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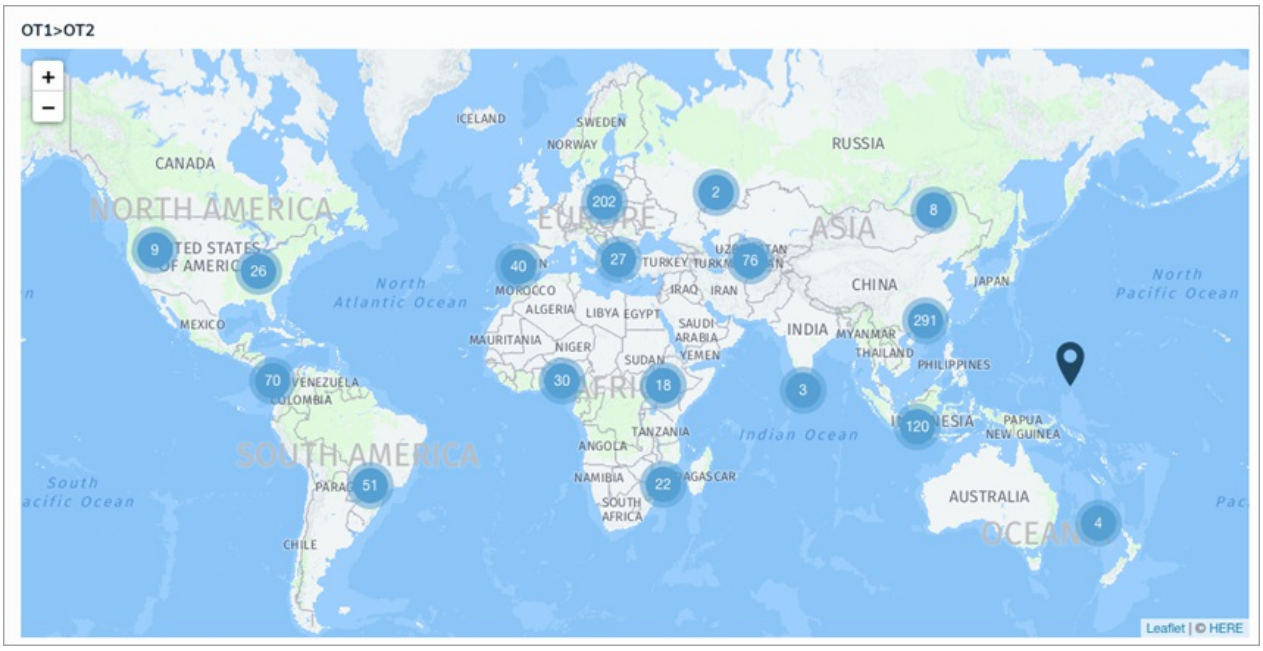
Version 3.1 Release Notes

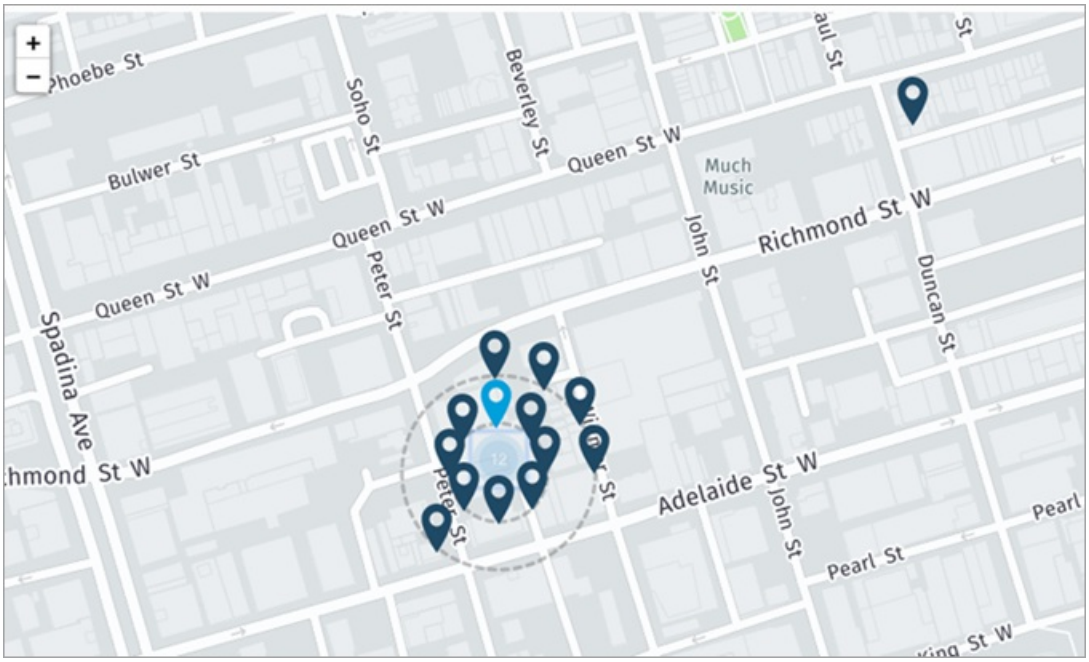
New Features

Geolocations

- The geolocations labels on admin screens have been renamed Location to match the end-user screens.
- Clicking a pin on a relationship map now displays a form in a palette, while hovering over the pin displays address information in a tooltip.
- Multiple pins within close proximity of one another are clustered together on relationship maps (depending on the zoom level).

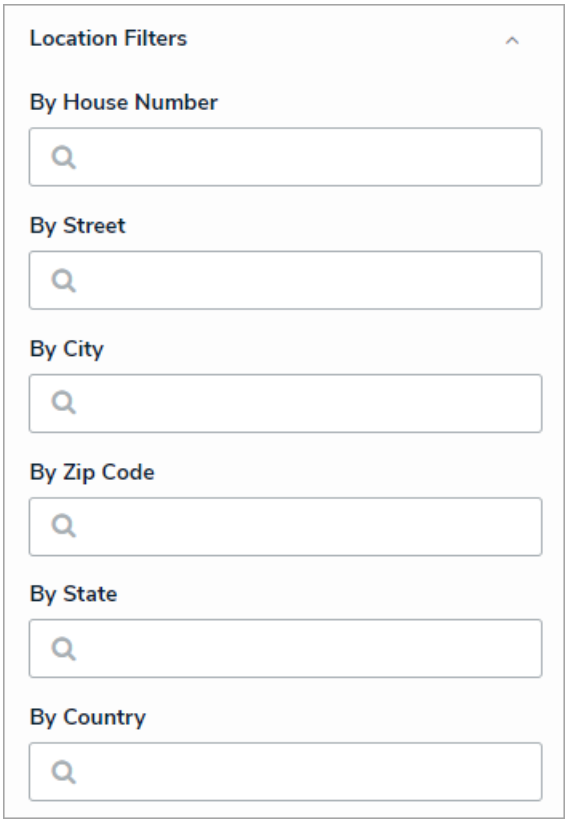


- Instead of overlapping, multiple pins at the same location are displayed in a helping circle, decluttering the pins and making it easier to click or hover over them for additional information.

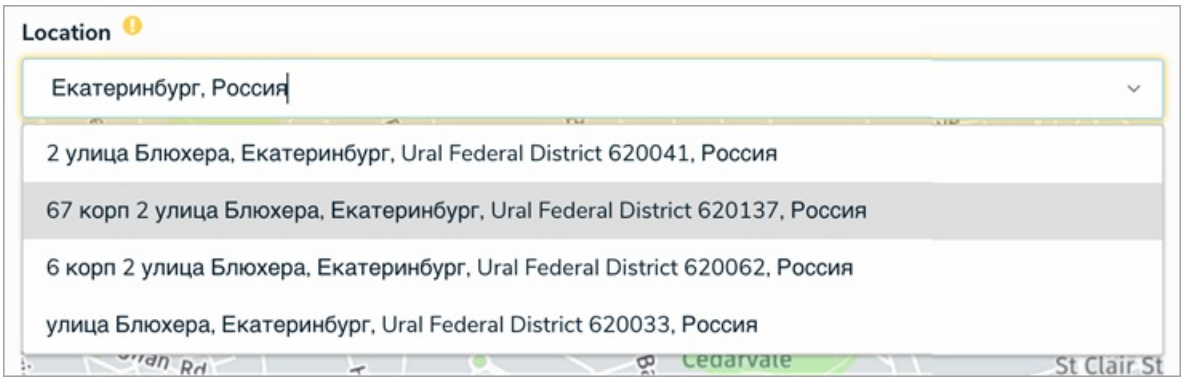


- The Location property can be marked as required in a workflow to ensure users capture required location information.

- Name and Description and text field concatenations now support variables created using Location components (e.g., City or State).
- Location addresses or coordinates can now be displayed in report tables.
- Users can perform a global search for objects by entering the full or partial address recorded in the Location property or refine the search results using the new Location Filters option on the Search Results page.

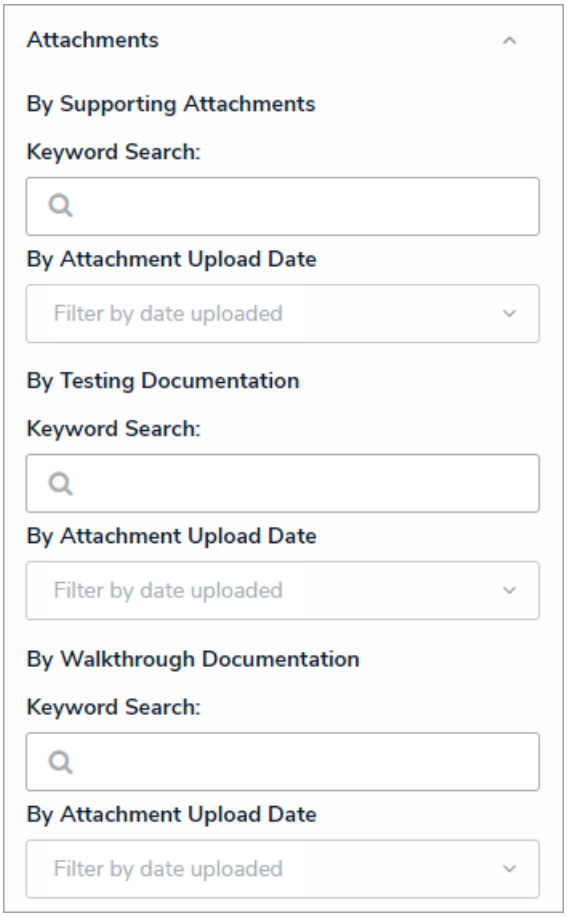


- Improved the UI to better indicate to users when a Location map is read-only.
- Users with a preferred language other than English can now search for locations in that language, as well as view map tooltips in that language.



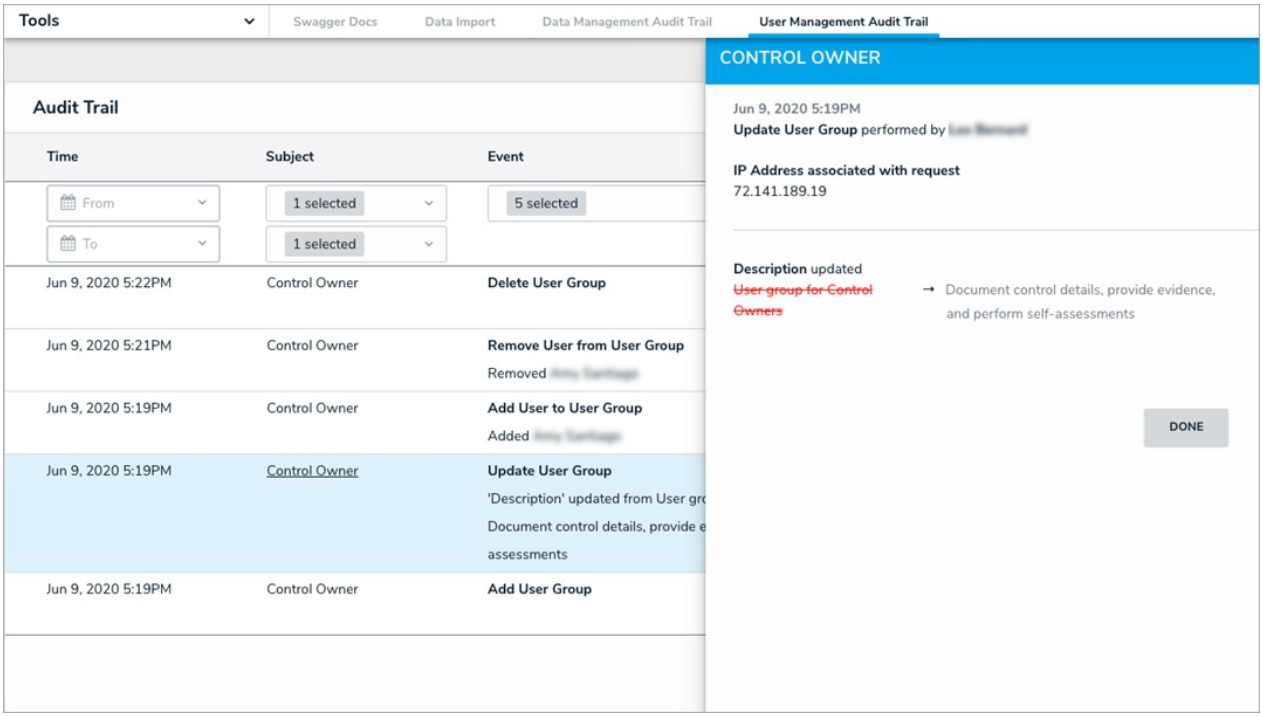
Document Search

- Users can search for documents attached to objects by entering keywords in the Global Search field. Results are populated based on keywords found within the document or the document's file name. Only English language characters are supported at this time.
- Detailed search results can also be refined by applying document search filters for each attachment field added to the objects in the results. Filter options include Keyword Search within the document contents or file name and By Attachment Upload Date.



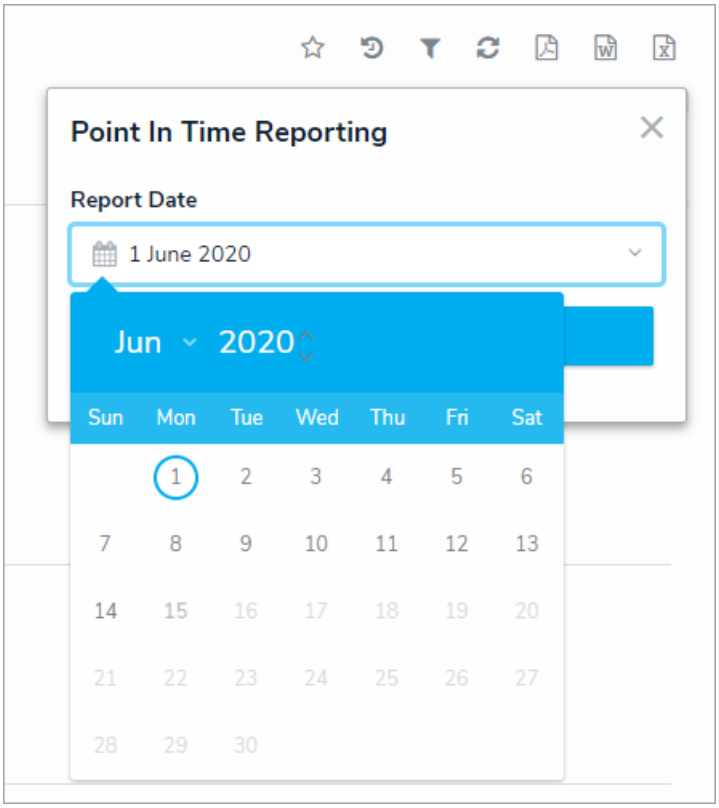
User Audit Trail

- Admins can track a number of user-related events in the new User Audit Trail, including anonymous logins, adding, removing, or modifying users, user groups, or roles, workflow permission updates, and login/logout events.
- Data can be filtered by date range, subject, event, and the admin who made the change (if any). Clicking on an event will display additional information about the event, including the IP address associated with the request.



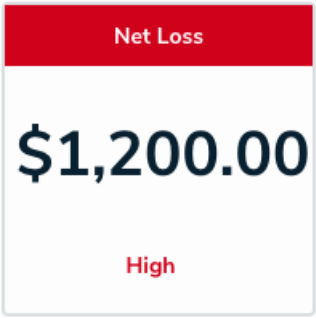
Point in Time Reporting

- With the new Point in Time Reporting feature, you can view historical data in their reports to compare and contrast against data from previous timeframes. Admins can enable this feature from the Configure Filters palette when editing a report.



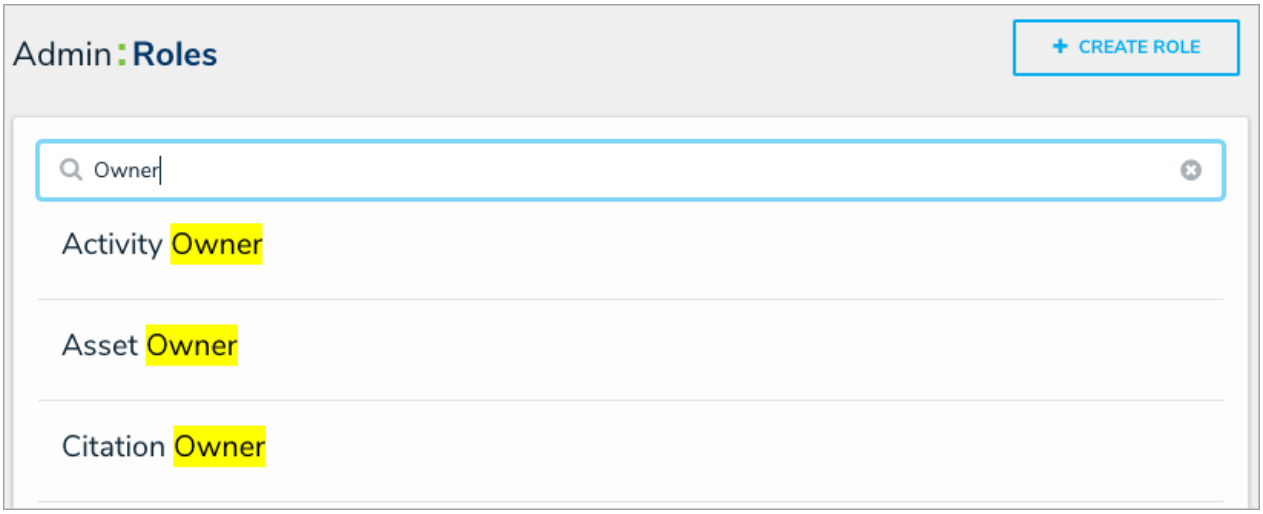
UI Enhancements

- Formula cards now show commas when displaying dollar amounts in the thousands.

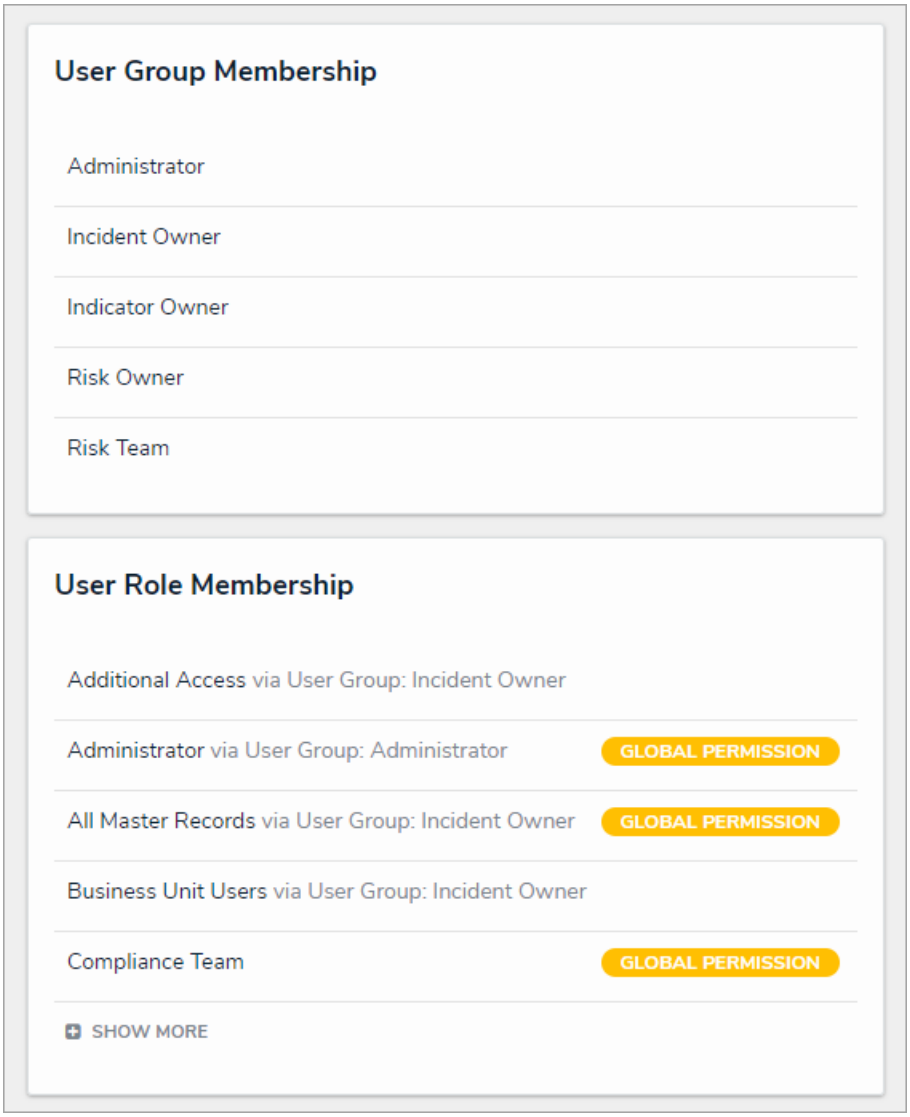


- Kazakh is now a supported language.
- Updated the messaging on formulas that require data from variables configured to treat empty values as null. Instead of displaying "Invalid Result," these formulas will now show "Input Not Available," to clarify to users that one or more variables require data before the result is successfully calculated.

- Added search bars on the Users, Roles, and Object Type Groups pages so that admins can quickly search for items by keyword.



- Quickly review which user groups and roles a user has been added to through the new User Group Membership and User Role Membership sections from the Edit User page. Clicking a user group or role from these sections will allow you to view more details and settings for that role or group.



Improvements

- The calendar on a date only field is now hidden once a user selects a date.
- The address search bar is now hidden on forms when a location property is set to address only and read only.
- The Help menu has been reordered and now routes users directly to the knowledge base with Resolver Support contact information.
- Reduced the report header size on PDF exports.

Bug Fixes

- Clearing the search field on a nav form now updates the tree.
- Fixed unexpected behavior issues when logging out of Core.
- Fixed a bug that caused object names to appear on PDF report exports as "undefined."
- Adding a title or logo to the PDF Output Options on a report no longer enables the "Show header on first page" option when it was previously disabled.
- Fixed some issues with forms loading slowly or not at all.
- Resolved an issue with nav form reports not loading correctly.
- Fixed a bug that prevented certain users from loading reports.

- The Date field on PDF report exports now displays the local time zone to match the UI, instead of UTC.
- Fixed a bug that caused the Create Object action to fail with a 400 error.
- Viewing a data grid while impersonating another user no longer causes the wrong section to freeze when scrolling.
- Fixed the bug that prevented repeatable forms from loading correctly.
- Users can no longer create new objects with invalid coordinates.
- Numeric values of 0 no longer disappear from read-only numeric fields.
- Corrected display and loading issues with select list button groups on forms.
- There is a shorter delay when expanding the tree in a nav form.
- Exported dates that include a space are no longer imported into Core with an invalid date of 30/12/1899.

Version 3.0.7 (Hotfix)

Fixed an issue with reports timing out and showing errors when loading.

Version 3.0.6 (Hotfix)

Bug Fixes

- Fixed a bug that prevented the search index from being updated immediately after a data import.
- Corrected infrastructure issues that caused some objects to be omitted from the results when conducting a search.
- Users can now search for objects with the # (hash) symbol without any issues.

Version 3.0.4 (Hotfix)

Bug Fixes

- Entering 0 in a numeric field marked as required no longer prevents the object from transitioning to the next workflow state.
- Nightly triggers no longer update an object's Modified On date if no changes were made.

Improvements

- Infrastructure improvements to help ensure dispatches in Command Center are closed as expected.
- To prevent whitelisting issues, the geolocation library is now loaded via a package instead of a script.

Version 3.0.3 (Hotfix)

Bug Fixes & Improvements

- The # symbol can now be included in search terms.
- Formula calculations triggered by workflow orchestrations have been improved.
- Fixed an issue that prevented users from being redirected to the Change Password page when their password expired.
- The Web Application Firewall now only blocks full SQL statements, rather than any instance of SQL keywords.

Version 3.0.2 (Hotfix)

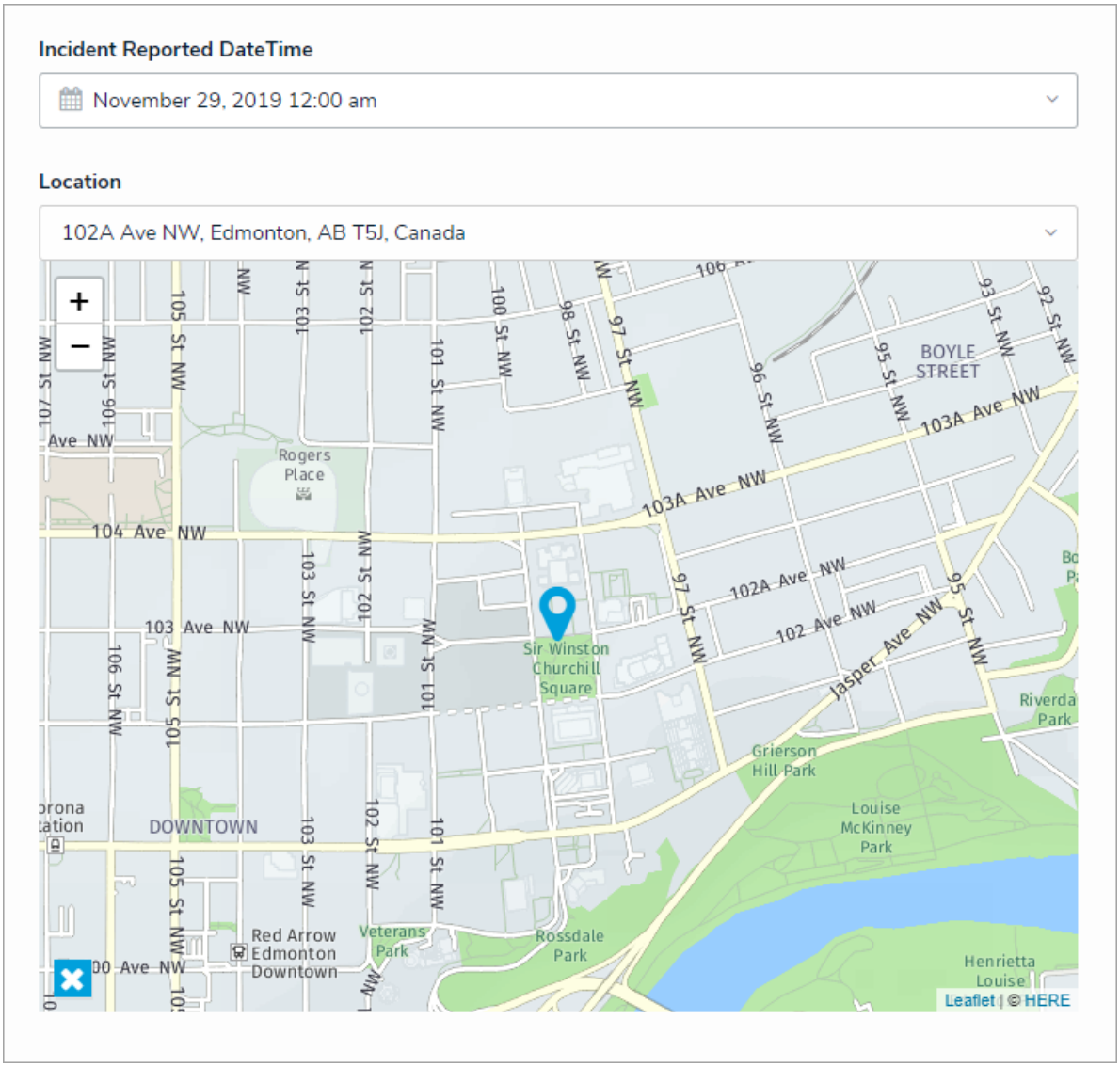
Improvements

- Deleting an object no longer recalculates inferred permissions when that object is not part of an inferred permission group.
- Improved calculations on formulas used to control section visibility on forms with the "Only If" option selected.

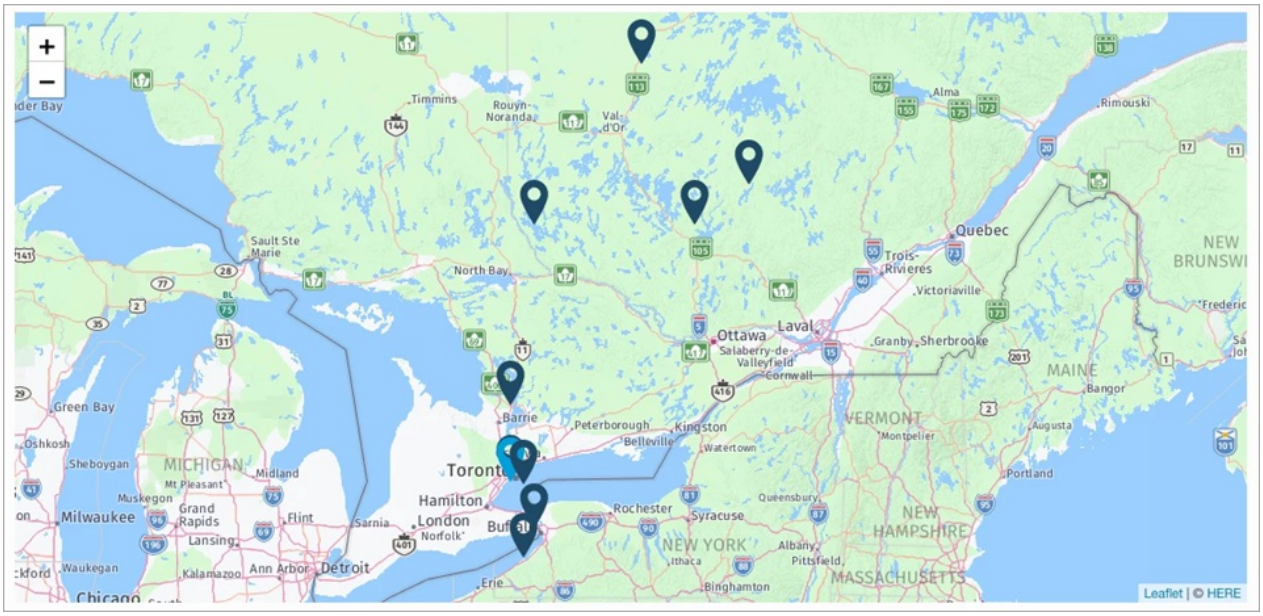
New Features

Geolocations

- The new Geolocation property allows users to record and view the location of an object via an address field, pins on a map, or both. Through this feature, users can visualize where events or incidents are occurring to help identify high-risk areas.



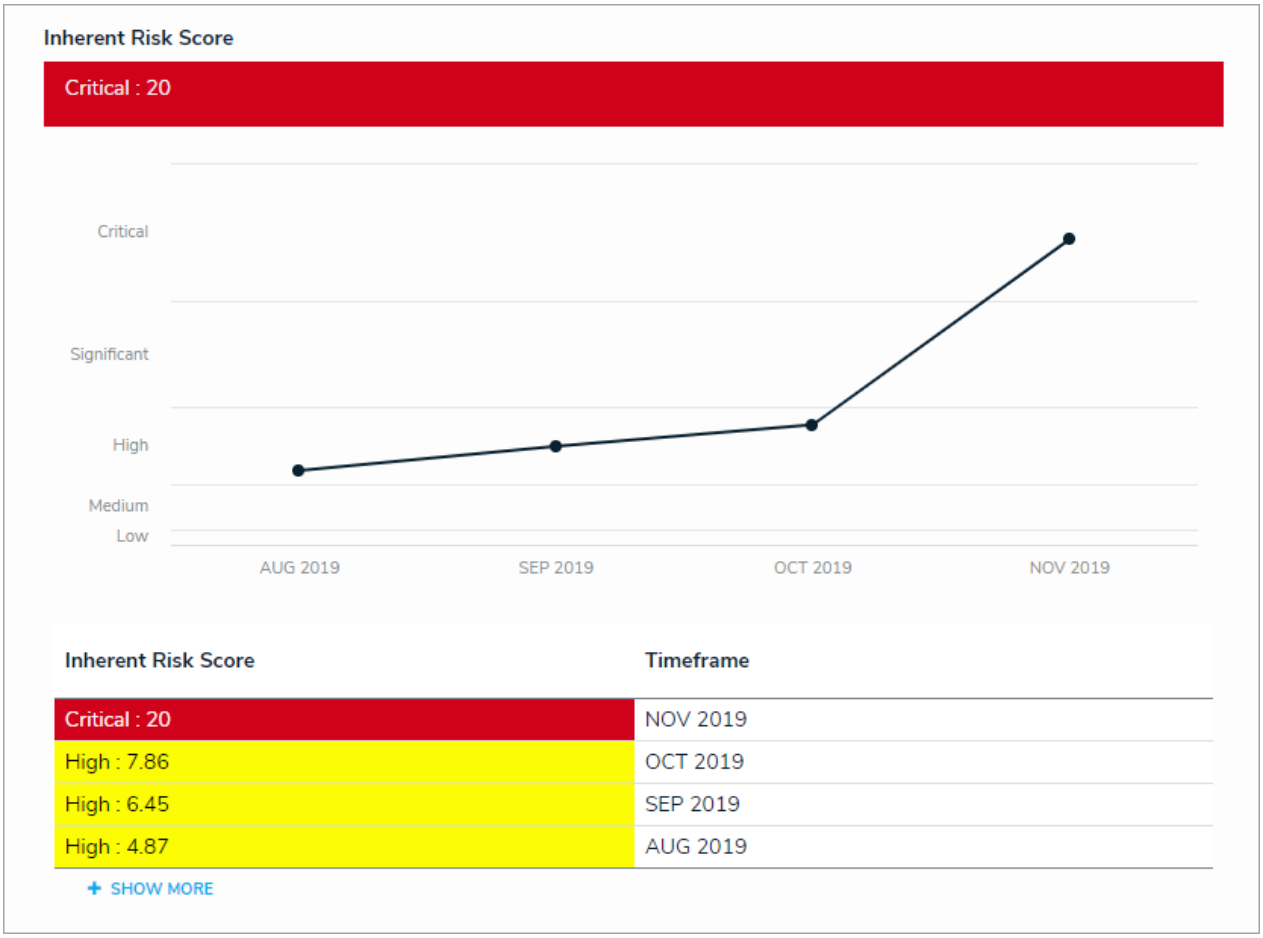
- Relationship and reference form elements can now also display geolocation info in a table or map. When viewing a relationship map on the originating object, the originating object's location is represented by a **light blue** pin, and any relationship objects are represented by**dark blue** pins. When viewing reference maps, these pin colors are reversed.



- Geolocation data can also be imported via JSON files or Data Import.

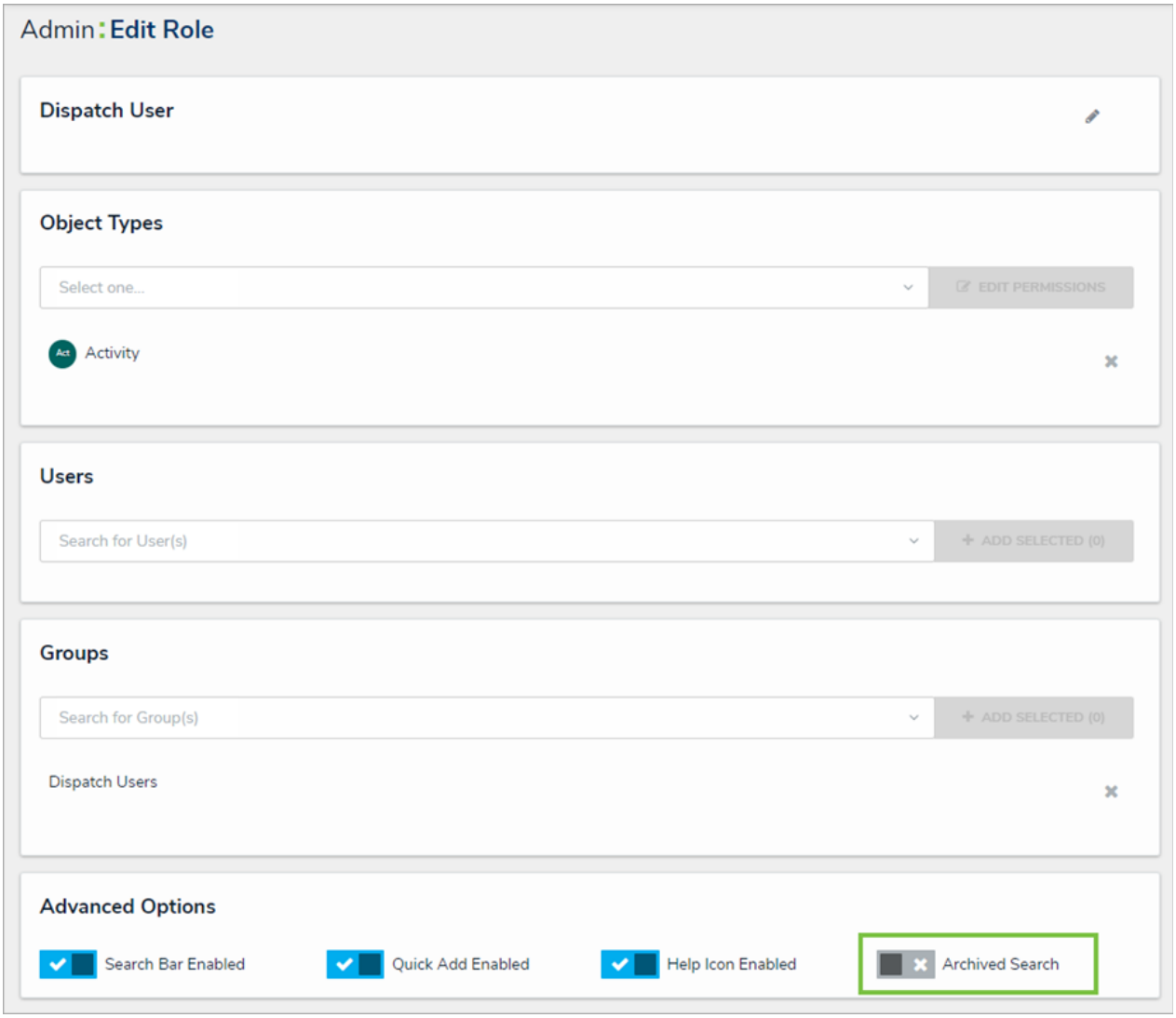
Trending Tables

- Formulas, single select lists, and numeric fields can now be configured to appear on standard forms as line graphs or tables to help you track how objects or their values have changed over daily, weekly, monthly, quarterly, semi-annual, or annual timeframes. Note that, as this is a new feature, only recent trending data will be available.



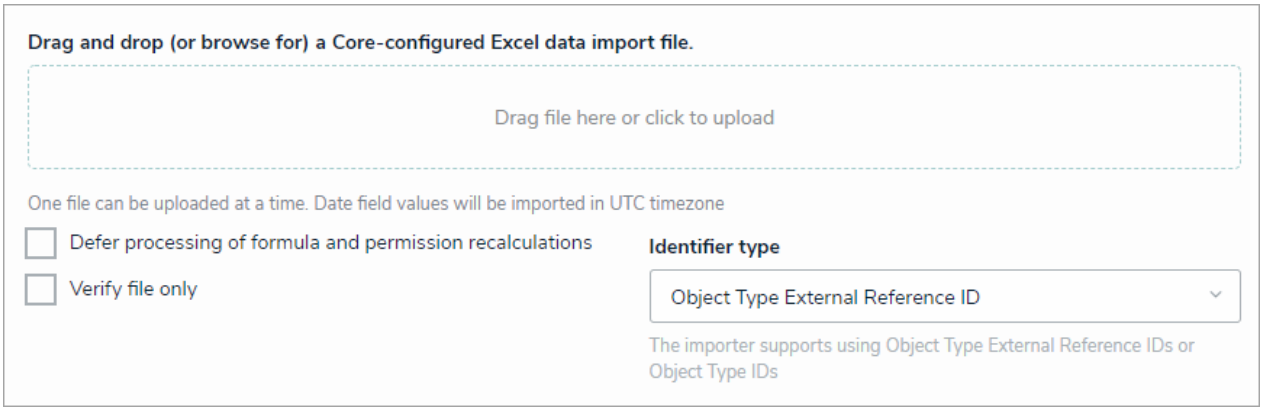
Archive Data

- Objects can now be archived by moving them into a state assigned the Archive category in the workflow settings. While deleted objects' data is permanently removed from the organization, archived object data can be used for trending analysis over time, and can be included or excluded from reports, relationship or references on forms, or global search results.
- Note that reports, forms, and roles created before Version 3.0 are configured to **include** archived data by default. All reports, relationship/reference elements, and roles created after Version 3.0 **exclude** archived data by default, but admins can choose to include it as needed.



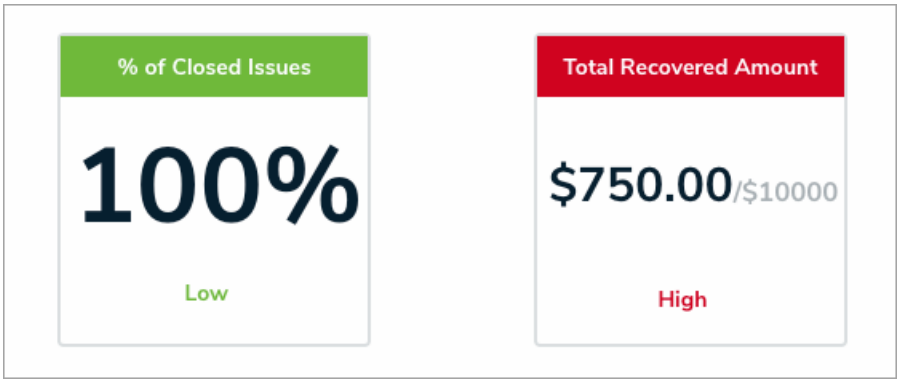
Defer Data Import Processing

- A new option on the Data Import tool allows you to postpone formula and permission recalculations when importing significant amounts of data. Note that, depending on the complexity of the relationships and formulas, it's generally recommended that the deferral option is enabled for imports that include more than 50,000 objects. Contact Resolver Support should you wish to use this feature.



Formula Cards

- Adjusted the spacing, font sizes, colors, and borders of formula cards to improve their overall appearance and readability.
- Formula cards can now display the % and $ symbols.



PDF Headers

- A new feature makes it possible to add titles and logos when exporting reports to PDF format.

Rotate Image

- Image files uploaded through the Image Attachment field can now be rotated.

Miscellaneous Improvements

- Updated the templates for emails sent to users from Core to match the current Resolver branding and to improve readability and functionality.
- To reduce clutter, hovering your cursor over an object in the Relationship Graph no longer displays the object's Name and Description.
- General Data Warehouse performance improvements.
- It's now possible to synchronize Active Directory users and groups to help manage access to Core.

Bug Fixes

- Resolved a display issue with report headers showing incorrect font sizes and line breaks.
- Users can now enter a negative number (e.g., -5) into a numeric field.
- PDF exports no longer fail with a 500 error message.
- Formula decimal places on exports now match the formatting applied in reports.
- Fixed a bug that blocked some workflow orchestration events from completing successfully.
- Roles no longer sporadically disappear and reappear in the settings for the Messaging workflow action.
- Corrected a bug that prevented users from selecting a time from the Date & Time picker on report filters.
- An internal server error no longer prevents admins from importing relationship data on objects with external reference IDs that contain only numbers.
- Fixed an issue with users groups sometimes not appearing in the results when searching in role fields on forms.
-

Version 2.8.5 (Hotfix)

Improvements

- Improved the response time when performing the following GET API calls:
    - data/object/created
    - data/object/updated
    - data/object/deleted
    - data/object/roleMemberships/created
    - data/object/roleMemberships/deleted
- Upgraded to Node 10.
- The SP metadata URL for SSO is now publicly accessible.
- Updated the expiring SP certificate for SSO.

Bug Fixes

- Corrected an issue that caused 408 errors when uploading files.

Version 2.8.3 (Hotfix)

Bug Fixes

- The User Groups page in the Admin settings now displays the correct number of users in each group after users are removed.
- Fixed a bug that caused read-only multi-select list fields to appear blank on forms.
- Corrected an issue that prevented admins from creating views for recently created object types.
- Making changes to a cell in a data grid no longer deselects the "Display colored cells as ovals" option.
- Resolved a bug with select list dropdowns not displaying correctly in data grid cells.

Version 2.8.2 (Hotfix)

Bug Fixes

- Reference objects are now displayed in repeatable forms when the report data series does not include the parent object type.
- Fixed a bug that prevented objects from appearing on relationship tables when the last column had no field values.
- Selecting the "Display colored cells as ovals" option in the Data Grid admin settings now automatically enables that option for end-users viewing the grid.
- User-defined cell colors on heat maps are now displayed correctly on PDF exports.
- Users now receive password reset emails after clicking Change Password in the password expiration window.
- Fixed a bug that caused some bar charts to display with truncated data.
- Resolved issues with the date picker that caused the wrong day to be selected and prevented users from selecting any months after September.
- Fixed a bug that prevented users from selecting list options in data grids when the colored cells were displayed as ovals.
- Relationship graphs are no longer reloaded each time an object is viewed in the palette.

Resolver Core Version 2.8 Release Notes

New Features

Adjustments to Nightly Triggers & Emails

Prior to version 2.8, nightly triggers and emails were executed between 7:00 and 8:00 pm Toronto time for all customers, which affected consistency for organizations in different time zones. To fix this, 2.8 will roll out adjustments to the nightly triggers and email deliveries so that they're executed at the same **local time** across all environments.

Core North America:

- Nightly triggers and emails begin at 7:00 UTC.
- Delivery starts for East Coast customers at 3:00 am EDT in the summer and 2:00 am EST in winter.
- Delivery starts for West Coast customers at 12:00 am PDT in the summer and 11:00 pm PST in winter.

Core UK:

- Nightly triggers and emails begin at 2:00 am UTC.
- Delivery starts for customers in London, UK at 3:00 am BST in the summer and 2:00 am GMT in winter.

Core EU:

- Nightly triggers and emails begin at 1:00 am UTC.
- Delivery starts for customers in Frankfurt, Germany and Paris, France at 3:00 am CEST in the summer and 2:00 am CET in winter.

Core AU:

- Nightly triggers and emails begin at 16:00 UTC.
- Delivery starts for customers in Sydney and Melbourne, Australia at 3:00 am AEDT in the southern hemisphere summer and 2:00 am AEST in the southern hemisphere winter.

NOTE: These changes will not disrupt any current configurations. Triggers and emails will execute on the same day.

Rich Text Formatting

- Text fields now support rich text formatting, and with it, end-users can apply headings, basic font formatting, alignment, lists, and hyperlinks for up to 20,000 characters of text directly in the field using the editor or through data import. Rich text formatting is displayed in reports viewed in Core, as well as their exports (Word, Excel, or PDF).

Formula Cards

- A new formula card display option is now available on reports and forms.

Display Cell Colors as Circles

- To improve readability, colored cells in data grids and relationship, reference, and report tables can be displayed with a colored circle instead of a full

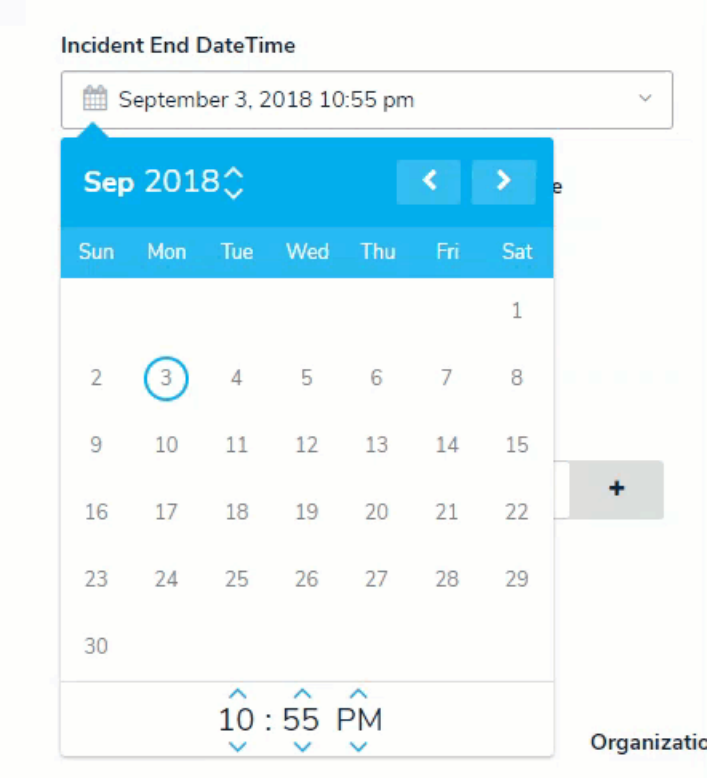
background color. Note that this option does not apply to workflow states.

Risk Description	Control Effectiveness	Inherent Likelihood	Inherent Impact
Inability to effectively monitor	Non Existent	Probable	Low
The risk of being the subject of a claim or proceedings due to inaccurately drafted contracts or inaccurate	Non Existent	Possible	Significant
Labor regulations are not followed leading to excessive fines and penalties.	Non Existent	Probable	Critical
Existence of financial information that is incomplete, inaccurate, improperly valued,	Strong	Possible	Low
Ensuring privacy/identity management and information security/system protection may require	Strong	Possible	Low
The risk that execution of business strategies will be impaired by failing to effectively manage the	Weak	Remote	High

Improved Date & Time Picker

- Select a date and time with fewer clicks using the improved date picker. Instead of continuously scrolling to select a date, you can now type the year, use the dedicated year arrows, and select a month from the new dropdown menu. To choose a time, you can still use the original arrows, or type the exact hour, minutes, and AM or PM.

View an Example



Select List Toggle Buttons

- Single select lists with five options or fewer can be displayed as toggle button groups on forms, so end-users can see all their options on-screen at the same time.

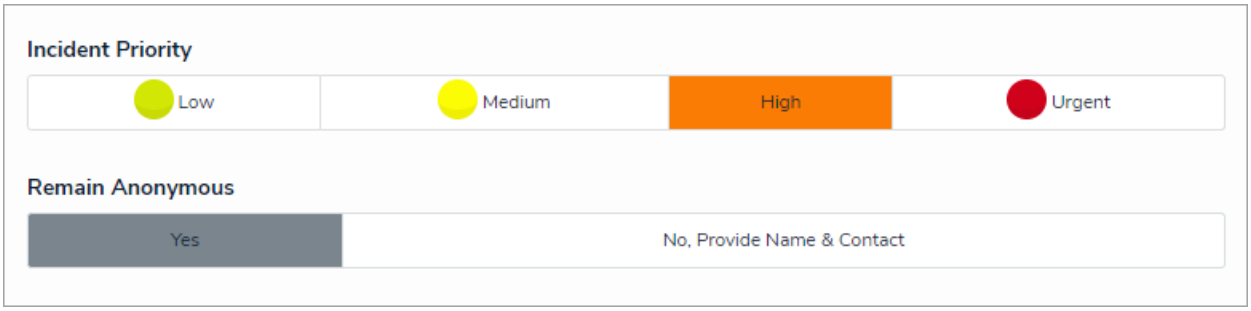


Image Upload

- A new administrative tool makes it possible to upload and store images (i.e., company logos) to embed within Core.

Palette Functionality on Mobile

- Palettes viewed on mobile devices are now fully functional and scaled to fit smaller screens.

Data Grid Palette

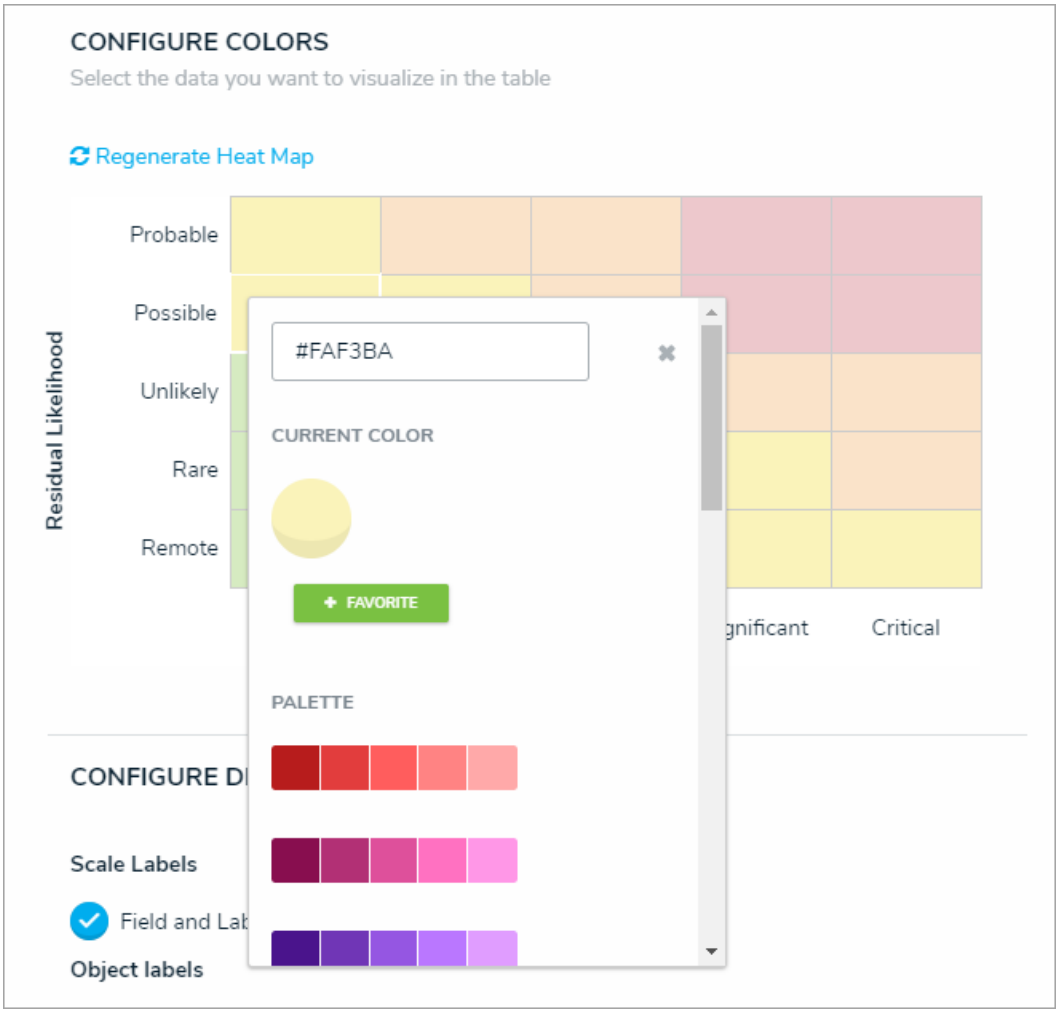
- Admins can now select a custom form to display in a palette for objects opened from a data grid, allowing end-users to access additional object data without navigating away from the grid.

Filter Tasks By Workflow State

- Clicking a bar chart on the My Tasks page filters which objects are displayed based on their current workflow state, making it easier to manage your tasks.

Heat Map Colors

- A new color picker makes it easier to customize the colors displayed on your heat maps. Clicking a cell in the settings displays the picker where you can enter a hex color or choose from several preset shades.



Relationship Graph Improvements

- Added functionality to relationship graphs, including:
  - Filters to display objects based on depth (1st Level, 2nd Level, and 3rd Level).
  - Highlighting the root object to easily identify which object the graph was opened from.
  - Viewing object details in a palette instead of redirecting users away from the graph.

Repeatable Form Page Breaks

- Admins can enable automatic page breaks before form titles so that each new form instance starts on a new page when exporting to PDF.

UI Improvements

- Various enhancements throughout the Core interface to improve the user experience, including font color adjustments for readability and improvements to editable data grid cells.

Idea Portal Link

- Admins can now access the Idea Portal through a new link in the Help menu.

Additional Supported Languages

- The Languages feature now supports Chinese (Simplified), Chinese (Traditional), Japanese, Korean, Russian, and Hebrew (including right-to-left text directions on Chrome, Internet Explorer, and Microsoft Edge).

Exclude PII in the Core Analytics Tool

- Added the ability to exclude user's first names, last names, and email addresses from the data sent to the Core analytics tool (Pendo).

Bug Fixes

- Resolved a bug that prevented linked object types from appearing in the Related Object Types section of the Editing Field page.
- Fixed an issue that prevented attachment files with #, %, or comma characters in the file names from being downloaded.
- The Modified By property no longer occasionally displays the incorrect user.
- Formulas now update as expected when a field value is configured on a workflow transition.
- Deleting a child relationship object that's used in a variable now automatically updates the formula on the parent object.
- Fixed an issue with linked objects not appearing on relationship tables.
- The system no longer accepts imported objects with names that exceed the 300 character limit.
- Users can now successfully upload .zip files as attachments on forms.
- Users groups removed from a role no longer appear in the search results in the role field on a form.
- All platform keys are included and properly translated when configuring alternate languages.
- Using the Explore By feature to search for objects no longer results in the occasional timeout.
- Corrected a bug with Starred Reports that caused sporadic login issues for some users.
- User group names are no longer omitted from language translations.
- Fixed an issue with forms not loading when impersonating another user.
- Corrected bugs that prevented object type names from being translated in the column headers of exported reports and formula ranges from being translated in reports exported into spreadsheets.
- Fixed some issues with the Assessment Header in both Internet Explorer and Chrome.

