNow Platform. This new type of Audit log is called the File Download Audit Log and is created whenever a document is download from the platform. The purpose of this new log entry is to provide an auditable record of whenever a document, which is stored on the ReadiNow platform, is downloaded by a user.

A File Download Audit Log is created where the following occur;

- Download of a document from the Document library
- Download of a document from a Form
- Sending of a document as an Email attachment
- Uploading of a document from the ReadiNow platform to an FTP server

File Download Audit Log entries appears in the Event Log report that can be found under Administration -> Audit in the ReadiNow console.

Each of these log entries contains the following properties;

- Accessed file - link to the document that was downloaded
- Accessed revision - the version/revision of the document that was downloaded
- Correlation code - the correlation code of the download request
- Downloaded by - link to the user who performed the download
- Event time - the time of the download
- File access operation - the type of document access that was performed. Options are: Download, Email Attachment, FTP Upload

Email Templates

Email templates is now included as a platform feature in Nova. Find out [how to configure Email Templates!](#)

Bug Fixes

- Fixed the 'OK' button on 'Actions' when there are multiple workflows available for selection
- Removed the unexpected display of 'info' button in all states of title bar in Nova and in React forms such as Email templates

Release Notes 2.179 (27th July 2023)

Last Modified on 04/07/2024 11:58 am AEST

ReadiNow reserves the right to update these release notes at any time.

Nova

Features

Data table

- Supports opening user action, user prompt and user survey tasks
 - Known issue: When a data table is used as a relationship, tasks will not open. Use the data table as a component to work around this issue until 2.180 when the issue has been resolved
- Report now have lines on formatting, group by and totals

Chart

- Shows tooltip on mouse hover



Container

- Background property selection between card and transparent

Link

- Link to function is now supported in Nova pages. Returns a URL to open the specified Nova shared form in either view or edit modes. The documentation has been updated to and you can link to it from the release notes [here](#).

Release Notes 2.178 (29th June 2023)

Last Modified on 04/07/2024 12:00 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Removed automatic prefix of 'http:/' on the 'mailto:' hyperlink for email header and footer
- Email Server Settings > Override Address field now accepts a semi-colon character (;) as the delimiter for multiple email addresses.

Release Notes 2.177 (1st June, 2023)

Last Modified on 25/07/2023 2:26 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Classic and Platform

Enhancements

- This release includes a change to the way workflows are queued. Under specific circumstances a single tenant could consume too many workflow “processing slots” by launching a very large number of long running workflows. The effect was to “starve” other tenants of workflow processing cycles. The change introduced in this release dedicates a minimum number of workflow processing slots to each tenant.

Bug Fixes

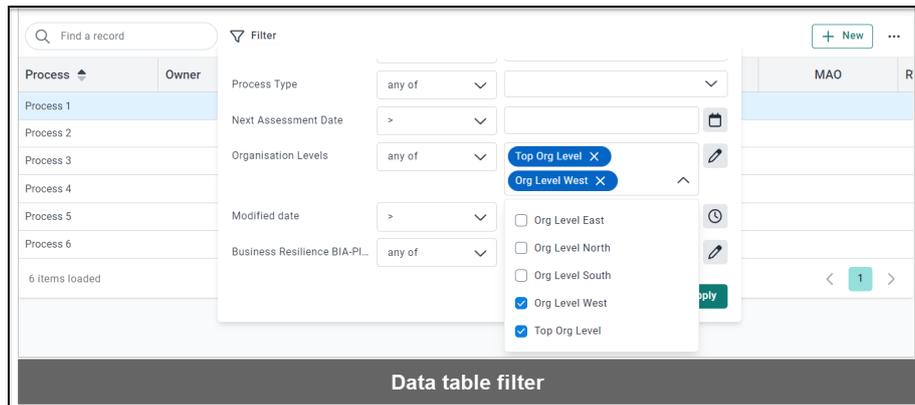
- Improved field validation for mandatory fields when using inline mode to edit

Nova

Features

Pickers

We are proud to announce pickers is available in data table filter.



Release Notes 2.176 (4th May, 2023)

Last Modified on 28/04/2023 5:30 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- FTP Fetch workflow activity - Fixed the SFTP URL not respecting different port numbers

Release Notes 2.175 (6th April, 2023)

Last Modified on 04/04/2023 10:02 am AEST

ReadiNow reserves the right to update these release notes at any time.

Classic and Platform

Enhancements

- FTP fetch workflow activity
 - Files imported through FTP Fetch will now be saved as "Document" type instead of "FileType". This means these files will now appear in the Document Library.
 - A new optional field has been added to the FTP Fetch activity, allowing users to specify a Filename expression. If left blank, the URL will be used as the filename which was the previous behaviour.

Bug Fixes

- Fixed the alignment of text after conditional formatting of multiline
- FTP Fetch workflow activity: updates on blocked file extensions on upload
 - Consistent upload restrictions have been applied to files imported through FTP Fetch activity. The same file content and type restrictions that apply to files uploaded to the Document Library are now also applied to files imported through FTP Fetch. Previously, the file update restrictions applied to the FTP Fetch activity were different to those on the Document Library. This change makes these restrictions consistent.
 - In order to maintain backwards compatibility the following behaviours have been implemented;
 - The changed file upload restrictions are only applied if a Filename expression has been specified. Since the Filename expression is a new field it will be blank on all existing workflows. This will ensure that existing workflows will not be impacted by file upload restrictions.
 - See [FTP Fetch](#) for unsupported file types.

NOVA

Features

- We are excited to announce that the Data table component now has a filter.

Find a record + New Create BIA ...

Process	Owner	Process	is		BIA Status	BCP St
Process 1	Adrianna P	Owner	any of	Cherilyn Fraize X	ith	● Approved ● In
Process 2	Business C	Criticality	any of			● Not Started ● No
Process 3	Heather Gil	Process Type	any of	Support X	ith	● In Progress ● No
Process 41	Heather Gil	Next Assessment Date	is empty			● Approved ● No
Process 5	Heather Gil	Organisation Levels	any of	QA X	ith	● Approved ● In
Process 6	Aide Ghera				ith	● Approved ● No

6 items loaded

Filter

Reset Apply

Data table filter

Release Notes 2.174 (9th March, 2023)

Last Modified on 03/03/2023 2:24 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Fixed the creation of duplicate records when 'Save and New' button is clicked multiple times on forms.

Release Notes 2.173 (9th February, 2023)

Last Modified on 03/02/2023 1:11 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Release 2.173 will involve standard platform maintenance only.

Release Notes 2.172 (12th January, 2023)

Last Modified on 23/12/2022 5:29 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Classic and Platform

Bug Fixes

- Record APIs now respect the Tenant time zone settings
- Fixed an issue in scrolling reports to the right when in inline edit mode

NOVA

Features

- Container component styling
- Data table component - group with paging

Release Notes 2.171 (1st December, 2022)

Last Modified on 25/11/2022 12:59 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Features

Email Templates

ReadiNow introduces Email Templates as one of our deliverables in the [Product Roadmap](#) for 2022!

Enjoy the benefits of having a centralized location to maintain email templates with these key features:

- customize header and footer according to your corporate branding
- customize content on email subject with preferred text from variables
- customize content on the body of the email with images, text, links and variables
- reusability across multiple workflows
- integrate with [Send email](#) activity

Find out [how to configure Email Templates!](#)

Bug Fixes & Other improvements

- Additional browser window no longer appears using Edit-In line for Document
- Issue fixed in displaying search results on Change Management application
- Fixed the unexpected character string in report's calculated column
- API Callout authentication via password grant type setting is fixed
- Error message will appear when an activity does not have any next step in workflow builder upon save
- Fixed an issue which causes SSO responses to fail under specific circumstances
- New metrics reporting objects & collection framework for future Tenant Metric Reporting feature

Release Notes 2.170 (3rd November, 2022)

Last Modified on 28/10/2022 12:49 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Fixed an error that forced users to close all browser tabs and restart their browser in order to continue working
- Fixed an issue where in certain situations a tenant rollback would fail
- Fixed an issue in Surveys that prevented saving when the response to a mandatory numeric question was '0' (zero)

Release Notes 2.169 (6th October, 2022)

Last Modified on 20/10/2022 10:52 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Fixed expressions when calculation shows different result for Form and Report
- Fixed expressions when match pattern for 'Like' comparison operator treats square brackets as RegEx group (instead of literal) with no way to escape
- Appropriate message will be displayed if a calculation on a form fails because of missing metadata

ReadiNow Nova Beta Availability

ReadiNow is committed to continual improvement and we are excited to announce our biggest enhancement yet. We have listened to your feedback and look forward to introducing you to the next evolution of ReadiNow called ReadiNow Nova.

ReadiNow Nova is a new user interface paradigm, built from the ground up. Aimed to improve user experience and provide even more flexibility in the configuration of your application.

From Release 2.169 onwards, ReadiNow Nova will be available in 'Beta' for any customers wishing to be part of the early access beta program. If you would like to register for the beta program, please visit <https://www.readinow.com/novabeta>

Release Notes 2.168 (8th September, 2022)

Last Modified on 05/09/2022 4:06 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Fixed an issue when data was displayed incorrectly when scrolling while using the Inline Edit function
- Improved the behaviour around deselecting multiple choice field values in forms
- The file type of '.wav' to has been added to the list of allowed file types under Document Types
- Improved the rendering of certain report styles
- Metrics Dashboard is now displaying the expected values for hero texts

Release Notes 2.167 (11th August, 2022)

Last Modified on 25/08/2022 9:58 am AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Message "Users unexpectedly receiving 'User Message' with Source: SAML Identity Provider 'SSO'" is appropriate for monitoring via Audit log instead to client
- Fixed multiple issues to prevent the workflows failing with "Internal Error" and "can only be associated with one record using 'Modified by'"
- Support to expressions were applied to fix the issue security rules are not updating in timely manner
- Update the behavior on checkbox label to prevent inconsistencies on totals modal dialog on Report Builder same as the tick box
- Prevents non-admin users to access the system within maintenance periods

Release Notes 2.166 (14th July, 2022)

Last Modified on 08/08/2022 3:42 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Fixed an issue where email body was missing from an email sent under specific circumstances
- Fixed an issue wherein the user is not able to export a report
- Fixed the issue on Forms where decimal field in the secondary tab is treating '0' and null equivalent

Release Notes 2.165 (16th June, 2022)

Last Modified on 15/06/2022 10:53 am AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Mandatory fields in tabbed containers were not respected unless the tab was visited or visible
- Large file uploads were being rejected from the documents library, size limits are now respected
- Fixed an issue where concurrent user data was not being displayed on the metrics screen
- The swagger page now shows API request body examples for POST & PATCH
- Fixed an issue with the Landing Page not showing Custom icons
- Fixed a refresh issue that prevented some HERO Texts on a Screen from displaying accurate record counts
- Fixed an issue that prevented certain colour ranges from being used for conditional formatting
- Improved error messages for Offline Forms when Form contains an invalid expression
- Fixed an issue where certain expressions were failing with the 'html()' function
- Fixed a Primary Key violation in the database that caused some workflows to fail randomly
- Fixed the issue on Workflows with a 'Clone' activity failed under specific circumstances

Release Notes 2.164 (5th May, 2022)

Last Modified on 05/05/2022 12:48 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Enhancements

- Compressed import and export are now supported for resources
- Resource imports now list all errors instead of stopping at the first error

Bug Fixes

- Chart menu options no longer shows options for numerical fields when a non-numeric field is selected
- Fixed an issue that prevented the Report Builder from closing when navigating from the Chart Builder
- Fixed a display issue for the Rich Text hyperlink tool
- Fixed an issue whereby Record APIs failed to retrieve records if the Record Name and Slug were different
- Fixed an issue that caused some workflows to become 'long running' when processing API Callouts
- Fixed a bug that allowed emails to remain undelivered if the initial delivery attempts failed due to relay delays
- Fixed an issue where Boolean values stopped working when passed inside a workflow For-Each activity
- Retired Choice Field values are no longer displayed by the workflow User Input activity

Release Notes 2.163 (10th April, 2022)

Last Modified on 05/05/2022 9:14 am AEST

ReadiNow reserves the right to update these release notes at any time.

Notice

Platform Core Upgrade

This release will update the core code of the ReadNow platform. While this update will not affect functionality it will ensure the platform code remains up to date with latest best practices and standards.

Deprecation of REST APIs

REST APIs for POST and PUT method calls have been deprecated in favour of our [Record APIs](#) and [Callout APIs](#). Your existing REST APIs will continue to function and can still be modified; however: it won't be possible to create new REST APIs, and we strongly encourage transitioning to the new APIs.

Enhancements

Change Management Report

The Change Management Report has been enhanced with filtering capability (Type, User, and App) and improvements to data export (ability to customise data to export and adds ability to export as CSV).

Bug Fixes

- Fixed an issue where in certain situations SSO URL redirects were causing some users to be redirected from their home page.

Release Notes 2.162 (March, 2022)

Last Modified on 07/03/2022 2:17 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Enhancements

The `DateDiff ()` calculation can produce unexpected results when different input types are used for date comparison. With this enhancement users are now warned when inputs are mixed, e.g. Date & DateTime:

```
DateDiff (period, Date, DateTime)
```

Bug Fixes

- Fixed an issue where Document Generation was failing to add Charts under certain circumstances
- Reassigning a Workflow button now refreshes the button text without requiring an additional save
- In Surveys it is now possible to edit the Value and Order of options in a Choice Field prior to launching a Survey

Release Notes 2.161 (February, 2022)

Last Modified on 07/02/2022 2:39 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Enhancements

Surveys now support Date fields

We've added a new Date field to Surveys. So now you can add questions that have a date based answer. Survey recipients can simply use their system date picker to easily complete questions with date input.

Easier to find numbers using Global Search

Global search now adds an 'alpha' wildcard card characters (i.e. [a-Z]) around numbers whenever the search expression is numeric.

For example searching for **12345** will now match:

- aa**12345**zz
- aa12345
- 12345zz

Note that searching for **12345** will not match '123456' but you can still add wildcards manually like this: 12345*

Bug Fixes

- Replying to emails with a nested email no longer truncates the body of nested emails.
- Fixed an issue where currency fields were not shown as mandatory if the currency was not defined globally.
- Global Search now displays a message if the search expression does not match any records.

Release Notes 2.160 (January, 2022)

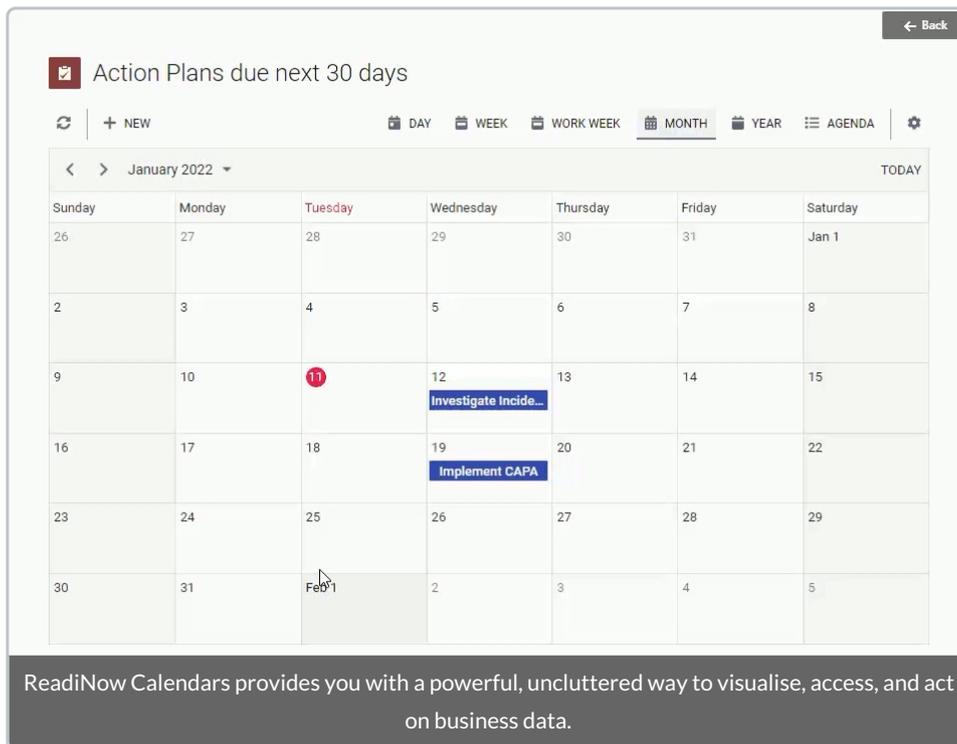
Last Modified on 12/01/2022 8:39 am AEDT

ReadiNow reserves the right to update these release notes at any time.

Features

Calendars - ready for beta testing

ReadiNow are excited to introduce the latest feature from our [product roadmap](#): Calendars.



Whether your ReadiNow solutions are *Out-of-the-Box* or *fully customised*, you can seamlessly integrate Calendars to support endless use-cases. And, with ReadiNow's zero-code technology for solution configuration, creating a new Calendar is as easy as:

1. selecting 'New Calendar' from the 'new page item' dialog
2. using a picker to select the Calendar data source
3. choose which field (or fields) to use for the event date (or start and end date/time)

Calendars puts you in control to enrich your solutions with even greater flexibility and improved user experience; key features include:

- conditional & custom formatting
- custom event labels
- drag & drop date editing for events
- drill down to individual event records
- support calculated date/date-time fields

- multiple layouts - *calendar, timeline, agenda*
- multiple views - *day, work-week, week, month, year*
- custom icons
- ability to create, edit, and delete events

As always data security is front of mind, Calendars implement the same security engine as Reports ensuring all your security and data access rules are respected. Navigation access to Calendars is conveniently configured independently of the Report.

To get started with Calendars you may wish to review the [Calendar feature documentation](#).

Note - the Calendars feature is designated as 'beta' and may be subject to changes:

- please raise any questions with ReadNow prior to implementing within a solution
- please submit any questions, bugs, or usability issues using a Service Desk 'Query'

Bug Fixes

- For some users adding attachments to emails using drag & drop stopped working (*fixed in minor update in 2.159*)
- Fixed an issue where the 'tabs' in tabbed containers could not be re-ordered(*fixed in minor update in 2.159*)
- Screen no longer flickers when a user does not have permission to access a specific Record
- Enhanced error message for situations where a user does not have permission to access a specific Record

Release Notes 2.159 (November, 2021)

Last Modified on 22/11/2021 2:10 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Reports with 'tile' formatting now display 2 lines without clipping text.
- Error messages now wrap to a new line without splitting words between lines.

Release Notes 2.158 (October, 2021)

Last Modified on 25/10/2021 4:54 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

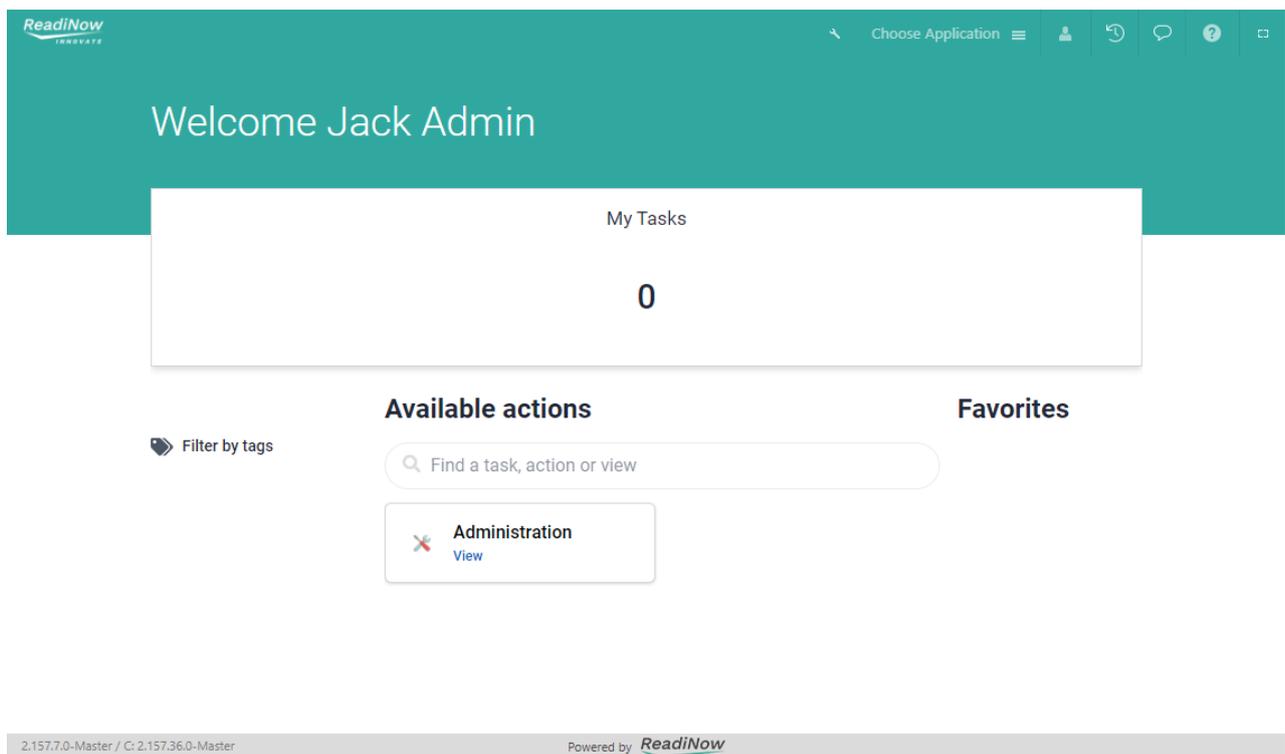
Features

New feature Landing Pages.

Landing Pages were designed to eliminate complex navigation paths by providing an 'action oriented' experience that puts users in the drivers seat. Key features include:

- Hero Text to keep you up-to-date and informed
- ability to pin Action as Favourites
- ability to find Action quickly using Tags and Quick Search

Landing Pages are **opt-in for existing tenants**, find out how to configure Landing Pages.



Enhancements

Improved an error message where roles could not be edited because they were part of a protected application.

New error message:

'An error occurred saving the changes: The resource being modified belongs to a protected application.'

Bug Fixes

- Fixed an issue where it was possible to choose a workflow that could not run for 'on receive email'.

- Fixed a caching issue that could prevent Public Forms logos from updating.
- Fixed error message when workflow run fails when trying to deliver to a disabled inbox.
- Fixed an issue where workflow runs were not appearing in the workflow run report for some users.
- An error message has been added for file upload failures.

Release Notes 2.157 (30th September, 2021)

Last Modified on 27/09/2021 10:30 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Fixed an issue where Public Forms was not respecting conditional visibility unless using default form
- Fixed an issue where Public Form submission failed when a mandatory field was hidden
- Files with special characters no longer fail to upload, special characters are replaced
- Emails sent as attachments in inbound email messages are no longer discarded

Release Notes 2.156 (September, 2021)

Last Modified on 01/09/2021 2:49 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Resolved an issue where updates from Lexis Nexis were not propagating through to ReadiNow.
- Workflows now have an option to reset multi-select choice fields to Null using a new "Replace existing records" option.
- Fixed an issue where the 'horizontal' axes title was being clipped vertically on some Charts in certain Screen configurations.
- Fixed an issue with OAuth tokens that prevented some API Callouts from working.
- Fixed an issue where the list of Public Forms failed to display if a form name was Null.

Release Notes 2.155 (5th August, 2021)

Last Modified on 05/08/2021 5:38 am AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Fixed an issue where text (SMS) messages took a long time to be received after sending
- Fixed an issue where Form Fields were not refreshing after being edited

Release Notes 2.154 (July, 2021)

Last Modified on 06/07/2021 1:29 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Fixed an issue where the Clone activity in Workflow's was failing for records with complex relationships
- Long titles on Survey are now truncated to be consistent with Form titles
- Reports and Forms on Screens now refresh when a Record is updated
- Fixed an issue where the Analyzer was failing to show correct value unless manually updated
- Fixed a false positive Health Check for workflows where a For-Each action was iterating over a List variable
- Improved usability of Radio Buttons in Survey on mobile screens
- Fixed an issue where error messages persisted for spreadsheet imports

Release Notes 2.153 (June, 2021)

Last Modified on 08/06/2021 9:28 am AEST

ReadiNow reserves the right to update these release notes at any time.

Features

Public Forms

Public Forms is now available for general use. Public Forms provides a low friction mechanism for collecting data from unauthenticated users, e.g. members of the public.

Built within our new UI, Public Forms provide a clean look and feel on screens of all sizes and are deeply integrated with the ReadNow Platform. Public Forms support a wide range of use-cases where 'authentication' is not required. For example you might want to:

- allow potential customers to make an enquiry
- enable passers-by to report a hazard
- use crowdsourcing to collect structured data

Whatever your use case, Public Forms are highly flexible and easy to integrate with your business logic. Just like our 'classic' Forms, Public Forms submissions can optionally trigger Workflows allowing you to harness the full power of the ReadNow platform.

Find out more about Public Forms:

- [best practices for Public Forms](#)
- [getting started with Public Forms](#)
- [Public Forms security overview](#)

Enhancements

Miscellaneous

- The select workflow picker now pre-selects the currently selected workflow

Bug Fixes

- Formatting of button text on mobile devices no longer uses incorrect colour
- Fixed an issue where the Rich Text Editor was not displaying a toolbar when used inline
- Fixed an issue where the Chart Select dropdown was not displaying correctly on small screens
- Forms with duplicated relationships no longer error when user 'Selects All'
- Fixed an issue where a child Chart was not updating with (grand) parent Chart filtering a parent Report
- Fixed an issue where the colour of a progress bar was not updating

Release Notes 2.152 (13th May, 2021)

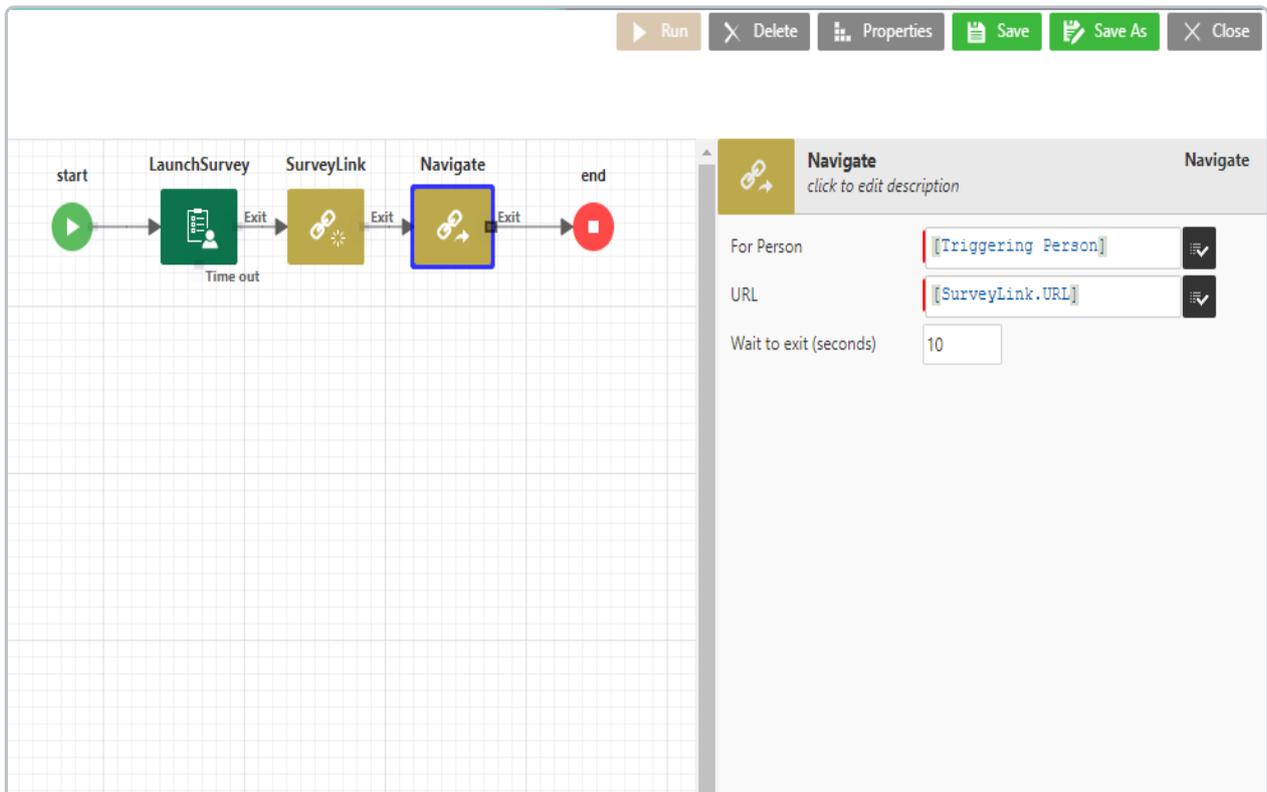
Last Modified on 07/06/2022 9:23 am AEST

ReadiNow reserves the right to update these release notes at any time.

Features

Workflow Navigate

Workflows have a new User Activity called 'Navigate'. Navigate allows you to create a workflow that navigates a User to a URL. This includes URLs within your tenant, e.g. you can specify URLs for Forms, Reports, Screens etc (see 'Create Link') or you can provide an external URL.



Example Workflow that is triggered by an Action button on a Form and redirects the user to a Survey that is created on the fly. The Navigate feature works when the workflow has a UI context (e.g. user clicks an Action Button or interacts with a User Input). This feature, for example, means that you can put an action button on a Form and do things like:

- generate a new survey on-the-fly, and then navigate your user to that survey in real-time
- navigate the user to a second Form or a specific chart or report

The Navigate allows you to simplify the end user experience by navigating for them. Not only does this result in fewer clicks it allows you to navigate to objects that are created on the fly.

Learn more about [Workflows](#) and [how to use them](#).

Enhancements

- Refreshing a Report no longer resets the Analyser filters.

Bug Fixes

- Fixed an issue where creating fields with the same name as an existing field could stop certain actions from working as expected.
- Fixed a rounding error that could happen on UI controls under certain circumstances.
- Fixed an issue where certain error messages were persisting after being closed by the user.
- Fixed an issue where the picker report for Organisation structure was throwing an error if the picker report was 'Default' or 'Organisation Structure Hierarchy'.
- Fixed an issue where horizontal scroll was missing from Report columns causing columns to overlap under certain conditions.
- Workflow 'Update' activity no longer deletes Relationships when there are no values to update.
- Fixed an issue where Action buttons cannot be deleted if the corresponding workflow has been deleted.
- Fixed an issue where Action buttons were being incorrectly displayed to some users under certain circumstances.

Release Notes 2.151 (15th April, 2021)

Last Modified on 20/04/2021 10:43 am AEST

ReadiNow reserves the right to update these release notes at any time.

Features

Public Forms - available for testing

Public Forms provides a low friction mechanism for collecting data from unauthenticated users, e.g. members of the public.

Built within our new UI, Public Forms provide a clean look and feel on screens of all sizes and are deeply integrated with the ReadNow Platform. Public Forms support a wide range of use-cases where 'authentication' is not required. For example you might want to:

- allow potential customers to make an enquiry
- enable passers-by to report a hazard
- use crowdsourcing to collect structured data

Whatever your use case, Public Forms are highly flexible and easy to integrate with your business logic. Just like our 'classic' Forms, Public Forms submissions can optionally trigger Workflows allowing you to harness the full power of the ReadNow platform.

Find out more about Public Forms:

- [best practices for Public Forms](#)
- [getting started with Public Forms](#)
- [Public Forms security overview](#)

If you're ready to test Public Forms, ReadNow customers can raise an issue in Service Desk to request access.

Bug Fixes

- Fixed an issue where users were losing access to related records.
- Improved UX for refreshing screen components all at once
- Fixed an issue where multiple workflows were showing in the Report builder
- Fixed an issue where some Charts were being cropped

Release Notes 2.150 (18th March, 2021)

Last Modified on 15/03/2021 12:00 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Enhancements

To improve user experience, some error messages now clear when you navigate away from a Form.

Miscellaneous

- Warning messages for workflows with incorrect input parameter types have been changed to error messages.

Bug Fixes

- Fixed a caching issue where client side reports were not cleared when login changed.
- Fixed an issue where adding a workflow inputs with changed Objects if the existing Object name matched the start of the new object name.
- Reports formatted with conversation style now support conditional formatting, choice fields, and rich text.
- Fixed issue with SMS message encoding to minimise message size.
- Fixed an issue where workflows were inappropriately showing an error 'Result was of type text but needed to be record.'

Release Notes 2.149 (February 2021)

Last Modified on 17/02/2021 8:53 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

New Features

There are no new features in this release. We're working on our [roadmap](#).

Bug Fixes

- Fixed an issue that prevented reports from showing changes after saving inline edits.
- Fixed an issue where formatted fields caused some labels to be missing from column charts.
- Refresh button no longer overlaps data in charts.
- Calculations in Workflows now give meaningful error messages if type conversion fails.

Release Notes 2.148 (January 2021)

Last Modified on 18/01/2021 2:03 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

New Feature

Email Listener for CC

You can now trigger workflows from CC fields. We have improved the email listener so that it listens to the CC fields of your configured inboxes.

Find out [about inboxes, using email in workflows and smart email handling](#).

Bug Fixes

- Improved error message in document generation if the Chart Name is not passed as the first parameter
- Changing workflow input parameters now triggers a validation check and displays a warning if the new input does not have the expected fields.
- Fixed a bug where calculations were failing to take Choice Field script names as an input value.
- Fixed an issue where autonumbers were not unique when records were imported from a 2nd tenant.
- Fixed an issue where workflows could twice if user double clicked on an action button while in edit mode.
- Metadata export now includes edit forms.
- Fixed an issue where Autonumber was always starting from 2

Release Notes 2.147 (December 10th 2020)

Last Modified on 07/12/2020 4:42 pm AEDT

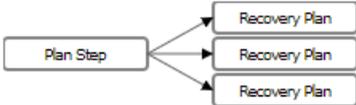
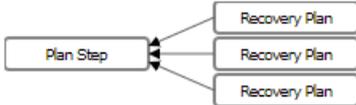
ReadiNow reserves the right to update these release notes at any time.

New Features

This release introduces opportunities to boost Report performance with an option to explicitly disabling evaluation of reverse Security-relationships. Security-relationships are convenient and especially useful when you need to return everything that a User has access to. However, in many situations this is not necessary and disabling securing relationships can result in significant performance improvements. Find out more in [Security Relationships](#).

SECURITY

If I have access to **Plan Step** do I also have access to the linked **Recovery Plan(s)** ?

<p>If I have access to Recovery Plan then:</p> <p><input checked="" type="radio"/> Off - I have no implied access to Plan Step</p> <p><input type="radio"/> I can see the name of any related Plan Step</p> <p><input type="radio"/> I have read access to any related Plan Step</p> <p><input type="radio"/> I have the same access to any related Plan Step</p>  <p><input type="checkbox"/> Allow security engine to assume that every Plan Step record will always have a related Recovery Plan record.</p> <p><input type="checkbox"/> Don't explicitly check this relationship in reports.</p>	<p>If I have access to Plan Step then:</p> <p><input checked="" type="radio"/> Off - I have no implied access to Recovery Plan</p> <p><input type="radio"/> I can see the name of any related Recovery Plan</p> <p><input type="radio"/> I have read access to any related Recovery Plan</p> <p><input type="radio"/> I have the same access to any related Recovery Plan</p>  <p><input type="checkbox"/> Allow security engine to assume that every Recovery Plan record will always have a related Plan Step record.</p> <p><input type="checkbox"/> Don't explicitly check this relationship in reports.</p>
---	--

New option "Don't explicitly check this relationship in reports"

Enhancements

Fields in the default group in Report and Chart Builders are now sorted alphabetically making it easier to find a specific Field.

Bug Fixes

- In document generation:
 - list functions `concat(last() first())` no longer create empty rows when input is empty
 - an issue where documents became corrupted if negative values were used for chart properties is resolved
 - fixed an issue where documents failed to generate under certain conditions including some Charts
- Implicit number to decimal conversion in a calculated Text Field on a Form no longer displays extra zeros on Reports
- Fixed an issue where SMS notifications were not sent due to 3rd party rate limiting
- Fixed an issue where an extra scroll bar appears on some screen configurations

Release Notes 2.146 (November 12th 2020)

Last Modified on 09/11/2020 4:34 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Enhancements

Security Rule Optimisation

Performance of Reports that rely on 'Security Rules' can now be improved by adding a corresponding Analyser condition. For example:

An application designer has created a report "My Tasks" that relies on security to filter rows for tasks owned by the user. They can now improve the performance of that report by including the filter "owned by current user".

Bug Fixes

- System Workflow no longer changes the 'modified date' on the workflow report.
- Using context() in a workflow calculation without also providing context no longer results in an unhandled calculation exception.
- Fixed an issue where Users were unable to drill down to some Reports unless the Report was in the Navigation Tree.
- It is now possible to change the script name when accessing Object Properties in the reverse direction.
- Fixed an issue with single tap 'New', for document upload not working on some iPads and iPhones.
- Inline editing no longer clears Choice Fields when scrolling or adjusting column widths.
- Using the 'Any Of' filter for 'Get Records' now allows selection of multiple Choice Field values.
- Report nodes nested more than one level below an aggregate node can now be deleted.
- Improved error message when importing Workflows with unknown dependencies.
- Calculated columns now sort alphabetically in the Report builder.
- Fixed an issue where week days were displayed inconsistently in View and Edit modes for workflow schedules.
- Global Search now respects theming.

Release Notes 2.145 (October 15th 2020)

Last Modified on 21/10/2020 8:54 am AEDT

ReadiNow reserves the right to update these release notes at any time.

New Features

Offline Mobile

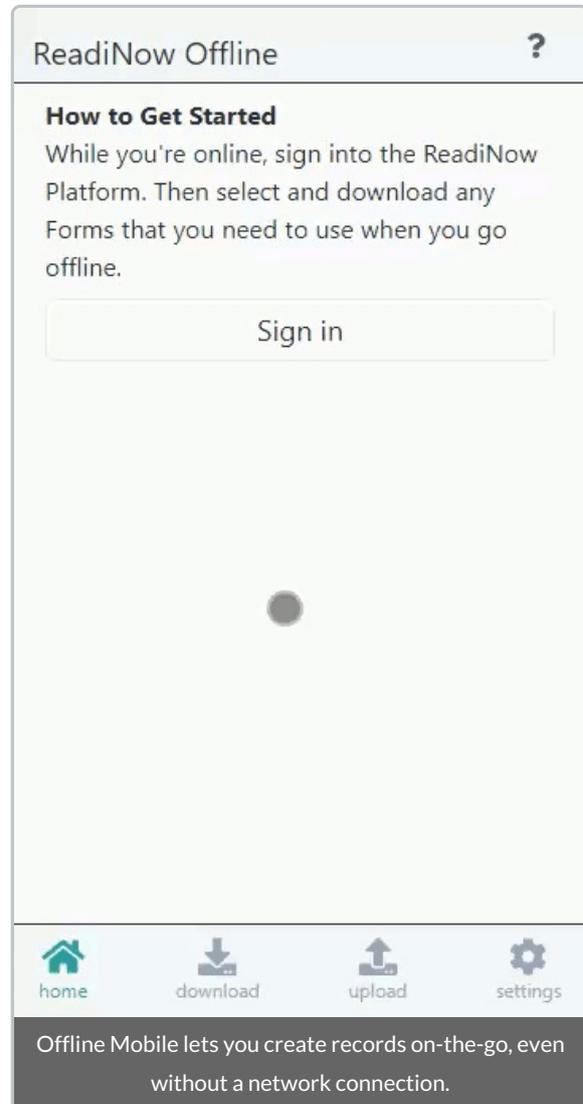
Offline Mobile makes it easy to capture data on-the-go. It was developed for situations where an network connections are not available but people still need to create records.

For example, from time to time, your users may need to report an incident or collect structured data while working remotely.

With Offline Mobile your users can:

- sign in using their ReadiNow account
- download Forms to their mobile device
- create draft record while offline
 - choice field pickers
 - relationship pickers
 - date time fields
 - image fields
- review & edit their draft records
- upload drafts to create new records

Read the [Offline Mobile documentation](#) to find out how to get started.



Enhancements

Import Spreadsheet - now supports Autonumber fields

We've improved our spreadsheet import by adding support for importing AutoNumber fields that are setup as Resource Keys. Learn how to setup a Resource Key to use with AutoNumber fields and how to import data from spreadsheets.

Import Spreadsheet

Upload Document Select Object **Select Columns** Options Import **Back** **Next** **Test Import** **Import**

Object:
Scientist

[Add a fixed value](#) [Clear all mappings](#)

Spreadsheet Column / Sour...	Object Fields	Field Details	Sample 1	Sample 2
(A) ScientistID	AutoNumber ▼	AutoNumber Field	SCI0002	SCI0003
(B) Sci	--select-- ▼		Mary Somerville	Michael Faraday
(C) Text 2	--select-- ▼		Scotland	England

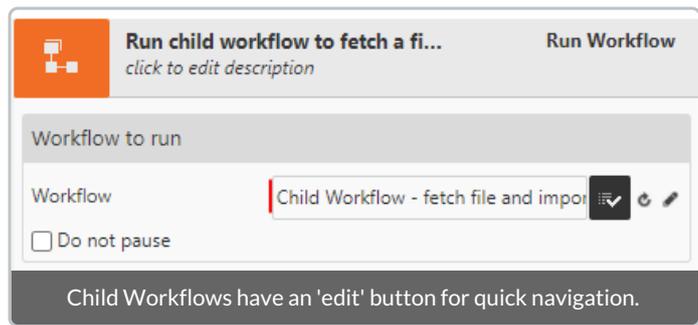
Import Spreadsheet now supports AutoNumber fields that are setup as Resource Keys.

We've also made it easier to run 'test imports' by replacing the import checkbox with a 'Test Import' button. The test import button is conveniently located next to the existing 'Import' button. This makes it easier to run test imports while you perfect your import configuration.

Direct Navigation to Child Workflows & API Configuration

Added edit buttons to the Run Workflow properties in Workflow Builder so you can easily edit a child workflow, and API Callout activity to configure APIs.

Find out how to [Run Workflows from another workflow](#).



Miscellaneous Security Improvements

- Introduces a 500M file size limit for all file uploads
- Added a new health check to flag when an Administrator account is enabled
- The default password policy has been strengthened
- XML files removed as a 'core' document type (find out how to [add custom document types](#))

Bug Fixes

- Fixes an issue where some Autonumber patterns displayed inconsistently in some situations.
- Renamed labels for Workflow Input Object selection from 'Definition' to 'Object'.
- Fixed a bug where generating documents from Screens with multiple reports could result in an error message on the first attempt.
- Fixed a bug where, under certain conditions, changes to columns in a report were not correctly propagated to the analyzer.
- Fixed an issue where default values were not applied to objects unless the corresponding field was included on the form.