Version 2.7.1 (Hotfix)

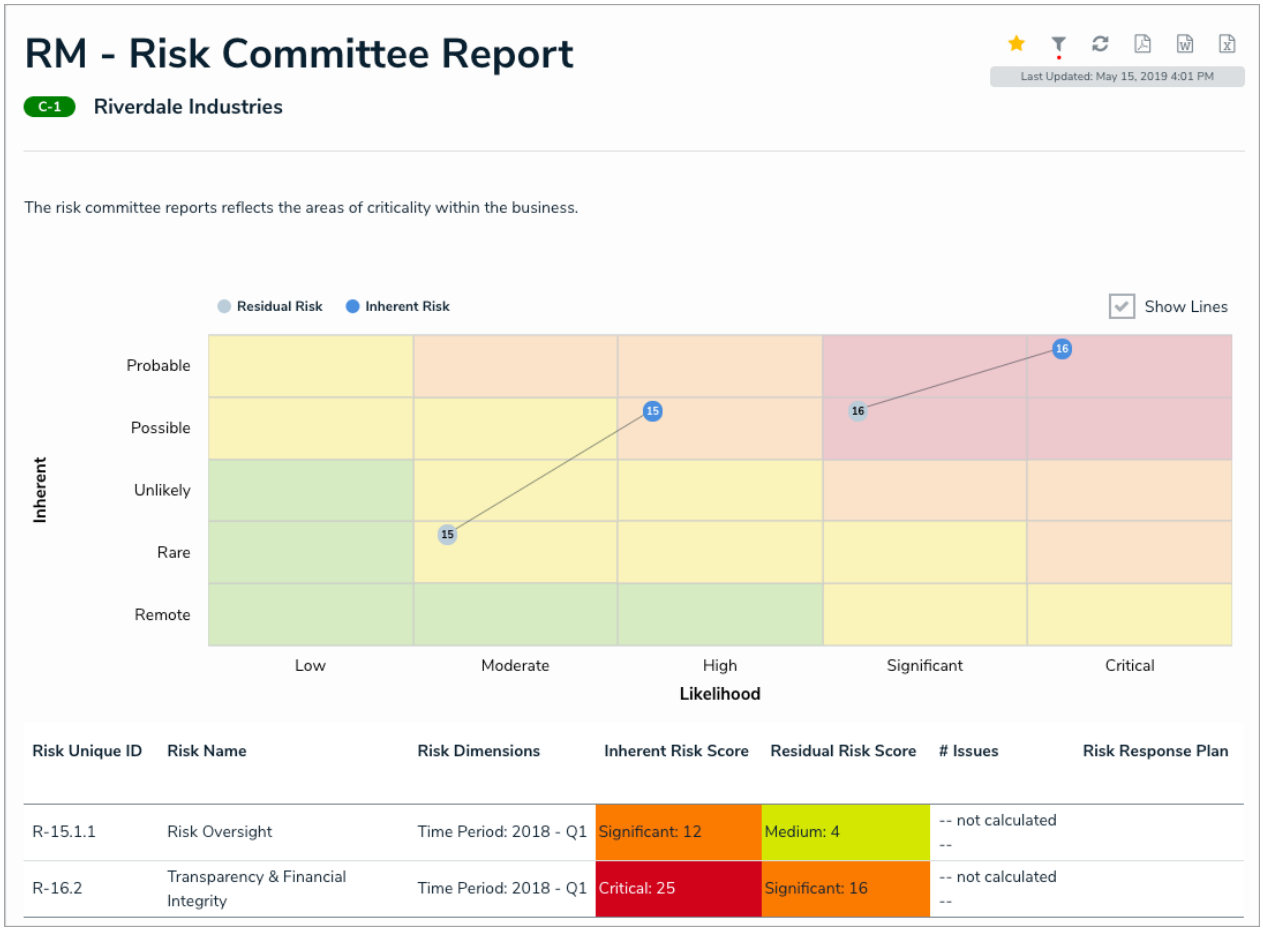
Bug Fixes

- Fixed an issue with anonymous URLs redirecting incorrectly when the links don't contain a hash symbol (#).
- Corrected a bug that caused a "Lost Connection" error message to appear to some users.
- Relationship tables on forms now display up to 1,000 objects.
- Data grids now load correctly after applying select list option filters.
- Corrected some bugs with PDF exports, including:
    - Section and page break lines displaying incorrectly on repeatable forms.
    - Extra padding in the left margins on repeatable forms, causing field names to wrap and images to shrink.
    - Unique IDs not displaying in the PDF report header.

New Features

Multiple Data Points on Heat Maps

- Up to six additional data points from a single object type can now be added to heat map reports. Each data point is assigned a preset color and grouped together on a legend, with optional custom axis labels and lines between objects that appear on the map more than once. Note that the cell labels displayed are populated based on the first data point added to the heat map.



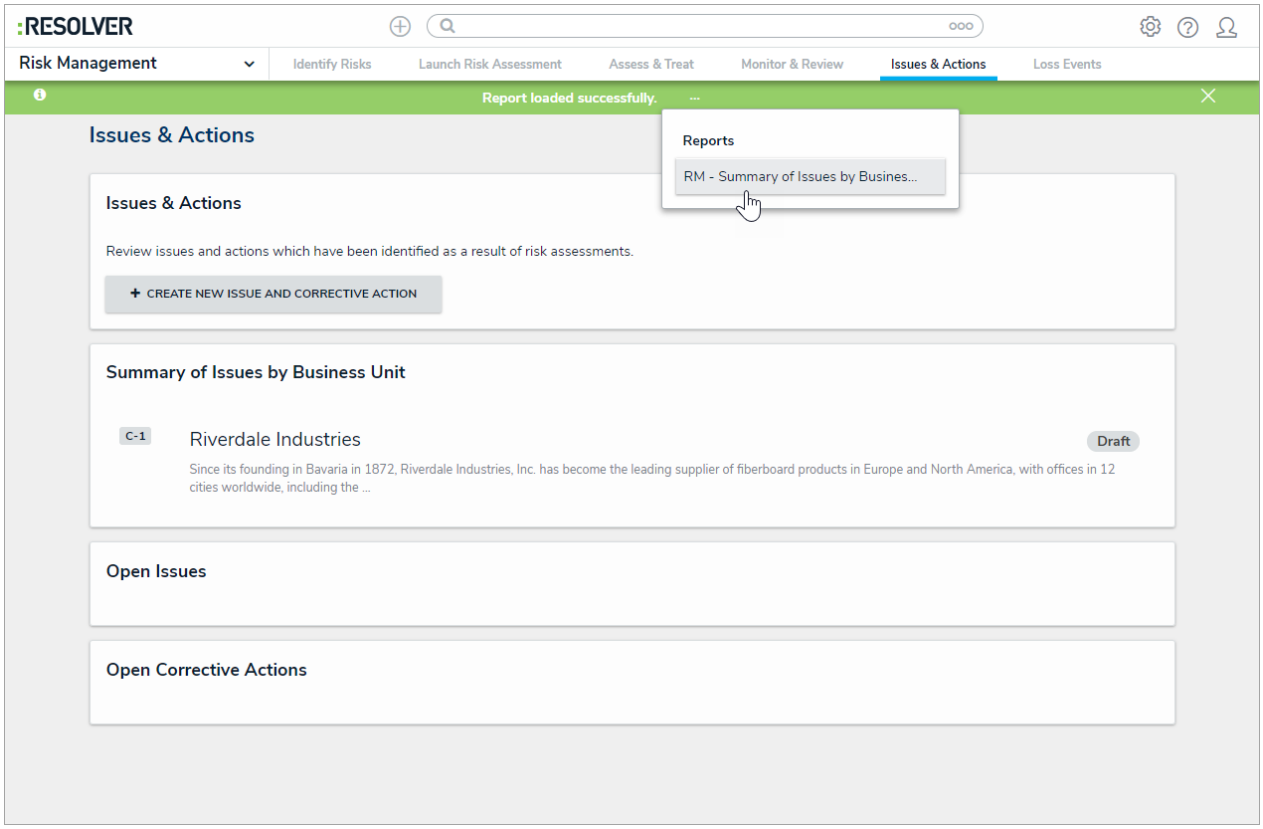
Risk Unique ID	Risk Name	Risk Dimensions	Inherent Risk Score	Residual Risk Score	# Issues	Risk Response Plan
R-15.1.1	Risk Oversight	Time Period: 2018 - Q1	Significant: 12	Medium: 4	-- not calculated --	
R-16.2	Transparency & Financial Integrity	Time Period: 2018 - Q1	Critical: 25	Significant: 16	-- not calculated --	

PDF Exports & Page Breaks

- It's now possible to export reports into a PDF file. Additionally, the new Page Break element breaks the page on PDF exports based on where an admin placed the element on the canvas, ensuring the report is displayed correctly when it's exported or printed.

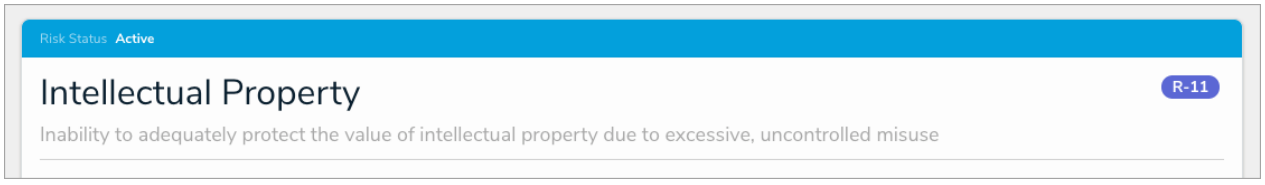
Report Loading & Caching

- To reduce loading times, previously loaded report data is cached for up to an hour, preventing the need to regenerate data every time a report is viewed within this 60-minute period. The cache is cleared only when your session ends or expires, or an administrator makes changes to the report's configurations or permissions.
- Users can also now work in another area of their org while the report is loading, but can easily access it once it's available through a link in the new banner. All reports will display a timestamp in the user's local time indicating the time and date the report data was last loaded.



Form Header Enhancements

- Form headers now have additional configuration options for admins, including custom titles or sub-titles based on the object's Description property, as well as the option of showing the object's workflow state and Unique ID at the top of the form.



Fewer Restrictions on the Pull Data Values Action

- It's now possible to copy an object's data in the Pull Data Values action when it belongs to a relationship that isn't restricted to a single object.

Business Intelligence Connectivity Via the Data Warehouse

- For all customers that go live after the 2.7 release, changes to objects (e.g., risks or incidents) are now sent to the new data warehouse. It stores a version of both current and historical data making it possible to track trends and see changes over time through business intelligence tools > **BI Connectivity**. Once purchased, administrators can access their warehouse credentials via their personal profile page in Core.

  NOTE: BI Connectivity via the Data Warehouse will not be available for our customers live on Core prior to the 2.7 release. Availability for existing customers will come in the Core 2.8 release currently targeted for the September time frame. Contact your Customer Success Manager for more information on this new feature.

Miscellaneous Improvements

- Admins can choose whether to show or hide empty views to end users in an activity.
- Admins can apply By Creation Date and By Last Modified Date parameters to reports.

- Improved image scaling in the Image Attachment field on forms.
- Addressed some display issues for users searching relationship and assessment names while using Internet Explorer or Edge.
- Report filters accessed by end users have been streamlined to remove unnecessary space, titles, and sections.
- Data grids now support multi-select lists.
- A repeatable form with one or more unsupported elements (e.g., relationship, reference, and assessment tables, tabs, workflow buttons, etc.) now shows an "Unsupported Element" message, ensuring the remainder of your report is properly displayed. See the **Unsupported Elements** section in the Add Repeatable Forms to a Report article for more information and a full list of unsupported elements.

Bug Fixes

- Fixed a bug that would cause inferred permissions to intermittently stop working.
- Formulas no longer retrieve options from deleted select lists.
- Fixed an issue that prevented objects from being created and linked from required relationship fields.
- Relationship columns from referenced object types no longer show "Errant Column" errors when configuring a report or data grid.
- Automatic recalculations now work correctly on all formulas.
- Fixed a bug that removed form section conditions when a linked field was removed from an unrelated object type.
- Scoping several objects in an assessment will no longer result in timeouts.
- Fixed some intermittent issues that occurred when rearranging options in a select list.
- Assessment dimensions are no longer repeated in reports.

For a brief overview of some of the new features in this release, see the Core 2.7 Orientation Video.

Version 2.6.2 (Hotfix)

Bug Fixes

- Fixed a bug that prevented formula calculations from being exported.
- Corrected an issue that allowed users to view unassigned objects.

Version 2.6.1 (Hotfix) Release Notes

Bug Fixes

- Fixed a bug that caused heat maps to load incorrectly.
- Users will no longer see significant delays when searching for objects through relationship fields on a form.
- Heat maps now function correctly when pulling data from an object type group with more than one object type.

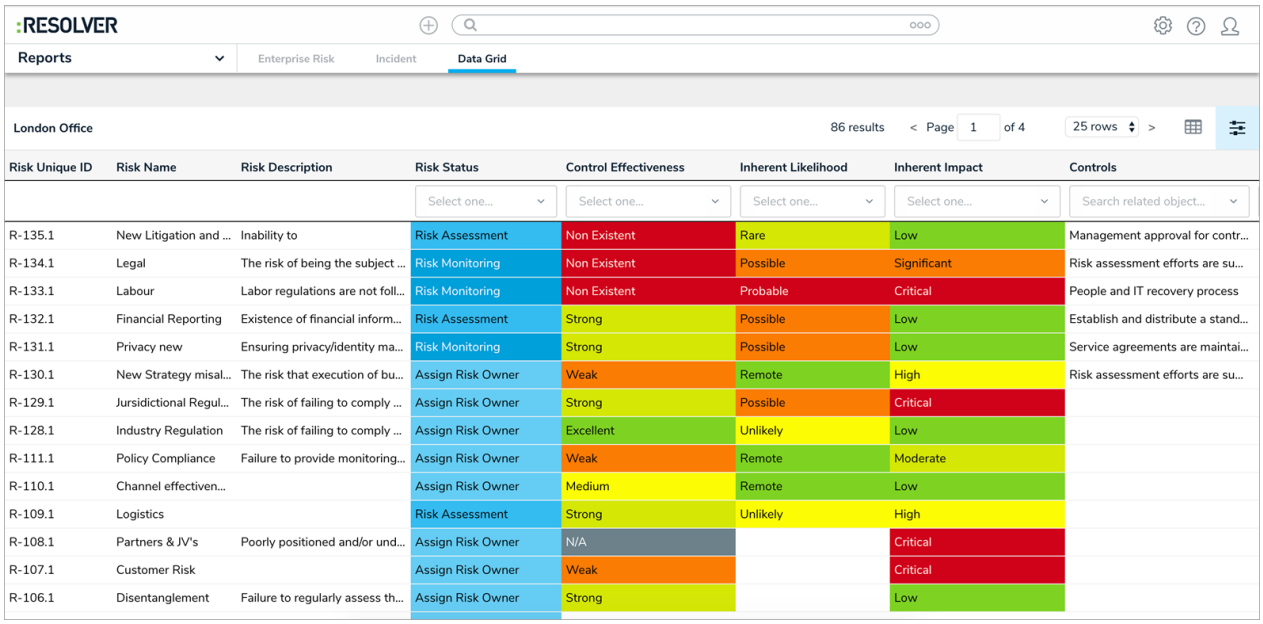
Resolver Core Version 2.6 Release Notes

For a brief overview of some of the new features in this release, see the Core 2.6 Orientation Video.

New Features

Data Grid

- The new data grid displays object data selected by an admin in a spreadsheet-style format. End users can edit the fields, sort, filter, and search for data, show or hide columns, click through pages, and adjust column width and the number of rows displayed per page. Admins can also select if some or all of the fields in the grid are read-only or editable.



Pull Data Values Workflow Action

- The new Pull Data Values workflow actions copies field and relationship data from related objects into another object once it transitions into the next state.

Menu Toggles

- The Quick Add, Search, and Help menu items in the top bar can now be toggled on or off for a role, granting administrators more control over which tools and features a user can access.

Repeatable Forms Parameters

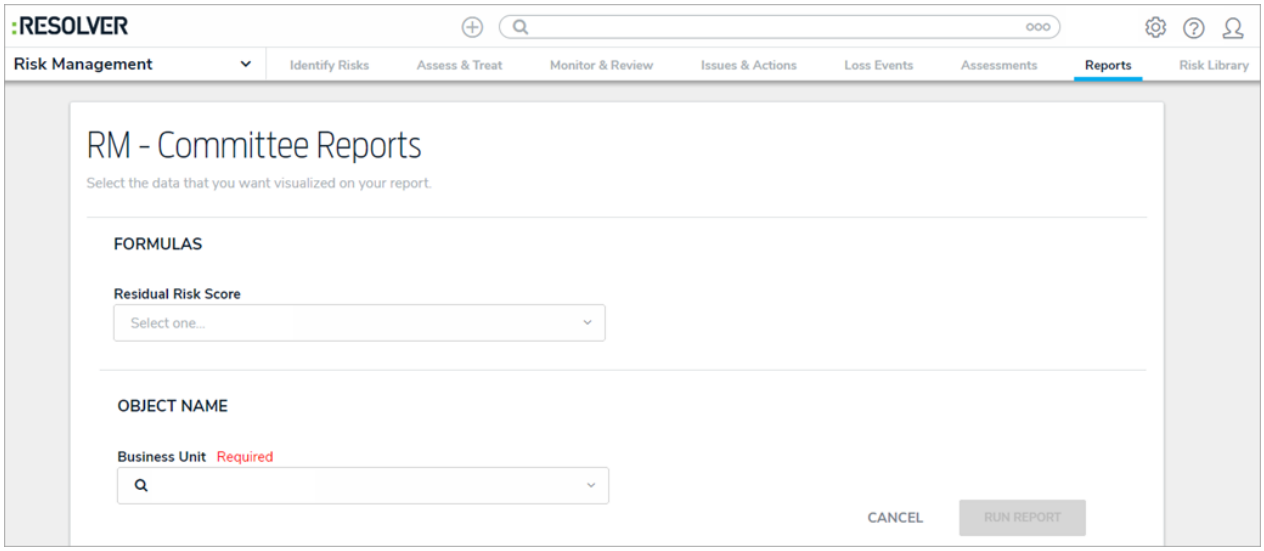
- Administrators can now apply parameters to a repeatable form element to control which data is displayed.

Relative Date Parameters

- Admins can select relative date parameters on tables, data grids, and repeatable forms to show data within more generic time period. Options now include:
    - Today
    - Last 30 days
    - Last 90 days
    - Last 180 days
    - Custom

Required Filters

- If a report-level filter is marked as required by an administrator, users must now apply a value to that filter before the report is loaded.



Create Object Action Notifications

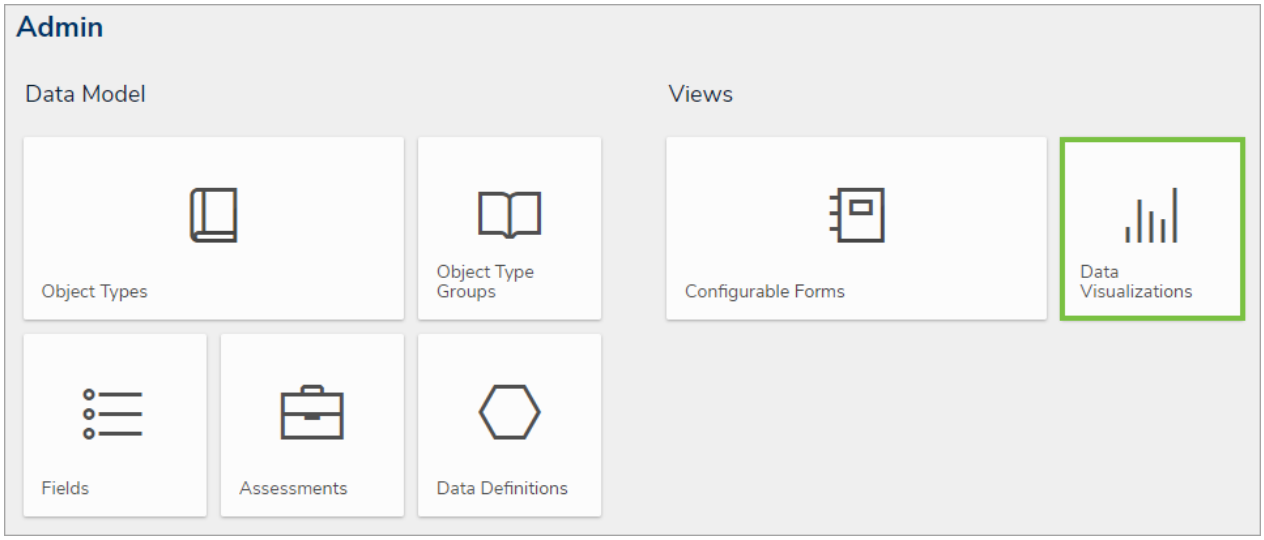
- A notification banner appears when objects are successfully created through a Create Object action on a workflow transition. The ellipsis (...) in the banner displays a list of the objects created. Clicking one of those objects in the list will display the new object.

Relationship Table Sorting

- Objects in relationship tables on standard forms are now automatically sorted by their Unique IDs (newest to oldest).

Data Visualizations

- The Reports settings in Admin has been renamed to Data Visualizations. Functionality in these settings remain the same and you can still create and edit reports (charts, tables, heat maps, and repeatable forms) and data analytics reports, along with the new data grids.



Bug Fixes

- Corrected an issue that prevented select lists from being searchable in report filters.

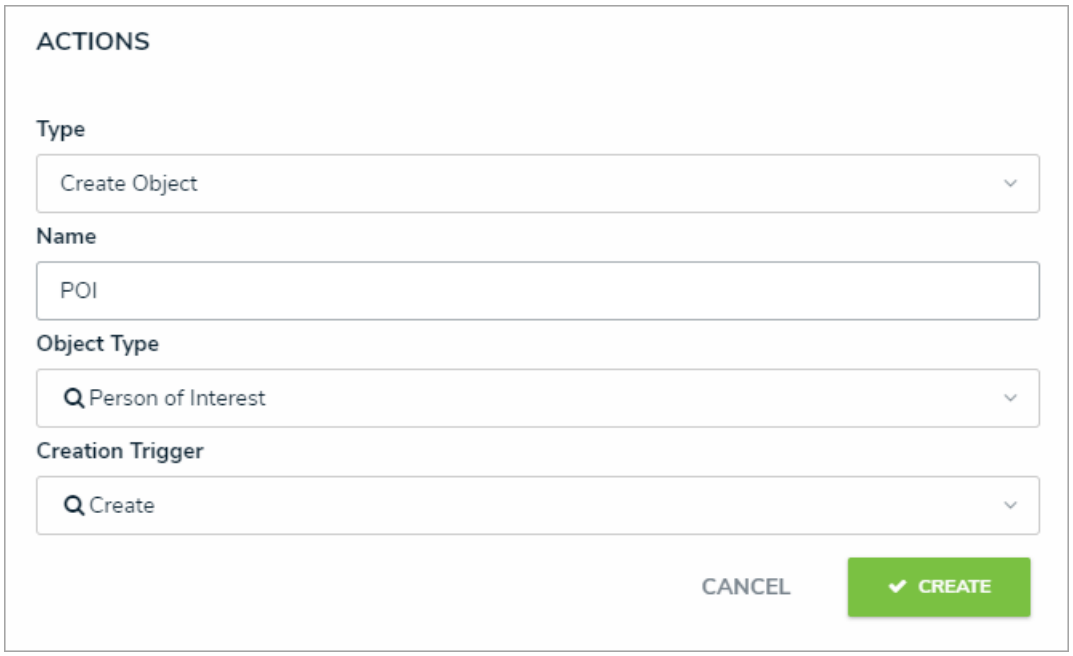
- Assessment dimensions are now separated by commas when displayed on forms.
- Images are no longer stretched when displayed in a palette in Chrome.
- Fixed a issue that resulted in users seeing a blank screen when switching between multiple starred reports.
- Date filters are no longer duplicated on the report filter palette.
- Nightly triggers will no longer send duplicate emails to users.
- Clicking Refresh on a report page with repeatable forms will now display a new data set when an object is edited.
- Opening a report with repeatable forms from a nav form tree will no longer display a blank page.
- Fixed the assessment labels and adjusted the placement of the Add and Remove buttons on the scoping page.
- Assessment workflows can now be selected as report parameters.
- The Inferred Permissions tree is no longer blank after deleting an object type that was selected in the tree.
- Fixed a bug in tables that caused the forms selected in a role's workflow permissions to override custom form selections.
- A data analytics export will no longer timeout when exporting a large data set.

Version 2.5 Release Notes

New Features

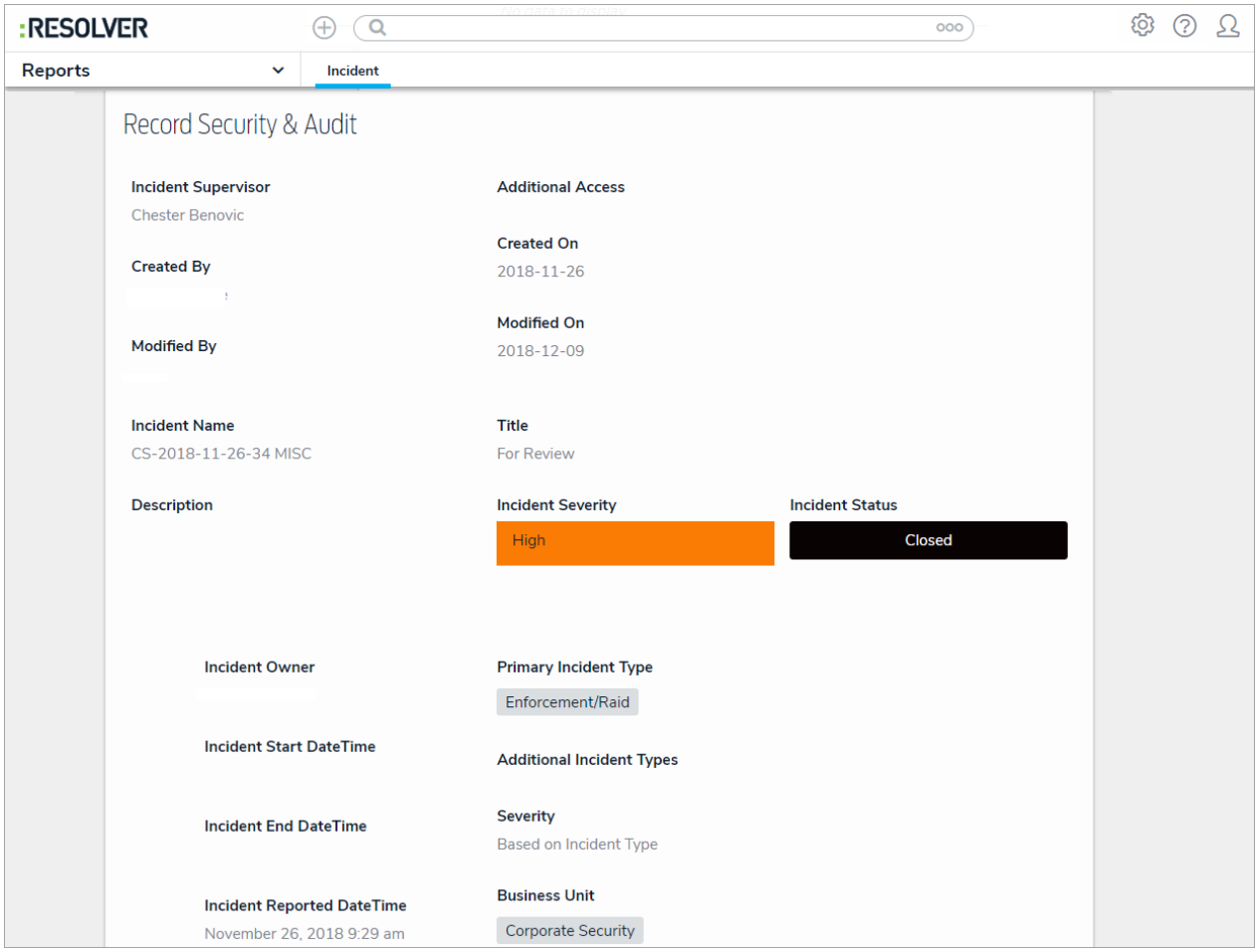
Create Object Action

- Clicking on a trigger with the new Create Object action will create a new relationship or reference object while moving the originating object to the next state.

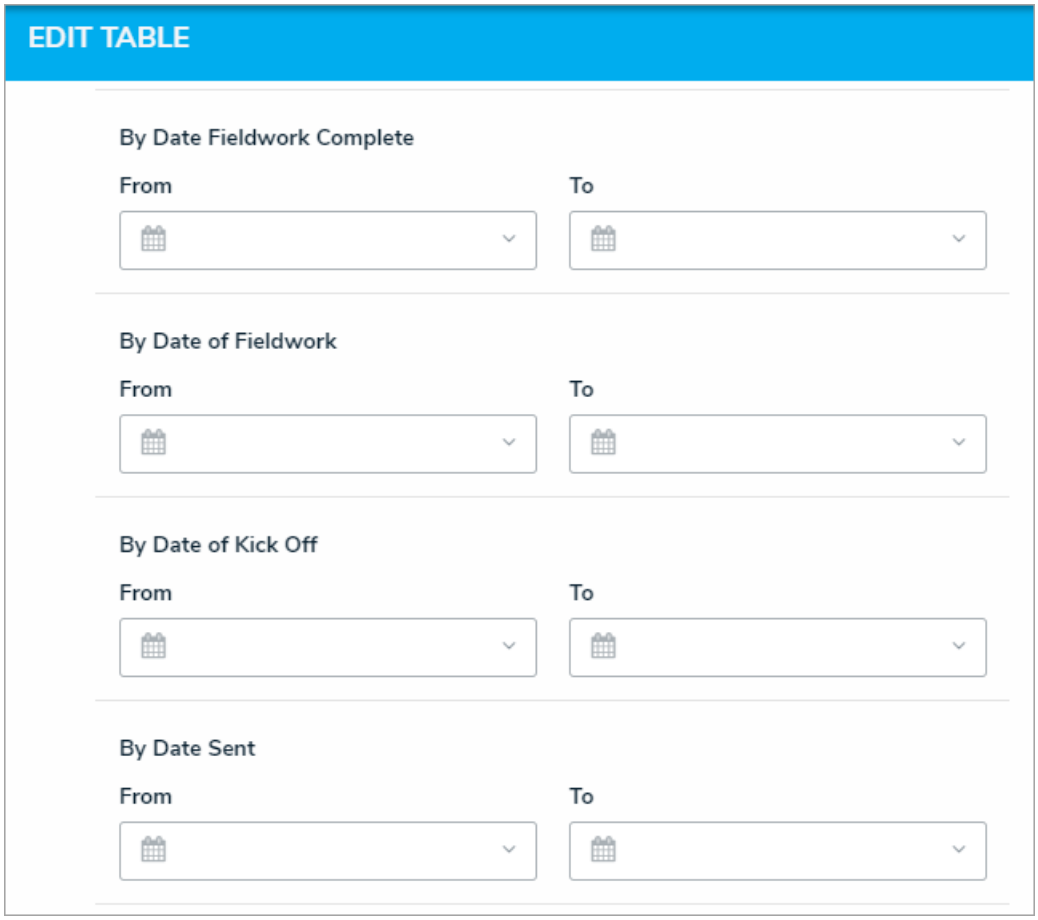


Reports

- Repeatable Forms is a new report element that displays object data as a non-editable, printer-friendly form. This report type is useful for forms that will need to be printed and/or shared in read-only mode with other users.



- Table reports now support Date & Time field parameters to narrow down the data displayed in the report based on the dates applied in the table's settings.



- For improved performance, filters are no longer automatically applied to reports once selected in the Filters palette. Users must now click the Apply Filter button to narrow down the data displayed.

Assessments

- Adding objects to a relationship or reference field on an assessment no longer creates clones (nstances) of those objects when the Assessment Data option is disabled for the corresponding object type in the assessment's settings.

Miscellaneous Improvements

- Form conflicts are now identified for forms accessed through a palette.
- The Date & Time field no longer rounds up to 5-minute increments to allow for greater accuracy when inputting a time.

Bug Fixes

- Creating a new relationship object no longer occasionally results in an error.
- Assessment types are no longer missing from the Explore By feature when the user has been added to a user group.
- Fixed a bug that would produce a 500 error when trying to delete a role that was set as a required component in a workflow.
- Corrected an issue that would cause pie charts with no data to display duplicate "No Value" sections in the report.
- Users' names now appear in the search results of a role field when typing or pasting a space.
- Fixed an issue that would occasionally prevent forms or reports from being moved to the top of the list in a view.
- General improvements for report loading when applying filters.

Version 2.4.2 (Hotfix) Release Notes

Improvements

- Australia (AU) is now a supported region for data storage.
- Added a time limit for formula calculation run times. If the calculation fails after the allotted time, an error message is displayed and an administrator should check the formula's settings to rectify any issues.

Bug Fixes

- Fixed an issue that prevented users from accessing Core or opening links from emails when SSO is enabled.
- Corrected a problem that prevented some users from creating new objects.

Version 2.4 Release Notes

See the Version 2.4 Feature Overview Video article for a video introduction to some of these new features.

New Features

Assessment Management

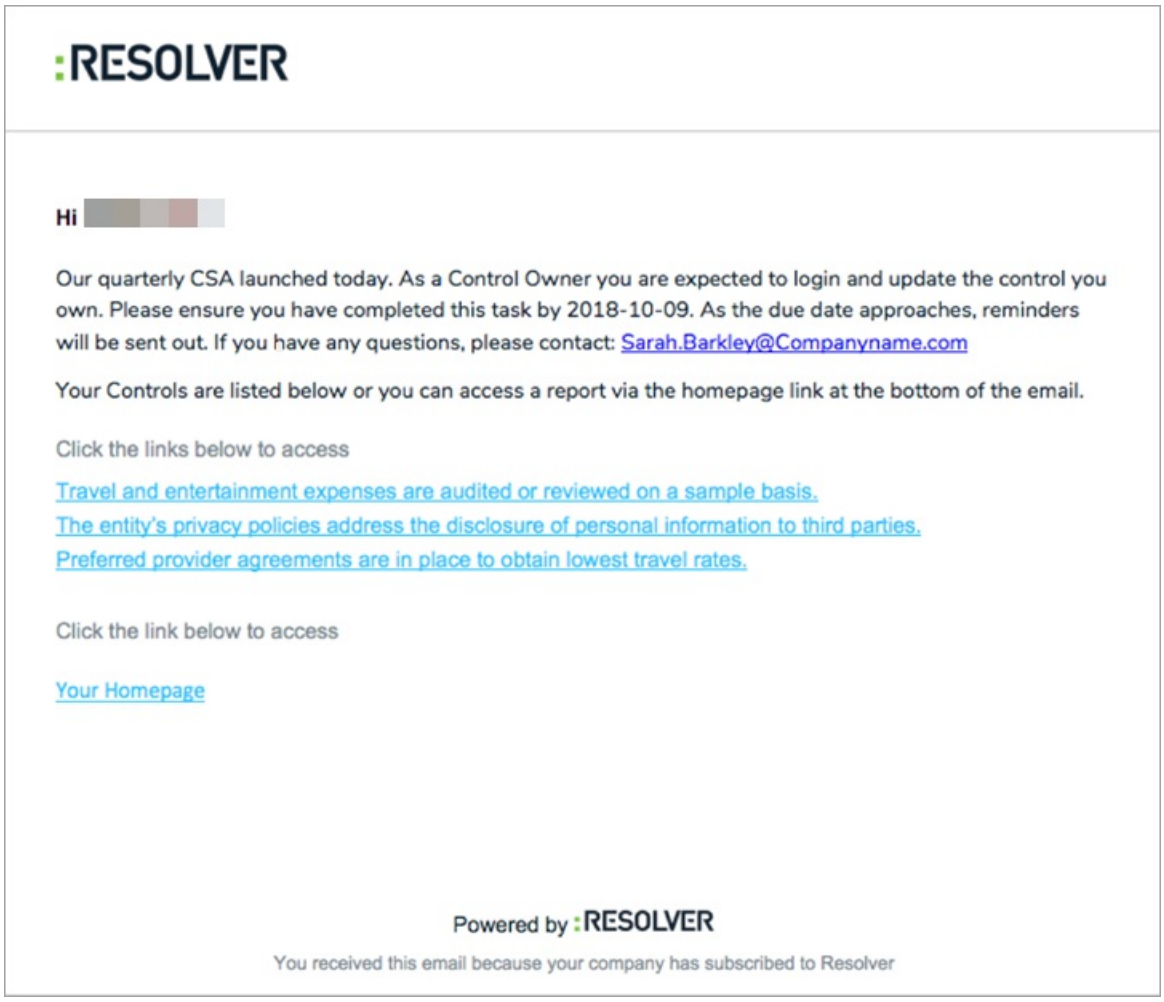
A number of new features make it easier to manage assessments, including the ability to:

- Delete unused data definitions;
- Modify any fields currently used in an assessment;
- Select a new data definition for an unlaunched assessment;
- Delete a launched assessment type and all its data; and
- Delete an individual assessment object and its instances (evaluations).

Note that only administrators with Delete permissions enabled on the assessment type can delete launched assessments and assessment objects.

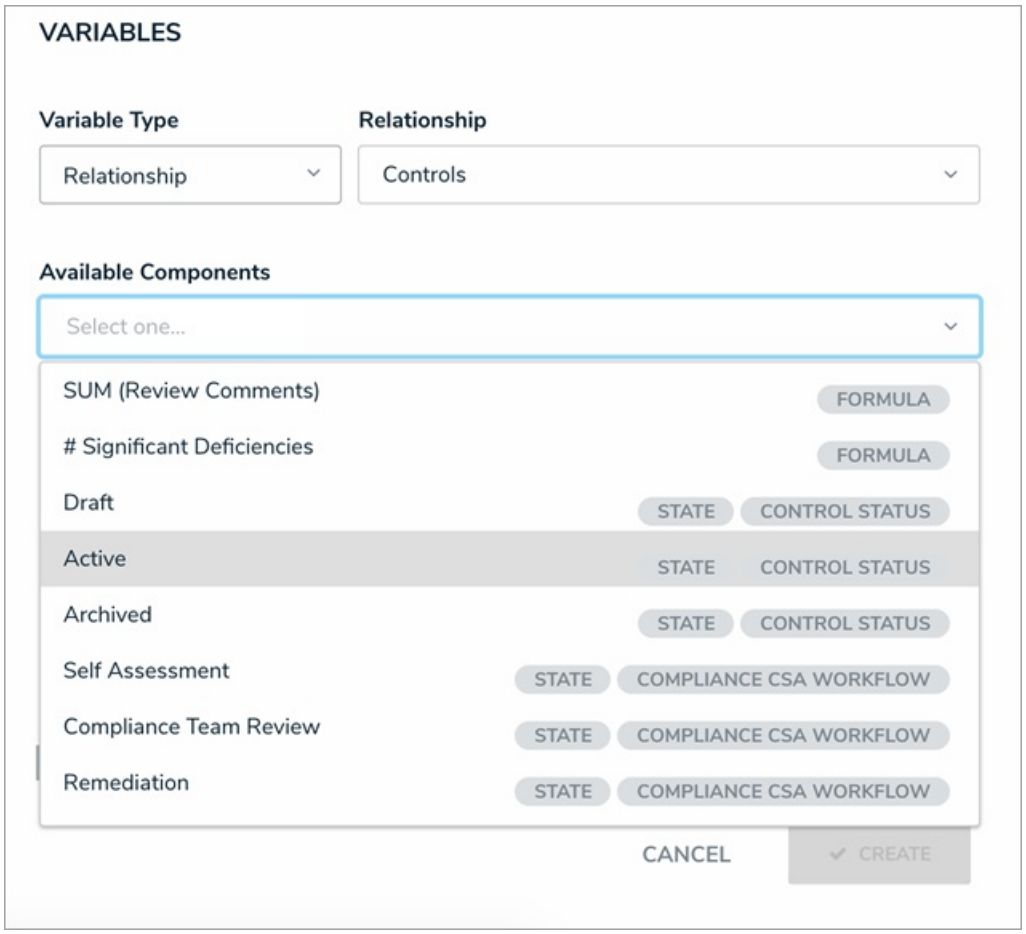
Email Daily Digest

The Messaging action on a workflow now offers a nightly delivery frequency to queue all the email notifications a user would receive for the transition in a single email. If the same role and email template are selected for additional Messaging actions, users will receive one email with a consolidated list of all the objects that require their attention, even if they're from multiple object types. For added convenience, admins also have the option to include a link in the email to the user's homepage (My Tasks or starred reports).



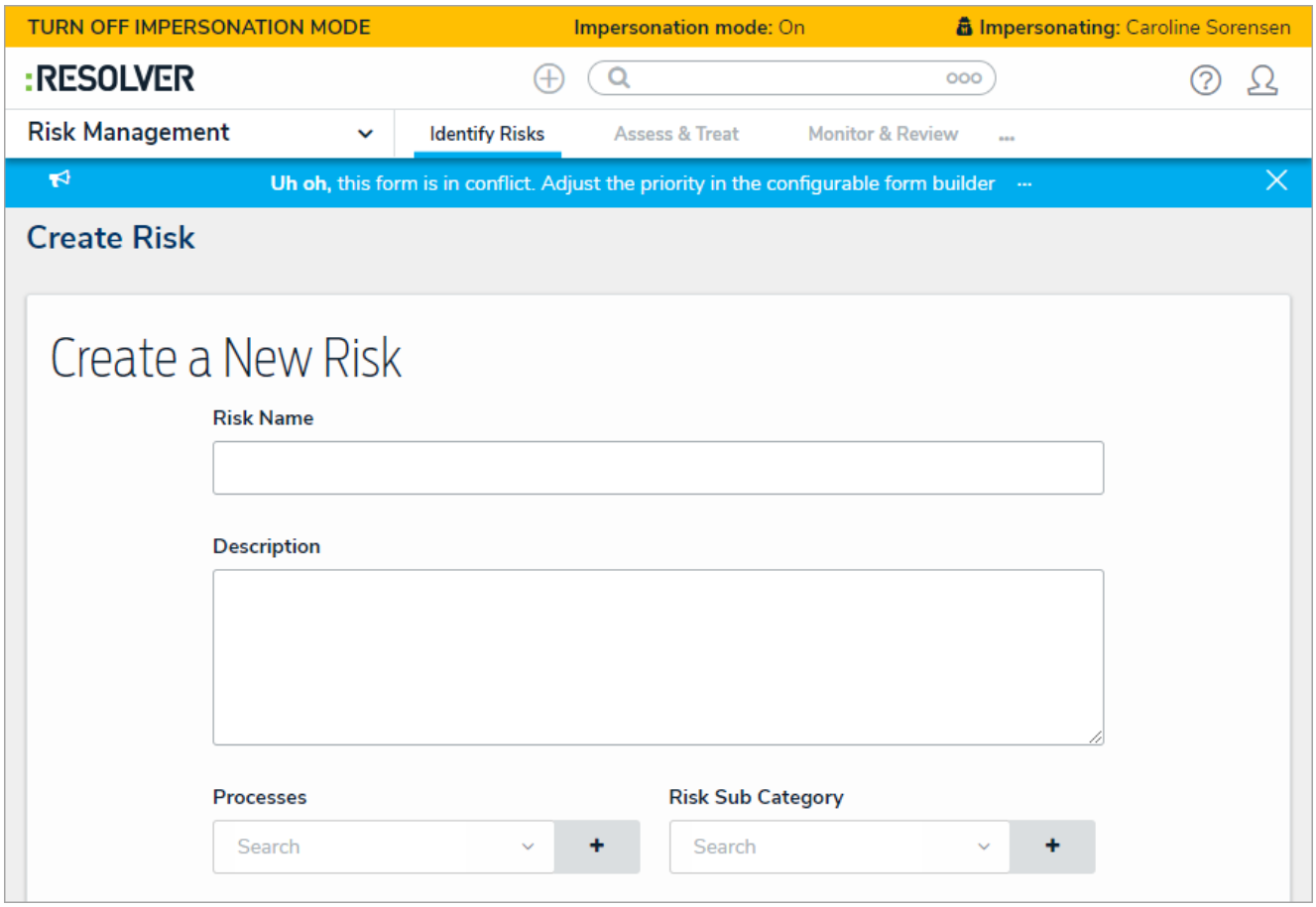
Workflow State Variables

Administrators can use workflow states as relationship/reference variables in conditions or formulas. Depending on the sub-type selected, these variables will check if some or all of the objects are in the specified state or provide a count of the objects in that state.

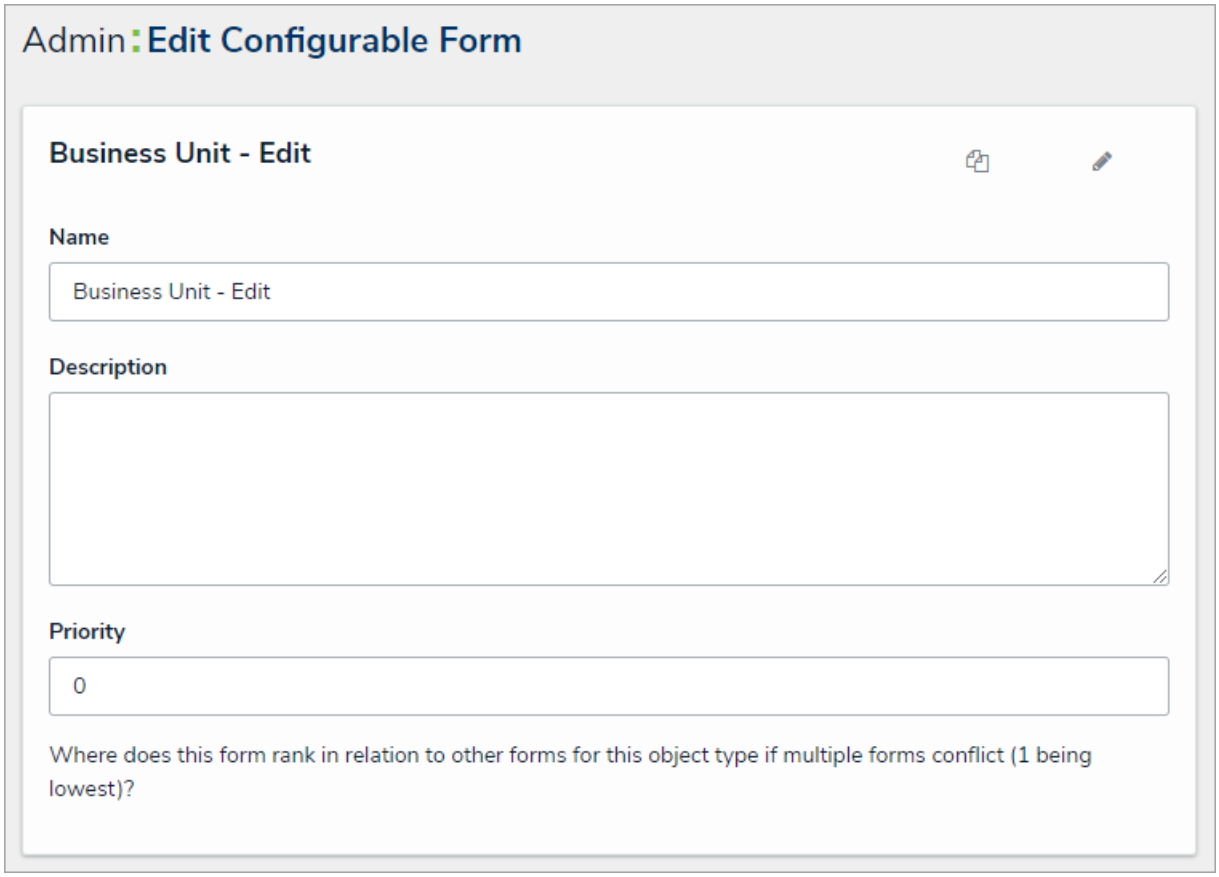


Identify Form Conflicts & Set a Priority

When a user belongs to two or more roles that have permission to view the same object, Core will automatically display the most recently created standard form for that object, which could create a form conflict. Now, using the Impersonate feature, administrators can navigate to a particular form to check if a conflict exists.

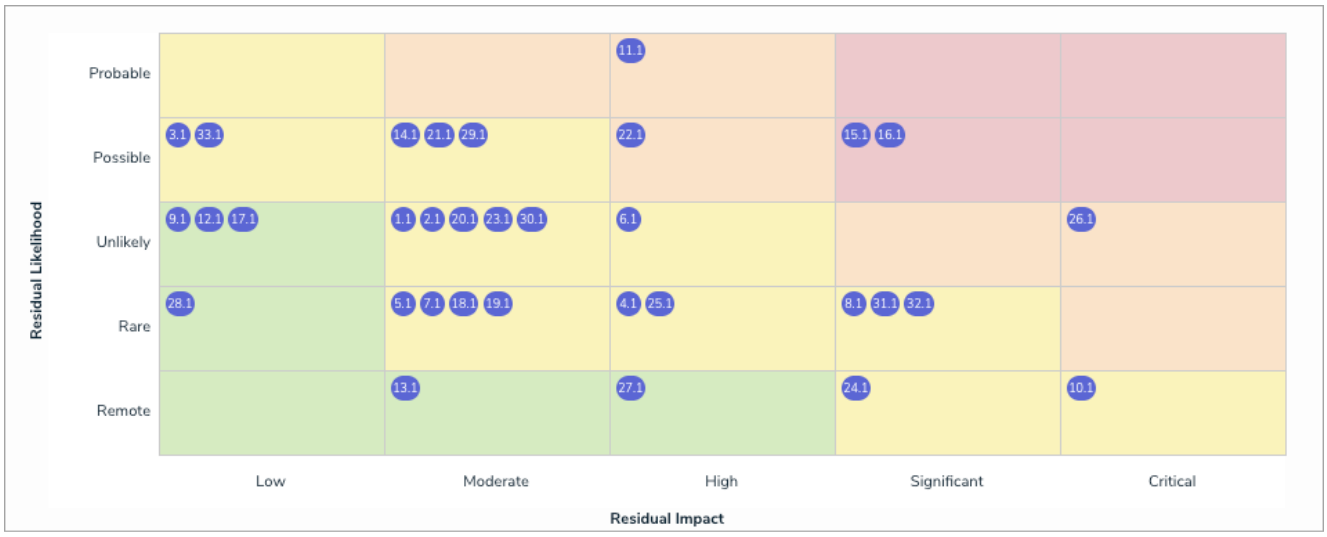


If a form conflict does exist, a number can be entered into the new Priority field when editing the form, so that the form with the higher assigned priority is displayed to the user.

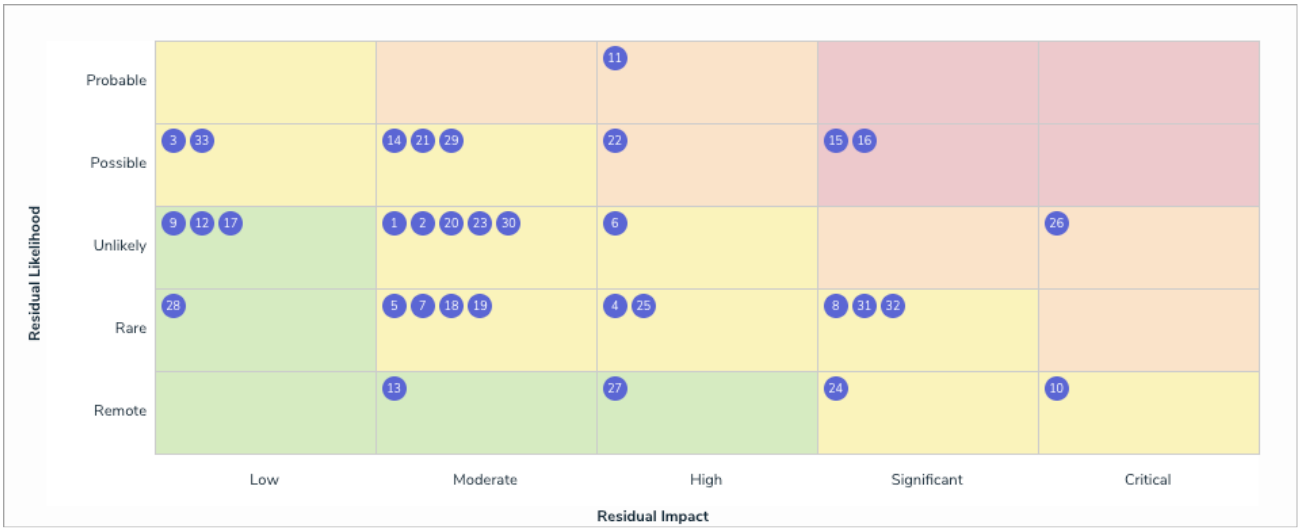


Heat Map Display

Two new options in the heat map settings allow administrators to show or hide decimals for assessment objects as well as the field or formula names selected for the X and Y axes.



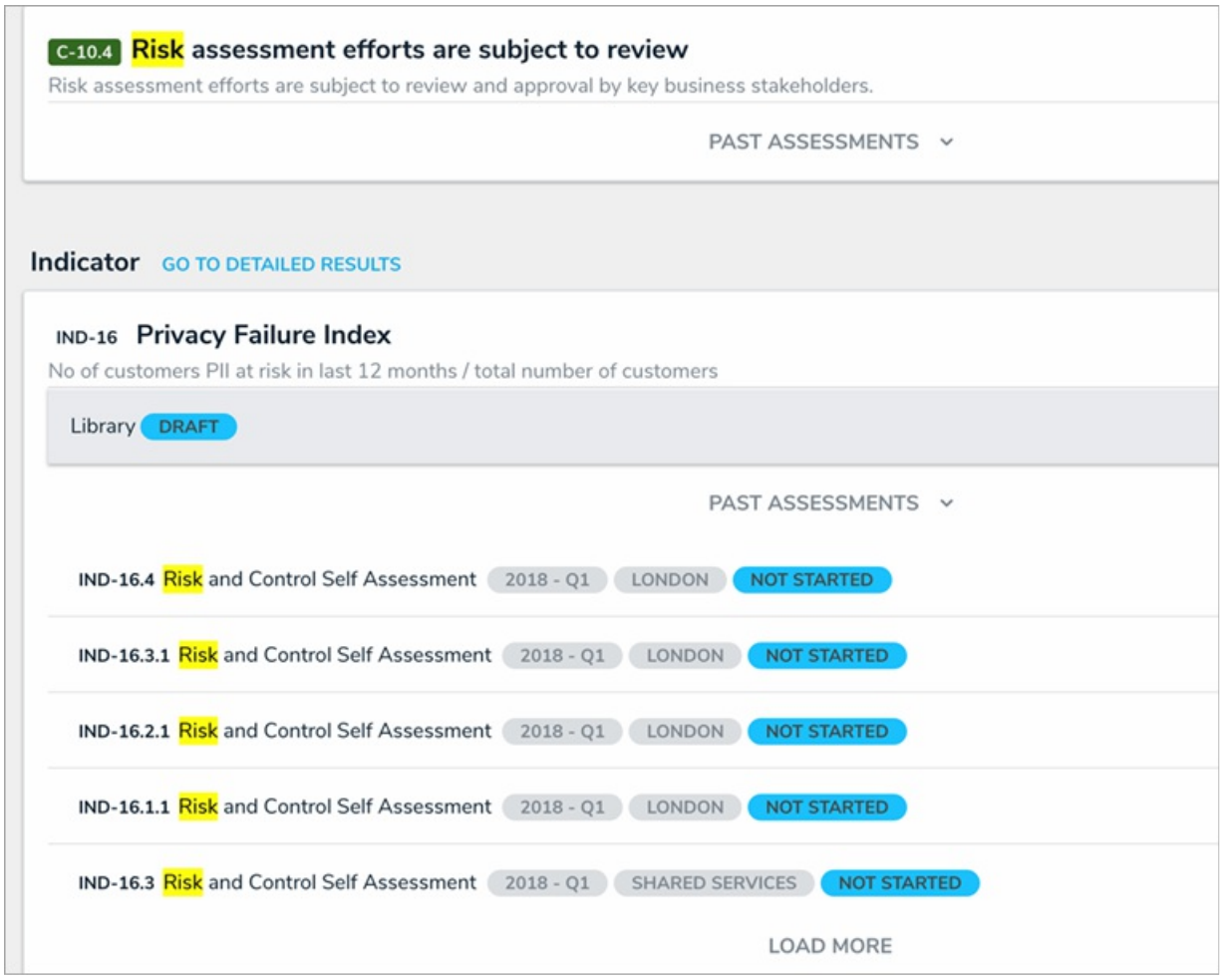
A heat map with decimals displayed.



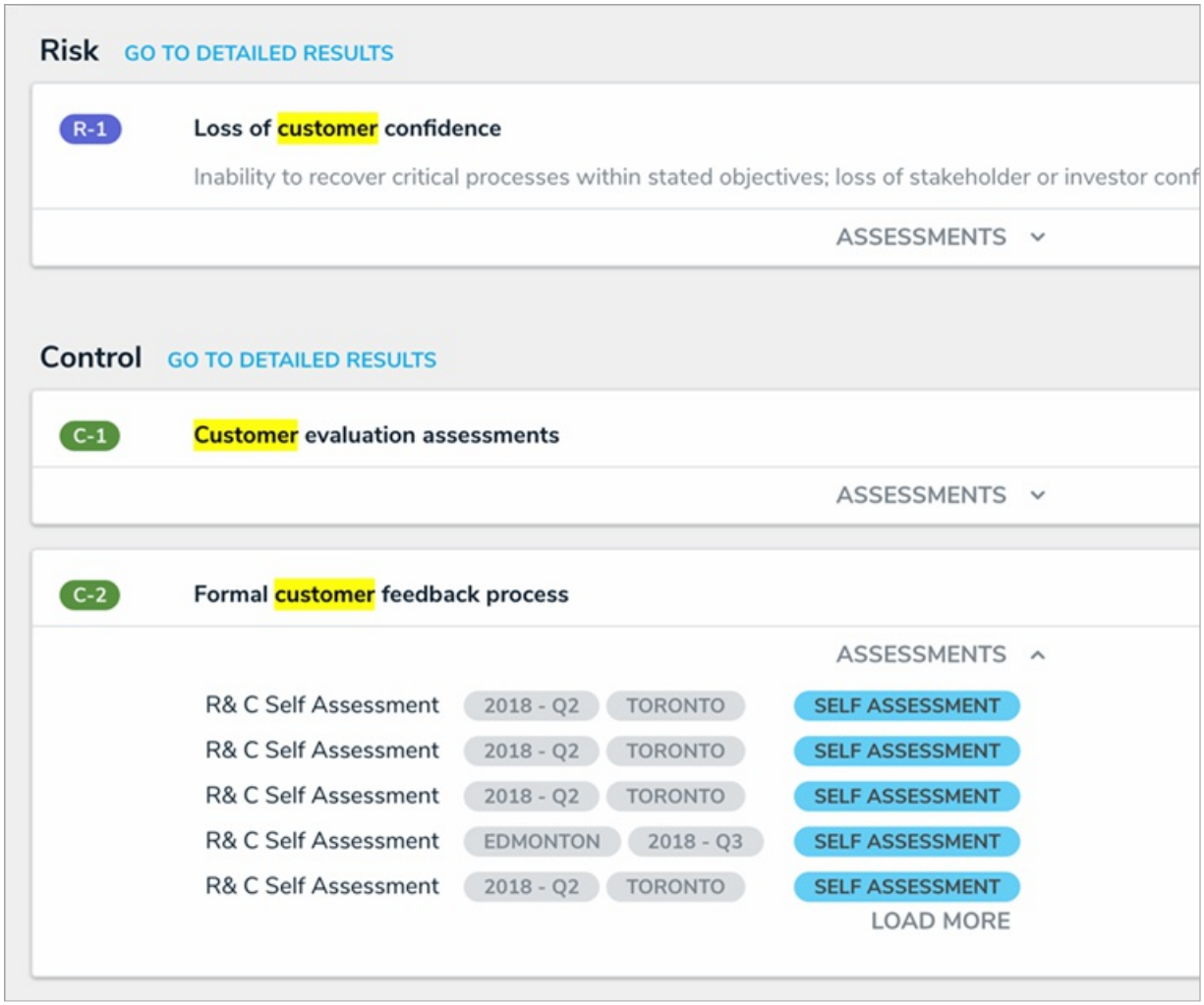
A heat map with the decimals hidden.

UI Improvements

The user interface for objects displayed in search results, the assessment scoping screen, and the advanced relationship/reference palette have been streamlined with a more intuitive design. This includes hiding references to assessments if no assessment data exist, automatically displaying existing objects that can be added to a relationship or reference through the palette, and displaying a message when a search yields no results.



Search results before version 2.4.



Search results after version 2.4.

Data Region Identification

The login screen and help icon in the top bar now displays the country where your organization's data is being stored.

Miscellaneous Improvements

- Made design and wording improvements to the email templates.
- Adjusted the colors on heat map reports for better readability.
- You can now view the unique IDs for assessment instances by hovering your cursor over an ellipsis in the search results, the scoping screen, and relationship palette.
- Object Type External Reference ID is now the default Identifier Type when using Data Import.

Bug Fixes

- Improved report loading time when retrieving formula and assessment data.
- Fixed a bug that caused database connection issues when recalculating a large number of formulas.
- There is longer a lag when typing data into a large form in Internet Explorer.
- Fixed an issue that would occasionally prevent inferred permissions from being saved.

- Creating an object after converting a single select list to a multi-select list no longer produces an error.
- Deleted relationship objects no longer continue to appear in a related object's table.
- The pop-up calendar now shows 31 days for the month of March instead of 30.
- Fixed an issue that sometimes caused Data Analytics reports to fail upon export.
- Table columns no longer disappear when applying report filters.
- Fixed a bug that sometimes prevented a heat map from regenerating.
- Parameters are no longer deleted when a report page is reloaded.
- Fixed an issue that produced inconsistent or incorrect search results when using the Search field in an activity.
- Objects added to relationships on assessment forms are no longer removed after refreshing your browser.
- Fixed an issue that prevented an object from transitioning out of the Creation state after removing values from a required field.
- Duplicate assignees no longer appear in report tables.
- Data Import no longer produces an error when attempting to import a role with a user that belongs to a user group.

Version 2.3.5 (Hotfix) Release Notes

This release includes an improvement to formulas with a new option for administrators to choose if the system should treat a blank variable as null so it's omitted from the calculation. Previously, all blank variables were assigned a zero (0), which could produce unexpected results, depending on the formula. See the Null Values in Formulas article for more information.

Version 2.3.3 (Hotfix) Release Notes

This hotfix release includes improvements and bug fixes.

Improvements

- Formulas and workflow conditions now treat blank field values as 0. This applies to the array, count, average, and sum formula sub-types.
- Clicking an Export button will now display a "Loading..." message to indicate the download will begin shortly. This applies to:
    - Org Manager;
    - Data Import;
    - Audit Trail; and
    - Languages.

Bug Fixes

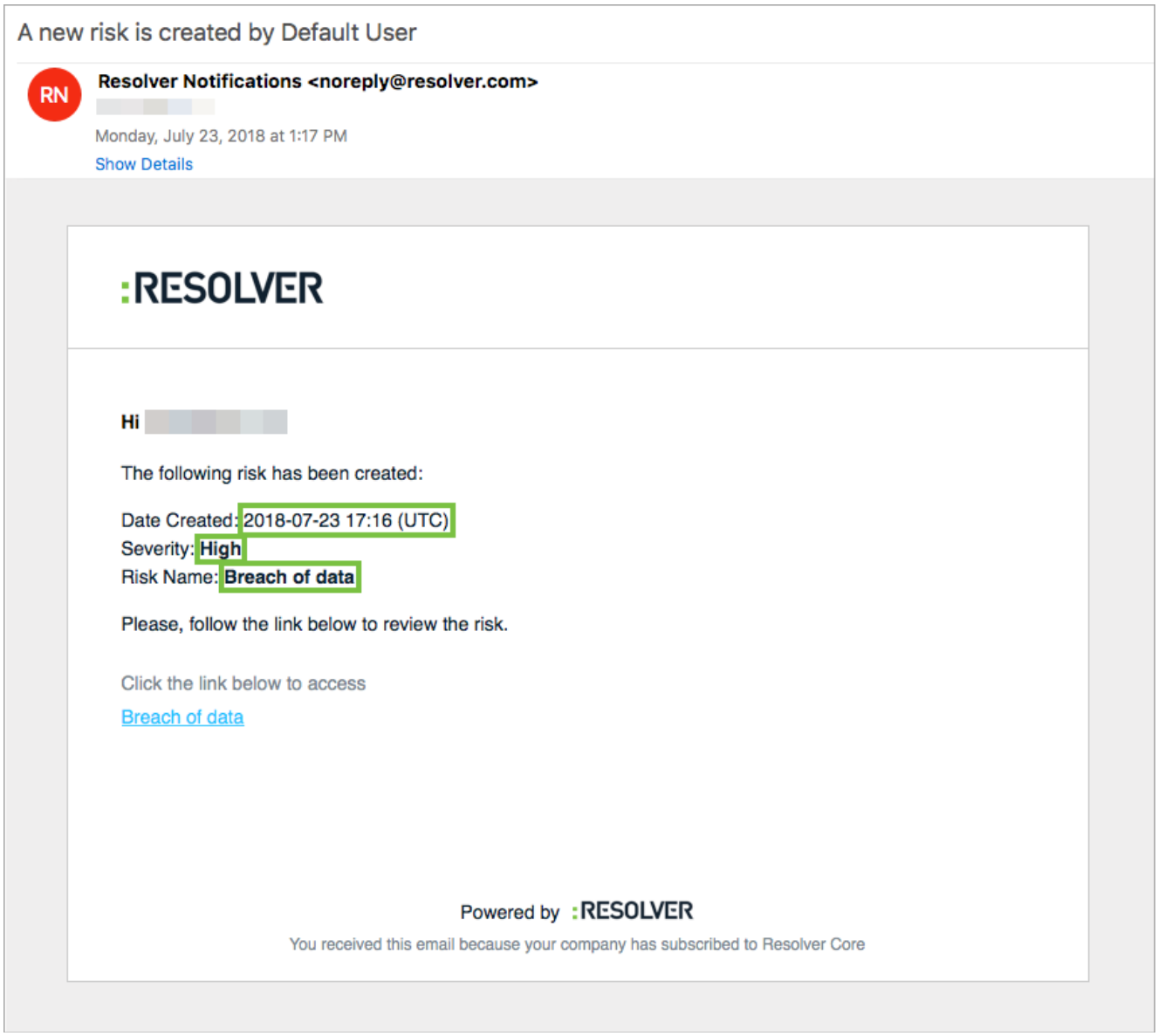
- Attempting to edit an assessment workflow from the Edit Assessment page no longer displays a blank page.
- Custom logos on email templates now display in the correct size when viewing emails on Microsoft Outlook.
- Fixed an issue that prevented related objects from appearing in the Relationship column of table reports.
- Exporting a large report to Excel or Word no longer produces a 500 error.

Version 2.3 Release Notes

New Features

Embedded Fields

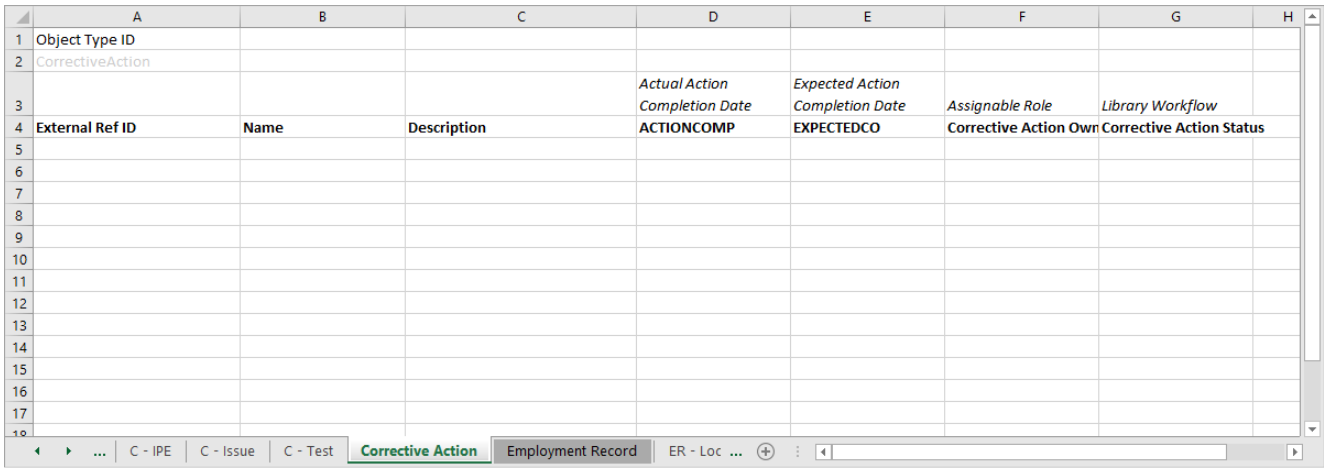
Email templates now support field and property variables, making it easy to provide important information about an object when users receive emails through the Messaging action. These variables are populated based on the object(s) that triggered the email.



Email variables (highlighted) as they appear to end users in an email.

Data Import Template

Instead of entering data manually into a spreadsheet, a data import template can now be generated from the settings for some or all of the relationships and object types in your organization. This template is populated with the basic data required to complete the import, including Object Type and Relationship IDs, fields' Unique Names, assignable roles, and workflow states.



	A	B	C	D	E	F	G	H
1	Object Type ID							
2	CorrectiveAction							
3				*Actual Action Completion Date*	*Expected Action Completion Date*	*Assignable Role*	*Library Workflow*	
4	**External Ref ID**	**Name**	**Description**	**ACTIONCOMP**	**EXPECTEDCO**	**Corrective Action Own**	**Corrective Action Status**	
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								

... | C - IPE | C - Issue | C - Test | **Corrective Action** | Employment Record | ER - Loc ...

Bug Fixes

- Fixed an issue that prevented required fields from validating on assessment objects with multiple workflows.
- Formula recalculations now display correctly on forms accessed through the Open a Form action.
- Fixed an issue that prevented the 0 digit from appearing in reports that displayed imported object data.
- Recalculated formulas no longer display an error when select list options are removed.
- Fixed an issue that would prevent email notifications from being sent when an object is created.
- Fixed an issue that sometimes caused a connection error to appear upon login.
- General email notification and Org Import bug fixes.

Version 2.2.1 (Hotfix) Release Notes

This hotfix release includes a number of performance enhancements to improve your overall experience in Resolver Core. These enhancements include:

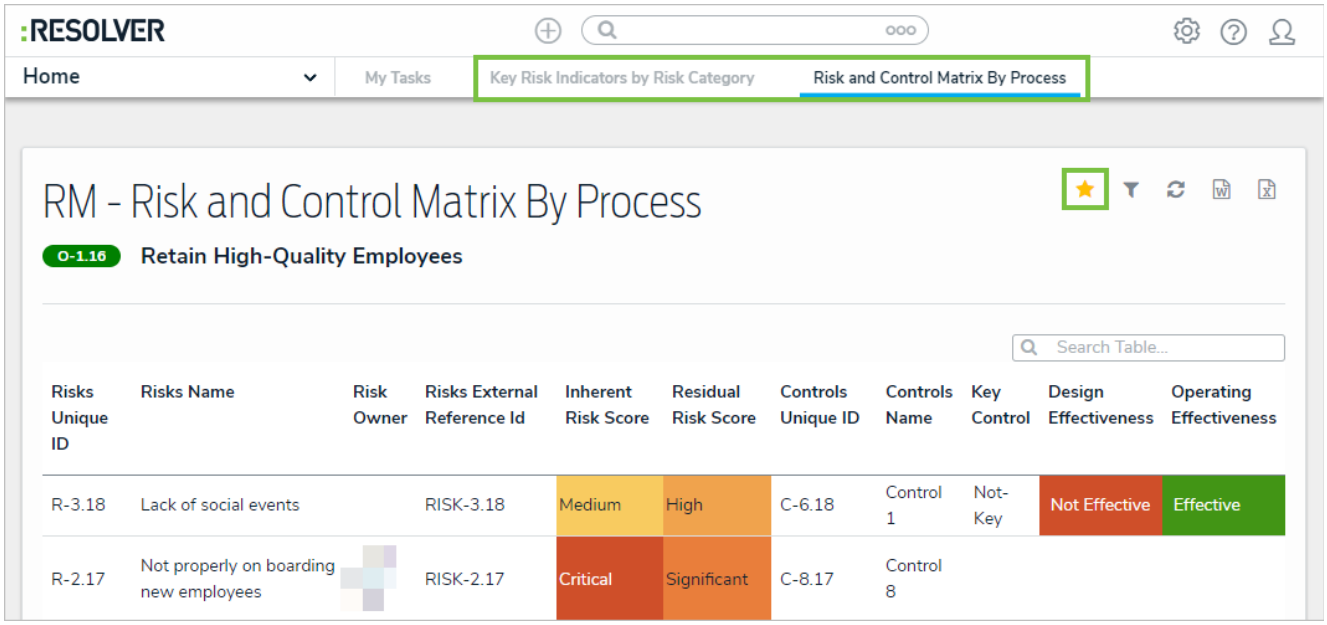
- New variable sub-types to improve formula processing.
    - Variables can now be made to contain the actual Array (default for current formulas), Count, Every, Average, Max, and Min values of a relationship or reference field (instead of representing the list of values). This means that formula variables can be used to collect and hold information, thereby greatly improving performance when formulas are recalculated.
- Other general performance improvements for:
    - Reports
    - Search
    - Scope & Launch
    - Object creation

Version 2.2 Release Notes

New Features

Starred Reports

It's now possible to star reports so they appear as tabs on your homepage, allowing you to quickly access important information that's relevant to you. A starred report can even be flagged as your landing page so it's the first thing you see when you log in. See the New in 2.2: Starred Reports article to watch a short orientation video.

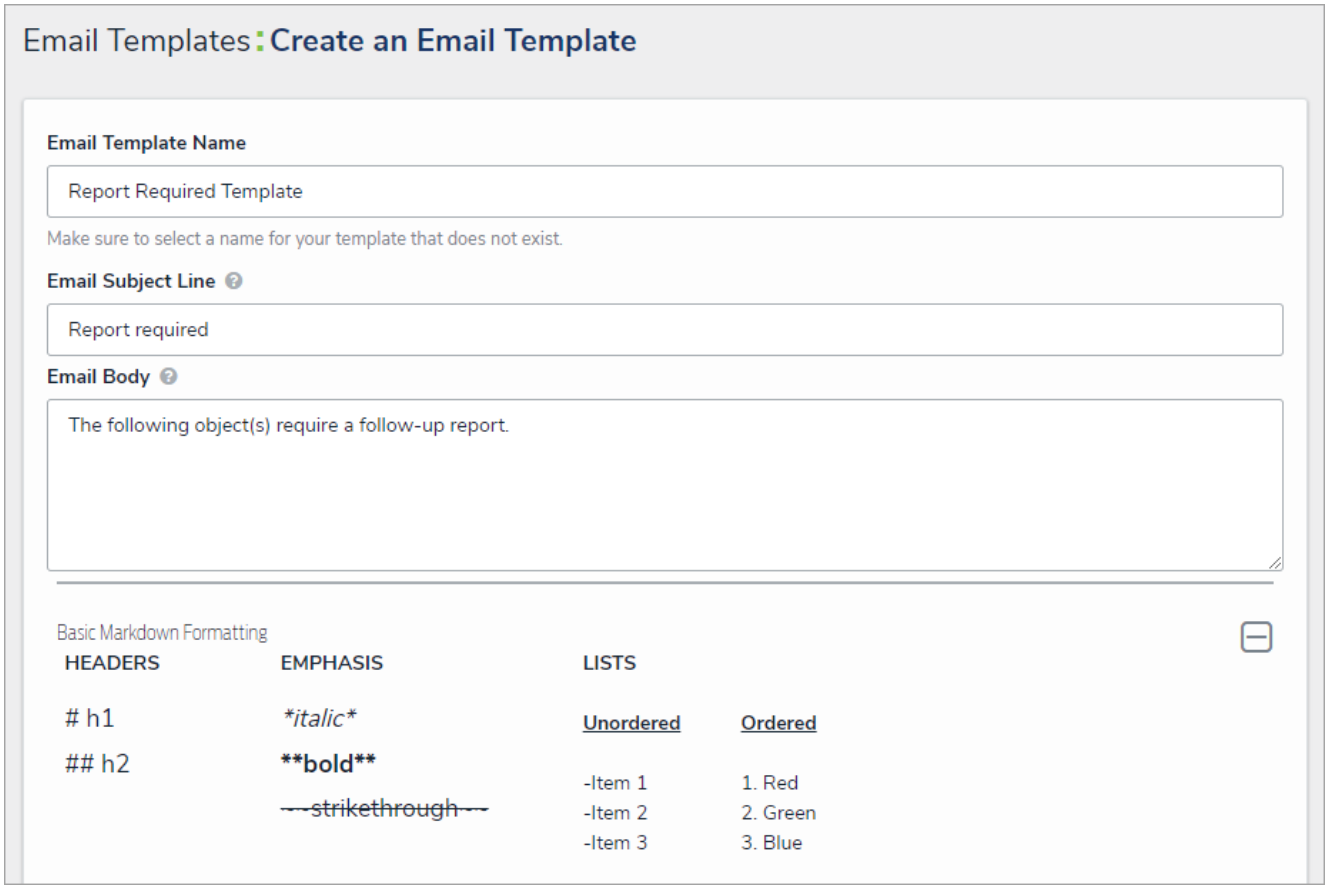


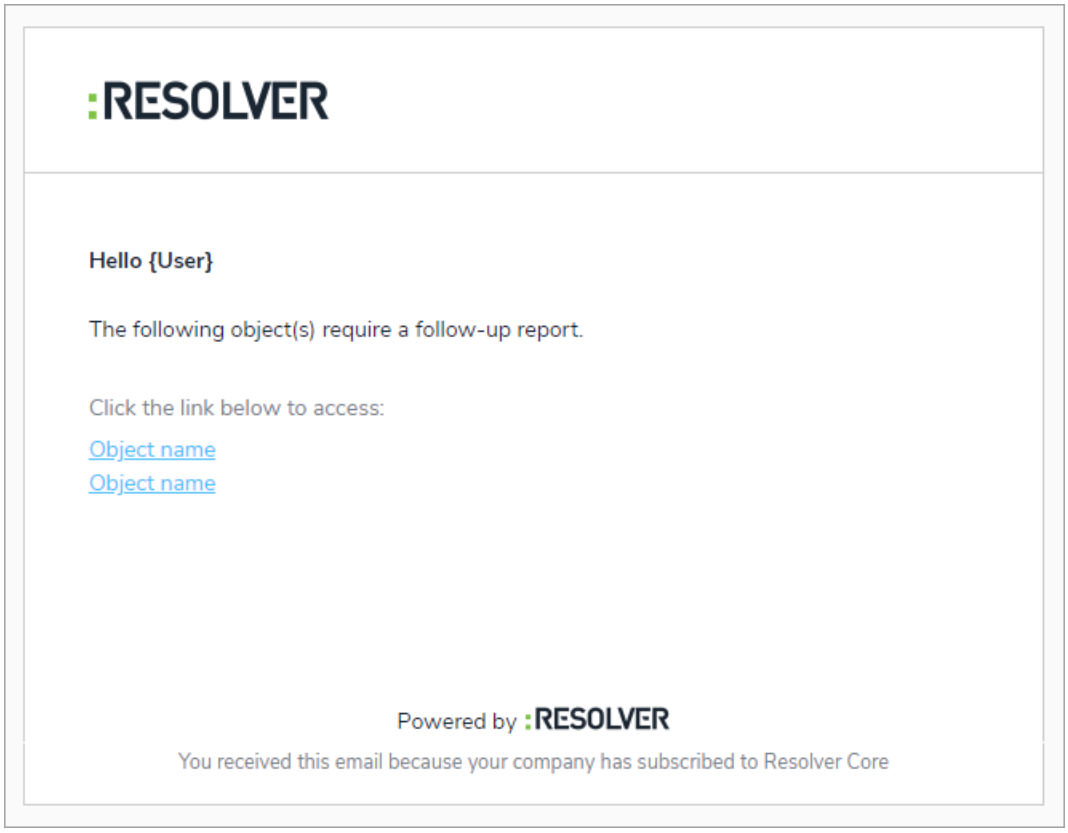
My Tasks Tab

The My Tasks page is now accessible through a tab on the homepage and appears beside any starred report tabs.

Email Templates

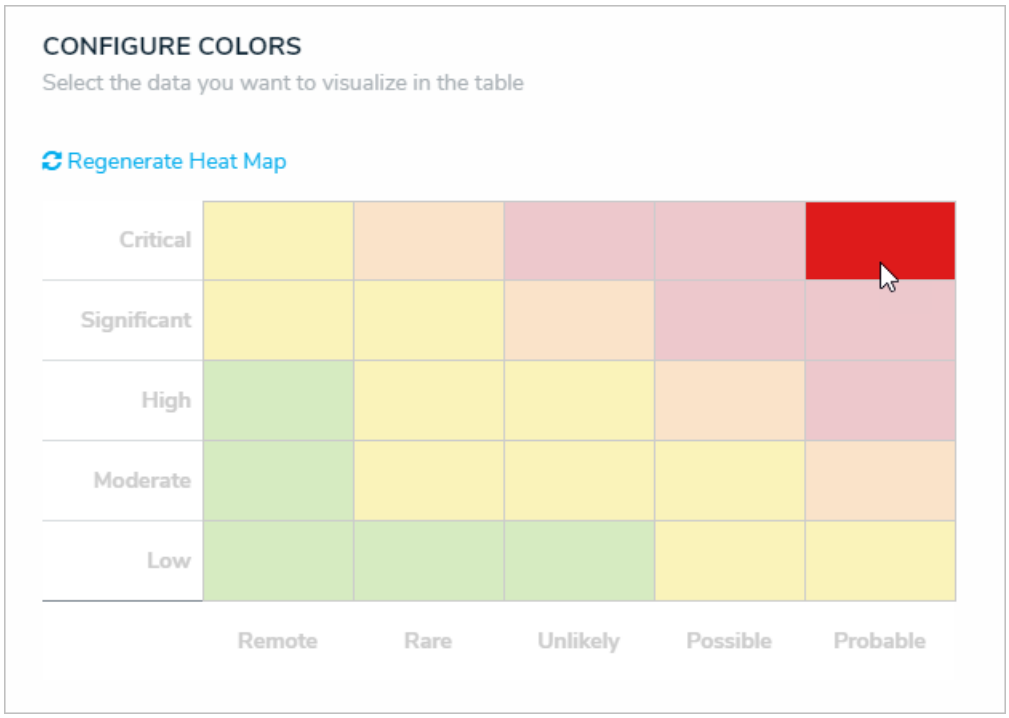
Tailor the emails sent to users during a Messaging workflow action with the new Email Templates settings, where you can add custom subject lines and messages, apply basic formatting, and even include your company logo.


Email Templates : Create an Email Template
Email Template Name
Report Required Template
Make sure to select a name for your template that does not exist.
Email Subject Line
Report required
Email Body
The following object(s) require a follow-up report.
Basic Markdown Formatting
HEADERS
h1
h2
EMPHASIS
italic
bold
~~strikethrough~~
LISTS
Unordered
-Item 1
-Item 2
-Item 3
Ordered
1. Red
2. Green
3. Blue


:RESOLVER
Hello {User}
The following object(s) require a follow-up report.
Click the link below to access:
Object name
Object name
Powered by :RESOLVER
You received this email because your company has subscribed to Resolver Core

Heat Map Colors

Additional colors are available for heat map reports. Clicking a cell when configuring the report lets you choose from light to dark shades of green, yellow, orange, and red.



Role Parameters on Reports

Administrators can apply the By Role parameter on reports, which controls the data displayed in the report and all its elements. More parameters will be available in future releases.

Assign Roles & States on Imported Objects

Administrators can now assign roles and workflow states when importing objects.

Printing Improvements

Larger tables and images no longer appear cut off in printed forms or reports, headers no longer appear alone on separate pages, and table headers are repeated when a table spans more than one page.

Miscellaneous

General performance improvements.

New in 2.2: Starred Reports

Get quick and easy access to important reports by adding them as tabs on your homepage. Simply click the ☆ icon from the report's page, click **Add to Home** and you're done! Check out the video below for a quick orientation on how to use this awesome new feature.
Your browser does not support HTML5 video.

Version 2.1.3 (Hotfix) Release Notes

Bug Fixes

- Fixed an issue that would prevent report and navigation form data from displaying after an object type was deleted.

Version 2.1 Release Notes

Overview

Resolver Core 2.1 introduces new features that make your experience even more seamless. With two new report filters, end users can now filter data by object type or role, while a new parameter on the table element in reports allows administrators to create personalized reports for the currently logged in user (e.g. My Risks or My Incidents). Other features include a new workflow action to automatically set select list options on an object, the ability to load and explore all objects that belong to a particular object type instead of searching by keyword, and improved orchestration performance.

New Features

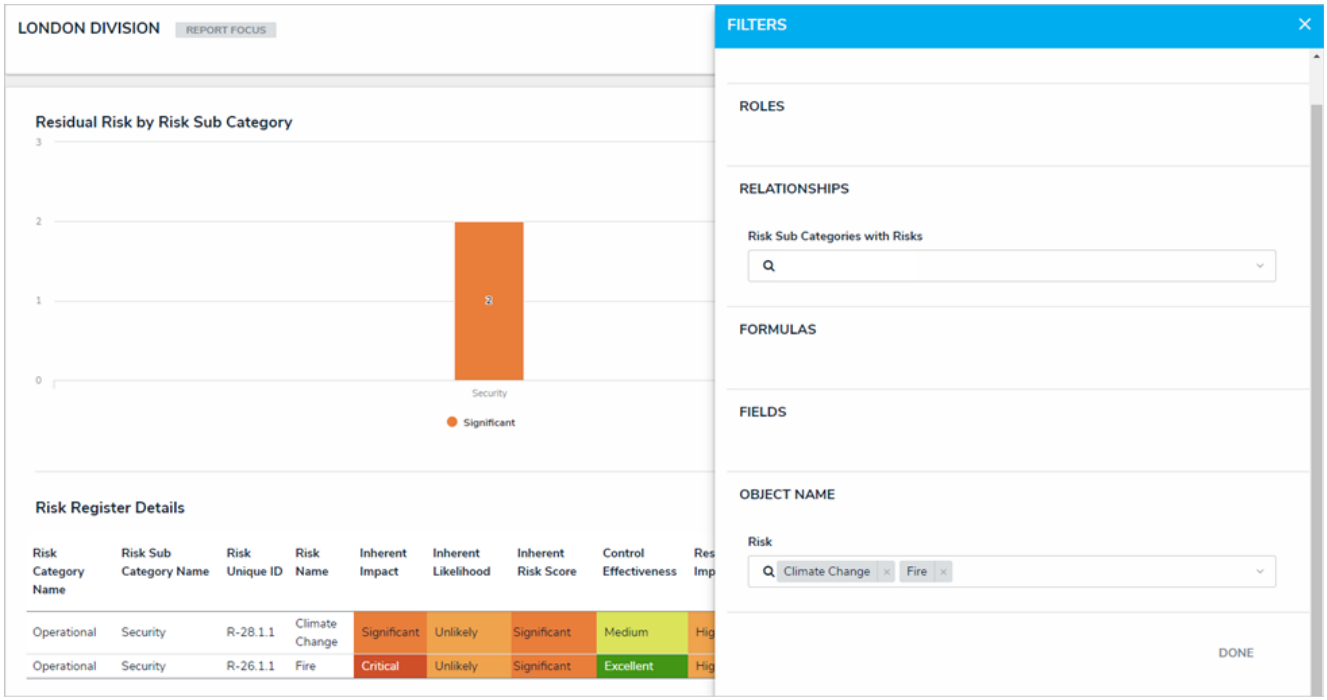
Quick Search (Explore By)

You can now search your organization by object type by clicking the icon in search field on any page, which will reveal the**Explore By** menu. From here, you can click an object type to reveal its objects and apply filters to further narrow the results. These results are displayed based on the current user's permissions.

Report Filters

New filter options have been added to reports, including:

- **Object Type (Object Name):** Users can filter by object name to display data from one or more selected objects only.
- **Roles:** Users can filter report data by individual users or user groups in explicit roles that have been granted direct access to objects from the report's data definition, making it easy to view and analyze data that's relevant to a particular user.



Object type filters applied to a report, which narrows down report data based on the object(s) selected in the filter.

Current User Parameter on Table Reports

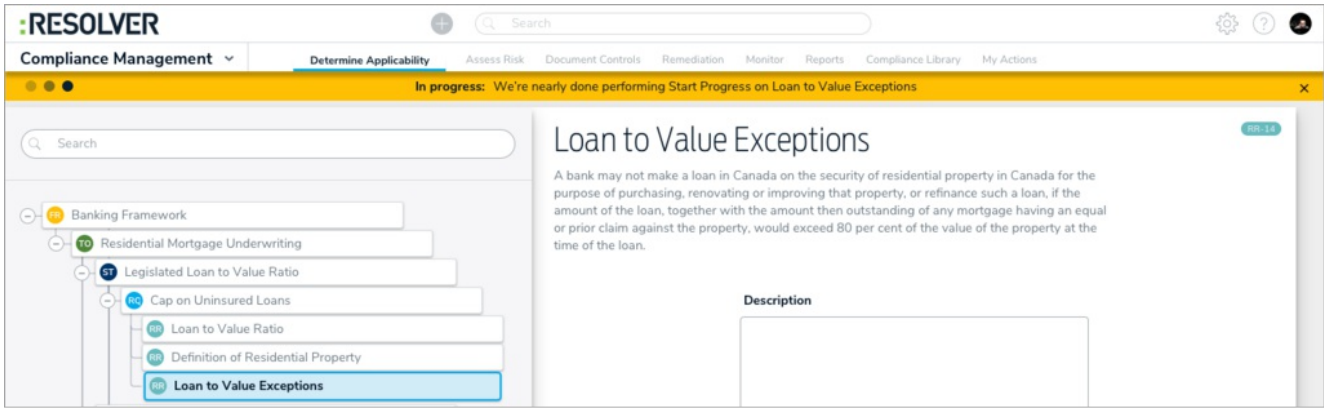
Administrators can apply the new **Current User** parameter on tables to create personalized reports. Only users added to the role selected in this parameter can view data in the table.

Select List Workflow Action

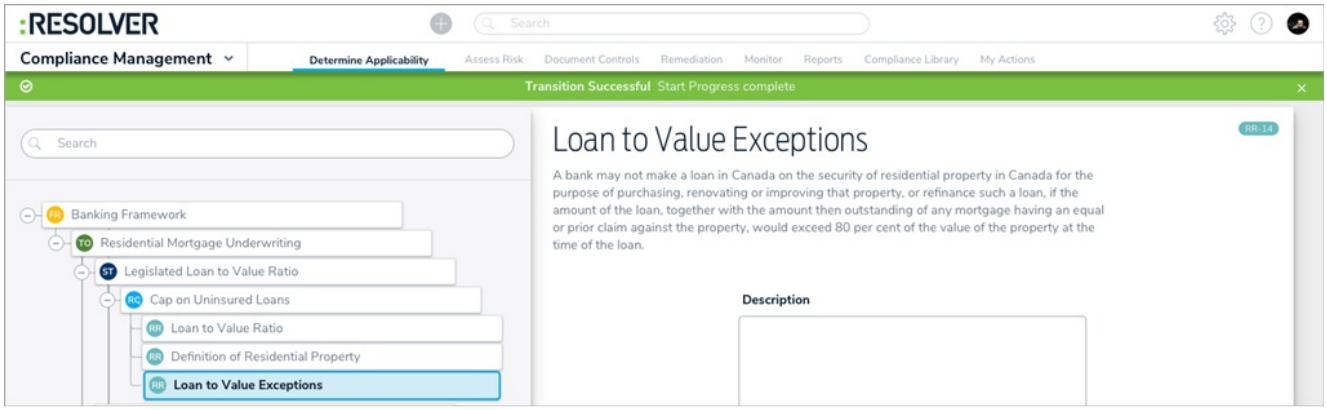
Administrators can now use the Set Field Value action on a workflow transition to dynamically update select lists once an object transitions into another state. For example, this action could be used to select a High Priority option when an Incident object moves from the Open to Escalated state.

Orchestration Event Improvements

Improved the performance of the Orchestration Event action on a workflow transition, including faster execution for large amounts of data and visual cues to indicate orchestration progress.



A banner indicating that an orchestration event is in progress.



A banner indicating that an orchestration event was successful.

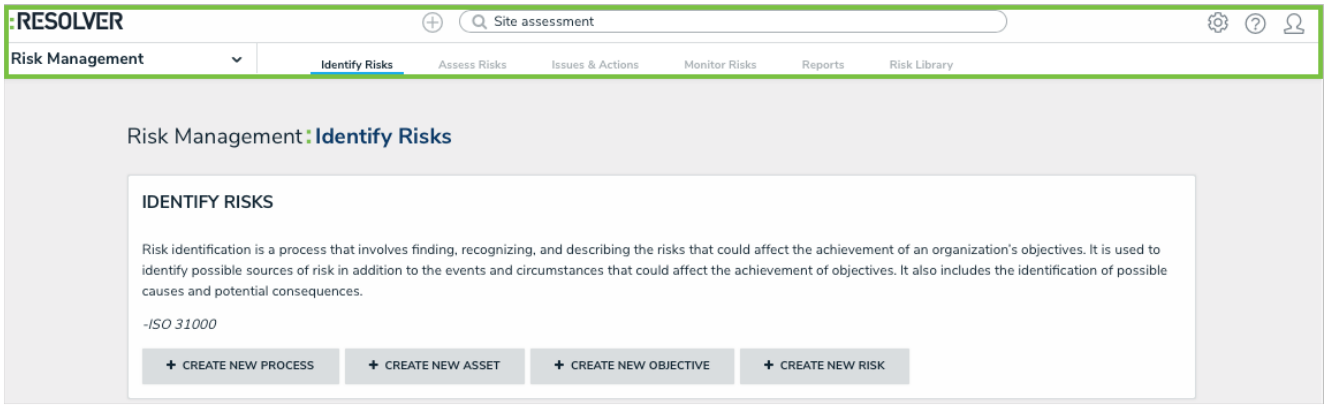
Resolver Core 2.0 Feature Overview

This article provides an overview of the major features available in Resolver Core 2.0, which is expected to released near the end of January, 2018.

User Interface: New Navigation

The new user interface offers a refined hierarchical, top-down structure in its navigation, providing contextual information that helps the user understand not only where they are in an app, but which task or function they should be completing.

By replacing the left navigation menu with a top navigation bar that includes both dropdown menus and tabs, valuable screen space is freed up while simultaneously providing more application/activity-related information as users move around an app.



The new app navigation in version 2.0 (highlighted).

For more detailed information on the new user interface, watch the Resolver Core 2.0 New UI Orientation video below.

Assessments

Assessments are a key building block to Resolver Core as they support multiple business activities across most of the apps. Broadly speaking, an assessment is a point-in-time or continuous evaluation of data in the context of a business activity. Some assessment examples include:

- Risk assessments
- Control assessments
- Control testing

- Security audits
- Audits
- A/B testing
- Scenario modeling

Note: Not all the examples listed above are supported in 2.0.

Additional Data Types

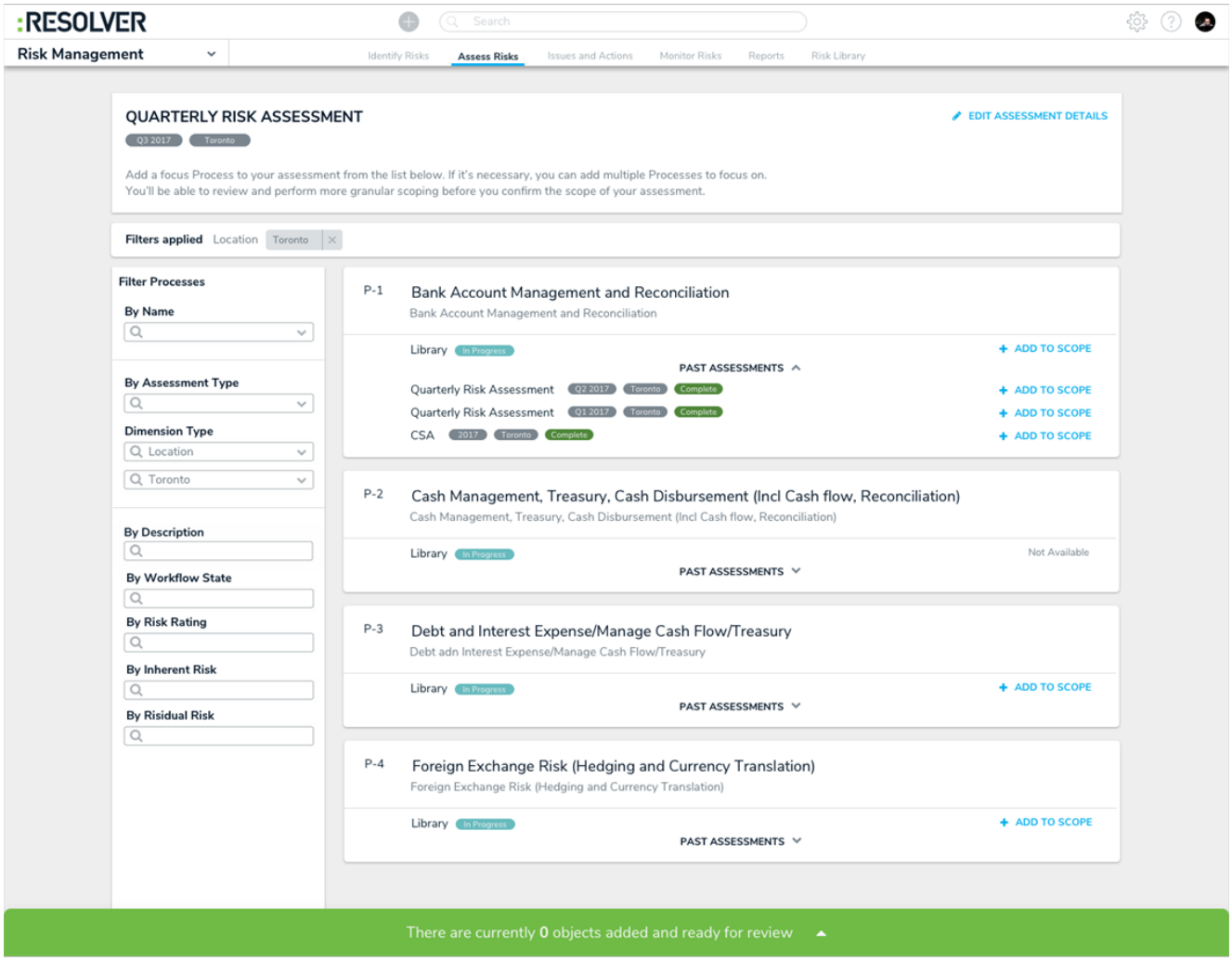
The 2.0 release introduces the concept of reference data, which helps the user understand how the assessed data relates to the bigger picture across the organization. Reference data is important, secondary information within an assessment that does not actually need to be assessed. Potential examples of data that can be used as a reference include:

- Legislations
- Business units
- Locations
- Departments
- Products
- Teams
- Major processes
- Objectives

When an object in an assessment is flagged as reference data, it prevents additional instances of that object from being created at the launch of an assessment, avoiding data bloat while providing better organization of the data.

Assessment Scoping

Users can search, explore, and refine assessment data via the new scoping tool. The ability to explore permissioned data will contribute to more efficiently scoped assessments, draw connections between data across an organization so testing can be done in sync, and easily include past data from previous assessments (e.g. relaunch from a previous quarter, leverage other team's conclusions).

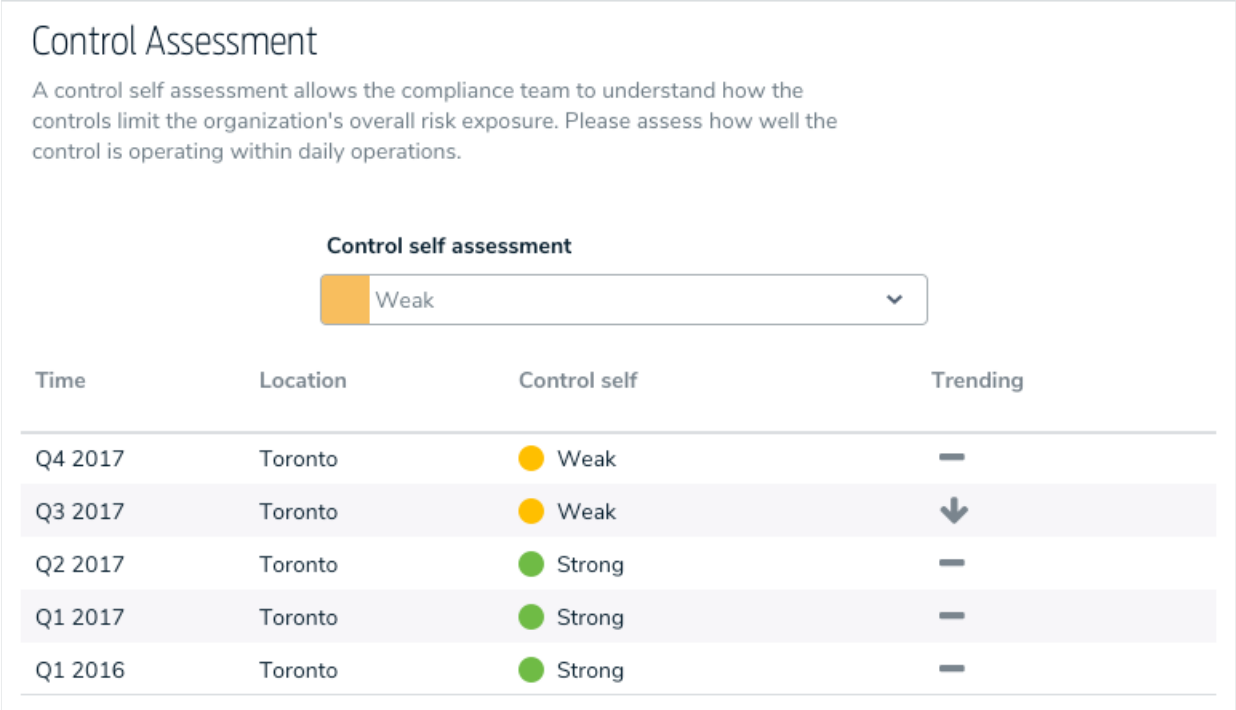


An assessment displaying the new scoping capability.

Intuitive Display

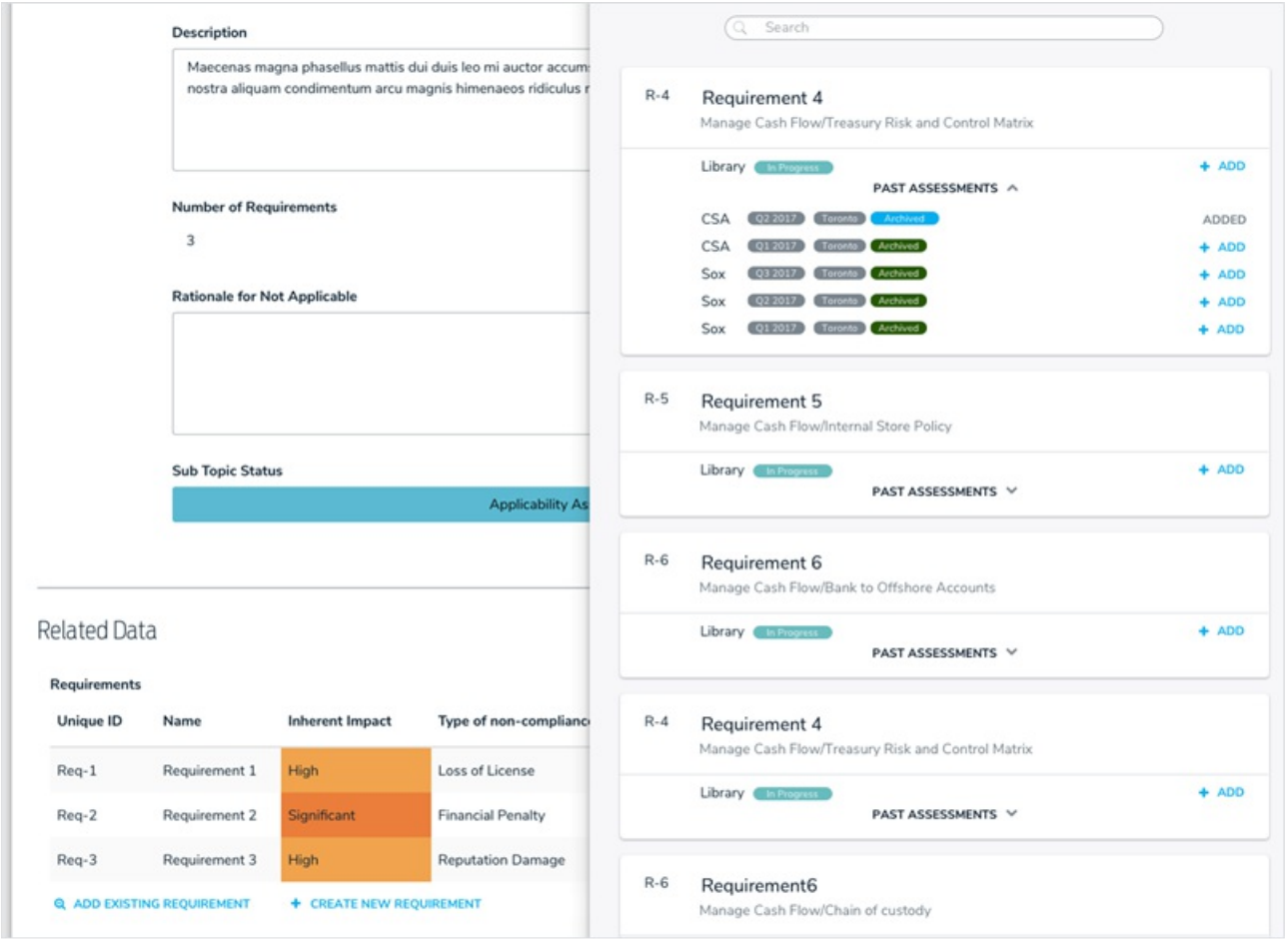
Understanding data is critical. Users need the visibility of data across the organization in its current state but also need to understand how that data has been changing over time and across business units. Did this control fail last quarter? How has that risk trended over time? Why? These are just some of the question we need to be answered to accurately make conclusions on the current state.

To do this, 2.0 has introduced the ability to access previous assessment results via fields while assessing objects. This enables all user types to make more confident and accurate conclusions.



Viewing previous assessment results of an object field via a form.

Additionally, intuitive grouping of assessment instances by the originating assessment in search, scoping, and relationships mean that it's easier to visualize how objects change over time and map the correct instance to applicable objects.

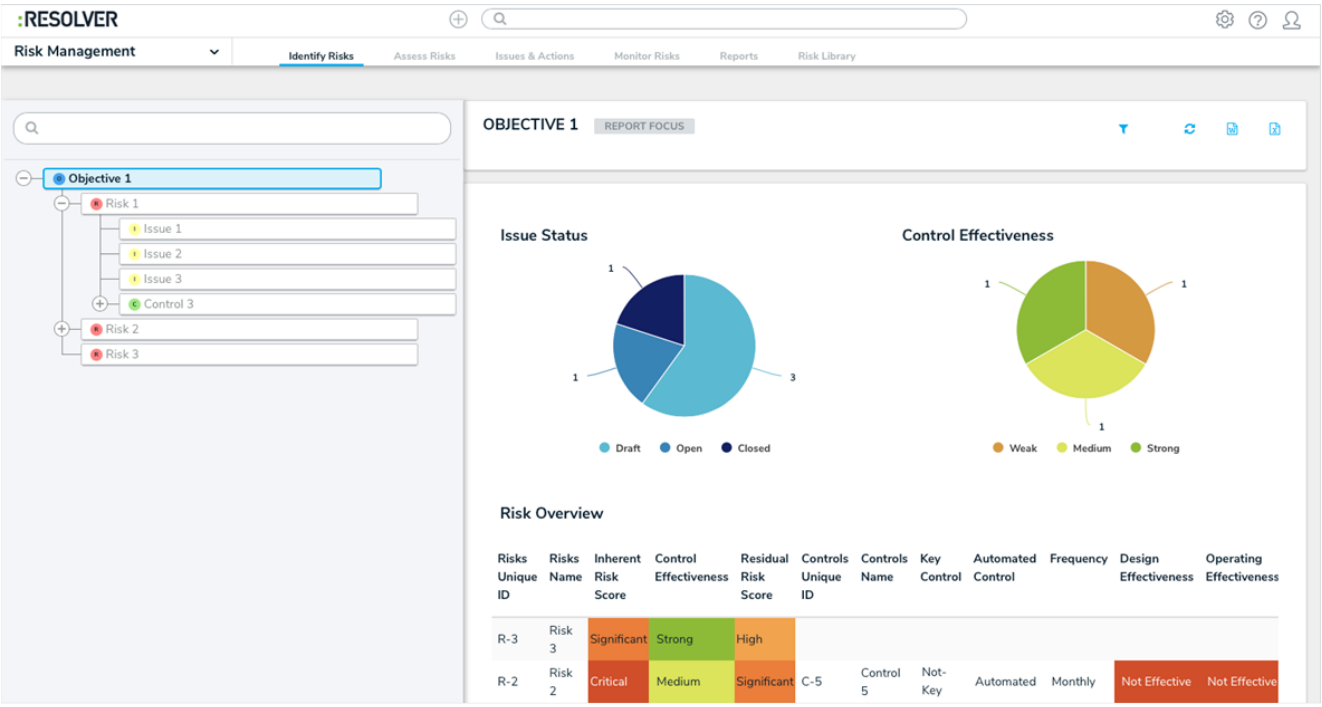


Adding existing, un-mapped requirements to a topic or sub-topic.

Navigation Form (Tree Browsing)

In previous versions, users didn't always understand where they were, which objects are related to another, or how to access these related or referenced objects. The new navigation form corrects these issues.

Organizations tend to think of their data in a hierarchical structure and with the navigation form, you can now connect your highly configurable forms or reports to any object. The tree provides context by representing the data in a structure that's both familiar and easily accessible.

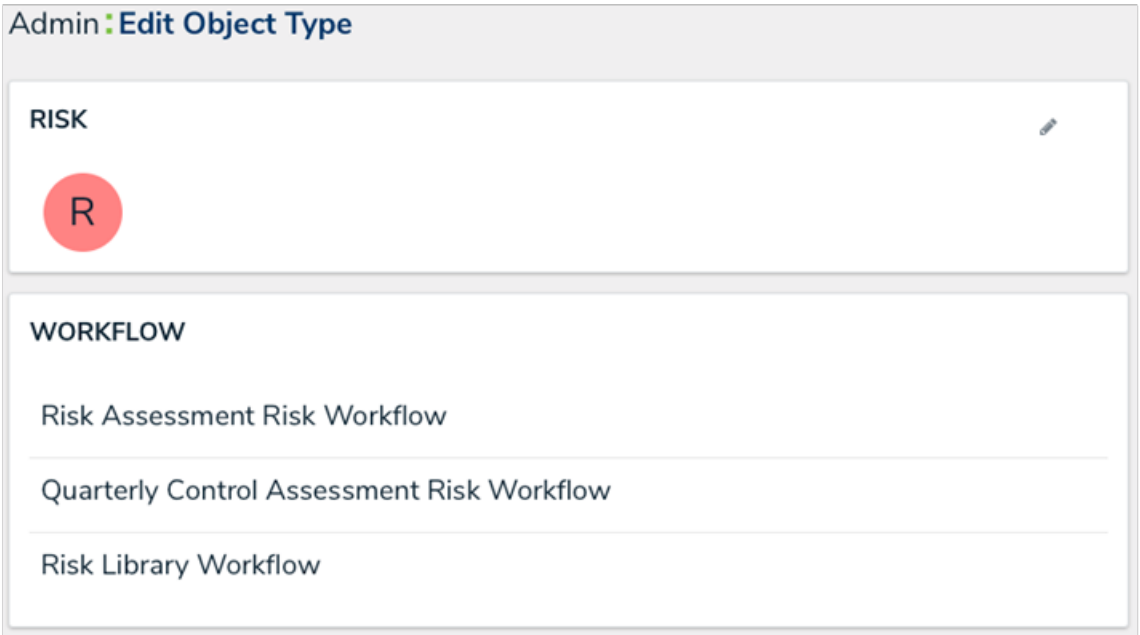


The navigation form on the left. Clicking on an object in the form will display it to the right.

Assessment Workflows

Although the properties and fields of an object (e.g. risk, control, or incident) may be similar, the process these objects go through are typically dependent on the application (e.g. a risk in Security Audit versus ERM) or the assessment (an audit assessment versus a risk assessment). For example, SOX assessments focus on controls and require an extended life cycle that potentially differs from an audit assessment, it requires more coordination and involvement from multiple resources.

Assessment workflows enable this flexibility by allowing administrators to tailor an object's workflow at the assessment level, allowing you to create different workflows for the same objects across multiple applications and assessments.



An object type with multiple workflows.

Workflows

Orchestration

Orchestration enables communication between objects. Objects can “talk” to and “instruct” each other, which dictates behaviors based on actions or assessments taken on another object. In other words, using orchestration, changes to one object can force a change to a related object. Events that could benefit from orchestration include:

- Kickoffs
- Escalations
- Close Audits
- Launch a Risk Assessment
- Launch a Control Assessment

More specific examples include:

- Close an Audit: Clicking the Close button at the audit level closes all open issues and marks all tests as Complete.
- Launch a Risk Assessment: Sets all processes, risks, and controls from Draft to In Progress. All objects transition, the objects are time stamped with start dates (a new workflow action feature), and emails are sent to the appropriate owners.

Workflow Actions

Expanding on the above, the new workflow actions add another level of automation to an organization’s processes, providing less hands-on work and more standardization of data changes.

These new actions include:

- Clear Fields, Role, or Relationships (e.g. clear roles when launching an audit. Clear fields, issues, and action plans when reassessing controls, risks, or processes).
- Set Date fields (e.g. extension requests or time stamping start or completion dates). As assessments progress, dates need to be responsive as the objects move through different stages. Workflow date actions will enable:
    - Time stamps (e.g. the start or completion of an assessment).
    - Deadline setting (set a date two weeks from today).
    - Extension deadline (e.g. request extension. If approved, reset the deadline date today, but add 5 additional days).

State Categories

State categories will help users understand completion percentages and segregate data across the applications. For example, Library versus Assessment versus Archived data.