Release Notes 2.144 (September 17, 2020)

Last Modified on 26/03/2021 12:51 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

New Features

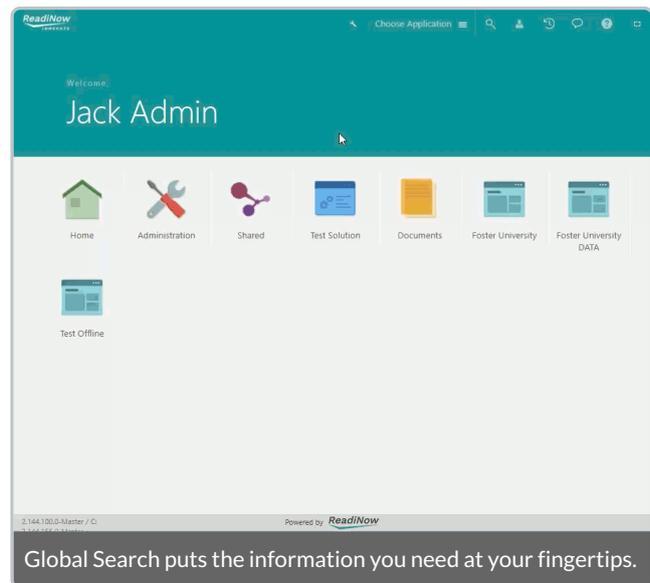
Global Search - Information at your fingertips

The new Global Search feature is a gateway to productivity. Simply click on the search icon in the header and start typing, you can use basic keyword matching (*even if you make a typo*), or take it up a notch with wild cards and other features.

Global Search offers several advanced features and you can even save search expressions to use anywhere, anytime. Find out how to:

[Use Global Search \(general use, tips and tricks\)](#)

[Enable and Configure Global Search \(Admin Settings\)](#)



Audit Log Retention

We've overhauled the purging and archiving of Audit Logs. Now tenant Admins have greater control over the management of audit log retention policies. We have introduced secure (Read-Only) storage for archived logs in the Document Library. Learn more about the improved [Retention Policies](#).

Enhancements

Smarter Grid Lines on Charts

With this release we've improved the grid lines on date-time charts, now you can give all your charts a mini-makeover with grid lines. Find out how to add [Grid Lines to Charts](#).

Bug Fixes

- Scheduled Workflows were not running if the Workflow trigger did not have an owner. With this fix the Workflow runs as expected when the owner is set to "Run as owner".
- Workflows using the 'Run Workflow' activity do not update if changes to input and output arguments of the selected Workflow have been made. With this fix a validation warning is displayed if the configuration is no longer consistent.
- Fixed an issue where some complex Workflows were not being deleted properly under certain conditions.

- Fixed an issue where some hyperlinks on Reports were not working.
- Improved error message when importing from a spreadsheet fails because no matching Records were found.

Release Notes 2.143 (August 20th, 2020)

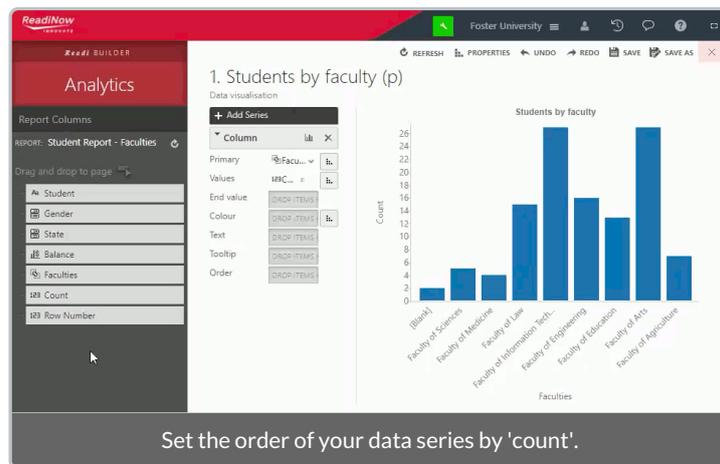
Last Modified on 07/09/2020 5:43 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

Put more order in your charts

Now you can specify the order of data series in your charts. Simply open a chart with a sortable axis in 'Edit' mode and drag your preferred sort criteria onto the 'Order' field.



Bug Fixes

- Health Checks:
 - Warnings now show for each instance of an issue, instead of just the first instance
 - Check added for deletion of documents used by Report Templates
 - Improved messaging for errors detected in calculated columns

Release Notes 2.142 (July 23rd, 2020)

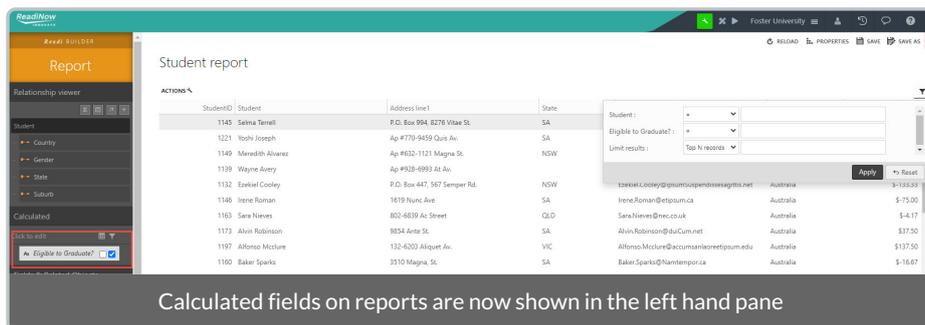
Last Modified on 21/07/2020 9:00 am AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

Ability to hide calculated field in a report

Now you have the ability to create a calculated field without requiring the field to be displayed as a column in reports, with the added bonus that the report builder also provides the user a simpler way of viewing, adding and/or removing the field from as a column or filter.



Identity Provider Initiated Login

This release adds Identity Provider (IdP) initiated login (in addition to Service Provider (SP) initiated logon). With IdP initiated login, users can log into your Tenant seamlessly from your preferred identity provider. Find out how to setup SP &/or IdP initiated login.

Log Retention Policy

The new Log Retention Policy settings gives Administrators fine grain control over the management and archiving of different types of logs and introduces a secure document library to store and protect archived logs. Find out how to configure archive settings and view archived logs.

Bug Fixes

- Calculations: Document Generation no longer throwing error on screen for invalid calculation
- Charts: Refresh icon on charts no longer stopping users from selecting chart bars/pie segments
- Forms: Cache issue resolved when changing read only/visibility setting for form controls
- Health Checks:
 - Now displays 'scan running' message during a scan
 - A scan can be run again after attempting to cancel a precious scan.
 - HealthCheck scan is no longer failing with error "Failed to start Health Check Scan. An existing health check scan already running"
- Reports: When workflow button removed in report builder it is also removed from report

- Resource Key: Auto field is now working
- Workflow: Workflow calculation compiler now provides meaningful error message when wrong data is entered for a relationship

Release Notes for 2.141 (June 25th, 2020)

Last Modified on 21/07/2020 9:05 am AEST

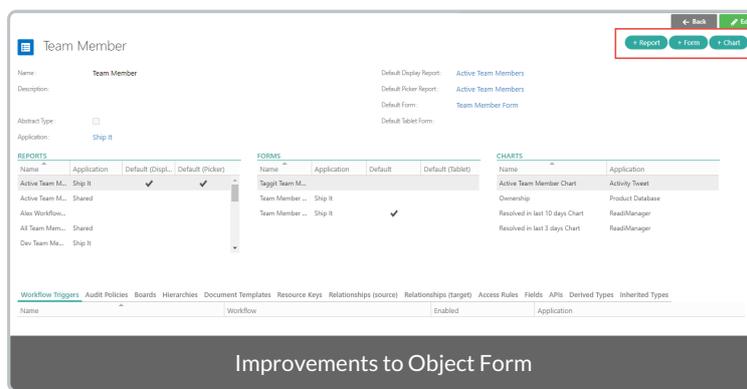
ReadiNow reserves the right to update these release notes at any time.

Enhancements

Miscellaneous

Administrator Object Form Improvements

- Creating Reports, Forms, and Charts is easier thanks to the addition of buttons to the Object Form. This can be found in: Administration > Resources > Objects.



Calculation Improvements

- In [release 2.132](#) we added warnings to certain calculation expressions as part of ongoing improvements to the calculation engine. As of this release, certain expressions will be deprecated and warnings will now be presented as errors.
 - If a calculation returns a list result when a single-value is expected an error message will be shown in the calculation editor and builders (however existing calculations that return lists will continue to run).
 - TIP: A list-result can typically be converted to a single-value result by using an aggregation function such as: `any`, `first`, or `join`.
 - NOTE: In most cases the calculation behaviour will not change, however in some edge cases calculations may behave differently from release 2.141, therefore running the [Tenant Health Check](#) and correcting 'flagged' calculations is recommended. This should not impact tenants as Professional Services have been working with clients to ensure a smooth transition. If you have any concerns, please [contact Support](#).

Bug Fixes

- Calculations
 - Error message no longer disappears from the other window when both ReadOnly and Visibility calculation windows have incorrect calculations and one of them is corrected

- Visibility and ReadOnly calculations displays error when a list is passed instead of a scalar value
- Fixed issue related to determining whether a calculation returns a 'list' or 'single-value'
- Forms
 - Entering valid value in time field manually no longer gives validation error
 - Relationship field displayed as 'Inline' can now be set to read-only
- Navigation: Moving a report with navigation access to another section, automatically assigns access to the parent under which the item is moved
- Reports
 - Edit Inline: If there is a field validation resulting an error, the cursor no longer jumps to another field
 - Date value format is now correctly labelled
 - Clicking 'Load More' when a Report was configured in a certain way no longer generates error: 'The report failed to run: Query entity could not be found'
- User Account: The last modified date and modified by are no longer set on the user account when submitting a Forgot Username or Password email
- Workflows
 - Failing workflows in specific scenarios due to primary key violation has been fixed
 - Get Records activity: filter performance has been improved
 - Send Email activity: "Override TO address" emails are no longer sent to CC recipients
 - Send Email activity: Switching between 'List' & 'Email Address' (in 'Email To') now resets recipient fields (To, CC, BCC), error messages are cleared on Save.

Release Notes for 2.140 (May 28th, 2020)

Last Modified on 22/06/2020 4:11 pm AEST

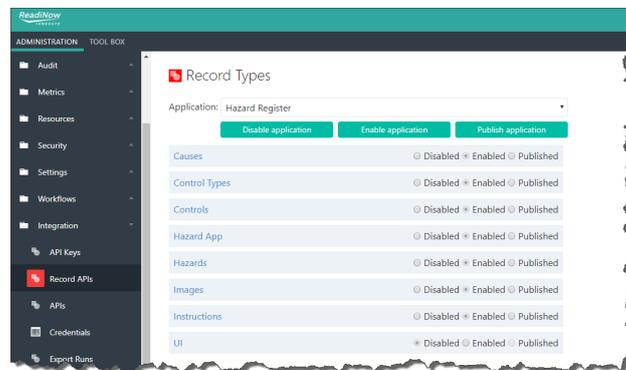
ReadiNow reserves the right to update these release notes at any time.

New Features

Record APIs

Now you can use Record APIs to easily access to API enabled records, find out how to get started:

- Getting Started
- Record Types
- Reading Data
- Creating and Modifying Data



Note: the existing Rest APIs will be deprecated after users transition to the improved Record APIs.

Enhancements

Miscellaneous

- Calculation:
 - A warning has been added for Substring() calculations if the starting position is less than 1.
 - A warning has been added when attempting to compare decimals to text.
- Workflow: The ownership of workflow triggers now defaults to the User who created the trigger.

Bug Fixes

- Export: Exporting to MS Word & MS Excel no longer converts time to 'daylight savings time'.
- Forms:
 - Cascaded choice fields no longer displaying more options than expected.
 - Fixed an issue causing: "An error occurred getting data: Cannot set property 'isVisible' of undefined" for non-admin users.
- Surveys:

- No longer possible to 'submit' an incomplete survey, submit is now disabled.
- Workflows & Surveys:
 - Workflows no longer stop working when a survey is at the approval step.
 - Clicking emailed links for survey approval in workflows now tells user if survey has already been approved.

Release Notes for 2.139 (April 30th, 2020)

Last Modified on 23/04/2020 5:56 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

Conditional Read Only

The *Visibility* Tab on Field Properties has been replaced with *Form Behaviour* where both the Visibility and Read Only states of the field may be (dynamically) determined. Any pre-existing Visibility calculation is not lost and is carried over to the new implementation.

The screenshot shows the 'Text Field Properties' dialog box. The 'Form Behaviour' tab is selected and highlighted with a red box. The 'Control behaviour' dropdown is set to 'Read-only (calculated)'. Below the dropdown, there are three radio buttons: 'Always', 'Calculated' (which is selected), and 'Never'. The 'Form Behaviour' tab is highlighted with a red box. The 'Form Behaviour' tab is selected. The 'Control behaviour' dropdown is set to 'Read-only (calculated)'. Below the dropdown, there are three radio buttons: 'Always', 'Calculated' (which is selected), and 'Never'. The 'Form Behaviour' tab is highlighted with a red box. The 'Form Behaviour' tab is selected. The 'Control behaviour' dropdown is set to 'Read-only (calculated)'. Below the dropdown, there are three radio buttons: 'Always', 'Calculated' (which is selected), and 'Never'. The 'Form Behaviour' tab is highlighted with a red box.

To configure the *Visibility* behaviour of the field, select *Visibility* from the *Control Behaviour* drop down, then select:

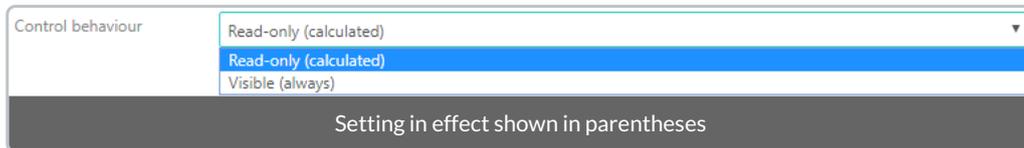
- *Always* - the expression box is disabled and the field will always be Visible. This will not delete an existing calculation in the expression box, but any calculation therein will be ignored
- *Calculated* - this requires a calculation that evaluates to a Boolean - when TRUE this field will be visible and when FALSE this field will not be visible
- Note that *Never* is not applicable to Visibility and is disabled

To configure the *Read-only* behaviour of the field, select *Read-only* from the *Control Behaviour* drop down.

- *Always* - the expression box is disabled and the field will always be Read-only. This will not delete an existing calculation in the expression box, but any calculation therein will be ignored

- *Calculated* - this requires a calculation that evaluates to a Boolean - when TRUE this field will be Read-only and when FALSE this field will not be Read-only
- *Never* - the expression box is disabled and the field will never be Read-only. This will not delete an existing calculation in the expression box, but any calculation therein will be ignored

Note that the setting applied to both Read-only and Visibility behaviours are shown in parentheses after each respective item. For example, in the screenshot below, *Read-only* is set to *Calculated* and *Visible* is set to *Always*.



New function availability - *any(x)* and *every(x)* for Reports

Previously available only in Workflow calculations, these are now available for use in Report calculations.

The *any* and *every* functions both accept a list of Yes/No values, and return a single Yes/No value.

Example Usage

- `any(all(Student).Name = 'Peter')` => true if there is at least one student called Peter
- `every(all(Student).Age >= 18)` => true if every student is at least 18

Bug Fixes

- Platform : Addressed an issue where on rare occasions the SSO drop down menu was not showing on the login page
- SSO : Existing User Accounts updated correctly when Update Existing Users is enabled

Release Notes for 2.138 (April 2nd, 2020)

Last Modified on 31/03/2020 10:41 am AEDT

ReadiNow reserves the right to update these release notes at any time.

New Features

Set Chart configuration options using Calculations

This new chart function allows named parameters to be passed. (I.e. unlike most calculation functions, you actually have to give a name as well as a value for each parameter)

- The first parameter to the chart is always the name of the chart, and this parameter does not get named.
- The remaining parameters may be specified in any order, with each having a name, then colon, then the value (or calculation)
- All named parameters are optional
- Parameter names are identifiers, and behave in the same way as other identifiers. (i.e. can have square brackets around them; and are not case-insensitive)

Parameters

WidthCm	<ul style="list-style-type: none">• The width of the chart, in centimeters, as it should appear in the Word document. While it is possible to zoom into a Word document, this is the 'natural' width, i.e. what should appear on a correctly configured screen, or normal paper print-out• If <i>WidthCm</i> is not provided, then a default of 16cm is used.• Data type : decimal (does not accept list calculations as values)
HeightCm	<ul style="list-style-type: none">• The height of the chart, in centimeters, as it should appear in the Word document.• If <i>HeightCm</i> is not provided, then the default is: $width/2.2$• Data type : decimal (does not accept list calculations as values)
Rotate	<ul style="list-style-type: none">• The number of degrees that the chart should be rotated clockwise• If <i>Rotate</i> is not provided, the default is zero• Data type : decimal (does not accept list calculations as values)
PixelsPerInch	<ul style="list-style-type: none">• The screen resolution to emulate when sampling the SVG for the chart.• This uses a default value of 100 PPI, which is consistent with typical monitors• Data type : decimal (does not accept list calculations as values)

Example Usage

- `chart([Chart Name])`
- `chart([Chart Name], WidthCm: 10)`
- `chart([Chart Name], WidthCm: 10, HeightCm: 10, Rotate: 90)`
- `chart([Chart Name], [Rotate]: 90)`
- `chart([Chart Name], WidthCm: 10, HeightCm: 10, Rotate: 90, PixelsPerInch:200)`

Application of sizing information

- A simulated rendering of the chart is done using screen pixels
 - *WidthCm*, *HeightCm*, and *PixelsPerInch* are used to determine the pixel size to use for the simulated rendering.
- The generated SVG is then embedded into Word, with sizing information.
 - *WidthCm*, *HeightCm*, and *Rotation* are provided to Word to indicate how big the result should be.
- Adjusting *PixelsPerInch* has the effect of controlling how wide the pixels/lines are when scaled.
 - a smaller PPI (i.e. less than default of 100) will give larger text; fat lines; and potentially fewer axis markings
 - a larger PPI (i.e. more than default of 100) will give smaller text; thin/faint lines; and potentially more axis markings

Using constant strings for drill-downs

It is now possible to specify that a chart should be drilled down such that document authors can create charts specific to the current record.

- Allow a list of column names and values to be provided to the chart function
- If any column names/values are provided, they must be placed after a 'with' keyword
- Column names are identifiers (i.e. use square brackets if there are any spaces or special characters)
- Refer to draft product documentation for details on column filters.
- Column values:
 - will typically be constant values
 - but can be any form of calculation, so long as the data type matches the data type of the column
 - lookup/relationship name columns, and the root name column, behave as though they have a data type of record (with whatever the appropriate record type for that column is)
- Examples
 - `chart([Chart Name] with [My number column]:123)`
 - `chart([Chart Name] with [My number column]:100+20+3)`
 - `chart([Chart Name] with [First Name]:'Peter', [Last Name]:'Aylett')`
 - `chart([Gantt - Scientists] with [Scientist]: resource([Scientist], [Alan Turing]))`
 - `chart([Whatever] with [Created By]: currentuser())`

Enhancements

Various performance tweaks and boosts in Reports.

Bug Fixes

- API Callouts : Gateway activity no longer throws a validation error when accessing APICallout dynamic type data
- API Callouts : Extraneous "??" no longer added after the base URL when using "API Key Authentication" for API Callouts
- Security : Inherited Security Rules could not be changed and are now greyed out to highlight this state of affairs

Release Notes for 2.137 (March 5th, 2020)

Last Modified on 19/03/2020 12:49 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

New Features

Workflow

Batch Creation of Records

This feature that allows users to create new record(s) based on another Object. Users will be able to create multiple records without looping which simplifies workflows which in turn should run faster.

The screenshot displays a workflow editor interface. On the left, a workflow diagram shows a 'start' node (green play button) leading to a 'Create' activity (blue square with a document icon), which then leads to an 'end' node (red square). The 'Create' activity is highlighted with a blue border. On the right, the configuration panel for the 'Create' activity is shown. The panel has a title bar with 'Create' and 'click to edit description'. Below the title bar, there are several fields and options:

- Object:** A dropdown menu with the value '[Executive_Board]'.
- Based on:** A dropdown menu with the value 'all(staff)'. This field is highlighted with a red border.
- Update existing record with matching key
- Field or Relationship:** A section with a close button (X) containing two rows:
 - Name:** '[Name]'
 - Value:** '[Name]'
- Field or Relationship:** A section with a close button (X) containing two rows:
 - Name:** '[State]'
 - Value:** '[NSW]'

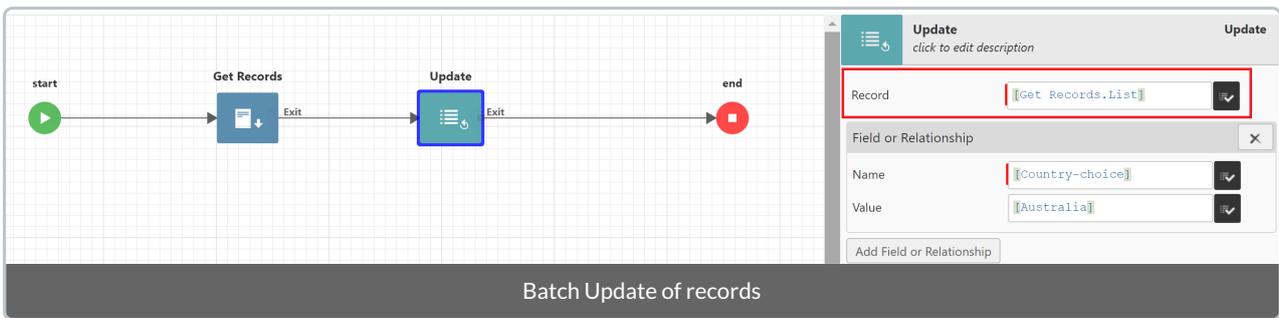
At the bottom of the configuration panel, there is a label 'Batch creation of records'.

Where there are existing records with a corresponding resource key available, this can be used to update the existing records by checking *Update existing record with matching key*.

Batch Update Activity

Historically, in order to update to multiple records in a workflow a loop was required.

In this release, the update activity is modified so that it will accept a list of records and perform the update on each record. This results in cleaner, more convenient workflows and improved performance.



"Template" style expressions in workflow calculations

New functions are available that allow document template techniques to be used within Workflow and Form calculations - *text* and *html*.

```
text(|Welcome {currentuser().[Account Holder]}, here is a custom greeting for you.|)
```

```
html(|
<p>
  Dear {[First Name]},
</p>
<p>
  If your name contains angle brackets then you'll be OK.
</p>|)
```

Both functions allow you to easily create multi-line messages with customized content. **Document template** features such as repeated content and conditionally included content are supported.

The *html* function also includes security features to prevent unusual characters or malicious record data from producing unsafe HTML, and it should be used in any place that a Workflow needs to generate rich text.

Please refer to [Text Templates](#) for further details.

Calculations

Link Calculation Function

A new **link** calculation function has been provided that can conveniently generate a web address for a viewing/editing/creating a record, or to a ReadNow page. For example:

```
link(view, [A workflow record variable])
link(create, [Task])
link(report, [My Report Name])
```

Refer to the [Link function](#) for details.

Calculated Rich Text and URL fields

Rich Text and URL are now both available as field options when adding a calculated field. If selected, these will render as read-only rich text and URL fields. The calculation must be formatted with the *html* or *url* functions to be correctly escaped.

For example, to create a calculated rich text field to produce this:

This is plain text. **This is in bold.**

Uses this calculation:

```
html(|This is in plain text. <b>This is in bold.</b>|)
```

For a URL, the following are appropriate calculations:

```
url('http://google.com')  
link([A workflow record variable])
```

The *html*, *url*, and *link* functions inform the system that the data is appropriately encoded for use as HTML or URL. If they are not used then the system will (for safety) fully encode the string, and will end with unexpected results.

Administrators may disable access control in report calculations

The `!unsecured` calculation keyword was previously unavailable in report calculations, except by creating a calculated field.

The `!unsecured` keyword may now be report calculations.

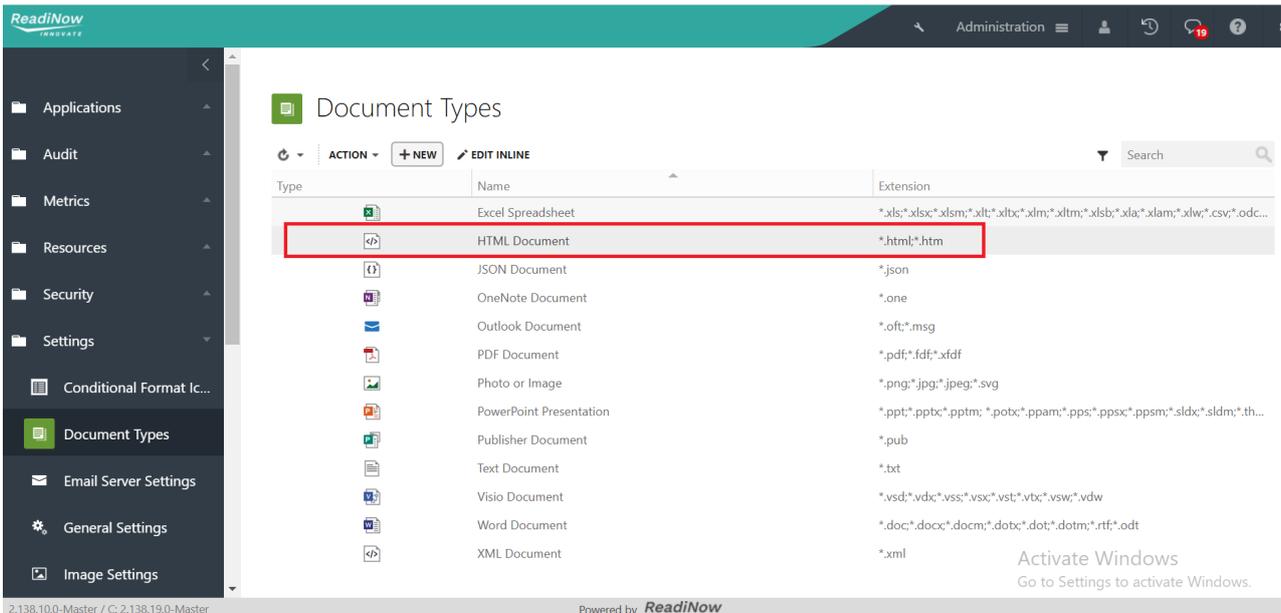
The report must be saved by a security administrator. If a content administrator, who is not a security administrator, subsequently modifies the report then `!unsecured` will no longer be honored in that report. However, if the user who saved the report ceases to be a security administrator or if their account is deactivated, then the report and `!unsecured` calculation will still run to work as intended for other users.

Document Generation

Support HTML document templates

Platform now supports the ability to generate the HTML documents.

User can upload documents and create templates with `.html/.htm` file extensions to be used for document generation. The generation process is similar to plain-text documents. The the default encoding of the calculation macros will be HTML.



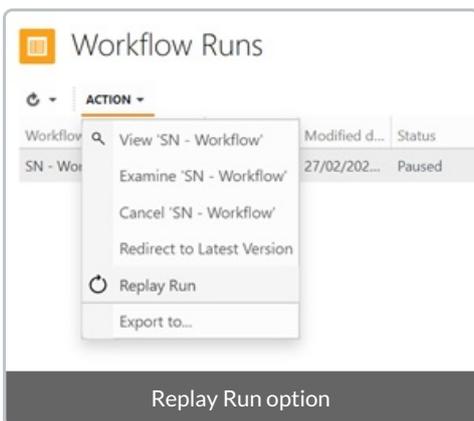
This means, for example, that if an embedded macro results in a string that contains a HTML character such as < > or &, then it will get encoded for HTML (e.g. < > or & respectively)

Note : Generated files are passed through a HTML whitelist sanitizer that removes script tags.

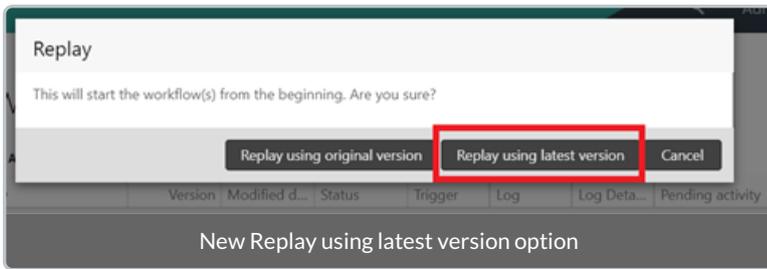
Enhancements

Replay Workflow

In Release 2.136, the *Replay Run* feature was made available which allowed users to replay any Workflow run with the same inputs and context. However, this replay would always use the original version of the Workflow which the run executed.



This feature has been enhanced such that now when replaying a Workflow run, after selecting *Replay Run*, users may choose to replay using the latest version of the workflow or staying on the original version.



Bug Fixes

- Configuration changes : Log entries are now created when an entity is imported via platform configure commands
- Reports : Workflow button on a report no longer temporarily disabled when returning to that report
- Report Builder : Adding additional columns to the right of a report will now always correctly render all columns on the right of the chart without requiring a scroll action to redraw
- Survey : Clicking Next/Previous when answering a Survey will now load the page starting from the top
- Workflow Builder : Pressing 'Enter' when editing a response in a User Action activity no longer deletes the response

Product Documentation

Changes have been made to this product documentation.

- You can now bookmark pages.
- You can now use Google and other search engines to find content.

The following articles have been added or updated recently:

- [Link Function](#)
- [Relationships](#)
- [Security Relationships](#)
- [Text Templates](#)

Release Notes for 2.136 (February 6th, 2020)

Last Modified on 11/02/2020 1:46 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

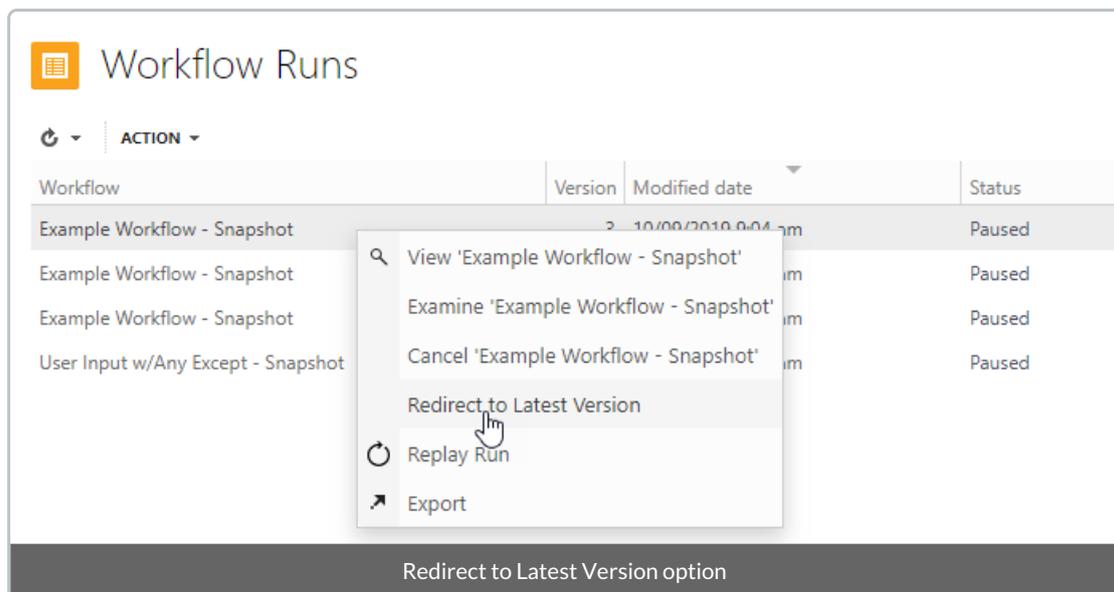
New Features

Workflow Run Management Options

Two new features are included in this release that will allow Tenant Administrators to have better control over their long running or paused Workflow Runs. Both new features are available in the Right Click Context Menu on the Workflow Runs report.

Redirect to Latest Version

The first new feature is *Redirect to Latest Version* which allows for paused or long running Workflows that are running against older versions of the Workflow to be redirected to the latest version.



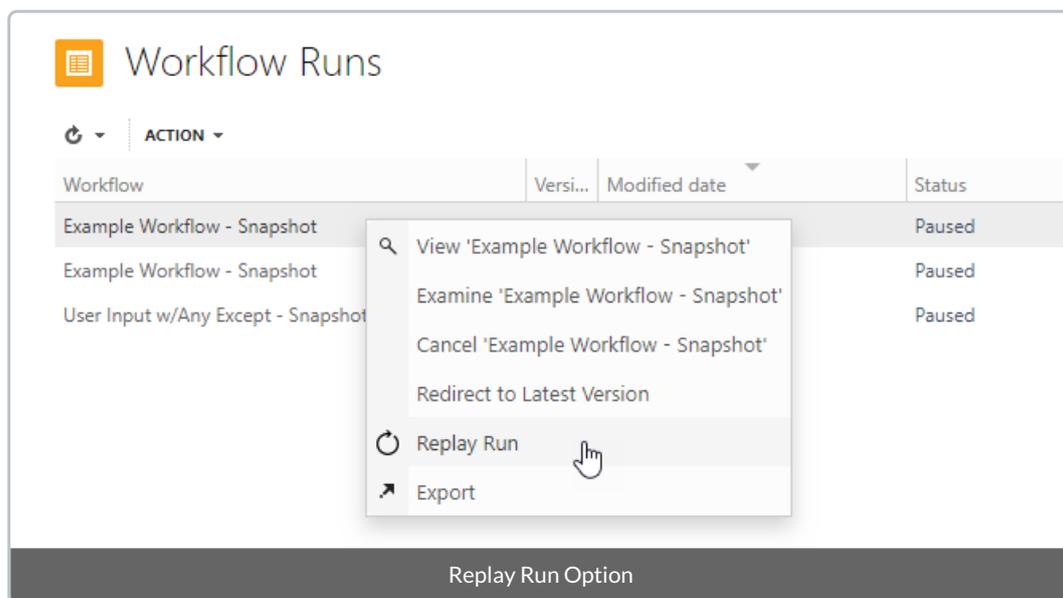
Notes on Usage

1. If the Workflow is already on the latest version, Redirect to Latest Version will fail and the reason given in a banner alert
2. Redirect to Latest Version is only applicable to Workflows that have not reached an end point (Completed, Failed, or Cancelled). Attempting to redirect a Workflow that has ended will fail and the reason given in a banner alert
3. If the Workflow Run is paused on a Workflow Activity that has been renamed or deleted in the latest version, the redirect will fail and the reason given in a banner alert
4. Multi-select is supported - use Ctrl-Click for expanding selection individually or Shift-Click to select all Workflow runs between the first highlighted row and the selected row. Any subset of the selection that fails to redirect will not impact the successful redirection of eligible Workflow Runs contained within the selection

5. Attempting to redirect a Workflow Run that is currently executing will only be redirected when that Workflow reaches a paused state
6. Finally, the redirection feature will not (and could not) check for behavioural differences when changing a Workflow Run to the latest version. It is strongly advised that Tenant Administrators review the impact that would occur when considering using this function

Replay Run

The second new feature is *Replay Run* which allows for any failed Workflow Run to be replayed with the same inputs and contexts. This provides an easy way to re-run a Workflow that had temporarily failed (incorrect calculation, security misconfiguration, etc) without requiring the re-entering of all the requisite inputs.



Notes on Usage

1. Replaying a Workflow Run will create a new Workflow Run with the same parameters, triggering user, and correlation code. It will also log an audit message indicating which user is initiating the Replay.
2. Wherever a Workflow has been updated, any Replayed Workflow Runs will use the original version it ran against and not the latest version
3. The "Parent Run" relationship is not maintained. Replaying a failed Child Run will have no effect on the parent run (which will have failed due to the failed Child Run)
4. The Triggering Run relationship is maintained.
5. Multi-select is supported - use Ctrl-Click for expanding selection individually or Shift-Click to select all Workflow runs between the first highlighted row and the selected row. Any subset of the selection that fails to replay will not impact the successful replaying of eligible Workflow Runs contained within the selection
6. While the primary use of Replay Run is to re-run failed Workflow Runs, the feature does not prevent the replay of any Workflow Run regardless of current status. Tenant Administrators are advised to carefully consider the impact if they replay a Workflow Run that has not reached an end state.

Change Management

The new Change Management feature allows Tenant Administrators to move configuration changes between tenants with more ease and precision.

This feature can be found under **Administration -> Applications -> Change Management** on the left hand navigation tree.

The screenshot shows the 'Change Management' interface. At the top, there is a 'Time period:' dropdown menu set to '8/16/2019, 11:35:23 AM - Platform Install/Upgrade (SoftwarePlatformSetup_2.1)'. To the right are 'Select All', 'Select None', and a search input field. Below this is a table of configuration changes:

Change Name	Type	Details	Admin	Target	Timestamp
Choice3	Relationship		Administrator		11/18/2019, 10:43:32 AM
Choice4	Choice Field		Administrator	ReadiNow Console	11/18/2019, 10:44:53 AM
Choice4	Relationship		Administrator		11/18/2019, 10:45:25 AM
Choice5	Choice Field		Administrator	ReadiNow Console	11/18/2019, 10:45:25 AM
Choice5	Relationship		Administrator		11/18/2019, 10:45:25 AM
Choice6	Choice Field		Administrator	ReadiNow Console	11/18/2019, 10:48:19 AM
Choice6	Relationship		Administrator		11/18/2019, 10:48:32 AM
Core API	API	APIs that are common to all applications.	Administrator	ReadiNow Core Data	9/27/2019, 3:00:28 PM
Currency	Currency Field		Administrator		10/1/2019, 12:27:29 PM
Custom Form Name	Custom Edit		Administrator		2/3/2020, 3:40:39 PM

At the bottom right of the table is a 'Generate' button. Below the table is a dark grey bar with the text 'Change Management Interface'.

Notes on Usage

Selecting the designated Time Period

The screenshot shows the 'Time period:' dropdown menu with 'Search in the last 5 minutes' selected. To the right is a 'Search' button.

There are three Time Periods that may be used to bracket Configuration Change history:

- **Relative** (as shown above) - show changes between now and the specified time interval in history
- **Absolute** - show changes between specified two absolute date/time reference points
- **Restore Point** - show changes since the selected *Restore Point*. *Restore Points* are created under *Tenant Rollback* - for more information on Tenant Rollback, please refer [here](#).

Once the Time Period has been configured, click Search to return the matching list of Configuration Changes.

Managing view of returned Configuration Changes

The screenshot shows 'Select All', 'Select None', and a search input field.

These are used for broad refinement and/or selection of the returned list of Configuration Changes.

- Select All - checks every item in the change list
- Select None - unchecks every item in the change list
- Search bar - refines change list by the entered search term

Reviewing details of individual Configuration Change items

The details of each Configuration Change item may be reviewed by clicking on Changes to expand a detail window view, as below.

Name	Type	Description	Username	Application	Change Date
Currency	Currency Field		Administrator		10/1/2019, 12:27:29 PM
<div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"> <p>▼ Changes</p> <p>Currency Field 'Currency'</p> <p>Modified fields: Decimal places, Name, Script name</p> <p>Modified relationships: Field belongs to group, Resource type</p> </div>					

Generate the Resource XML



When the desired Configuration Change list has been finalised, click Generate to create the XML containing every Configuration Change that had been checked. This may be imported into the Target Tenant via Import Resource.

Retiring Choice Fields

Values in Choice Fields may now be set to 'Retired'. This feature is available in the Choice Field Properties and via the Administration tab (Administration/Resources/Choice fields).

Choice Field Properties

Name :

Display Name :

Description :

Choice Fields New Use Existing

Choice Values Format: Display text

Name	Description	Retired
NSW		<input type="checkbox"/>
VIC		<input type="checkbox"/>
SA		<input type="checkbox"/>
WA		<input type="checkbox"/>
QLD		<input type="checkbox"/>

Order from minimum to maximum.

▼ OPTIONS

Retire Choice Field option

Notes on Usage

1. When a value has been marked as 'Retired' it will not appear as a choice when creating new Records, but any historical Record that has that value set will retain them.
2. This feature is available on both single and multi-select Choice fields
3. This is a UI restriction only - Workflows or Imports will still be able to set a Choice Value that has been marked as 'Retired'
4. If an existing record has a Retired Choice value set then that choice will still appear in the drop down

Enhancements

Form Name Display

Previously, the Object Name was shown instead of the Form Name when creating a new Record.

Now, Tenant Administrators may define what Form Display Name appears when creating a new Record depending on the Form being used. This is done by entering the desired value in *Display Name* field on the Form Properties dialog, as below.

Omitting this value will result in the behaviour as before, displaying the Object Name.

The screenshot shows a configuration window with two tabs: 'Form Properties' (active) and 'Object Properties'. Under 'Form Properties', there are several fields:

- Name :** OBJECTIVE Form
- Display name :** Custom Form Name
- Description :** (empty text area)
- Applications :** (empty field with edit and delete icons)
- Enable convert :**
- Show help :**
- Show labels above values :**
- Icon :** (empty field with edit and delete icons)
- Default form :**

 A dark grey footer bar at the bottom of the window contains the text 'Customising a Form Name Display'.

When creating a New Record using this form, the defined Display Name appears.

The screenshot shows a form header with a blue icon on the left and the text 'Custom Form Name' in the center. On the right side, there are three buttons: 'Save' (green), 'Save and New' (green), and 'Cancel' (red). Below the header is a dark grey footer bar with the text 'Customised Form Display Names'.

Please note that this new enhancement will not change any existing implementations - adoption of this new behaviour must be an explicit action on the part of Tenant Administrators.

Workflow Activity - User Input

Previously, all defined User Inputs in the Workflow Activity were always Mandatory.

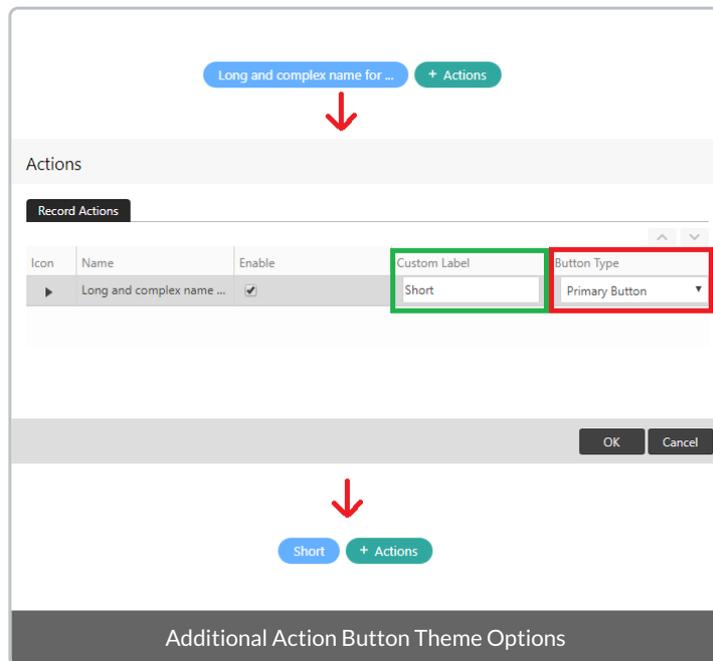
As of this release, Tenant Administrators may now define whether or any User Input is Mandatory or Optional, as shown below.

By default all existing User Inputs will be marked as 'Required', as to not change how existing implementations currently behave.

New Theme Options

Tenant Administrators may now specify additional theme options by specifying colours across 5 sub-types of buttons.