This feature will continue to evolve in future releases. More to come...

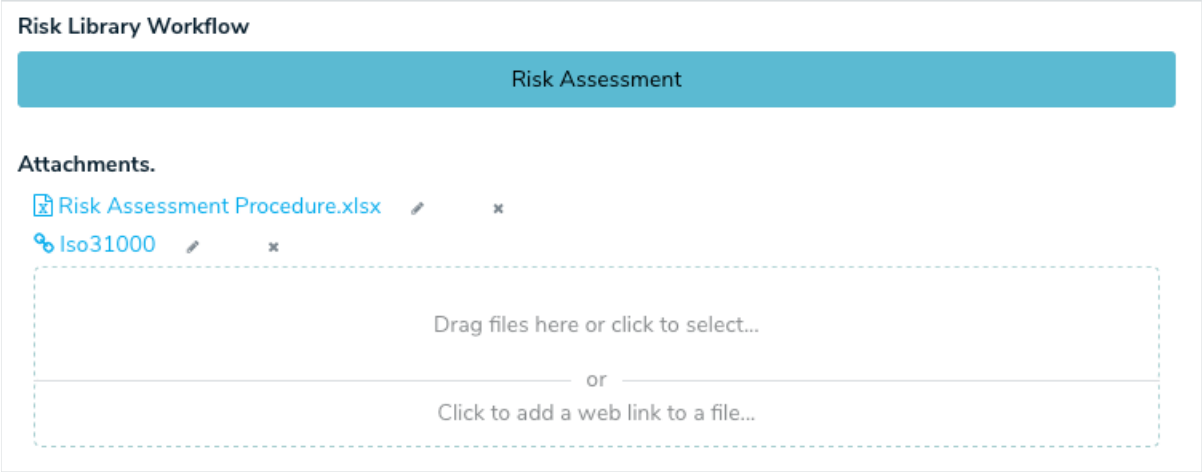
Additional Features

Filters

Date-based filters can now be applied to reports**.** This feature is useful for situations such as running reports on issues created in the last month or action plans that have been opened in the last week.

Field Type: URLs

The URL field type on forms enables users to upload files, files and links, or links only.



The new URL field on a configurable form.

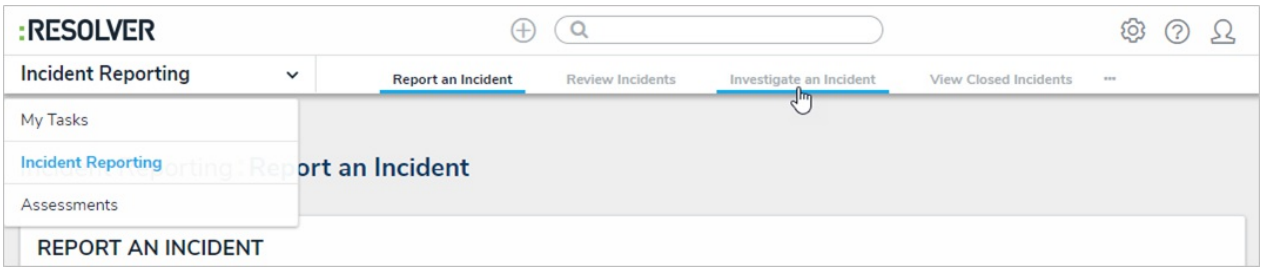
Version 2.0 Release Notes

New Features

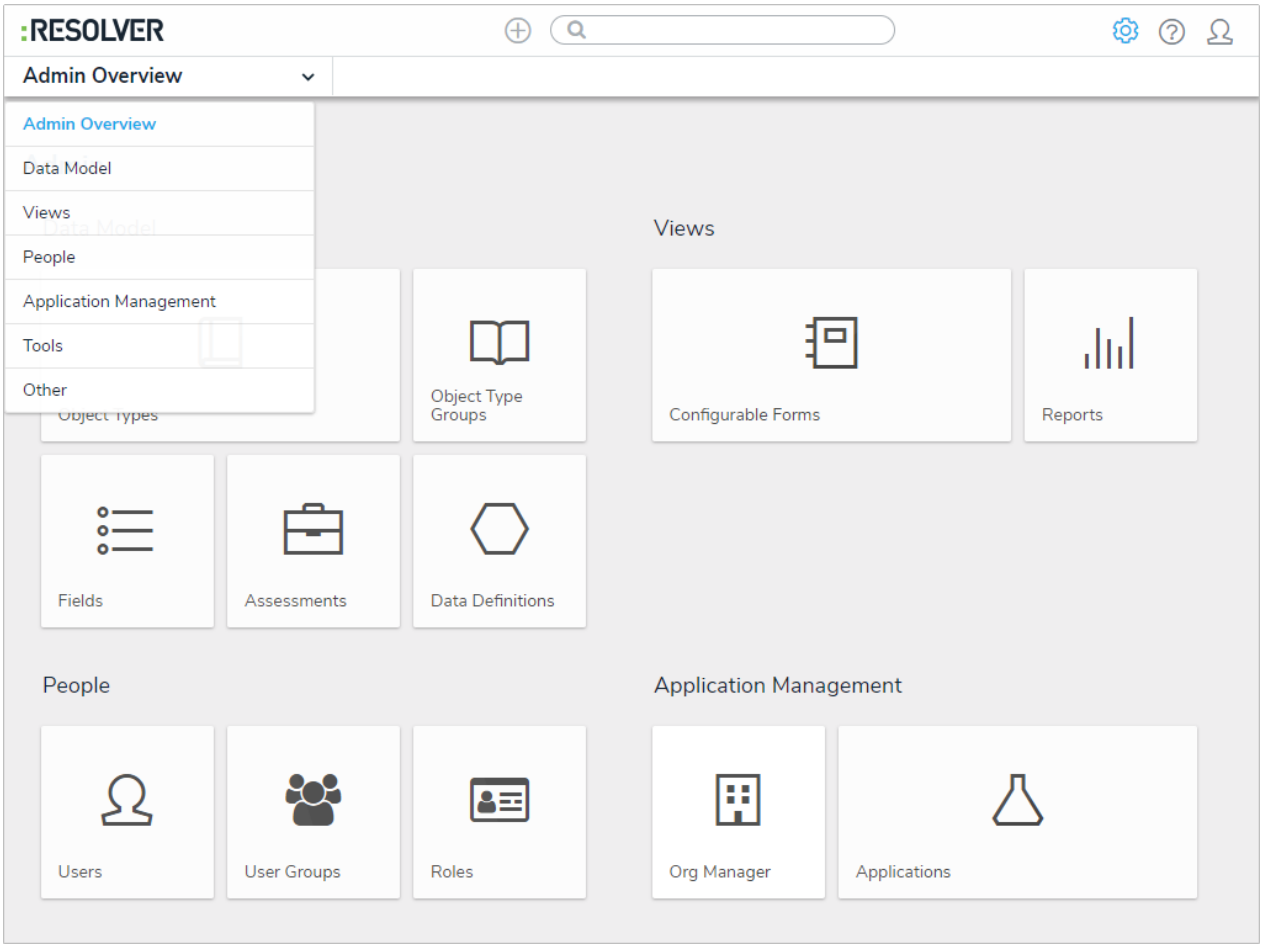
User Interface

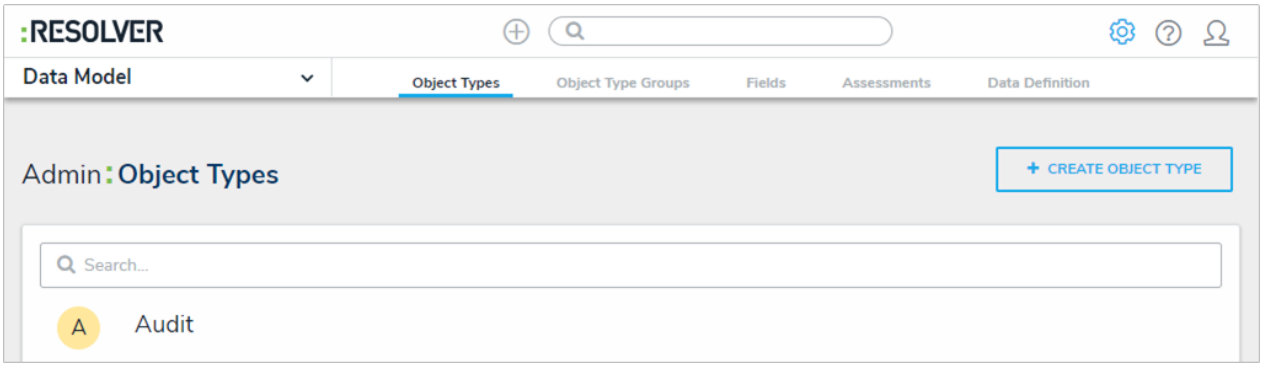
Core 2.0 comes with a brand-new user interface that helps guide users and free up valuable screen space. These changes include:

- The new static top bar that gives you access to:
  - The home (My Tasks) page by clicking the Resolver or custom logo;
  - Quick Create by clicking the icon;
  - The search function by entering keywords in the text field;
  - The administrative settings by clicking the icon (if you're not an admin, this icon is not visible);
  - The Resolver Knowledge Base, Terms of Service, the Resolver Support site, and current version number by clicking the icon; and
  - The name of the currently logged in user, the My Tasks page, and the logout function by clicking the icon.
- Through the new navigation bar (nav bar), the homepage (My Tasks) and any applications you have permission to view are available through a dropdown menu. Once an application is selected, you can quickly move through activities using the new tabs.

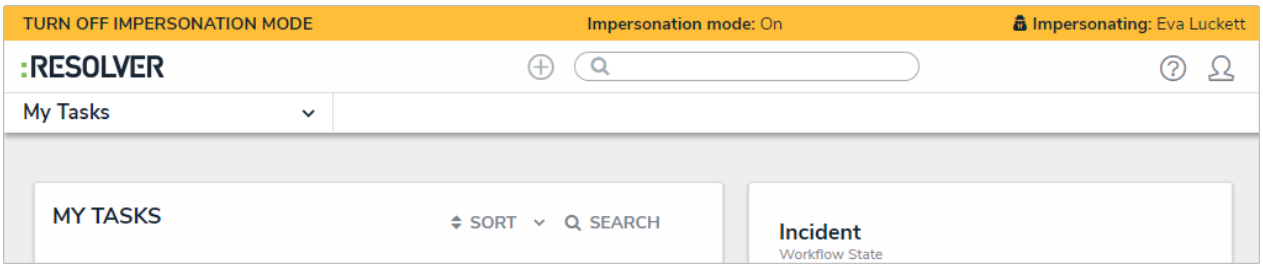


- When working in any of the administrative settings, the nav bar dropdown menu provides a link to the Admin page (Admin Overview) as well as the groups of the settings available (Data Model, Views, People, Application Management, Tools, and Other). When an individual setting or group is selected, the other settings in that group are available through tabs. To return to the home page, click the Resolver or custom logo.





- A refined design for Impersonation Mode that aligns with the new UI.

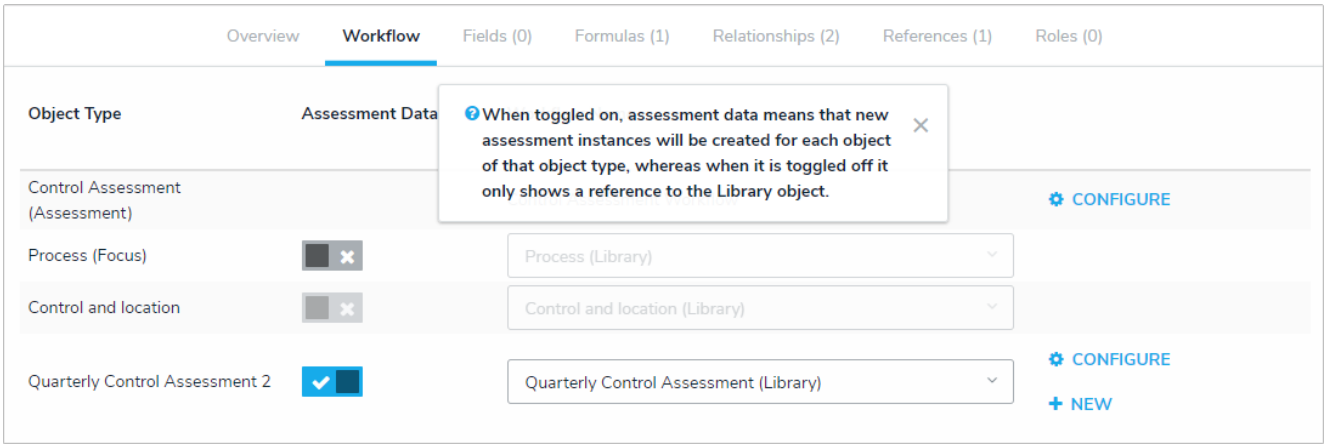


Assessment Workflows

Because an assessment object's process often differs by each application (e.g. Audit versus ERM), administrators can now tailor the workflows of dimension object types, allowing you to configure or create new workflows for the same objects types across multiple applications and assessments. These settings are available from the Workflow tab on the Edit Assessment page.

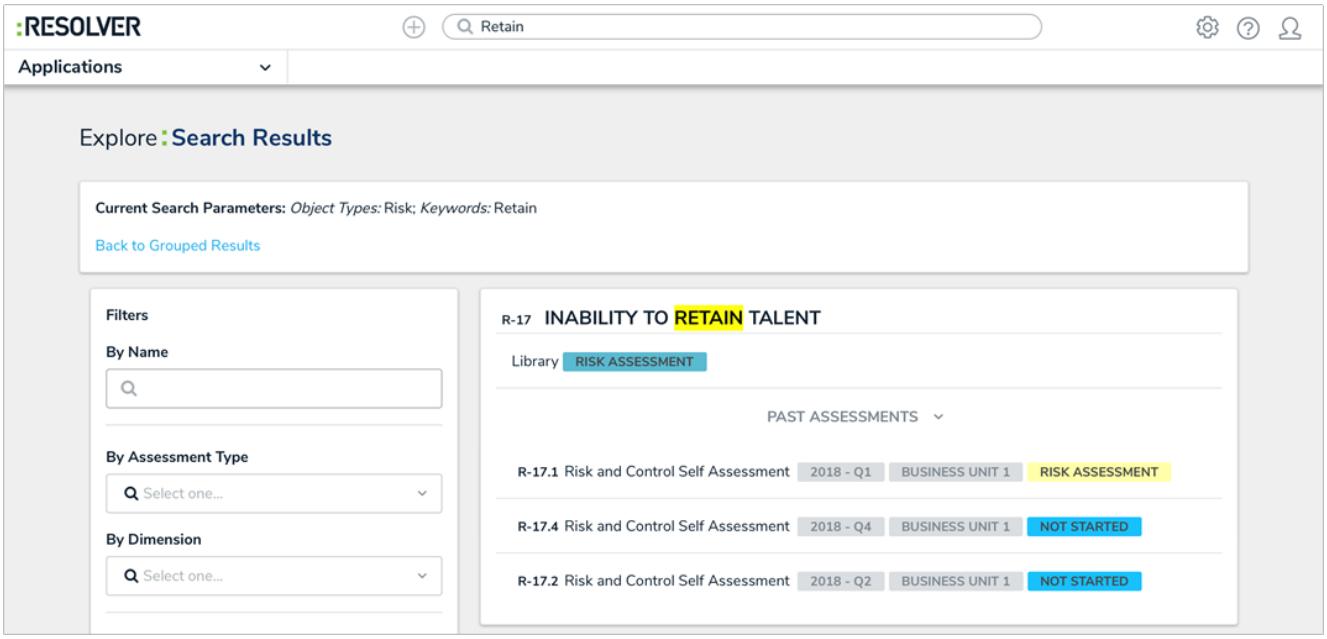
Assessment Reference Data

When an object in an assessment is flagged as reference data, it prevents additional instances of that object from being created at the launch of an assessment, avoiding data bloat while providing better organization of the data. Examples of reference data includes legislation, business units, locations, products, or objectives. Object types are flagged in assessments by toggling them on or off in the new Workflow settings of the assessment. When toggled off, you can display the assessment object through the Reference element on a configurable form.



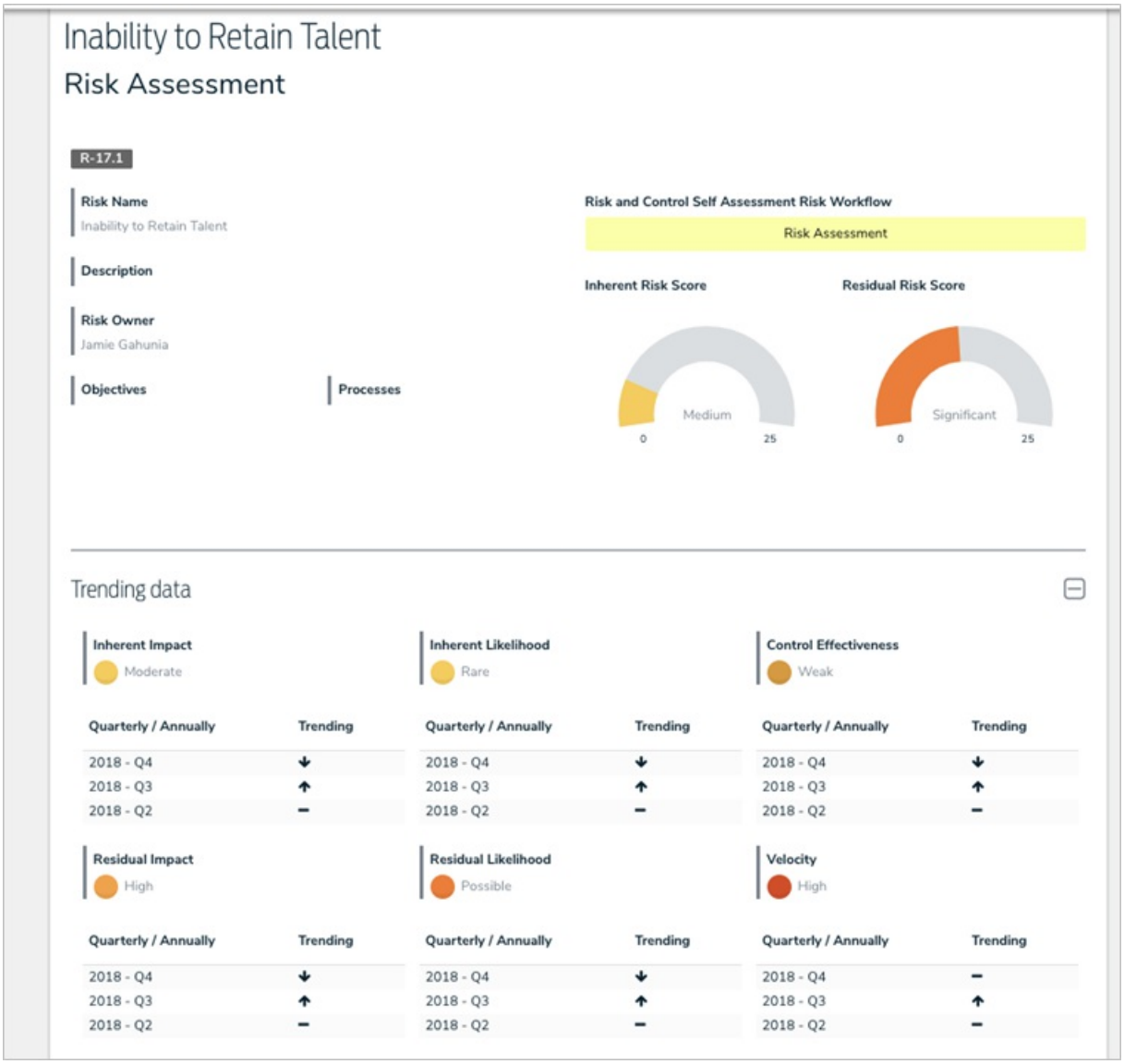
Intuitive Grouping

The intuitive grouping of assessment instances by the originating assessment in search, scoping, and relationships help users visualize how objects change over time.



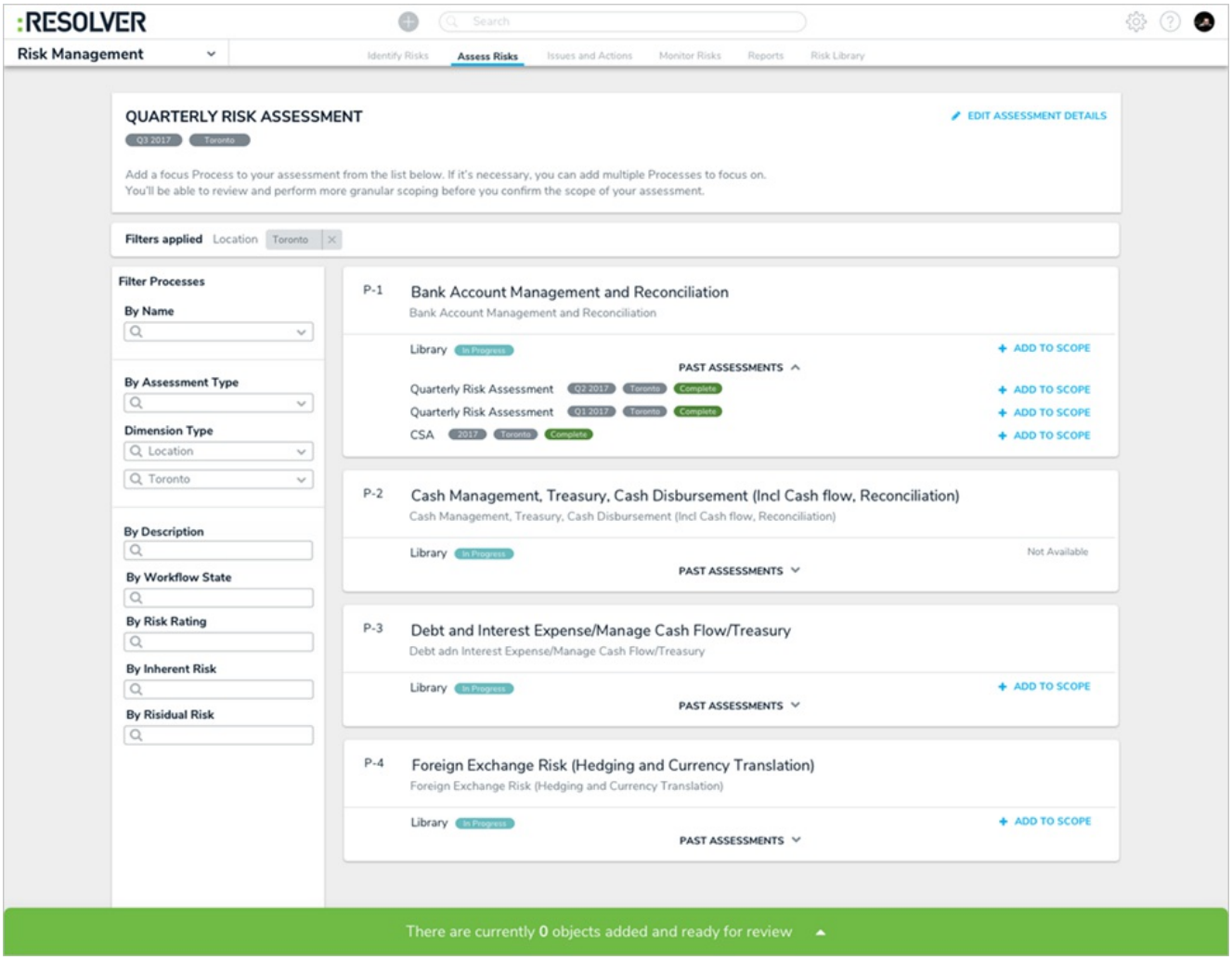
Intuitive Display

The intuitive display feature on assessments allows users to view past assessment results while reviewing objects and instances. Past assessments are displayed through the Assessment Table option for form elements. If the past assessments contain numeric values, they can be used to display whether the data is trending upwards or downwards.



Assessment Scoping

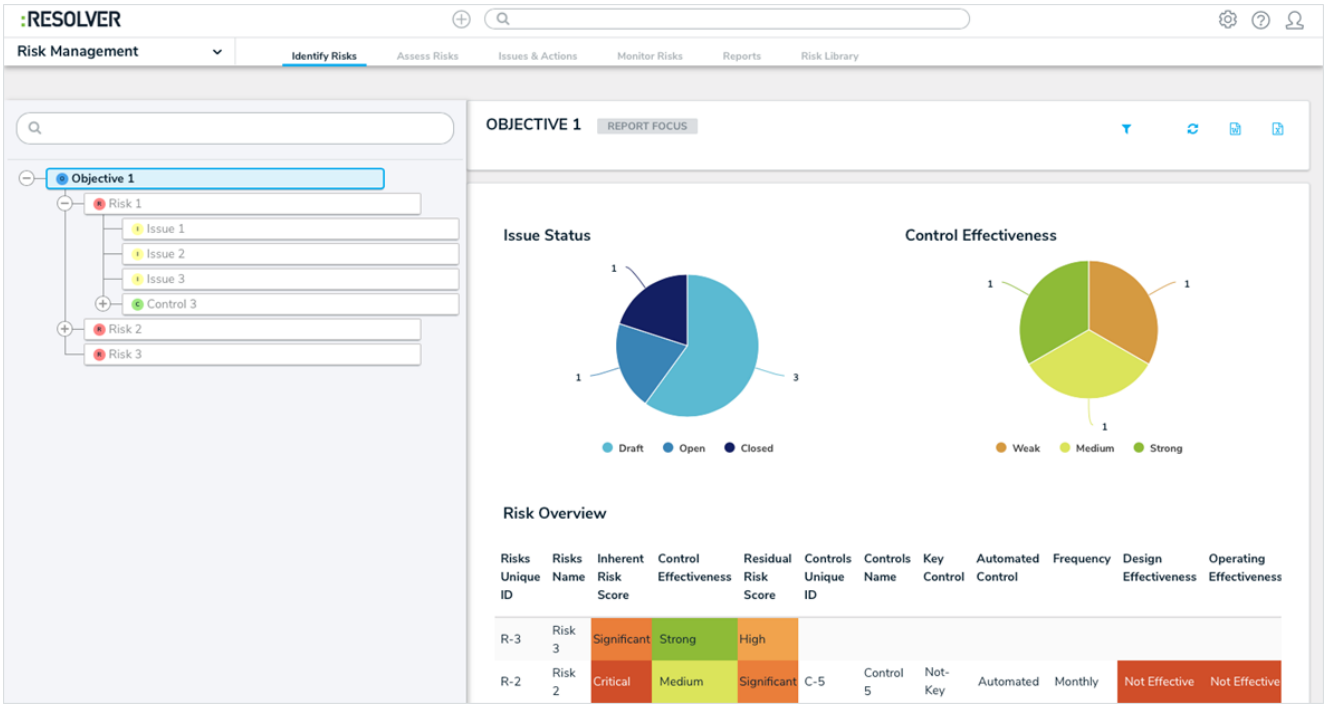
After an assessment (e.g. Risk, Audit, or Quarterly Control) is created, users can search, explore, and filter data via the new scoping tool, which is accessed through the new scoping form action. The ability to explore permissioned data helps users draw connections between data across an organization so that testing can be done in sync and makes it easy to include data from previous assessments (e.g. relaunching an assessment from a previous quarter or leveraging another team's conclusions).



Navigation Form (Tree Browsing)

The Navigation Form is a new form type that provides additional context for users viewing and working with data that's related to their current tasks. When this form type is created, administrators select a data definition and a form or report to display for the object and their states. When a user is viewing the form, each object type in the data definition is represented as a tree with expandable nodes. Clicking an object type will display the administrator-defined form or report.

Because this form is based on a chosen data definition, the same data can be displayed in another navigation form, but with different starting (anchor) points. For example, in the screenshot below, the Objective object type is the anchor and Control objects are available through the data path (tree). If an administrator wanted to create a form with the Control object type as the anchor to view all related risks and issues, those same Objective objects from the original form could still be accessible through its relationships or references to Control.



Workflow Orchestration

Using the new Send Orchestration Event workflow action and Consume Orchestration Event trigger, an orchestration event moves multiple objects from different object types into other states at the same time. For example, when the Send Orchestration Event action is added to the Audit object type, closing an Audit object will also close all open Issue objects. Once the action is created (e.g. on the Audit object type), it's added to all other relevant object types' workflows (e.g. Issues) through the orchestration event trigger. The object types this action can be added to is determined by the data definition selected when the action is created.

Workflow Actions

In addition to the Send Orchestration Event action, workflows now have the following new transition actions available, including:

- Clear Fields/Roles/Relationships: Clears the values from selected fields, roles, or relationships on a form. These actions are helpful when users want to relaunch an assessment, but don't want to manually clear previous assessment data. Note that you cannot use this action to clear formula data.
- Set Field Data: Auto-completes a Date & Time field saved on the object type based on the date the object transitioned to the next state. Administrators can choose to auto-populate the current date, the current date plus a selected number of days, or the current date less a selected number of days. This action could be used to set time stamps for start or completion dates on assessments, set deadlines, extend deadlines, etc.

Auto-Created Workflows & State Categories

Each new object type is now created with a default workflow that includes the following states:

- Creation
- Draft
- Active
- Archived

These states, except Creation, can be edited and deleted as needed.

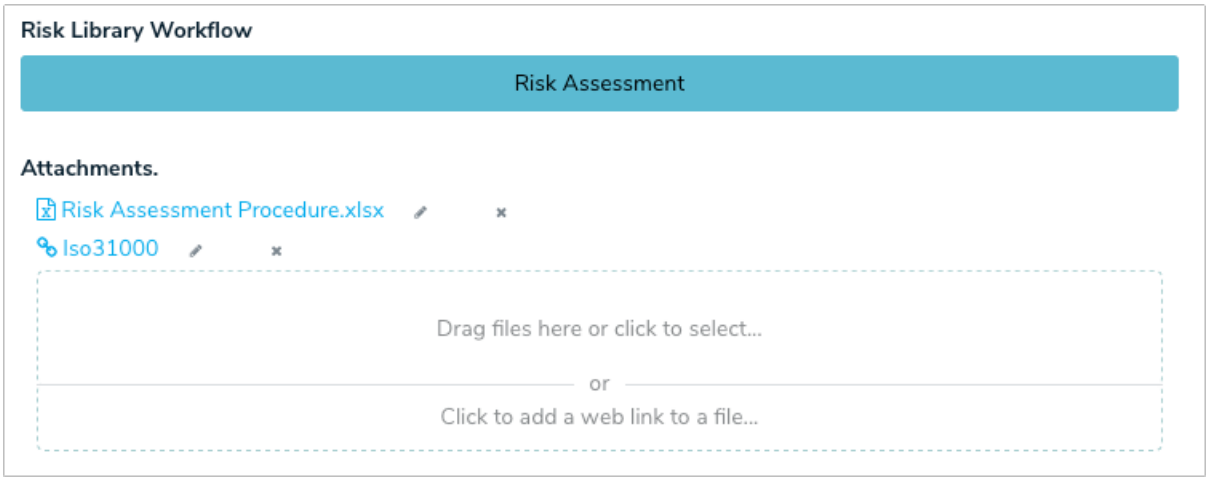
Workflow State Categories

The ability to categorize workflow states will enable CORE to do the following in future releases:

- Create the ability to remove archived data from across the app.
- Provide an accurate progress indicator.
- Create visual representations of completion on the new tree visualization in the Navigation form.

Hyperlink Field

The Attachment field type now allows users to upload files, files and links, or links only.



Report Parameters & Filters

- Administrators can now add parameters to the table report component when the anchor object type is selected from the data series.
- Users can now filter report data using Date & Time fields.

Search

- The search function has been simplified to display results as groups or as detailed results. When viewed as detailed results, filters can be applied to further refine the data.
- The Past Assessment feature displays any related assessments on individual search results as clickable links.
- Users can filter search results by assessment type or dimensions.

Miscellaneous

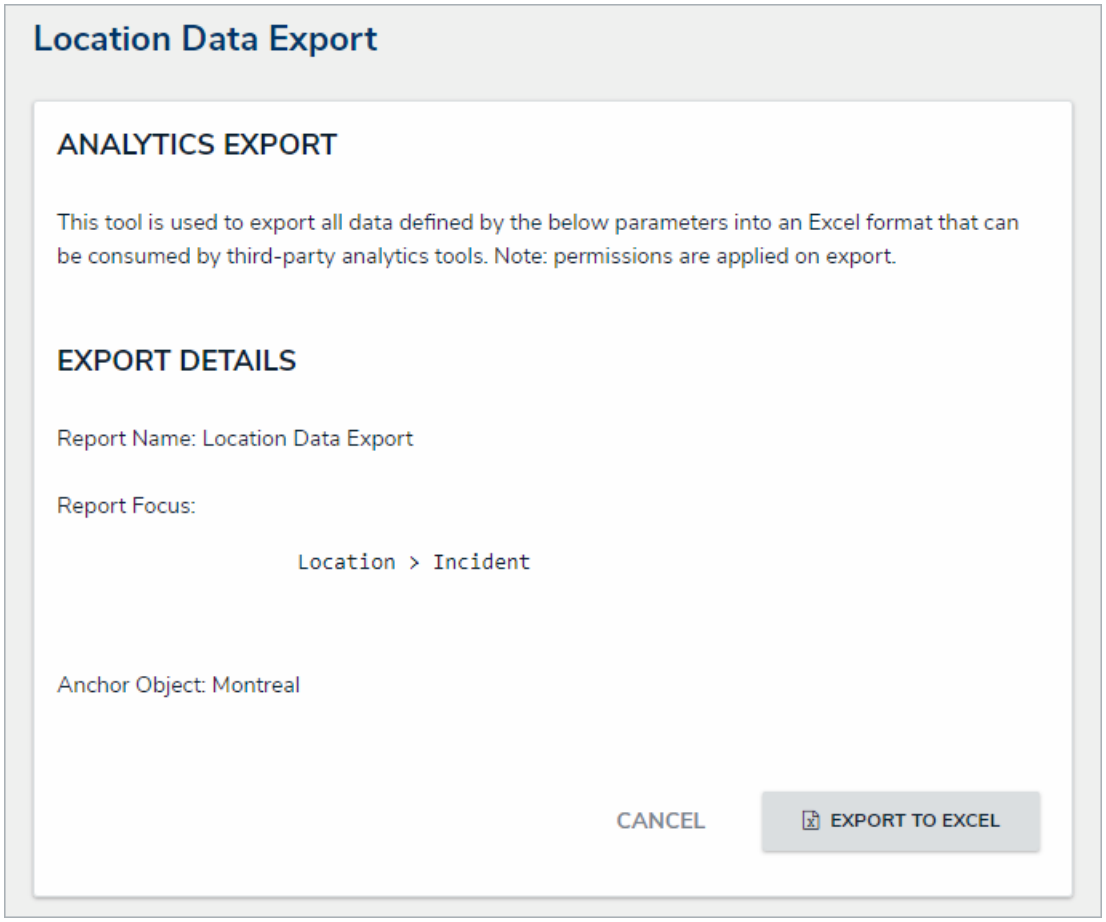
- Heat maps displaying more than 10 objects indicate the actual number of objects (versus the previous “10+”).
- The Swagger API documentation page now contains a search bar.
- The Create option is now available for relationship and reference tables viewed in a palette.
- Administrators can set references as required fields on workflow states.
- The Export Organization and Import Organization functions in Org Manager are now separated into tabs.
- Improved the overall stability of the Org Manager.

Version 1.4 – Release Notes

New Features

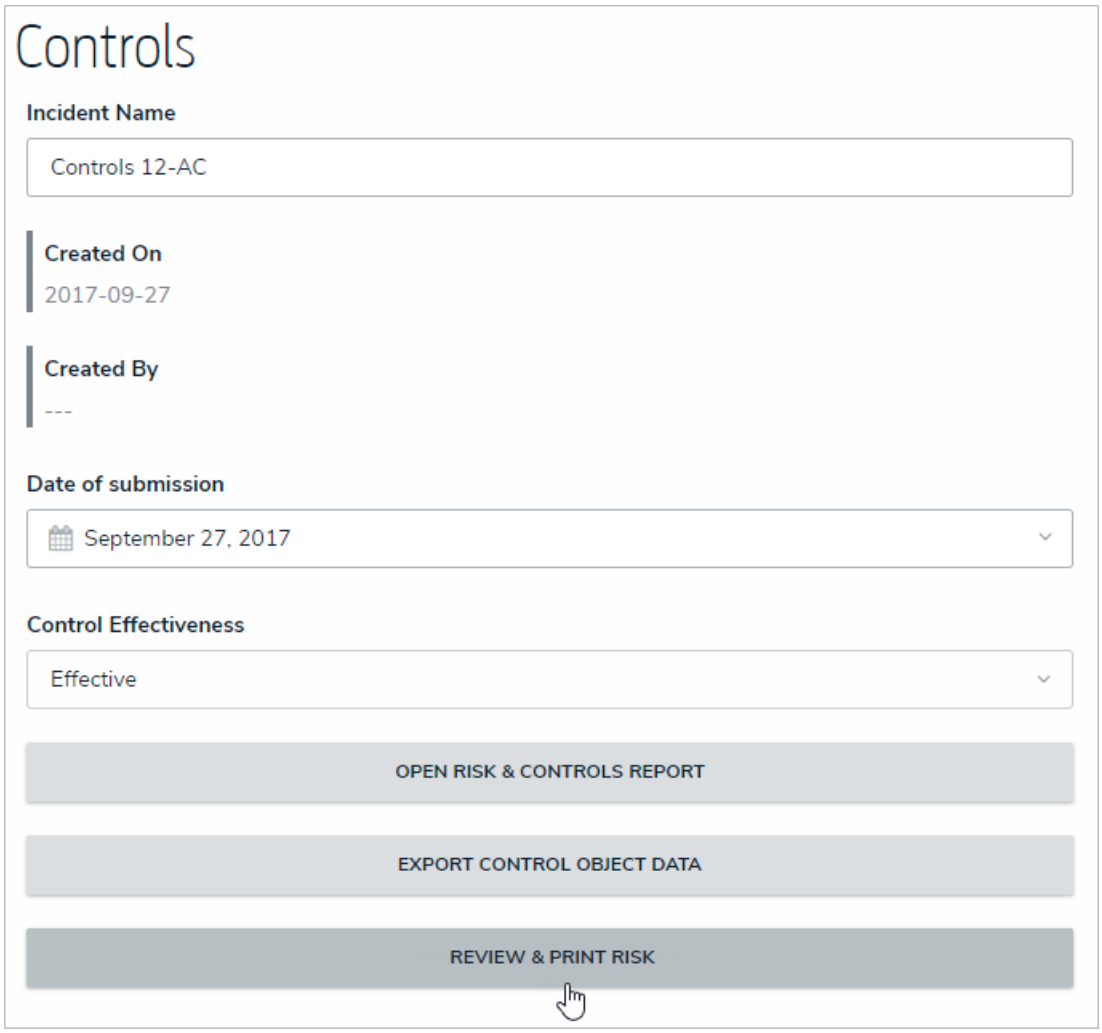
Export Reports

The Data Analytics Export report type is designed to allow an object's data to be exported into an Excel spreadsheet, including any related object types selected in the data definition. These reports can be accessed via an action or view in an activity or in an Export Data form action.



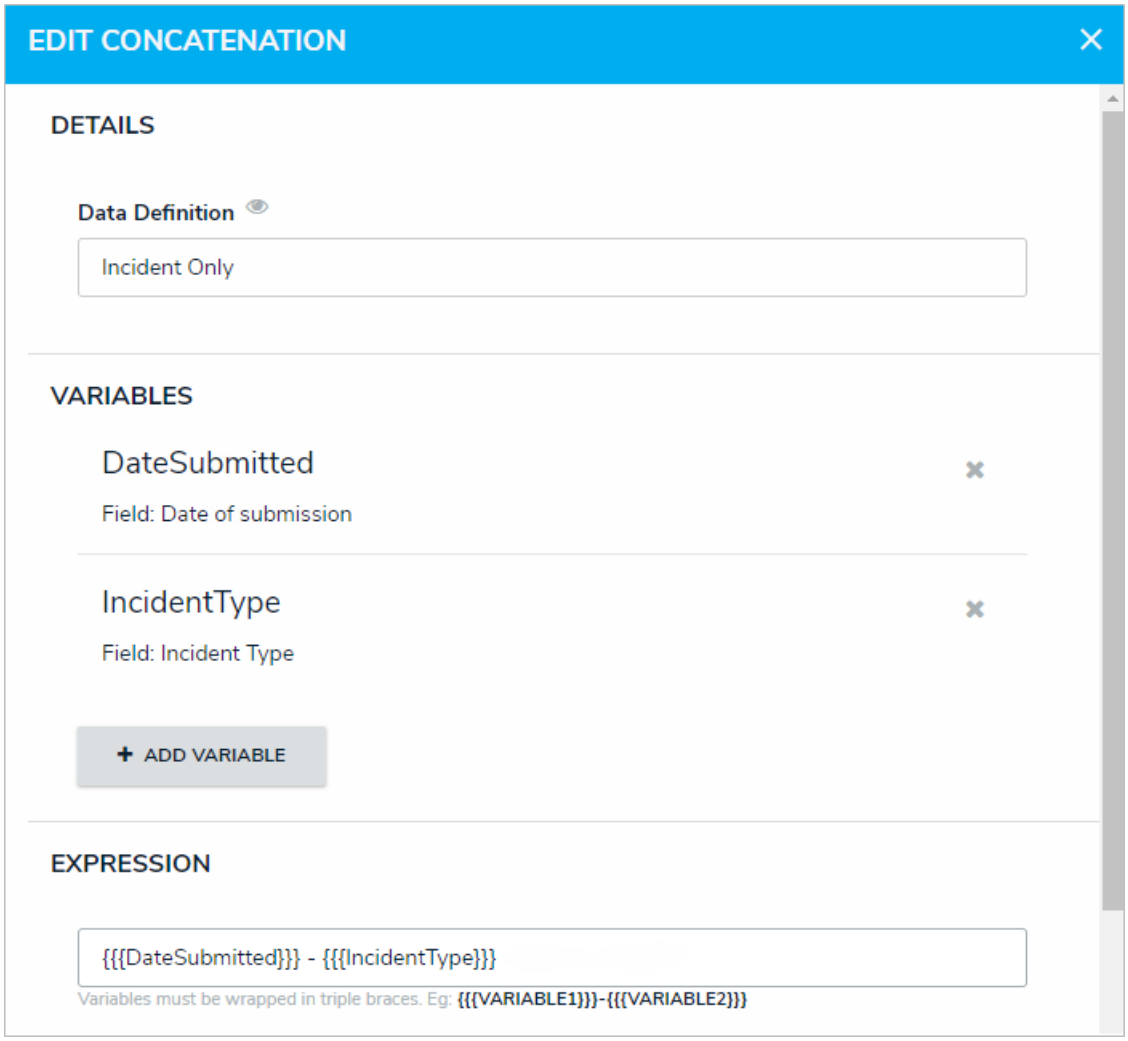
Form Actions

With the new Actions feature on configurable forms, end users can click a customizable button from within an object to open a report or form of an administrator's choosing or access a Data Analytics report for the current object.



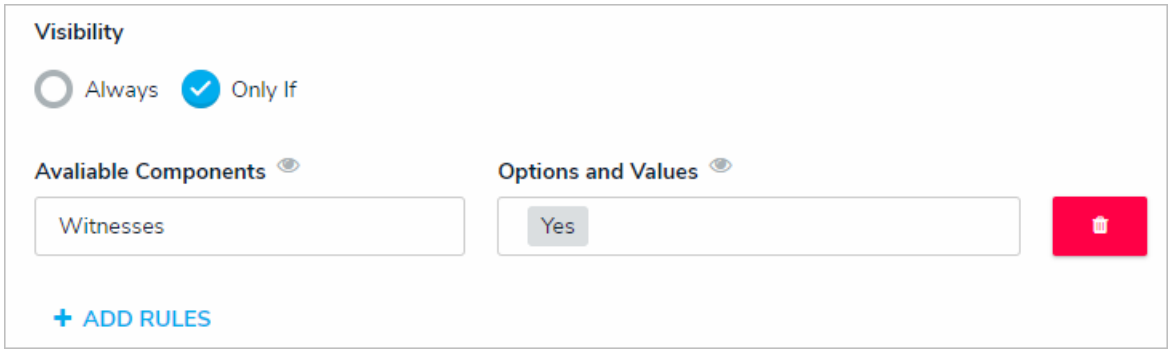
Concatenation

Concatenation uses variables to pull data from the properties and fields saved to an object type or related object types which then automatically populate plain text fields or the Name and/or Description properties of objects. This feature is also available on Plain Text fields.



Dynamic Forms

Administrators can create conditions on forms using formulas and select list values to control whether or not a section is visible (e.g. selecting Yes from the Witnesses? dropdown menu on an Incident form will display the Witness Details section).

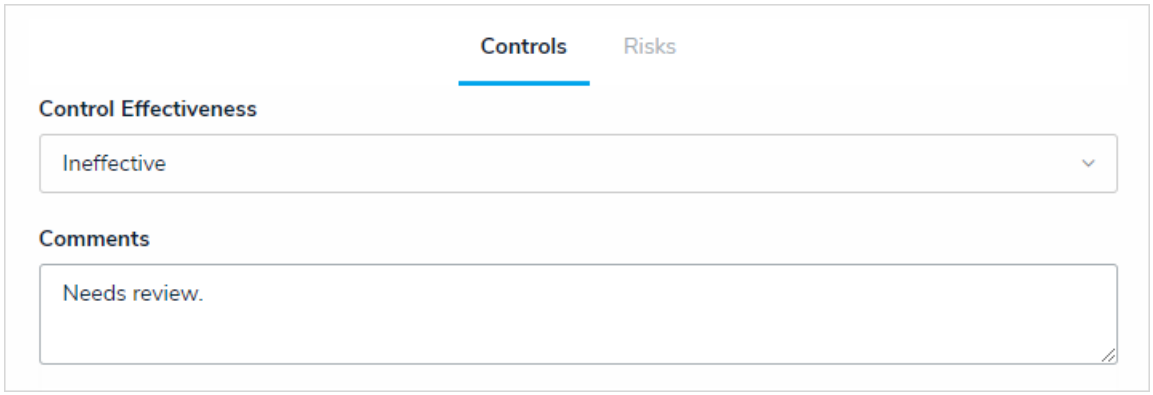


Collapsible Sections

Form sections can now be made collapsible and expandable. Administrators can choose whether the section is collapsed or expanded by default and end users can collapse or expand the section by clicking the and icons.

Tabbed Sections

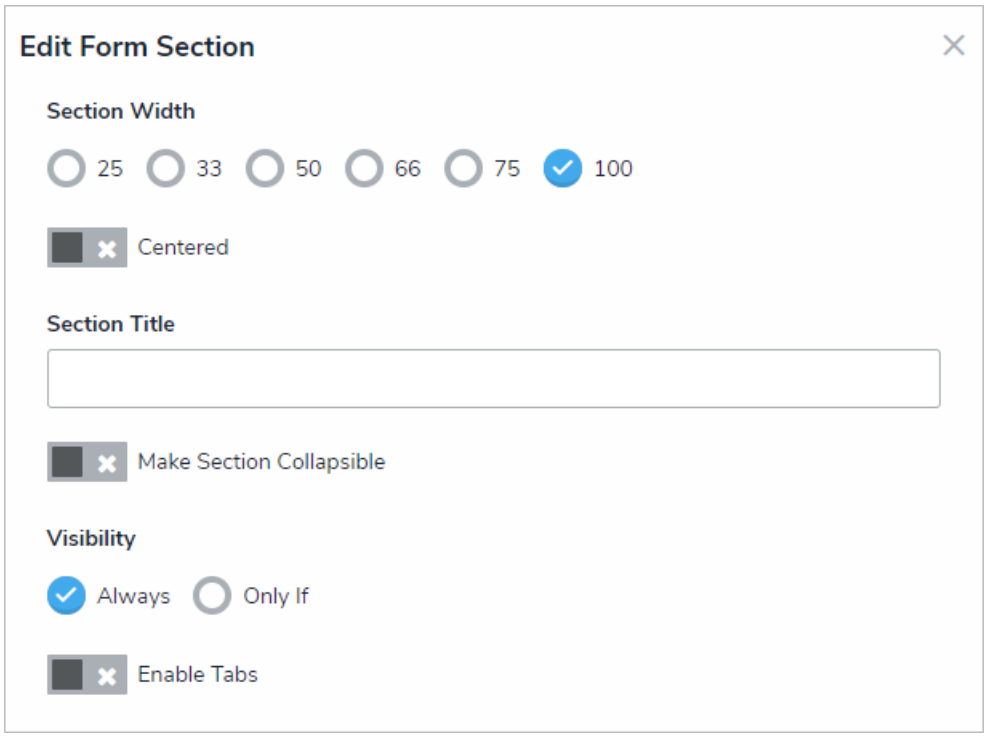
Administrators can now add tabs on form sections to display specific elements only when an end user clicks that tab.



Other Section Enhancements

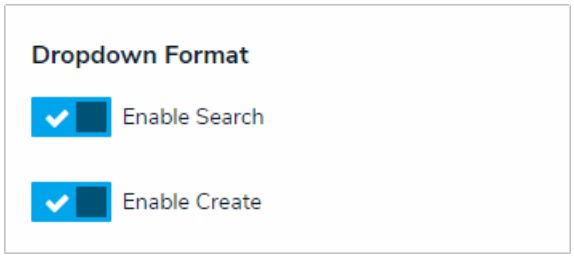
Other section enhancements include:

- Configure the width of the section using radio buttons.
- Center a section on the form.
- Provide a section title.



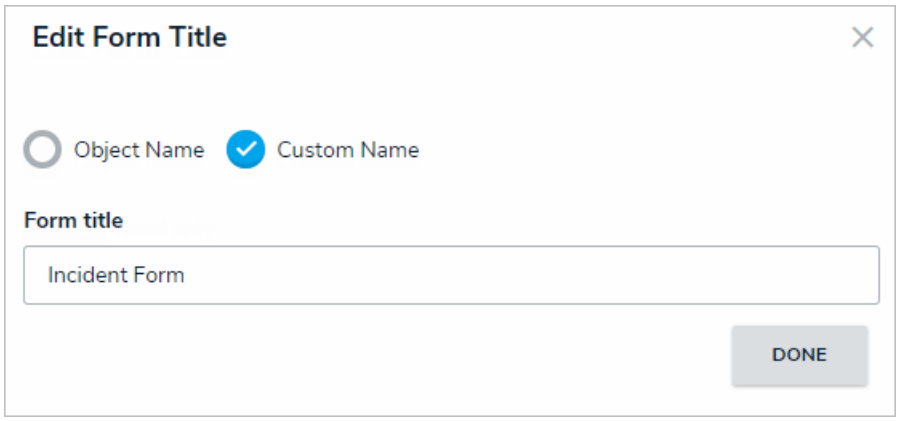
Relationships & References Form Elements

- The References element now has the same functionality as the Relationships element, including the option of displaying the reference as a dropdown menu or table and the ability to search for or create new objects through the reference. Existing references will be read-only until an administrator changes the settings.
- Admins can enable or disable Search and/or Create functionality on the Relationships and References form elements.



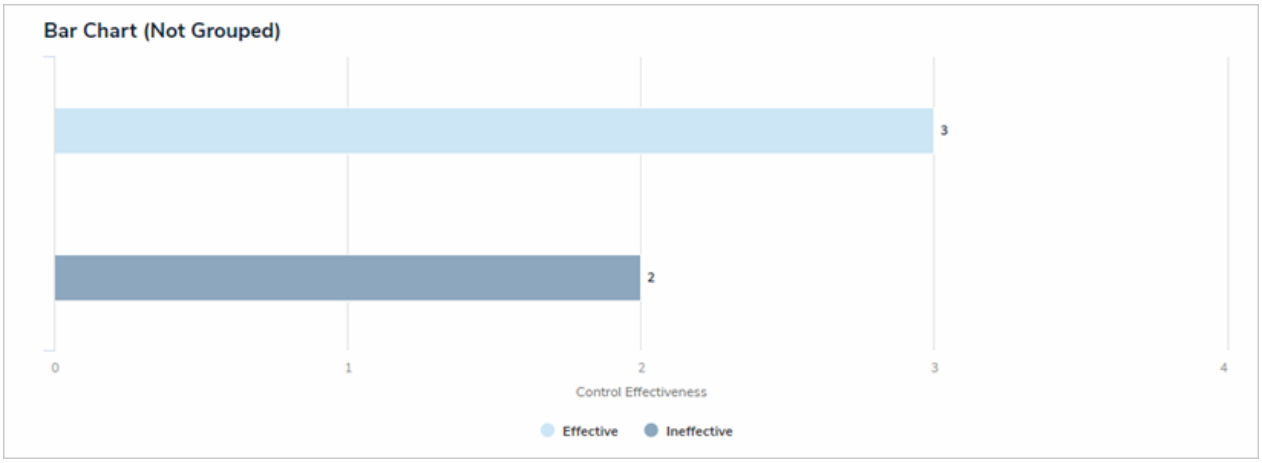
Form Titles

A title header is now displayed at the top of the canvas for every configurable form, with the option of creating custom titles. By default, the title for new objects is “Create a New [Object Type]”, which is replaced by the value entered into the Name property once the form is created. Default titles can be edited by end users with the appropriate Edit permissions.



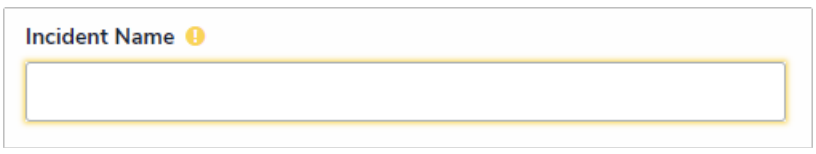
Bar & Column Charts

- When creating a bar or column chart, admins are no longer required to select an object type or relationship to group the data. When the report data isn't grouped, the number of times a field, formula, relationship, or state appears on a single object is totaled on the chart.
- Admins can display a total count of the grouped data displayed in each bar or column.



Miscellaneous

- When users receive a Core-generated email about an object without a name, the object is identified by its unique ID.
- Data Import now supports multi-select lists.
- Users no longer use their current password when resetting it.
- Users can click the icon when reviewing an object in a palette to view the object on its own page.
- Administrators can now rearrange how views appear in activities by dragging the icon beside the view on the Edit Activity page.
- Pie charts and half-pie charts now display the workflow state, select list, and formula ranges in the order they were defined in the pie chart settings.
- The Name property on for objects now displays a header of "[Object Type] Name."



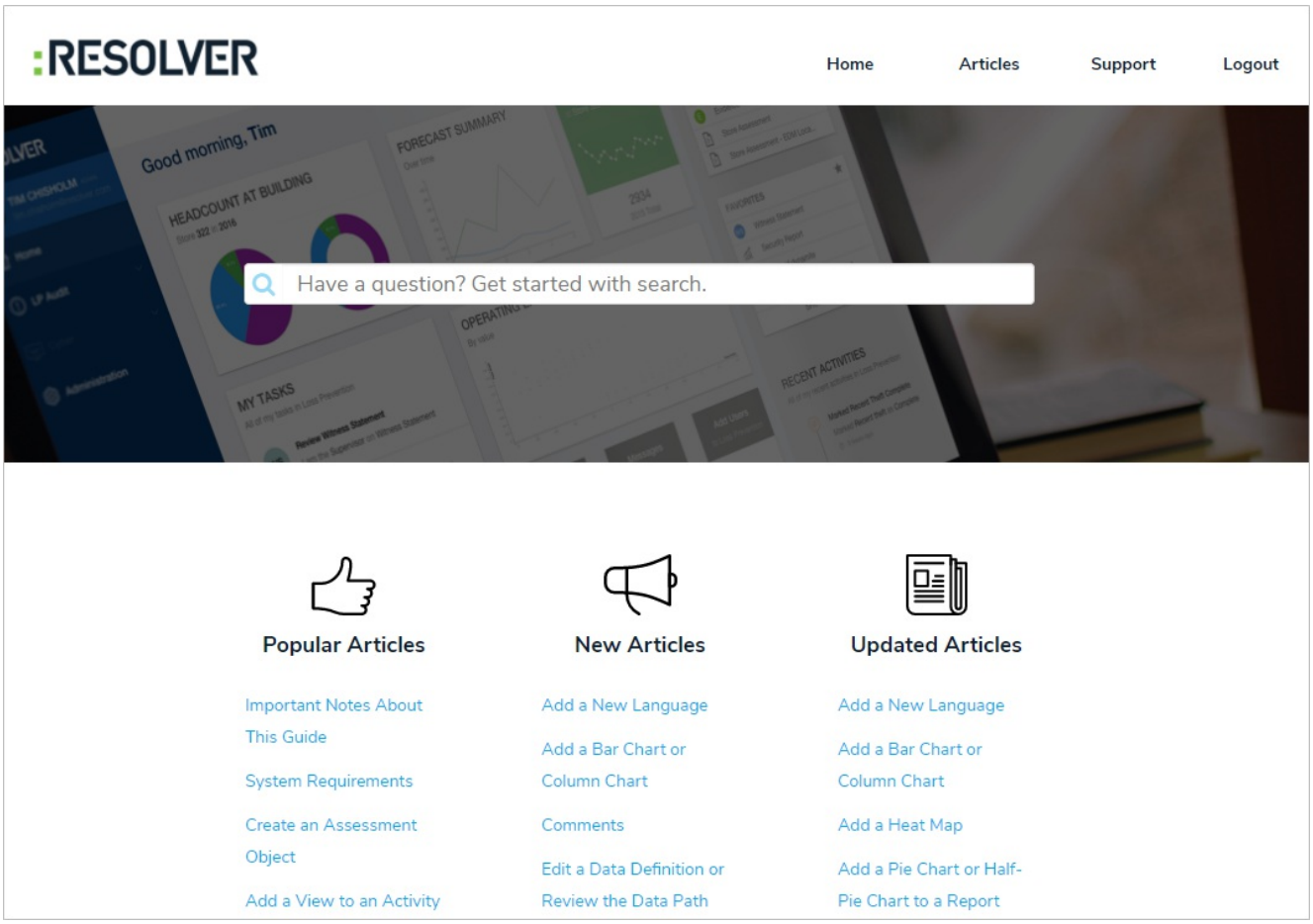
- Users no longer receive emails when they're imported into a new org.
- Various design enhancements and fixes.

Version 1.3.2 – Release Notes

New Features

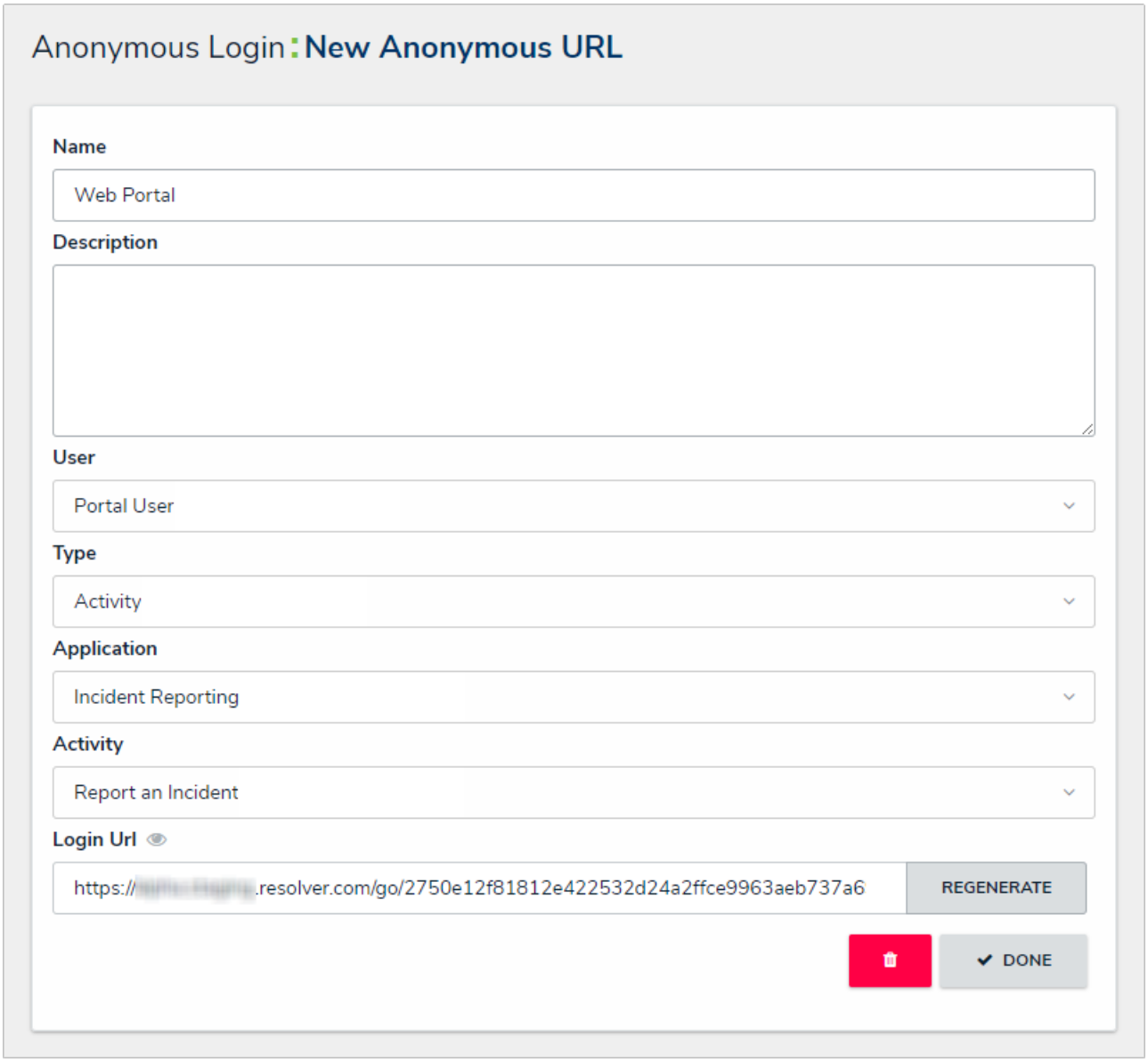
Resolver Knowledge Base

Core help can now be accessed through the all-new Resolver Knowledge Base. Explore topics by category, by popular, new, or recently updated articles, or by entering search terms. The Knowledge Base can be accessed any time you're logged into Core by clicking the icon in the left navigation menu.



Anonymous Login

The new Anonymous Login feature allows administrators to use a single account to grant multiple users limited access to Core. Once an account for this purpose is created, administrators select that account and generate a URL that can be shared with users as needed. Users with this URL don't need to provide login information and can only view the form/activity selected in the settings. This feature is useful for organizations that occasionally require non-employees or ground-level employees to access Core and/or anonymously create or edit data.


Anonymous Login : New Anonymous URL
Name
Web Portal
Description
User
Portal User
Type
Activity
Application
Incident Reporting
Activity
Report an Incident
Login Url
https://[redacted].resolver.com/go/2750e12f81812e422532d24a2ffce9963aeb737a6
REGENERATE
DONE

Version 1.3 – Release Notes

New Features

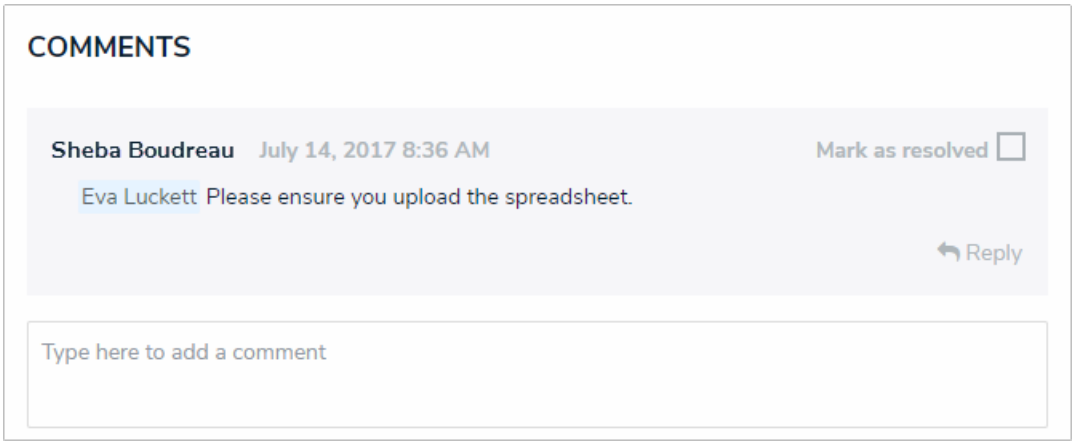
Internet Explorer

Core now supports Internet Explorer 11 and Edge.

Comments

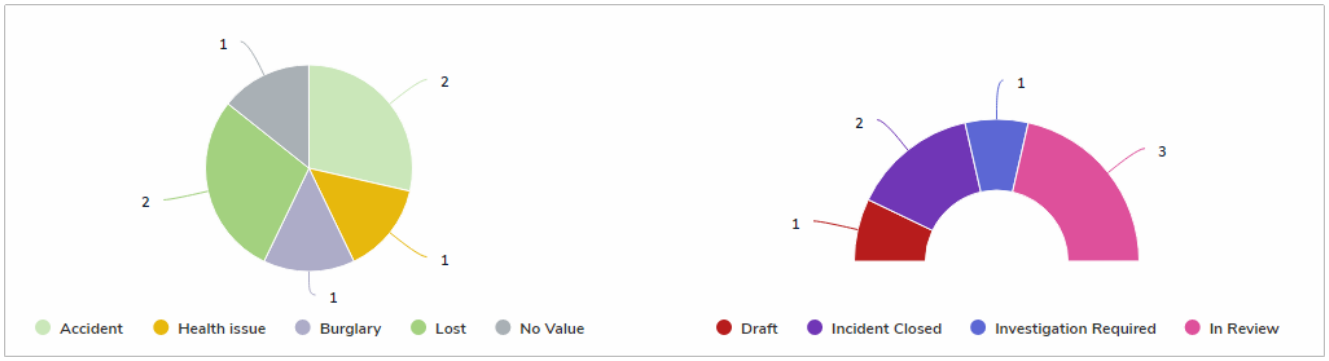
You can now leave comments on an object, making it an excellent collaboration tool. This feature also allows you to:

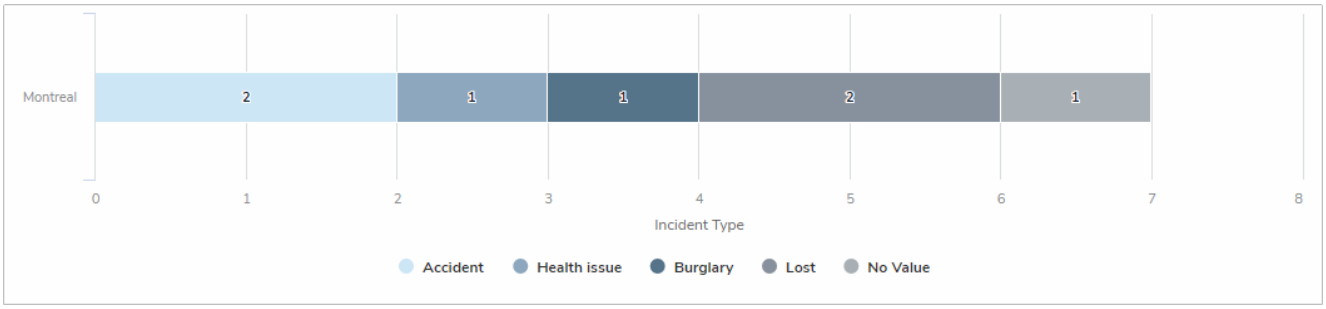
- Tag another user in a comment, who will then receive an email notification.
- Create threads by creating new comments or replying to existing comments.
- Mark comments as resolved.
- Edit your unresolved comments.

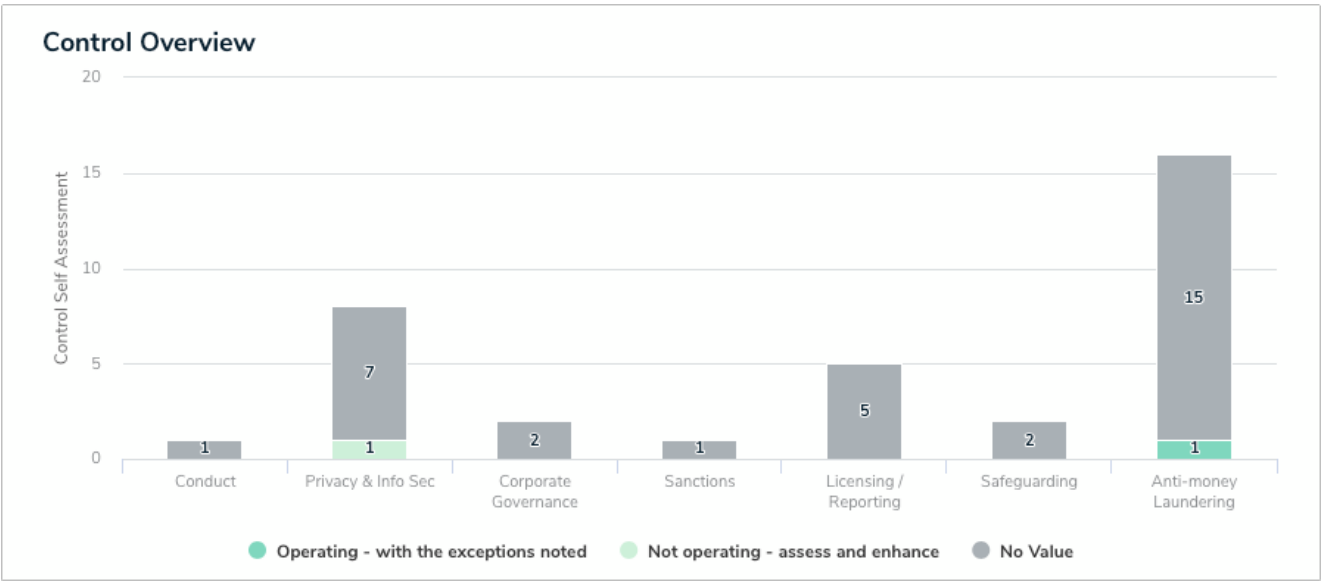


Charts

In addition to a design upgrade on the pie charts, there are three new report charts available, including half-pie charts, bar charts, and column charts.



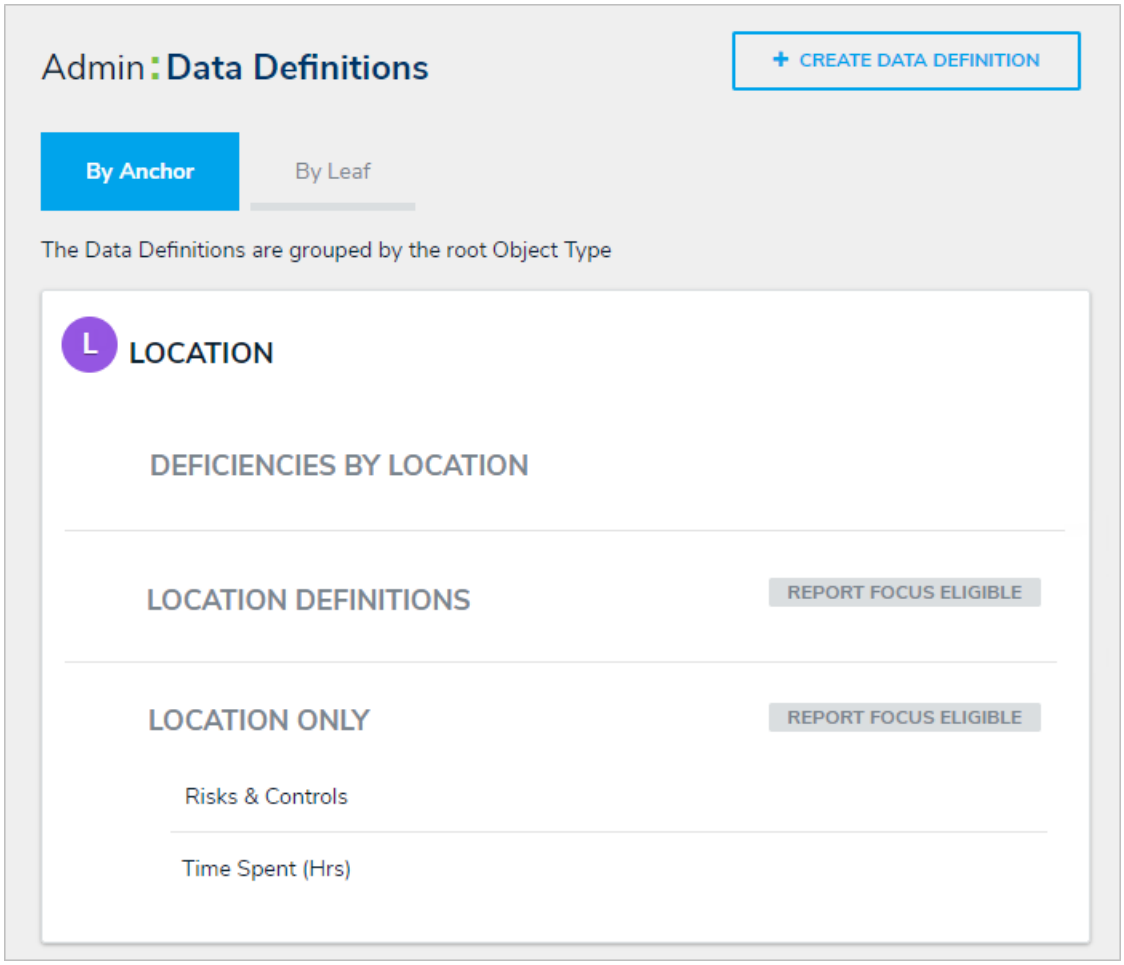


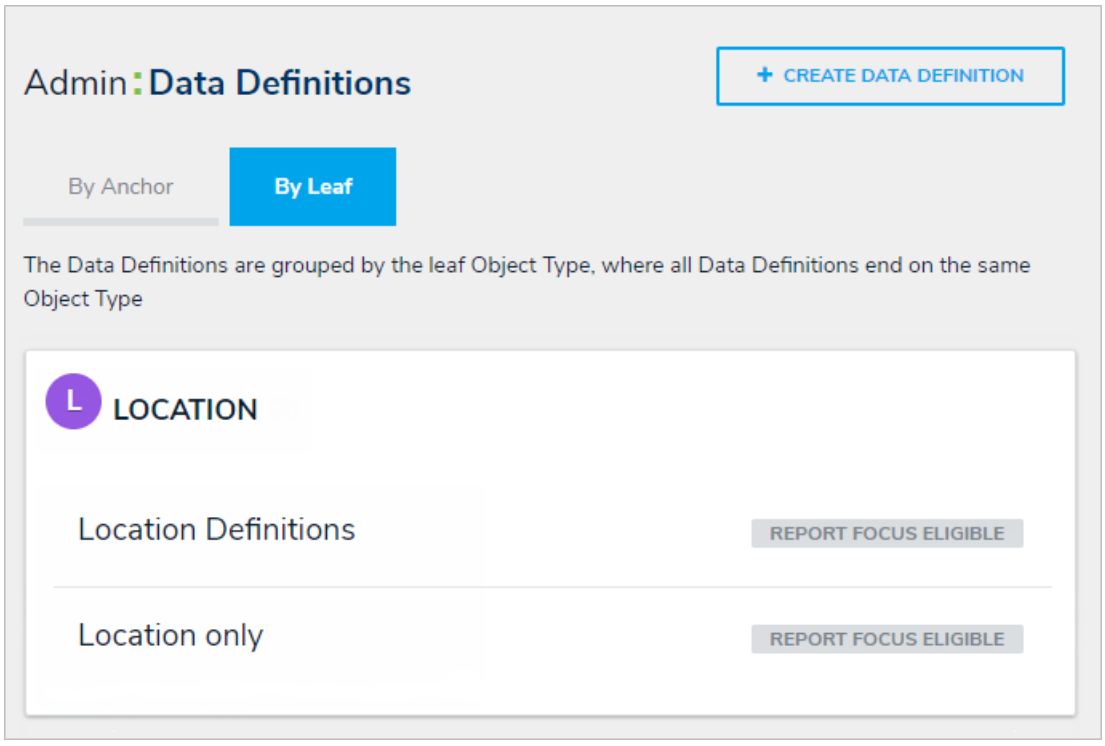


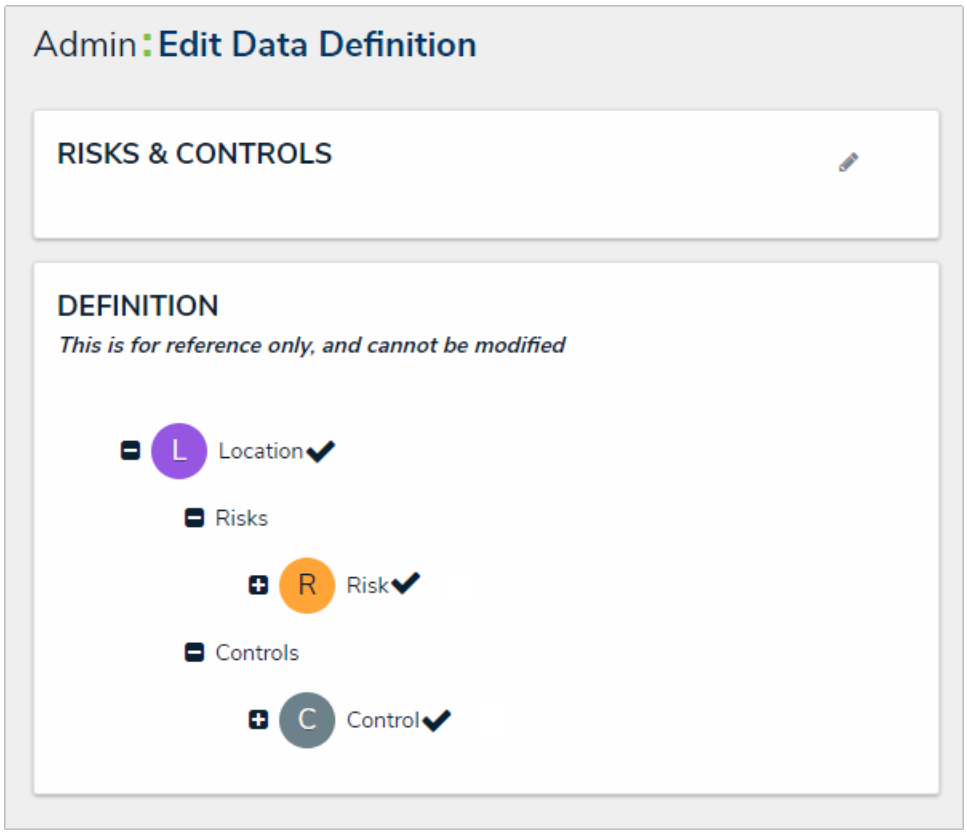
Data Definitions

The new Data Definitions page in Administration displays all the data definitions in your org. When the By Anchor tab is selected, the definitions are organized by the anchor object type in the data path, with related data definitions auto-populated below it. When the By Leaf tab is selected, the definitions are organized by the object type at the end of the data path. You can also click on any of the definitions to review its data path and edit its name and/or description.

NOTE: Data definition management requires elevated administrative knowledge.

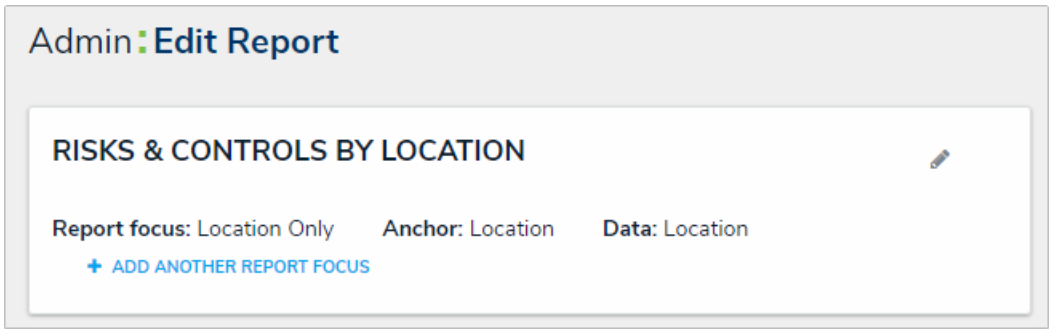

Admin : Data Definitions
+ CREATE DATA DEFINITION
By Anchor
By Leaf
The Data Definitions are grouped by the root Object Type
L
LOCATION
DEFICIENCIES BY LOCATION
LOCATION DEFINITIONS
REPORT FOCUS ELIGIBLE
LOCATION ONLY
REPORT FOCUS ELIGIBLE
Risks & Controls
Time Spent (Hrs)

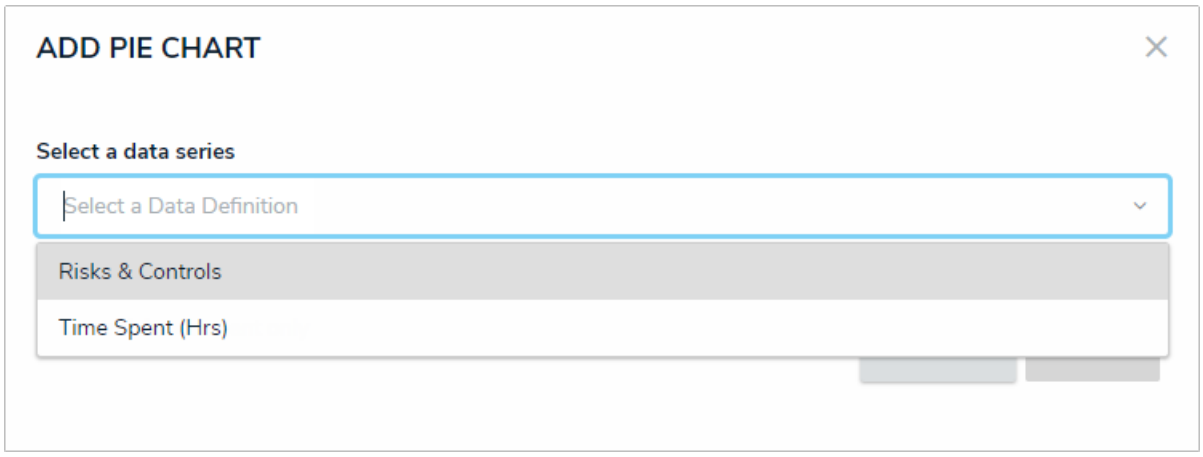

Admin : Data Definitions
+ CREATE DATA DEFINITION
By Anchor
By Leaf
The Data Definitions are grouped by the leaf Object Type, where all Data Definitions end on the same Object Type
L
LOCATION
Location Definitions
REPORT FOCUS ELIGIBLE
Location only
REPORT FOCUS ELIGIBLE



Report Focus & Data Series

To help further refine report data, we've introduced the Report Focus and data series features. When creating a new report, one or more simple data definitions must be selected as the Report Focus, which broadly defines where data will be drawn from. The data is then further defined by including additional data definitions (data series). These new changes help address the past issue of identical objects appearing in reports by removing duplicates based upon the report focus and data series selected.





Workflow Conditions

It's now possible to automatically move objects to a specified state or trigger an action when certain conditions, defined by variables and formulas, are met (e.g. if an incident is flagged as "Injury Occurred" you can specify that the object is sent to HR, while other incidents that aren't flagged are moved through a standard triage workflow).

NOTE: Condition management requires elevated administrative knowledge.

Timed Workflow Triggers

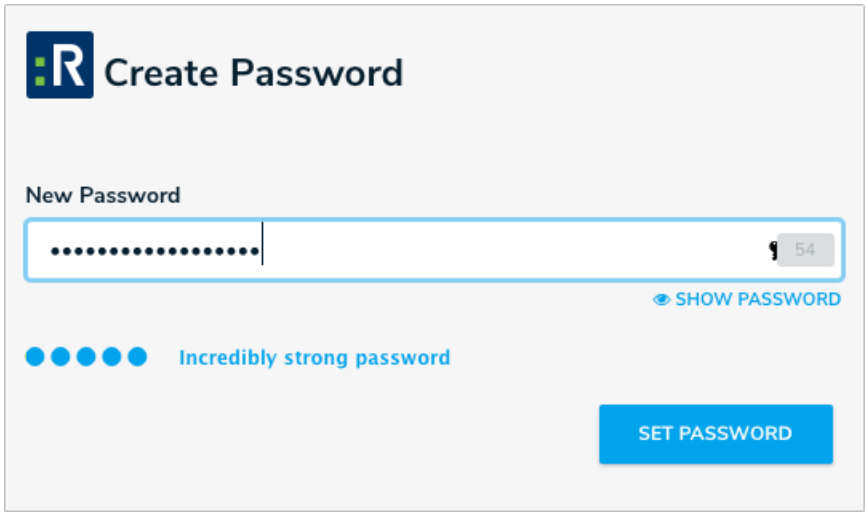
When timed triggers are added to a workflow state, an object is automatically transitioned to a specified state on a nightly basis at 12:01 am UTC (e.g. you can notify users if a deadline is approaching or overdue or launch an assessment on a specific day).

Formulas as Variables

It's now possible to use formulas as variables within other formulas. Variable options were previously limited to fields.

Passwords

For improved security, Core passwords now expire every 90 days, require 9 characters and are now tested against a more complex algorithm to determine strength. This approach is more secure, flexible, and user-friendly than the traditional configuration (8 characters + 1 change of case + 1 special character). All existing accounts will need password resets to meet these new requirements.



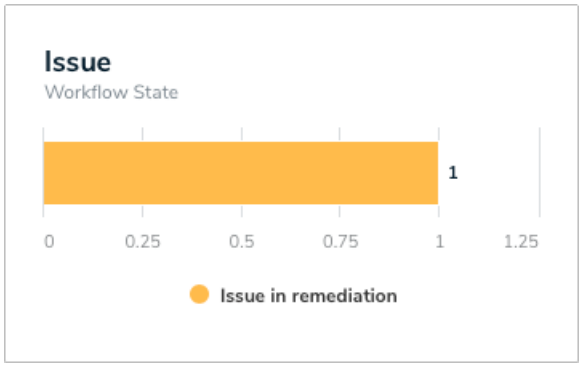
Custom Logo

You can now remove the default Resolver logo from Core and replace it with your company's logo. Contact Resolver for more information.

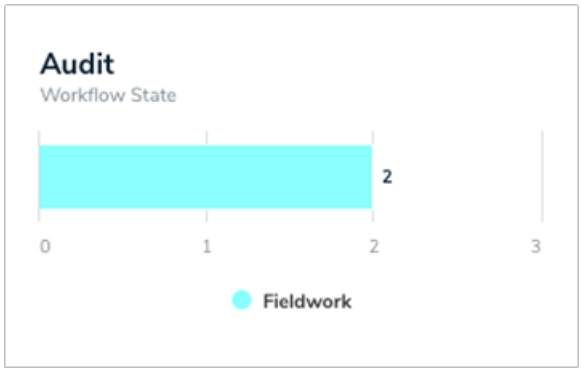
Miscellaneous

- Removed the integers from the charts on the homepage/My Tasks page.

  Before (version 1.2):

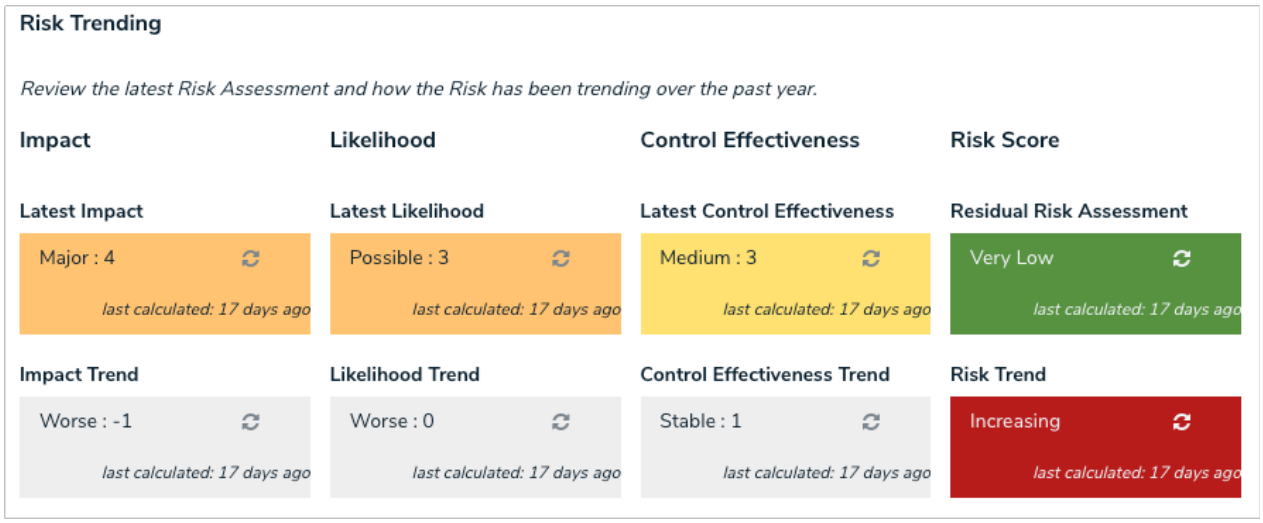


  After (version 1.3):

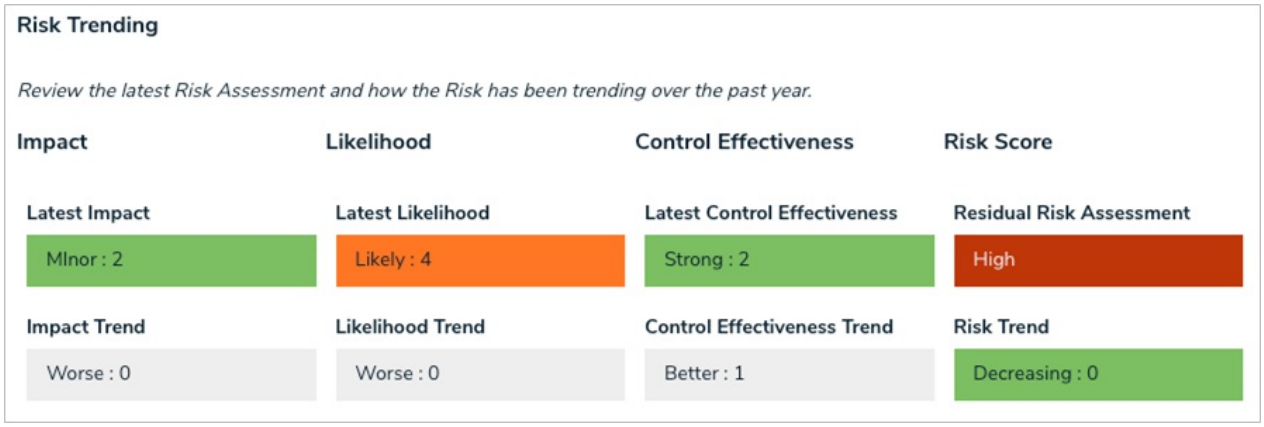


- Removed the "Last calculated" text and refresh icon from formulas. These items can now be accessed by hovering over the formula.

  Before (version 1.2):

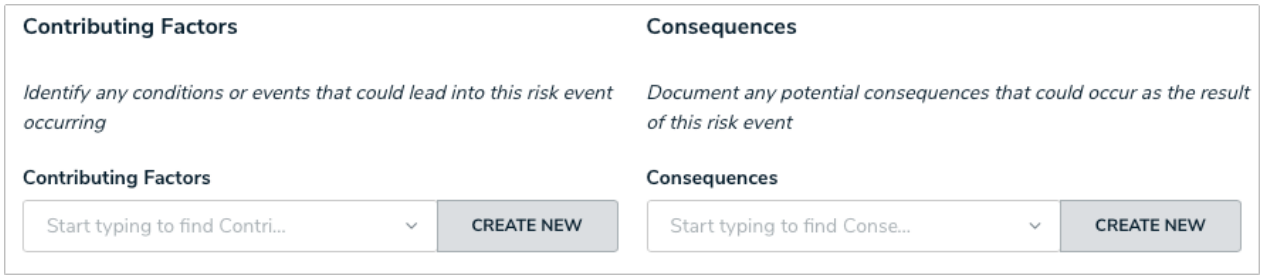


After (version 1.3):

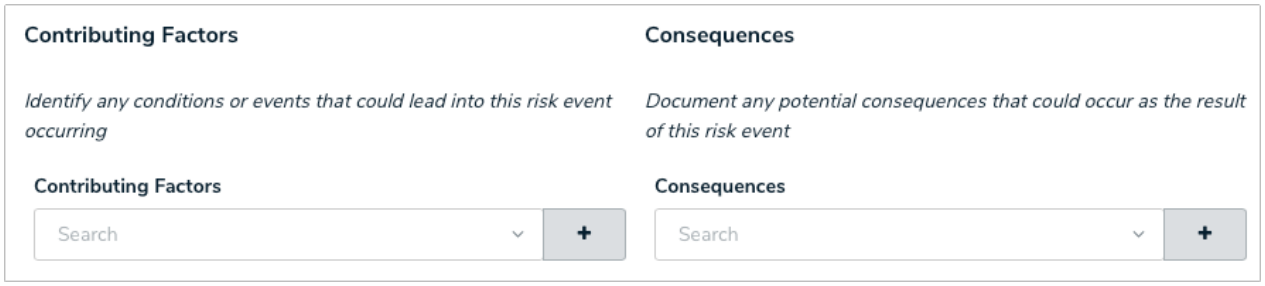


- Removed “Create New” and other non-essential text from the relationship dropdown menus for a cleaner design.

  Before (version 1.2):

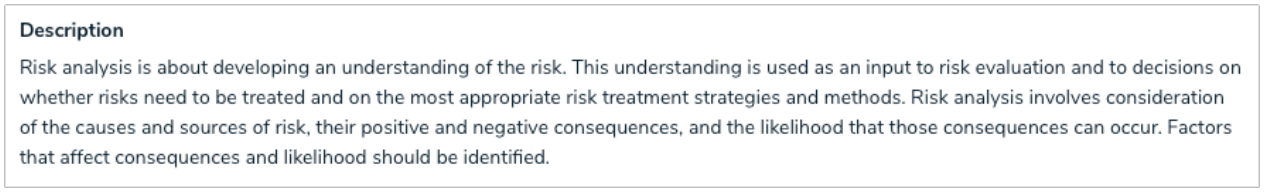


  After (version 1.3):

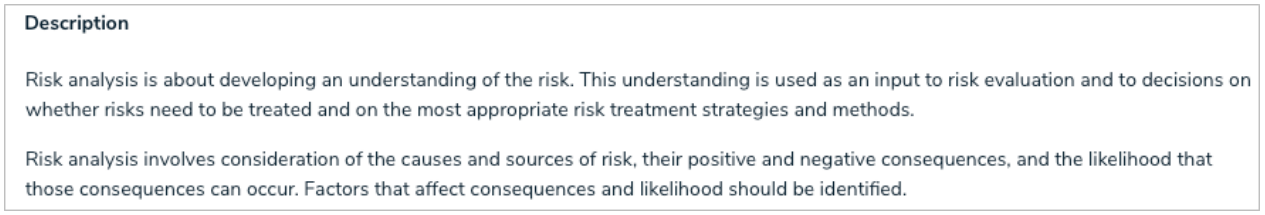


- Line breaks are respected (displayed) in text boxes on read-only objects.

  Before (version 1.2):

  After (version 1.3):

- Objects created through an assessment can now be deleted.

Version 1.2.2 – Release Notes

Bug Fixes

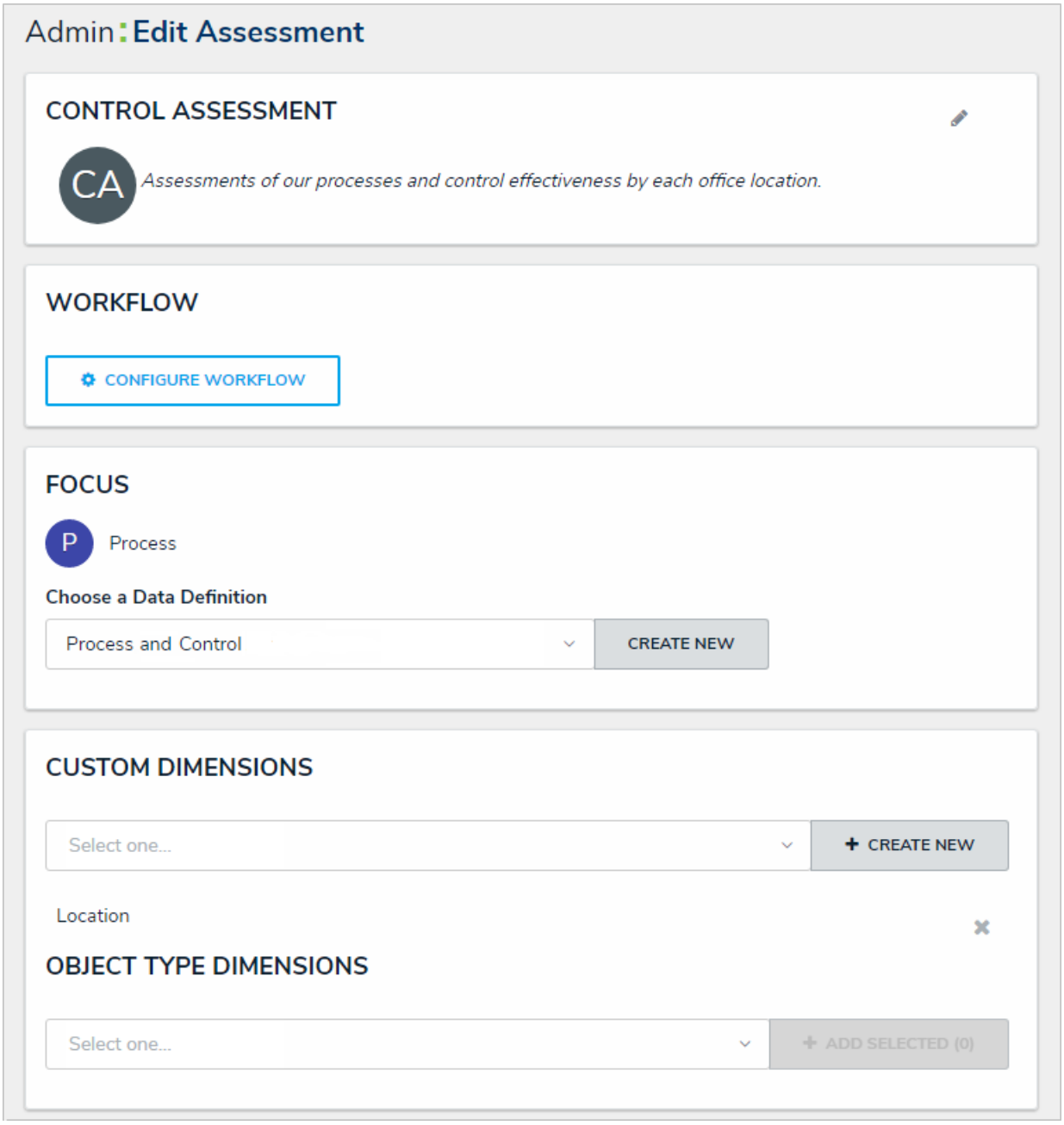
- Bug 6548: Form - Data is Not updated properly if typing while auto saving.
- Bug 6373: Object Creation - Objects created by Assessments cannot have objects outside their data definition related to them.

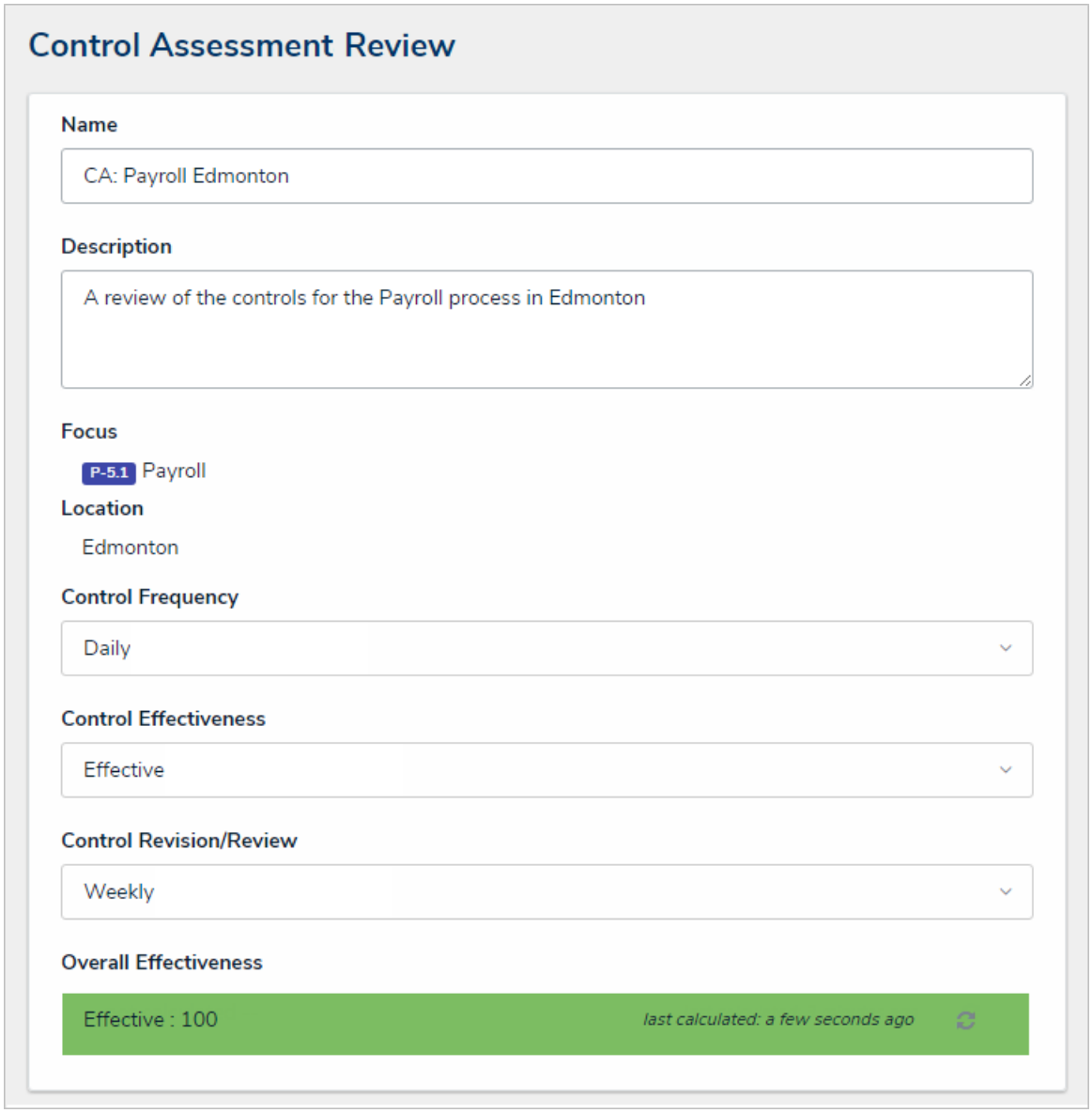
Version 1.2 – Release Notes

New Features

Assessments

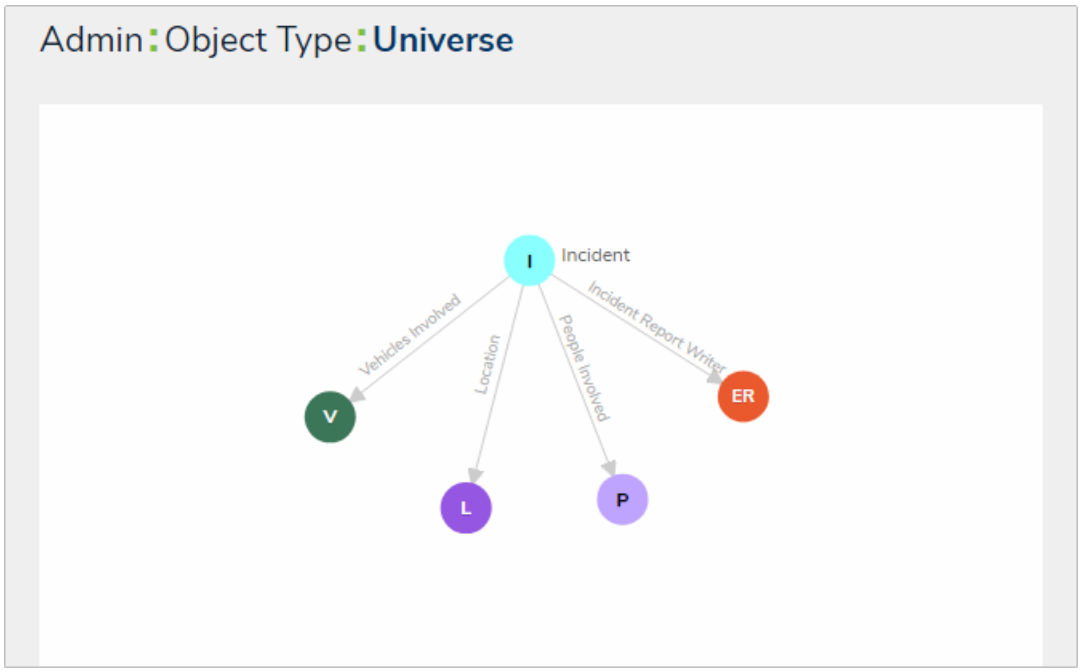
The new Assessments feature enables a point-in-time or continuous evaluation of business activity data (e.g. audit, investigation, control assessments etc.).





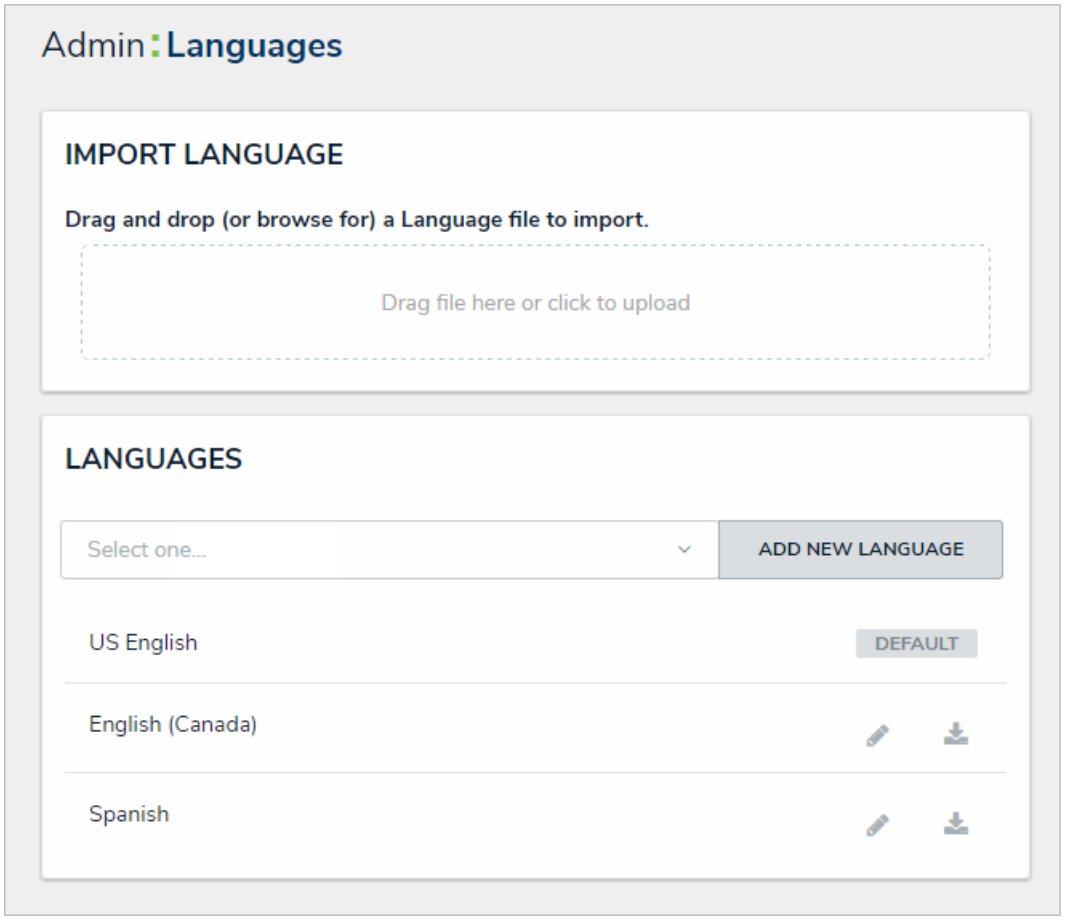
Object Type Universe

The new Object Type Universe graph visualizes how all the object types in your org are associated with one another through relationships.



Languages

It's now possible to upload translations for multiple languages into Core using the new Languages feature.



Data Import

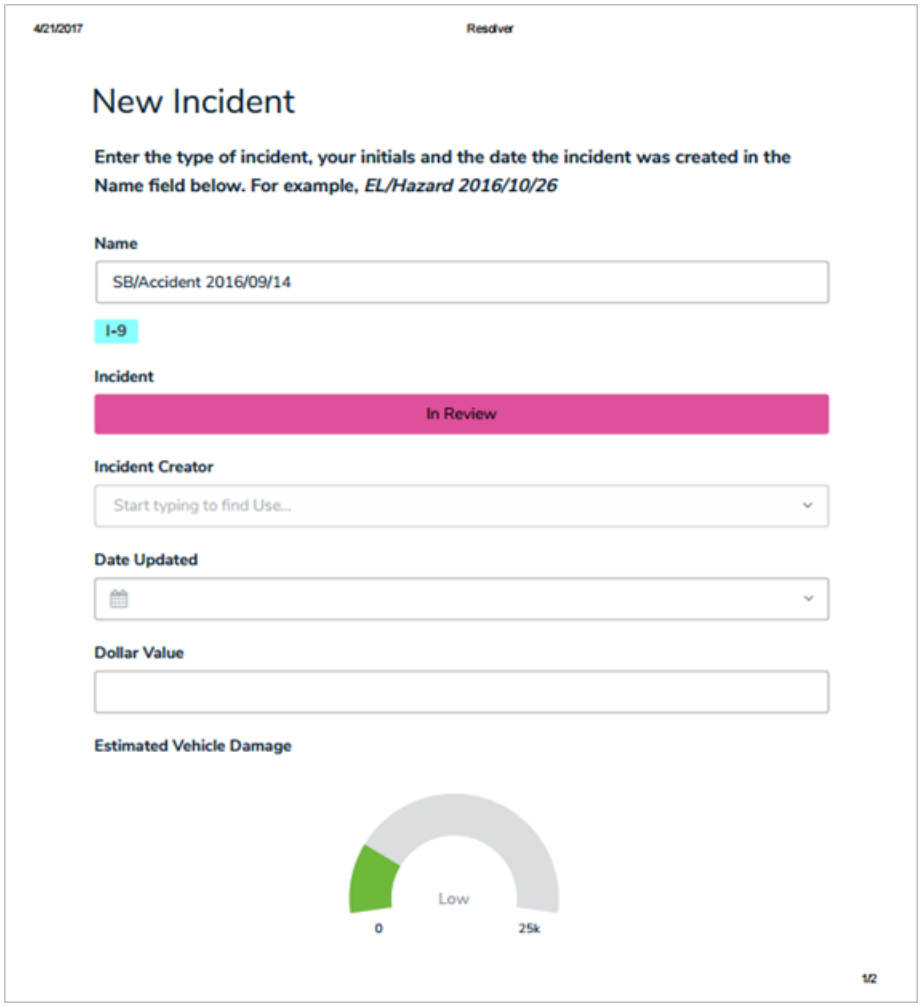
The Data Import feature now supports upload of spreadsheets that are up to 15 MB in size.

Formulas

Administrators can create formulas using variables from references on object types as well as create formulas using variables from n-depth relationships and references.

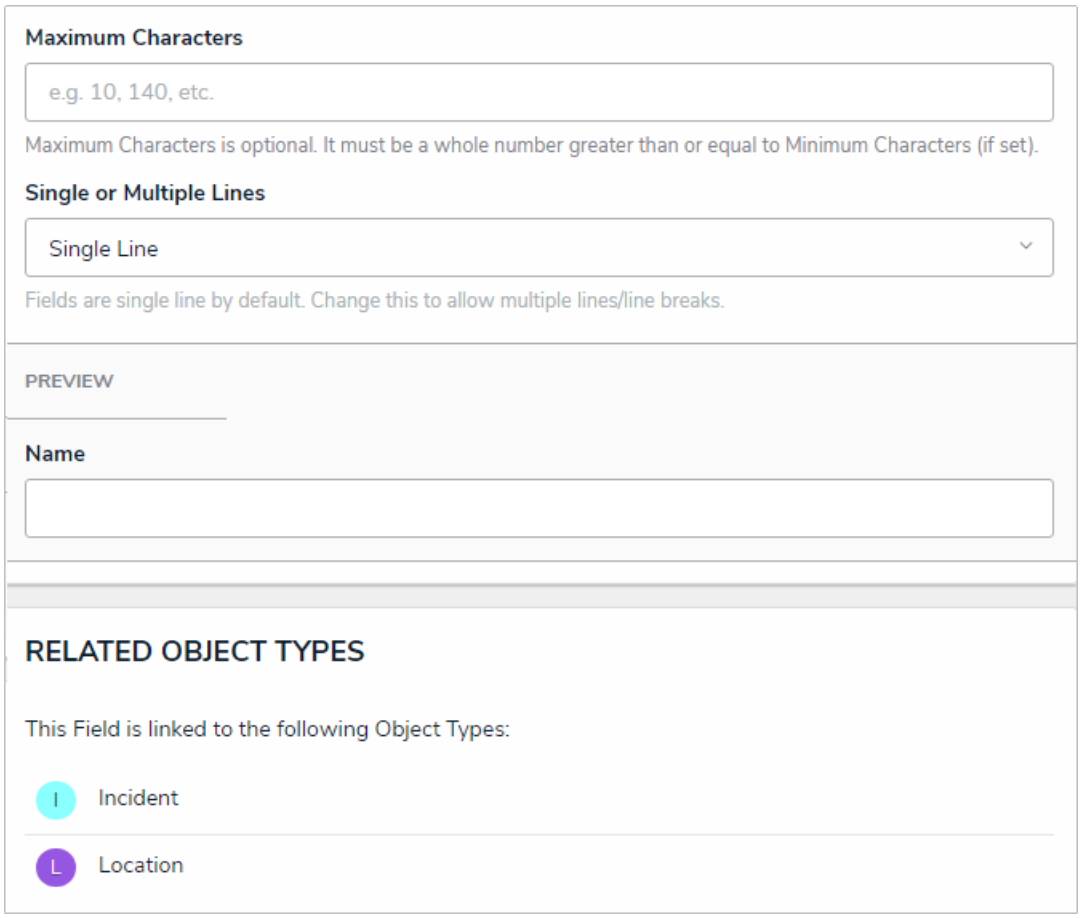
Printer Style Sheets

New printer style sheets ensure that only important data is included on printed copies of reports and forms.



Related Object Types

The Editing Field page now has a Related Object Type section that displays links for the object types the field is linked to.