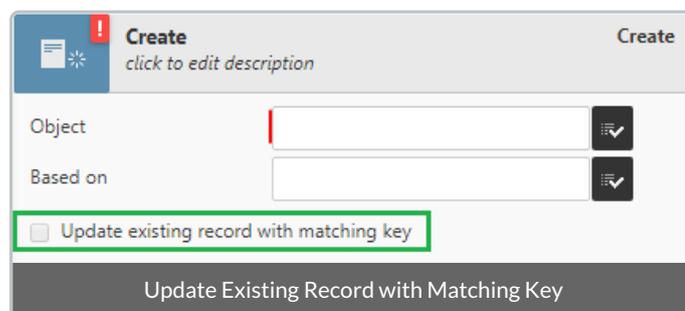
The sub-type of a button is specified in the Record Actions dialog, as below boxed in green.



Additionally, Action Buttons may now have their labels customised in the Record Actions dialog as shown above boxed in red.

Miscellaneous

- Configuration Change Log Entries will now refer to entities by their *Display Name*. If there is no *Display Name* defined for the relevant entity, it will be referred to as <Unnamed> followed by an internal entity ID.
- The *Update existing record with matching key* option in the *Create Workflow Activity* will now always display. Previously it would only display if there were resource keys associated with the selected Object. Please note you will not be allowed to check this option if there are no resource keys defined for the selected Object.



Bug Fixes

- The Show Help icon will now display properly when two or more fields are horizontally inline on a Form when outside a Container
- Case calculations used in Workflows now compile successfully
- Importing Workflows with variable(s) no longer generates a dependency error message
- "En Dash" (-) character now correctly renders when exported to a Word document
- Workflow Run cleanup no longer occurring sooner than it should
- Disabled Scheduled Workflows is now ticked by default after a Tenant refresh

Release Notes for 2.135 (9th January, 2020)

Last Modified on 02/01/2020 3:37 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

New Features

There were no New Features included in this update.

Enhancements

Security Rules Performance

Based on feedback from clients and analysis of a selection of applications, we have made several enhancements to our security rules that will translate into improved performance.

Miscellaneous

- Text in the Hero Text Container Description field now appears as a hover tip
- Gauge charts no longer include the y-axis
- The performance of the initial load of large Workflows in Build Mode has been significantly improved

Bug Fixes

- **Audit:** The Configuration Change report is no longer limited to 3000 entries
- **Documents:** The Browse button for uploading new versions of documents has been restored

Release Notes for 2.134 (14th November, 2019)

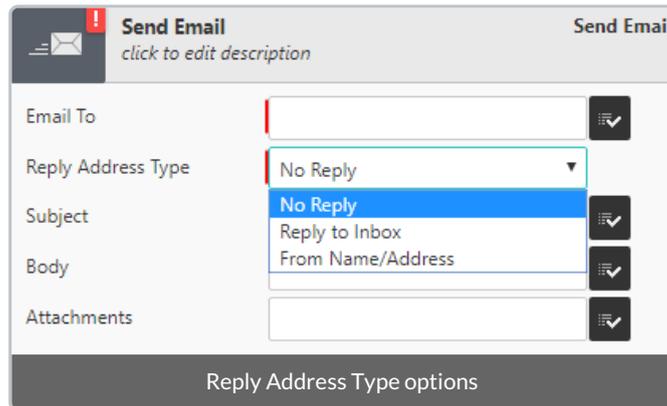
Last Modified on 20/11/2019 1:49 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

New Features

Send Email Workflow Activity

The Reply Address Type can now be specified in the Send Email Workflow Activity.



There are three options available:

1. **No Reply** - replies to emails generated by this Workflow activity will be addressed to *noreply@readinow.com*
2. **Reply to Inbox** - replies to emails generated by this Workflow activity will be routed to the specified Inbox that has been configured on the Platform
3. **From Name / Address** - replies to emails generated by this Workflow activity will be sent to the specified Name/Address

Custom Form Validation

The ability to define Custom Form Validation via a calculation has been implemented.

^ OPTIONS

Form Detail Object Detail Visibility Format **Custom Form Validation**

NOTE: The validation options are applicable **ONLY** when creating or editing records with this form.

Validation Calculation:

Error Message :

Always Validate:

Custom Form Validation Tab

1. **Validation Calculation** : The calculation used to validate the value for this field - this calculation must return a Boolean value
2. **Error Message** : The message the user will see whenever the validation calculation above returns as False
3. **Always Validate** :
 - *Checked* - This field will be validated on new record creation, or whenever this record has been updated, even if this field or any referenced fields used for the validation have not modified. This approach would be taken if it has been determined that a particular field needs to be continuously validated on creation and any subsequent edits, such as an 'Estimated Completion Date' or something similar
 - *Unchecked* - This field will only be validated on new record creation, or when the value of this field or any referenced fields used for validation have been changed. Validation will not run if only unrelated fields are modified on this record. An example of using this approach is where a Date field is validated such it cannot be in the past at time of record creation, but it is not a meaningful check to continue on subsequent edits - such as 'Original Due Date' or something similar

Custom Form Validation Usage

- Custom Form Validation is supported for standalone edit Forms, edit forms on screens and inline editing
- Validation is performed only as a record is being saved - not whenever fields on the record are changed
- Custom Form Validation is not available for Read Only fields - marking a field as Read Only will hide the Custom Form Validation tab and any content will be ignored
- Using a Custom Form Validation will in effect make that field mandatory, unless specified by the calculation expression to allow null values
- Custom Form Validation based on a field that is hidden due to a visibility calculation is not supported. All referenced fields in a Custom Form Validation calculation must be visible on the form

- Records that have been imported are not subject to Custom Validation
- Custom Validation based on the *AutoNumber* field is not supported
- Removal of a field from a Form that is being used in a Custom Validation Expression will not remove those field references from those expressions and they will still be evaluated
- Please exercise care when creating multiple Validation Calculations as it is possible to create circular references

Enhancements

Miscellaneous

- Document version is now displayed on the Document Revision Form
- Browsing through Activities in a large Workflow will now be more responsive
- Improved handling of invalid Cron schedules
- Implemented checks in Workflow Builder to prevent the inadvertent creation of closed loops

Bug Fixes

- **Choice Fields:** Cascaded choice fields now work correctly when a user initiates a Workflow on a Form
 - **Documents:** The Ability to recover Word Documents from the Document History has been restored
 - **Import/Export:** Importing/Exporting after logging in again after a session time-out now works as expected
 - **Survey:** In the rare cases where deadlock recovery is required, this will no longer create duplicate Survey Tasks
 - **Workflows:** Improved deadlock recovery when multiple Workflows are running in parallel interacting with the same set of records
-

Release Notes for 2.133 (17th October, 2019)

Last Modified on 16/10/2019 8:06 am AEDT

ReadiNow reserves the right to update these release notes at any time.

New Features

There were no New Features included in this update.

Enhancements

Saving Workflows Performance Improvement

Prior to this release, when saving a Workflow that had an inordinately high number of runs associated to it would take a long time and have a significant impact on Platform performance. We had advised Tenant Administrators to avoid doing Workflow saves of workflows that fall under this description during peak business hours.

A change was effected around how this operation occurs which dramatically speeds up this process. Tenant Administrators may now save Workflows at their discretion regardless of time of day or Workflow run count.

These changes are transparent unless the Workflow report has been modified in specific ways.

Miscellaneous

- Assorted performance improvements with Forms, Reports and Surveys

Bug Fixes

- **Export:** Exporting Choice fields to XML now functions correctly
- **Forms:** Refreshing the browser while creating a new Record will abandon that create operation in order to preserve the integrity of the create operation as a whole
- **Survey:** Improved robustness when operating in parallel with multiple Workflows operating on the same set of records

Release Notes for 2.132

Last Modified on 05/09/2019 1:31 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

Tenant Rollback

The tenant rollback feature allows you to undo changes to your tenant to a selected restore point. Generally you can undo up to five calendar days or until the last platform upgrade, whichever is the most recent. In some circumstances a rollback may not be possible due to the type of configuration changes that have been made.

Tenant rollback is under **Settings** in the **Administration** application.

The screenshot displays the 'Tenant Rollback' interface. At the top, there is a title 'Tenant Rollback' and a descriptive paragraph. Below this is a 'NOTE' section. The main area is divided into two sections: 'Restore Points' and 'Rollback Log'. The 'Restore Points' section contains a table with columns 'Date' and 'Name'. The 'Rollback Log' section contains a table with columns 'Date', 'Rolled back to', and 'User'. At the bottom of the interface, there is a caption: 'The tenant rollback interface'.

Date	Name
08/05/2019, 08:09:20	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.85.0) Restore Point
07/05/2019, 02:13:04	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.77.0) Restore Point
05/05/2019, 02:06:27	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.76.0) Restore Point
04/05/2019, 02:09:15	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.76.0) Restore Point
03/05/2019, 02:06:30	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.73.0) Restore Point
02/05/2019, 02:09:48	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.73.0) Restore Point
01/05/2019, 02:09:25	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.70.0) Restore Point
30/04/2019, 02:08:49	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.65.0) Restore Point
29/04/2019, 13:11:56	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.61.0) Restore Point
29/04/2019, 10:17:36	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.58.0) Restore Point
29/04/2019, 09:45:16	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.58.0) Restore Point
27/04/2019, 02:08:56	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.58.0) Restore Point
26/04/2019, 11:16:13	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.56.0) Restore Point
26/04/2019, 08:59:27	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.53.0) Restore Point
26/04/2019, 08:28:27	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.51.0) Restore Point
26/04/2019, 08:07:06	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.51.0) Restore Point
25/04/2019, 02:06:08	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.51.0) Restore Point
24/04/2019, 15:16:56	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.51.0) Restore Point
24/04/2019, 10:04:48	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.51.0) Restore Point
24/04/2019, 07:22:04	Platform Install/Upgrade (SoftwarePlatformSetup_2.129.44.0) Restore Point

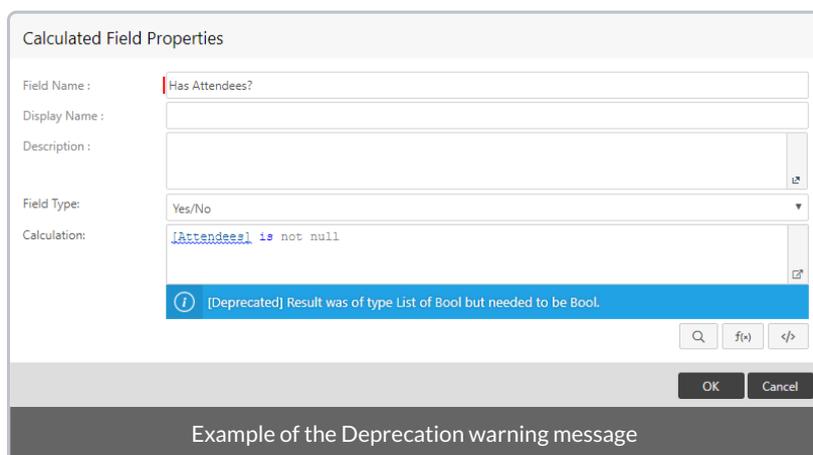
Date	Rolled back to	User
20/03/2019, 14:31:56	20/03/2019, 14:31:03	Administrator
20/03/2019, 14:31:03	20/03/2019, 14:29:37	Administrator
20/03/2019, 14:29:37	20/03/2019, 14:27:30	Administrator

Feature Enhancements

Miscellaneous

- The maximum number of Records allowed to be exported has been increased from 10,000 to 100,000
- Performance enhancements for Form loading and interaction
- The **Tenant Health Check** will now identify Forms that appear to save slowly due to containing a Trigger that is marked as "Run in foreground" that had been triggered in the last 7 days. Previously there was no way for Tenant Administrators to identify such problematic Triggers and/or Workflows

- Due to ongoing improvements to Calculated Fields, certain calculations that are written in a specific way will be deprecated in a future release. In order to assist migration of these calculations to the improved format, such calculations will be flagged with a warning. These will appear both when editing a Calculated Field (on Forms and Workflows only) and highlighted in the [Tenant Health Check](#).



Bug Fixes

- Documents: Document Generation now correctly handles special ASCII characters
- Form Builder: The cursor will no longer occasionally jump to the start of Visibility Formula field when typing
- Forms: The Relationship tab will now allow linking to existing records in all circumstances
- Forms: Check Boxes will now show the default value if none had been assigned
- Workflow: Improved cache handling to address highly specific internal server failures
- Workflow: It is no longer possible to click more than once on the Done or Cancel buttons during a single User Input activity
- Workflow Builder: Encountering an Internal Server Error when saving workflows no longer results in duplication of activities

Release Notes for 2.131

Last Modified on 25/07/2019 9:57 am AEST

ReadiNow reserves the right to update these release notes at any time.

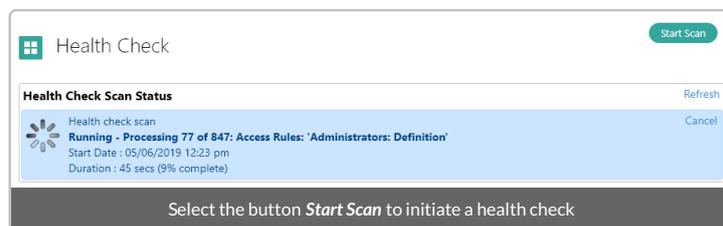
New Features

Health Check

Now, we have empowered you as the Application Developer and Tenant Administrator to improve and enhance your custom applications with our new **Health Check** tool. By simply running a scan over your tenant, the results will provide you an overview of existing errors, warnings and suggested improvements.

For example, you may have a slow running report that you would like to make faster, by running the scan, then looking at the **Reports** in the summary to see if there are any list improvements for that particular report.

We will continually add to our scan scope to provide you better information on enhancing your applications.



A health check scan can be run on demand which can be found in Administration > Metrics > **Health Check**. Running the scan will not impact performance, however it may take over an hour to complete on a tenant with complex configurations.

The screenshot displays the 'Health Check' results page. It features a 'HEALTH CHECK SUMMARY' table and an 'ITEMS BY TYPE' bar chart. Below these is a 'HEALTH CHECK RESULTS' table showing specific error details.

Health Check Type	OK	Errors	Warnings	Suggestions
Access rules	222	2	4	0
Action buttons	0	0	0	0
API callouts	16	0	0	0
Calculated fields	32	1	0	0
Forms	217	0	0	0
Report templates	2	0	0	0
Reports	313	7	10	0
Workflows	22	2	0	0

ITEMS BY TYPE

Item Type	Count
Reports	313
Calculated fields	32
Workflows	22
Forms	217
Access rules	222
API callouts	16
Report templates	2

Health check...	Item checked	Details	Application	Message...	Messages	Subc
Reports	H_Country Report		Test Solution	Error	Invalid column: H_City	
Reports	H_Country Report		Test Solution	Error	Invalid relationship: H_City	

Results of a completed health check

The report in the lower part of this screen lists the results, which include the type of resource, the name of the resource, the application name, severity and a detailed message. Using this information the location and nature of the problem can be identified. For example, the "H Country Report" has an invalid column, which has generated more than one warning message because it is also a relationship.

Collapsible Sections in Survey Editor

Previously, it was difficult to manage surveys with hundreds of questions, but now the survey editor supports collapsing and expanding sections to make editing easier.



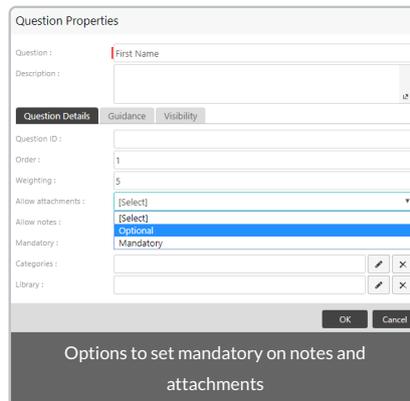
Mandatory Attachments and Notes on Survey Answers

Mandatory Attachments

Attachments can now be made mandatory on survey answers. This is especially useful when questions require documentary evidence to support the answer.

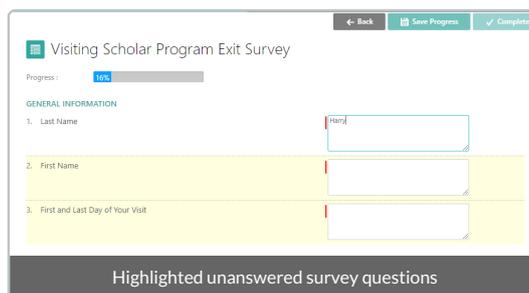
Mandatory Notes

It is now possible to require notes on survey answers, which can be used to require justification text for an answer.



Highlighting of Survey Questions

Questions that require an answer but have not been answered yet will be highlighted for the user. This makes it easy to save progress on a survey, gather the required information and then return later to answer the remaining questions. The highlighting takes into account mandatory attachments and notes, so if a mandatory attachment is missing then the question is considered unanswered for the purpose of highlighting.



Feature Enhancements

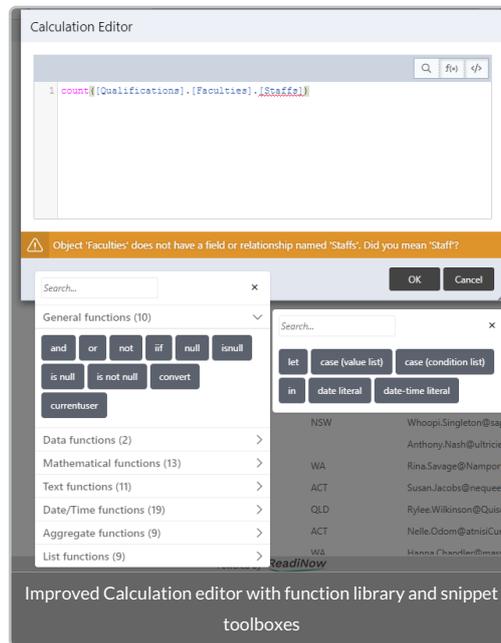
Calculation Editor

Writing and reading calculations are made easier with our improvement calculation editor enhancements.

There are a lot of handy improvements to talk about here:

- expand the calculation editor to your liking
- allows the use of calculation snippets to save typing
- shows red squiggly line where there is an error in the calculation
- easier to read error message

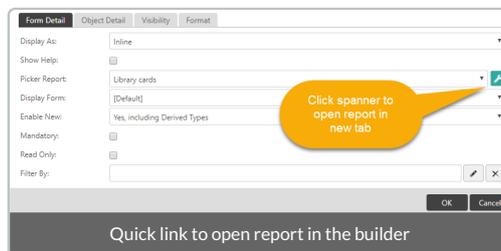
- now with warning and hint messages
- improvement auto complete when using fields
 - use **ctrl + space** to see the hints, then you arrow keys to find the field you are looking for, then hit enter
- easier to read function library in a separate toolbox window



Direct links to reports in builder

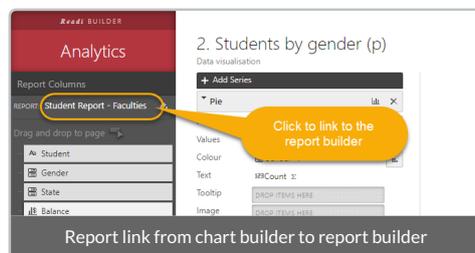
Link to picker reports in relationship properties

We have now provided you with quick easy way to directly go to a picker report within the relationship proprieties. Clicking on the spanner will open the report in the builder in a new tab.



Link from chart builder to reports in builder

The link in chart builder will now open the report in the builder for quick easy access.



Forthcoming Feature

You may have noticed that we have added a new report in Administration > Metrics > Alerts. This report will be used for a future feature that we are planning on releasing soon.

Bug Fixes

- Calculations: Date time calculation does not work in the report in certain scenarios
- Calculations: Functions charindex() and replace() should not be case-sensitive
- Calculations: The calculation 'case [Fruit] When 'Orange' then True else False end' throws error on report
- Calculations: 'Where' clause is allowing various data types to be automatically converted to true/false
- Charts: Deleting an object does not delete the chart
- Document Library: 'Report failed to run' error on clicking on the Image column in Icon library and Photos Library
- Forms: Completed tasks show a blank screen when clicked through via URL in an email
- Forms: Duplicate action buttons appear in certain scenarios
- Forms: Limit for currency and decimal is much less than workflow/storage limit
- Import Spreadsheet: Failing due to error message @valuelist
- Rich Text: Few letters are hidden in the rich text field editor when in edit mode
- RichText: Only hide the menu bar when there is a textual change, not a formatting change
- RichText: Popup menu hides text when the control is the top control in a tab host container
- Surveys: Input for multi select question changes after moving between pages and when Saving Progress
- Themes: Not displaying correctly when item in folder is selected
- Workflows: JSON error on User Input with one choice field
- Workflows: Failing with internal error in certain scenario with error 'Unable to find the default exit point'
- Workflows: Allows saving with two paths from same exit point, and then gives internal error
 - **Note:** If you have experienced this issue with a workflow, the workflow will continue to work as before, however when you open it in the builder you will see a validation error message that you will need to fix before saving.
 1. Simply open the offending workflow
 2. Save the workflow
 3. You will then be presented with an validation error message like **Activity "XXX" has multiple transitions from the same exit point "YYY"**
 4. Find the duplicate transition line between the 2 activities
 5. Delete one transition line
 6. Save the workflow
- Workflows: Create Link has URL parameters that affect survey functionality
- Workflows: Workflow and audit fires twice at the same time for one record
- Workflows: Workflow with multiple Send Email activities sends email to incorrect recipients in some circumstances

Release Notes for 2.130

Last Modified on 24/06/2019 10:32 am AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

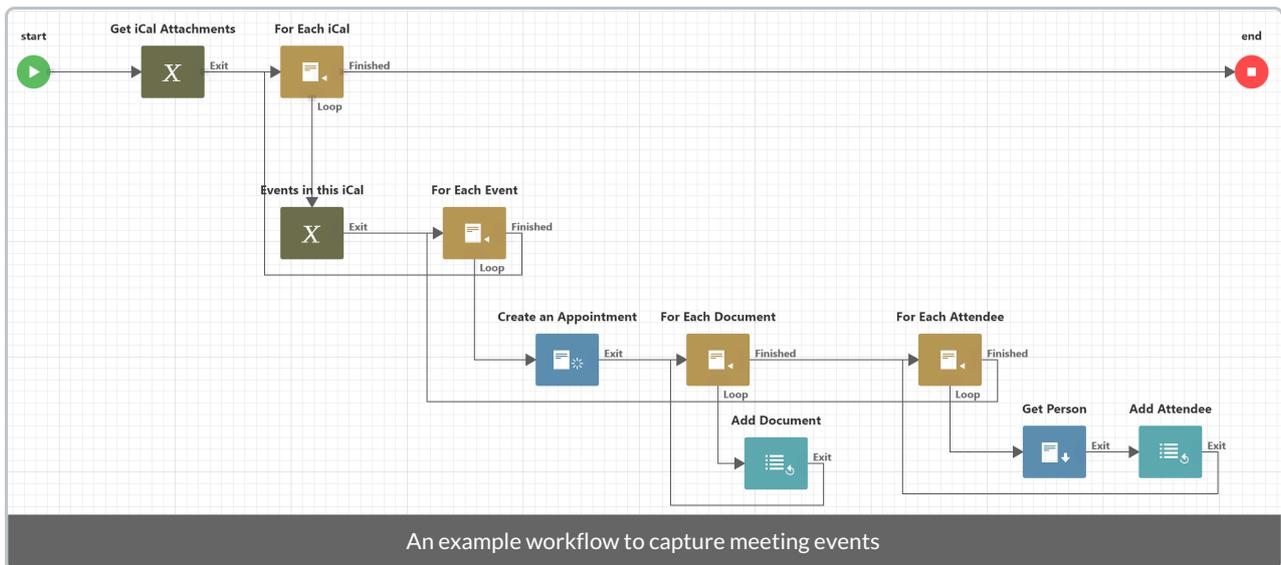
Opt into Self-Triggering

It is possible for a workflow to trigger another instance of itself as a side-effect of the processing in the workflow, but this is now an explicit opt-in on new triggers. Existing triggers will have this enabled by default to ensure that their existing behaviour persists. Disabling self-triggering helps to prevent accidental situations where many instances of a workflow are created unintentionally.

The screenshot shows a configuration window titled "Trigger on Create/Update". It contains several input fields: "Name", "Description", and "Application". Below these is a section titled "TRIGGER DETAILS" with the following options: "Enabled" (checked), "Triggered on" (dropdown menu), "Object to trigger on" (input field with edit/delete buttons), "Workflow to run" (input field with edit/delete buttons), "Run in foreground" (checkbox), and "Allow self triggering" (checkbox, highlighted with a red box). A dark grey bar at the bottom of the window contains the text "The trigger checkbox to allow self-triggering".

Workflow Support of Event Notifications

Meeting notification emails that use an [RFC5545 specification](#) iCal attachment can now be processed by an [Inboxes](#) workflow. It is possible to extract the attached documents (usually agendas and reference information) and the attendees for each event in the invitation. Repeating events are also supported.



Enhancements

Forcing Closure of Workflow For Each Loops

The For Each workflow activity will now cause an error when the loop output does not reconnect to the input. This is a safeguard to protect against accidental errors when configuring a workflow. Existing workflows will continue to function in the same manner.

Bug Fixes

- Forms: Invalid calculation in a calculated field causes an error when shown on an edit form
- Recent Items: When a user creates a new record then two separate entries are displayed in recent items
- Reports: Edit inline is not showing the bottom line for look-ups in the row being edited
- Reports: Cannot download survey attachments from a report
- Security: User Account's Last Modified Date changes when a user enters bad password
- SSO: Saving a new IDP gives a validation message if the Claim Mapping tab is selected
- Surveys: Comments box is too small on survey review
- User Interface: Typo in the wording in relationship ownership properties
- Workflow: cardinality violations are not checked in the Update activity
- Workflow: Internal error message when trying to generate a document which doesn't have an associated document
- Workflow: Caching issue with Update activity
- Workflow: Filtering a User Input activity report based on parameter 'Triggering person' does not work
- Workflow: Alignment of workflow activity fields is not proper
- Workflow: Examine Run is sometimes blank
- Workflow: Examine Run issues in the Activity Outputs tab
- Workflow: Examine Run 'Last updated' is not shown for paused run
- Workflow: Notify by text message shows an error in test mode
- Workflow: Error should be warning: Attempted to queue a run

- Workflow: 'Triggering entity' link on examine run page doesn't work
 - Workflow: Gateway activity errors and not referencing object correctly
 - Workflow: Activity is not able to lookup a field or relationship from an object when the object is from for-each loop
 - Workflow: User Input shows "Invalid ID or Alias" error and the user cannot exit
-

Release Notes for 2.129

Last Modified on 30/05/2019 11:01 am AEST

ReadiNow reserves the right to update these release notes at any time.

End of Support for Internet Explorer

ReadiNow will be announcing the End of Support for Internet Explorer in the coming months, with the final date to be announced. More information such as the alternatives and impact can be read [here](#).

New Features

Automatic User Provisioning

Previously there were several steps to provisioning users for SSO, which included setting up an *User Account*, a *Person*, and then linking the account to the SSO identity provider. These steps can now be done automatically when a user attempts to log in using SSO; if this feature is enable by checking the Auto provision users box show below, then when the identity provider successfully authenticates the user the ReadNow platform will provision their account. The Claim mappings tab contains the mapping of fields that will be used in the process and must be configured before enabling this feature. See the [SSO](#) page for more details.

IDENTITY PROVIDER DETAILS

Name :

Description :

Is provider enabled :

Is provider internal :

Order :

Is auto login enabled :

Auto provision users : [i](#)

Update existing users : [i](#)

Identity provider users **Claim mappings** Claims

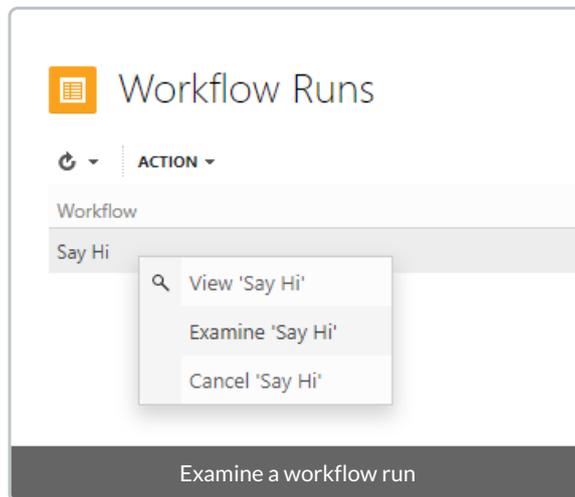
[+](#) NEW [v](#)

Claim name

Configuration for automatic user provisioning

Examine Run

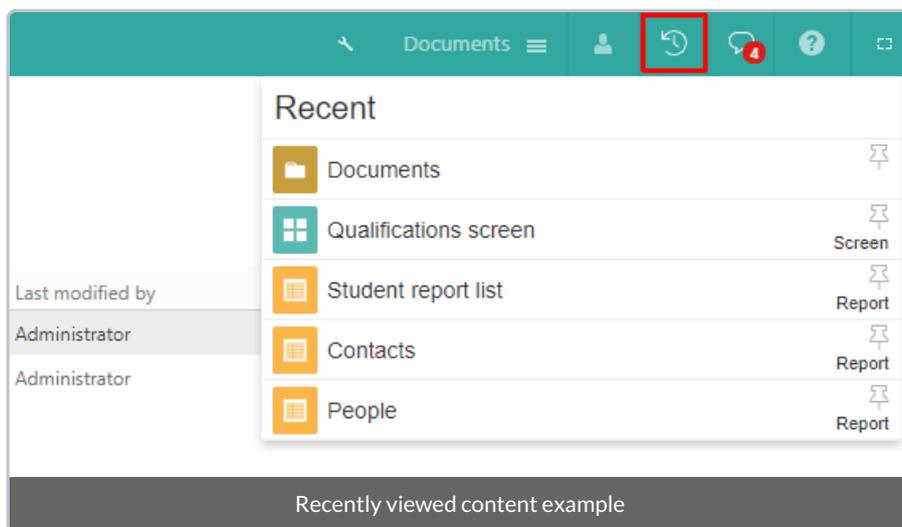
An additional trouble-shooting feature [Examine Run](#) has been added to the workflow run context menu.



Selecting this option will lead to the [Examine Run](#) page, which shows the sequence of activities and duration of each. This screen will only have data for workflows that run after this platform upgrade.

Recent Items

An icon for navigation history has been added to the global toolbar at the top right; clicking the icon will drop down a list of the most recently viewed content with the most recent at the top. Surveys are excluded from the recent items menu.



Enhancements

Conditional Formatting for Rich Text Fields

Conditional formatting can now be used on rich text fields, and the condition will be able to match regardless of the formatting of the text.

Bug Fixes

- Boards: Initial colour does not match legend
- Charts: Legend overlaps form on Internet Explorer 11
- Export: Excel export does not represent null values properly

- Export: Excel file throws an error when opened
- Forms: Unable to remove visibility calculation
- Mobile: Inconsistency in field sizes and mandatory flag icons
- Reports: Analyser hides the visibility icon when resized
- Reports: Group by is placing fields in the incorrect order
- Reports: Conditional formatting does not work with a calculated field
- Reports: Conditional formatting does not work for icons
- Reports: Rich text icons should be centre-aligned for value formatting
- Survey: "IN" operator is not working
- Survey: Sections are not in the correct sort order when answering a survey
- Survey: Questions can be deleted in view mode
- User Experience: Completed tasks show a blank screen
- User Experience: Freeze when 3 or more tabs are open
- Workflow: Cannot display variables assigned to a choice field
- Workflow: "Could not find a match of the correct type" error appears for a valid calculation
- Workflow: "Hide from" and "Hide to" flags are not respected for relationships
- Workflow: The user sees an error "exceeded maximum recursion depth"
- Workflow: Workflows can fail without a meaningful message

Release Notes for 2.128

Last Modified on 23/03/2020 4:28 pm AEDT

ReadiNow reserves the right to update these release notes at any time.

Enhancements

IN Operator for Calculations

Calculations now support the IN operator to check for membership in a set. The result is true if the search term equals one of the options, otherwise it is false. The search and option expressions can be scalar values, choice field values, or records.

```
[Project].[Project Tasks] in (
  'Documentation',
  'Unit tests'
)
```

Miscellaneous

- Boards:
 - Board cards match the legend colour
 - Double-clicking on the legend filters the cards
- Calculations:
 - A warning message is shown for implicit conversion checks
- Export:
 - Removed the table and row formatting in reports exported to Excel
- Surveys:
 - "Original guidance" renamed to "Question guidance"

Bug Fixes

- Calculations:
 - CASE statement is not working as a report calculation when the result is an entity that then gets concatenated
 - Calculations are behaving differently for a calculated column and a calculated field dragged to report
 - Error not shown when the condition is a list in the CASE Statement
 - Reports throw an error when filtering with a CASE calculation
 - Sorting not working when using a choice field in the search expression
- Forms:
 - Choice field still save changes despite electing to discard changes
 - Multi-select choice field is missing hover text
- Security:

- When the "Forgot your username or password" email link is used, the account's "Modified by" field is not updated
- Surveys:
 - Calculation for percentage completed is incorrect if the survey is followed by a review activity
 - Survey recipient can modify Launch Person Campaign target object parameter from the survey
- Triggers:
 - Creating a schedule with a conflicting CRON does not give an error to the user
- UI:
 - Adding the Document library to navigation is not showing the documents added to the folder
 - Administration tab cannot be clicked after creating another tab
 - Background colour is not respected for conditional icons
 - Buttons are incorrect in the "New Object" dialogue
 - Horizontal Scroll bar displays on the "Choose Application" drop-down menu
 - Rich text field layout/margin not appearing properly in IE browser
 - Rich text field numbering and bullet points do not display properly
 - The formatting toolbar does not appear for Default control in a Rich text field
 - User account expiry date is auto-filled by the browser with the user name
 - Verbose and unfriendly messages appear when the internet connection is poor
 - Workflow builder shows suggested fields at top-left side of the page for the Update activity
- Workflow:
 - Cleanup operations are causing deadlocks when there are large deletes
 - Paused workflows do not respect "Limit trigger depth"
 - The error message 'clashing output arguments' has been improved
 - Workflow can trigger on relationship to Organisation Structure when there's no relationship

Release Notes for 2.127

Last Modified on 23/04/2019 11:52 am AEST

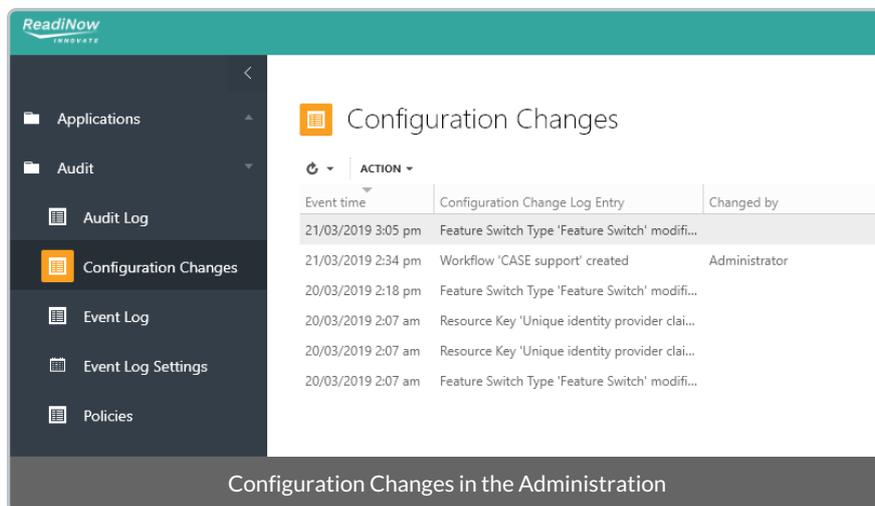
ReadiNow reserves the right to update these release notes at any time.

New Features

Configuration Change Auditing

Previously only records were audited, but now there is a **Configuration Auditing** log which will show changes to application and tenant configuration. A new menu item **Configuration Changes** can be found under **Audit** in the left panel of the **Administration** application. Some of the elements included are:

- object definitions
- charts
- forms
- reports screens
- resource keys
- email settings
- schedules
- triggers
- workflows



Master Detail can link between different underlying reports

Master Detail has been improved and can now be used to link items (viz. charts, reports or hero texts) that run off different reports. Until now both items needed to be based off the same report.

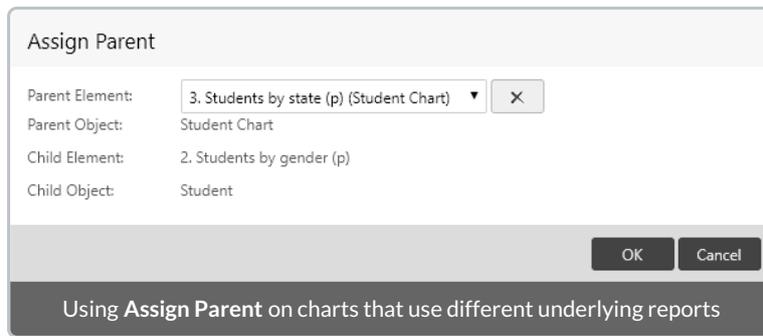


Diagram: Using Assign Parent on charts that use different underlying reports

The filter on the parent can also be cleared to show all items. Using linked charts as an example, clicking the bars on the parent bar chart will filter the child chart, and clicking in the chart but outside of any of the bars will clear the filter.

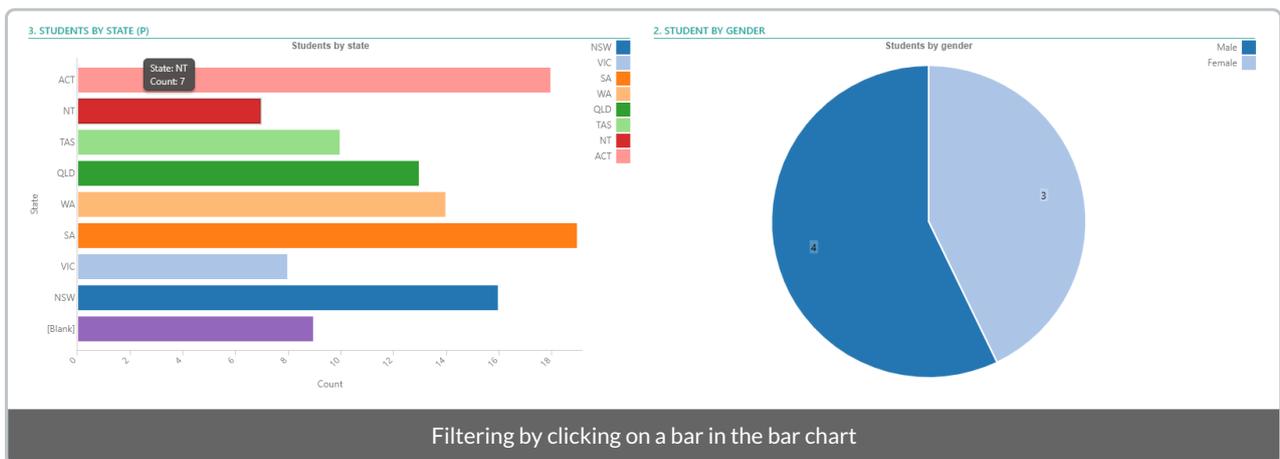
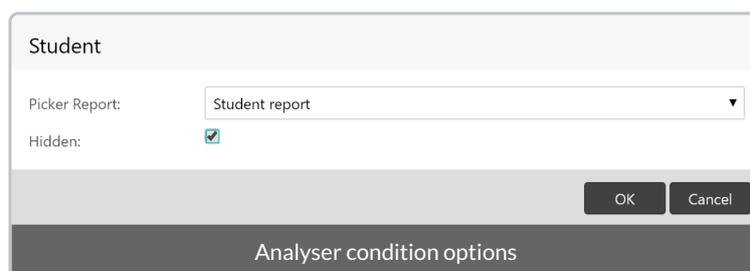


Diagram: Filtering by clicking on a bar in the bar chart

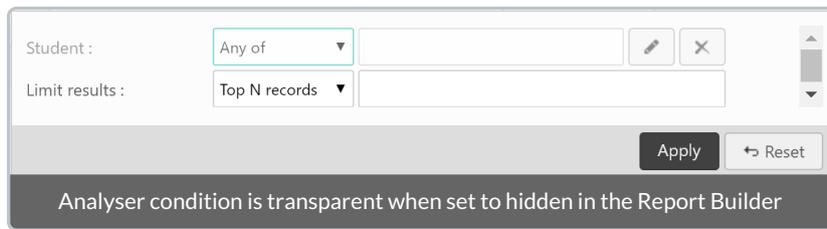
Enhancements

Hidden Analyser Conditions

Analysers conditions in **Reports** can now be hidden from end users. This can be set by checking the **Hidden** option in the **Report Builder** of a **Analysers Condition**.



Hidden conditions will appear translucent when the administrator is modifying the report, and completely hidden for users running the report.

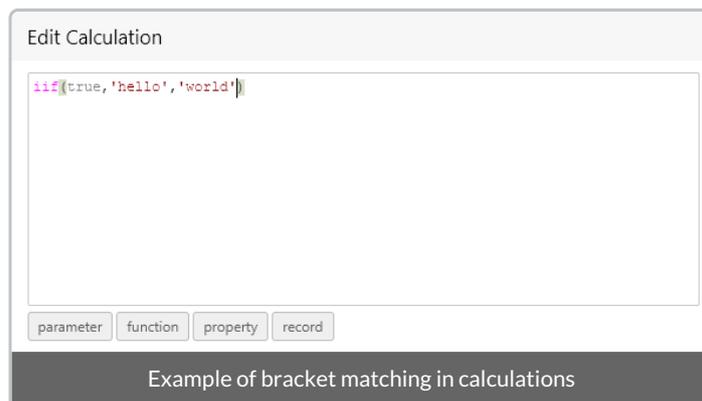


Nested Calculations

Calculations can now refer to other calculations - provided there are no circular references - in forms and reports. This feature should be leveraged as much as possible to improve performance, because refactoring with nested calculations will reduce the total number of calculations required. Simply choose the calculated field in calculation; previously doing this would have resulted in an error message because calculated fields were not usable as terms in calculations.

Bracket Matching

When the cursor moves over a bracket in the calculation editor, the matching bracket will now be highlighted as shown with a grey background, making it easier to edit long and complex calculations.



CASE Statement

Calculations now support the CASE statement for value comparisons. CASE may be used by either providing a value to be matched against a list of options, or by providing a list of tests.

If none of the conditions match then the result will be NULL. Also, the output data type will be the common data type among all the possible results. In the first example the result for Singapore is a string of '457' and not the number 457.

```
case [Input].[Country]
  when 'Australia' then 'citizen'
  when 'New Zealand' then 'resident'
  when 'Singapore' then 457
  else 'foreign'
end
```

```
case
  when [Input].[Country] = 'Australia' then 'citizen'
  when [Input].[City] = 'Sydney' then 'local'
  when [Input] is null then 'unspecified'
  else 'foreign'
end
```

If multiple options evaluate to true, then the first matching condition will be used.

Miscellaneous

- Reports: Optimisation to reduce rendering time
- Security: Accounts are locked out on the Change Password screen if the incorrect password is entered too many times
- Security: HTTP OPTIONS verb disabled
- Security: Explicitly set X-Content-Type-Options

Bug Fixes

- Auditing: No logs are created when Identity Provider User details are modified
- Auditing: No logs are created when an API is created or modified or deleted
- Boards: Boards retain settings after refreshing the page or navigating to a board item and then back to the board again using "Back"
- Calculations: Error message improved for a calculation that tries to use a field or relationship that is not valid for the object
- Charts: Add colour attributes to differentiate data points by input assigned to colour
- Forms: Cache is not being leveraged properly
- Forms: Rich text default label and properties toolbar formatting problem
- Integration: CSV fields with commas cause an error
- Screens: Reports missing from Screen Builder under certain conditions
- Survey: Changing guidance text after launching survey shouldn't change the text in the survey instances that have already been launched
- User Interface: Current user is missing in Person icon drop-down
- Workflow: Not able to cancel workflows with a long duration
- Workflow: Tenant Isolate flag causes all tenants to isolate fetching via FTP
- Workflow: Queuing of workflows is not handled properly under certain conditions
- Workflow : Review survey activity does not show correct parameters
- Workflow: A scheduled workflow based on an object consisting 100 000 records does not run after step count 27
- Workflow: Clicking on a workflow on a relationship on a form opens the previous screen in certain scenarios
- Workflow: Workflow does not stop after reaching its maximum steps
- Workflow: Run from Inbox not working for automatic workflows
- Workflows: Scheduled triggers for past dates are triggering

Release Notes for 2.126

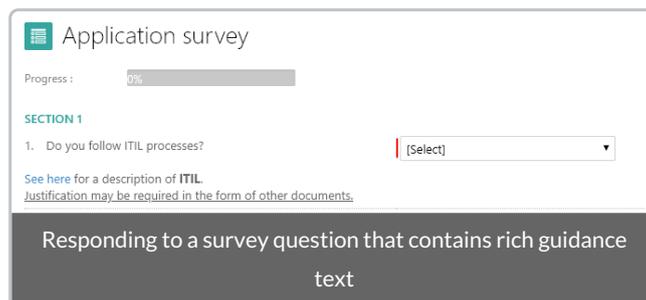
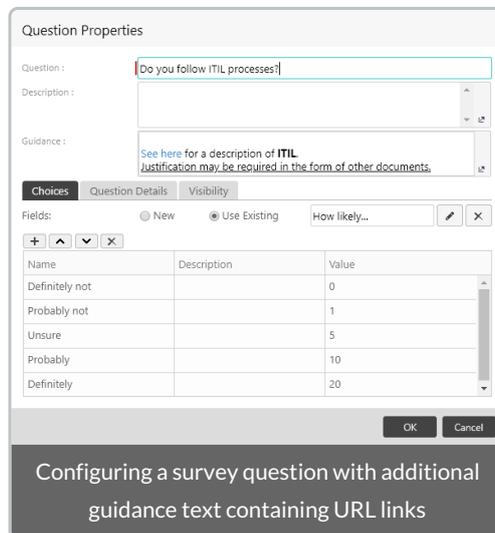
Last Modified on 18/04/2019 11:04 am AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

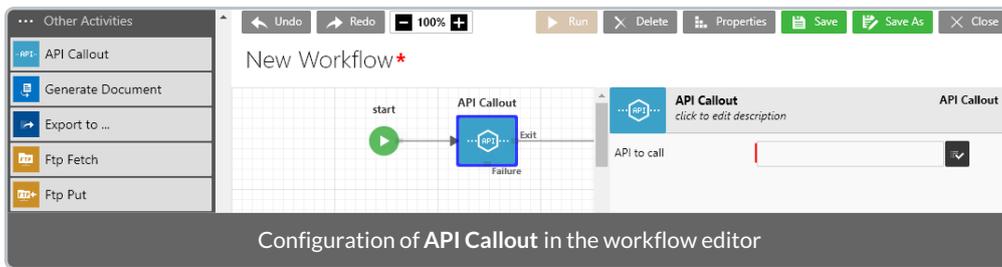
Guidance text field for survey questions

An additional field named **Guidance** has been added to survey questions which allows rich text (including URL links) to be shown in a survey. The **Guidance** text will appear immediately below the **Question**; in the example there is a blank line in the **Guidance** text to visually separate it from the **Question** text. Please note that formatting can greatly reduce the amount of text that can be shown, especially when pasting in from another application.



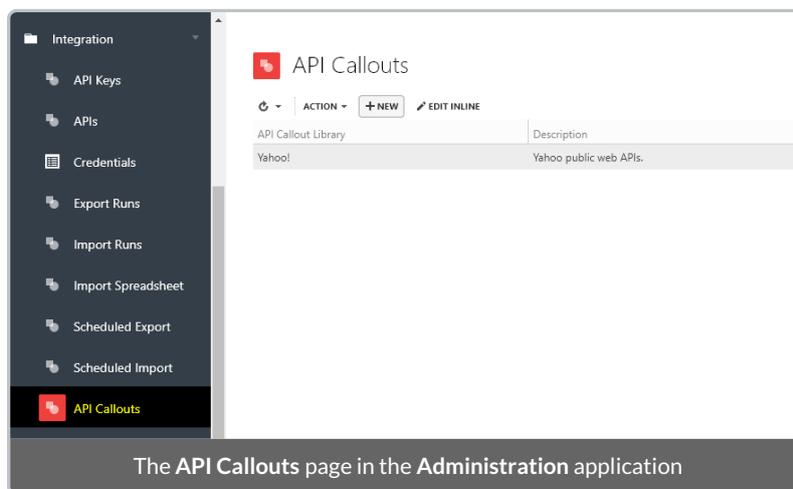
API Callout workflow activity

API Callouts allow integration with other systems. A new workflow activity named **API Callout** has been added to Other Activities. This allows a workflow to connect to online services that have an API.



Configuration of API Callout in the workflow editor

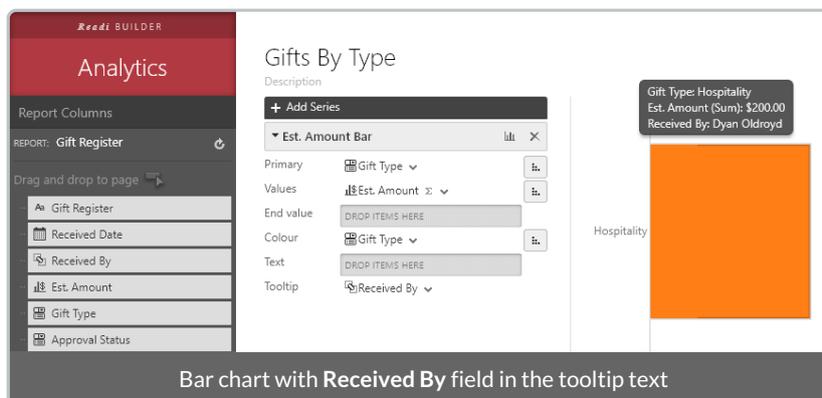
Each API that will be used in a workflow must be added to the new **API Callouts** configuration in the **Integration** section of the **Administration** application. Note that this option appears when the **Integration** section is expanded in the left panel, but does not appear in the main page of the **Administration** application.



The API Callouts page in the Administration application

Additional chart option for tooltip text

There is an additional configuration setting in charts called **Tooltip**. The value of any field dropped into the **Tooltip** will be added to any existing text in the tooltip.

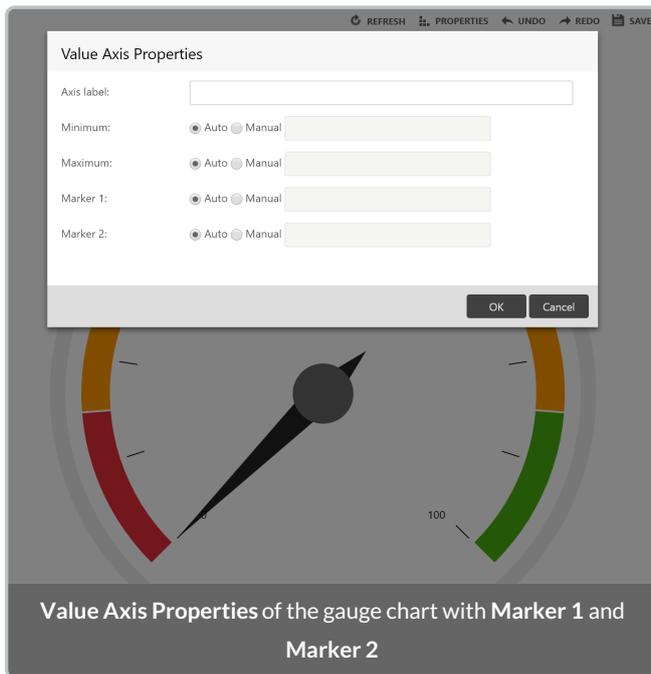


Bar chart with Received By field in the tooltip text

Configurable gauge marker thresholds

The marker thresholds for the red-orange and the orange-green transitions can be set to a predefined value in the

gauge chart's **Value Axis Properties**. **Marker 1** is the red-orange threshold value and **Marker 2** is the orange-green threshold value.



Resource Keys are calculated in the background

Resource Keys will be automatically generated or updated after being created or changed. There is a **Generating hashes** flag on **Resource Keys** which will be "No" normally but change to "Yes" while a change is being effected.

Resource Keys					
Name	Object	Merge For Imports	Application	Enabled	Generating hashes
Unique name per structure level	Structure Level		ReadiNow Core	Yes	No
Unique name per identity provider user	Identity Provider User		ReadiNow Core	Yes	No
Unique name per user account	User Account		ReadiNow Core	Yes	No
Unique IP address range	IP Address Range		ReadiNow Core	Yes	No
Unique name per user role	User Role		ReadiNow Core	Yes	No
Unique name per definition	Definition		ReadiNow Core	Yes	No
Unique name per solution	Application		ReadiNow Core	Yes	No
Unique name per structure view	Hierarchy		ReadiNow Core	Yes	No
Unique name per edit form	Custom Edit Form		ReadiNow Console	Yes	No
Unique name for organisation structure	Organisation Structure		GRC Common	Yes	No
Unique name per question ID	Choice Question		GRC Common	Yes	No

Generating hashes flags for Resource Keys

Enhancements

Miscellaneous

- TLS 1.0 and 1.1 has been disabled to ensure better connection security

- User Interface: The Administration application shows the object relationships of choice fields more clearly
- User Interface: The browser window title now shows the name of the open object rather than a generic action

Bug Fixes

- Calculations: Calculated field result is blank in certain conditions
- Calculations: Log of a negative number causes the form to fail
- Calculations: The warning message is not always shown when the calculated field refers back to itself
- Charts: Bullets and numbers on a list in a rich text field are not shown in the tool tip
- Charts: The tooltip for the original chart type still shows after changing to an Area or Gauge chart
- Charts: Setting the axis minimum to a negative number can crash the browser
- Charts: Multiple dials appear in gauge charts
- Charts: Users should not be allowed to enter nonsense text into the minimum and maximum marker fields on a gauge chart
- Charts: Legend is not displayed by default
- Charts: No column is drawn in the first slot of a log chart
- Charts: OK button is clickable but has no function after not choosing a report in the 'New Chart' dialogue
- Charts: Filtering the report to display zero rows causes the chart to completely disappear
- Charts: Bar chart renders incorrectly when the primary value is an unformatted date
- Charts: Bar chart labels are badly positioned and hard to read
- Charts: Using a column with conditional icon formatting causes the chart data to go black
- Forms: Mobile users have to click twice to approve or reject a task
- Forms: An invalid calculation can be saved and render the form unusable as a result
- Forms: Hierarchy order is incorrect when a name is duplicated
- Forms: Visibility formula not working
- Reports: Cannot move a field in analyser to the bottom of the list
- Reports: A blue line appears in the builder when a column is moved
- Reports: Two or more recursive access rules can crash a report
- Reports: The placement of 'Report name' is incorrect in report properties
- Reports: 'Any Except' filter does not clear correctly
- Reports: 'Any Except' filter does not work as expected on a summarised column
- Reports: '<>' filter does not work on a relationship column if the column is summarised as 'List'
- Reports: Edit inline sometimes does not select the cell text when using arrow keys
- Reports: Diagnostic tool can be seen by self-serve users
- Reports: 'Summarise' on a report with grouping does not display the summarised results if the grouping is done on a summarised column
- Reports: Using the 'Is not defined' filter on multiple lookup/relationship fields causes an error
- Reports: Images disappear if full ownership is set on the field
- Screens: A chart filter based on 'Assign Parent' does not work in a tabbed container
- Security: A user can be directed to a blank page on their first login

- Security: Items in Navigation access are not visible for lite users after an upgrade
- User Interface: Terminology 'Mailbox' and 'Inbox' in Administration is inconsistent
- User Interface: Help text for 'Disable communication' updated
- User Interface: The click area for 'Forgot your username or password?' is too large
- User Interface: Left aligned decimal values show additional digits in the preview for 'Import Spreadsheet'
- User Interface: Dependency information is not displayed when deleting a report, screen or chart - both within the same application and across applications
- User Interface: Some choice fields are missing the report that shows related records where the field has been used
- User Interface: Name, Description and Last Import Date fields are duplicated in Security Audit Log Settings page
- User Interface: A URL link to a record sometimes doesn't open the record when using SSO
- Workflow: Modifying the schedule can cause a workflow to run twice
- Workflow: Multiple workflows can have the same name
- Workflow: Rich text fields are generated in HTML by the 'Generate Document' activity
- Workflow: 'Import Spreadsheet' activity parameters should be mandatory for configuration and file
- Workflow: Cannot clear a multi-select choice field with the 'Update' activity

Release Notes for 2.125

Last Modified on 16/04/2019 4:03 pm AEST

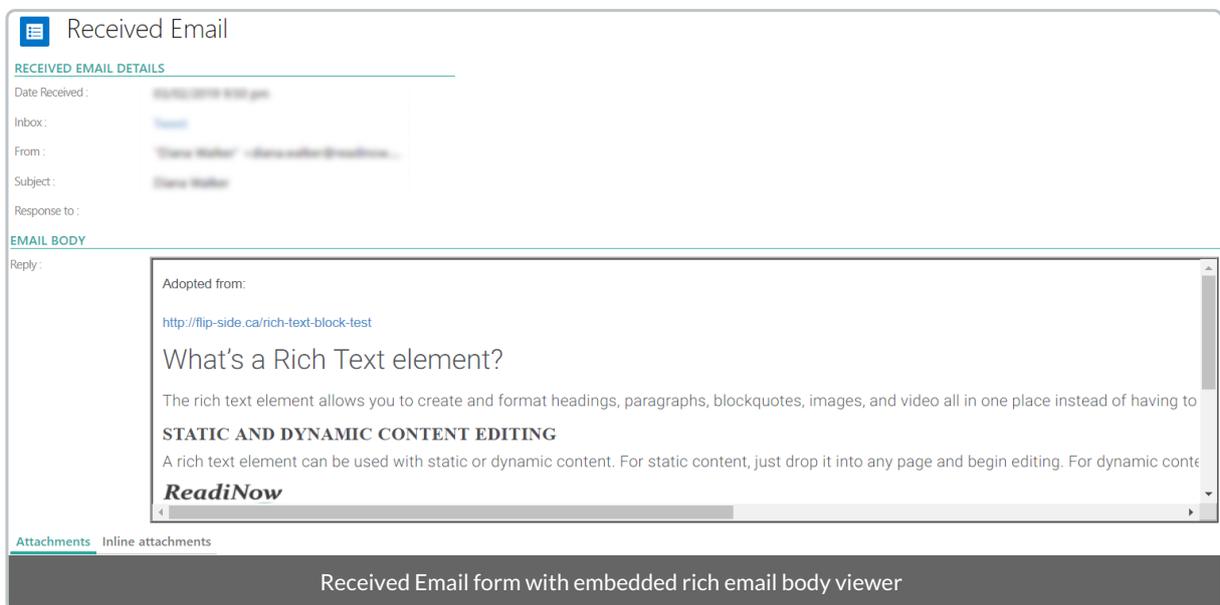
ReadiNow reserves the right to update these release notes at any time.

New Features

Rich email body viewer

The rich email body viewer provides the ability to view the contents of a received email as close to the original sent email. The viewer provides richness similar to Gmail and Outlook viewers provide.

When an email arrives it may contain both a plain text and a HTML version. An attempt is made to look for an available HTML version. If a HTML version is available it is used and is stored in the **Body** field will be HTML. The **Body** field will only contain plain text if the email was sent only in plain text and no HTML version is available.

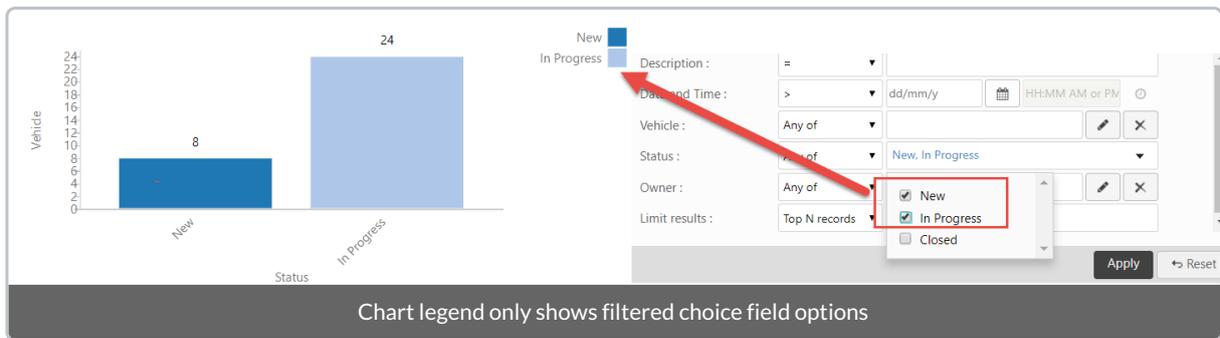


Feature Enhancements

Charts legend only displays filtered choice fields options

When filtering on specific choice field options, only these selected items be visible on the chart legend.

For example, you may be managing a list of incidents where a chart is required with 'open' incidents only. In the case where a choice field is used to represent incident status, where typically 'open' can be categorised into: New, In Progress and Waiting on Customer, and 'Closed' incidents into: Resolved and Closed. When you now filter on the 'open' choice fields options, these are the only options you will only see on the chart, thus removing unnecessary closed status options from the chart.



Additional calculation functions supported in forms

The following calculations are now available for calculated fields on forms:

- rand, any, every, first, last, reverse, skip, concat, join
- iif (can return lists, however results must be scalar when used in reports)
- order by

Note: While the above functions are now available on the forms, fields using unsupported reports functions are will not be visible in the report field list.

Ability to time a report for a user in Report Diagnostics

To assist with improving report performance for you and your team, Report Diagnostics now allow you to time how long it takes to run a report as the specified user.

Run timed functionality in Report Diagnostics

Import survey choice options using Import Spreadsheet

Application developers can now import long list of choice field options into the platform via Import Spreadsheet. This saves the application developer time by avoiding having to manually enter choice field options.

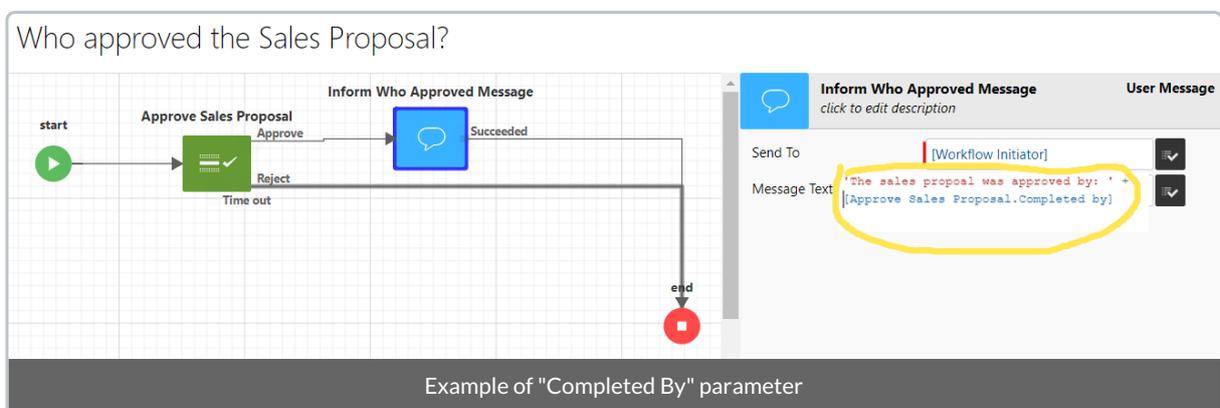
Spreadsheet Column / Source	Object Fields	Field Details	Sample 1	Sample 2
(A) Order	Order	Int Field	1	2
(B) Name	Name	String Field	Definitely not	Probably not
(C) Value	Value	Decimal Field	0.000	1.000
Fixed Value	options Choice Option Set	Lookup using Name	options How likely...	How likely...

Import Choice options through Import Spreadsheet

User Action activity provides task "Completed By" as parameter

The workflow User Action activity parameter outputs has been extended to now provide information on what user completed a User Action task through the parameter of "Completed By".

For example, say a User Action task could be completed by several people, like a sales proposal can be approved by one of the many sales team leads. Once the sales proposal has been approved, a message can be sent back to the workflow initiator, the team member who requested the approval, the team lead who approved the proposal.



Miscellaneous Enhancements

1. Boards - search strings are now retained when drilling down and navigating back to the board
2. Boards - Need a back button to navigate back to the main board when navigation
3. Application Toolbox - Applications are now sorted alphabetically application drop down list

Bug Fixes

- Calculations: Rand() function fails when used in a calculated field on a form
- Calculations: Using a variable which follows a relationship inside an aggregate fails
- Charts: Chart with two series cannot display the total count of records as its result for one of the series
- Charts: Client error when 'Count' is dropped on 'Values' after 'Show all Values' is selected.
- Reports: Calculated fields not getting displayed in IntelliSense list in other calculated fields
- Reports: Failure when report is ordered by a calculated column or field and the field referred in the calculation is deleted
- Reports: Proper error message should be displayed to the user if report is broken due to some SQL errors
- Reports: Report and form crashing when calculated field 1 refers to calculated field 2 and the calculated field

2 is made empty

- Reports: Report failing for a calculation of type 'Time'
 - Reports: Report with "order by" is returning too few rows
 - Security: In some situations, recursive access rules fail and therefore user cannot open form for records
 - Workflow: Deadlock rerun failed on clone activity
-

Release Notes for 2.124

Last Modified on 16/04/2019 4:05 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Feature Enhancements

Survey Branching

Now you can control which questions participants will see with reflexive question branching (also known as skip logic). You can hide questions and sections that do not apply based on responses from participants. This will also help keep respondents engaged with your survey as these questions can be better targeted to the situation.

Questions use `visibility` a calculation to determine if a nominated question is to be shown or hidden.

SURVEY DETAIL

Name : Customer Survey

Description :

Show help text:

Application :

[Survey Layout](#) [Outcomes](#) [Campaigns](#) [Workflow](#)

[+ SECTION](#) [+ QUESTION](#) [+ BREAK](#)

CUSTOMER SURVEY

1. Have you used our product before?

Script name: Used product?

2. What was your first reaction to our product?

Script name: Reaction to product

3. How often frequently do you use our product?

Script name: Frequency

The screenshot shows the 'Question Properties' dialog box for the question 'What was your first reaction to our product?'. The dialog has three tabs: 'Choices', 'Question Details', and 'Visibility'. The 'Visibility' tab is selected, showing a 'Show when' field with the calculation `[Used product?] = 'Yes'`. Blue arrows point from this calculation to the 'Script name: Reaction to product' text in the main survey list.

Excel imports now supports auto numbers fields to identify related records

If you use the excel import feature, you will now find that you can map `AutoNumber` field types to identify related records between a field in an object and an excel column. This enhances and supports making integration more flexible, for example, you could set a resource keys on an `AutoNumber` field and map this to another column in the excel sheet to ensure uniqueness.

Bug Fixes

- Calculations: `CurrentUser()` not working in report, error "The report failed to run. Type 37809377 could not be loaded."
- Calculations: need decent error for date/time formula
- Charts: clicking refresh does not rerun the database (whereas it does for reports)
- Email: Clicking on the ReadNow URL from an outlook email does not enter the tenant name in the tenant field though the URL contains the tenant name

- FTP: FTPS export failed when IP address is given instead of server name
- Forms: Autofill tabbed container shrinks its size when returned back to the form after viewing one of its related record
- Forms: Link to Existing button doesn't display in view mode on a tab after the form has been saved
- Forms: Picker report filters set on form are not honoured when using in-line edit
- Forms: Rich text formatting toolbar is hidden when rich text placed on a tabbed container
- Form: The help icon on a form is fine when in view mode. When clicking edit mode, it overlaps the end of the field
- Identity Provider: After failed SSO login the tenant entry and SSO option has disappeared
- Identity Provider: The automatic login does not happen in IE, though autologin is enabled for identity provider is
- Reports: Column formatting against a Date Time field using 'Last N days until now' highlights all dates into the future
- Reports: Conditional formatting does not work on Date Time Date Only and Time only column if formatting is done
- Reports: Fails to run when analyzer is set to 'Is Not Defined' on Attachments relationship
- Reports: Failed to run, "Query entity could not be found" when filtering Report fails to run when filtering on "[Business Unit]: 'Is not defined'"
- Reports: Conditional Formatting - "Next N days from now" operator is holding static time instead of dynamic time.
- Reports: The "Send Email" report fails to run in the time allowed
- Reports: "The Report failed to run" because a column formatted as Month-Day contained the leap year value Feb-29
- Screens: On a screen when "assign parent" is used to filter report and chart based on the selection on the parent report it does not work on a tabbed container
- Screens: Unable to modify screens cannot find or select items on the dashboards in design mode. Items are either not visible or are hidden behind other items.
- Security Audit Logs: A change in User Role should be logged to the security audit log
- Security: "Create record" button for a Read-only object should be hidden.
- Theme: A small portion of the header area is showing black instead of the theme colour
- User Messages: User message count is not getting updated immediately when a task is completed
- User Roles: Record access is not respected for derived type, if set to Exact Type in Advanced Options

Release Notes for 2.123

Last Modified on 16/04/2019 4:04 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Calculations: Using First(all(object)) is returning last record instead of null if no matches found
- Calculations: Using Convert() or resource() not working for Choice fields in workflows
- Charts: Changing the aggregate on the data after a save not sticking till page refreshed
- Choice Fields: Choice field tab names are repeated in the choice field details screen but show different relationships
- Export Run: Failed 'Scheduled Export' run is displayed as completed in 'Export Run' report
- Export Run: No record is created in export run report when workflow fails at 'Export to' activity
- Forms: Text Field: User not able to set Min length = Max length for text field
- Forms: When updating a form that is based on a system object, it fails silently
- Relationships: 'Link to existing' not working correctly when sorting is used
- Reports: Attempting to summarize a report that is grouped by Name on the root entity breaks report on Save
- Reports: Report having formatted DateTime column throws error message if the time zone is changed
- Reports: Sorting in 'Grouped By' reports does not work all the time
- Reports: Performing a summarise on a grouped by report where the grouping is done on the left most column create erroneous data
- Workflows: Updating choice field is not reflected in subsequent activities

Release Notes for 2.122

Last Modified on 17/04/2019 10:29 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

Automatic Sign-on for SSO

You can now set your Identify Provider to login in automatically, as a result, this will save users time by directly going to their identity provider to sign in. Once authenticated with the Identity Provider, users will go straight to the ReadNow landing page or the default page, if a default has been nominated.

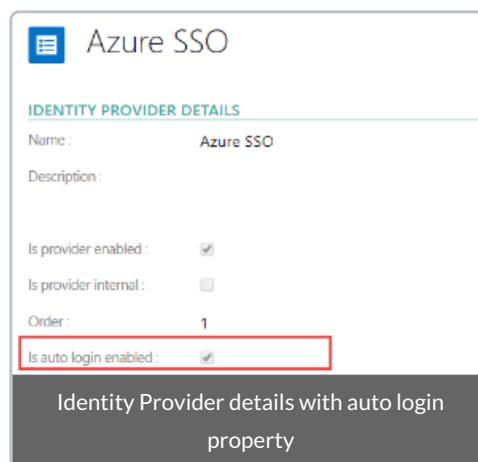


Diagram: Identity Provider details with auto login property

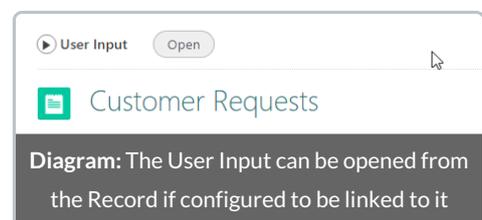
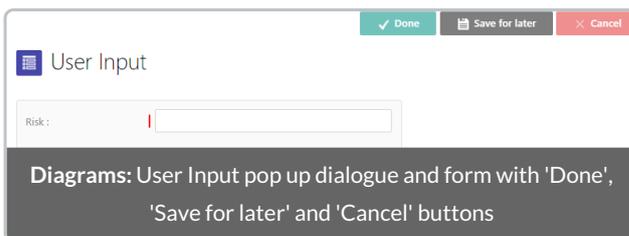
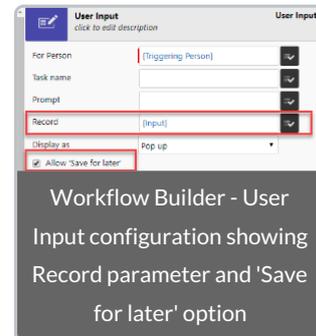
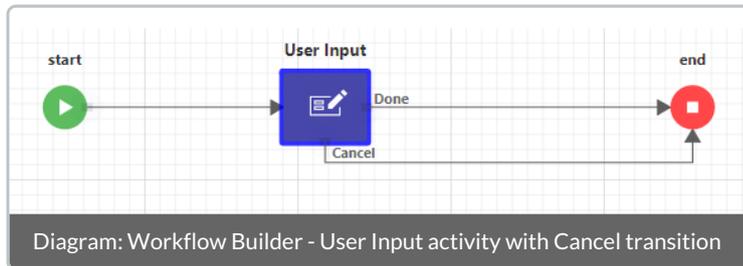
See External Authentication/Single Sign On (SSO) for more details.

Feature Enhancements

Workflow: User Input now allows for 'cancel' flow to be customised and other improvements

- User Input activity now allows the ability to set a transition path to 'Cancel' a user input pop up dialogue or form within the workflow builder.
 - The cancel button will only appear on the user input pop up dialogue or form if the 'Cancel' path has been configured.
- During this feature enhancement, we have also made our wording and placement of the user buttons both on the pop up dialogue and form consistent.
- User Input activity now allows the ability to set an option so the user can 'Save for Later' to fill in the form at later point in time. If selected by the user, the user will see this task in their task list or notifications list.
- A record can now be linked to the user input task.
 - This is particularly helpful when allowing the user to save the user input for later, so when the user

does select the task, they will be directed to the record first. This provides the user context to the user input and the business flow.



Note for upgrade on existing workflows

All existing workflows will keep the existing behaviour prior to the upgrade, will mean that you will need to configure the 'Cancel' flow for each User Input to benefit from this feature. In addition, after the upgrade 'Save for Later' will be set as on, as this was also the same behaviour prior the upgrade, in particular if you hit the Cancel button that appeared on the form only.

See [User Input activity](#) for more details.

Bug Fixes

- Choice field: duplicate choice values are created when OK button is clicked more than once in choice field properties
- Document Generation: Could not generate document with all the records in an object

- Forms: Autofill tabbed container shrinks its size when returned back to the form after viewing one of its related record
- Forms: On relationships tab, 'Link to existing' not working correctly when sorting is used
- Reports: In certain scenario reports are failing to run with an error, System.ArgumentNullException: Value cannot be null. Parameter name: key
- Reports: Fix the maintain option found in Administrator → Resources → Reports
- Reports: Group By is not allowing you to expand when more than 200 rows
- Reports: When summarising on a grouped by report where the grouping is done on the left most column create erroneous data
- Workflow: Consumption of valuable amounts of memory when running particular workflow expressions
- Workflow: Validation icon is overlapping with Launch Target campaign/ Launch person Campaign activity name
- Workflow: When running a workflow the following error appears. EDC.Exceptions.WebArgumentException: Provided Workflow Run Id cannot be 0
- Workflow: When saving workflow for the first time, it forgets to remember checked options; 'Do not Pause', 'Run Workflow' activity and 'Run as workflow owner'

Release Notes for 2.121

Last Modified on 16/04/2019 4:06 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Document Folder: A new 'Document folder' does not display documents when it should
- Export report to CSV: DateTime/Duedate field data is exported in UTC format
- Export XML/CSV/Word : Auto number export not working as expected when pattern set to "Issue# 0000"
- Forms: Show hide does not work on form when the form is placed on screen - IE only bug
- Import: Could not map a spreadsheet column with an object field when a different spreadsheet is used to import using the same import configuration
- Import Resource: In certain scenarios, nothing happens when user clicks on 'Import Resource' from left hand side navigation area
- Mobile: In certain scenarios, show/hide is not being respected in mobile
- Mobile: Could not type in name field on a form in report as the title of the container below appears in the name field when a new form is loaded form report
- Quick search: When performed on Group by is removing the Group-by header
- Quick Search: When performed on summarised relationship column is not displaying Group-by header
- Reports: Clearing the General Settings 'Currency Symbol' is not respected
- Reports: Sorting does not work on a calculated column if it takes the value from a boolean field
- Survey: Attachment is uploaded every time save is hit it will duplicate the file
- Survey-Mobile: When an attachment is uploaded with mobile, the download of the file fails
- Theming: Deleting the themeing causes issues with the tenant and it comes back with a blank screen
- Time Zone : When system time zone is changed , "date" field is displaying wrong data in report
- Workflow: Forgets that I have checked Run as Workflow Owner checkbox
- Workflow: Cannot adjust columns in Select Parameter dialogue box in workflow designer to see full description
- Workflow: User Action - Comment mandatory could not be checked - IE only
- Workflow: when a date is selected in a workflow the date that actually populates is the day before

Release Notes for 2.120

Last Modified on 16/04/2019 4:17 pm AEST

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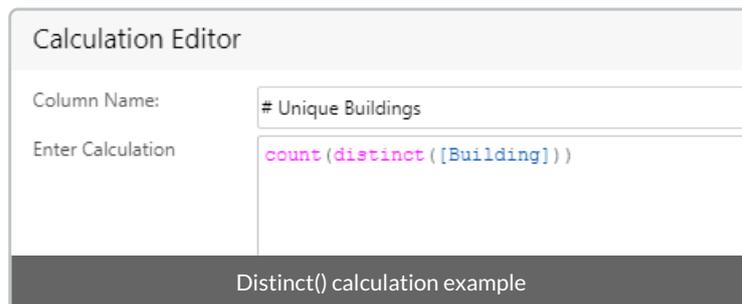
New Features

New Distinct() function

Distinct() is a new function in the calculation engine which will return unique lists of items. Alternatively, it can also be used with count() to provide a way to count unique items in a list.

How it works:

- The distinct function works as a list function. It receives a list of items, and returns a list of items that are unique.
- There is no guarantee of order of results.
- If used in the reports engine, then the distinct function may only be used directly within the count function, such as `count(distinct ([Some Relationship]))`



Security: More Administrative Roles

Two more administrative roles have been added to our already currently existing four administrative roles, these are:

- Content Administrators
- Workflows & Schedule Administrators

Administrative roles allow you to grant users special administrative access without the need of giving users full administration access to perform specific administrative tasks. You can also customise your own administrative roles based on the existing roles, by simply defining record access rules, permissions and navigation access using the base administrative roles.

Feature Enhancements

Workflow: Comments field can now be set to mandatory in User Action

activity

Capturing user actions along with user commentary are important when moving through a business process flow. Therefore, we now allow the ability to mark the comment field of a user action as mandatory.

How it works:

- Enable mandatory in the User Action activity in the workflow builder
- The actions buttons are disabled until the user enters commentary

Approve Leave Workflow

Approve Leave
click to edit description

For Person: [Triggering Person] ✓

Record: [Input] ✓

Form: ✓

Priority: ✓

Task name: 'Approve Leave for' + [Input] ✓

Due date/time: ✓

Time out date/time: ✓

Keep completed task history

Wait for next form

Open in edit mode

Hide comment field

Comment mandatory

Requiring a comment in a User Action activity

Approve Leave

Approve Reject Comment

Scarlet Cunningham

PERSONAL DEATILS	ADDRESS DETAILS	STUDENT
StudentID : 1165	Address line 1 : Ap #907-1575 Nulla. Rd.	Club :
Title : Miss	Address line2 :	Library card :
Full name : Scarlet Cunningham	Country : Australia	Balance :
First name : Scarlet	State : VIC	
Last name : Cunningham	Suburb : Mitcham	
Gender : Female	Postcode : 3132	

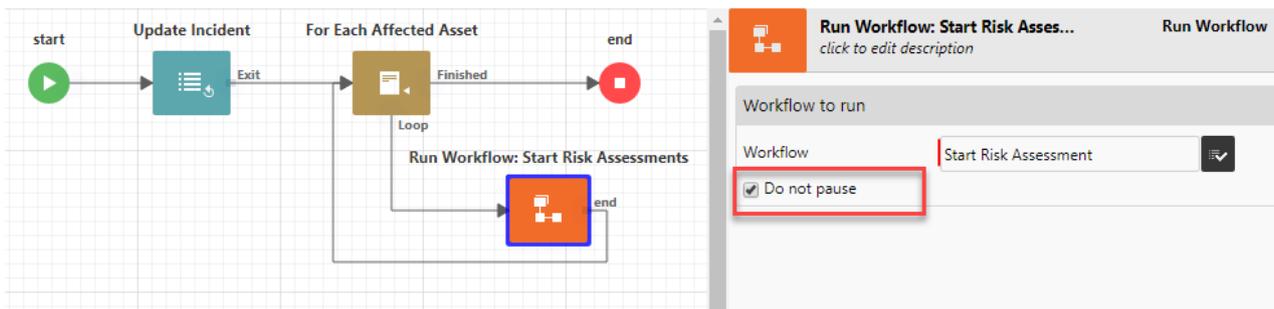
Buttons are disabled until a comment is entered

Workflow: "Do not Pause" allows parent workflows to continue to run when launching child workflows

Now you can keep parent workflows running without requiring to wait for a child workflow to complete. For example, let's say a new incident affects multiple assets, for each affected asset, you could start multiple risk

assessment workflow that run independently from each other.

New Incident



Survey: Making questions mandatory is now optional

More survey flexibility by allowing which questions you would like as mandatory or non-mandatory.

How it works:

- Simply enable the Mandatory option in the Question Properties of a survey question
- When the user takes on a survey, the complete button will only be enabled once all the mandatory questions have been answered.

The 'Question Properties' dialog box shows the configuration for a survey question. The question text is 'Between 1 and 10 rate your application experience'. The 'Mandatory' checkbox is highlighted with a red box, indicating it is the focus of the image. Other properties include 'Description', 'Question ID', 'Order' (1), 'Weighting' (5), 'Allow attachments', 'Allow notes', 'Only allow whole numbers', 'Categories', and 'Library' (University questions). The dialog has 'OK' and 'Cancel' buttons at the bottom.

Mandatory option on Question Properties dialogue

Application survey

Progress : 33%

SECTION 1

1. Between 1 and 10 rate your application experience

DRINKS

1. Describe your favourite drink Add Notes Add Attachment

2. Do you think coffee? Yes No Add Notes Add Attachment

3. How many coffees do you drink a day? Add Notes Add Attachment

Example of mandatory and non-mandatory fields. The progress bar is calculated on the mandatory fields.

Note on existing surveys upgrade

All existing survey questions will be marked as mandatory to keep with the behaviour prior to the upgrade where all questions were mandatory by default.

Bug Fixes

- Calculations: The 'count' function is inconsistent between forms and reports due to null/fanout issue
- Calculations: The 'any' function returns true when it should return false for choice fields
- Calculations: The 'every' function returns false when it should return true for choice fields
- Charts: Drill down on non-pivot shows report instead of form on bar chart
- Form: DateTime display on the form and report are inconsistent
- New conditional formatting icons not displayed correctly when uploaded with certain sizes
- Reports: Cannot Edit Inline when report has Groupby, under certain conditions
- Password reset send email reporting as failed incorrectly
- Workflow: When a date is selected in a workflow the date that actually populates is the day before
- Workflow - User Input: Cannot filter by Choice field as you cannot see the choice field variable as a parameter

Release Notes for 2.119

Last Modified on 18/04/2019 11:07 am AEST

ReadiNow reserves the right to update these release notes at any time.

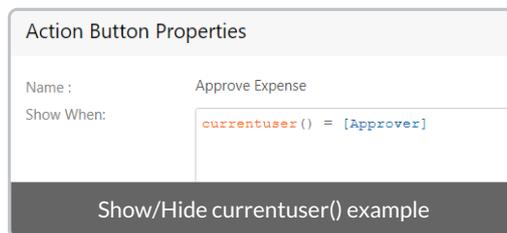
New Features

New `currentuser()` function

- A new function in the calculation language, `currentuser()`
- Returns the record that represents the User Account of the current user
- You can access fields and relationships from it.
 - Example: `currentUser().[Account Holder]` will return the Person's name
- Support for both workflows, reports, and other places where calculations are used.

Some ideas of where this feature could help you:

- Write workflows that performs calculations based on a user
- Show/Hide buttons on a form based on a user
- Highlight information in a report based on a user



See [Calculation Functions and Operators](#) for more detail.

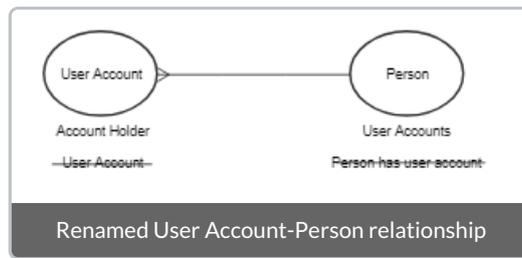
Feature Enhancements

Renamed "User Account-Person" relationship

Based on user feedback, we have updated the User Account-Person relationship names.

The lookup from User account to Person, formerly called "User account", is now "Account holder". In the opposite direction, rename the relationship from Person to User account, formerly called "Person has user account", is now "User accounts".

Existing calculations will continue to work with the old names. It is recommended that you start using the new relationships name when creating any new calculations or modifying existing calculations.



Feature Removal

Tenant Rollback

Due to some performance issues identified with the Tenant Rollback, this feature has temporarily removed.

If you would still like to perform a tenant rollback, please contact Support.

Bug Fixes

- Chart: Legend in charts with DateTime as Primary, shows value 'NaN/NaN/ONaN NaN:NaN PM' for blank Date/Time fields
- Export: Export to Excel fails when there is a 0x10 hexadecimal character in the data being exported
- Export: Export to Excel of a report with "\"/" in name failed
- Reports - Calculation: count([Child Organisation Levels]!recursive!self.[Organisation Assets]) giving incorrect value on report
- Reports: Cannot sort of fields with '>' '<' characters in them
- Reports: Report shows no data if sorted on [Modified Date] descending
- Screen: Saving a new screen causes some other reports which are in the same folder to be modified at the same time when the screen was saved
- Twilio: Delivery status is not being updated correctly
- Workflow: Workflow fails with internal error and server error while running Get Records activity when selected report is configured in certain manner

Release Notes for 2.118

Last Modified on 17/04/2019 10:31 pm AEST

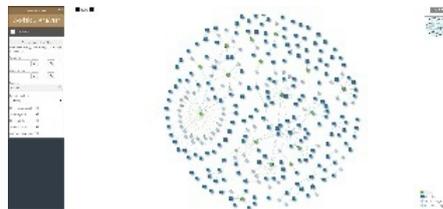
ReadiNow reserves the right to update these release notes at any time.