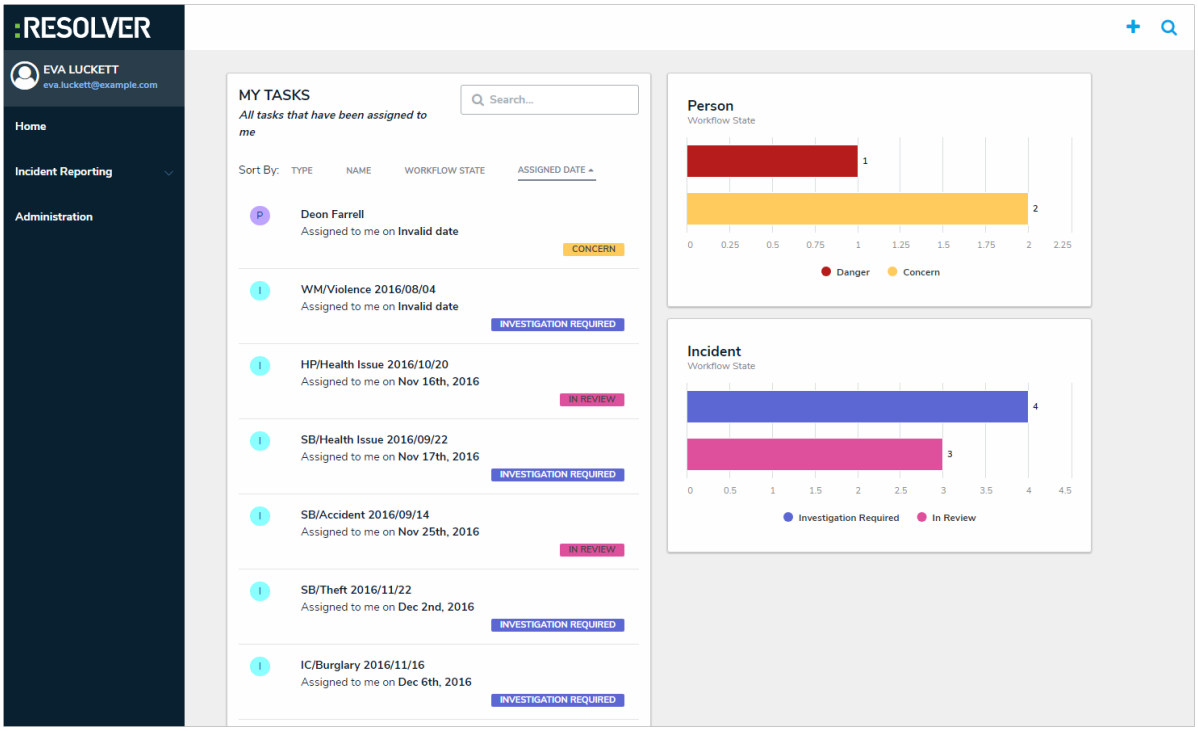
Design Enhancements

Additional design enhancements, including replacing the object type monogram with the unique ID icon on the My Tasks page and a darker font color in report tables for better readability.

Version 1.1 – Release Notes

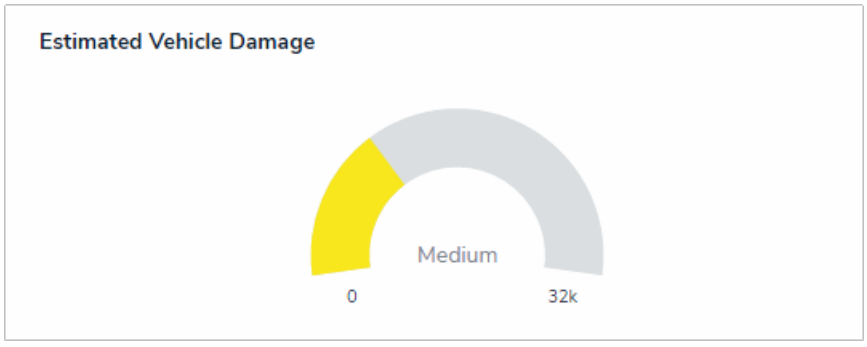
New Features

- Single sign-on authentication is now available.
- A number of user interface changes have made Core more functional and attractive, including:
    - A new color scheme and font.
    - A redesigned Administration section, with a more intuitive arrangement for the settings, including moving Reports to Administration and out of the left navigation menu.
    - Removed the icons from the left navigation menu.
    - Removed page numbers and the search function from relationship tables that display four objects or fewer.

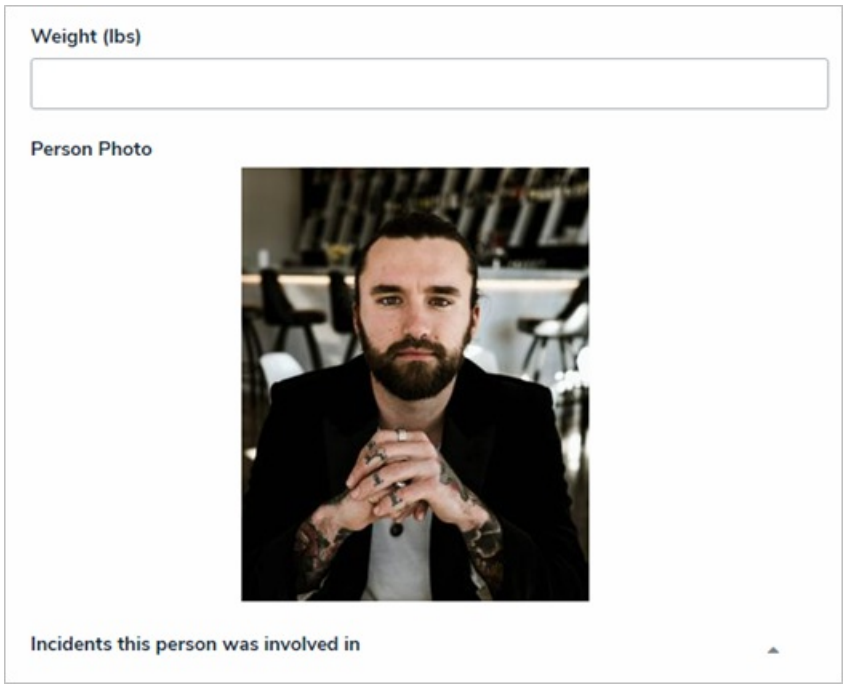


- The home (My Tasks) page now displays a chart that outlines the number of objects assigned to the current user, as well as the objects' current workflow states.

- The Edit Object Type page now includes tabs for easy configuration of the components, which include Fields, Formulas, Relationships, References, and Roles. Additionally, the Overview tab provides clickable links to all the configurable forms for the object type along with a list of the associated data definitions.
- Markdown formatting is now available on the Long Names for fields and relationships.
- It's now possible to mark a role as required in the Required Components settings for individual workflow states.
- Required components (fields, properties, or roles) can be applied to an object at the Creation state.
- You can now display formulas as gauges on configurable forms.



- The new Image Attachment field allows users to upload images and display them directly on a form, where they may also edit the name and description or replace or crop the image.



- American date formatting (e.g. 03/20/2017) is available for the Date & Time field.
- Select list fields now have a multi select option, allowing users to select multiple options from a list.
- Configurable forms can be duplicated to create similar forms for the same object type without having to recreate the form.
- Administrators can now import data using External Reference Object Type IDs and External Reference Relationship Type IDs, thereby making it possible to use one spreadsheet to import data into multiple duplicate orgs.
- Data Import now supports import of JSON files.

Introduction Overview

Resolver Core is a cloud-based system that helps you quickly and easily to record, track, report, and manage information. Core is completely configurable, which allows you to create custom applications, along with custom forms, fields, workflows, reports, and more to ensure that the needs of your organization and industry are met as you collect and analyze data.

Submit Your Ideas: The Resolver Idea Portal

If you have an idea for a new feature or improvement for our products, we want to hear from you!

Through our Idea Portal, customers can submit ideas for enhancements, vote on other customers' ideas to help get them on our product roadmap, post comments, and much more!

For a brief introduction to this tool and how to use it, check out the short video below. To start sharing and voting on ideas, sign into the Ideas for Resolver site. If you need help signing in or creating an account, contact our Support Team.

System Requirements

Resolver Core and its apps run on the following Internet browsers:

- Google Chrome (latest version)
- Microsoft Edge (latest version)
- Internet Explorer 11

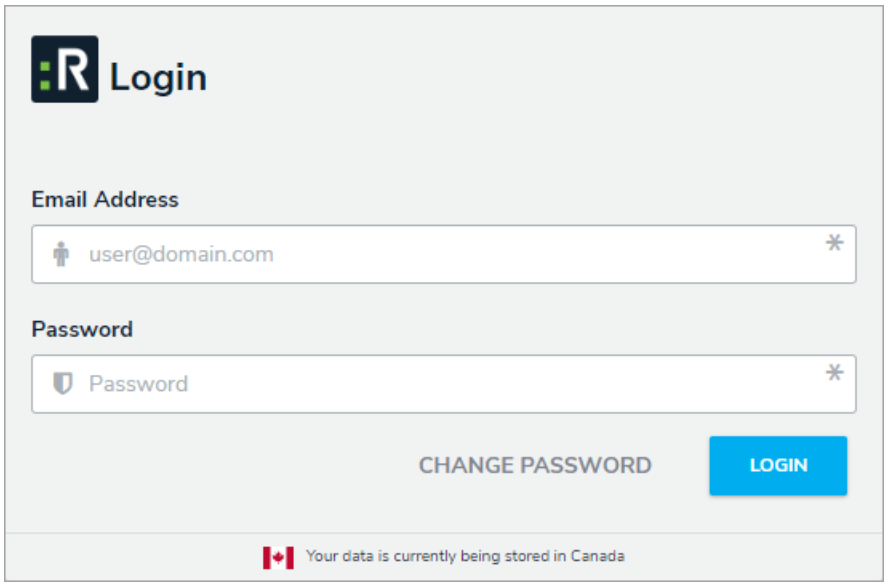
Visit the links below to download Chrome, Edge, or Internet Explorer 11 and ensure your computer meets the minimum system requirements.

- Download and install Chrome
- Microsoft Download Center

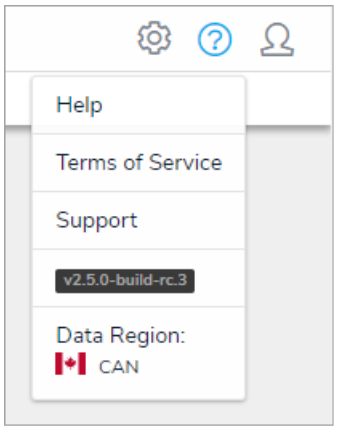
Data Region

You can review the geographical region where your organization's data is being stored from the login screen or by clicking the icon in the top bar.

Your organization's data region is selected upon implementation. Contact Resolver Support should you require additional information.



Data region information on the login screen.



Data region information in the top bar.

Who Should Use This Guide

This guide is for users operating Core with administrative rights enabled. Note, however, that your account may not have access to some or all the features or settings discussed in this guide.

Important Notes About This Guide

This guide is designed to help administrators learn the concepts behind Core's features and how to edit its settings and functions, however, depending on your app and the settings applied to your profile, **you may not be able to edit some or all the settings and features referenced in this guide**

Additionally, the screenshots used and the applications, object types, and other elements referred to are not specific to a particular Core application, so your version of the user interface may differ.

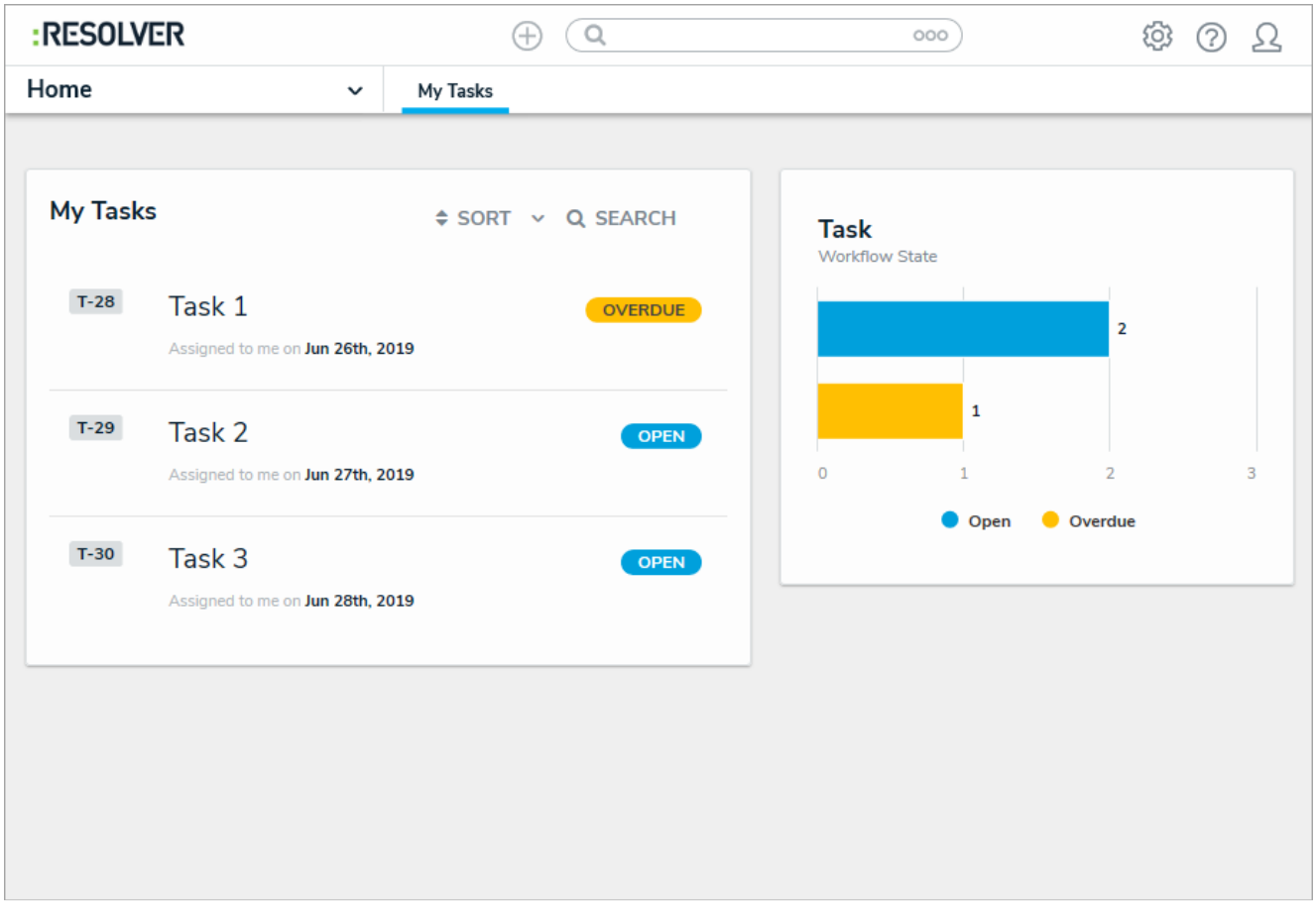
Notes, Tips & Warnings

Throughout this guide, you'll see the following symbols:

	Indicates a **NOTE**.
	Indicates a **TIP**.
	Indicates a **WARNING**.

My Tasks

My Tasks is a tab in the nav bar that displays a list of existing objects that have been assigned to the user who is currently logged in. By default, the **My Tasks** tab is displayed as the landing page whenever you're working in the **Home** area of your organization (upon login, after clicking the company logo in the top-left of the page, or selecting **Home** from the nav bar dropdown menu). Any starred reports, including those that may have been flagged as the landing page, will always appear beside the **My Tasks** tab in the nav bar.



The My Tasks page.

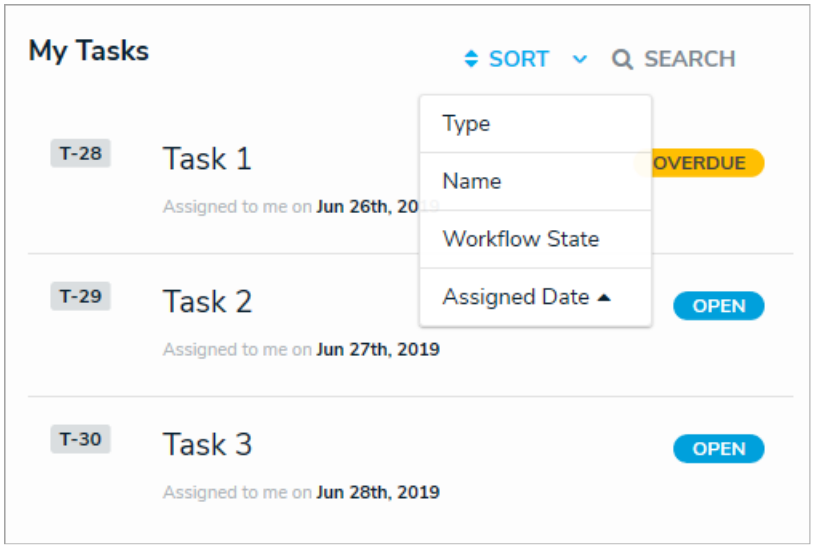
You can access this page at any time by clicking the Resolver logo (or your company logo, if configured) in the top-left corner of any page or by clicking **My Tasks** in the nav bar while working in an application or activity. Note that if you're working in the Admin settings you will need to click the logo to return to the My Tasks page.

Objects can be viewed by clicking on them, but they won't appear in your tasks unless the **Assign** option has been enabled on one or more states in your role's workflow permissions for an object type. Additionally, the object must currently be in the state selected in the workflow permissions before it will appear in your tasks or on the charts. Edit, manage, and delete rights are configured through your role's workflow permissions, as is the form that's displayed when the object is viewed.

To arrange how the objects appear on the page, click **Sort**, then select one of the following options:

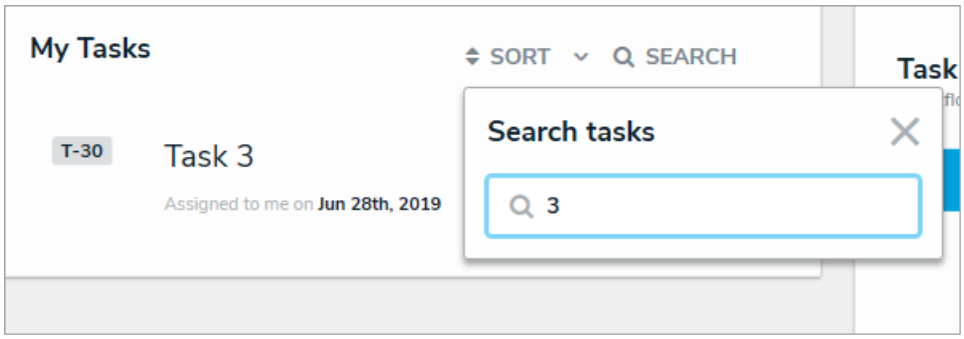
- **Type:** Sorts the assigned objects by object type name.
- **Name:** Sorts the assigned objects by name property.
- **Workflow State:** Sorts the assigned objects by their current workflow states.
- **Assigned Date:** Sorts the assigned objects by the date they were assigned to you.

By default, clicking an option will sort the objects in ascending order (alphabetically or by newest date first). Clicking the option again will sort the objects in descending order.



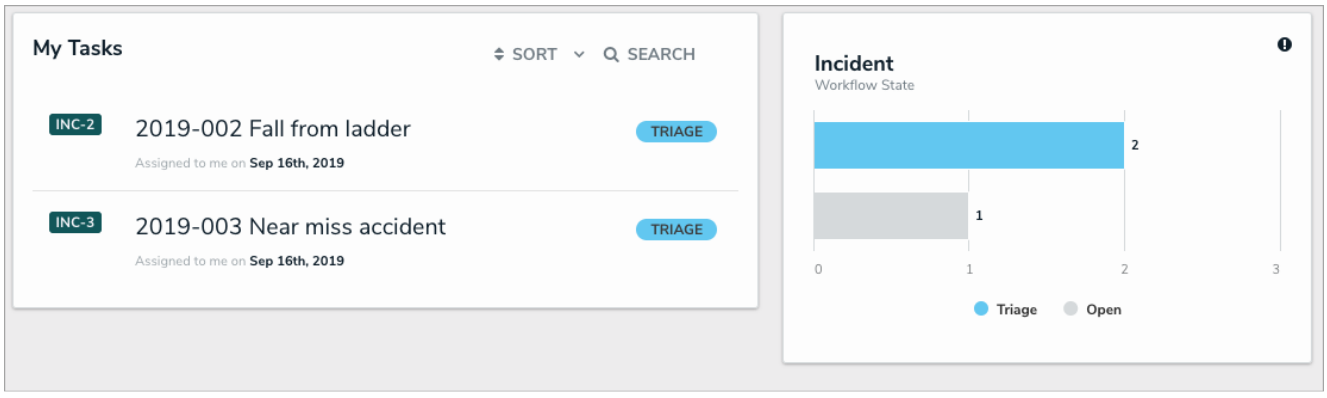
The sort option on the My Tasks page.

You can narrow down which objects are displayed by entering keywords from one or more object names. To once again view all the objects, click**Search**, then use **Backspace** on your keyboard to delete any search terms.



Clicking Search then entering keywords from an object's name will narrow down which objects are displayed.

The bar charts to the right of the **My Tasks** section on this page outline the number of objects assigned to you and their current workflow states. To filter your task objects by their current state, click a state in the bar chart. To remove this filter, click the state again.

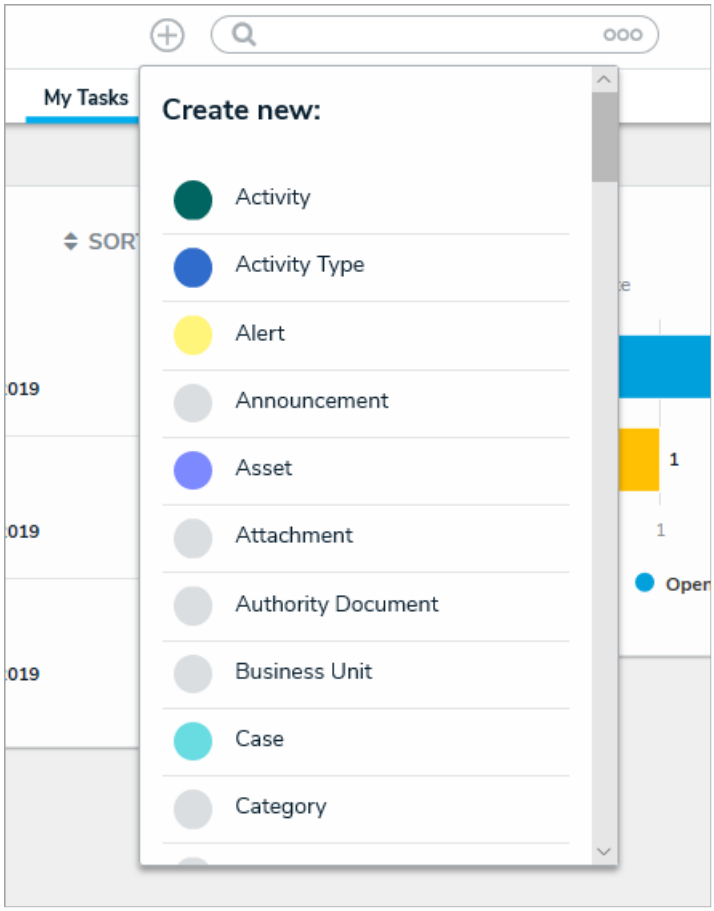


Tasks filtered by their current workflow state.

Quick Add

You can create new objects outside of an action by using the **Quick Add** feature. The object types displayed in **Quick Add** are determined by the object types added to your role that also have Create permissions enabled.

This feature is available on any page through the top bar and can be accessed by clicking the icon, then selecting the applicable object type from the dropdown menu. The form displayed on each object type in Quick Add is selected in your role's workflow permissions for the **Creation** state. If no form was selected, the object type's default form will be displayed.

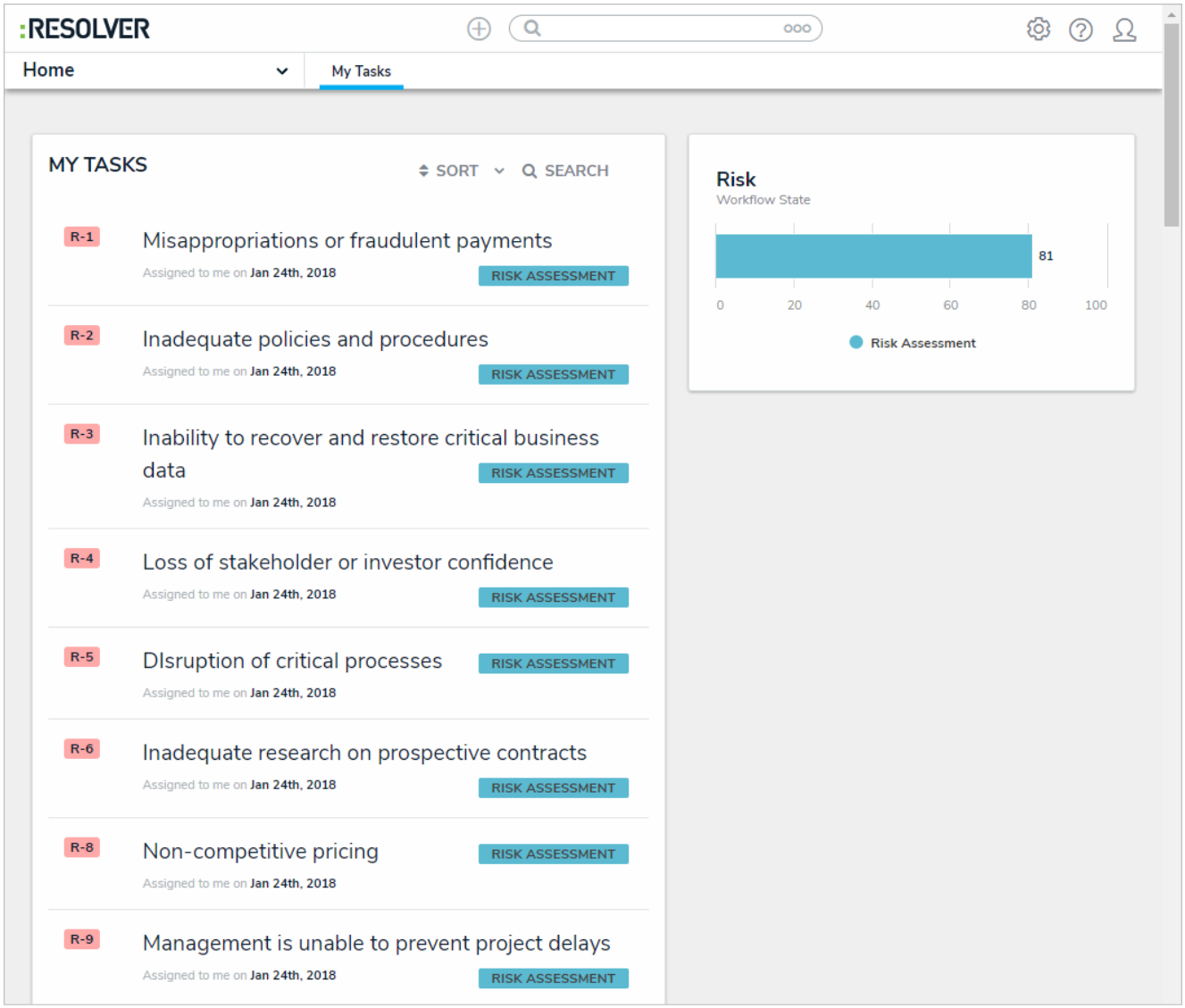


The Quick Add feature. The object types displayed in this dropdown menu are determined by your role's permissions.

Administrators have the option of showing or hiding this function on certain roles. As such, the **Quick Add** icon in the top bar of the application may be hidden for some users. See the Advanced Options on Rolesarticle more for more information.

User Interface

By default, the Core homepage displays the My Tasks tab, which shows existing objects that require your attention. If any reports have been starred, they will appear beside the **My Tasks** tab. The column chart to the right of your tasks is summary of the current workflow states of those objects. At the top of each page is the **top bar** and **nav bar.**



The home page, displaying My Tasks.

Top Bar

The following components are in the **top bar** on every page:

The top bar, which is displayed on every page.

1. **Resolver or custom company logo:** Clicking the logo will return you to the **My Tasks** page or a starred report you've flagged as your landing page.
2. **Quick Add:** Clicking the icon will open the Quick Add feature, which allows you to create objects outside of applications. This feature may be disabled by an administrator and may not be visible to certain roles.

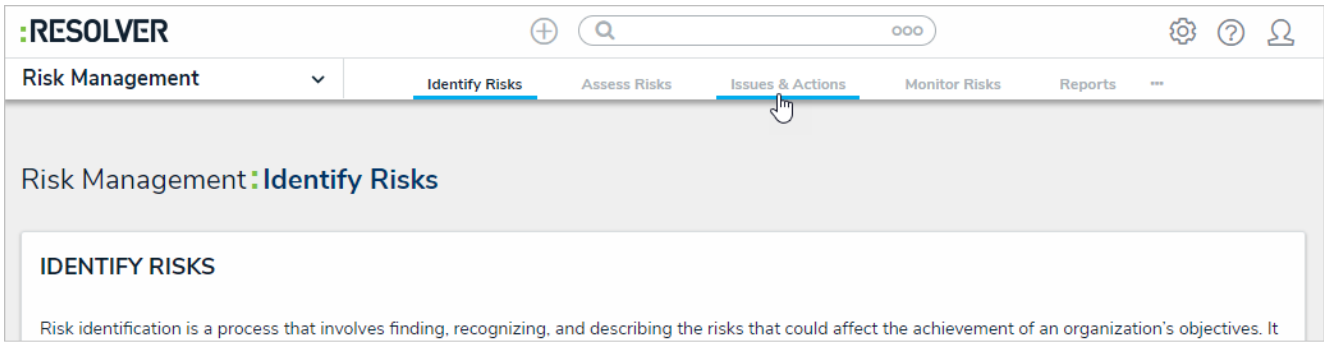
3. **Search:** Enter keywords to search for objects by keyword within the organization. Clicking the icon allows you to search by object type. This feature may be disabled by an administrator and may not be visible to certain roles.
4. **Administration:** Clicking the icon will display the administrative options. If you don't have admin privileges enabled, this icon will not be visible.
5. **Help:** Clicking the icon displays links to the Resolver Knowledge Base, Terms of Service, and the Resolver Support site. Clicking this icon will also display your current version of Core, your organization's data region, and, if you're an administrator, a link to the Resolver Idea Portal. This icon may be disabled by an administrator and may not be visible to certain roles.
6. **User:** Clicking the icon displays the name of the currently logged in user, as well as provides links to the **My Tasks** page and the **Logout** function.

Nav Bar

The **nav bar** contains a dropdown menu that displays links to the home page and all the applications your role has permission to view (if any). When working in the **Home** area of your organization (after logging in, clicking the **Home** link in the dropdown, or clicking the company logo in the top left of any page), the **My Tasks** tab and any starred reports tabs appear in the nav bar.

The nav bar. The options in the dropdown menu change when working in the Admin settings.

Clicking the name of the application in the nav bar menu will display the application and its activities, which are displayed as clickable tabs. The tab for the first activity in the application is selected by default. To view more tabs (if any), click the icon.



The nav bar displaying the activities in a selected application. Applications are selected from the dropdown menu to the left and activities are opened by

clicking the tabs.

Clicking an activity tab displays the landing page for the activity and not the last object or report you may have been working with.

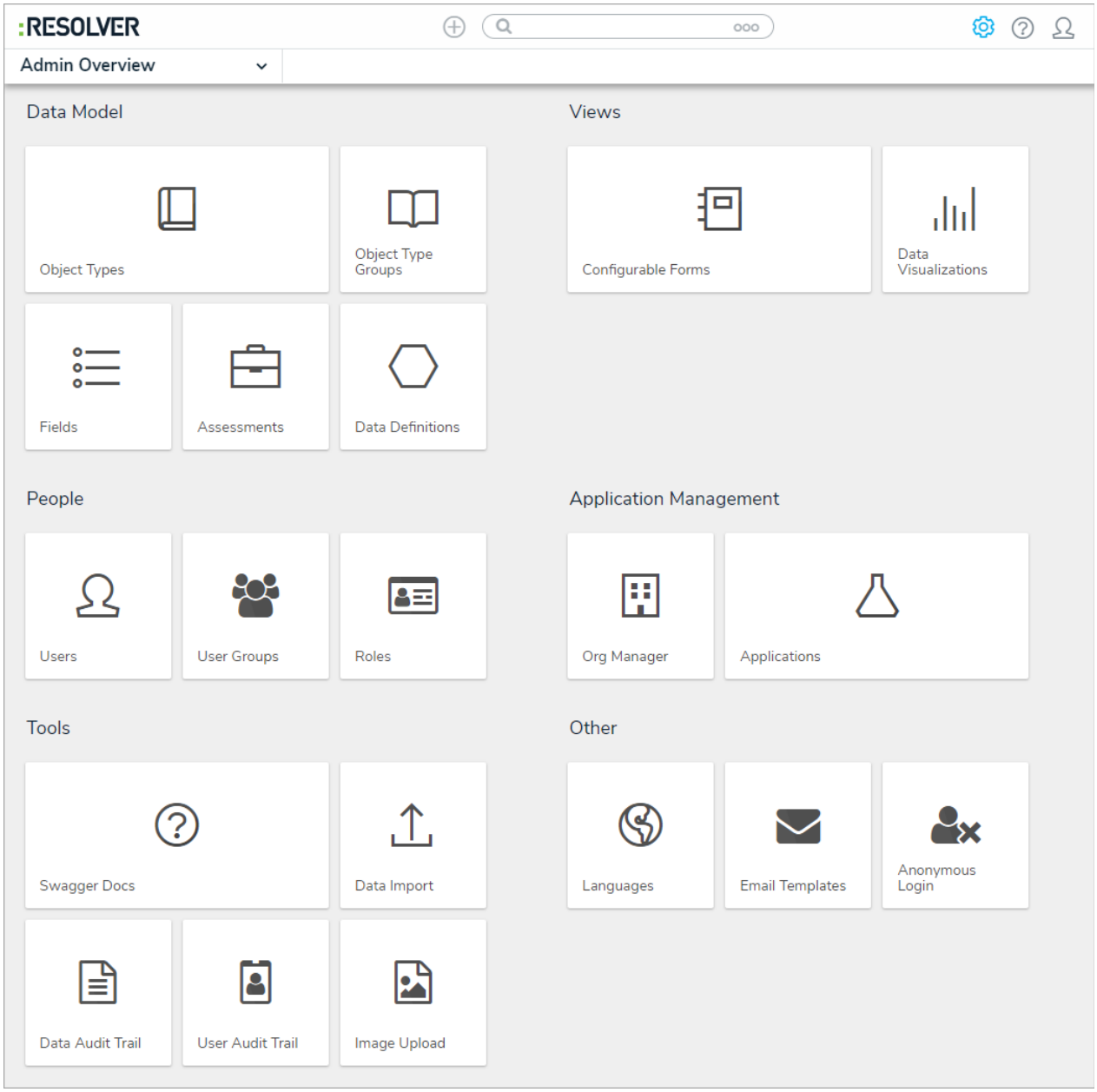
The options in the nav bar change if you're viewing the administrative settings. See Admin User Interface for more information.

Admin User Interface

Users with administrative rights enabled in their profiles can access the **Admin** page by clicking the icon in the top bar on any page. If you don't have administrative access enabled, this icon will not be visible.

The administrative settings are available in the following groups:

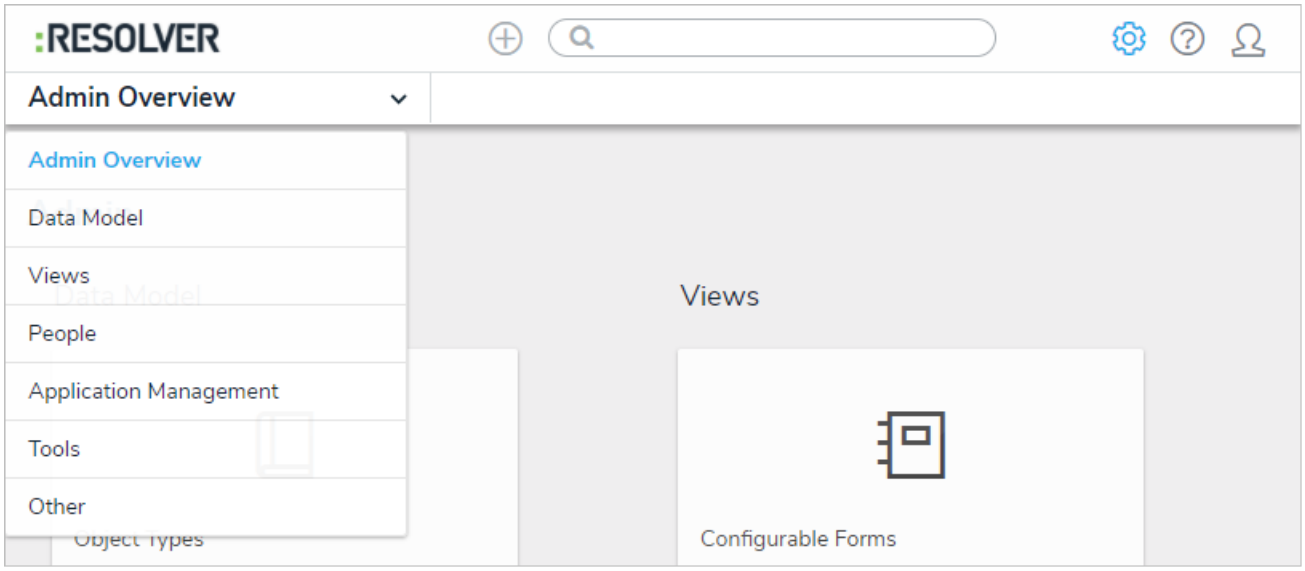
- **Data Model:** Settings for object types, object type groups, fields, assessments, and data definitions.
- **Views:** Settings for configurable forms and data visualizations.
- **People:** Settings for users, user groups, and roles.
- **Application Management:** Settings for the Org Manager and applications.
- **Tools:** Swagger Docs (API) and the Data Import, Data Audit Trail, User Audit Trail, and Image Upload tools.
- **Others:** Settings for languages, email templates, and Anonymous Login.



The Admin Overview page.

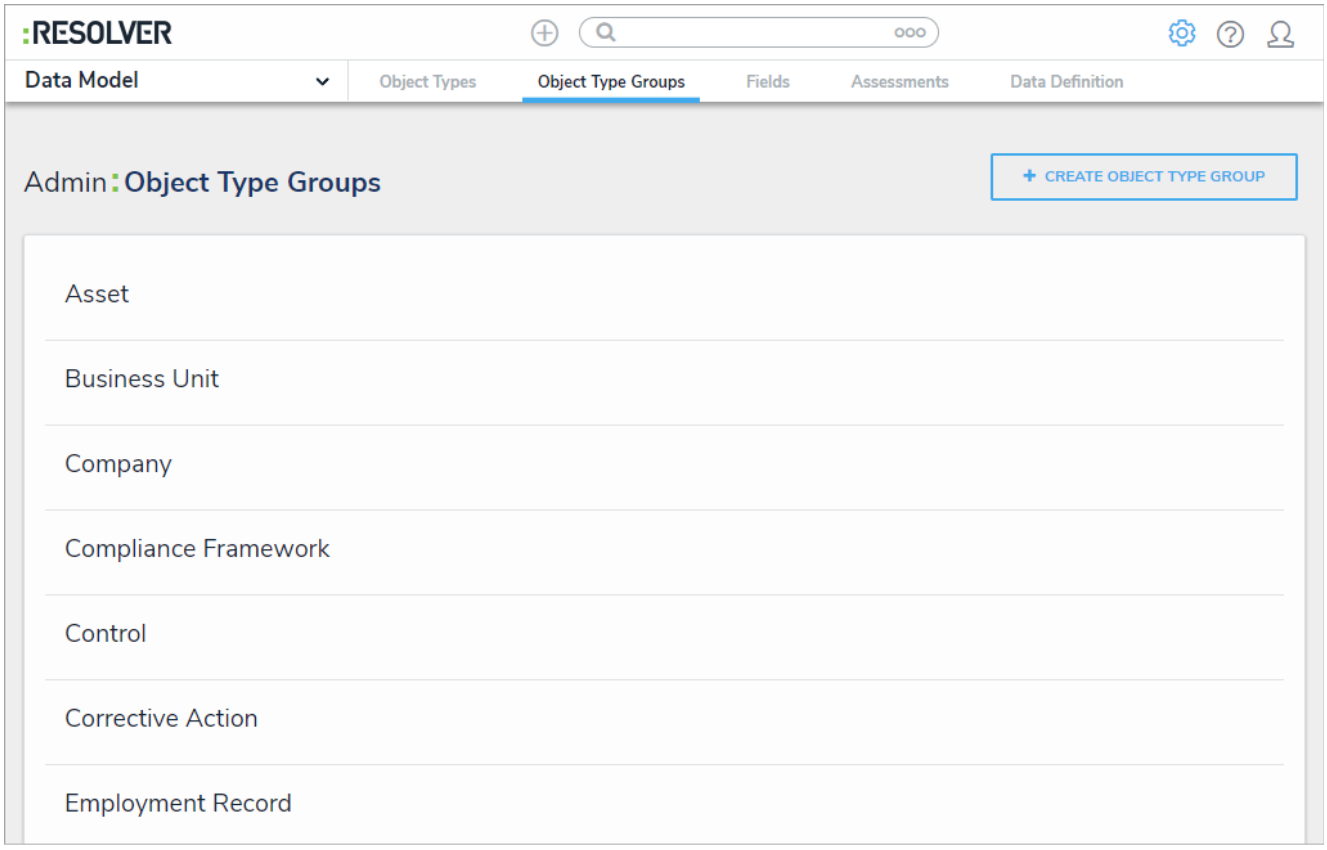
Admin Nav Bar

After clicking the icon, the **nav bar** will no longer display any applications or activities you may have access to. Instead, it will display links to the setting groups (i.e. **Data Model**, **Views**, **People**, **Application Management**, **Tools**, and **Other**) and will continue to do so until you've navigated away from the admin settings.



The admin nav bar displaying the settings groups.

Clicking on an individual setting on the **Admin** page will display tabs for the other options in the settings group. For example, clicking **Object Type Groups** in the **Data Model** section will display the object type groups settings page, as well as tabs for all the settings available in that group (i.e. **Object Types**, **Object Type Groups**, **Fields**, **Assessments**, and **Data Definitions**).



Tabs in the admin nav bar displaying tabs for the available settings in the Data Model group.

Clicking on a settings group in the nav bar menu (e.g. **People**) will also display the tabs for the settings in the group. The tab for the first option in the group will be selected by default (e.g. **Users**).

Clicking on a tab will display the main page for the selected setting. For example, if you were working on the **Edit Object Type** page for the Incident object type, then you clicked the **Fields** tab, clicking the **Object Types** tab again will display the **Object Types** settings page, not the **Edit Object Type** page for Incident.

To return to the **Admin** page, click the icon in the top bar of any page or select **Admin Overview** from the nav bar dropdown menu.

To return to the homepage and access the applications and activities you have permission to view, click the company logo in the top-left corner of any page.

Log In

If you're the primary administrator for your organization's account, Resolver will provide you with the URL and login credentials required to sign in, otherwise you'll receive an email with instructions on creating your password once another administrator creates a user account for you.

If you're using single sign-on authentication to log in see the Single Sign-On (SSO) section for more details.

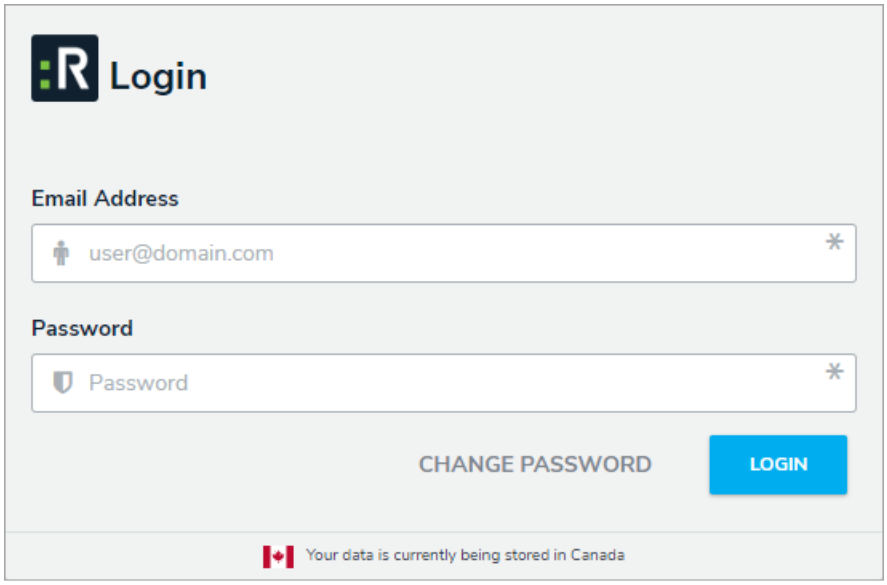
> The login screen indicates which country your data is currently being stored. See the Data Region article for more information.

To log in:

1. Open the email sent to you from Resolver Core.
2. Click the **Create Password** link from within the email.
3. Enter your password in the **New Password** field. See the Password Requirements section for more information on the password conditions that must be met.
4. Click **Show Password** to confirm the password entered is correct.
5. Click **Set Password**.
6. Review the **Terms of Service**, then click **Accept Terms**.

> All new users must accept the **Terms of Service** before continuing.

7. From the screen confirming that your password was successfully created, click the **Log In** link.
8. Enter the email address that received the original email in the **Email Address** field.



The Login screen.

9. Enter your password in the **Password** field.
10. Click **Login** to be taken to the homepage.

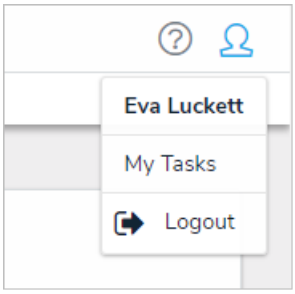
If your implementation includes multiple organizations, you must select the organization you'll be working in before the homepage is displayed.

Log Out

After 10 minutes of inactivity, you'll be prompted to refresh your session. If, after 5 minutes, you haven't refreshed the session, you'll be logged out automatically. Note that your administrator may have configured a different time limit before a session refresh is required.

To log out:

1. Click the icon in the top-right corner of the nav bar.
2. Click **Logout.**



The logout option in the nav bar.

Multi-tenancy (Multiple Organizations)

If your implementation has access to more than one organization, you can select an organization after login. If you're already working in an organization but wish to access a different one, you must first log out then select the organization after once again logging in.

Enable SSO

Before Resolver can enable SSO on Core, your IT team should review the SSO Technical Information and Frequently Asked Questions to ensure that you have everything necessary for SSO to run.

Once the technical requirements have been confirmed, the Resolver Support team will provide assistance in configuring and enabling SSO. For best results, we test SSO on a sandbox environment before rolling out the changes to your organization's production environment.

To initiate this process, submit a ticket with the following information:

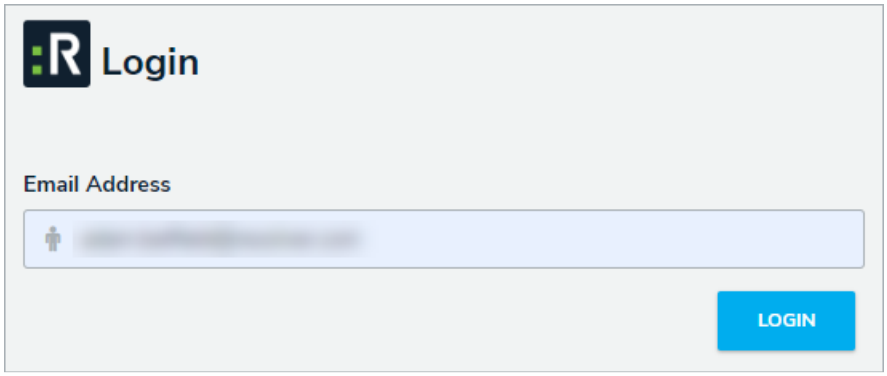
1. Your company name;
2. Your identity provider (OKTA, ADFS, etc.);
3. Your primary domain name;
4. Other domain names;
5. Contact details for relevant technical and business resources;
6. Identity provider metadata for testing; and
7. Confirmation that you meet the technical requirements.

Once the ticket has been submitted, a member of the Customer Support team will respond with the next steps.

Log In with SSO

If single sign-on (SSO) is enabled, entering your email address on the login page will redirect you to your identity provider, where you'll need to enter the login credentials configured for your SSO account. If you're logging in for the first time, you must accept the Terms of Service before you can successfully log in. New users will not be required to create a password nor will they receive an email with a link to log in. As such, administrators should provide new users with the URL to access their organization.

To log in using SSO, enter your email address, then press **Tab** on your keyboard to disable the **Password** field and complete the login process.



The login screen with SSO enabled.

Admins can disable SSO for individual users.

Logging out will end your SSO session. Additionally, after 10 minutes of inactivity, you'll be prompted to refresh your session. If, after 5 minutes, you haven't refreshed the session, you'll be logged out automatically. Note that your administrator may have configured a different time limit before a session refresh is required.

SSO Technical Requirements

Before configuring Core SSO, the following requirements must be met:

1. A valid Identity Provider (IdP) must be configured with the SAML 2.0 Web Browser profile in accordance with the SAML 2.0 OASIS standard and must provide a valid IdP metadata file containing:
    a. X509 RSA 2048 bits Public Certificate (RFC 5280) ( ).
    b. **EntityId** ( ).
    c. **SingleSignOnService** URL with HTTP Redirect Binding ( ).
    d. **NameIDFormat** in `urn:oasis:names:tc:SAML:1.1:nameid-format:emailAddress` .
2. IdP must communicate using HTTP over TLS [RFC 2818].
3. A SHA-256 signature in the metadata, response, and/or assertion.

EXAMPLE

```
entityID="https://idp/saml/metadata/622342">

        MIIEFzCCAv…

    urn:oasis:names:tc:SAML:1.1:nameid-format:emailAddress
```

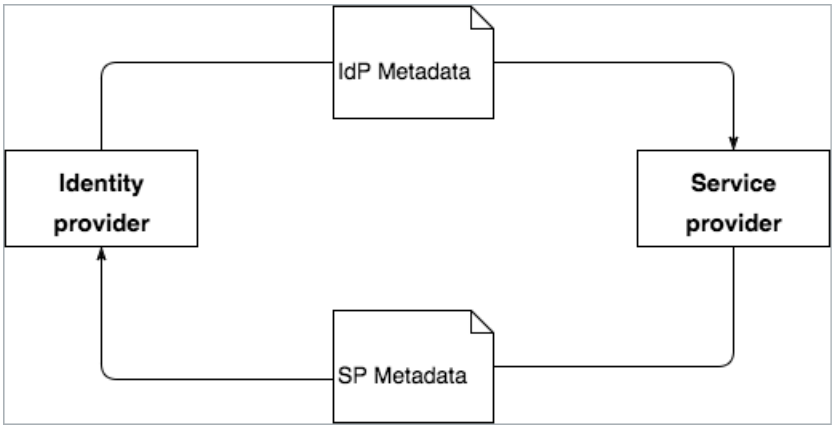
4. Certificates must have at least a three-year expiry and should be valid a minimum of 8 months before expiring.
5. The RCS profile requires at least the message or the assertion to be signed.
6. The username used for the assertion subject statement should be the user's primary email address.

> The username should be identical to the email address used to register the user in Core.

Resolver Core SAML Profile

The Resolver Core SAML Profile (RCS Profile) is an adoption of the SAML 2.0 Web Browser Profile (SAML2 Profiles). The RCS SAML Profile allows users the ability to authenticate with a federated identity into Core through SSO.

The RCS Profile is based on the trust created between the Identity Provider (IdP) and Core using the metadata exchange as shown in the flowchart below. The trust is stored in Core using the primary customer domain. Core identifies a user through their email address and the domain in the email address is used to confirm that the user authenticates via SSO.



A flowchart showing the high-level trust process during metadata exchange.

SAML Authentication Sequence

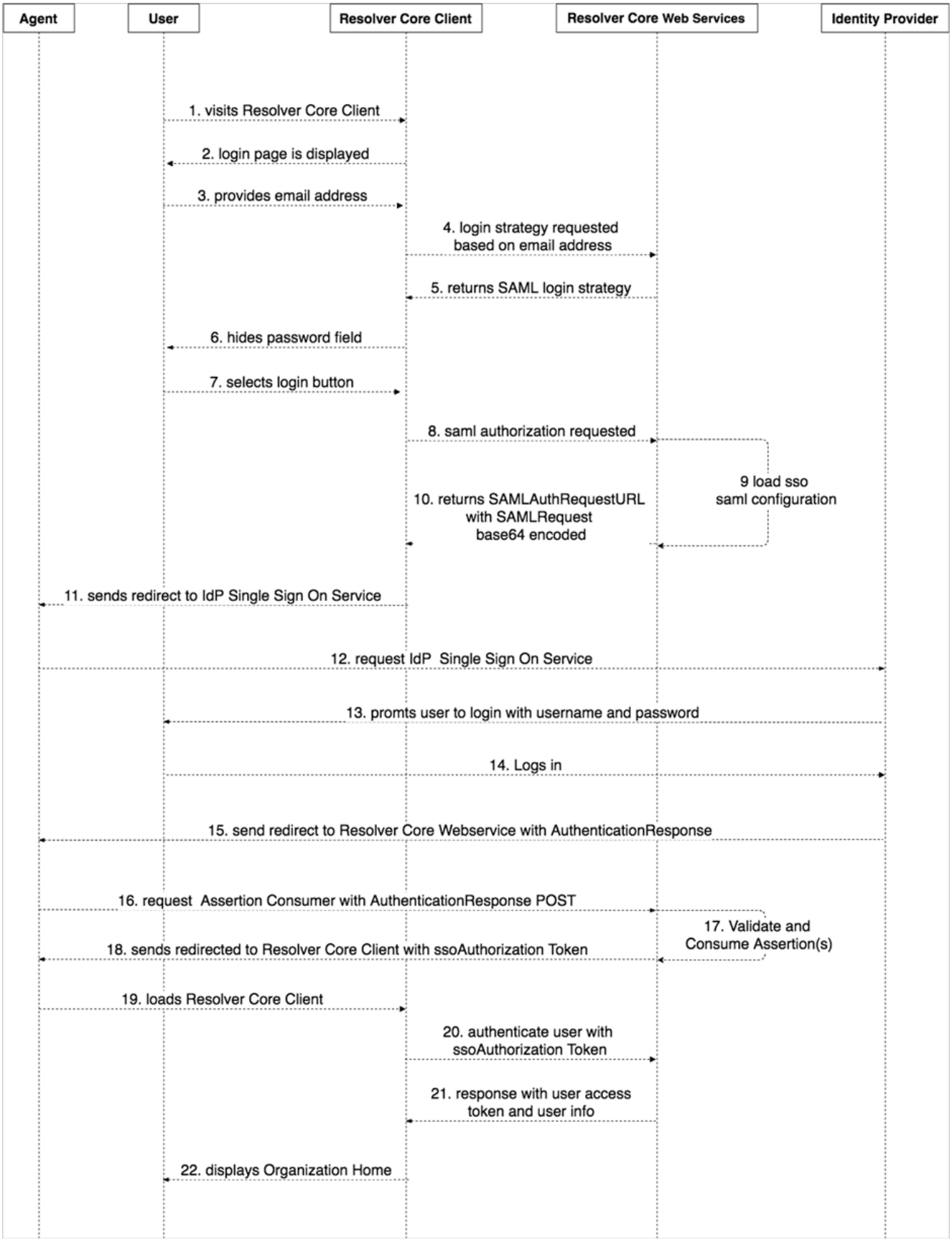
The roles in the below sequence include:

- **User:** Principal
- **Agent:** Web browser
- **Resolver Core Client (Client):** Web-based software GUI
- **Resolver Core Web Services (Web Services):** Service provider
- **Identity Provider (IdP):** ADFS, OneLogin, SiteMinder, CA, etc.

This sequence also assumes that:

1. The user exists in Core and is a member of at least one organization;
2. The user is not logged into Core;
3. SSO SAML configuration has been imported using the IdP metadata and the primary email domain name; and
4. The user is not logged into the IdP service.

SAML Sequence Diagram



A sequence diagram showing the typical flow of SAML SSO authentication in Core.

1. User visits the Core client.
2. Client displays the login page.
3. User enters their email address.
4. Client requests the authentication strategy using the provided email address. Web Services loads and asserts SSO SAML configuration using the domain of the domain of the email address.
5. Web Services returns the authentication strategy to the Core Client.
6. Client hides the password field and sets its state into SSO SAML authentication strategy.
7. User clicks Login.
8. Client requests an SSO SAML authorization using the provided email address.
9. Web Services loads the SSO SAML configurations using the domain of the email address. The service uses the configuration to create a **SAMLRequestAuthentication**. The **SAMLRequestAuthentication** is a SAML 2.0 protocol XSD XML digitally signed deflated Base 64 encoded string.
10. Web Services returns the request URL, which is the Single Sign On service URL with the **SAMLrequest** query **PARAM** containing the **SAMLRequestAuthentication**.
11. Client sends a redirect to the Agent with the **SAMLAuthentication**.
12. Agent requests the SSO service with the **SAMLAuthentication**.
13. IdP service prompts the User to authenticate with their username and password.
14. User logs in and authentication is successful.
15. IdP sends a redirect to the Agent with the **SAMLResponse**.
16. Agent redirects to the consumer service in Web Services with the **SAMLResponse**.
17. Consumer service in Web Services validates the response and assertion, then retrieves the user identity from the assertion. The identity is the email address of the user who just logged in into the IdP. Web Services validates if the user exists. If the user exists and is active, an **ssoAuthorization** token will be created. This token is used by the Client to authenticate the user in Web Services and to obtain an access token.
18. Web Services sends a redirect to the Agent with the **ssoAuthorization** token.
19. Agent loads the Core client.
20. Client authenticates the user into Web Services using the **ssoAuthorization** token.
21. Web Services validates the token and authenticates the user into the Web Services. The Web Services then returns the user information and access token to the Client. The **ssoAuthorization** token is invalidated.
22. Client displays the homepage of the organization.

SSO Frequently Asked Questions

General FAQs

Q: What value should the nameID be?

A: The user's primary email address. This email address must also be the same email address used when the user's account was created in Core.

Q: Is it possible to bypass SSO?

A: Yes. Users can be flagged to bypass the SSO authentication strategy, which then enables a user to log in using the default username and password strategy.

Q: Is there multiple domain support?

A: Yes. Multiple domains can be configured for SSO (e.g., somedomain.com,somedomain.sub.com).

Q: Are there any other data items we can send in the SAML token, such as name, phone, country, location, etc?

A: No.

Q: Does Core support real-time new user provisioning based on SAML requests?

A: No.

ADFS FAQs

Q: We're using ADFS as the IdP. What claim should be configured?

A: Claims should be configured as follows:

- **Claim Rule: Template:** "Send LDAP Attributes as Claims"
- **Attribute Store:** Active Directory
- **LDAP Attribute:** User Principal Name
- **Outgoing Claim Type:** Name ID

OKTA FAQs

Q: Where can I find the Single Sign On URL (ACS)?

A: The Single Sign On URL can be found in the SP metadata provided by Resolver for the specified environment.

Q: Where can I find the Recipient URL and Destination URL?

A: The Recipient and Destination URL can be the same as the Single Sign On URL, which can be found in the SP metadata.

Q: Where can I find the Audience URI?

A: The Audience URI or EntityID can be found in the SP metadata provided by Resolver for the specified environment.

OneLogin FAQs

Q: What value should the Audience be?

A: The Audience value should be the EntityID provided in the metadata (see).

Q: What Value should the Recipient be?

A: The Audience value should also be the EntityID provided in the metadata.

Q: What value should the ACS be?

A: The ACS value should be provided in the the SP metadata file (see).

Q: What value should the Certificate be?

A: The Certificate is provided in the SP metadata file (see .....).

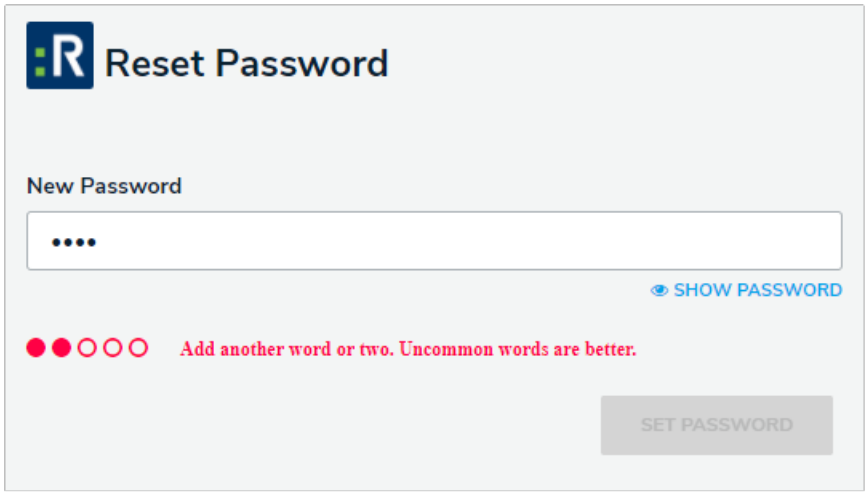
Password Requirements

Your password must contain at least 9 characters, which must include letters. Spaces are permitted.

The system uses a password strength estimator to judge the strength of your password and recognizes and weighs 30,000 common passwords, names, words, and patterns to ensure your password is as secure as possible.

When creating or resetting your password, a color-coded password strength indicator is displayed. If your password doesn't meet the minimum requirements, the indicator will include suggestions on how to bring your password up to the required level of security. Each color represents the following:

- **Red:** Your password does not meet any or most of the minimum requirements.
- **Yellow:** Your password does not meet some of the minimum requirements.
- **Green:** Your password meets the minimum requirements.
- **Blue:** Your password surpasses the minimum requirements.



The Reset Password screen. In this case, the password entered in the New Password field does not meet most of the minimum requirements.

By default, your password expires every 90 days. At the end of the 90-day period, you'll be prompted to change your password after a successful login. Your new password must meet the requirements outlined above. If you forget your password, you can send a reset link to your account email by clicking **Change Password** at the login screen.

You cannot reuse your current password when resetting it after expiry or resetting it via email. Also note that you must wait 15 minutes between password reset requests.

After 3 failed login attempts, you will be locked out of your account and you must wait 15 minutes before attempting to log in again.

Search for Objects

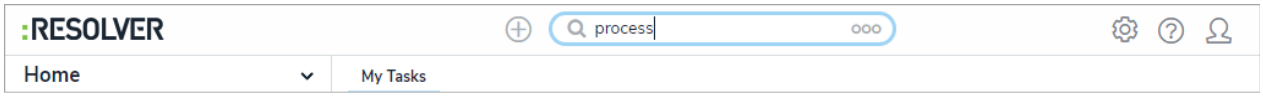
With the search tool, you can search your organization by keyword(s), object type(s), or both. When you search for individual object types, you're given additional options to refine the search results by name, description, unique ID, state, and other optional filters.

> Administrators have the option of showing or hiding the **Search** function for certain roles. As such, the search field in the top bar of the application may be hidden for some users.

Search by Keyword

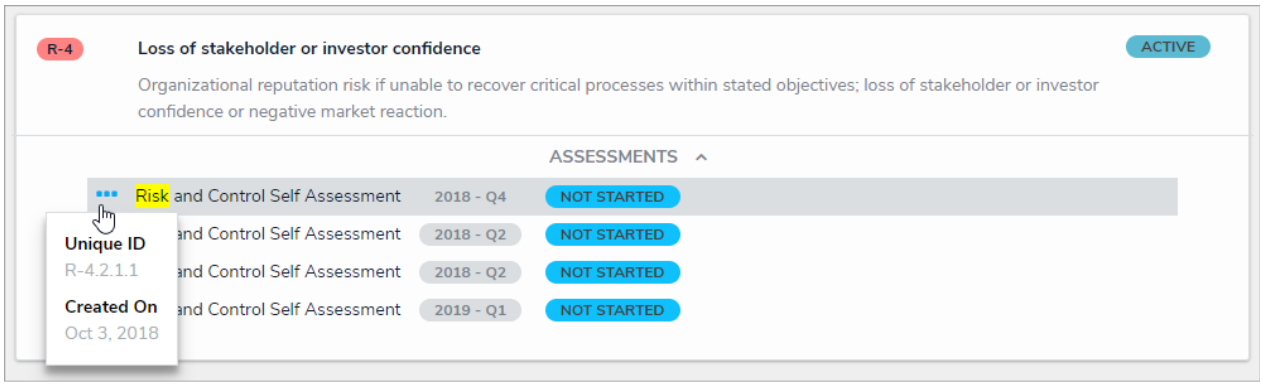
To search Core by keyword:

1. Click the search text field in the nav bar, enter the name of an object, then press **Enter** on your keyboard.



Entering keywords in the search bar.

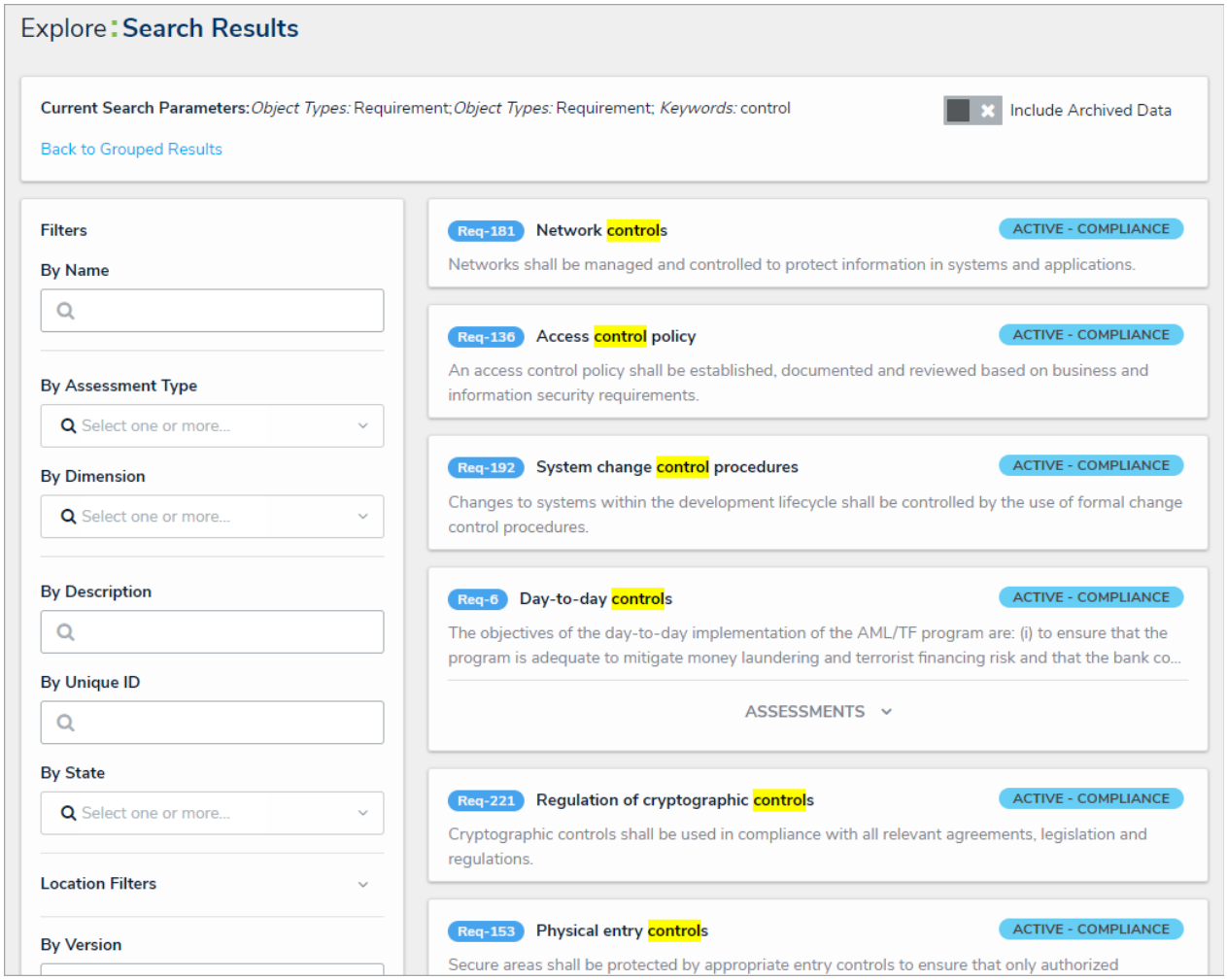
2. Review the search results, which are organized by object name. The results also display the objects' unique IDs and current workflow state. If an object has attachment files that match the search terms, they'll appear with the object beside **Keyword(s) found in:** For more information on searching for documents, see the Attachment Searches article.
3. To include archived data in the search results, click the icon beside **Include Archived Data**. If this option is not visible, an administrator has disabled this option for your role.
4. To view an individual object, click the area below the object's unique ID and name.
5. To view assessment instances of an object, click Assessments below the object to display them. If any attachment files on the instance match the search terms, they'll appear beside **Keyword(s) found in:** To view the instance, click it. Hovering your cursor over the ellipsis will display the instance's unique ID and the date it was created.



Search results displaying individual objects and their instances.

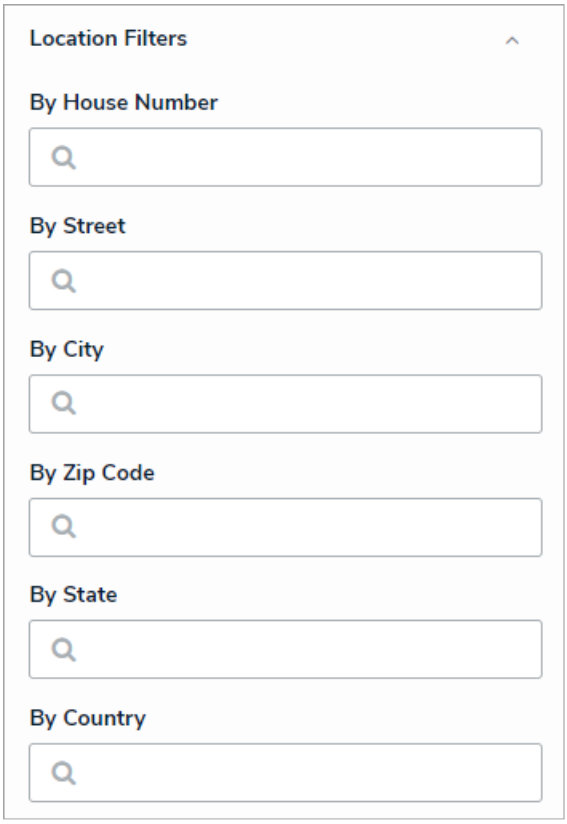
> If an object has not been previously assessed, it will not have any instances and the **Assessments** link will be hidden by default.

6. To view details results and apply filters, click **Go to Detailed Results** at top-left of the search results for each object type.



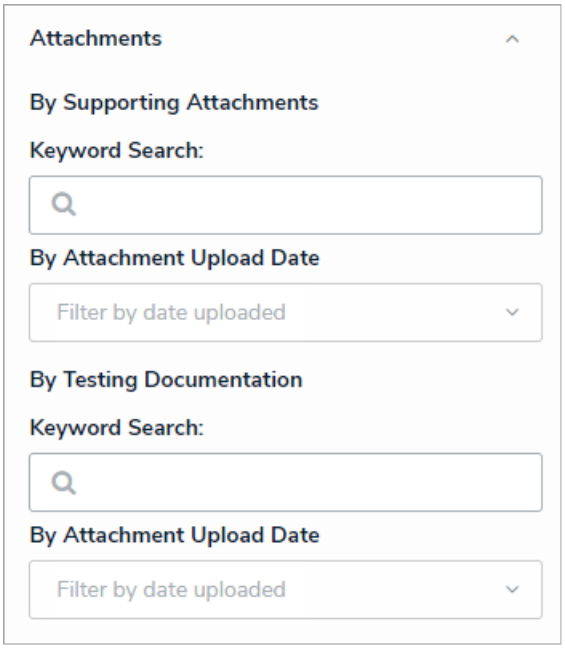
The Search Results page after clicking Go to Detailed Results.

7. To apply search filters:
    a. Use the filters in the **Filters** section to the left of the page to narrow down which objects are displayed. Default filters include:
        - By Name
        - By Assessment Type
        - By Dimension
        - By Description
        - By Unique ID
        - By State
    b. Click **Location Filters** to expand the Location property filters based on address components, then enter keywords in the filter fields as required. ISO 3-character codes are supported (e.g., searching for CAN or Canada will return all results for Canada); however, you **cannot** search by coordinates.



Location property filters.

c. Click **Attachments** to expand the filters and search for documents uploaded to objects or assessments through an attachment field. Filters are named after the attachment field and include the **Keyword Search** (for searching by keywords in the file name or within the document) or **By Attachment Upload Date** filters. For more detailed information on attachment searches, including a list of supported file types, see the Attachment Searches article.



Attachment filters.

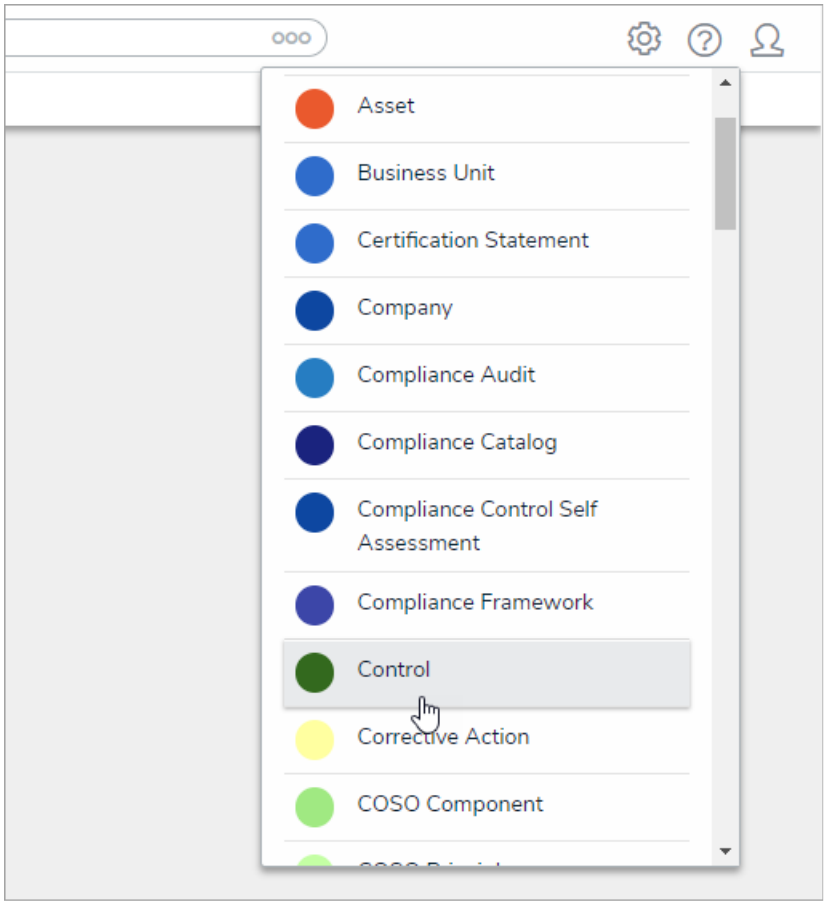
d. Click **More Filters** to show additional filters and apply as needed. These additional filters are based on any plain text, select list, and multi-select fields added to the object type:

- If you're adding a select list or multi-select list filter, choose one or more options from the dropdown menu.
- If you're adding a plain text filter, enter one keyword into the text box. All special characters, except the @ and ! symbols, will be ignored.

8. Click an object to view it. To view instances of an object, if any, click the **Assessments** link below the object, then click the instance to open it. If no instances exist, the **Assessments** link will be hidden.
9. To return to the previous page, click **Back to Grouped Results.**

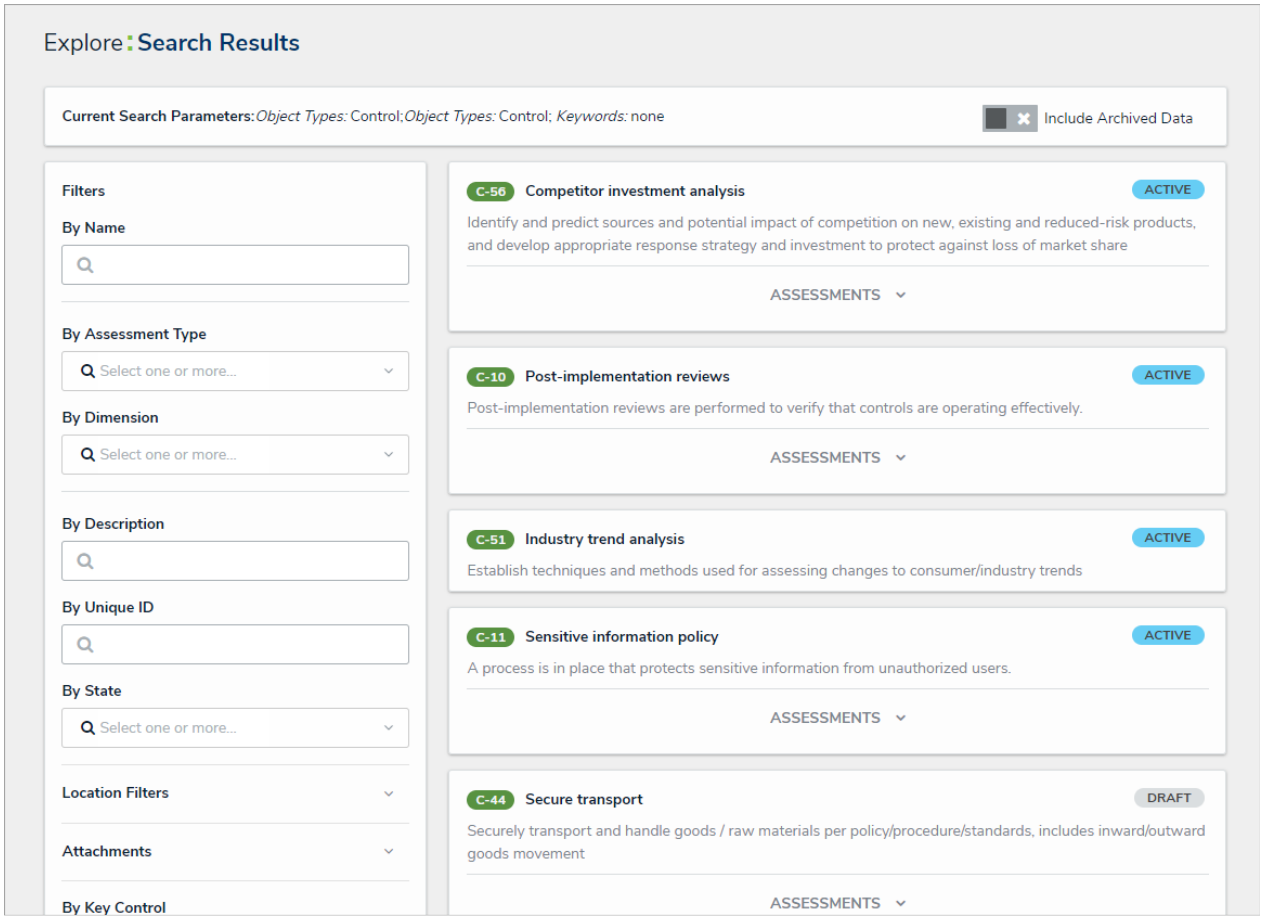
Search by Object Type

1. Click the search text field in the nav bar, click the icon to display the **Explore By** menu.
2. Click an object type from the list to display its objects in the search results.



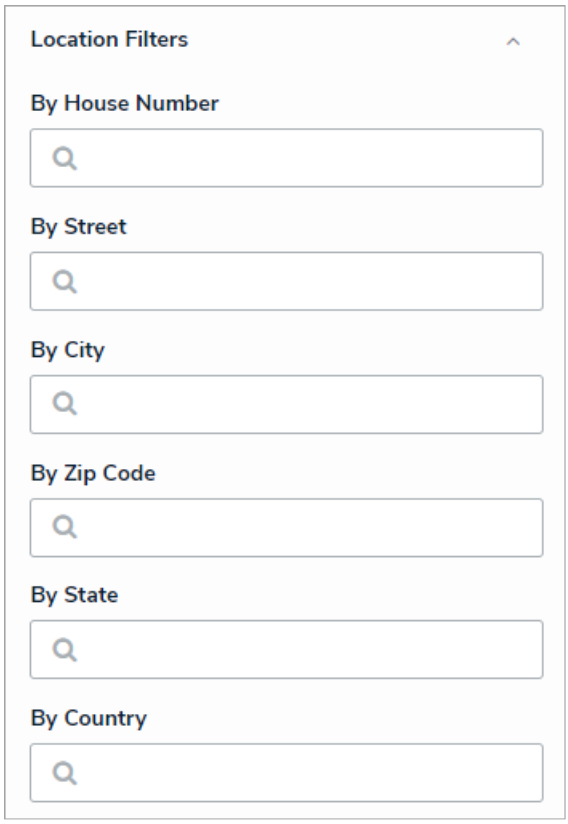
The Explore By menu. Clicking an object type in this menu will display search options.

3. To include archived data in the search results, click the icon beside **Include Archived Data**. If this option is not visible, an administrator has disabled this option for your role.



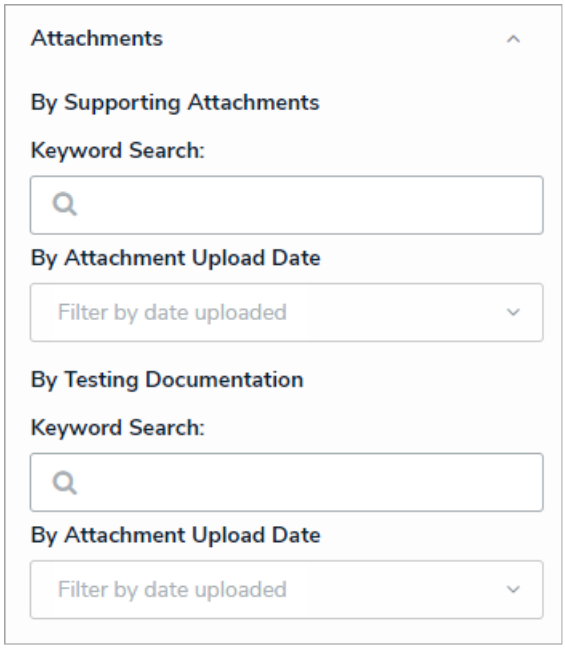
The Search Results page after searching by object type.

4. Use the filters in the **Filters** section to the left of the page to narrow down which objects are displayed. Default filters include:
    - By Name
    - By Assessment Type
    - By Dimension
    - By Description
    - By Unique ID
    - By State
5. Click **Location Filters** to show the Location property filters based on address components, then enter keywords in the filter fields as required. ISO 3-character codes are supported (e.g., searching for CAN or Canada will return all results for Canada); however, you **cannot** search by coordinates.



Location property filters.

6. Click **Attachments** to expand the filters and search for documents uploaded to objects or assessments through an attachment field. Filters are named after the attachment field and include the **Keyword Search** (for searching by keywords in the file name or within the document) or **By Attachment Upload Date** filters. For more detailed information on attachment searches, including a list of supported file types, see the Attachment Searches article.



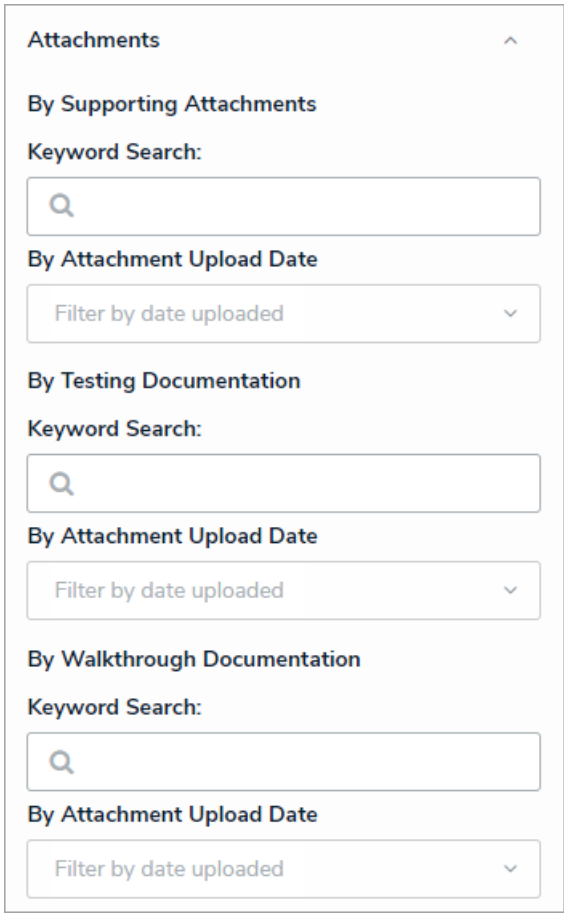
Attachment filters.

7. Click **More Filters** to show additional filters and apply as needed.

8. Apply additional filters as needed. These additional filters are based on any plain text, select list, and multi-select fields added to the object type:
    - If you're adding a select list or multi-select list filter, choose one or more options from the dropdown menu.
    - If you're adding a plain text filter, enter one keywords into the text box. All special characters, except the @ and ! symbols, will be ignored.
9. Click an object to view it. To view instance of an object, if any, click the **Assessments** link below the object, then click the instance to open it. If no instances exist, the **Assessments** link will be hidden.

Attachment Searches

Users can search for documents uploaded through the Attachment field on an object based on keywords found in the file name and/or file contents or by the date the document was uploaded.



Attachments filters on the detailed search results page.

Important Notes

- Unreadable documents, web links, and deleted attachments are not searchable.
- Text preview of keywords in a document and reading/extraction of keywords from an image in the document is not supported.
- When searching for documents based on keywords within the file, note that up to 20,000 words are searched. That means if a keyword doesn't appear within the first 20,000 words, it will not appear in the search results.
- Attachments that appear in the search results are not clickable. The associated object must be viewed on a form to access the files. Note that if an admin has selected a form for your role that isn't configured to show the attachment(s) field, you will not be able to open the files from the object.
- If a file is unsupported (e.g., a .jpeg) or unreadable (e.g., an encrypted PDF), it will not appear in the search results even if those files match the search terms or filters.
- The **Attachments** option on the **Search Results** page will be available only if the object type has attachment fields.
- Attachment upload dates are based on UTC time.

Supported File Types

Only **readable** documents with the follow filename extensions are searchable:

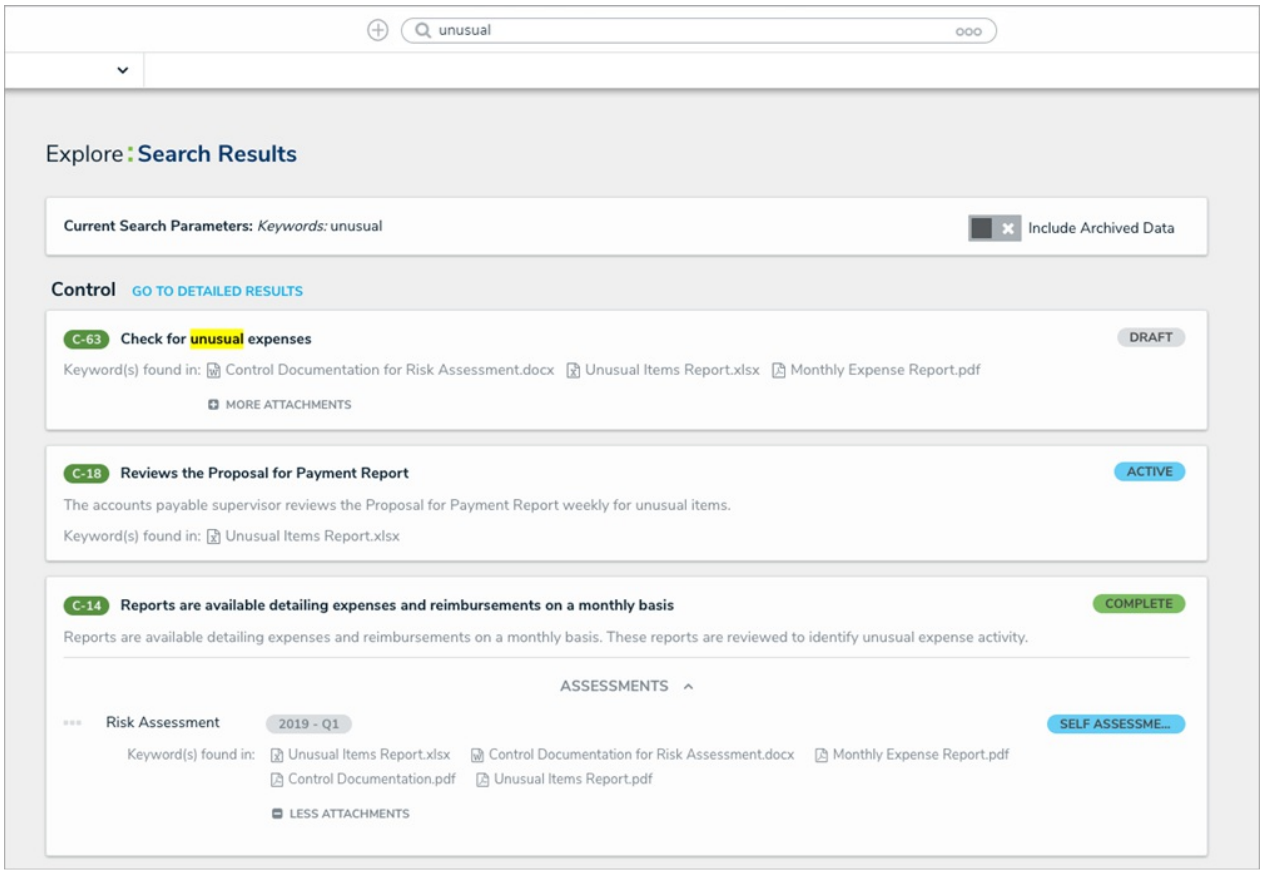
- .PDF

- .doc and .docx
- .xls and .xlsx
- .ppt and .pptx
- .txt
- .msg (Outlook email files for Windows) and .eml (Outlook email files for Mac). Supported file types attached within an .msg or .eml file are also searchable.

Keyword Search

To perform a keyword search:

1. Enter search terms in the search text box in the nav bar, then press **Enter** on your keyboard. If required, click the icon in the search field in the nav bar after typing the search terms, then select an object type to search for attachments from a particular object type.
2. Review the list of objects returned on the **Search Results** page. Files that match the search terms will appear below the related object beside **Keyword(s) found in:** If the object has an assessment instance that matches the terms, click **Assessments** to show more details.



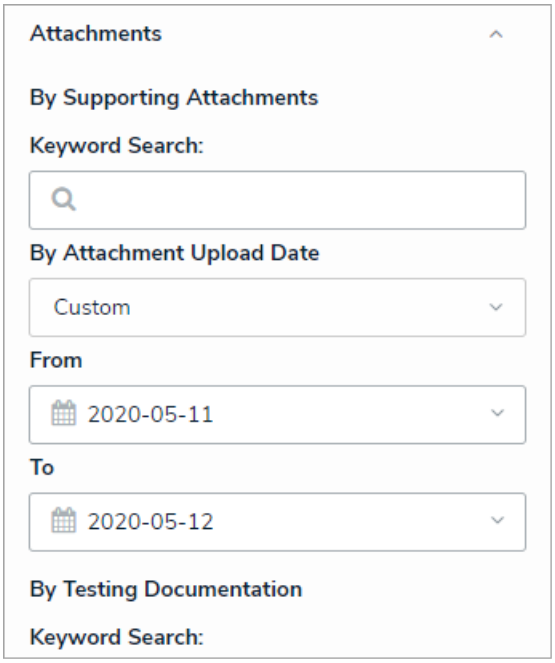
Objects and assessments on the Search Results page and their matching attachment files.

3. To apply filters, including the Attachments filter options, click **Go to Detailed Results**. See the **Filters** section below for more details on these options.
4. To access the files, click the object to view it on a form.

Filters

To apply attachment filters:

1. Click the icon in the search field in the nav bar, then select an object type. Alternately, enter search terms in the search field, then click **Go To Detailed Results** to access the filters.
2. Click **Attachments** in the **Filters** menu to expand the filter options. Filters are grouped based on each attachment field added to the object type. If the object type has no attachment fields, these filters will be hidden.
3. To apply filters based on keywords found in the filename(s) and/or file contents, enter search terms in the **Keyword Search** field for the applicable field.
4. To search based on the date the document was uploaded (in UTC time), select one of the following options from the **By Attachment Upload Date** dropdown menu:
    - **Today**
    - **Last 30 Days**
    - **Last 60 Days**
    - **Last 90 Days**
    - **Last 180 Days**
    - **Custom** (If you select this option, you must select dates in the **To** and **From** fields.)



The By Attachment Upload Date filter with Custom selected.

5. Review the list of objects that match the filter parameters on the **Search Results** page. If you conducted a keyword search, files that match the search terms will appear below the object beside **Keyword(s) found in:** If the object has an assessment instance that matches the filter parameters, click **Assessments** to show more details and any matching files.
6. To remove a filter, click the **x** by the keyword or date in the **Filters applied** section at the top of the page.
7. To access the files, click the object to view it on a form.

Numeric Searches

- Entering a number's full numeric term will return the exact result. For example, searching for "000000123" will return "000000123".
- If a number is separated by spaces, hyphens, parentheses, or other non-numeric or non-alphabetical characters, searching for a separated portion of that number will return applicable search results. For example, searching for "234" or "8910" will return "1 (234) 567-8910". Likewise, searching for "123" will return "123 456 789".
- Searching for a portion of a number that is **not** separated by non-numeric or non-alphabetical characters will not return any search results. For example, searching for "000000" will not return any search results, but searching for "000000123" will return "000000123".
- If a phrase contains a mix of numbers and words that are separated by spaces, hyphens, parentheses, or any other non-numeric or non-alphabetical characters, searching for a portion of that phrase will return applicable search results. For example, searching for "123" will return "Number 123."

Text Searches

- Text search terms must be in their complete forms to return results. For example, searching for “accident” will return “accident”, but searching for “Acc” will not return any results.
- If a word or phrase is separated by spaces, hyphens, parentheses, or other non-alphabetical or numeric characters, searching for a separated portion of that phrase will return applicable search results. For example, searching for “John” will return “John Doe.” Likewise, searching for “double” will return “double-check”.
- If a phrase contains a mix of words and numbers that are separated by spaces, hyphens parentheses, or any other non-alphabetical or non-numeric characters, searching for a portion of that phrase will return applicable search results. For example, searching for “Doe” will return “John Doe (555) 555-5555.”
- Searching for a root word will return that root word and its related forms. For example, searching for “accident” will return “accidental,” “accidentally,” “accidents,” etc.
- Search terms are not case-sensitive.
- Stop words (words that are considered unimportant by the search tool) are automatically removed from the search terms. Examples of stop words include:
    - “a”
    - "an"
    - "and"
    - "are"
    - "as"
    - "at"
    - "be"
    - "but"
    - "by"
    - "for"
    - "if"
    - ”in"
    - "into"
    - "is"
    - "it"
    - "no"
    - "not"
    - "of"
    - "on"
    - "or"
    - "such"
    - "that"
    - "the"
    - "their"
    - "then"
    - "there"
    - "these"
    - "they"
    - "this"
    - "to"
    - "was"

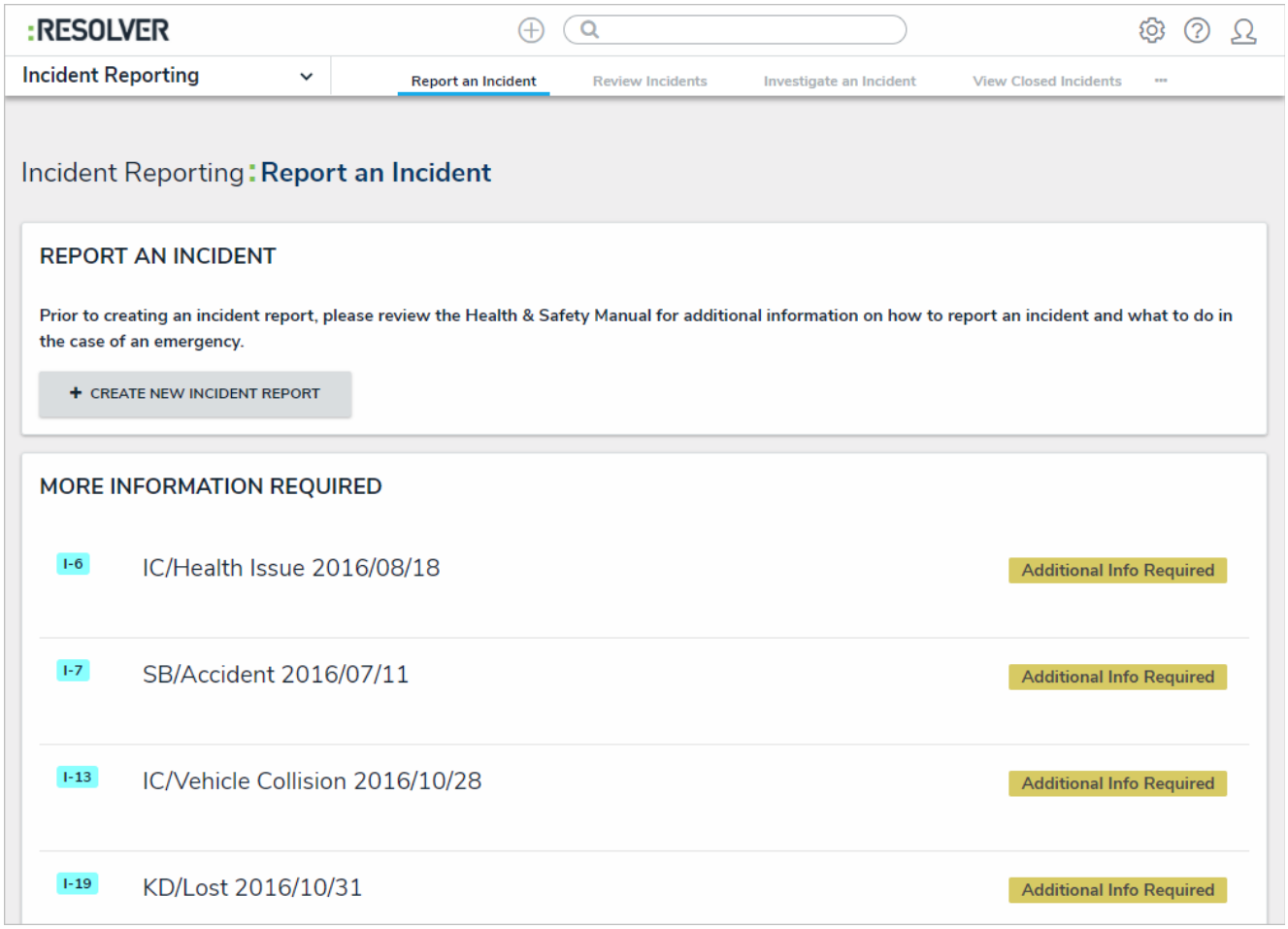
    - "will"
    - "with"
- Searching for words in possessive form will return both the possessive and non-possessive form of the word. For example, searching for “John’s” will return both “John’s” and “John.”
- If searching for words with special characters or accents, you must include the special character or accent in the search. For example, searching for “Joël” will return results, while searching for “Joel” will return no results.

About Applications Overview

Core is designed to help you collect and analyze data for several scenarios or circumstances. To do so, a data structure and workflow must be in place to ensure data is effectively collected, filtered, assigned, reviewed, and analyzed through one or more applications.

Applications and object type workflows control the movement of the data and are created when object types, object type groups, assessments, fields, configurable forms, and roles come together to make activities, which is where a user must perform a task (through an action) or view objects or data visualizations (through a view).

Access to applications and its activities is granted through a user's role permissions. Once permission is granted, users can view the applications and activities through the nav bar.



An application displaying one of its activities. Additional activities are accessible by clicking the tabs in the nav bar.

Recommended Process for Creating Applications

To create an application as quickly and easily as possible, Resolver recommends that administrators follow the process outlined below:

1. **Create users, user groups, and roles.**
2. **Create an application**.
3. **Create an activity:** Enter the activity's name and description.
4. **Create object types:** Enter the object type's name(s), description, and configure its monogram and icon.
5. **Create object type groups:** Enter the group's name(s), then edit the group to add related object types.
6. **Configure the object types:** Add fields, relationships, formulas, roles, and inferred permissions, and configure the workflow states, triggers, transitions, conditions, and actions.
7. **Add object types to roles:** Configure the workflow permissions for each state on each object type added to the role.
8. **Create forms and data visualizations for the object types**.
9. **Configure the activities' actions, roles, and views.**

The steps to complete the above process are discussed in detail the remainder of this guide.

Archive Data

While deleted objects' data is permanently removed from the organization, archived object data can be analyzed over time, and can be included or excluded from reports, relationship or references on forms, or global search results. Objects are archived when they've been moved to a workflow state assigned to the **Archive** state category. Once archived, administrators can then choose if archived data should appear in reports, in relationship or reference elements on forms, or in the organization's search results by applying additional settings in reports, forms, or roles.

This article provides instructions for assigning the **Archive** category to a workflow state. For instructions on including or excluding archived data from reports, relationships, references, and searches, see the Include or Exclude Archived Objects article.

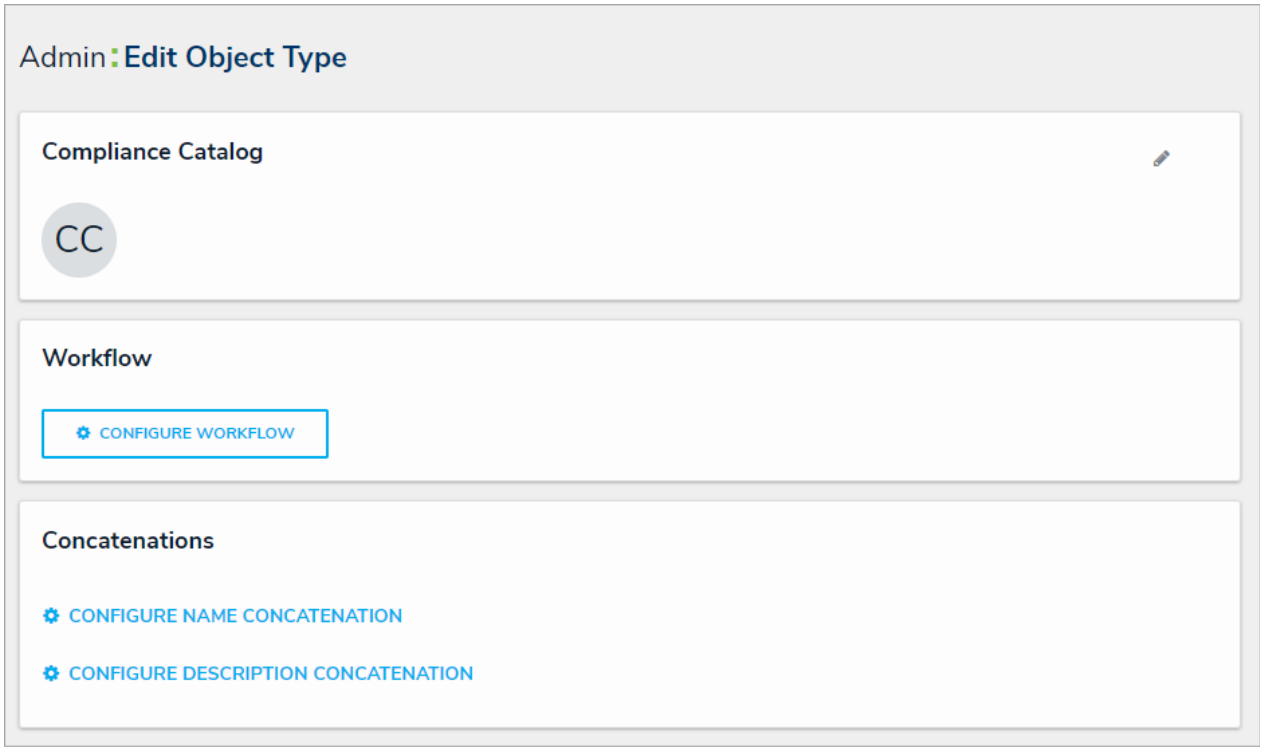
Important Notes

- The auto-created **Archived** state, which is part of the default workflow created with each new object type, is automatically assigned the **Archive** state category; however, you can assign this category to another state if required.
- Reports, forms, and roles created before Version 3.0 are configured to **include** archived data by default. All reports, elements, and roles created after Version 3.0 **exclude** archived data by default.
- Archived data is supported for reports, but no other data visualizations (i.e., data grids or analytics export reports).
- If a user is in multiple roles and **Archive Search** is enabled on one role, but not the other, the user may still be able to perform a search of archived objects.

Instructions

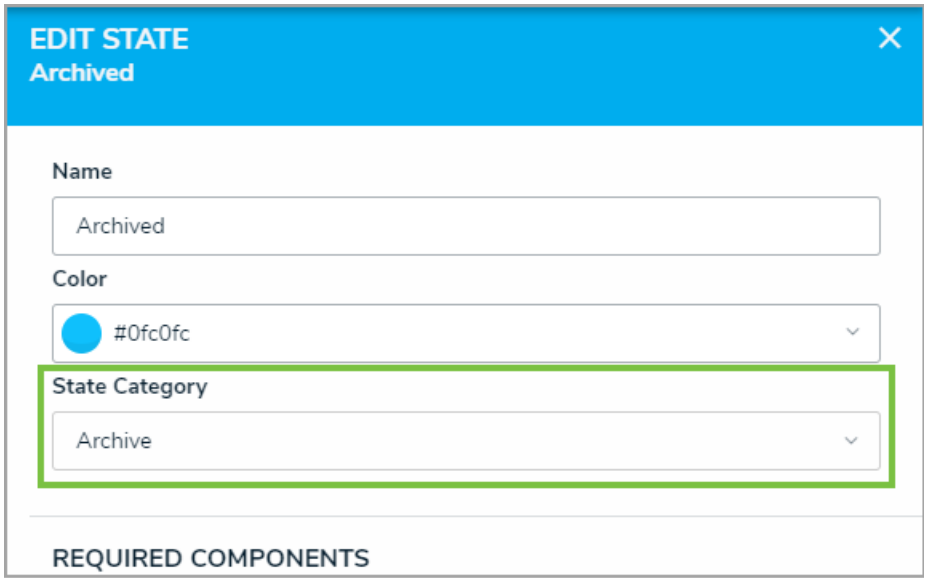
To assign the Archive category to a workflow state:

1. Click the icon in the top bar > **Object Types** in the **Data Model** section.
2. Click the object type or enter the name of the object type in the **Search** field, then click it to display the **Edit Object Type** page.



The Edit Object Type page.

3. Click **Configure Workflow** to open the **Edit Workflow** page.
4. Create a new state or click its name to edit an existing one, ensuring **Archive** is selected from the **State Category** dropdown menu.



The State Category dropdown menu.

5. Click **Done** when finished.

Include or Exclude Archived Data

This article provides a brief overview of including or excluding archived data in reports, when searching a relationship or reference field on a form, or when using the **Search** function. For instructions on archiving objects, see the Archive Data article.

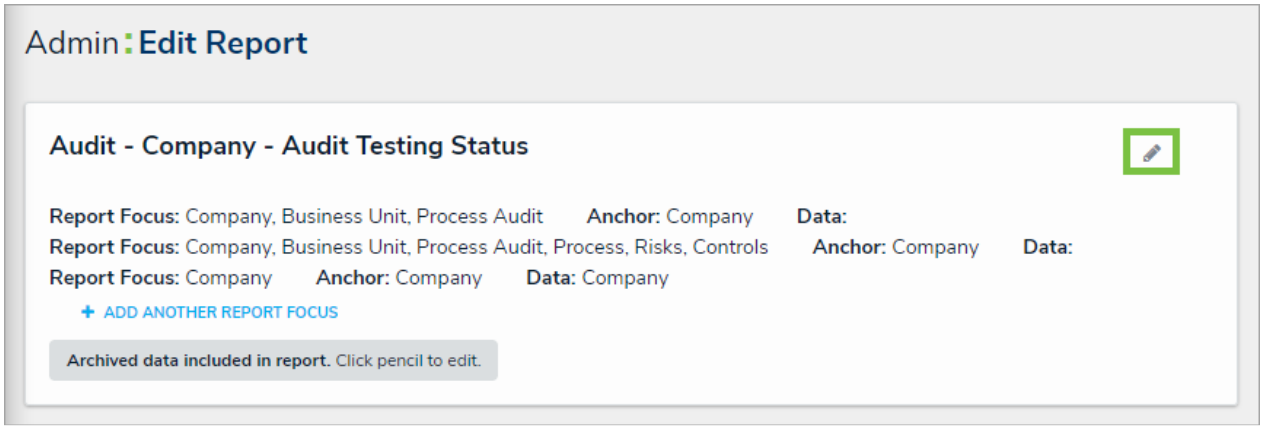
> Reports, forms, and roles created before Version 3.0 are configured to **include** archived data by default. All reports, relationship/reference elements, and roles created after Version 3.0 **exclude** archived data by default.

Reports

The ability to include or exclude archived objects is not supported on other data visualizations (i.e., data grids or analytics export reports).

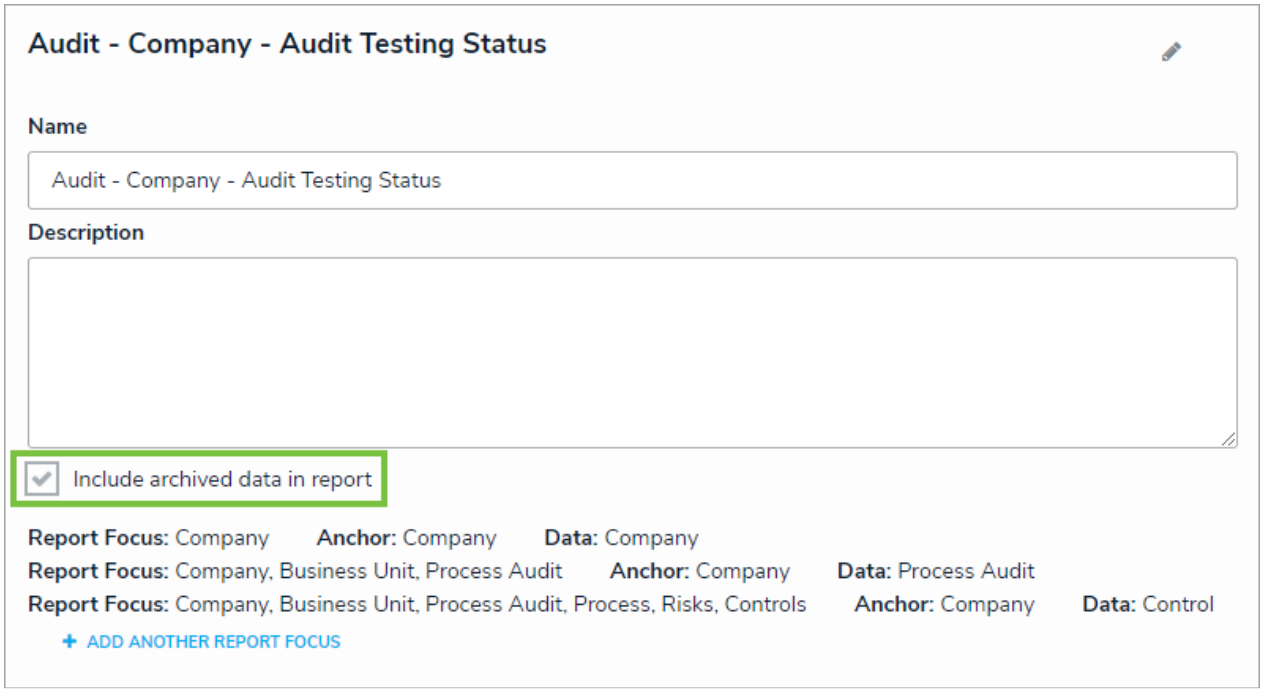
To include or exclude archived objects from reports:

1. Create a new report or open an existing one to view the **Edit Report** page.
2. Click the icon at the top-right of the first section on the **Edit Report** page.



The Edit Report page. In this case, the report is configured to include archived data.

3. Click **Include archived data in report** to select or deselect the checkbox.



The "Include archived data in report" checkbox.

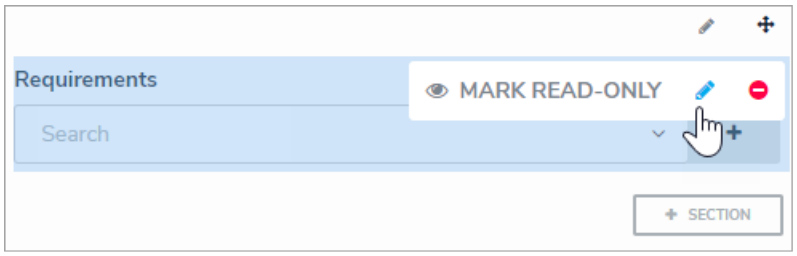
4. Click the the icon when finished.

Relationships & References

When archived data is included on relationship or reference elements with the search option enabled, users can search for, select, and/or view archived objects through those element(s) on a standard configurable form.

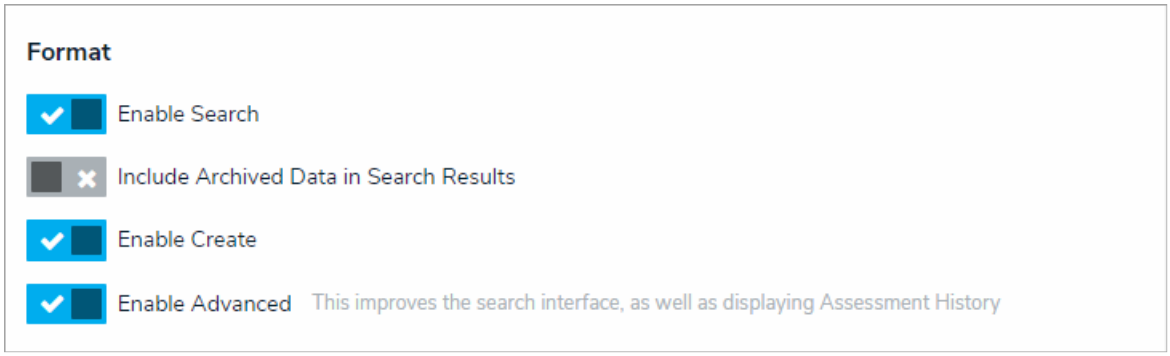
To include or exclude archived objects from relationship and reference form elements:

1. Create a new standard form or open an existing one to view the **Edit Configurable Form** page.
2. If required, add a relationship or reference element to the canvas.
3. Hover your cursor over the element, then click the icon to open the **Edit Component Display** screen.