New Features

Workflow: Workflow Analyser

Now you can visualise the interconnections between triggers and workflows. This map now can help you better manage workflows and triggers, by understanding:

- workflow and cycle loops they may cause issues
- impacts from other areas implemented by other app developers
- how you may simplify and/or reduce the number of triggers and/or by combining updates



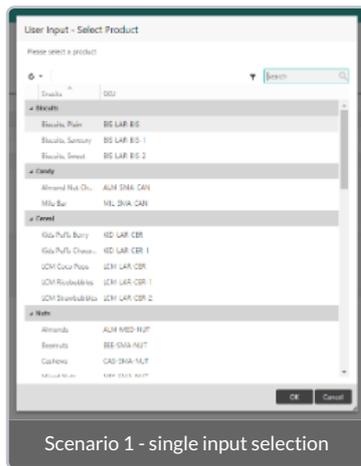
See [Workflow Analyser](#) for more details.

Feature Enhancements

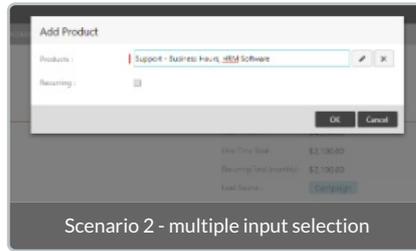
Workflow: Allow User Input activity to display as a Pop-up

The User Input activity in workflow now allows administrators to view their display input as a pop-up, in addition to displaying as a form. When users need to frequently make selections from a list, using a pop-up will minimize the number of actions required to make the selection.

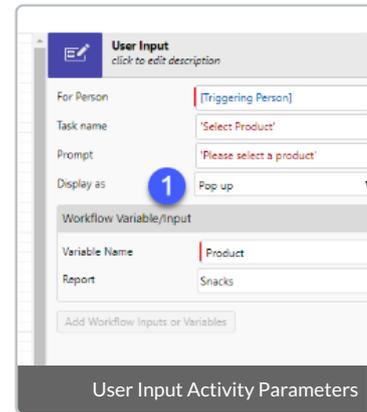
The workflow with the User Input pop-up can be run from forms, reports and screens.



Scenario 1 - single input selection



Scenario 2 - multiple input selection



User Input Activity Parameters

See [User Input activity](#) for more details.

Workflow: Triggering Trigger parameter

You can access now **Triggering Trigger** parameter information when designing workflows. This can come in handy when a change to a field or object can be a result of one of many defined triggers and which trigger actually made the change.

This can better explained with in the case of a risk assessment example. Let's say a risk assessment can be triggered in one of two ways; if a risk rating changes or an incident occurs relating to the risk, and both scenarios will each have a defined trigger. Then within the workflow builder, you can pull up the and query the parameter like you would with other parameters.

See [General Workflow Activity Configuration](#) for more details.

Bug Fixes

- Charts: Number in colour field can change the charted values
- Platform: Screens in certain scenario showing error messages: "Collection was modified; enumeration operation may not execute"
- Reports: Wrong value is displayed If Date Time value is displayed in 'Hour Only' format
- Workflow: Newly added variable is populated into calculations and overwrites pre-existing variables
- Workflow: Validation failing in calculation

Release Notes for 2.117

Last Modified on 16/04/2019 4:18 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Analyser: Picker is blank for Username field in User accounts report
- Documents: File upload errors not being thrown on subsequent failed attempts
- Documents: Opening xml files in Microsoft Edge displays unformatted text
- Email: Unable to send attachments of type icon or image
- Forms: Related records are not deleted in form created using Workflow
- Hierarchy: An org structure picker does not expand to show all selected options when first opened
- Platform: Administrators cannot navigate to pages in a specific scenario - with Value cannot be null error
- Platform: User screens intermittently display errors for specific users in specific situations
- Screens: Can't configure container when label is hidden
- Security: Error on console and server when a user role is added to the user account
- Survey: If a survey task status is not "Completed" by the due date, the survey task should get deleted
- Survey: Closes on date in survey campaign form incorrect when using date functions
- Survey: Error when launching survey before campaign is saved
- Survey: Incorrect values in target campaign for self referencing relationships
- Survey: Review survey task is not getting deleted after time out
- Workflow: Activities can be created without a next action, but fail during execution
- Workflow: Unable to filter reports with Report input parameter in User Input Activity
- Workflow: Workflows triggered on schedule don't run at the scheduled time

Release Notes for 2.116

Last Modified on 17/04/2019 10:31 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

Improved reliability for Time calculations in Workflows

In this release administrators can now set the Time zone for their ReadNow tenant. This will improve the reliability of workflows and triggers which use time related calculations, without a user context. The configuration of time zones will continue to undergo further enhancements.

General Settings

Name: General Settings
Description: The general settings configured by the tenant.

GENERAL SETTINGS
Currency symbol: \$
Tenant theme: Console Theme Settings
Disable communications:
Disable console session t...:
Disable API callouts:

FINANCIAL YEAR SETTINGS
Financial year start month: January

LANGUAGE AND TIME ZONE SETTINGS
Time zone: (UTC-07:00) Mountain Time (US ...)

See Settings for more details.

Bug Fixes

- Hero Text: Header overlaps Hero text depending on screen size
- Import/Export: Importing invalid xml returns a general error message
- Screen: Descriptions set for screens in builder is not visible in view mode

Release Notes for 2.115

Last Modified on 16/04/2019 4:19 pm AEST

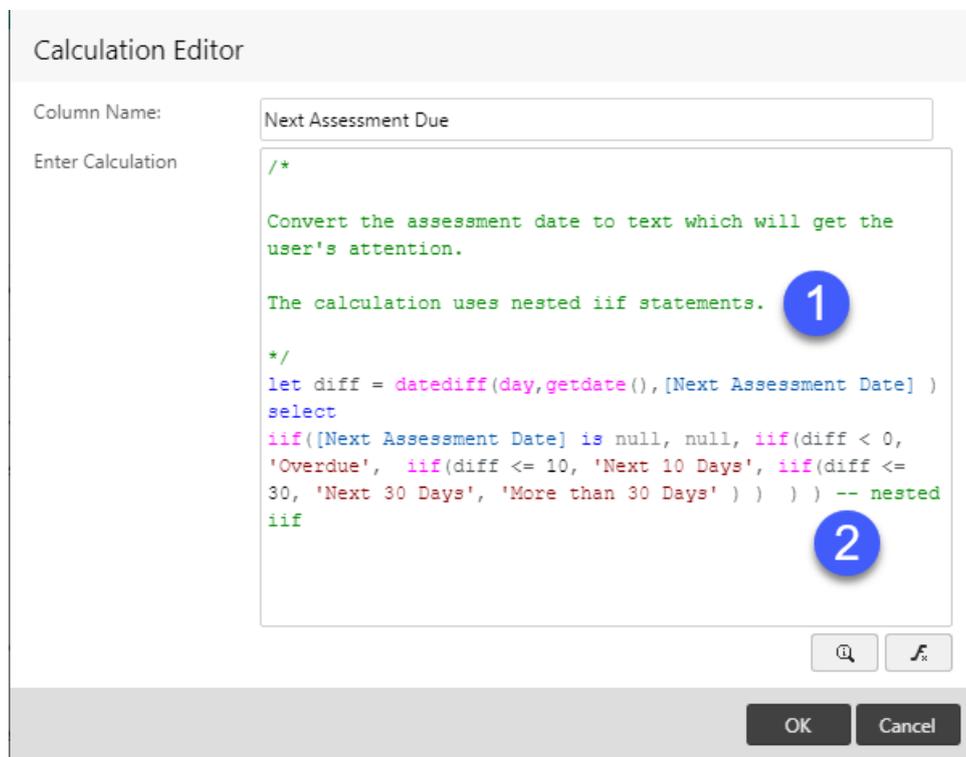
ReadiNow reserves the right to update these release notes at any time.

New Features

Support for comments in Calculations

We now support **block** and **in-line** style comments in calculations. Comments will allow users to explain complex calculations in a convenient location.

This will improve communication with other team members and reduce potential errors.



Bug Fixes

- Analyser: Analyser drop-down disappears when selecting choice field in Firefox
- Calculations: Inline editing option is missing when using GroupBy with calculated fields in reports
- Charts: Cannot Save As a chart with shared axis
- Charts: Long category names in charts are incorrectly truncated
- Charts: Charts with multiple series are listed multiple times in Charts report
- Documents: Certain documents downloaded in Firefox result in errors when opened in the associated application
- Documents: Unable to upload email message files, using drag and drop
- Reports: Renaming a report column is not reflected in the analyser

- Reports: Export fails with Reports which have a forward slash in their name
- Screens: Charts within a container are not displayed in Screens
- Security: Changes in access rules does not update Last modified date
- Surveys: Review survey activity in workflows is unresponsive
- Surveys: Derived instances not added in target campaign with self referencing relationships
- Surveys: Launched on field value is incorrect in Survey Campaigns
- Surveys: Survey results display incorrect start and complete dates
- Surveys: Scroll bar missing when multiple targets are added in Target campaign
- Surveys: Workflows are not triggered for On survey complete and On campaign close
- Surveys: Workflow remains in paused state when a campaign is completed
- Workflow: Unable to select object for Target Object field in Launch Person Activity in Workflow
- Workflow: Empty Workflow activity paths should warn that they will fail during run
- Workflow: Improve the error message in the Workflow, Send Email activity, when password is incorrect
- Workflow: Sent email messages report contains entries for emails that were not sent

Release Notes for 2.114

Last Modified on 17/04/2019 10:36 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

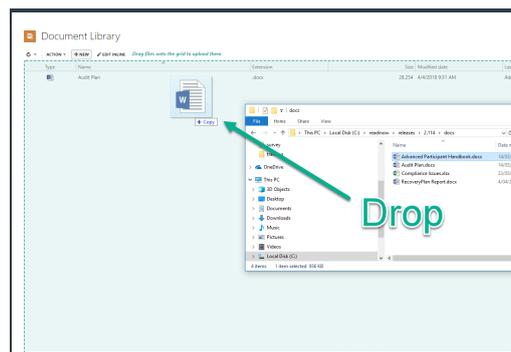
Improved user experience for documents

We have greatly improved the user experience for uploading and downloading documents. Both tasks are much more intuitive and require fewer user actions.

- Users can drag and drop, one or **multiple** documents, to the Document field on a form.
- Clicking a document name will download the document.

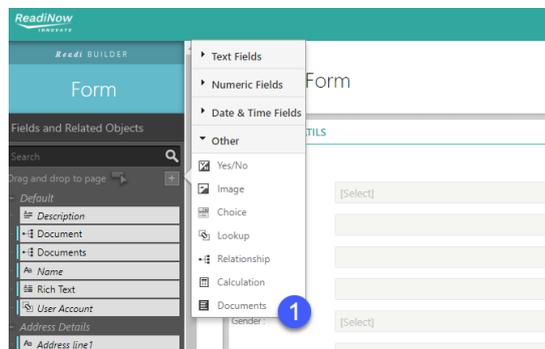
The Document Library also supports uploading and downloading documents in a similar intuitive manner.

In addition to ease of use, this enhancement will increase the productivity of both users and administrators.



Documents Field Type

We have created a new field type called Documents, this will allow users to easily create a relationship to documents.



See Documents Field for more details.

Bug Fixes

- Forms: On mobile, user is not able to multi-select instances on a picker
- Hero Text: Header overlaps hero text on smaller screens
- Reports: Picker report of an image field on mobile does not show images and is difficult to select
- Screens: In builder mode, controls on screens don't indicate 'Show Help' is enabled

Release Notes for 2.113

Last Modified on 16/04/2019 4:20 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

Report Diagnostic Tool

We have now empowered users with a tool to diagnose when certain reports may be less responsive.

If you are looking making performance gains to reports, it is helpful to understand:

- report is structured
- security rules are applied
- data is cached and shared

This tool can be found within the report builder, scroll down to the bottom of the left hand side to find the link.



Report Diagnostics

Report Name: Opportunities

User:

Use 'Current User Account'

Show diagnostics

Report Name: Opportunities
Report ID: 28420 / c0e78059-9f65-46ad-a9d7-affe9278c631

Caching
Cachable and sharable between users

Referenced Objects and Types

1. Company - Object (full grant)
2. Opportunity - Object (full grant)
3. Person - Object (full grant)
4. Opportunity Type - Choice type (full grant)
5. Sales Stage - Choice type (full grant)

Nodes

Description	Join Type	Object	Details
Opportunity	Object	Opportunity	Secured (full grant)
Opportunity Type	Fwd to-one	Opportunity Type	Secured (full grant)
Opportunities - Company	Fwd to-one	Company	Secured (full grant)
Owner of - owner	Fwd to-one	Person	Secured (full grant)
Sales Stage	Fwd to-one	Sales Stage	Secured (full grant)

Calculations
None

Inherited/Derived Types

1. Opportunity
 1. Record (Editable Resource) (ancestor)
 2. Owned Items (ancestor)
 3. Activity Related To (ancestor)
2. Company

Close

Bug Fixes

- Analyser: Changing the order of fields in Analyser does not update
- Forms: On mobile user is not able to multi-select instances on a picker
- Forms: Quick lookup feature does not work in case of nested lookup
- Import: Error importing existing objects
- Reports: Inline editing not enabled when using Group By on Reports
- Reports: Reports with images will run with 'slow secures flag' mode
- Workflow: Long names in workflows are distorted
- Workflow: Popups in workflow do not support filtering

Release Notes for 2.112

Last Modified on 17/04/2019 10:38 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

List Processing Functions

The power of list processing has just got simpler with the introduction of the following list functions. Workflows with more complicated loops to process data in lists can now be simplified and be made to run more efficiently.

1. **first(list)** - returns the first record of a list of items as a single scalar value.
2. **last(list)** - returns the last record of a list of items as a single scalar value.
3. **first(n, list)** - returns the first n records of a list of items as a list of value.
4. **last(n, list)** - as above for the last n records.
5. **skip(n, list)** - as above, but for a function that skips over the first n records.
6. **reverse(list)** - a function that reverses the order of a list.
7. **convert(list, input)** - A way to take a single value and convert it to a list of zero or one items.
8. **concat(list1, list2)** - concatenate two lists of the same type together, or a list and a single item, or a single item and a single item.

Note: These functions are only supported in workflow and document generation calculations.

See [Calculation Functions](#) for more details.

Enhanced Features

Security Roles

We have listened to you and based on customer recommendations we have renamed a couple of the security roles tabs to make it more meaningful.

- Includes Roles *is now titled* **Members (Roles)**
 - The listed roles are members of the currently role.
 - Users assigned to member roles are also effectively in the current role.
 - Equivalently, each of the Members (Roles) inherit permissions of the current role
- Included by Roles *is now titled* **Member Of**
 - The current role is a member of the listed roles
 - Users assigned to the current role are also effectively in the listed roles.
 - Equivalently, the current role inherits permissions of the Member Of roles.

See [User Roles](#) for more details.

Bug Fixes

- Analyser: Item not selected when selection is outside filter dialog
- Analyser: Renamed report columns are not displayed in the Analyser
- Calculations: Count calculations in records in a relationship incorrectly displayed in reports
- Calculations: Exporting data, which uses the calculation DateFromParts, is incorrect
- Charts: Charts incorrectly display data in filtered columns
- Charts: Using the inline editor to modify a chart name incorrectly displays the chart title
- Reports: A lengthy report description interferes with the report filter control
- Reports: A warning displayed for a specific report remains after saving the report
- Reports: Adjusting column widths on reports takes time
- Reports: Default reports show the same report multiple times
- Reports: Searching on summarized reports results in an error
- Resource Keys: The user interface for Resource keys shows incorrect controls
- Resource Keys: Users cannot add a resource key, with relationships or Choice fields, to objects
- Security Roles: Changing a user role's record access queries does not update the Last Modified Date for the user role
- User accounts: If the expiration time for a user account is exceeded, accounts are not marked as expired
- Workflow: A specific workflow, with multiple user inputs with user action, results in an error
- Workflow: Documents with multiple versions cannot be cloned in a workflow
- Workflow: In a workflow with multiple users, the audit log displays an incorrect user for an event

Release Notes for 2.111

Last Modified on 18/04/2019 9:26 am AEST

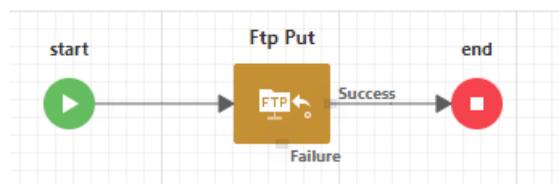
ReadiNow reserves the right to update these release notes at any time.

New Features

Workflow: FTP Put Activity

Ability to upload a file to a remote server via FTP.

You can now customise generated output filenames. For example, you can append a date to the file name, FILENAME_YYYYMMDD.csv.



See [FTP Put Activity](#) for more details.

Enhanced Features

Centralised Configuration Credentials

Credentials for all integration configurations are now centrally managed under one report called Credentials. This report can be found under Administration → Integration → Credentials.

These integration configurations include:

- [Scheduled Export](#)
- [Scheduled Import](#)
- [FTP Fetch Activity](#)
- [FTP Put Activity](#)

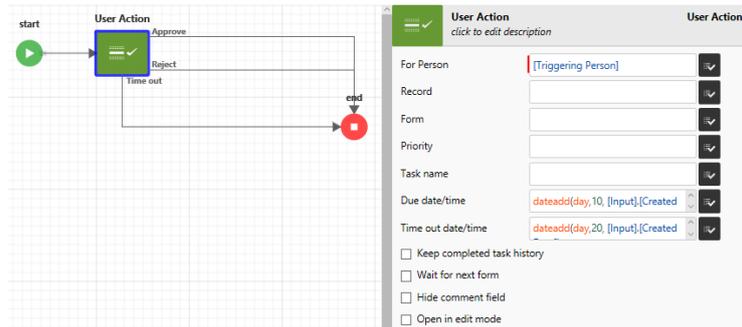
Note upgrade changes for the above configurations

The upgrade to Release 2.111 will automatically take credentials from the existing configurations and automatically create unique Credential records for both Scheduled Import/Export. Prior to the upgrade, the credentials were required to be set up in a Scheduled Import/Export first that was then used in the FTP Fetch Activity. After upgrade, this has now been simplified to allow the FTP Fetch Activity directly access the credential itself.

See [Credentials](#) for more details.

Workflow: User Action Activity - Split out from Due Date and Time out

You can now set due date and a time out date independently within the workflow User Activity. This means that you can set the set due date for the user action task, and optionally set a time out date, if you need to end the task to say escalate it to another person.



See [User Action activity](#) for more details.

Note upgrade changes

Prior to the upgrade, **Due Date/Time out date/time** was the same field. After upgrade, these fields will be split out into **Due Date date/time** and **Time out date/time** fields. The upgrade will take any existing value and duplicate into both fields, which simply means that it will keep the existing behaviour prior to the upgrade.

Bug Fixes

- Reports/Analyzer: Calendar in report analyser not working correctly if you use Today or Clear buttons
- Report: Drag dropping a report into a tab container should automatically hide the label
- Workflow: Clone activity failing/causing deadlocks when cloning an object with an auto-increment field
- Workflow: Large description prevents tabs from being clicked

Release Notes for 2.110

Last Modified on 16/04/2019 4:22 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Inline Edit: Error message 'Undefined' on multiple mandatory field exceptions
- Inline Edit: Description of related data is editable and showing the wrong data when Edit Inline
- Survey: Seeing 400 (bad request) on console log when saving a survey
- Reports: Analyser errors on hierarchy picker field
- Reports: Changing only a calculation in a report does not update the modified date of a report
- Reports: count unique not vertically aligned with heading
- Workflow: import/export (or SaveAs) does not retain position of end activity

Release Notes for 2.109

Last Modified on 16/04/2019 4:23 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

Anti-virus file scan

Any files that are uploaded onto the ReadNow platform will now be scanned for malware and viruses prior to the save into the document library.

Users who attempt to upload a suspicious file via the UI will be prompted with the following message: *Possible suspicious content found in file* and stops the file being saved.

There are a number of ways a file can be saved into the document library, regardless of the method all files will be scanned:

- via the document library directly
- via a record
 - as an attachment
 - as an image/picture
- workflow file download
- document template generation

In addition, an audit log entry is also saved within the Security Audit Log to help detect and prevent malicious behaviour.

Bug Fixes

- Calculations: `datefromparts()` calculates incorrectly if day value is 1
- Charts: When labels are added to a chart that has a second series then all labels display the values from the first series
- Document Generator: Generated document has wrong data in DateTime field (as well as system fields) when the time zone is changed
- Export: Exporting to Excel of a report is causing "Server Error in '/SpApi' Application"
- Link in UI: Why are we displaying a broken link to a 3rd party?
- Reports / Analyser: Updates applied to an analyser are applied against the value saved in the report as opposed to the last applied value
- Reports / Analyser: When set to last N days on date field, user changing to an absolute date causes an error
- Screen Builder - cannot modify report properties when opened within screen builder
- Workflows: Improve Builder load time for complex workflows
- Workflow: Multiple versions of the same workflow think they are the latest

- Workflow: User input relationship field clears when a choice field is selected

Release Notes for 2.108

Last Modified on 16/04/2019 4:24 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

Administrative Roles

Now you can grant users special administrative access without the need of giving users full administration access to perform specific administrative tasks. Our pre-defined administrative roles allows the ability to assign users to the following roles:

- Spreadsheet Importer
- Spreadsheet Administrators
- User Administrators
- Security Administrators

Furthermore, you can customise your own administrative roles, based on the roles listed above, by defining record access rules, permissions and navigation access.



User Roles



ACTION ▾

+ NEW

User Role	Description
User Administrators	Users who manage user accounts, such as disabling accounts, resetting passwords and assigning roles.
Spreadsheet Importers	Users who import data only.
Spreadsheet Administrators	Users who add new configurations and import data.
Security Administrators	Users who create roles, define access rules and assign navigation access.

Bug Fixes

- Hierarchy Picker: link to existing for hierarchy replaced all other entries
- Forms: Multi-select fields not displayed in order of source report
- Forms: When adding multiple fields to a tabbed form relationships do not show labels
- Forms: Relationships set to display inline result in broken links
- Forms: When adding multiple fields to a tabbed form relationships do not show labels
- Import: Importing from a spreadsheet should not import blank rows
- Forms / Workflow: Navigation issue on form when using a User Input activity and screen refreshes
- Workflows: Builder is slow to load complex workflows because of many sequential calls to compile expressions
- Workflows: Workflow invalidation fails at runtime

Release Notes for 2.107

Last Modified on 16/04/2019 4:24 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Email: Invalid characters in email subject cause inbound email processing to fail
- Import from Excel - "This field is already mapped" error when re-allocating fields to columns
- Mobile: No response but blank dialogue is given on mobile after running a workflow
- Reports: Count totals not vertically aligned with heading
- Workflow: Cannot clone a document
- Workflow: Extra workflow runs on trigger for a certain scenario
- Workflow: Cleanup picking up some workflows as stalled that are not
- Workflow: Unable to store a single resource variable into a resource list when pausing workflow

Release Notes for 2.106

Last Modified on 16/04/2019 4:31 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug Fixes

- Charts: Deleting a series on a chart is giving you dirty handling message
- Email: Issue adding email attachments to a record via a workflow
- Import/Export: Data loss on getRecords Filter property
- Import/Export/Workflow: Run as owner breaks during export/import
- Reports: A number of reports are failing to run with error: "The report failed to run. The datediff function resulted in an overflow"
- Report: Unable to delete mass number of records (lower than page limit 200)
- Workflow: Save-As workflow is giving "...Workflow ID is not a workflow Ref..." error when saving in certain circumstances
- Workflow - User Action: Showing incorrect actions when viewing via master-detail on a screen

Release Notes for 2.105

Last Modified on 16/04/2019 4:26 pm AEST

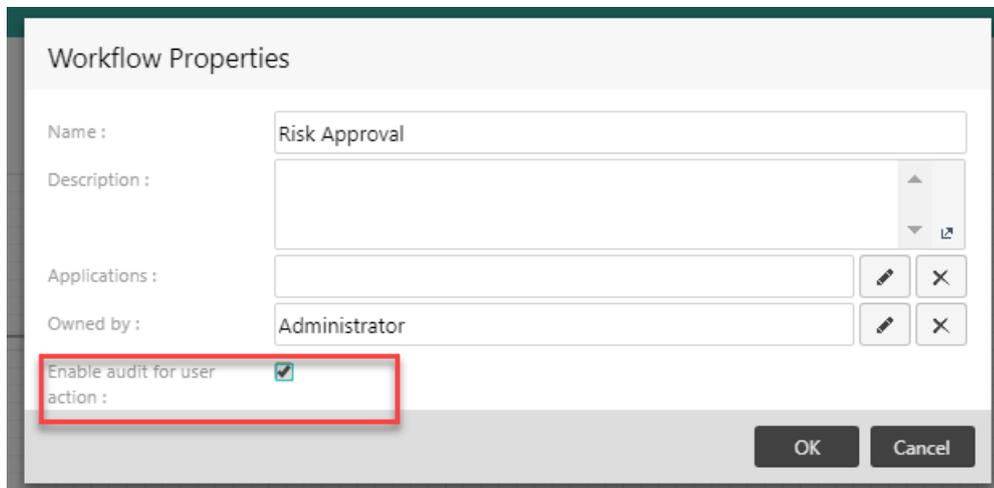
ReadiNow reserves the right to update these release notes at any time.

Feature Enhancements

User Action workflow activity auditing

The "Keep History" setting in the User Action activity has now been separated into two independent settings to give the user greater granularity of setting options.

1. **Enable audit for user action** - this is now a global setting for the workflow and will audit all the User Action activities for a given workflow.



Workflow Properties

Name : Risk Approval

Description :

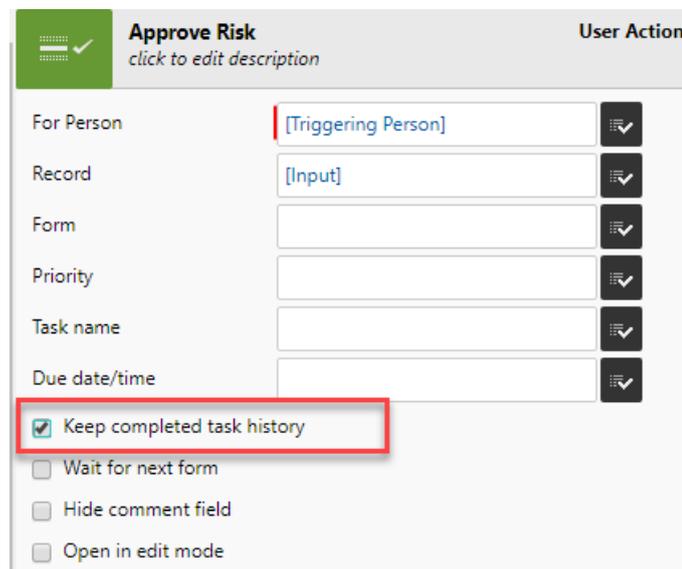
Applications :

Owned by : Administrator

Enable audit for user action :

OK Cancel

2. **Keep completed task history** - this will now only keep the completed tasks generated by the User Action activity. By default, completed User Action tasks are deleted.



Approve Risk User Action

click to edit description

For Person [Triggering Person]

Record [Input]

Form

Priority

Task name

Due date/time

Keep completed task history

Wait for next form

Hide comment field

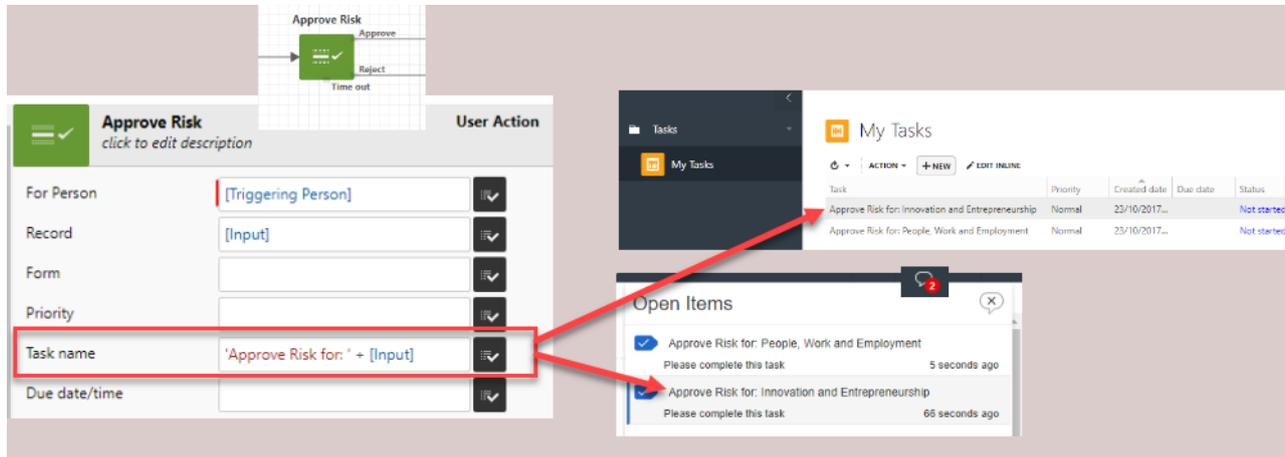
Open in edit mode

Prior to the upgrade, if you had enabled 'Keep History' on any User Action activity for a given workflow, the

upgrade to Release 2.105 will automatically take that setting and convert it to **Enable audit for user action** so your workflow will continue auditing the User Action activity changes.

Configurable task names in User Action workflow activity

Now you can customise the name of the task that is generated by the User Action activity. These are the tasks that appear in a user Task report and User Messages.



Bug Fixes

- Charts: Cannot hide the legend when you have 2 series
- Forms: Help bubble on forms does not respect show/hide
- Hierarchy Picker: link to existing for hierarchy replaced all other entries
- Report : tenant admin user is not able to see right click menu for some of the system resources (as a result not able to export resource e.g. report/screen in xml)
- Workflow: User Action - Timeout not closing task
- Workflow: User Input - filtered lists, is not showing all relevant objects/choice fields
- Workflow: While cloning a record, the newly created record gets the same "created date" as the original one
- Workflow: Duplicate activity names in workflow throw errors on run validation

Release Notes for 2.104

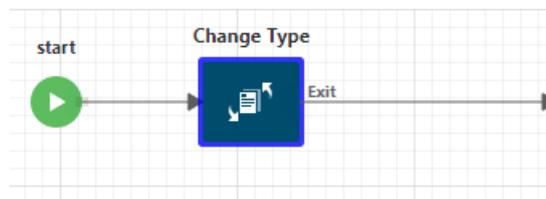
Last Modified on 16/04/2019 5:05 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

Change Type workflow activity

Now you can change a record from one object type to another with a single workflow activity, rather than having to create a new record and delete the old one.



Filtering lists on User Input workflow activity

User Input activity now supports the ability to filter one input variable list based on another. This can be configured between choice fields, lookups or even relationships.

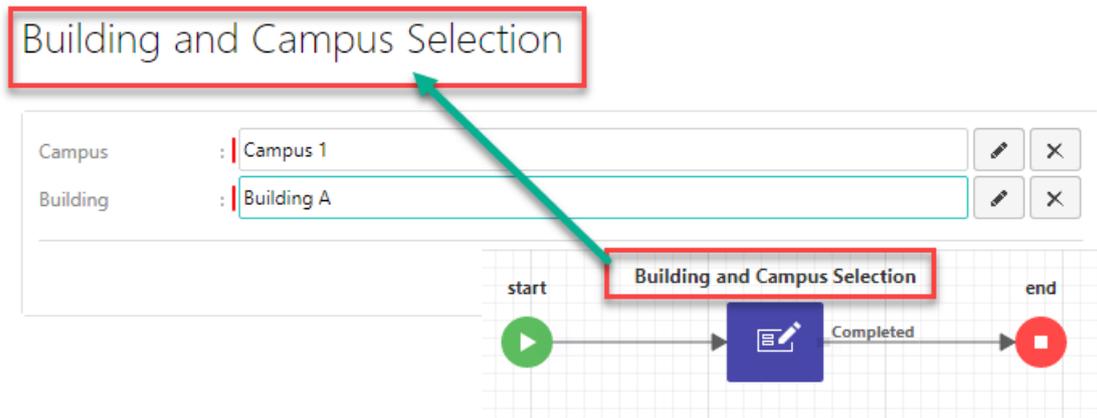
Building and Campus Selection

Campus	:	Campus 1	<input type="text"/>	<input type="button" value="✎"/>	<input type="button" value="✕"/>
Building	:	Building A	<input type="text"/>	<input type="button" value="✎"/>	<input type="button" value="✕"/>
<input type="button" value="DONE"/>					

Feature Enhancements

User Input Form Label

Now you have the ability to customise the label of the User Input form. Previously, the label of the User Input form displayed the title of the workflow with no ability to change it. This is another further improvement to workflows from our customer suggestions.



Bug Fixes

- Forms: Double click to edit on a form you do not have access to still goes into edit mode, though it doesn't let you save
- Calculations: inconsistent results between Reports and Forms in some scenarios
- Reports: Filtering by top N records still exports all records
- Workflow: Display issue in the user input activity when variable label is long
- Workflow/Calculations: unable to update decimal values in related records

Release Notes for 2.103

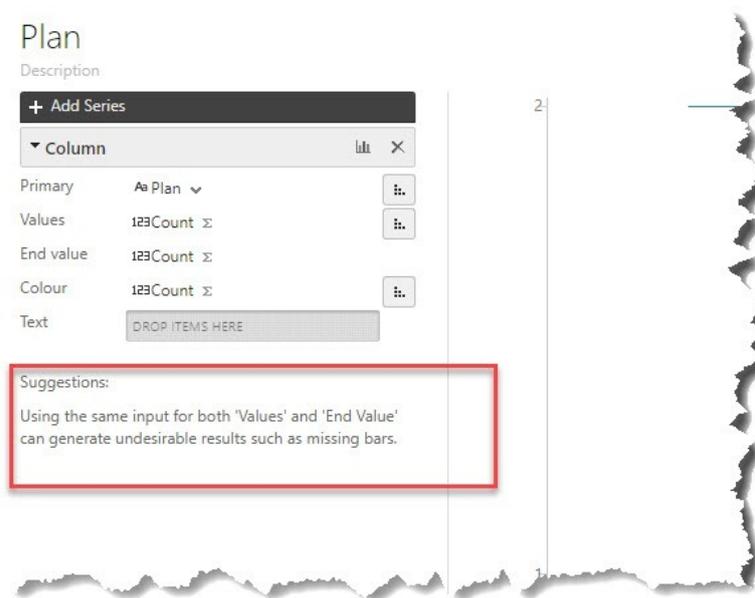
Last Modified on 16/04/2019 4:34 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Feature Enhancements

Charts: Providing helpful suggestions

Charts now have built-in smarts to guide users in creating more meaningful charts. When a user now tries to create a chart that does not make sense in context with both chart type and given data points, Chart Builder will now prompt the user to say which data point is problematic.



Bug Fixes

- Charts: Legend disappears when switching between tabbed charts
- Email: Failed to send email should be retried
- Forms: Form displays differently in IE and text is truncated, but displays correctly in Chrome
- Screens: Buttons on screen can't be clicked if they wrap down
- Twilio: Bad error messages when adding Twilio account
- Workflows: Workflow builder keeps resizing frames when workflow is zoomed
- Workflows: We should be able to modify or "save as" the Workflows report in Administration without the report breaking

Release Notes for 2.102

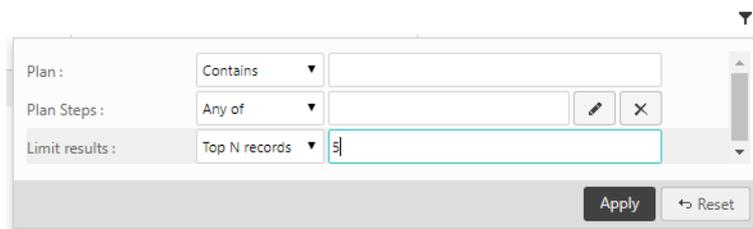
Last Modified on 18/04/2019 9:32 am AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

Filter your Top N records in reports

Creating a dynamic report to filter top N records is now possible with the new report limit feature found in the analyser of reports. Simply set the the number of records you would like to show, and then sort on the column you would like it to limit to.

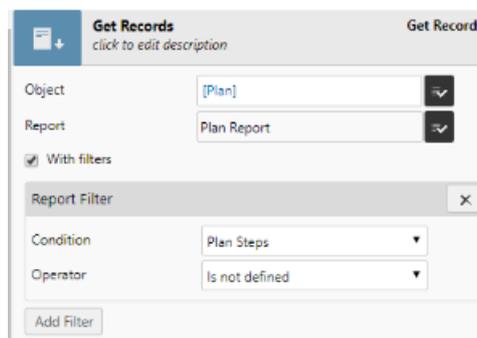


The screenshot shows a configuration panel for a report. It includes three rows of settings: 'Plan' with a dropdown set to 'Contains' and an empty text input; 'Plan Steps' with a dropdown set to 'Any of', an empty text input, and edit/delete icons; and 'Limit results' with a dropdown set to 'Top N records' and a text input containing the number '5'. At the bottom right, there are 'Apply' and 'Reset' buttons.

see [Analyser](#) for more details

Filter on Get Records workflow activity

Get Records workflow activity now supports filtering directly on the activity. You will need to ensure that any conditions that you would like to filter on are set in the analyser on the report beforehand.



The screenshot shows the configuration for the 'Get Records' workflow activity. It includes fields for 'Object' (set to '[Plan]') and 'Report' (set to 'Plan Report'). There is a checked checkbox for 'With filters'. Below this is a 'Report Filter' section with a dropdown for 'Condition' (set to 'Plan Steps') and a dropdown for 'Operator' (set to 'Is not defined'). An 'Add Filter' button is located at the bottom left of the filter section.

Benefits

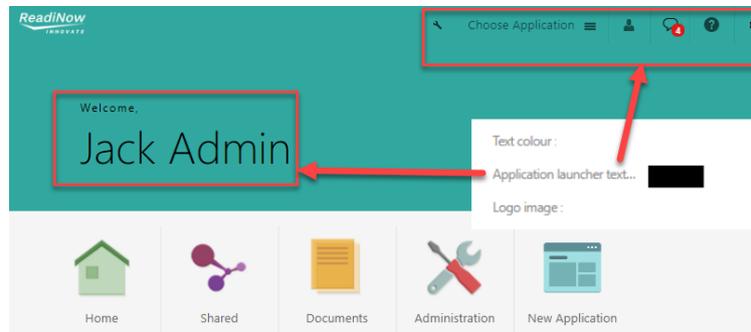
- Allows dynamic filtering
- Reduce the number of steps of workflow
- Improve workflow performance as result of targeted filtering
- Minimises the reports required

See [Get Records](#) activity for more details.

Feature Enhancements

Theme: Application Launcher Text is configurable

You now have the ability to set the application launcher text giving you more flexibility on theme configuration and colours. For example, this now allows white background colour on the application launch page and across the top header area.



Release Notes for 2.101

Last Modified on 18/04/2019 11:26 am AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

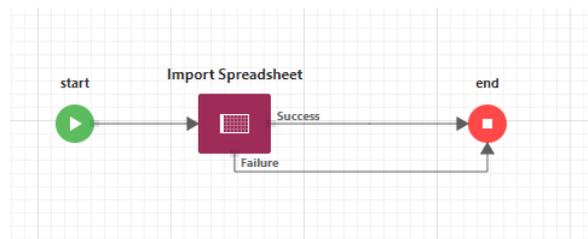
Import Spreadsheet Workflow Activity

A new workflow activity to provide the ability to import an excel or CSV file into an object.

Benefits

- Provides the ability to perform multiple sets of imports from a single uploaded file
- Can sequence multiple imports one after the other
- Can take full advantage of workflow flexibility to add data processing after or before an import

See [Import Spreadsheet Activity](#) for more details



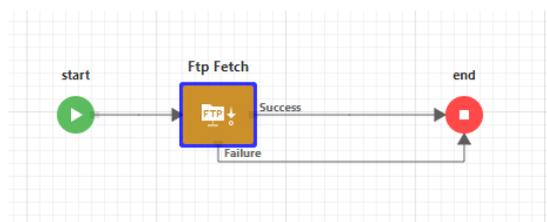
FTP Fetch Workflow Activity

A new workflow activity to provide the ability to retrieve documents via FTP.

Benefits

- Can be used in conjunction with "Import Spreadsheet Activity" to streamline the importing processes where multiple steps are required to transform and import the data by fetching the required file directly.

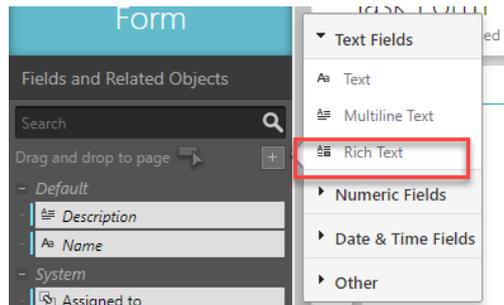
See [FTP Fetch Activity](#) for more details.



Rich Text field type

A new Rich Text field control can now be used as field type on an object. To enable Rich Text in Form Builder,

simply add the Rich Text field to your object.



Rich text supports the following formatting:

- Paragraph
 - Bullet list
 - Numbered list
 - Text alignment - left, right and centre
- Font
 - Bold text
 - Italics text
 - Underlined text
- Quotes
- Links
 - URL - default to be opened in a new tab
- Undo / Redo

Rich text is supported in:

- View and edit forms
- Documents templates
- Reports
- Inline editing

See [Rich Text Field](#) for more details.

Feature Enhancements

Spreadsheet Import Enhancements

The following enhancements have been made to the Spreadsheet import feature:

- Users can now set an option to Append or Overwrite on relationships and multi-select choice fields

- When mapping columns, users are now able to set a static fixed value for a field or a relationship

Bug Fixes

- Workflow: Updating a workflow with existing workflow runs can corrupt the workflow, showing errors for every activity
- Reports: A broken calculation can break a report
- Calculations: Broken calculation for the following scenario; `sum(iif(Name="",1,0))`

Release Notes for 2.100

Last Modified on 16/04/2019 4:51 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug fixes

- Screens: Performing a 'save as' for a screen or report assigned to a lite or basic role fails
- Reports: 'Save as' on system reports is not working as expected
- Import: If an object has two separate resource keys; one for name and another for relationship, then importing data into that object results in error message
- Mobile: Forms can be moved side-side
- Workflow: A second or third user action activity is not using the nominated form
- Screen Buttons: If a screen has a workflow action button that navigates to a user action, then it navigates to an empty form in certain circumstances.
- Survey: Weighting is not given to text question if user creates a text question from Question Libraries

Known Issues

- Workflow Save Error
 - **Issue:** Making a change to an existing Workflow that has paused workflow runs may cause the workflow to error.
 - **Workaround:** If a change is required to be made to workflows with paused runs, do a "save as" to the workflow and update the new version. Note any triggers or workflow action buttons will need to be repointed to the new workflow.
 - **Resolution:** ReadNow are working to resolve the issue and will advise once rectified

Release Notes for 2.99

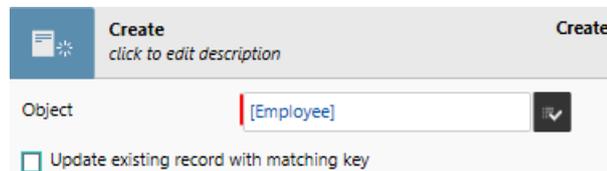
Last Modified on 18/04/2019 9:39 am AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

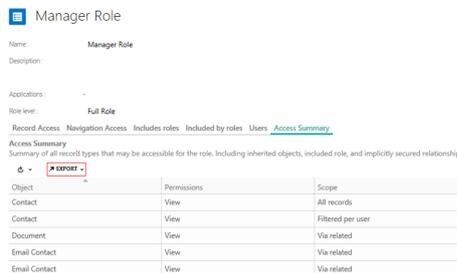
Workflow Create Activity now able to merge with existing records

- Workflows that create records may need to merge into existing records when a resource key is set.
- The create activity now has a new checkbox to "Update existing record with matching key"
- When checked, if the workflow tries to create a record where there is a Resource Key Match (See Resource Keys), then the record is merged with the existing record
- This checkbox only appears if a resource key is defined on the Object (See Resource Keys)



Ability to Export Access Summary of a role

- When viewing a Role the 'Access Summary' tab is now able to be exported to excel, csv or word.



Object	Permissions	Scope
Contact	View	All records
Contact	View	Filtered per user
Document	View	Via related
Email Contact	View	Via related
Email Contact	View	Via related

Ability to change Field Label Colour

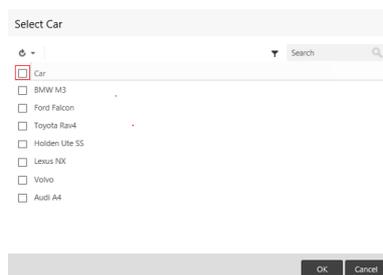
- New Setting in "Theme Settings" under General Content Area to allow a colour selection for all field labels on forms

Show/Hide Elements on form now work on screens

- See Showing/Hiding Elements on form
- The above show/hide behaviour now works when a form is added to a screen

Ability to "Select/Deselect" all on multiselect pickers

- On any multi-select picker, you now have the ability to select or deselect all records by clicking the checkbox in the header



Feature Enhancements

Feature Enhancement	Description
Workflows runs with deleted 'User Input' or 'User Action' tasks are cleaned up daily	Workflows that have a User Input or User Action create a task and placed into a paused state until the user completes the task. If the task gets deleted for whatever reason the workflow run was remaining in the paused state forever. These workflow runs are now identified and status set to failed on a nightly basis
Reports dragged onto screens now show container heading	When a report is dragged directly onto a screen (not into a tab) the name of the report is now automatically added as a heading.
When charting on records where 'Conditional formatting on choice field' is set, blanks now are automatically grey	On any set of records that includes a choice field where the conditional formatting is set on that choice field (see Conditional Formatting of Choice Fields), for any 'blank records' the blanks were represented as black segments on a chart. This has been changed to show 'blanks' as light grey segments
Changes to Password Reset Feature	<ul style="list-style-type: none"> • Option to "Reset Password" is now always shown on login screen • Formatting changes to the auto generated password reset email

Bug fixes

- Workflow: Some functionality of User Input not working in the new workflow UI.

- Screens : Refreshing the matrix chart on a screen displayed hidden rows on the corresponding report
- Report: Column names were overlapping when report column was resized either in view mode or builder mode.
- Reports: Unable to view all the columns on the report in builder mode after column widths were rearranged.
- Calculations: Filters on certain calculated columns were giving incorrect results.
- Forms: Some Field Controls with conditional visibility(show/hide) were appearing on tabs when they shouldn't

Release Notes for 2.98

Last Modified on 16/04/2019 5:09 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

Column width resizing

Reports now remember their column sizes. Columns can be resized both in **builder mode** and in **view mode**.

1. When report columns are resized in **report builder** the column sizes are saved as percentages as part of value formatting.
2. When report columns are resized in **view mode** the column sizes are saved as percentages in local session storage and will not affect the reports for another user as the changes are local to their machine.
3. If the column width is resized in local session storage it will override the value formatting widths.
4. A context menu called Reset Column Width is shown for columns that have a custom widths, which reset the width of the column to default.
5. The initial column size for Currency, Decimal, Integer, Boolean, Time, Date, DateTime, Choice, Image column types is half the width of the other columns.
6. Any custom width will still override any initial width.

Feature Enhancements

Feature Enhancement	Description
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There are no feature enhancements in this release.

Bug fixes

- Document Generation: Using 'Order by' and 'where' clause in document template was yielding incorrect results
- Import Spreadsheet: Unchecking 'No heading row' was giving an error though the import is performed successfully
- Import Spreadsheet: CSV import via web API - causes HTTP header rows to be processed by importer
- Reports on forms were not refreshing when the data is updated
- Resource key: Import Append/Override option wasn't working properly
- Workflow: non-admin user was given the view access to the custom form specified on Create Link activity

Known Issue

- Screens: refreshing the matrix chart on a screen displays the hidden rows on the corresponding report
- Calculations: Variables that follow relationships to multiple records only return the first record
- Mobile: approval buttons appear missing if workflow triggered on form
- Workflow- Large workflows are not loading or taking a long time to open

Release Notes for 2.97

Last Modified on 18/04/2019 9:33 am AEST

ReadiNow reserves the right to update these release notes at any time.

New Feature

Arrow Charts

New chart type has been released that allows you to show data as 'arrows'. This can be used in conjunction with other charts types as a secondary series to show trending.

Show Hide Actions Button

New functionality to allow show/hide conditions to apply to 'Action Buttons' on top of forms. This allows only applicable 'action buttons' to be visible on a form depending on set conditions. See [Showing/Hiding Elements on form](#).

Feature Enhancements

Feature Enhancement	Description
Quick Search: now search on numeric columns	Quicksearch on reports now allows quicksearch on numeric fields (note only 'exact matches' are found on numeric quicksearch)
Field Hover Tooltip: Increase character limit to 250 characters	Hover tooltip of a field on a form has been increased from 197 characters to 250 characters
Reports Data Value Formatting: More formats available	On a date column in a report, new display formats are now available including: <ul style="list-style-type: none">• Day Month Year (e.g. 12 October 2017)• Shortmonth Year (e.g. Oct 2017)
Right clicking on form hyperlink: Change behaviour	Right clicking on form hyperlink (e.g a lookup link) now opens the browser right click menu

Feature Enhancement	Description
Help Icon added at top right of page	Help icon appears at the top right of the screen (next to the user icon). Clicking on the icon navigates to documentation link
Minor changes to Clear All and OK Button in multi line control	Clear all button has now been changed to text only and appears to the left of OK button.

Bug fixes

- "New" button was visible even when enable new is set to false.
- Unable to add records to a multi-select relationship when the selected row was over 200 records.
- Running a workflow from Form on Screen is not passing record info to workflow unless a record is selected
- When there are nested containers, scrolling behaved incorrectly in certain circumstances.
- Incorrect positioning of information icon in certain circumstances
- Certain Records not appearing on the report after a successful import.

Known Issue

- Screens: refreshing the matrix chart on a screen displays the hidden rows on the corresponding report
- Workflow: non-admin user is not given the view access to the custom form specified on Create Link activity

Release Notes for 2.96

Last Modified on 16/04/2019 5:11 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Feature

Import/Export XML

This is a new feature that allows an individual component, such as reports, forms, workflows etc, to be exported to XML format. This can then be imported into a different tenant. Please refer to the documentation to learn more about the steps involved in Import/Export of XML and the rules around this feature.

Feature Enhancements

Spreadsheet Import Enhancements

The following enhancements have been made to the Spreadsheet import feature

- Users can now cancel the import run even after they navigate away from Import screen.
- Spreadsheet import now ignores cases and whitespace when importing spreadsheet
- Import run reports now record a relationship between every record that is imported and the last run it was imported by. Users can use this relationship to find which import caused that record to be updated
- Records that get imported from a spreadsheet are now related to the latest "import run" via a hidden relationship called "Last Import". Users can use this relationship to find which import caused that record to be updated.
- There is also a new field available on all records called "Last import date", which is a calculated field that returns the import date of the associated import run.

Workflow Task Due Date by Calculation

The following changes have been made to the following activities: User Action, Launch Person Campaign, Launch Target Campaign and Review Survey.

- Previously the above activities allowed a property to specify a Due in time, which was allowed a static number to be set. This would then set the 'due date' of the corresponding task that gets created as part of the workflow.
- To allow for increased flexibility, this property has been changed to allow you to set a "Due Date" as a calculation or parameter. This allows the user to set the due date of the task by calculating it based on other reference points. Note it is still possible to set the due date based on a 'due in time' by specifying a calculation similar to `dateadd(day, 6, getdate())` to make a due date 6 days after the task is created.

- Any existing workflows will be upgraded to allow for this new property
 - Foreexampleanexisting user action in an existing workflow that is set to "Due in 6 days" will be converted to `dateadd(day, 6, getdate())`

Auditing on User Action Task

- Any Audit History entry for a user action task now captures the user that directly actioned the task.
- This will only be applied if the "Record History" option is enabled on the user action in workflow
- This will be applied to any new workflow runs or runs that are currently paused 'at or before' the user action task (i.e. not completed workflow runs or completed user action tasks)
- The format of the audit log will be:

User Action Audit Log Format:

	Format	Example
Name Field:	<Workflow Owner>(<Workflow Triggered by>) (<User Action Actioned By>)	Admin(john.smith)(jane.lowe) Updated 'Task 1'
Description Field:	Assigned to: <Acting Person>, Due: <Due date>, Actioned By: <Actioned Person>, Completed: <Completed date>, Action: <Action Summary>	Assigned to: John Smith, Due: 30/05/2017 3:35:42 AM, Actioned By: Jane Lowe, Completed: 30/05/2017 3:36:45 AM, Action: Approve

Disable Console Session Timeout

New setting in "Administration>Settings>General Settings" to "Disable console timeout settings". When this is checked, the console session timeout will be disabled (i.e session timeout will not occur). Note: this will disable the session timeout when logging on using standard REDI NOW credentials or any external identity providers such as OpenID Connect or SAML

Disable Communications Setting

New setting in "Administration>Settings>General Settings" to "Disable Communications". When this is checked, all email or SMS communications are prevented from being sent from REDI NOW

Bug fixes

- User Actions: User action drop down shows multiple entries of the user action when it is run more than once on the same record
- Report: setting default value to be true for a new boolean field make all existing appear true on report

Known Issue

- Workflow - running workflow on Form on Screen is not passing record info to workflow unless a record is selected
 - Screens: refreshing the matrix chart on a screen displays the hidden rows on the corresponding report
-

Release Notes for 2.95

Last Modified on 16/04/2019 5:12 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Feature Enhancements

Export to Excel

- When exporting a report to Excel, CSV or Word document; any 'group by' attribute on a report now exports as a column in the exported document

Resource Keys

- For performance reasons, resource keys cannot be created or modified for objects that contain more than 100 pre-existing records.

Bug fixes

- Console : Server returns error when trying to create a resource key on Name field for an object which has large amount of data.
- Enabling workflow buttons in report builder leads to 500 internal server error in certain circumstances
- Workflow: Unable to add a 'default value' to a defined variable in workflow
- Workflow - running out of memory when loading large workflow.
- Workflow: Create/Update/Clone - When we add the 10th field to a create activity, the field was being added at position 2 instead of the end in position 10.
- Mobile: Password set to change on next login does not work in mobile
- Import: Import fails if the duplicate row is within 30 rows and passes if it as after 30 rows

Known Issue

- Workflow: Undo action does not work on added or deleted activities.
- Unable to add more records to a multi-select relationship

Release Notes for 2.94

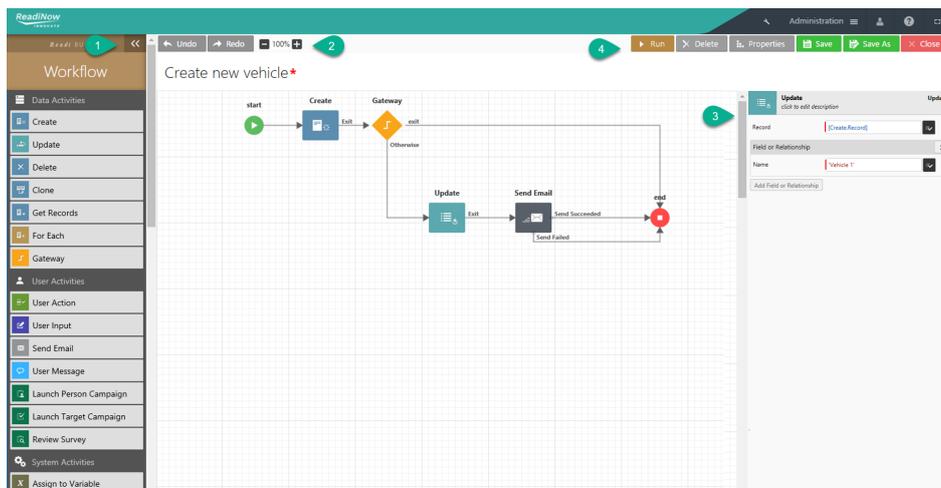
Last Modified on 16/04/2019 5:14 pm AEST

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Feature Enhancements

Workflow Builder Improvements

This release contains a new and improved user interface for the Workflow Builder. Suggestions have been incorporated from customers feedback and is part of an overall Workflow Enhancements.



Key Changes:

1. Ability to Expand/Collapse left Activity menu to provide a larger canvas while building workflows.
2. Undo/Redo buttons have moved to left hand side of the screen.
3. Configuration Panel now appears as the right hand side of the screen and restyled
4. General re-styling of buttons and panels

Spreadsheet Import

- Efficiency improvements to spreadsheet import

Bug fixes

- Calculations: Calculated fields on form were not refreshing on update of relationship.
- Export: Changes to SFTP Export to support smooth file transfer.
- Reports: Style of the report could not be changed in the view mode.
- Reports: Report builder was displaying error when a choice field is deleted from the object

- Survey: Name of choice question was not appear in Choice Options depending on how choice question was created.
- Workflow: Workflow buttons were being duplicated on records in a certain scenario.

Known Issue

- Workflow: Undo action does not work on added or deleted activities.
- Workflow: Unable to add a 'default value' to a defined variable in workflow

Release Notes for 2.93

Last Modified on 16/04/2019 5:15 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

There are no new feature releases in this version.

Feature Enhancements

- Added "Read Only" option to Relationships when the relationship is displayed as 'Inline' on a form

Bug fixes

- Import spreadsheet: Unable to map all fields using safari browser on a Mac due to issues with scrollbars.
- Import Spreadsheet: After importing a spreadsheet the "Done" button is still greyed out and not clickable.
- Importing data was not adhering to resource key resulting in duplicate records in certain situations
- Form Builder: Some form layouts were not rendered correctly on a Safari Browser on a Mac machine
- Form Builder: Form builder was giving an error when trying to save the default name field by specifying display name.
- Edit Forms: Error when saving form preventing when selecting certain options pre-save.
- Audit Policy against Task was causing workflow run saves to fail
- Workflow is updating 'Created Date' on existing records with the date/time the workflow ran against the record.
- Error was being thrown when opening Document generated from template with certain browser settings

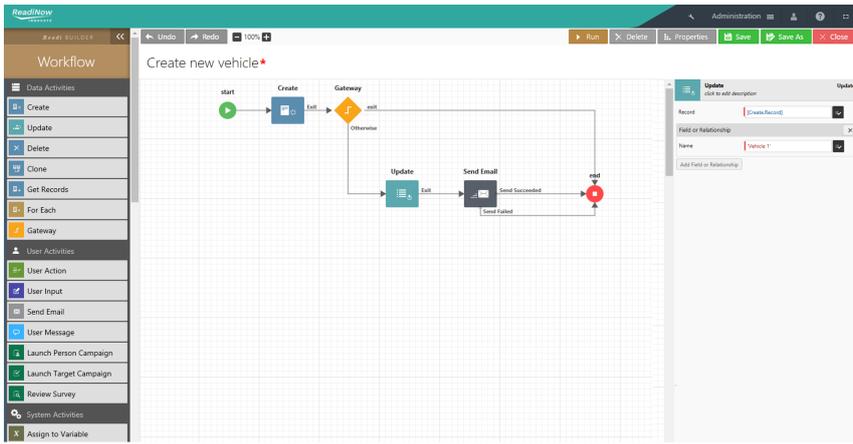
Known Issue

- Report builder displays error when a choice field is deleted from the object

Feature Preview

Workflow Builder Improvements

Listening to customer feedback, we are taking steps to improve the User Interface of the Workflow Builder. This changes will be released in phases over the next few release cycles. The first phase includes some interface changes that is targeted to be released in 2.94 (a current target release of 25 May 2017). See below a screenshot of the new Workflow Builder User Interface



Release Notes for 2.92

Last Modified on 16/04/2019 5:18 pm AEST

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Note

Release 2.92 will involve standard infrastructure maintenance only. Previously reported bug fixes will be incorporated into Release 2.93.

Release Notes for 2.91

Last Modified on 16/04/2019 5:19 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

Feature	Summary
Buttons on Screen	Ability to add a button at the top of the screen to either create a record or run a workflow

Feature Enhancements

No major changes have been made to the existing features.

Bug fixes

- Workflow: bug with long running workflow foreground triggers has now been fixed.
- Workflow: A clone action that would result in a cardinality violation now gives a proper error message.
- Report Builder: 'Enabling workflow' was presented in a different tab if the report is created using Save As
- Survey: User message were not being presented when survey is completed
- Calculations: Mod function was giving wrong result in certain circumstances due to order of operations
- User Message: completed tasks were not disappearing from user message bank

Known Issue

- Deleting the application navigates to the first available application on the welcome page
- Reports on screens are not updating when running workflow buttons.
- Report builder displays error when a choice field is deleted from the object

Release Notes for 2.90

Last Modified on 18/04/2019 9:41 am AEST

ReadiNow reserves the right to update these release notes at any time.

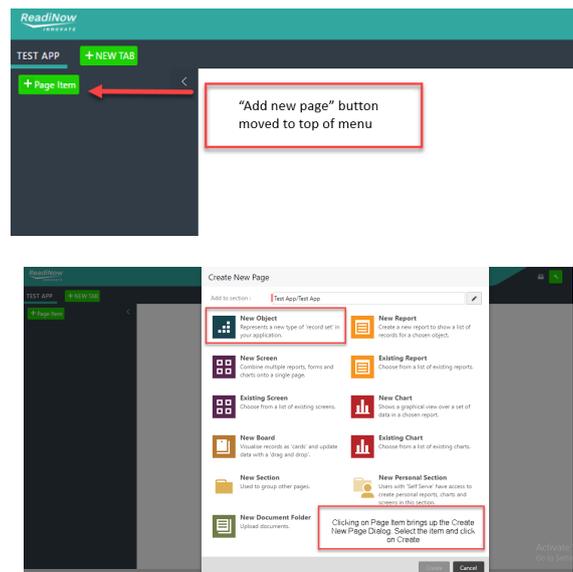
New Features Summary

Feature	Summary	Documentation
User Message Notification	A new 'User Message' activity in workflow that can be used to send notifications to the user when they are logged into ReadiNow.	User Message
IP Ranges	IP Range whitelisting feature restricts access to a given IP range	IP Ranges

Feature Enhancements

Change to method of adding pages to Navigation

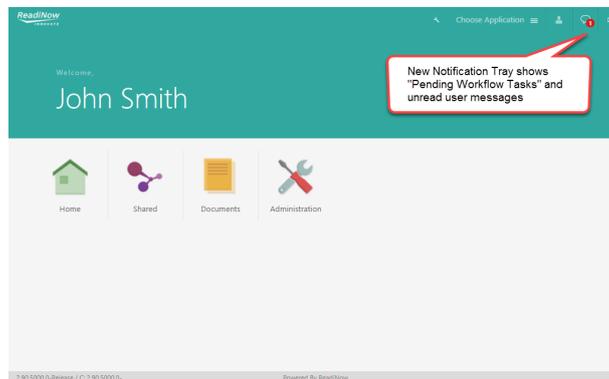
- New pages are now added via the "+ Page Item" button
- A new pop-up window has been created to add the page type
- See screenshots below



New "Notification Task Tray" for all users

- A "Message" icon added to top right of top menu bar

- When clicked, shows a list of:
 - Workflow tasks pending for the current user (from the User Action activity or User Input activity)
 - Unread messages from the User Message activity



Bug fixes

- Conditional formatting on charts was not working when using the default format for choice fields
- Quick lookup fails if the lookup and report point to a parent type but the user enters a resource of child type
- Default value for a choice fields can now be set.
- Long report name was overlapping with the column name
- Adding a row to the existing board made the column disappear
- Launching Campaign that was already launched was giving an error

Known Issue

- Deleting the application navigates to the first available application on the welcome page
- Reports on screens are not updating when running workflow buttons.

Release Notes for 2.89

Last Modified on 16/04/2019 5:20 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

Feature	Summary
Conditional Formatting on Choice Fields	Conditional formatting can now be applied directly to a choice field. This allows the formatting to be displayed on the form (in view mode) and also be the default format when the choice field is added to a report

Feature Enhancements

- Survey Enhancements: The 'Target' of a target survey now displays as a hyperlink so users can navigate back to the target from the survey response.

Bug fixes

- Import Excel failing due to errors in certain circumstances
- Cannot scroll down more than 200 records in some reports
- Reports: Adding and deleting of rows from the report needs manual refresh on the report to see the changes on report

Known Issue

- Screen Builder: Assign parent functionality on screen may not always be applied
- Document Library: Sometimes able to view document template in document folder after deleting.
- Calculations: Adding a where clause in a calculation is not working as expected in certain circumstances
- Undertaking Tenant Rollback may remove links to certain images
- Person Name Update: The out of the box workflow used to join a persons first & last name may not trigger.
 - Workaround: Make the "Name" field of person not editable (i.e. turn off 'read only') and update any newly created person's name via the form.
 - This issue will be fixed in 2.90.

Release Notes for 2.88

Last Modified on 18/04/2019 9:44 am AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

Feature	Summary	Documentation
Tenant Rollback	The tenant rollback feature allows Administrators to rollback changes to your tenant to a selected restore point. Generally you can rollback up to five calendar days or until the last ReadNow upgrade. In some circumstances a rollback may not be possible due to the number of changes in a given period. Refer to the documentation link for more information.	Tenant Rollback
SAML	ReadiNow now supports SAML as an external identity provider for authentication.	SAML

Feature Enhancements

Audit Log Changes

- Audit log character limit now increased to 100,000 characters

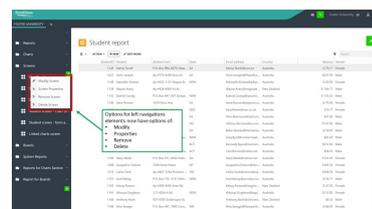
Create Link Workflow Activity

- Create Link Activity in workflow, now gives the ability to specify a specific 'form' to open

User Interface Enhancements

#	Feature	Screenshot
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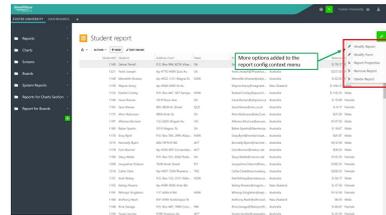
- 1 Context menu's for left hand navigation elements has been made consistent



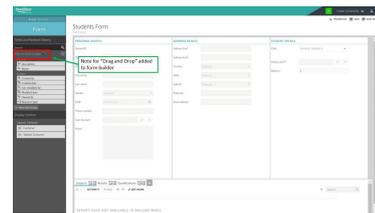
Feature

Screenshot

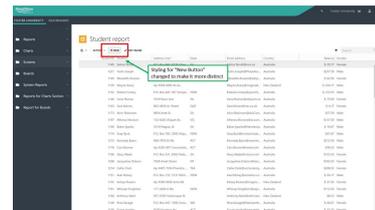
- 2 More options added to the report configuration menu.
This allows the user to access the form builder of the underlying form from this report configuration menu



- 3 A note now appears in all builders to "Drag and drop" to page.



- 4 Styling change to the "New" button on reports to make it more distinct



Bug fixes

- Calculations: Using nested iff and select statement causes calculation to crash report
- Calculated fields on form not refreshing when relationships are changed via inline edit.
- Form builder not working properly when trying to create inherited objects in certain circumstances

Known Issues

- Calculations: Recursive calculation doesn't work correctly for related resource
- Screen Builder: Assign Parent functionality on screen may not always be applied
- Connected lookup not working consistently when master field is Read Only
- Undertaking Tenant Rollback may require clearing of browser cache
- Undertaking Tenant Rollback may remove links to certain images

Release Notes for 2.87

Last Modified on 16/04/2019 5:21 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

See "Feature Detail" for further details & screenshots.

Feature	Summary
Default Login	Allows the administrator to define where the user lands after logging in.
Scheduled Export	Allows the data to be exported into an excel or csv format on a defined scheduled.

Bug fixes

- Forms: On a low resolution or when the browser is zoomed, the form buttons overwrite the record name.
- Forms: When navigating to a new record if the user has scrolled down on a report, the scroll bar does not reset to the top of page. In some instances this will effectively hide buttons on the top of a page.
- Multiline Field: Increase character limit to 100,000
- Screen: Options for assign parent on hero text appears only after the screen is saved
- Survey: Selecting the 'Use Existing' option for choice field does not bring up the choice values.

Known Issues

- Charts: Refreshing chart on screen navigates to report rather than stay on screen.
- Import Spreadsheet: progress reporting behaves inconsistently
- Import Spreadsheet: unable to map all fields using safari on a mac, scroll bar doesn't come up for fields at the bottom as on windows.
- IE Browser: Styling in few areas in IE browser is not consistent with other browsers
- Reports: Cannot scroll down more than 200 records in some reports in certain circumstances
- A New link in the Admin side panel for "Licence Information" is appearing. This will be removed in a later release as it relates to internal licence details

Release Notes for 2.86

Last Modified on 16/04/2019 5:27 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

See "Feature Detail" for further details & screenshots.

Feature	Summary
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Show/Hide	A new feature that gives the ability to show/hide fields on a form depending on rules defined.
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Feature Enhancements Summary

There were no feature improvements in this release.

Bug fixes

Bug fixes to the following areas:

- IE Browser: In Internet Explorer 11 Analyser have two "X's" in it.
- IE Browser: The saving message and the validation error message appears on the left side on IE
- Edit Forms: Help text icon overlaps the control if the control width is set to 100%.
- Edit Forms: Date picker icons are missing and date is not visible completely
- Edit Forms: Connected lookups not working consistently

Known Issues

- Charts: Refreshing stand-alone chart navigates to report
- Workflow: Triggering a workflow that is not marked "run as owner" for a create/update scenario in a Scheduled Import is not working properly
- Report: Long report name gets overlapped with the name of the column name.

The above will be addressed in a subsequent release

Feature Detail

Show Hide

This feature allows the user to see some additional controls on the form depending on the user Input.

There are circumstances where a user only needs to see a subset of controls on a form. Depending on the data the user inputs into the form, user sees some additional controls.

This allows simpler forms as user only sees the fields they need to see.

Behaviour:

The Show/Hide feature is available on the properties of:

- Field controls
- Containers
- Tab containers

In the 'properties' of the above controls, there is now a "Visibility" tab that describes the condition on whether the control is hidden or shown.

The screenshot shows a dialog box titled "Text Field Properties". It has several input fields: "Field Name" with the value "Text", "Display Name", and "Description". Below these is an "OPTIONS" section with four tabs: "Form Detail", "Object Detail", "Visibility" (which is selected and highlighted), and "Format". Under the "Visibility" tab, there is a "Show When:" label followed by an empty text input field. At the bottom right of the dialog, there are "OK" and "Cancel" buttons, along with some smaller utility icons.

Steps to configure Show/Hide of controls.

1. Add a control to the form that is to be shown when a condition is true.
2. Open the Properties of the control and go to Visibility tab.
3. Enter a calculations that results in a true/false.
4. The control is hidden by default and appears if the condition is true.
 1. Note:
 2. System validates the calculations real-time to ensure it results in a True/False.
5. In the example below, user enters the name and specifies if they are an Australian Citizen.
6. 'Nationality' field is **ONLY shown** If the user answers No to ' Are you an Australian Citizen?'

Information Form

Description

Name :

Are you an Australian ... : [Select] ▼

Nationality :

Text Field Properties

Field Name :

Display Name :

Description :

^ OPTIONS

Form Detail Object Detail **Visibility** Format

Show When:

Form Builder showing conditional calculation

Information Object

Name :

Are you an Australian Citi... ▼

Edit form showing that the field is hidden by default



Information Object

Name :

Are you an Australian Citi...



Nationality :

Edit form showing that the field is visible when the condition is true

Release Notes for 2.85

Last Modified on 16/04/2019 5:25 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

See "Feature Detail" for further details & screenshots.

Feature	Summary
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Self Serve	Allow users to create personal reports, screens and charts that are not visible to other users.
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Feature Enhancements Summary

Feature	Summary
---------	---------

Send Email	UI changes and enhancements to support emails going out of the platform.
------------	--

Bug fixes

Bug fixes to the following areas:

- Multiline Field: Increase character limit to 35,000
- Workflow: Running a workflow that is not marked "run as owner" is causing an exception.
- Workflow: Buttons are not actionable when logged in as User in certain situations.
- Workflow: Nestediiifwith date calculation isonlyevaluatingfirstoption
- Workflow: Change to error message for resource key violation

Known Issues

- Form title wrapping: if a long record name exists, then form title will wrap and may be overlapped by any action buttons on forms.
- Receiving of the emails is currently not working. If you try and create a New Inbox, it will not receive any emails.

The above will be addressed in a subsequent release

Feature Detail

Self Serve

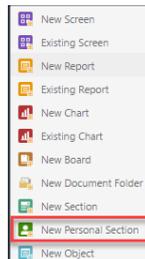
Behaviour:

- Non-admin users are now able to create 'personal' reports screens and charts. This will only be visible to the user that created the report, screen or chart.
- An administrator user must explicitly give access to a user or role to undertake "self-serve actions". This is done by assigning the user to the new 'Self Service' role.
- An administrator must also designate special 'Personal Section' where non-admin users can create personal
- A user in self serve role will only be able to create New Screen, Report or Chart.

Setup:

To provide access for user to create personal reports, screens and charts, as an administrator:

1. On the left hand menu, add a "New Personal Section". This is a special section that allows non-admin users to create personal reports, screens and charts.



2. Then, go to Administration >> User Roles
3. Open Self Server role >> Users Tab and add the user to the Role.

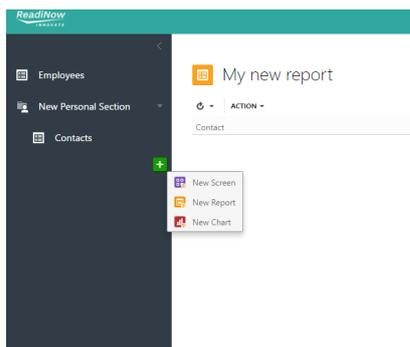


4. Go to Navigation Access tab and give the user Navigation access to the Application and the new personal section

Creating personal reports, screens and charts, as a non-admin user:

1. Log in as the non-admin user and click on Configure button in the top right corner of the page.
2. Navigate to the "New Personal Section"

3. You will get a self servemenu to create newreport, screen or chart.



4. Any Screen, Report or Chart that a user creates is only visible to the current user

Release Notes for 2.84

Last Modified on 16/04/2019 5:31 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

See "Feature Detail" for further details & screenshots.

Feature	Summary
Vertical list view in reports	When a column has been formatted as a comma separated list, new format option to display as a stacked list.

Feature Enhancements Summary

See "Feature Detail" for further details & screenshots.

Feature	Summary
Reports: some columns now behave as hyperlink	Single click on a "name" or "lookup" column of a report to enter the record
Form navigation button restyle (Back, Edit, Save, Close)	"Back" button moved to top right and form navigation buttons restyled
Quick Lookup	Start typing in a lookup field on a form to get a list of possible results
Checkbox selection for relationship control	Ability to use checkboxes for selection when selecting records in a picker for a "relationship",
User password change dialogue	Now prompt user to enter current password before changing password

Bug fixes

Bug fixes to the following areas:

- User Input: default value for date showing 1753
- Workflows: "Save as" workflow saves the new workflow as a version # next increment from the saved

workflow, rather than version 1.

- Form Layout: Relationship Reports in container appear squashed when stacked in certain order
- Excel Import: When importing a list that results in a parent-child relationship, some relationships were dropped
- Inline Edit: "Edit Inline" button not able to be turned off for a report on a screen
- Action Button on Form: Could not click the button on the form if the name field is too long
- Error and notification message made wider when message spans over two lines
- Form Builder: Multi-line Field doesn't respect vertical format setting
- Confirm Delete Dialogue: not reporting other resources that will be deleted during cascade delete
- Other miscellaneous bugs

Feature Detail

Vertical List in Report

In a report, when a column has been formatted as a comma separated list, new format option to display as a stacked list.

In **Report Builder**, open the **Value Formatting** of any relationship column that has been formatted as "Comma Separated List". A new option available to show as "Vertical List" and specify the number of lines to show.

The records will not appear as a vertical list. If there are more records than can be displayed, the last row will show a count of how many more are available.

The screenshot displays the ReadNow Report Builder interface. A 'Format' dialog box is open, titled 'Format Name: List: Qualifications'. The dialog has two tabs: 'Conditional Formatting' and 'Value Formatting', with the latter selected. The 'Value Formatting' tab contains the following settings:

- Alignment: Default
- Show as: Vertical list (highlighted with a red box)
- Lines: 3 (highlighted with a red box)
- Hierarchy: [Select]

At the bottom of the dialog are 'OK' and 'Cancel' buttons. The background shows a report table with columns for Student Name, State, Country, Gender, and Qualifications. The table contains several rows of data, including students like Selma Terrell, Yoshi Joseph, Meredith Alvarez, Wayne Avery, Ezekiel Cooley, Irene Roman, and Sara Nieves, each with their respective state, country, gender, and a list of qualifications.

Student report

🔄 ACTION + NEW EDIT INLINE

Student	State	Country	Gender	List: Qualifications
Yoshi Joseph	SA	Australia	Male	Bachelor of Education in Primary Education Bachelor of Laws Master of Engineering + 1 more
Wayne Avery	SA	New Zealand	Male	Bachelor of Science in Information Technology Graduate Diploma in Media Arts and Production
Ezekiel Cooley	NSW	Australia	Male	Graduate Certificate in Arts Management
Alvin Robinson	SA	Australia	Male	Master of Accounting Information Systems Master of Arts (Research) in Humanities and Social Sciences
Alfonso McClure	VIC	Australia	Male	Master of Arts in Creative Writing
Baker Sparks	SA	Australia	Male	Graduate Certificate in Engineering

Reports: some columns now behave as hyperlink

Any "Name" or "Lookup" column in a report now appear as a hyperlink on mouse hover. This allows:

- A single click to enter a record when clicking on the name field
- A single click to navigate directly to a lookup record
- Hold Ctrl + Click hyperlink to open record in new tab

Staff Report

🔄 ACTION + NEW EDIT INLINE 🔍 Search

StaffID	Staff	Faculty	Job Title	Tenure	Manager
8464	Ina Harmon	Faculty of Commerce	Lecturer of Economics	Yes	Prescott Dawson
4245	<u>Timon Valentine</u>	Faculty of Sciences	Dean of Sciences	Yes	Cooper Griffith
6908	Indigo Huffman	Faculty of Education	Lecturer of Special Education	Yes	Rebekah Erickson
7272	Heidi Shaffer		Administration Manager	Yes	Cooper Griffith
3509	Sasha Jacobs		Lecturer of Agriculture	Yes	Paul Larson
2443	Aladdin Farrell		Dean of Law	Yes	Cooper Griffith
2939	Sophia Grimes		Lecturer of Civil works	Yes	Adam Foster
9470	Quin Morgan		Research Associate (Optics an...	Yes	Adam Foster
6500	Uriel Chen	Faculty of Arts	Lecturer of Mathematics	Yes	Alec Summers
7792	Buckminster Alexander	Faculty of Medicine	Lecturer of Nursing	Yes	Erica Mcknight
1574	Sheila Jenkins		Timetable Officer	Yes	Heidi Shaffer
1461	Ross Macias	Faculty of Law		No	Aladdin Farrell
1324	Erica Mcknight	Faculty of Medicine		Yes	Cooper Griffith
9118	Prescott Dawson	Faculty of Commerce		Yes	Cooper Griffith
5934	Marah Sampson	Faculty of Agriculture	Lecturer of Pastoral Science	No	Paul Larson
2352	Ifeoma Woodard	Faculty of Sciences	Biostatistician/Applied Statisti...	Yes	Timon Valentine

Single click to open Record

Single click to open faculty

Form navigation button restyle (Back, Edit, Save, Close)

For ease of use and in response to customer feedback:

- "Back" button on the form has been moved to the top right
- The Back, Edit, Save and Close buttons have been restyled

← Back Edit

Selma Terrell

PERSONAL DEATILS

StudentID : 1145
 Title : Miss
 Full name : Selma Terrell
 First name : Selma
 Last name : Terrell
 Gender : Female
 DOB : 9/01/1988
 User Account : Selma.Terrell

ADDRESS DETAILS

Address line1 : P.O. Box 994, 8276 Vitae St.
 Address line2 :
 Country : Australia
 State : SA
 Suburb : Beverley
 Postcode : 5009

Save Cancel

Selma Terrell

PERSONAL DEATILS

StudentID : 1145
 Title : ▾
 Full name :
 First name :
 Last name :
 Gender : ▾
 DOB : 
 User Account :  

ADDRESS DETAILS

Address line1 :
 Address line2 :
 Country : ▾
 State : ▾
 Suburb : ▾
 Postcode :

Quick Lookup

On a form, when entering data into a lookup field, new ability to start typing directly in a field, a list of possible matches will be dynamically displayed and can be selected

 Heidi Shaffer

 Save  Cancel

PERSONAL DETAILS

Title :	Mr. ▾
Full name :	Heidi Shaffer
First name :	Heidi
Last name :	Shaffer
Gender :	Male ▾
DOB :	8/05/1968 
Phone number :	(05) 4574 1885

STAFF DETAILS

StaffID :	7272
Job Title :	Administration Manager
Tenure :	<input checked="" type="checkbox"/>
Salary :	\$ 80000
Manager :	ad  

Adam Foster
Aladdin Farrell
Howard Head

Inline Relationship Control: Checkbox for multi-selection

On a form, when linking to existing records in a relationship, the picker dialogue now shows checkboxes next to each record. Records can easily be selected/deselected with a single click

Release Notes for 2.83

Last Modified on 16/04/2019 5:31 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Feature Changes

Feature	Summary
Time Field	Time field is now able to be defaulted to "Now" on creation of a new record
Date/Time Field	Default time picker to be set to 9:00AM
Screen Builder Object List	Object name in screen builder is now clickable to expand or collapse
Form Edit/View mode	Double click on a field value to put the form into edit mode

Bug fixes

Bug fixes to the following areas:

- Import: Unable to Import records into Contacts.
- Import : Password field is not available when attempting an import to user account.
- Edit Forms: Removing a record from a tab report after you delete a record gives an error message as "Entity not found. Id=xxxxxx"
- Screen: Double click on the form value on a Screen doesn't enter into edit mode
- Edit Forms: Saving on edit form throws "sequence contains no elements"
- Survey: Non-Admin user can't create outcomes or see responses
- Other miscellaneous bugs

Known Issues

- Import from excel: Not all relationships are being imported in certain circumstances
- Hero text: Changing the resize to compact makes the hero text disappear from the screen
- Inline Relationship Control: In some circumstances, only able to select a single record instead of multiple

Release Notes for 2.82

Last Modified on 16/04/2019 5:31 pm AEST

ReadiNow reserves the right to update these release notes at any time.

Bug fixes:

Bug fixes to the following areas:

- Chart: Error when using Save As for an area chart
- Mobile: White space appears when there are a fields on a tab
- Forms: Could not enter a value for Date and DateTime field in certain browser configurations
- Workflow: Send email fails with an internal error and a server exception 'Exception occurred on run. Value cannot be null.' in certain configurations
- Other miscellaneous bugs

Known Issues

- Reports: Removing/setting totals on one column removes or sets the total from other column as well
- Import from Excel - to support importing into Survey objects
- Analyser: Choice selector with more than 12 options closes when trying to scroll through the options
- Mobile: Could not add or create related records on a saved record on mobile

Release Notes for 2.81

Last Modified on 16/04/2019 5:33 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

See "New Feature Detail" for further details & screenshots.

Feature	Summary
Changes to Login Behaviour	Changes to a user's login location

Feature Changes

Feature	Summary
Survey	More enhancements to Survey module.

Bug fixes:

Bug fixes to the following areas:

- Form builder : Actions once set on the form could not be removed.
- Survey: Progress bar does not track changes to text correctly.
- Survey: The questions loses the ID on the survey form if we add the order and weight to the questions.
- Navigation pane appears on landing page once entering builder mode
- Form action buttons: issues closing the 'action button dialogue window'
- Other miscellaneous bugs

Known Issues

- Survey Campaign - unable to create survey campaigns via workflow
- Forms: Placing the relationship reports in a container in a certain order can appear squashed.
- Mobile: Issues around creating related records on mobile devices

New Feature Detail

Changes to Login Behaviour

Changes have been made to the login behaviour to take users straight into applications (by passing the landing page) in certain circumstances. A user will either:

- Navigate to the last application they used on that browser
- If it's the first time login from a particular browsers, then the user will navigate directly into the first application available to them (ignoring "Home" App and "Admin" app).

Known Issue: some users have reported inconsistent login location behaviour, we are currently working on a resolution and in addition; working on enhancing this feature to allow admins to define the default login location per user.

Release Notes for 2.80

Last Modified on 16/04/2019 5:32 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

See "New Feature Detail" for further details & screenshots.

Feature	Summary
Mass SMS Notifications	Ability to send out mass SMS notifications from within Readinow
Security Summary	A new tab that provides a summary of all objects a role has access to

Feature Changes

Feature	Summary
Survey	More changes to survey forms & reports for a better user experience
Icons in left navigation	When left navigation background colour is made light, icon background becomes grey
Report Builder drag & drop	When dragging a new field to add a column to a report, you can now drop anywhere on the report (not just header area)

Bug fixes:

Bug fixes to the following areas:

- Scheduled Import: Fixed display of the the incorrect error message when the import was not working due to incorrect host name in FTP client
- Scheduled Import : Fixed scheduled import screen that allowed a user to save a blank record
- Mobile: Fixed icon on action menu for report and tab report
- Survey: Fixed issues around adding new and removing questions from the survey.
- Other miscellaneous bugs

Known Issues

- Survey: Unable to launch a target campaign.

- Forms: Placing the relationship reports in a container in a certain order can appear squashed.
- Mobile: Issues around creating related records on mobile devices
- Form action buttons: issues closing the 'action button dialogue window'

Release Notes for 2.79

Last Modified on 16/04/2019 5:33 pm AEST

ReadiNow reserves the right to update these release notes at any time.

This release mainly includes bug fixes across the product. We are currently working on some exciting new features that are due in release 2.80.

Feature Changes

Feature	Summary
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Survey	Changes to standard survey forms & reports for a better user experience
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Bug fixes:

Bug fixes to the following areas:

- Form Builder: Fixing properties dialogue for few datatypes.
- Import from excel: Improvements to "Import from excel" to show the name of the spreadsheet in "Import runs" report and config file.
- Security: Fix quick search on user roles.
- Other miscellaneous bug fixes

Known Issues

- Survey: Unable to launch a target campaign.
- Forms: Placing the relationship reports in container appear squashed.
- Mobile: Could not add or create related instance on a saved record on mobile

Release Notes for 2.78

Last Modified on 16/04/2019 5:34 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

See "New Feature Detail" for further details & screenshots.

Feature	Summary
Hiding internal system objects.	<ul style="list-style-type: none">• This is an internal architectural change to allow internal system objects to be hidden from the end user view.• Picker reports will only show objects that are used by the user within the application.

Feature Changes

Feature	Summary
Changes to Save behaviour on forms	<ul style="list-style-type: none">• In the case of related record on a form, a user now has to first save the parent record before they can create a new child record.
Workflow updating data on form	<ul style="list-style-type: none">• Workflows that are triggered from an action button on a form now refresh the report on form so that changes are reflected immediately
Protected column to Application Library	<ul style="list-style-type: none">• Add Protected column to Application Library page in administration, which shows whether an application is protected or not. If an application is protected, a user cannot delete objects or fields that are installed 'out of the box'.

Bug fixes:

Bug fixes to the following areas:

- Boards: Minor styling changes and support for boards in Edge and Fire Fox browsers
- Form Builder: Formatting and layout fixes to form builder.
- Mobile: Styling fixes and ability to save the form when mandatory where not filled.

- Other miscellaneous bugs

Known Issues

- Inline Editing : When many-many relationship is made to display as inline, then editing the same column on the report (in inline edit mode) makes the corresponding rows to appear with the same value
- Workflows : When a workflow in Paused state is progressed by "User Action" , the changes are not immediately reflected on the report when the report is placed on the screen
- Workflow : Creating a new related instance on a form appears only after a manual refresh of the tab report when triggering on a save.

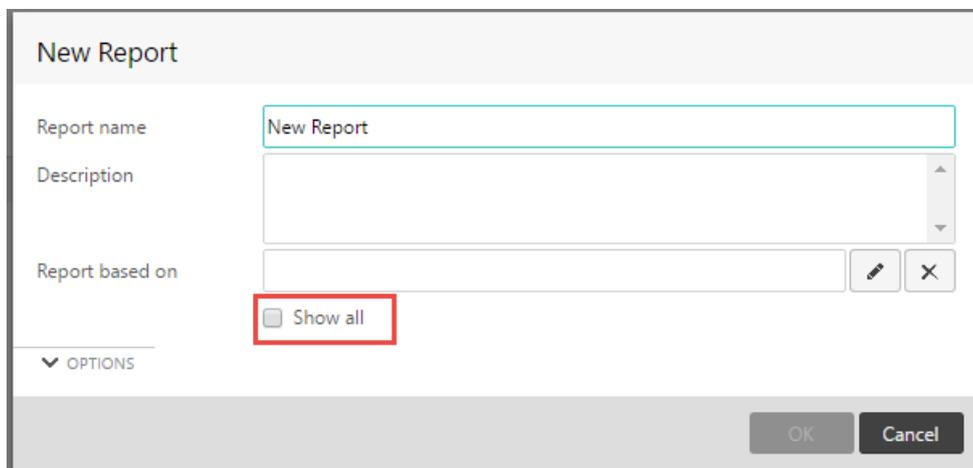
New Feature Detail

Hiding internal system objects

This is an internal architectural change so that the internal system objects are hidden from the end user view.

Picker reports will now only show objects' that are used within the application plus any user-created objects. However if required, the advance system types can be accessed by clicking on 'Show All' options when creating reports and charts.

To access the advance option while creating New Report or Chart click on the Show all check box.



The screenshot shows a 'New Report' dialog box with the following fields and controls:

- Report name:** A text input field containing 'New Report'.
- Description:** A text area with a vertical scrollbar.
- Report based on:** A dropdown menu with a pencil icon and an 'X' icon.
- Show all:** A checkbox labeled 'Show all' which is highlighted with a red rectangle.
- OPTIONS:** A section header with a downward arrow.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.

Release Notes for 2.77

Last Modified on 16/04/2019 5:39 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

See "New Feature Detail" for further details & screenshots.

Feature	Summary
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Help Text Ability to add "help text" on a form

Feature Changes

Feature	Summary
Background colour of form controls	<ul style="list-style-type: none">Setting the background colour of a container now applies to the container headingSetting the background colour of a field control on a form now applies to the background of that entire field
Form styling change	<ul style="list-style-type: none">Styling changes on forms to allow more characters to be visible in form labels

Bug fixes:

Bug fixes to the following areas:

- Inline editing bugs
- Reports on tabs on forms go missing after clicking through different tabs
- Analyser: When selecting a date in the analyser, the window immediately closes leaving the user unable to select a date
- Other miscellaneous bugs

Known Issues:

Notification Styling

Alerts that appear at the top of the page can show inconsistent styling if a large number of words are being displayed (e.g. save success message). This issue will be fixed in a subsequent release.

New Feature Detail

Help Text

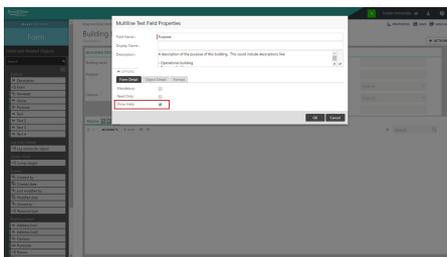
New feature in the product to enable the administrator to provide "Help Text" on the form to guide the end users in completing the form. The Administrator can specify any text in the description of a field, container or form properties and then an  icon is displayed on the form. When the user selects the  icon, the help text is displayed in a pop up.

Help text can be displayed for:

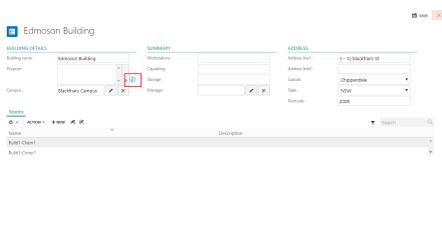
Element on form	Icon Displayed
Field Control	Next to field control
Container	Next to container heading
Tab Container	Next to tab heading
Relationship	Next to relationship heading (note: relationship heading must be on by setting a 'display name' in the relationship properties)
Entire Form	Next to the form heading

Screenshots:

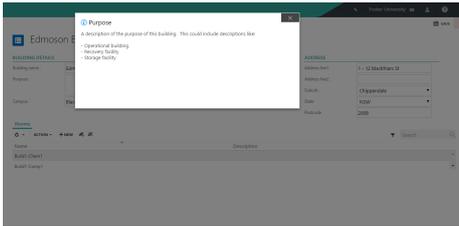
In the field, container or form properties, add a 'Description' and select "Show Help"



An  icon appears next to the relevant form element.



When a user selects the help icon, the help text appears in a popup.



Known Issues for help text

- When a field control is not set to "Autofill" then the  icon still appears to the far right of a control leaving a whitespace
- The  icon overlaps some controls in certain circumstances
- Sometimes hard to tap on  on mobile
- Some minor styling issues with  icon.

The above will be fixed in subsequent releases.

Release Notes for 2.76

Last Modified on 16/04/2019 6:05 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

See "New Feature Detail" for further details & screenshots.

Feature	Summary
Workflow "Save as"	Ability to "save as" a workflow to create a copy
Inline Editing - Keyboard control support (PreRelease Feature)	Ability to use up keyboard up/down arrows & tab to scroll through report when inline editing

Feature Changes

Feature	Summary
Bigger workflow button on form	Workflow button on form now allows up to 30 characters
Restyle of User Input form	Changed styling on the form generated for the "User Input" activity

Bug fixes:

Bug fixes to the following areas:

- Inline editing bugs
- Form Builder: Cannot save an object after opening properties window
- Other miscellaneous bugs
- Refreshing client-side code after upgrade (see known issues below)

Known Issues:

 Login: Web page cached after upgrade

After a product update, some users were running older cached web page code instead of the latest code which was causing unpredictable issues throughout the product. We have made changes to automatically detect 'out of sync' client/server code on login & refresh the page to rectify this problem. If the problem persists, please contact your ReadiNow representative.

⚠ Inconsistent Styling in Reports Toolbar

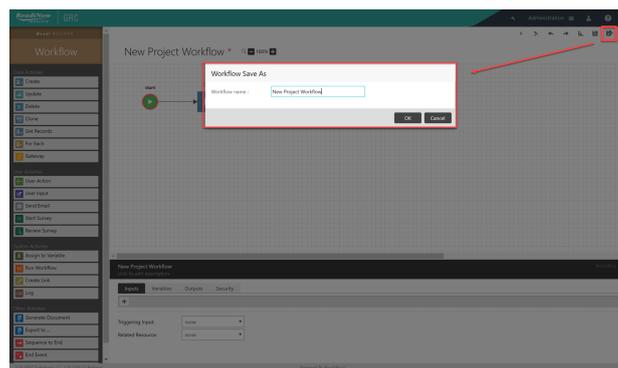
Some users may experience inconsistent styling in the reports toolbar depending on individuals browser configuration (see example of large arrows in screenshot below). We are currently working on this issue.



New Feature Detail

Workflow - Save as

In the workflow editor, new option to "Save As" has now been implemented. When clicked, creates a copy of the workflow. See below screenshot.



Inline Editing - keyboard support

Added support for keyboard controls whilst doing inline editing.

- After clicking 'Edit Inline' click on a row to set focus on the first cell
 - Up/Down arrows will change rows being edited
 - Tab will move across cells being edited

Screenshot:

Buildings

⌵ ACTIONS + NEW ✓ SAVE CHANGES ✗ DISCARD CHANGES Search

Building	State	Suburb	Manager	Maintenance Cost
Chau Wing house	NSW	Haymarket	David Franklin	\$256,540.00
Richard Watts	NSW	Ultimo	Gerry Luther	\$540,560.00
Mary Anne Building	NSW	Haymarket	Mark McDonald	\$240,554.00
Building 11	NSW	Ultimo	Mary Smith	\$ 545642
Ian Thorpe	NSW	Ultimo	David Franklin	\$344,788.00
Peter Johnson Building	NSW	Ultimo	Gerry Luther	\$32,369.00
Building 1	NSW	Chippendale	Mary Smith	\$45,454.00
Building 2	NSW	Chippendale	David Franklin	\$456,060.00
Building 5 Block D	NSW	Haymarket	Mary Smith	\$71,033.00

Release Notes for 2.75

Last Modified on 16/04/2019 4:03 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

See "New Feature Detail" for further details & screenshots.

Feature	Summary
Inline Editing for number, decimal currency & lookup fields (Pre-Release only to 'pilot' customers)	Ability to edit a record in a report; this now includes number, currency, decimal & lookup fields.

Bug fixes:

Bug fixes to the following areas:

- Charts: Issues relating date formats on charts
- Inline editing: on conditionally formatted columns
- Inline editing: showing validation errors incorrectly
- Inline editing: other misc inline editing bugs
- Other miscellaneous bugs

Known Issues:

General: Web page cached after upgrade

After a product update, some users are running older cached web page code instead of the latest code. This can cause unpredictable issues throughout the product. If you experience product issues, please check the page version, and if necessary refresh the page by clicking "reload" or pressing F5. The page version is located in the bottom left corner after logged in. Two version numbers appear, and both must start with 2.75.

We are progressively taking steps to resolve this issue, thank you for your patience. Changes have been made to resolve this issue and should take effect in this release or next 2.76 release (depending on the timing of individuals browser caches refresh).

Form Builder: Cannot save new object after opening 'properties' of a system field

When creating a new object, if you attempt to add any 'system' field to the form (e.g. Name, Description, Created Date, Modified date etc) and then open the 'properties' of that field (prior to saving), you will be unable to save the form. In the interim, please save the object prior to opening properties of system fields on unsaved objects. Note, this only occurs on the creation of a new object. This issue will be fixed in a subsequent release.

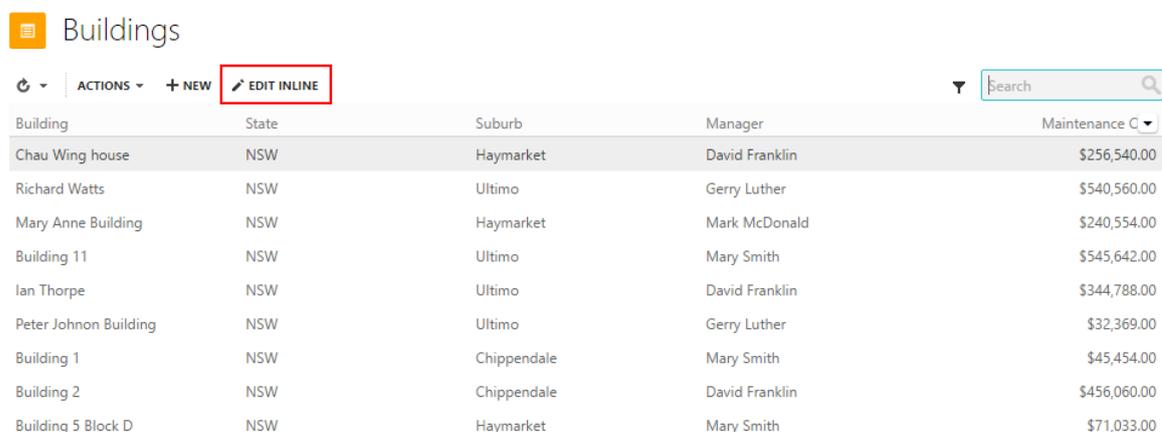
New Feature Detail

Inline Editing (Number, currency, decimal & lookup fields)

- This feature is in 'Pre-release'. Please contact your ReadiNow representative if you would like access to this feature.
- On any report, click on "Edit Inline" button above the report. This will then enable inline editing on records of that report
- Click to edit a row
- Once all desired changes are made, click 'Save Changes' to save all changes in one batch
- Note: a field is only inline editable if:
 - It is a text, choice, Yes/No, currency, decimal, number or lookup field.
 - You have security record access to modify the selected record
 - The field is on the form relating to that report.
 - The field is not set to 'read only' on the form relating to that report

Known Issues

- When editing a lookup (via inline edit on report) the picker report occasionally shows misaligned values



The screenshot displays the 'Buildings' report interface. At the top, there is a title 'Buildings' and a search bar. Below the title, there are action buttons: 'ACTIONS', '+ NEW', and 'EDIT INLINE' (which is highlighted with a red box). The main content is a table with the following columns: Building, State, Suburb, Manager, and Maintenance C. The table contains ten rows of data.

Building	State	Suburb	Manager	Maintenance C
Chau Wing house	NSW	Haymarket	David Franklin	\$256,540.00
Richard Watts	NSW	Ultimo	Gerry Luther	\$540,560.00
Mary Anne Building	NSW	Haymarket	Mark McDonald	\$240,554.00
Building 11	NSW	Ultimo	Mary Smith	\$545,642.00
Ian Thorpe	NSW	Ultimo	David Franklin	\$344,788.00
Peter Johnon Building	NSW	Ultimo	Gerry Luther	\$32,369.00
Building 1	NSW	Chippendale	Mary Smith	\$45,454.00
Building 2	NSW	Chippendale	David Franklin	\$456,060.00
Building 5 Block D	NSW	Haymarket	Mary Smith	\$71,033.00

Release Notes for 2.74

Last Modified on 16/04/2019 5:37 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features Summary

See "New Feature Detail" for further details & screenshots.

Feature	Summary
Navigation icon colouring	Icons are now white and appear coloured when selected or hovered over.
Theme change	To compliment new 'navigation icon colouring' the default theme has been changed to a sleek dark grey navigation menu.
Improved "Security Role" user interface	Ability to manage record and navigation access within the role form.
Inline Editing for Text, Yes/No and Choice fields in reports (Pre-Release only to 'pilot' customers)	Ability to edit a record in a report; this includes Text, Yes/No and Choice fields without having to navigate to the form.

Features Changes

Feature	Summary
Form save behaviour changes	To improve usability, when creating a new record from a report, after saving the record, you will now remain on the form (rather than navigating back to the report or screen) Note: When creating a new record from a relationship on a form, after saving the record, will still return back to the parent form.
Record delete dialogue changes	When deleting a record from anywhere in the system, the confirmation dialogue showed 'related resources', this has now been removed.

Bug fixes:

Bug fixes to the following areas:

- Misconfigured reports in Admin
- Incorrect default behaviour of certain controls on forms
- Alerts appearing unintentionally on import from excel wizard
- Mobile quick search on hierarchy views
- Layout of some controls on screens overlapping in certain circumstances.

Known Issues:

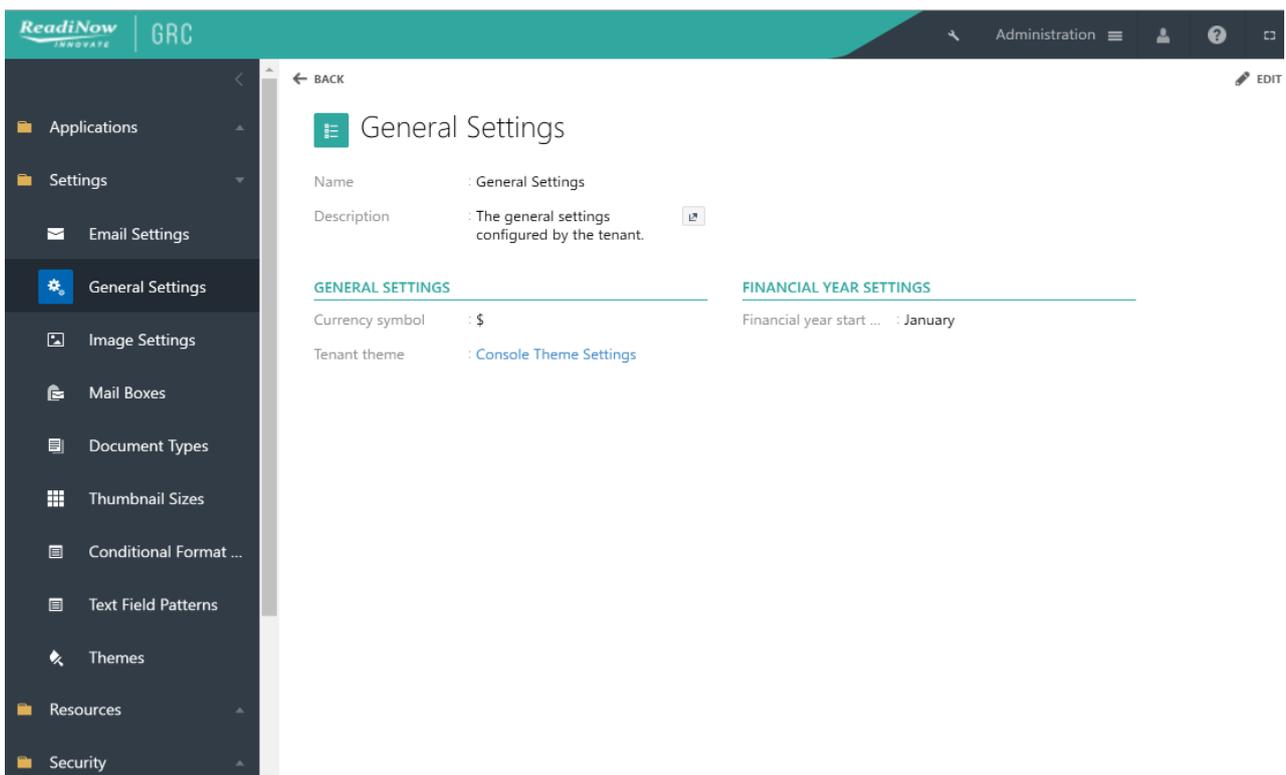
Web page cached after upgrade

After a product update, some users are running older cached web page code instead of the latest code. This can cause unpredictable issues throughout the product. If you experience product issues, please check the page version, and if necessary refresh the page by clicking reload or pressing F5. The page version is located in the bottom left corner after logged in. Two version numbers appear, and both must start with 2.74. We are working to resolve this issue, thank you for your patience.

New Feature Detail

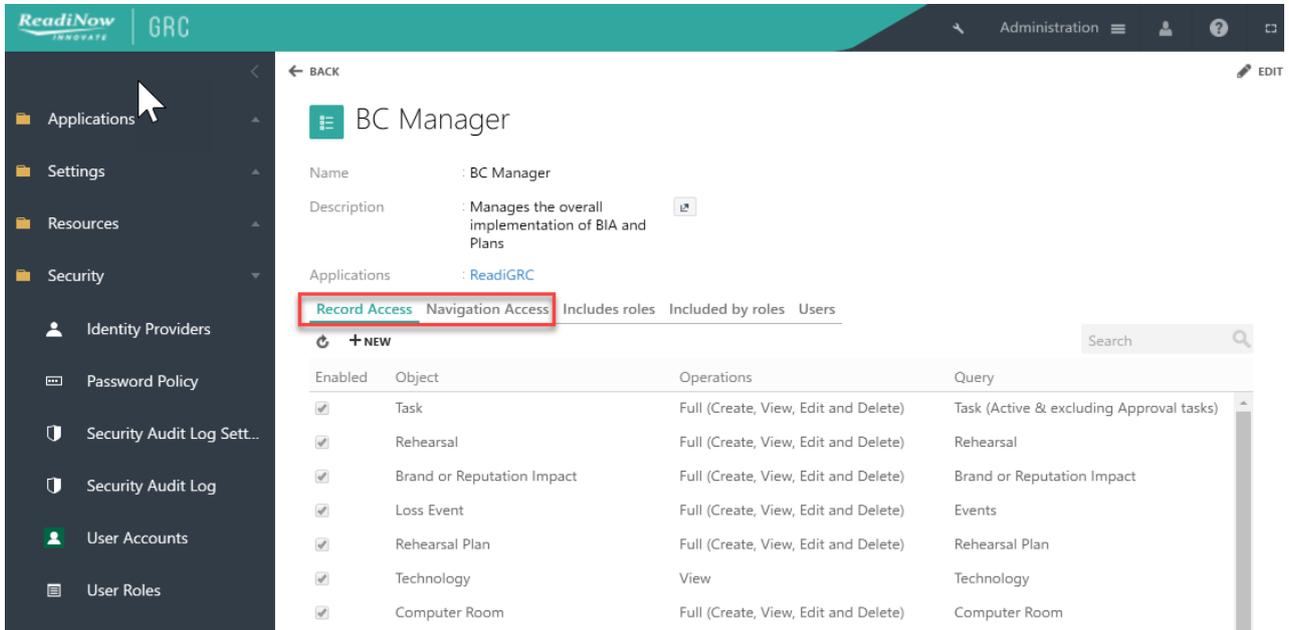
Navigation icon colouring & revised theme

- As an improved modern look and feel, the default colour for the left navigation has been changed to a sleek dark grey navigation menu.
- This will not affect your tenant if you have a 'custom' colour assigned to the left navigation
- Default Icons in the left menu now appear 'white' and will be coloured if you 'hover over' or select the element.



Improved Security Role User Interface

- To improve the usability of creating security roles, the security role form has been enhanced.
- Go to Administration > Security > User Roles > Open a user role. You will now be able to set both "Record Access" and "Navigation Access" from the same security role form



Inline Editing (Text, Choice and Yes/No Field)

- This feature is in 'Pre-release'. Please contact your ReadinessNow representative if you would like access to this feature.
- On any report, click on "Edit" above the report. This will then enable inline editing on records of that report
- Click to edit any Text, Choice and Yes/No field.
- Once all desired changes are made, click 'Save Changes' to save all changes in one batch
- Note: a field is only inline editable if:
 - It is a choice text, choice or Yes/No field.
 - You have security record access to modify the selected record
 - The field is on the form relating to that report.
 - The field is not set to 'read only' on the form relating to that report

Known Issues

- Inline editing may not work if the report column utilises "conditional formatting" in some circumstances. This issue will be addressed in the next release.
- Yes/No field may not be inline editable in certain combination of columns. This issue will be addressed in the next release.

ReadiNow INNOVATE | GRC Organisation and Assets

Products & Services

ACTIONS + NEW EDIT

Product or Service	Description	Service Status	Active	Owner
Accommodation	Hotels and Accomodatio...	Available	No	Flora Mineo
Bloomberg Terminal	Direct access the the blo...	Available	No	Bryan Addams
Building Supplies	Hardware and Building s...	Impacted	Yes	Bryce Mcginty
Business Cards	Business Cards	Not Available	No	Dagny Durrett
Chantwest Financial Rev...	Financial Markets Inform...	Impacted	No	Debera Cranston
Computer Peripherals	Computer Accessories	Available	No	
Cutlery	Kitchen Utensils	Available	No	
Desktop computer	Desktop computer and p...	Available	No	
Desktop computer	Desktop computer and p...	Available	No	

ReadiNow INNOVATE | GRC Organisation and Assets

Products & Services

ACTIONS + NEW SAVE CHANGES DISCARD CHANGES

Product or Service	Description	Service Status	Active	Owner
Accommodation	Hotels and Accomodatio...	Available	No	Flora Mineo
Bloomberg Terminal	Direct access the the blo...	Impacted	No	Bryan Addams
Building Supplies	Hardware and Building s...	Impacted	Yes	Bryce Mcginty
Business Cards	Business Cards	Impacted	No	Dagny Durrett
Chantwest Financial Rev...	Financial Markets Inform...	Available	No	Debera Cranston
Computer Peripherals	Computer Accessories	Available	No	
Cutlery	Kitchen Utensils	Impacted	No	
Desktop computer	Desktop computer and p...	Not Available	No	
Desktop computer	Desktop computer and p...	Not Commissioned	No	
Desktop computer	Desktop computer and p...	Available	No	

Release Notes for 2.73

Last Modified on 16/04/2019 5:38 pm AEST

ReadiNow reserves the right to update these release notes at any time.

New Features

Feature	Details
Workflow: Run in foreground	<p>Ability for a workflow that is triggered on a 'create or update' to run prior the save completing</p> <p>This means that a workflow that updates data on a form (from 'create or update' trigger), will complete prior to refreshing the form, allowing the user to see the updated data.</p> <p>This is configured via a new checkbox called "Run in foreground" on the 'create or update' trigger form</p> <p>See attachment 1 below.</p>

Features Changes

Feature	Details
"Submit Bug/Feature Request" link removed	<p>Link to "submit bug/feature request" has been removed. Will be re-introduced and accessible to 'nominated technical persons' within each customer tenant at a later date.</p> <p>Bugs and issues can be raised through your ReadNow contact in the interim</p>

Known Issues

Issue	Workaround	Fix Due
An error is returned when attempting to access the "Icons" and "Photos" reports in the Documents application.	If required, create new reports based on 'photo' or 'icons' object, by clicking 'show all' option when creating the report.	In next release

Issue	Workaround	Fix Due
Potential UI display issues if a web browser is left open over the upgrade maintenance window.	Either log out & close browser before maintenance window, or clear browser cache after maintenance window.	In next release

Bug fixes to the following areas:

- Various fixes to self-serve analytics feature
- Misconfigured reports in Administration area
- Layout of forms which caused overlapping containers
- Calculations using the 'let' function
- Conditional formatting on calculated columns

Attachments

New checkbox on trigger for workflow to "Run in Foreground"

Accessed via: Administration>Workflows>Trigger



Trigger

Name : Update Fields

Description :

Application :

TRIGGER DETAILS

Enabled :

Triggered on : Create Or Update

Object to trigger on : Person

Workflow to run : Workflow 1

Run in foreground :

End of Support for Legacy Calculation Engine

Last Modified on 28/06/2024 1:25 pm AEST

Overview of the change

Over the last 2 years, ReadiNow has completely reimplemented the engine that runs all calculations and expressions in the platform. This new calculation is more performant and provides a foundation for future feature enhancements to calculations in the ReadiNow Platform.

This new implementation has been extensively tested to ensure it is backwards compatible with the legacy engine, and most tenants already use this new engine. While ReadiNow has continued to support the legacy engine all development work on this has stopped and support for the legacy engine will soon end.

End of Support date

The ReadiNow Platform will cease support for the legacy calculation engine on 13th June 2024 (release 2.190).

On this date, all tenants still using the legacy calculation engine will be switched over to the new calculation engine. ReadiNow has already contacted any customers still using the legacy calculation engine directly. Note you may wish for this switchover to occur earlier, if so please contact ReadiNow Support.

If you have not already been contacted, then your tenant(s) are already using the new calculation engine and there is nothing you need to do.

What do I need to do?

ReadiNow has conducted extensive testing on the new calculation engine ensuring backwards compatibility for each customer configuration using tenant metadata. Therefore, ReadiNow has made best endeavours to verify there is no impact to customer configuration when the switchover occurs.

However, you may wish to test calculations and expression on the new engine before being switched over to the new engine permanently. The ReadiNow team has been assisting customers with this testing.

This testing should be completed before the end-of-support date so that you can switch over to the new engine and continue to receive support from ReadiNow for the expressions and calculations used in your tenant.

End of Support for TLS versions 1.0 and 1.1

Last Modified on 16/04/2024 10:37 am AEST

Overview of the change

Over the past several years, internet standards and regulatory bodies have deprecated or disallowed TLS versions 1.0 and 1.1 for a variety of security issues. In line with this move, REDINow will be ending support for TLS version 1.0 and 1.1 in the REDINow Platform. Instead, REDINow will be supporting TLS version 1.2 which is much more secure than the older versions.

End of Support date

It will no longer be possible to connect to the REDINow platform using TLS 1.0 or TLS 1.1 after 13 June 2024.

What do I need to do?

No action is required if you use the REDINow Platform in the browser. All modern browsers support TLS version 1.2 and will automatically use this for all applications that support TLS version 1.2.

Customers who are using Record APIs to connect to a third party system need to ensure that their client application supports TLS 1.2.

Removal of Calendar Feature in Classic

Last Modified on 05/11/2024 4:34 pm AEDT

Overview of the change

The Calendar feature in the ReadNow Classic UI is not widely used and currently offers limited flexibility. ReadNow has made the decision to withdraw the current calendar feature. This will involve the removal of functionalities related to the Calendar, including the creation of new calendar page items, the selection of existing items, and the viewing of calendar navigation items.

However, we are excited to announce that a new calendar control with enhanced features will be introduced in Nova in the future. Importantly, your data will remain unaffected and will still be accessible through an alternative report view. Please refer to this article for detailed guidance on creating the alternative view: [Alternative Report View: Replacing the Withdrawn Classic Calendar Feature](#)

ReadNow has not taken this decision lightly, however, this change will allow us to focus on delivering exciting new features and improvements across the platform.

Who is affected?

Clients using the Calendar feature in Classic.

What do I need to do?

For clients not using the Calendar feature:

No action is required. The calendar feature will no longer be available in your tenant after October 3, 2024 (Release 2.194).

For clients who are using the Calendar feature:

The calendar feature will no longer be available in your tenant after January 9, 2025 (Release 2.197). Rest assured that your data will remain intact and can be accessed through an alternative report view.

Next steps:

- Remove any bookmarks to calendar views, as they will no longer be functional.
- Create an alternative report view that provides the same information. See [here](#) for guidance.

A member of our professional services team will reach out to you before December 2024 to assist with transitioning your existing calendars to the alternative report view, if needed.

Technical Architecture Overview

Last Modified on 19/01/2022 10:43 am AEDT

The Readiness platform is a web-based service that empowers customers to solve their own business problems by creating or customising their own web application without the need for computer programming or other technical knowledge. The Readiness platform also relieves the burden of important, but distracting, activities such as backup, security, scalability, and so on by providing these services within the platform itself.

Applications

Applications can be built by customers themselves, or they can be chosen from a suite of pre-written applications and then customised. They can be as varied as imagination permits, from customer relationship management, to business continuity management, to expense tracking and so on.

Applications consist of various pieces that logically make up a software experience, such as dashboards, data entry forms, reports, charts and other visualisations, as well as interactivity such as running workflows, triggering business processes, importing and exporting data, template document generation, email notifications and so on.

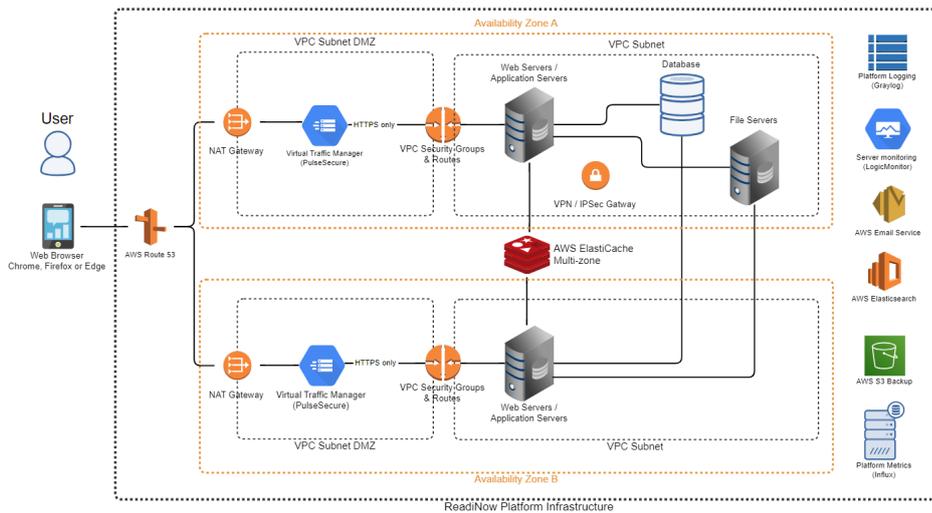
Construction

The design of the Readiness platform is considered at the following levels:

1. The physical infrastructure and the hosted software processes
2. The functional software services
3. Multi-tenancy and application hosting
4. The logical structure of the entity-relationship database
5. Client-side code

Physical infrastructure

The physical infrastructure is arranged in a typical N-tier architecture. Web requests are received by a virtual traffic manager that routes these requests to a pool of front-end web servers. A SQL database server houses record data and a File server houses document data. A Redis service is used for caching and as the backplane communication channel between the web servers. Additionally, the AWS Elasticsearch service is used to index record and document data for searching.



Functional software services

The majority of the platform software resides on the front-end web servers. The platform software contains number of modules to support various internal and customer facing features. In many cases modules are interconnected with each other and depend on each other.

Multi-tenancy and application hosting

The SQL database hosts multiple tenants (clients). Each can have different versions of different applications installed. Separate from the tenants, an application library hosts every available version of every available application. Customer data is stored within each tenant. Each tenant is isolated from every other tenant. For discussion of how co-hosted customers are isolated refer to the “ReadiNow Tenant Isolation Model” whitepaper.

A single set of database tables holds all entity-relationship data for all tenants, with every record containing a tenant ID.

Entity-relationship database

At the heart of the ReadiNow platform is a purpose-built entity-relationship database. All data is modelled as entities. For example, employees, projects, clients, contracts, and risks, are all entities. Each entity can have a group of flat field data attached to it, such as names, dates, amounts.

Any entity can be related to any other entity. For example, employees can be related to projects, which can be related to clients and contracts. ReadiNow customers' can configure their own new types of relationships between distinct applications to build an interconnected web of data.

These relationships can then be traversed when presenting reports, running workflows, and by other application features.

Additionally, all application components are also described in the entity-relationship database. For example, a report may have columns and filters and formatting rules. These are all described as entities, and a report is connected to its columns, its filters, data source, and so on with relationships. Moreover, the schema (or metadata) about the application is also described using entities and relationships. The types of entities that are possible; the

fields that they may possess; the relationship types that are defined; rules for validating input – these are all described using entities and relationships. This unique structure means that all modules written to power the platform equally enrich the customer’s applications, and vice versa.

Finally, all customer data is represented as entities and relationships, as described above.

Client-side code

The above systems run on the ReadNow platform servers. Additionally, a body of code is sent to and runs on the client's web browser. This code provides the user interface for the dynamically generated applications. For application developers, this code supports application building.

The client is structured as a *single page application (SPA)*, whereby all code is loaded up front, and then communication only goes back to the servers to fetch or modify data.

Key Feature Areas

The following is a list of the more significant customer-facing feature areas.

Console	A web-based SPA (single-paged application) that the user logs into to use the platform. This includes the ability to access multiple platform applications; as well as a variety of navigation services.
Reports	Creating and running tabular reports of data. This includes basic and advanced searching, following relationships, aggregates, roll-up groupings, conditional formatting, exporting, sorting, paging, and stylistic configurations.
Forms	Dynamically constructed forms for viewing and editing individual records. Supports configurable layout, various control types, embedded reports of related data, and data validation.
Charts	Configurable charts and other visualisations based on report data. Features include various chart types; automatic data pivoting; drill-down.
Screens	Composed dashboards based on multiple reports, charts, and forms, which can be linked together.
Workflows	Designable workflows that perform sequences of actions. These can either process data directly, or involve user tasks, that include the user in the workflow for applications such as approvals. Workflows can be triggered on data change, schedules, or directly invoked.

Document Templates	Generation of Word documents using a 'mail merge' style template. Embedded macros are based on an extension of the expression engine, allowing for rich calculations that support relationships, etc.
Actions	A configurable mechanism for determining what actions, workflows and document templates, etc, may be performed in various contexts, such as screens and reports.
Administration	A tenant administration area for managing various aspects of the product, including: access control rules, theme settings, email notification settings, to name a few.
Application Library	A way for tenants to select platform applications to be deployed into their tenancy, upgraded, removed. Similarly for application builders to publish their applications.
Builders	Builder interfaces are provided for each of the key component areas: reports, screens, forms, schema, charts, navigation, and workflows. These allow application authors or tenant administrators to customise applications to meet their needs.
Access Control	A configurable security mechanism allows custom rules that can dynamically grant access to resources.
Import	Mechanism for importing data via Excel. Supports both FTPS and SFTP.
Export	Mechanism for exporting data. Supports Excel, Word and CSV formats.
Data Connectors	Web-based APIs can be built directly into tenant applications.
Scheduling	Separate service that triggers workflows at configurable intervals.
Calculation engine	Parses and processes user-entered calculation scripts. Supports reports, forms, workflows, and document templates.
Analytics engine	The analytics engine is a flexible charting and visualisation system that is capable of intuitively leveraging and pivoting the interconnected data gathered from the entity model and reporting engine.

Tenant Isolation Model

Last Modified on 10/05/2022 10:26 am AEST

Overview

The ReadNow platform is designed to support multiple tenants (clients) concurrently on the same platform. The design ensures that it is impossible for any information of one tenant to be accessible in any way by users of another tenant. This requirement has been a key factor in the design, architecture, and implementation of the ReadNow platform since its inception.

Every tenant database record includes a tenant identifier. The design of the ReadNow platform means that only a small number of code-paths can reach the database. Any calls to the database are made such that the query is always constrained to the tenant of the current authenticated user. In a similar manner, various server caches used by the ReadNow platform isolate data by tenant, such that cached data is partitioned by tenant, and source code can only access cache data for the tenant of the current user. Binary data is associated with tenants via cryptographically secure hashes.

All requests to the ReadNow platform to read or modify data include a security token for the current user. In this way, every request is necessarily associated with a user and tenant. In conjunction, this means that it is not possible for any authenticated user to interact with any database information for a tenant other than their own.

This design ensures that the following are achieved through a robust architecture design: 1. Isolation of tenant data between tenants, accessible only to users of that tenant; 2. all data for a tenant can be identified; 3. where required, all data for a tenant can be removed.

Detail

Database structure

The ReadNow platform contains a relatively small number of database tables for holding customer data. These include a table of Entities (records), Relationships, and field data tables. Each of these contain a TenantID column so that each piece of data is associated with a tenant.

For example, the Relationship table contains columns:

TenantId Rel type ID From ID To ID Other column(s)

Database access

Many of the database queries performed by the ReadNow platform are dynamically generated to match the particular data or reporting requirements of each customer and application.

There are two engines for generating dynamic SQL queries: a report query generation engine for generating tabular reports; a graph-based query generation engine for loading more general entity relationship data. The latter is used for loading much of the user data and application metadata data for the platform. In both cases, the query generation engines explicitly enforce a tenant filter on each table join such that it cannot be circumvented by

the dynamic queries. (Further, no portion of the dynamic query is ever derived directly from unfiltered string data, to prevent any possibility of SQL injection attacks).

The ReadNow platform software also contains a relatively small number of other static queries that serve various parts of the product. These also explicitly filter the tenant. Tenant filtering is always done in addition to any other filtering clauses that may be present in the query.

In this way, the platform architecture ensures that database accesses are filtered to the tenant.

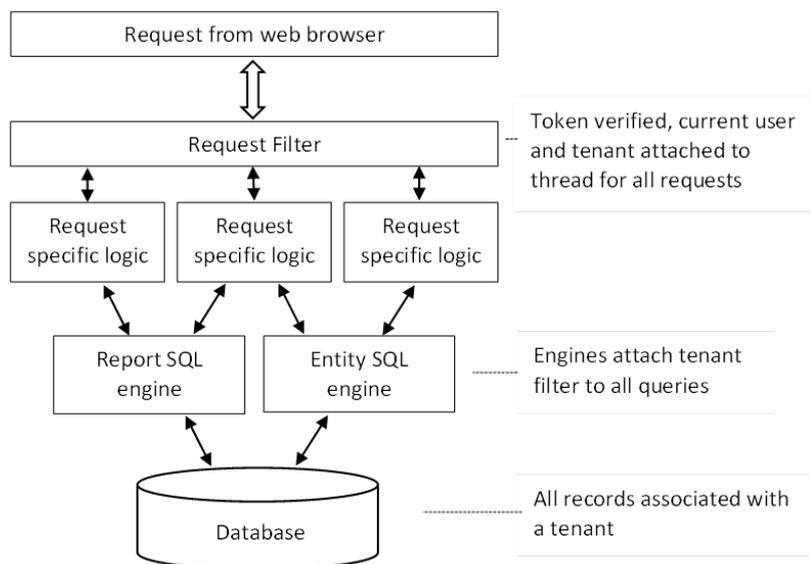
Identifying the Current Tenant

When a user logs into the ReadNow platform, an authentication token is issued in the form of a per-session cookie. This token is then returned to the server as part of every web request to retrieve or modify data.

An ASP web filter is used to ensure that every request is intercepted at the server to ensure that the request contains a valid authentication token. This allows every request to be associated with a user and a tenant. This information is stored on the current executing thread, so that all code paths have reliable direct access to the current user ID and tenant ID. This tenant ID is what is applied in the database query filters described in the previous section. In this way, only authorised users can make requests to read or update data; and the architecture scopes all queries to only apply to data in their tenant.

Pipeline

As depicted, platform logic cannot reach the database without queries being constrained to the tenant for the current user.



Storage of binary data

Binary data such as application icons, documents, and generated report templates, are stored separately to the main database. Data deduplication is implemented by taking a cryptographically secure (SHA256) hash of the binary data and indexing data by the hash. This means that for all intents and purposes the hash securely uniquely

identifies the document. The hash is then stored in the database, along with the tenant ID and filtered in the same manner as other database data.

In this way, each binary is securely protected by tenant filtering via the hash. However, necessarily to achieve data de-duplication, one binary may be associated with multiple tenants.

It is therefore possible to identify all binaries associated with a tenant; and to remove all binaries uniquely owned by a tenant.

Cache Tenant Isolation

The ReadNow platform server makes use of a number of caches – both in memory, and in separate processes/servers. A shared code-path is used by various systems for establishing and accessing caches. This code path includes a tenant-isolation layer that ensures that cached data is associated with a particular layer. This is typically achieved either by isolating data into sub caches with one sub-cache per tenant; or by augmenting the cache key to include the tenant. By design this is done by the common cache code used by all caches, rather than particular specific caches to maximise protection. Per tenant cache isolation also allows for caches to be refreshed on a per-tenant basis.

As with the query filtering, cache accesses use the tenant ID for the current thread. In this way a user requesting to read or modify data can only reach cache entries for their tenant.

Platform Security

Last Modified on 01/03/2024 3:45 pm AEDT

Overview

ReadiNow employs multiple layers of industry standard practices, protocols and techniques to mitigate the risk of unauthorised access or modification to data or systems.

This document covers ReadiNow network and protocol security mechanisms. For discussion of how co-hosted customers are isolated refer to the “ReadiNow Tenant Isolation Model” whitepaper. Customers may also optionally be hosted on dedicated servers. For discussion of configuring application-level record access, refer to the “ReadiNow Access Control Security” whitepaper.

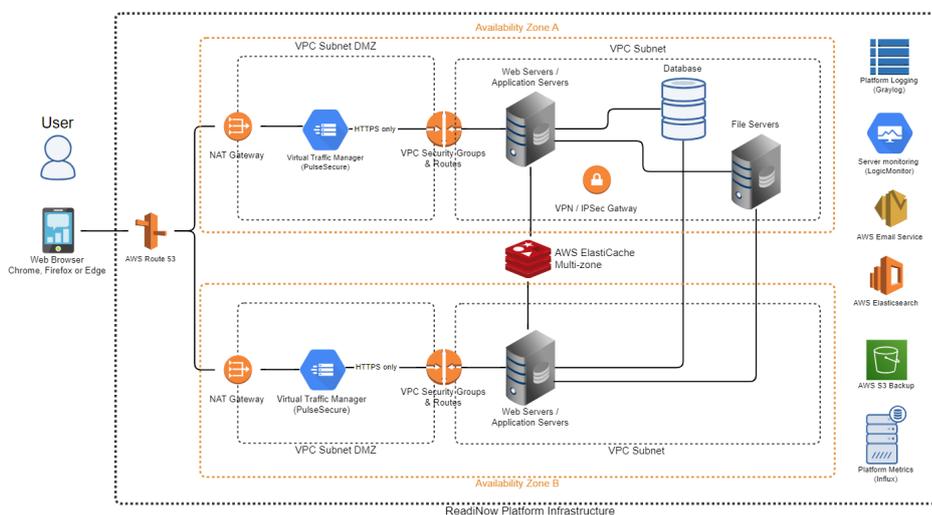
Network/Hosting

ReadiNow servers are hosted in a secure AWS virtual environment.

The virtual traffic manager (vTM) receives connections and forwards valid request onto web servers on the client’s behalf. Only **encrypted HTTPS (TLS 1.2)** connections are admitted. The vTM also provides **load balancing** and **failover** services.

The web, file, database and cache servers all reside in the non-public zone such that direct connection to them is not possible.

All servers run **anti-virus** software.



Infrastructure Security

Data at rest in our databases and file repositories is encrypted using Amazon EBS encryption. This encrypts data on the volume, and in transit between the volume and operating system. EBS uses the AES-256 encryption standard

Data in transit is encrypted. All web requests to web servers is over encrypted secure HTTPS connections. This

includes login, data and file exchanges. This includes internal communications between the vTM and the web servers.

Communication between web servers and database servers is encrypted using SSL. Communication between web servers and cache servers is encrypted using SSL. Communication between web servers and the document repository is encrypted using SMB 3 AEC-CCM.

ReadiNow only admits TLS requests that are of version 1.2 and higher. The version of TLS (https) connections initiated by the end user's browser to our infrastructure is necessarily determined in part by their browser, operating system, and network infrastructure. However, attempts to connect using older TLS-1.0 and TLS-1.1 connections are denied.

ReadiNow platform backups are protected from accidental or malicious modification or erasure using the Amazon S3 Object Lock technology. Once a backup is generated, it is not possible for it to be modified or deleted by any means, for a minimum of 90 days - even by ReadiNow infrastructure administrators.

Database backups are encrypted when generated. Additionally, the S3 buckets used to store all backups are encrypted.

Web Request Security

During login, an authentication token is generated and encrypted using the **AES** (Rijndael) algorithm and returned to the browser. This token is attached to all subsequent web requests. The ReadiNow servers check the authentication token on every request as part of the request processing pipeline.

To mitigate against a malicious script from capturing the authentication token on the client side, authentication token cookies are tagged with the **HttpOnly** and **Secure** attributes which instruct the browser to not make the cookie available to scripts, and to only pass the cookies back over encrypted HTTPS/TLS-1.2 connections.

ReadiNow does not store the passwords used to log into the ReadiNow console and instead just stores the hash of these password to enable password validation at login. This hash is generated using an industry standard non-reversible salted hash protocol based on the **HMAC SHA1** algorithm.

To mitigate against Cross Site Scripting (XSS) attacks, HTTPS responses include **Content-Security-Policy** and **X-WebKit-CSP** headers instructing browsers to not run unsafe Javascript operations; as well as the **X-XSS-Protection** header that instructs browsers to sanitise potential attacks.

To mitigate against Cross Site Request Forgery (XSRF), an XSRF token is generated at login, and attached to the URL of all internal data requests. The server verifies the presence and validity of this token to further ensure that all requests are coming from a properly logged in session.

Additionally, Refresh Tokens are used to protect against session hijacking attempts.

The ReadiNow platform uses a combination of the React and Google AngularJS frameworks to generate HTML, which prevents unsanitised content from being directly rendered to the browser Document Object Model (DOM).

To mitigate against ReadiNow content being maliciously hosted inside an IFRAME, all responses include the **X-Frame-Options** header to instruct browsers to disallow this.

To mitigate against invalid or malicious MIMETYPE interpretation, all requests include the **X-Content-Type:nosniff** header.

To mitigate against protocol downgrade attacks and cookie hijacking attacks, all responses include the **Strict-Transport-Security** header, as per RFC 6797, to instruct browsers that cookies and authentication tokens issued over encrypted HTTPS are not to be available to any (i.e. malicious) content attempting to run in an unsecured HTTP context.

Secure Development and Security Penetration Testing

All source code changes are submitted for peer review, and security-sensitive code changes in particular must be reviewed by ReadNow platform architects.

The ReadNow platform undergoes an annual third-party penetration test to independently scan and test for security vulnerabilities in the application.

In addition, ReadNow performs automated penetration tests as part of our continuous build process. We use the OWASP Zed Attack Proxy utility. It first captures a baseline sample of traffic generated by our browser automation testing, which it then uses to automatically generate and attempt malicious attacks against the platform. Any anomalous results are automatically raised as build errors. This is scheduled to automatically run for all release builds, and daily for development builds.

Tenant Configurable Security Tools

Last Modified on 12/03/2024 1:09 pm AEDT

Overview

The ReadNow platform offers a rich set of tools to allow customers to configure and monitor their own security within the platform tenant.

Configurable security policy and tools include:

1. Access control configuration
2. Single Sign-On (SSO)
3. IP Address Range White-listing
4. Configurable password policy
5. Configurable Record change audit log
6. Security audit log
7. Configuration change audit

Access Control Configuration

ReadNow allows for rich record access control policy to be defined that can be automatically driven by the relationships that interconnect your data records.

For example, with a single access rule, it is possible to define a policy that would allow Employees to have access to documents that are attached to projects, where the project is marked as active and assigned to the same region as the employee. Record access changes are automatically reflected as any of the relevant record relationships are updated. Rich policy conditions involving relationship connections such as this can be defined over any relationships.

Please refer to the “ReadNow Access Control Security” whitepaper to learn more about the relationship based access control policy, as well as other access control features (including as nestable user roles, security relationships, and navigation access).

Single Sign-On

ReadNow supports Single Sign-On via both SAML and OpenID Connect identity providers. This allows for integration with Microsoft Azure single-sign on, and other popular identity providers.

Multi-factor authentication is supported when using an identity provider that supports it, such as Microsoft Azure.

IP Address Range White-listing

Customers may self-serve to configure a white-list of acceptable IP-address ranges. This allows, for example, the platform to be configured so that access will only be provided to computers and devices if that are originating from within a company office network, or via a company VPN.

Attempts to log in or use the system from an IP address outside of this range are denied and logged.

Configurable Password Policy

Customers may define their own password policy restrictions to meet their own security policy standards.

Configurable options include:

- Minimum length
- Whether it must contain upper-case, lower-case, digits, characters (individually)
- Maximum password age
- Number of incorrect password attempts before lockout
- Lockout duration

Record Change Audit Logging

Customers may log record-changes for auditing by configuring audit policies.

An audit policy specifies the type of record (the object), and the fields and relationships on that object, that will be monitored for changes.

The record change audit log include the type of change, old and new values, time of change, and the user account that made the change.

Security Audit Log

Security-sensitive events are logged and available to the tenant administrator. The tenant administrator can configure the log sensitivity and retention.

Event Type	Events
User accounts	<ul style="list-style-type: none">• Creation• Deletion• Rename• Expiry• Password change• Change user account expiration• Change of user account status
Login sessions	<ul style="list-style-type: none">• Logon• Logoff• Locked user account

Event Type	Events
User role configuration	<ul style="list-style-type: none"> • Creation • Deletion • Rename • Membership change
Access rule configuration	<ul style="list-style-type: none"> • Creation • Enabling • Condition structure change • Permission change • Deletion
Password policy	<ul style="list-style-type: none"> • Change
Application	<ul style="list-style-type: none"> • Creation • Deletion • Deployment • Publish

Configuration Change Log

In addition to the security audit log, the platform maintains a log of changes made to the structure of the ReadNow platform applications (the 'metadata'). This includes, but is not limited to:

- Object/schema changes
- Forms and screens
- Workflows
- Report
- Charts
- Navigation
- Administrative settings and configurations

Configuration change log details include:

- Time of change
- User account
- Type of metadata changed
- Description of the change
- And, where available, the object that the change relates to

Access Control Security

Last Modified on 26/08/2020 10:51 am AEST

Overview

The ReadNow Access Control system determines which users can view, create, and modify data records, reports, screens, and other services. Access Control is dynamic in that arbitrary custom, data driven, security rules can be easily created that take advantage of the data on records and the relationships between records. For example, you can define a security rule that applies to managers such that they can read orders associated with active customers if the customer is in the same region as the manager. In this example, the security rule would apply to a 'Manager' security role, and it would be configured to traverse the relationship from the manager to their region, to the customers in that region, verify that the customer is active, then traverse to the orders for that customer.

Consider the following users and data. Two users in the manager role, Alice and Bob. Alice is in the Asia region, Bob is in the Europe region. Customer A is in the Asia region. Customer B is in the Europe region. The single access rule above will allow Alice to see Customer A's orders, and Bob to see Customer B's orders. If Customer A's status changes from Active to Inactive, then Alice will no longer see Customer A.

New relationship types can be custom created in the administration user interface, as can new access rules. This example gives a flavour of the type of access control that is possible.

User Accounts, Records and Permissions

The end objective of access control is to determine if a given user account is permitted to perform a given action in relation to a given record or system entity.

User accounts are connected via a relationship to the person that owns the account. From there a system relates to many other records along various types of relationships. It is also possible for permission to be granted to some resources on some basis other than following a path to the user.

Permissions are the types of actions that can be secured. These include 'view', 'create', 'modify', and 'delete'. The create permission is special in that it relates to types of records, rather than individual records.

User Roles

User Roles allow user accounts to be grouped together to make the administration of access rules more convenient. User roles typically specify a job function.

In many other systems that offer User Roles, or Security groups, it can be necessary to maintain many security roles for different regions. That is not the case in ReadNow, as the relationship-following nature of the access rules still act on individual users within the role. So objectives such as region, customer, or department-based access can often be achieved with a single access rule.

ReadNow, nonetheless, offers flexible options for combining user roles. User Roles can be members of other user roles. For example, if 'User Role B' is a member of 'User Role A', then this mean that the users in role B are also implicitly in role A. Or put differently, access rules and other content made available to role A are also made available to users in role B.

In this example, both Alice and Bob can be in the same Manager role. The example Access Rule for 'Orders', previously described, would be applied to both users, but will still differentiate which particular Order records

Alice and Bob can individually access based on their specific region relationship, according to the query in that rule.

Users can be assigned to multiple roles. User roles can be members of multiple other roles. User roles can be nested multiple levels deep.

There is a built-in 'Everyone' role, which implicitly applies to all users. Access rules and content granted to the 'Everyone' role is made available to all users. Role membership is not supported for the 'Everyone' role, in order to prevent accidental exposure of other roles to all users.

Record Access Rules

Access rules are at the heart of the ReadNow access control system. Each record access rule includes:

1. The User Role (or single user account) that it applies to
2. The type of record (the Object) that it applies to. For example 'Customer'.
3. The permissions granted by the rule. (Read, update, delete, create)
4. The query that describes what specific records can be accessed

The query can be thought of as a filtering mechanism. It is a report built using the ReadNow reporting engine. The report engine allows record filters to be applied, such as checking certain values on the record. If a given record is acceptable to the report's filter, then the access rule grants the user or role the specified permission(s) to that record.

For example, an access rule could be defined that grants view and modify to all incidents that have their status set to urgent. This would grant view and modify permission to all urgent incidents, to any users in the role nominated by the access rule. (Note that in this example, the rule does not relate to individual users).

The report engine also allows relationships to be followed, and filters to be applied based on the values of the related record. Relationships can be followed to multiple levels, and recursively. If the relationship types lead to a user account, then it can be filtered to only match the current user.

Our example 'Orders' record access rule query describes a relationship path from the 'order' record to the current user. In this example, the report query would follow from Orders to the Customer, to the Region, to users in that region.

Calculations can also be applied in the filtering process.

Navigation Access

The Navigation Access security interface allows administrators to specifically nominate certain screens and reports as being available to certain user roles.

The record access control engine may sound complex at first. However, it allows for arbitrary security arrangements to be defined. The Navigation Access mechanism is one such example, as it is internally driven by a small number of record access rules.

Security Relationships

Security Relationships allow permissions that are granted to one record to be inferred onto a related record. The

Security Relationships feature is not to be confused with the relationship aspect of record access control that we have seen so far.

In the REDINow platform, records are frequently connected to each via relationships to build a rich data model. For example, a Disaster Recovery Plan may relate to Plan Steps; Policy documents; Implementation Notes, and so on. It is common to want to grant access to group of interconnected records as a whole.

Record Access Rules allow complex rules to be specified, but they do so for only one type of record at a time. In the above example, an access rule might describe who gains access to a Disaster Recovery Plan. Independently, the relationship types “plan has steps”, “plan has policy documents”, “plan has notes”, and so on can be marked as being security relationships. If a user gains read access to any plan, then they will automatically also gain read access to its steps, documents, notes, and so on. Similarly, if they have modify access to the plan, then modify access is inferred to the related records.

The security access relationship applies to the relationship type (for example “plan has steps”), and not to individual relationship instances (for example, “my plan A has step A1”). Therefore, they should only be used in circumstances where access should always be granted.

Security relationships are followed recursively, such that security can be conveyed through rich data models. The permission inferred to the related entity is always the same as the permission granted to the parent entity. In this example, if a user can read a plan, but not modify it, then the same applies to the plan steps.

Inheritance

Objects (record types) can be arranged to inherit field and relationships that are defined on other Objects. For example, a ‘Manager’ object can be defined that inherits from an ‘Employee’ object. In this case the Manager is referred to as the derived object and the Employee object is referred to as the parent object. The Manager Object inherits any fields and relationships that are defined on the Employee object. The Manager Object can then also define additional fields and relationships.

For all intent and purpose, Manager records also act as Employee records. They will appear in Employee reports; and can be used in any relationships that call for Employee.

For record access control security, any access rule that grants someone access to some parent object will, by default, also grant access to the derived object. For example, an access rule that grants permission to see all employees will also, by default, grant access to all managers. This can be changed by adjusting the record access control query to only apply to the exact type.

Combined Access

In the REDINow Access Control system, all security rules grant access in an additive manner.

That is to say, if any one access rule, or role, causes a user to have some permission to some record, then the user definitely has that permission on that record. There is no notion of ‘denied’ permissions.

Put differently, the total access that a user gains to the system is the sum, or union, of the access granted by each access rule that applies to the user.

This design bolsters security as it means the security engine starts by assuming the user has no access whatsoever, other than that granted by a record access control rule. It also provides the basis for substantial performance optimisations. When designing security policies, only grant what is required, rather than granting broad access to

many users then seeking to deny individual content.

Security Summary Report

The record access control rules may appear complex at first. However, the system is intended to allow you to model your security policy, and then drive actual security automatically from data; rather than needing to maintain individual record access policy on large numbers of resources, security groups, or user roles.

To assist with reviewing record access rules, the ReadNow platform provides a summary report mechanism that, for a given User Role, calculates all Objects that may be accessible; the permissions granted; as well as the specific reasons; whether it be for access rules, security relationships, or inheritance. This allows the administrator to gain a clear picture of the objects that a role can see.

Internal Security Filter

The only exception to the notion of no denials is the internal security filter. Record access control is performed in two phases. In order to gain access to a record, the user must receive permission according to the customer configurable access rule, as described above. In addition, a second system level security layer enforces access control rules to protect certain system and application records.

Summary

The platform provides a comprehensive robust Access Control model that:

- Allows security policy to be described
- Then automatically applied based on data
- Taking advantage of the rich ecosystem of related, interconnected, records
- Starting with the assumption that a user has no access

Custom implementations can be as simple as automatically granting access to records that have a certain status; reaching through to complex rules that span multiple interconnected records, applying calculations along the way.

Capacity Management

Last Modified on 14/07/2023 1:59 pm AEST

The ReadNow platform is hosted in AWS. AWS enables ReadNow to either increase the size of existing resources or to create new EC2 instances on demand. This flexibility to adjust resources as needs fluctuate is one of the prime advantages of a cloud environment.

However, this flexibility does not mean that capacity management ceases to be important in the cloud. ReadNow uses several techniques to provide an effective cloud capacity management strategy:

- Existing Capacity Data

We use LogicMonitor to collect and analyse capacity data for existing workloads within AWS. We make use of the native tools provided by AWS to give us extra insight into performance and to predict capacity requirements.

- Sales Forecasting

Information about our sales pipeline gives Operations data about potential new clients and their resource requirements to feed into our long-term planning.

- Customer Success Planning

Regular customer success meetings give us information about our existing clients and how they see their capacity needs changing in the future. This data is also used in our long-term planning.

- Scale Testing

Each platform release undergoes scale testing before deployment to Production. This ensures that new features or other code changes have not negatively impacted the performance of the platform.

- Burst Capacity

If one of our existing clients faces a disruption and needs to invoke the burst capacity portion of their contract, we have defined procedures in place to ensure this does not negatively impact performance for our other existing clients.

HTTP/2 Support

Last Modified on 26/08/2020 7:44 am AEST

Readinow strongly recommends turning on support for HTTP/2 on network devices such as proxies. (For a description of HTTP/2 see <https://en.wikipedia.org/wiki/HTTP/2>.)

HTTP/2 allows a web browser to pass multiple web requests over a single channel. This can improve performance in situations where a web page makes parallel web requests, such as displaying multiple elements on a screen.

Snippet Test

Last Modified on 17/08/2021 12:26 pm AEST

This is normal text.

inline

Configure Landing Pages

Last Modified on 25/10/2021 4:56 pm AEDT

About Landing Pages

Landing Pages were designed to eliminate complex navigation paths by providing an 'action oriented' experience that puts users in the drivers seat. Key features include:

- Hero Text to keep you up-to-date and informed
- ability to pin Action as Favourites
- ability to find Action quickly using Tags and Quick Search

As the name suggests, Users are automatically taken to their personalised Landing Page as soon as they log-in. Landing Pages provides Users with:

- direct access to the: Screens, Reports, Forms, Charts, and Boards that are relevant to their role (*useful for infrequent tasks*).
- a carousel of Hero Texts to keep an eye on the things that matter the most.

ReadiNow
INNOVATE

Welcome Jack Admin

My Tasks

0

Filter by tags

Available actions

Favorites

Find a task, action or view

Administration
View

2.157.7.0-Master / C: 2.157.36.0-Master

Powered by ReadiNow

Out of the box, the Landing Page for tenant Administrators has a Hero Text to show how many tasks are outstanding, and a Action configured as a Nav Item opens the Administration area.

Things you should know

- Landing Pages are opt-in
- you should configure Landing Pages prior to enabling
- when enabled, Landing Pages replaces the Classic Home Page

- enabling Landing Pages is a tenant wide setting
- you can enable / disable Landing Pages at any time
- Landing Pages will not override existing 'default login location' settings

Configuration options

There are two parts to the Landing Page - Hero Texts at the top and Action at the bottom. Configuration for both is similar, however Hero Texts have a few extra steps. The following table provides an overview of the Landing Page configuration options.

Config Item	Hero Text				Action			
	Create	Edit	Nav	View	Create	Edit	Nav	View
Name	Y	Y	Y	Y	Y	Y	Y	Y
Description	Y	Y	Y	Y	Y	Y	Y	Y
Tags	-	-	-	-	Y	Y	Y	Y
Nav Item	-	-	Y	-	-	-	Y	-
Object	Y	-	-	-	Y	-	-	-
Report	-	Y	-	Y	-	Y	-	Y
Form	Y	Y	-	Y	Y	Y	-	Y
Hero Report	Y	Y	Y	Y	-	-	-	-
Hero Column	Y	Y	Y	Y	-	-	-	-
Hero Method	Y	Y	Y	Y	-	-	-	-

Strategy for configuring Landing Pages

Each user's Landing Page is automatically customised according to the Roles they belong to. Landing Pages can be further customised for groups of users (or even an individual) by creating additional roles.

The following outlines a 3-step-process to setup Landing Pages in a way that is consistent, quick to implement, and easy to manage. The basic steps, explained in greater detail in the following sections, are:

1. initial setup
2. create a like-for-like version of the classic home page
3. add Hero Texts and Actions

Initial setup

Initial setup involves setting up a helper Role and a helper User to view the configuration holistically.

1. Create a new role for your tenant - this will be "a dummy role that should not be given to any real user, purpose is to provide a holistic view of the Landing Page configuration".
 1. name the role 'lp_config'
 2. add a description (e.g. text above: "a dummy role...")
 3. in the 'Member of' tab click on the 'link to existing' & select 'All' --> Ok --> Save

2. Create a new User for your tenant - this will be "a dummy user that should remain disabled, purpose is to provide a holistic view of the Landing Page configuration".
 1. name the user 'lp_user'
 2. add a description (e.g. text above: "a dummy user...")
 3. disable the user: status = disabled
 4. in the 'Security roles' tab click on the 'link to existing' & select 'lp_config' --> Ok --> Save

3. Test - open the Landing Page configuration tool and view the configuration for all users:
 1. enable 'View as user' mode
 2. select user: lp_user (the Landing Page user preview will load to show all configuration options)

Create 'like-for-like'

Create a new role for each Application in your tenant. The purpose of these roles is to provide Navigation Access to the corresponding Application.

1. Add & configure a new Role for each Application
 1. identify an Application to configure and create a role: e.g.: lp_AppName
 2. in the 'Member of' tab add every other role that is related to the Application
 3. in the 'Navigation Access' tab, select the Application and 'check' the top level folder

2. Setup the new Role in the Landing Page configuration tool
 1. In 'Configure role' mode, select the role, e.g. lp_AppName
 2. In the 'Actions' window: click 'New' --> a menu appears, select: 'View navigation item'
 3. Enter the text that should appear on the Action in the 'Name' field
 4. Enter a description to help you remember what this configuration is, e.g.: Navigation to root application for lp_AppName
 5. Enter tags to help users find this application
 6. In the Nav Item picker, select the corresponding top level folder for the application (e.g. lp_AppName)
 7. Click 'OK' then 'Save'

3. Test and repeat until all Applications are represented as Actions on the Landing Page
 1. Click 'view as user' and select user: lp_user
 2. Confirm the configuration

3. Repeat 1 & 2 until each Application has been added

Landing Page FAQ

Last Modified on 25/08/2022 11:29 am AEST

Q. Can I still use the classic home page after Landing Pages has been enabled?

No. Landing pages replaces the Classic home page and is enabled / disabled for all platform users.

Q. Will 'default login location's continue to work?

Yes. Default login locations will continue to work.

You can access your Landing Page by clicking on the platform logo on the left side of the header.

Q. How do I add a new Hero Text or Action to my personal Landing Page?

You need administrator privileges to add new items to Landing Pages, this is because changes to Landing Page configuration affects all users. Please ask your administrator to set this up for you.

Q. Should I enable Landing Page, will the Classic Home Page continue to work?

You should enable Landing Pages as soon as possible. Classic Home Page is using technology that is becoming obsolete, however Classic Home Page will continue to work until Landing Pages reaches a mature state - when that happens Classic Home Page will be disabled.

Q. How do I create Tags?

You need administrator privileges to add new Tags to Landing Pages, this is because changes to Landing Page configuration affects every user. Please ask your administrator to set this up for you.

Q. Can I change deployment options from the Landing Page configuration page?

No. The deployment options are shown for reference only. These can be modified in the corresponding builder.

Q. There are some Actions that I will never use, can I hide them?

No - you can not hide Actions. If you see Actions that you do not use you might belong to a role that you do not need, check with your tenant administrator.

Q. Can I sort the Actions on my Landing Page?

No. However you can sort your 'Favourites' using drag-and-drop.

Q. How come I have duplicate Tags?

Tags are sensitive to white-space and capitalisation. Duplicate Tags can be avoided by sticking to a convention of using lowercase characters and using hyphens instead of space. Tell your tenant administrator if you have duplicate Tags.

Q. How come I have duplicate Actions?

Duplicate Actions can happen if you belong to multiple roles that access the same resource (e.g. Screen, Report, Chart, Form, etc.). Tell your tenant administrator if you have duplicate Actions.

Q. Why don't I get taken to my Landing Page when I log-in?

There are 2 reasons why you might not get taken to your Landing Page when you log-in.

First, Landing Page might not be enabled - this needs to be done by an administrator. The second reason is that you might have a 'default login location' that over-rides your Landing Page; if this is the case you can ask your tenant administrator to change this setting for you.

Q. Why can't I find my new application on my Landing Page?

Landing Pages do not display any new content by default. Actions and Tags need to be explicitly configured; however, you can find all your applications in the application dropdown in the Landing Page header.

Backup & Retention Policy

Last Modified on 08/01/2025 3:02 pm AEDT

Customer Data Backup and Retention

In this guide '**Customer Data**' means information and content owned and controlled by a ReadNow Customer (including any File Repository data) held in the Customer's tenant.

1. Backup

1.1. Backup Frequency

Full backups are taken daily and transaction log backups are taken every 20 minutes.

Note: Customer Data that is present for less than this time period may not be captured by the backup process and hence may not be recoverable (i.e. Customer Data that is created and subsequently deleted between the backup periods).

1.2. Backup Retention

Backups are retained for at least 90 Days

1.3. Backup Security

All backups are encrypted. Encryption processes and methods follow AWS' data encryption standards in line with ISO 27001 standards across all their infrastructure and hosting environments. The platform backups are protected from accidental or malicious modification or erasure using the Amazon S3 Object Lock technology. No one, including ReadNow staff, can modify or delete a backup by any means, for a minimum of 90 days.

1.4. Data Residency

All customer data, including live and backup data, resides in AWS data centres located in Australia.

2. Restore/Data Recovery

2.1. Recovery Requests

A Customer may request a restoration from a backup by submitting a Support ticket in the ReadNow Service Desk. The recovery time depends on the age of the backup and the amount of Customer Data to be recovered. Such requests are chargeable and will be estimated and quoted prior to fulfilling the request.

2.2. Recovery Format

The recovered Customer Data will be in one of the following formats:

- Access to a temporary tenant; or

- CSV files; or
- As otherwise advised via ReadNow Service Desk, at ReadNow's sole discretion.

3. Data Destruction

3.1. General

ReadNow does not delete records from active tenants. Customers should refer to the [Log Retention Policies](#) article for information on configuring log archiving frequencies.

All customer data, including backup data, is held within AWS at all times. ReadNow does not maintain any physical media holding client data. Therefore, destruction of media is performed by AWS.

Media storage devices used to store customer data are classified by AWS as Critical and treated accordingly, as high impact, throughout their life-cycles. AWS has exacting standards on how to install, service, and eventually destroy the devices when they are no longer useful. When a storage device has reached the end of its useful life, AWS decommissions media using techniques detailed in NIST 800-88. Media that stored customer data is not removed from AWS control until it has been securely decommissioned. For further information please refer to the data centre controls published by AWS.

3.1. Customer Disengagement

In the event of customer disengagement, active tenants will be deleted within 30 days. ReadNow will ensure the security of backups from multi-tenanted systems until the backups can be deleted in line with the backup retention period. Backups from dedicated systems will be deleted within 30 days.

Ethical Trading & Modern Slavery Policy

Last Modified on 02/10/2024 1:13 pm AEST

The ReadiNow policy covering Ethical Trading and Modern Slavery is available here: [Ethical Trading and Modern Slavery](#)

Platform Privacy Policy

Last Modified on 02/10/2024 1:27 pm AEST

The Platform Privacy policy is available here: [Platform Privacy policy](#)

Spring4Shell (CVE-2022-22965)

Last Modified on 07/04/2022 1:37 pm AEST

Summary

ReadiNow does not have direct exposure to this vulnerability.

Background

In March 2022, a Spring application running on JDK 9+ was found to have a vulnerability known as the Spring4Shell (CVE- 2022-22965)

ReadiNow Response

ReadiNow promptly reviewed all code and environments. The ReadiNow platform itself does not use Spring nor Apache and so is not vulnerable to CVE-2022-22965. We are continuing to review any 3rd party vendors and software to see if they are at risk and will promptly apply any patches if required

Update

This bulletin was last updated on 05 April 2022.

New information will be posted here if required

Log4j Vulnerability (CVE-2021-44228)

Last Modified on 16/12/2021 2:31 pm AEDT

Summary

ReadiNow does not have direct exposure to this vulnerability.

Background

In December 2021, Apache log4j was found to have a very critical vulnerability known as the Log4j Vulnerability (CVE-2021-44228)

ReadiNow Response

ReadiNow promptly reviewed all code and environments to confirm that the ReadiNow platform itself does not use Java nor Apache Log4j and so is not vulnerable to CVE-2021-44228.

We are continuing to review any 3rd party vendors and software to see if they are at risk and are promptly ensuring they are patched as required

Update

This bulletin was last updated on 16 Dec 2021.

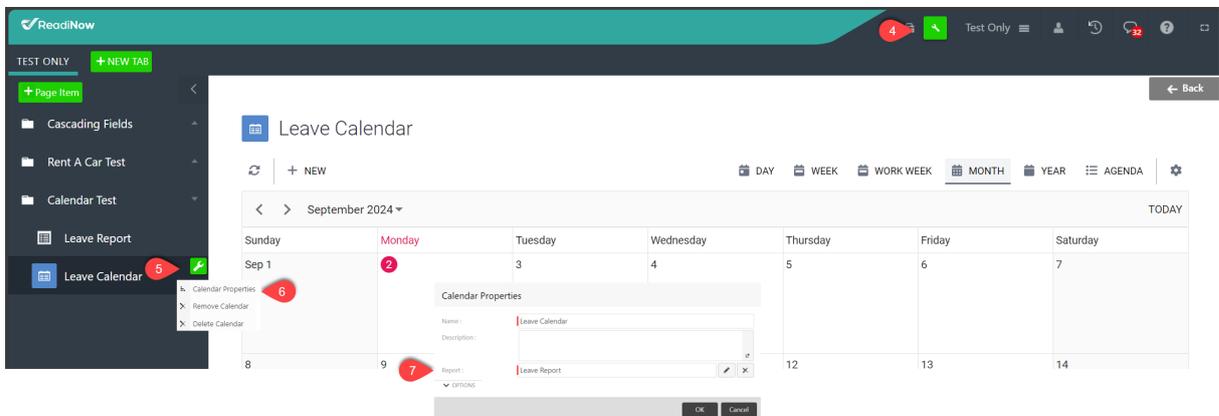
New information will be posted here if required

Alternative Report View: Replacing the Withdrawn Classic Calendar Feature

Last Modified on 05/09/2024 8:23 am AEST

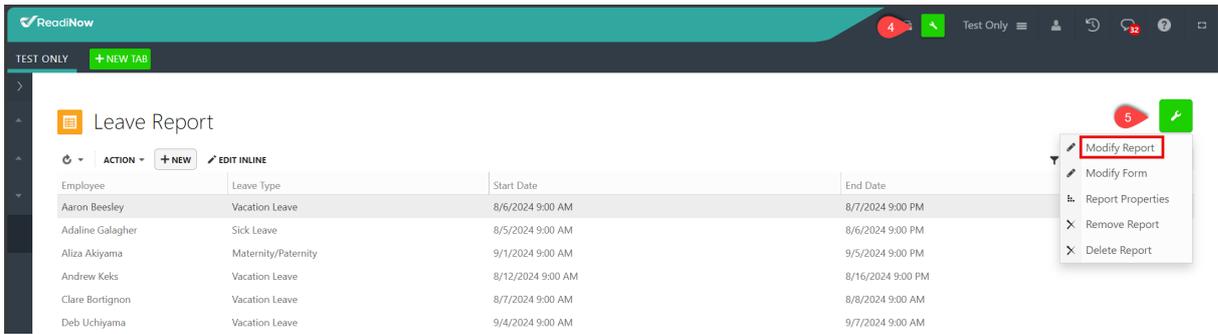
Step 1: Locate the Source Report for your Calendar

1. Log in to your tenant as an administrator.
2. Open the app that contains your calendar.
3. Navigate to the location of the calendar you wish to transition.
4. Enter configuration mode by clicking the configure (spanner)  icon in the top right-hand navigation bar.
5. Hover over your calendar in the left-hand navigation to reveal the configure icon.
6. Click the configure icon and select **Calendar Properties** from the dropdown menu.
7. The name of the source report will be displayed for your reference.



Step 2: Edit the Source Report

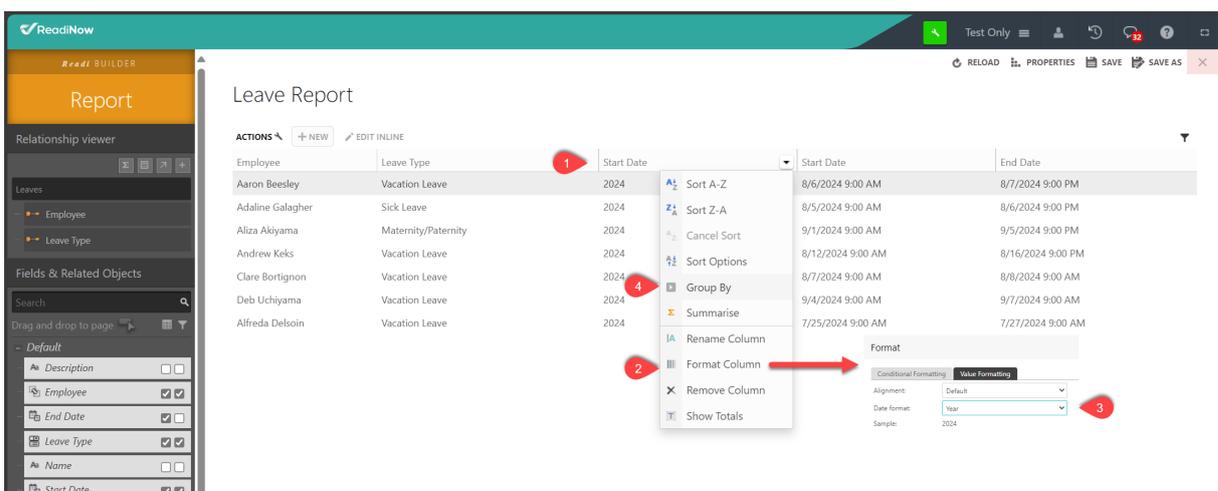
1. Ensure that the **Resources** heading in the left-hand navigation menu is expanded.
2. Expand the **Reports** section in the left-hand navigation menu.
3. Use the quick find feature to search for the source report identified in Step 1.
4. Enter Report Builder Mode by clicking the configure (spanner) icon  in the top right-hand navigation bar.
5. Click the configure icon at the top right corner of your report and select **Modify Report** from the dropdown menu.
6. [Optional] To create a working copy of the report, use the **Save As** option once you are in Report Builder mode. This allows you to keep the original report unchanged in case you need to revert or repeat the transition to the alternate view.



Step 3: Configure the Date Column for your Preferred Grouping

In this example, we will group the data first by year and then by month.

- Duplicate the Date Column:** Drag the date column from the left panel and drop it into the report area. (If your report contains two date columns, duplicate the first date column.) The duplicated column will be referred to as the "new column" in the following steps.
- Format the New Column:** Hover over the name field of the new column, click the arrow, and select **Format Column** from the dropdown menu.
- In the **Value Formatting** tab, change the Date Time format to **Year** and click **OK**.
- Group by Year:** Use the new column to group your data by year. Hover over the name field of the new column, click the arrow, and select **Group By** from the dropdown menu.
 - Note: If the grouping appears incorrect, save your changes, exit the report, and then re-edit it to see the correct grouping.*
- Group by Month:** If needed, you can also group your report by month. Repeat the previous steps, starting with duplicating the date column. Select **Month** for the Date Time format in the Value Formatting. Remember to apply **Group By** as your final step.



- Save the Report:** Once you have completed the configurations, be sure to save your report.

Example of a report grouped by year and month:

ReadiNow

Test Only

Leave Report

ACTION + NEW EDIT IN LINE

Search

Employee	Leave Type	Start Date	End Date
2024			
Jul			
Alfreda Delsoin	Vacation Leave	7/25/2024 9:00 AM	7/27/2024 9:00 AM
Aug			
Aaron Beesley	Vacation Leave	8/6/2024 9:00 AM	8/7/2024 9:00 PM
Adaline Galagher	Sick Leave	8/5/2024 9:00 AM	8/6/2024 9:00 PM
Andrew Kekes	Vacation Leave	8/12/2024 9:00 AM	8/16/2024 9:00 PM
Clare Bortignon	Vacation Leave	8/7/2024 9:00 AM	8/8/2024 9:00 AM
Sep			
Aliza Akiyama	Maternity/Paternity	9/1/2024 9:00 AM	9/5/2024 9:00 PM
Deb Uchiyama	Vacation Leave	9/4/2024 9:00 AM	9/7/2024 9:00 AM

You can now easily make your newly designed report accessible to users by configuring the navigation access settings. Once you are satisfied with the layout, simply adjust the access options to share your report as required. (Navigation Access)

For a refresher on Value Formatting, please refer to the following article for detailed guidance: <https://readinow.knowledgeowl.com/docs/value-formatting>

Exclude Internal Data from Tenant Refresh

Last Modified on 10/01/2025 12:20 pm AEDT

A tenant refresh is a process that involves copying data from a source tenant to a target tenant. The refresh can be an exact copy of the source tenant; or you may elect to exclude internal data from the refresh operation.

For further information on the tenant refresh operation, please refer to this article: <https://readinow.knowledgeowl.com/docs/tenant-refresh>

What is internal data

Internal data is data that is typically not required for a non-production tenant such as development or testing.

The following types of data are classified as "internal" for the purposes of tenant refresh.

- Documents
- Emails
 - Both sent and received emails
- Logs
 - Audit logs
 - Import runs
 - Export runs
 - Workflow runs
 - Process runs (Nova)

In summary, when the "Exclude internal data" option is selected, certain types of data will not be copied over to the destination tenant. This does not include report templates required for document generation.

Report templates will still be copied to the destination tenant even when the "Exclude internal data" option is enabled. The document generation feature will work as expected.

Roadmap

Last Modified on 28/10/2024 3:32 pm AEDT

This page contains forward-looking statements which contain risks, uncertainties, and assumptions. Therefore ReadiNow reserves the right to change, update or remove any statements made on this page at any time.

The intent of this page is to provide a high-level overview of major features planned over the next few months. ReadiNow may release features and enhancements in each release cycle that are not listed on this page as part of the day to day platform improvements.

Refer to [Release Notes](#) for details of recently released features.

2024

Notifications

Centralised area for creating multiple reminders (eg. Reminder for reviews) without the need to creating individual workflows. Notifications assigned to individual objects and utilising [email templates](#).

Process

ReadiNow Process will enable you to easily configure an end to end business process that displays the progress directly to the user. The ReadiNow process will complement the existing Workflow engine to enable highly configurable business process automation.

Process will allow for both sequential and parallel paths to allow flexibility in implementing complex business processes.

Nova

We are committed to ongoing enhancements of our Nova interface, ensuring an improved user experiences.

Custom validation

Users will have the ability to define validation rules on your Nova page form.

Inline editing

Edit directly from a data table component, a favourite feature from our classic UI, will be integrated into the Nova form page with refreshed modernised UI/UX.

Form breadcrumbs

Breadcrumbs on form pages will provide the user with a visual trail of user navigation within company records. This will also help reduce the number of clicks helping you get to where you need to be faster.

Hierarchy

Hierarchical data will be visually displayed in filters and on forms simplifying data entry and providing enhanced experience when used on dashboards.

Building application schema using Page Builder

Build schema without the need to leave the Nova Page Builder. We will continue to add features to allow you to build and manage object schema within the Page builder, meaning there will be less jumping between the classic form builder and new Page Builder.

AI suggest

Save time during data entry with the assistance of AI assist to suggest information. It will suggest texts based on the questions you ask. Additionally it will also add list items as many records, which is particularly helpful for example task actions and compliance checklists.

Supporting Teams

Our tasks will natively support teams, allowing tasks to be assigned to a team collectively.

New Module: Environmental, Social & Governance Modules

Rollout of a new modules to cover the Environmental, Social and Governance management and reporting

Ongoing

Out of the Box (OOTB) solutions

As an ongoing commitment to improve our OOTB offerings, more solutions will be developed in coming months to serve wider range of customers from different domains and industries. The existing OOTB apps will also be enhanced continuously based on customer feedback and market trends.

Scheduled Maintenance & Upgrades

Last Modified on 14/01/2025 3:26 pm AEDT

Please avoid accessing the ReadNow platform at these times.

Date	Time (AEST)	Reason
Thursday, 23 January 2025	05:00 - 06:30	Maintenance
Thursday, 6 February 2025	05:00 - 06:30	Platform upgrade 2.198
Thursday, 20 February 2025	05:00 - 06:30	Maintenance
Thursday, 6 March 2025	05:00 - 06:30	Platform upgrade 2.199
Thursday, 20 March 2025	05:00 - 06:30	Maintenance
Thursday, 3 April 2025	05:00 - 06:30	Platform upgrade 2.200
Thursday, 17 April 2025	05:00 - 06:30	Maintenance
Thursday, 1 May 2025	05:00 - 06:30	Platform upgrade 2.201
Thursday, 15 May 2025	05:00 - 06:30	Maintenance
Thursday, 29 May 2025	05:00 - 06:30	Platform upgrade 2.202
Thursday, 12 June 2025	05:00 - 06:30	Maintenance
Thursday, 26 June 2025	05:00 - 06:30	Platform upgrade 2.203

Contact us

Last Modified on 16/09/2024 10:55 am AEST

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Email Us: sales@readinow.com

Support

Support is available on standard business days between 9:00 am and 5:00 pm AEST.

Raise a Ticket: [ReadiService](#)

Call Us: 1800 645 645

Email Us: rn_support@readinow.com

Report a Vulnerability:

If you are an existing client, please contact Support.

Otherwise: rn_security@readinow.com