A relationship element on a form canvas.

4. If required, click the icon beside **Enable Search** in the **Format** section.
5. Click the or icons beside **Include Archived Data in Search Results** to enable or disable the end-user's ability to search for or view archived objects through the form element.



The Format section of the Edit Component Display screen.

> The **Include Archived Data in Search Results** option will not be visible if the **Enable Search** option is not enabled.

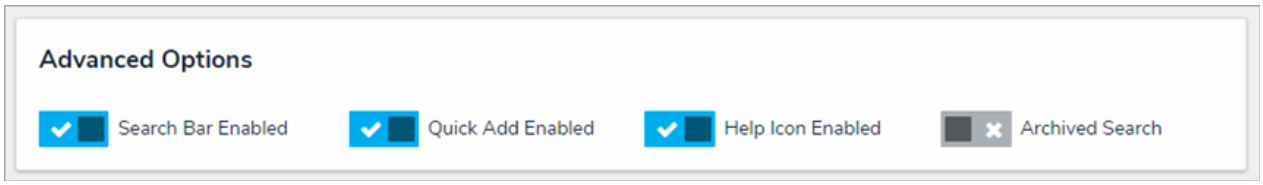
6. Click **Close** when finished.

Search

Enabling **Archived Search** on a role allows users to enable the **Include Archived Data** option when searching the organization for objects. Note that if a user is in multiple roles and **Archive Search** is disabled on one role, but not the other, the user may still be able to perform a search of archived objects or vice versa.

To enable or disable archived object searches for a role:

1. Create a new role or open an existing one to view the **Edit Role** page.
2. Click the or icons beside **Archived Search** in the **Advanced Options** section to enable or disable the end-user's ability to search for archived objects.



The Advanced Options section.

3. Click **Done** when finished.

Key Permission Components

This section serves as a guide to the Resolver Core permissions model. It contains steps for providing users with access to appropriate information and links to relevant articles in the Core Admin Guide.

Core's permissions model uses a high level of detail to ensure that each user only sees the data they have been given access to. Due to the complexity of this model, it's important to understand the individual components of the permissions model and how those components work together.

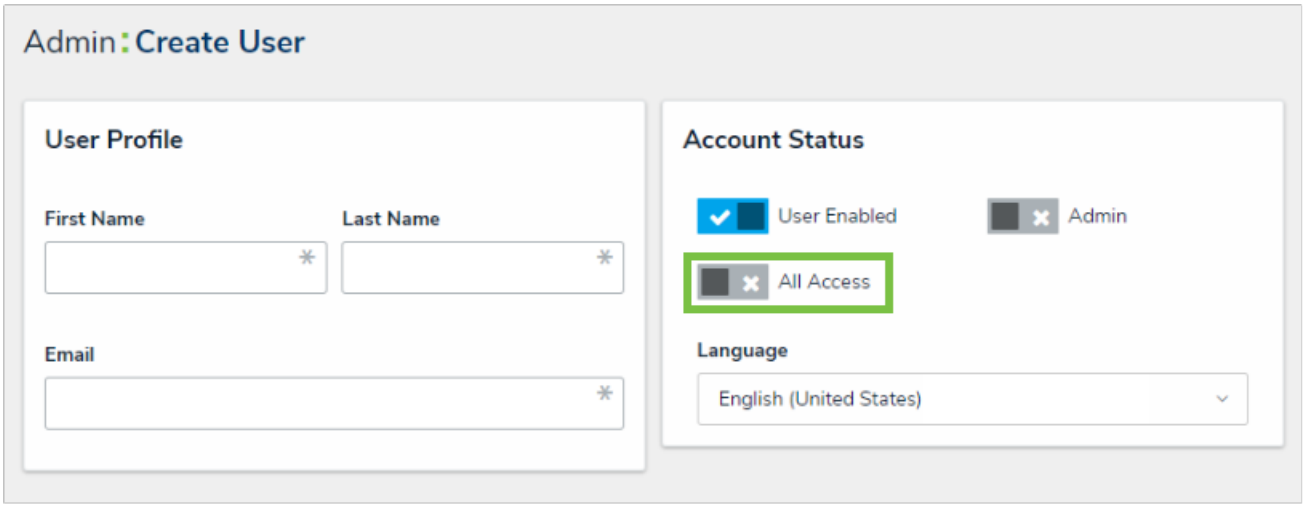
User Assignment: Users, User Groups & Roles

Permissions are configured by defining roles. Permissions can then be assigned within each role.

User groups are used to define multiple users to the same role. This allows roles to be granular, while reducing complexity. Users assigned to a user group will inherit the permissions for all roles assigned to the group. This is optional but recommended.

> Users may also be assigned directly to a role; however, this is generally not recommended, as adding users directly to roles will likely complicate your organization's permission model and any troubleshooting efforts should any permission-related issues arise.

User accounts also have an All Access setting, which is usually reserved for administrators only. If **All Access** is enabled, the user will have unrestricted access to all objects in the system without needing to assign roles or define permissions. This makes **All Access** useful for building new applications.

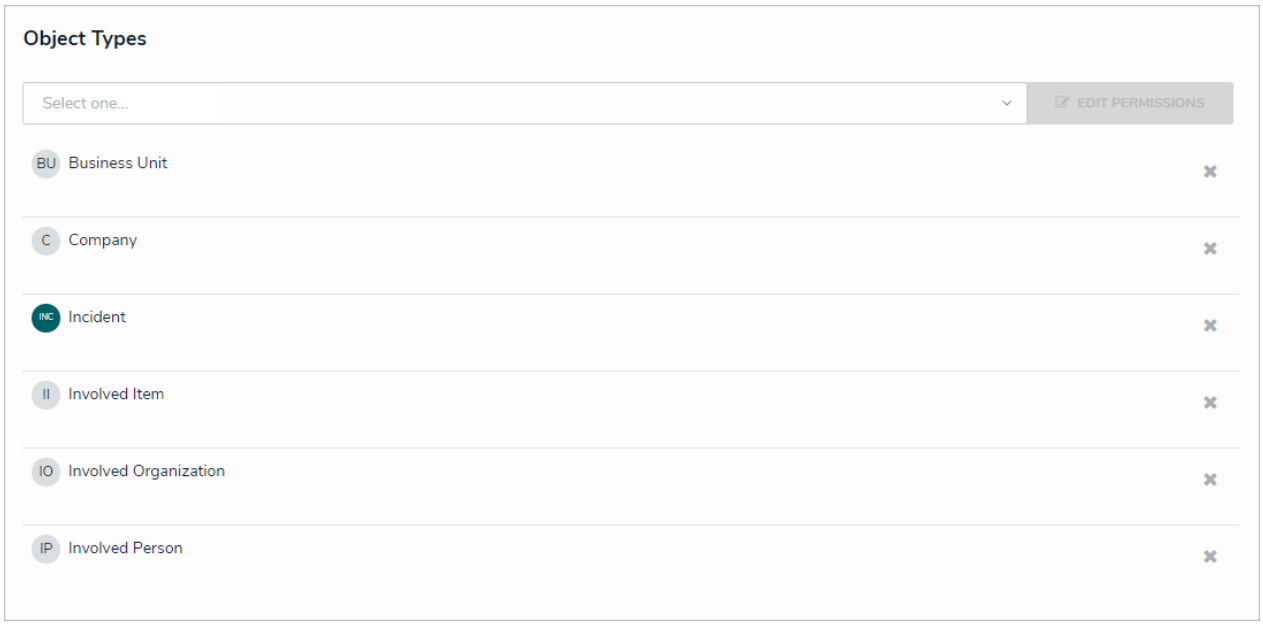


The Create User page, where the All Access feature can be found.

Role Configuration: Object Types, Workflows & Permissions

To configure a role:

1. Define the object types members of the role will have access to.



The Object Types section on the Edit Role screen.

2. Define the workflow permissions for each object type assigned to that role, including:

    a. Permissions: **Create**, **Read**, **Edit**, **Delete**, and **Manage**. (Selecting any of these permissions in the **All States** section will grant the role access to those permissions for all the workflow's states);

    b. Triggers (selecting **All Triggers** in **All States** will give the role the ability to click on all defined triggers);

    c. Objects assigned to the user's My Tasks list (**Assign**); and

    d. Forms the assigned user should see. This may still be overridden for specific:
        - Views
        - Report tables
        - Navigation forms
        - Relationship tables

3. If the role should have access to all objects from its assigned object types, enable Global Permissions when creating the role. Note that this setting cannot be changed once the role has been created.

4. If the users in the role should only have access to objects to which they have been explicitly assigned, some additional steps are required:

    a. Add the role to the object type and include it as a field on a standard form so users from the role can be assigned to an object. Once the user has been assigned to an object using that field, they will have access to that object in accordance with their role's definitions.

    b. **Optional:** Determine the main object type that the user needs access to (e.g. Risks for a Risk Owner, Business Unit for a Manager). On that object type, define the inferred permissions to specify the related object types that the user should inherit access to. By adding inferred permissions, the user is automatically granted access to related objects when they are assigned to the root object. For example, when a Risk Owner is assigned to a Risk, they will inherit permissions to any Controls linked to that Risk, and any Tests linked to that Control.

5. **Optional:** Disable the **Search**, **Quick Add**, and **Help** functions for the role.

Application/Activity Permissions

Roles can grant access to specific areas of Core by adding the role to an activity. This lets members of that role:

- Access the activity's parent application in the **Nav Bar**.
- Access the activity through its tab at the top of the **Application** screen.
- Use the actions and views that have been added to the activity.

Enabling **All Access** on a user's account will **not** automatically grant access to all activities. The user must still be added to a role with access to the activity in order to access it.

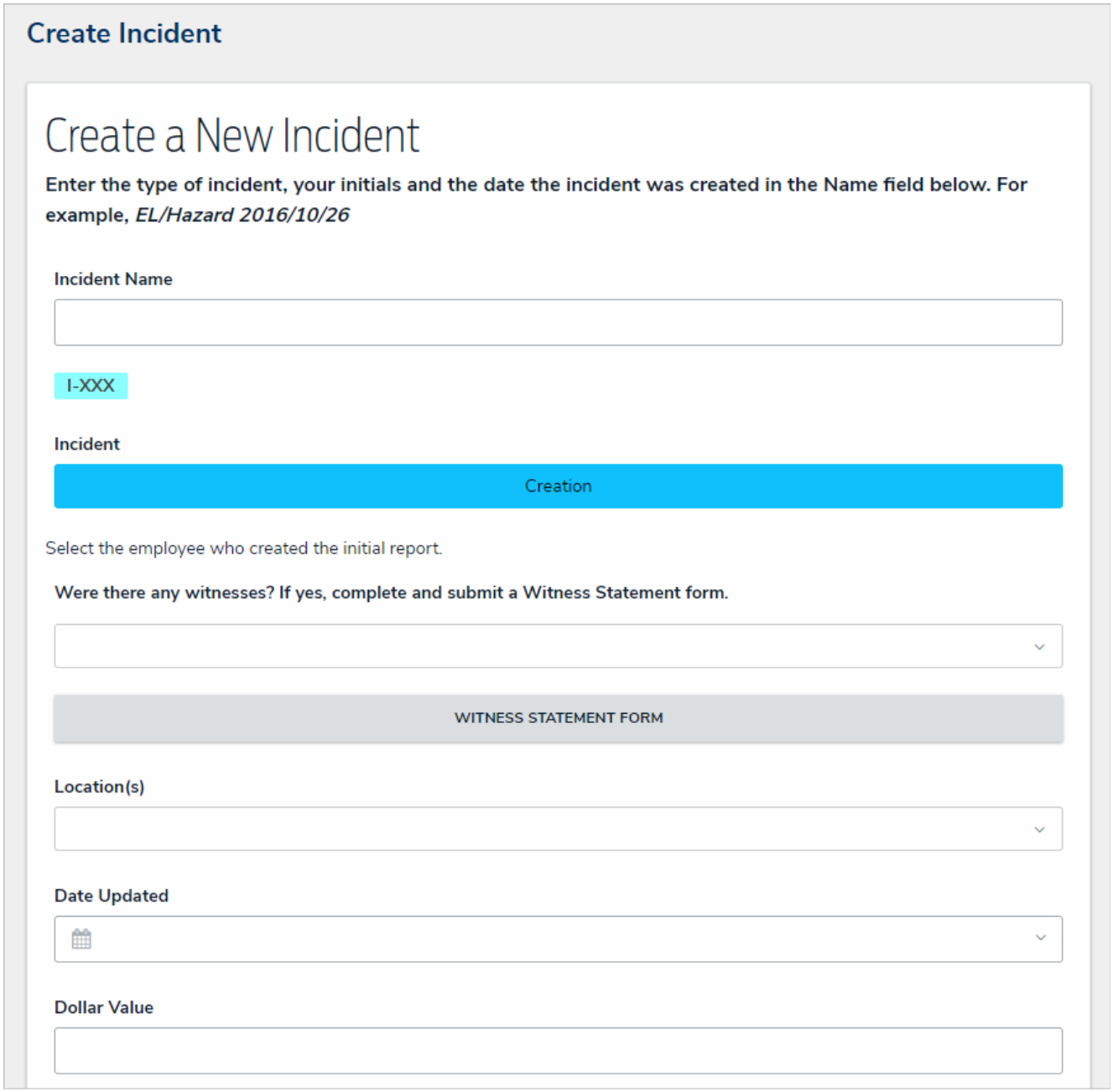
Object Types Overview

Object types are the containers for the data entered into Core and are the foundation of the entire system.

Object types determine the category of data that's collected and exactly what kind of data is entered. After an object type has been created, it can be associated with configurable forms, applications, activities, tasks, and data visualizations. Records saved within an object type are known as **objects**.

Administrators define what appears on the object type by adding fields, relationships, formulas, and roles, which are components. Components need to be added so they can later be selected to appear on the configurable forms created for the object type, alongside the object's properties. If needed, these components can be used to create concatenations that use custom expressions to auto-populate the **Name** and **Description** properties on an object.

The data collection process for each object type is defined through a workflow, while the privileges a user has when working with the object type is specific in their role's workflow permissions.



A blank object type displayed through a configurable form. Through this form, users can enter, edit, and view data (depending on their permissions).

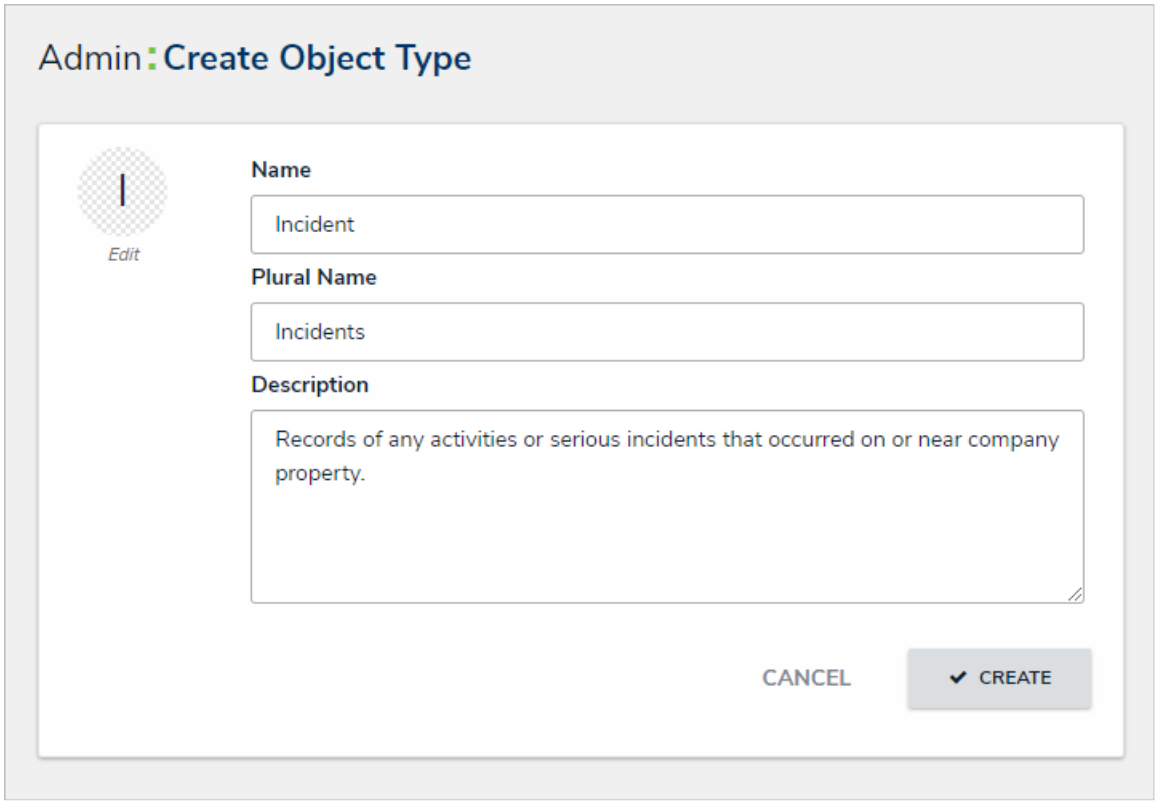
Components and workflows are configured through the **Edit Object Type** page, which has a number of tabs with information and configurable settings, including:

- **Overview:** A list of any configurable forms or data definitions associated with the object type.
- **Fields:** Allows you to create, add, and edit fields on the object type as well as displays a list of the previously added fields.
- **Formulas:** Allows you to create, add, and edit formulas on the object type as well as displays a list of the previously added formulas.
- **Relationships:** Allows you to create, add, and edit relationships on the object type as well as displays a list of the previously added relationships.
- **References:** Displays a list of references on the object type.
- **Roles:** Allows you to add and configure roles on the object type as well as displays a list of the previously added roles.

Create a New Object Type

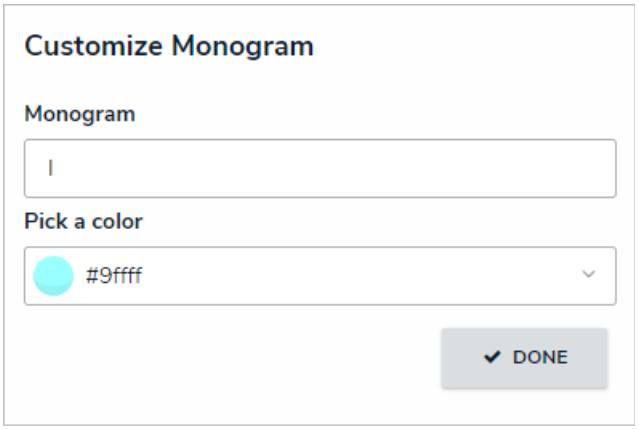
To create a new object type:

1. Click the icon in the top bar > **Object Types** in the **Data Model** section.
2. Click **Create Object Type**.
3. Enter a name for the object type in the **Name** field.
4. **Optional:** Enter a plural name for the object type, which will appear when viewing a list of the objects for that type (e.g. "View Incidents" instead of "View Incident").
5. **Optional:** Enter a description of the object type, which will appear on the **Edit Object Type** page when editing the object type.



The Create Object Type page.

6. **Optional:** To customize the object type monogram:
    a. Click the monogram icon to the left of the **Name** field.
    b. Enter 1 to 3 characters in the **Monogram** field.
    c. Click the **Pick a color** dropdown menu to reveal the color picker. You can also type a hex color into this field to select a color.

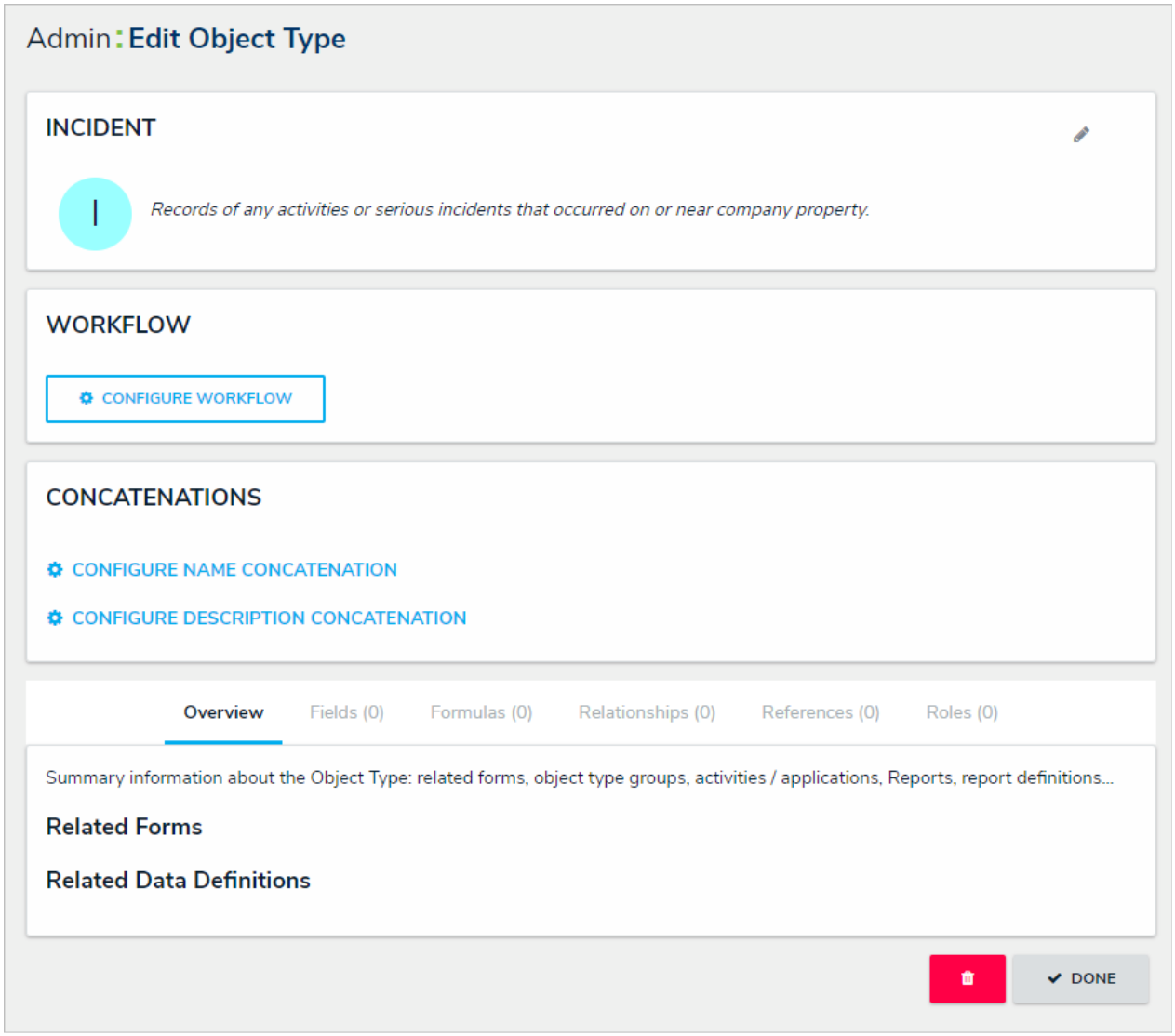


The Customize Monogram screen.

The monogram is used to help you quickly identify an object type throughout CORE. If you're creating multiple similar object types (e.g. Incidents and Incident Review) you may want to apply the same or similar colors to their monograms to help create a theme.

d. Click **Done**.

7. Click **Create** to display **Edit Object Type** page.



A new object type. By default, new object types do not have any workflows, concatenations, or components.

Add Fields to an Object Type

An object type's fields are where users will input data. Fields are available in the following formats:

- **Text**: A text field that allows for a single line or multiple lines of text, concatenations, or rich text formatting. See the Text Field Concatenation and Rich Text Formatting articles for more information.
- **Numeric:** A field that allows for numbers.
- **Date & Time:** A picker that allows you to select the date and time. All dates and times are saved and displayed in UTC format.
- **Select List:** A dropdown menu with multiple options to choose from.
- **Attachments:** An area on the form that allows users to upload files, insert links to websites, or both. Supported document files aresearchable by keywords or upload dates.
- **Image Attachment:** A field through which images can be uploaded and embedded onto a form.

All fields saved to an object type will appear on the object type's default form, but you can select which fields will appear on configurable forms associated with the object type.

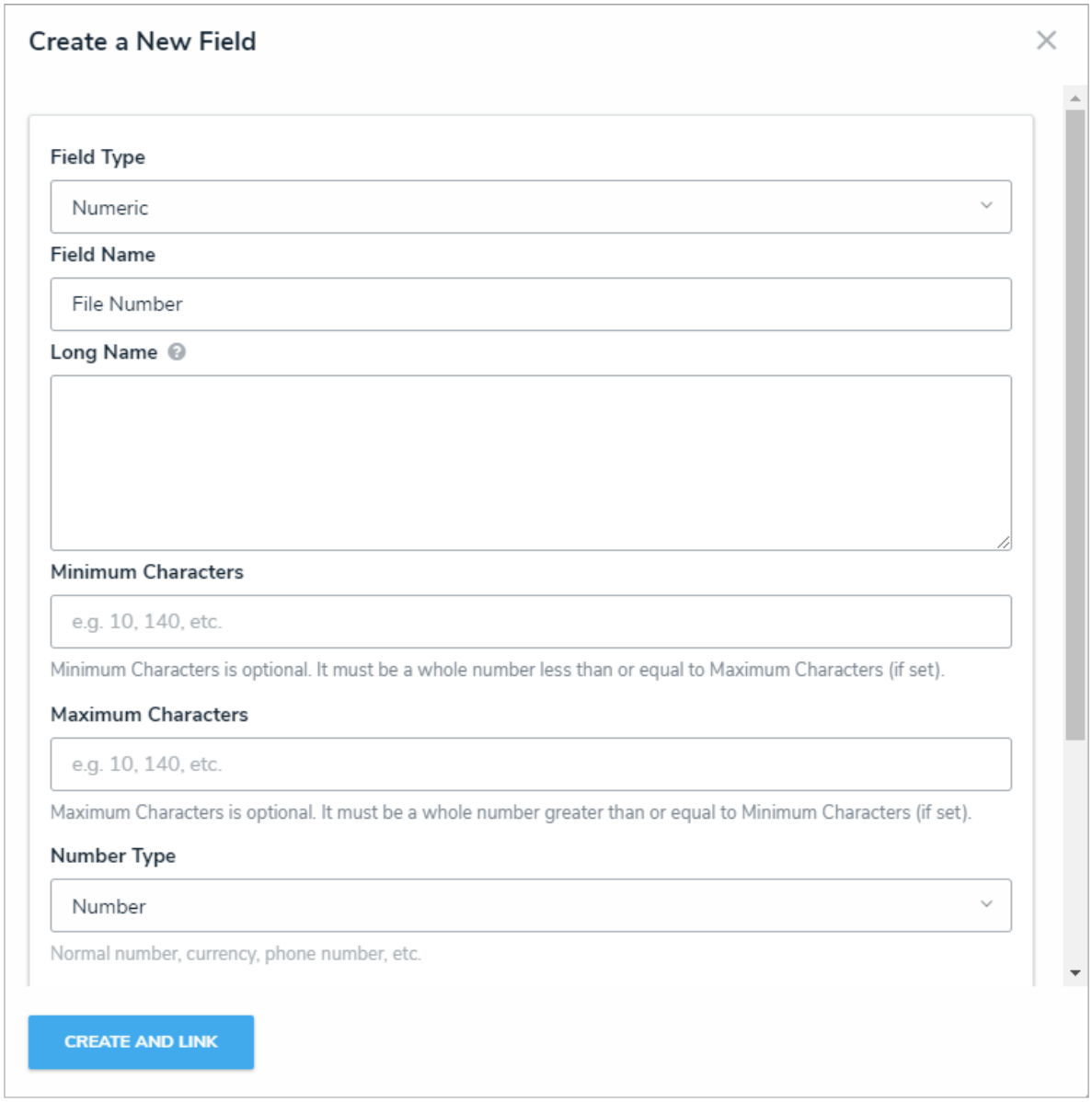
This section explains how to create and add fields to an object type, but you can create, edit, and delete fields from the **Fields** settings. See theFields section for more detailed information and instructions on each field type.

To add fields to an object type:

1. Click the icon in the top bar > **Object Types** in the **Data Model** section.
2. Click to select the object type with to configure.
3. Click the **Fields** tab.

The Fields tab with no previously added fields on the object type.

4. To create a new field to add to the object type:
    a. Click **Add Field(s) > Add a New Field**
    b. Select a field type from the **Field Type** dropdown menu.
    c. Enter the field's details, including name, minimum and maximum number of characters, and any other settings as needed. If needed, provide additional information or instructions on completing the field in the **Long Name** section, which can be styled using Markdown.

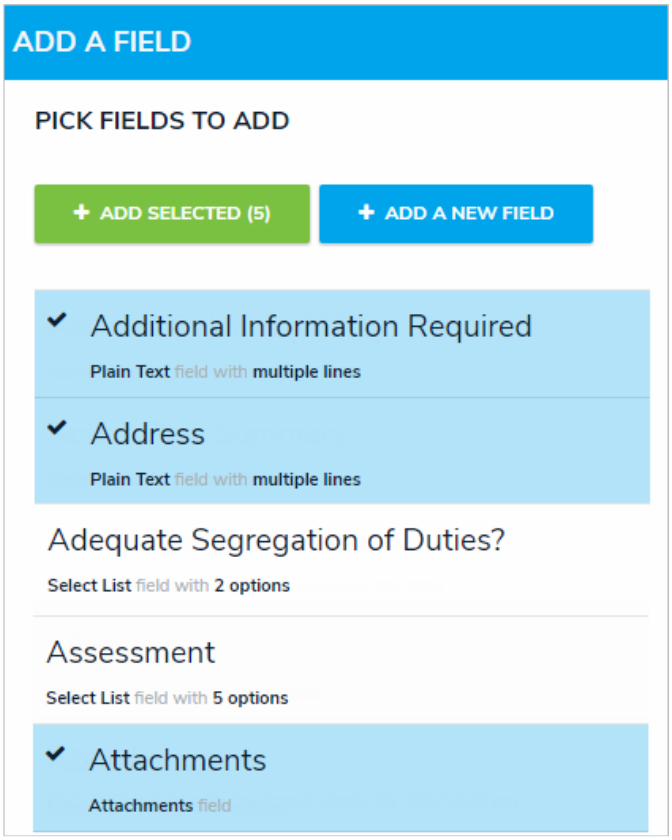


The Create a New Field screen, accessed from the Edit Object Type page.

d. Click **Create and Link** to add the field to the object type.

> See the Fields section for more detailed information about each field type.

5. To add an existing field to the object type:
   a. Click **Add Field(s)**.
   b. Click one or more fields in the **Pick Fields to Add** section.



Selecting existing fields to add to the object type.

> Existing fields can be added to multiple object types; however, note that deleting the field or modifying the field's settings will affect **all** related object types.

c. Click **Add Selected**.

6. To edit a field, click it in the tab to open the **Editing Field** page.
7. To delete a field **from the object type only**, click the icon.
8. Click **Done** when finished.

Add Formulas to an Object Type

Formulas compile data from numeric and variable values to generate conclusions, such as Incident Severity, Estimated Damage, or Likelihood the Incident Will Recur. Variable data is created from numeric data from other formulas, select lists, numeric or date fields, or workflow states that are added directly to an object type or from object types associated through a relationship or reference.

A formula can be displayed on a form as a number, label (e.g. Low, Medium, High), numbers and labels, a gauge, or as a formula card. See the Formulas on Forms article for more information on configuring the display.

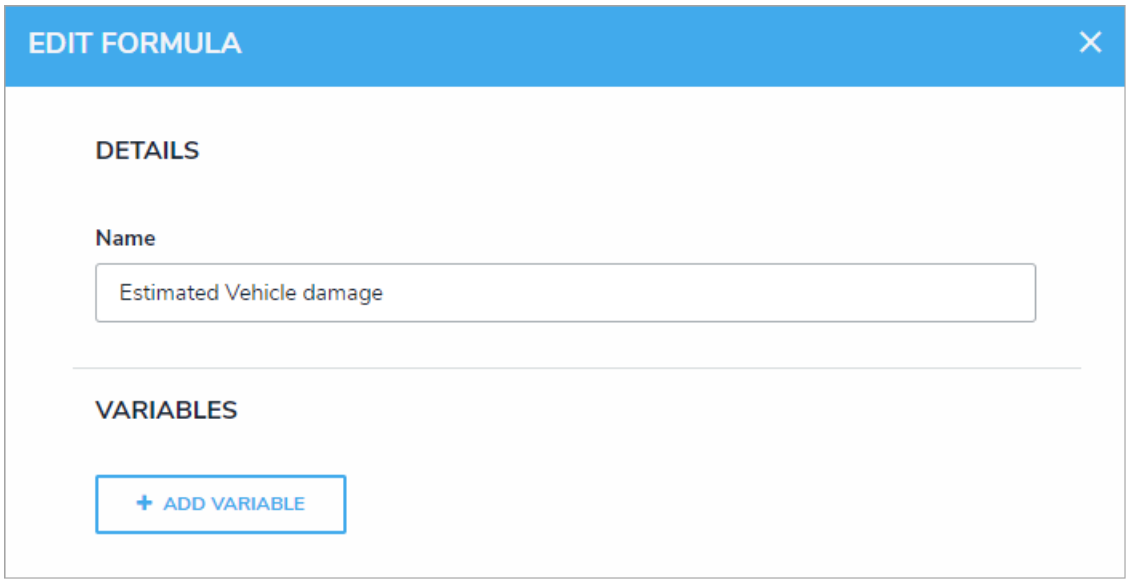
For more information on formulas, see the following articles:

- Formulas Overview
- Variables, Operators & Functions
- Time Functions
- Null Values in Formulas
- Formula Examples
- Formulas on Forms

Instructions

To add a formula to an object type:

1. Click the icon in the top bar > **Object Types** in the **Data Model** section.
2. Click the object type or enter the name of the object type in the **Search** field, then click it to display the **Edit Object Type** page.
3. Click the **Formulas** tab > **Add Formula**.
4. Enter a name for the formula in the **Name** field (e.g. Estimated Vehicle Damage).
5. Click **Create**.
6. Click the new formula to open the **Edit Formula** palette.



The Edit Formula palette.

7. Click **Add Variable**.
8. Select either **Field, Relationship,** or **Reference** from the **Variable Type** dropdown menu.
    - If you selected **Field**, choose a field or formula from the **Available Components** dropdown menu. The options in this dropdown are fields or

formulas added directly to the object type.

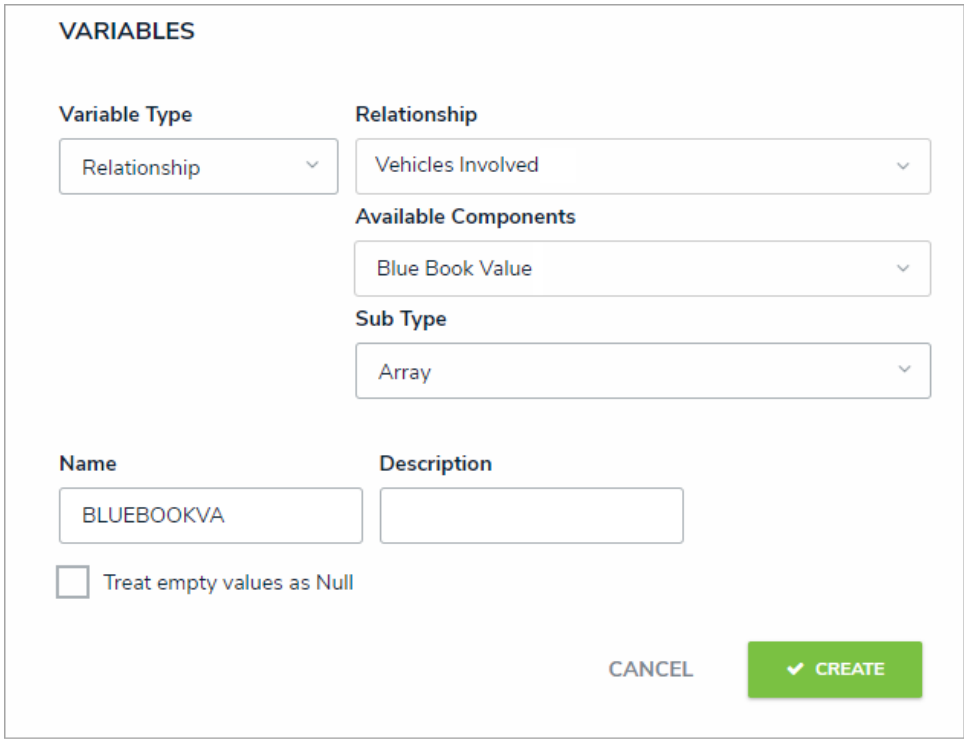
- If you selected **Relationship** or **Reference**:
    a. Select a relationship or reference saved to the object type from the **Relationship** or **Reference** dropdown menu.
    b. Select a field, formula, or workflow state from the **Available Components** dropdown menu. These are the fields, formulas, or states saved to the object type(s) in the relationship or reference.
    c. Select a variable sub-type from the **Sub Type** dropdown menu to specify how the data from multiple objects will be compiled, calculated, and displayed. See the Variables, Operators & Functions article for more information on the sub-types and relationship/reference variables.

> Select lists can be used in formulas only if numeric values have been added to their options. See the Select List Fields article for more information.

9. **Optional:** If you wish to use a name other than the field's unique name, enter it in the **Name** field. Numbers, special characters, and spaces are not permitted.

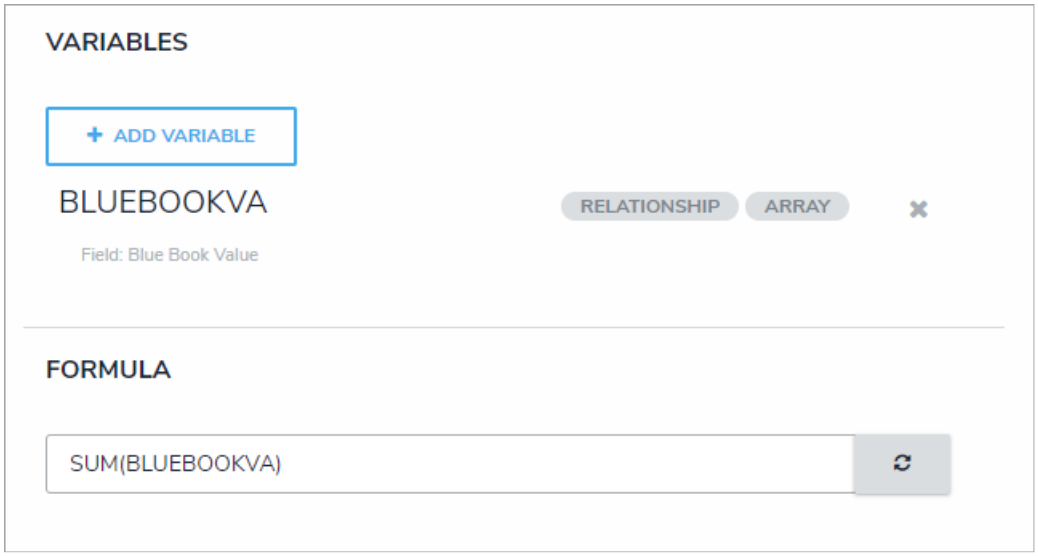
> Naming a variable after a function will result in an error.

10. **Optional:** Enter a description of the variable in the **Description** field, which will appear below the variable in the **Edit Formula** panel.



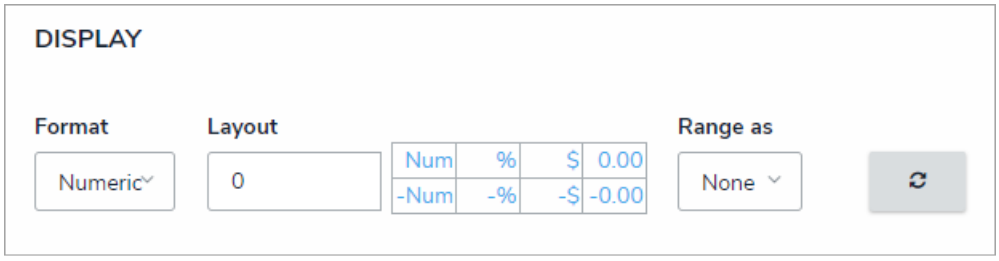
A new variable in the Edit Formula panel.

11. **Optional:** Select the **Treat empty values as Null** checkbox if objects with blank variables should **not** be assigned a zero (0) value. See the Null Values in Formulas article for more information.
12. Click **Create**.
13. Follow steps 8-12 above to continue adding more variables as needed.
14. Using the variable name(s), enter the formula, including any operators and/or functions, in the **Formula** field (e.g. **SUM(BLUBOOKVA)**). See the Variables, Operators & Functions article for more information.



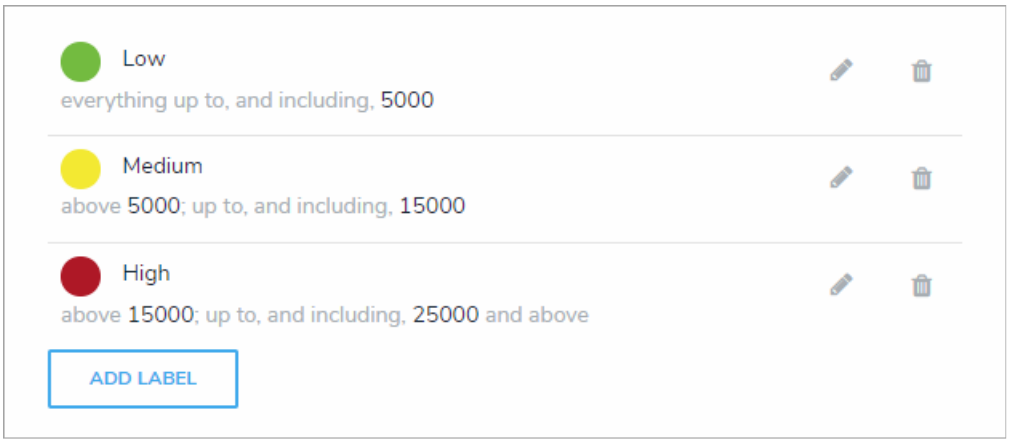
A formula entered in the Formula field using the variable name(s) (in this case, BLUEBOOKVA).

15. In the **Display** section, select either **None** or **Numeric** from the **Format** dropdown menu. If you selected **Numeric**, you can choose how the numbers will be displayed by clicking an option in the table to the left (i.e., **Num**, **%**, **0.00**, .etc). A preview of the number format is displayed in the **Layout** field.



The display options for formulas. Selecting an option other than None in the Range as dropdown will reveal additional options.

16. Select an option from the **Range as** dropdown menu:
    - **None:** The formula will display the numeric results only.
    - **Label:** The formula will display the range labels only (e.g. Low) in the color selected for that range.
    - **Label and Result:** The formula will display the numeric results and labels (e.g. Low – 1000) in the color selected for that range.
    - **Result:** The formula will display the numeric results only in the color selected for that range.
17. If you selected any option other than **None** in the **Range as** dropdown menu above, formula labels of **Low**, **Medium**, and **High** are automatically created. To configure the labels:
    a. Click the icon next to the range you want to edit.
    b. Click the **Color** dropdown menu to reveal the color picker and select a new color for the label. You can also type a hex color into this field to select a color.
    c. Enter a new name for the label in the **Label** field.
    d. Enter a numeric maximum value in the **Max Value** field.
    e. Click the to save your changes.
    f. To delete a range, click the icon.
    g. To add a new label, click **Add Label**, then follow steps b-e above.



The default formula labels.

18. Click **Done.**
19. To edit the formula, click it in the tab to open its settings.
20. To delete the formula, click the icon.
21. Click **Done** when finished.

If changes are made to the display of an existing formula, you must click **Reformat Formulas** from the **Edit Object Type** page before those changes are displayed.

Clicking **Recalculate Formulas** recalculates **all** the formulas in your organization. As such, this action should be performed only when required.

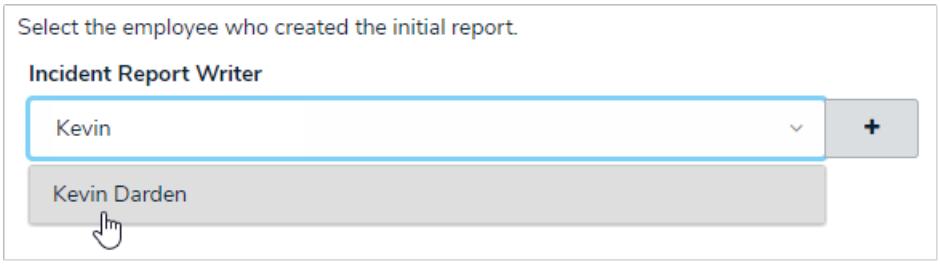
Add Relationships to an Object Type

You can connect two or more objects together by adding object types to an object type group, then adding that group to a relationship on another object type (e.g. the Visitor and Employee Record object types in a People Involved relationship saved to the Incident object type). Once a relationship is created, it will appear either as field or table on a configurable form for the object type the relationship is saved to, where administrators can allow users to select an existing object or create a new one on the object type(s) added to the group, which then forms a relationship between the two objects.

Depending on the permission structure of the roles granted access to this object type, you will likely need to configure the inferred permissions to ensure users will have access to the object type(s) in the relationship, as required.

EXAMPLE

If you had an Incident object type and an Employee Record object type, you may want to link those object types together to track which employees created new incident objects. To do this, you create a new object type group called "Employees" and add Employee Record as the related object type. You would then use the Employee object type group to create a relationship on Incident, called "Incident Report Writer." Once that relationship has been added, users can indicate which employee is creating the incident by selecting an existing Employee Record object or creating a new record from the Incident Report Writer field on the form.



An example of how a relationship can be displayed on an object type. In this case, the Incident Report Writer field was created from a relationship on the Incident object type using the Employees object type group.

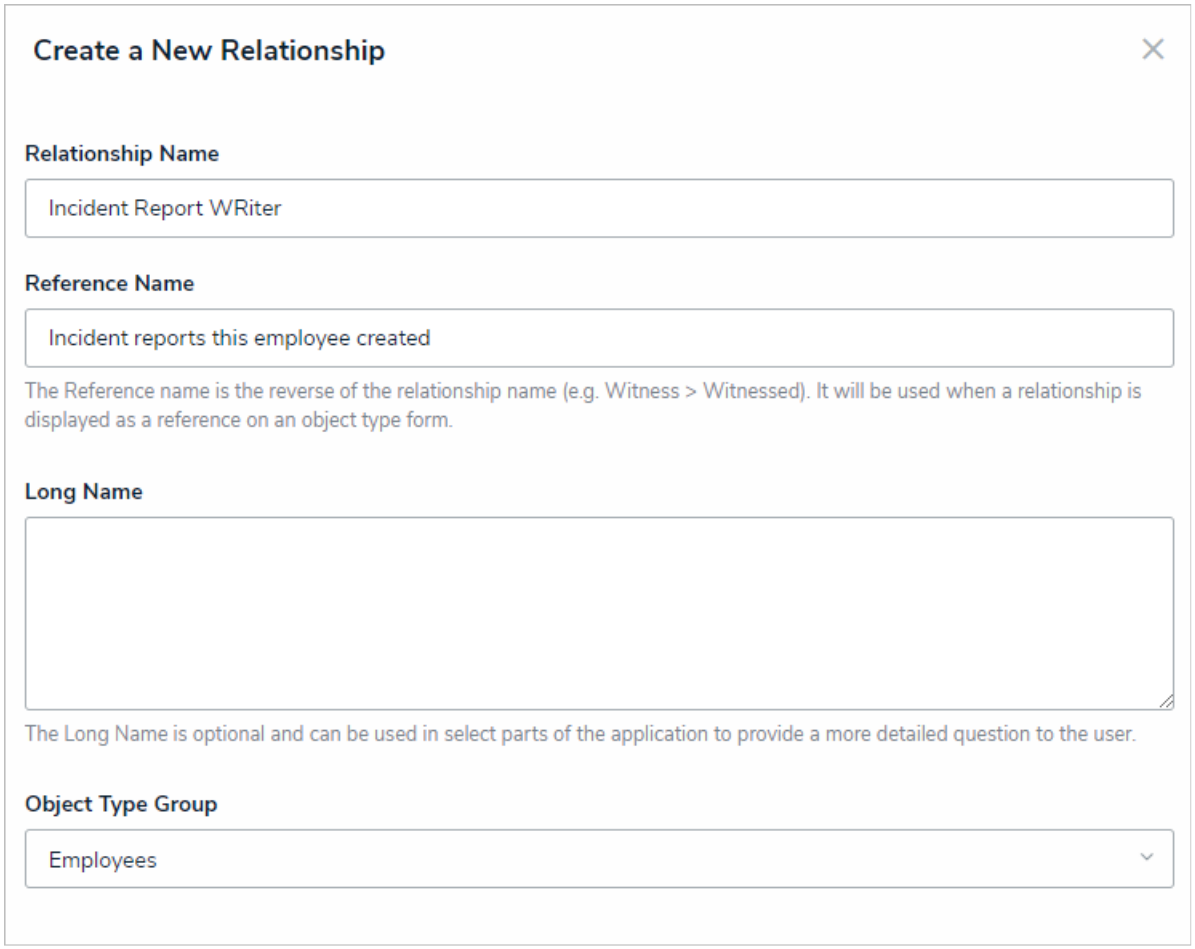
References are automatically created with relationships, but they don't appear on an object type until the **References** element has been added to a configurable form. See Add References to an Object Type for more information.

You cannot create a new object through a relationship on an object that hasn't transitioned out of the Creation state as the object has not yet been created and saved.

To add a relationship to an object type:

1. If not already created, create an object type group that includes the object type(s) you wish to add to the relationship.
2. Click the icon in the top bar **> Object Types** in the **Data Model** section.
3. Click the object type you wish to add a relationship to or enter the name of the object type in the **Search** field, then click it to display the **Edit Object Type** page.
4. Click the **Relationships** tab **> Add Relationship**.
5. Enter a name for the relationship as it will appear on the forms in the **Relationship Name** field (e.g. Incident Report Writer).
6. **Optional:** Enter a reference name in the **Reference Name** field, which will appear as a field if references are added to a configurable form. See Add References to an Object Type for more information.

7. **Optional:** If needed, provide additional information or instructions on completing the field in the **Long Name** section, which can be styled using Markdown formatting. If a long name is provided, you can choose to display it on a configurable form above the relationship or reference elements to provide more information to end users.
8. Select an object type group from the **Object Type Group** dropdown menu.



Adding a relationship to an object type.

9. Click **Create**.
10. To edit the relationship, click on it from the **Relationships** to open its settings.
11. To delete a relationship, click the icon, then **Yes** to confirm.

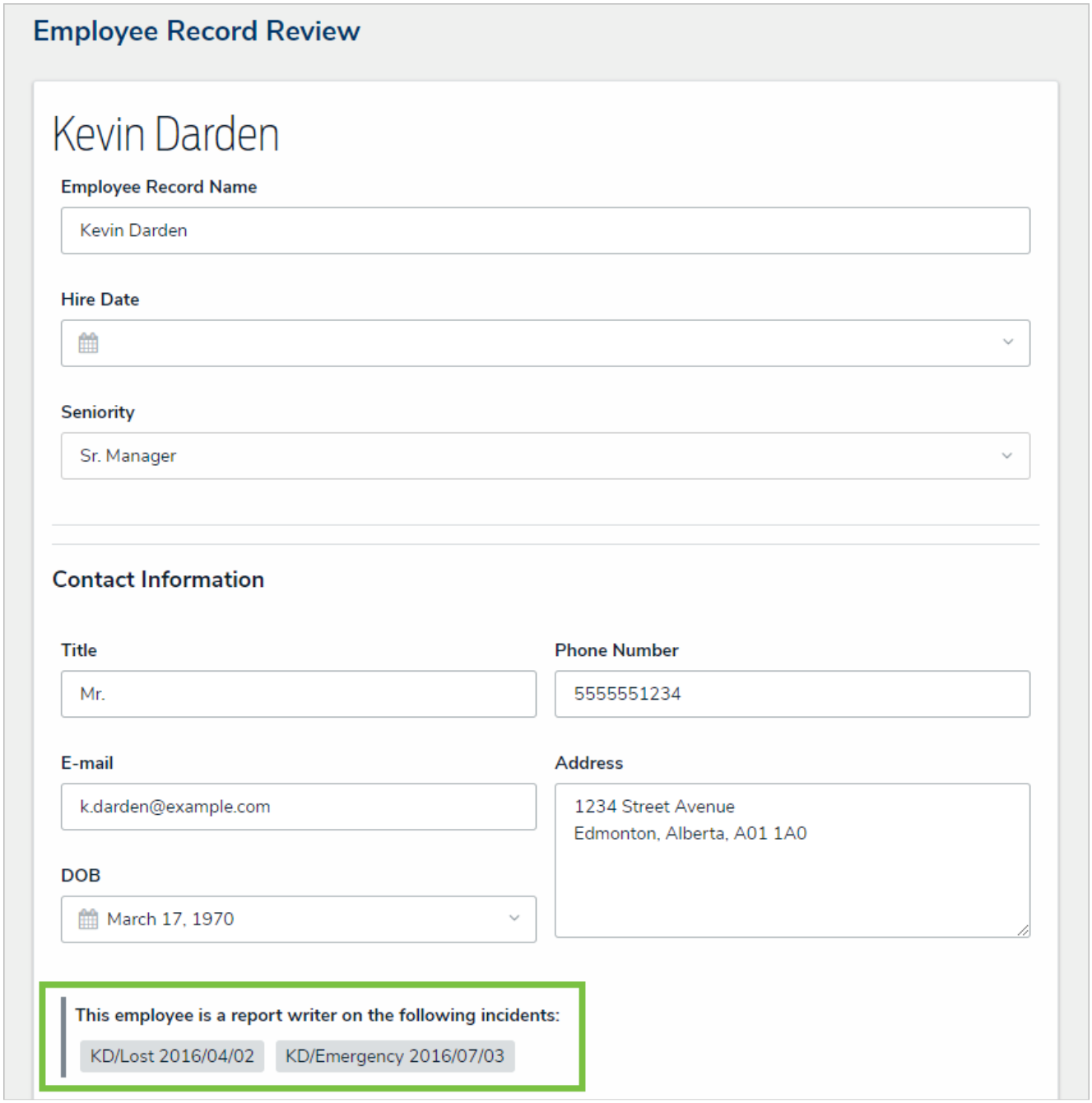
Add References to an Object Type

References indicate that an object is connected to another object through a relationship. References are automatically created at the time a relationship is created, but they cannot be viewed on an object until the References element has been added to a configurable form.

Depending on the permission structure of the roles granted access to these object types, you will likely need to configure the inferred permissions to ensure users will have access to object type in the reference, as required.

EXAMPLE

Because you created a relationship on the Incident object type using the Employee group (which has the Employee Record object type added to it), you have the option of adding the References component to any configurable forms you create for Employee Record, which will display the incident records an employee created.



A reference on a configurable form displaying custom text.

When creating a relationship, the name entered in the **Reference Name** field will determine which text will appear over the reference on a configurable form. If you don't enter anything in the **Reference Name** field, the reference will appear as **[Object type name] is a [relationship name] on:** If you entered a long name for the relationship, you may also display the long name over the reference on a form.

The default reference description appearing a configurable form.

You can view the references on an object type by clicking the **References** tab from the **Edit Object Type** page. Clicking on a reference in this tab will show the **Edit Object Type** page for the other referenced object type.

Add Roles to an Object Type

Roles control the data a user can create, edit, delete, view, or manage on object types and objects. Once the role component for a specific role is added to an object type, it can be added to a configurable form, where you can grant users from within that role permission to view a specific object. Where necessary, roles allow users to see additional object types related through relationships or references by granting inferred permissions.

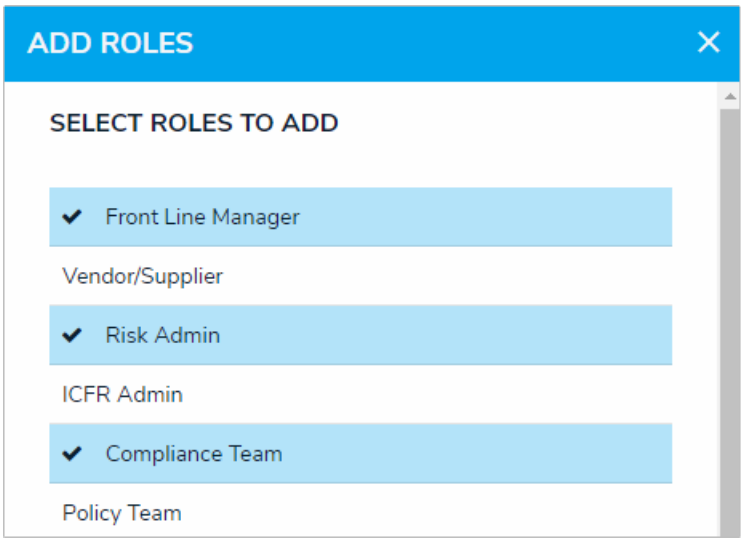
> As users with global permissions can automatically view all the objects saved to the object type(s) specified in the role (subject to any workflow permissions), you can only add roles with explicit permissions to an object type.

What the users within a role can do with the object types and objects, including those accessed through inferred permissions, is controlled by the object type's workflow permissions on their role.

Roles must be created and configured before they can be added to an object type. See the Roles chapter for more information.

To add a role to an object type:

1. Click the icon in the top bar > **Object Types** in the **Data Model** section.
2. Click the object type or enter the name of the object type in the **Search** field, then click it to display the **Edit Object Type** page.
3. Click the **Roles** tab.
4. Click **Add Role**.
5. Click to select one or more roles under **Select Roles to Add**.



Selecting roles to add to an object type.

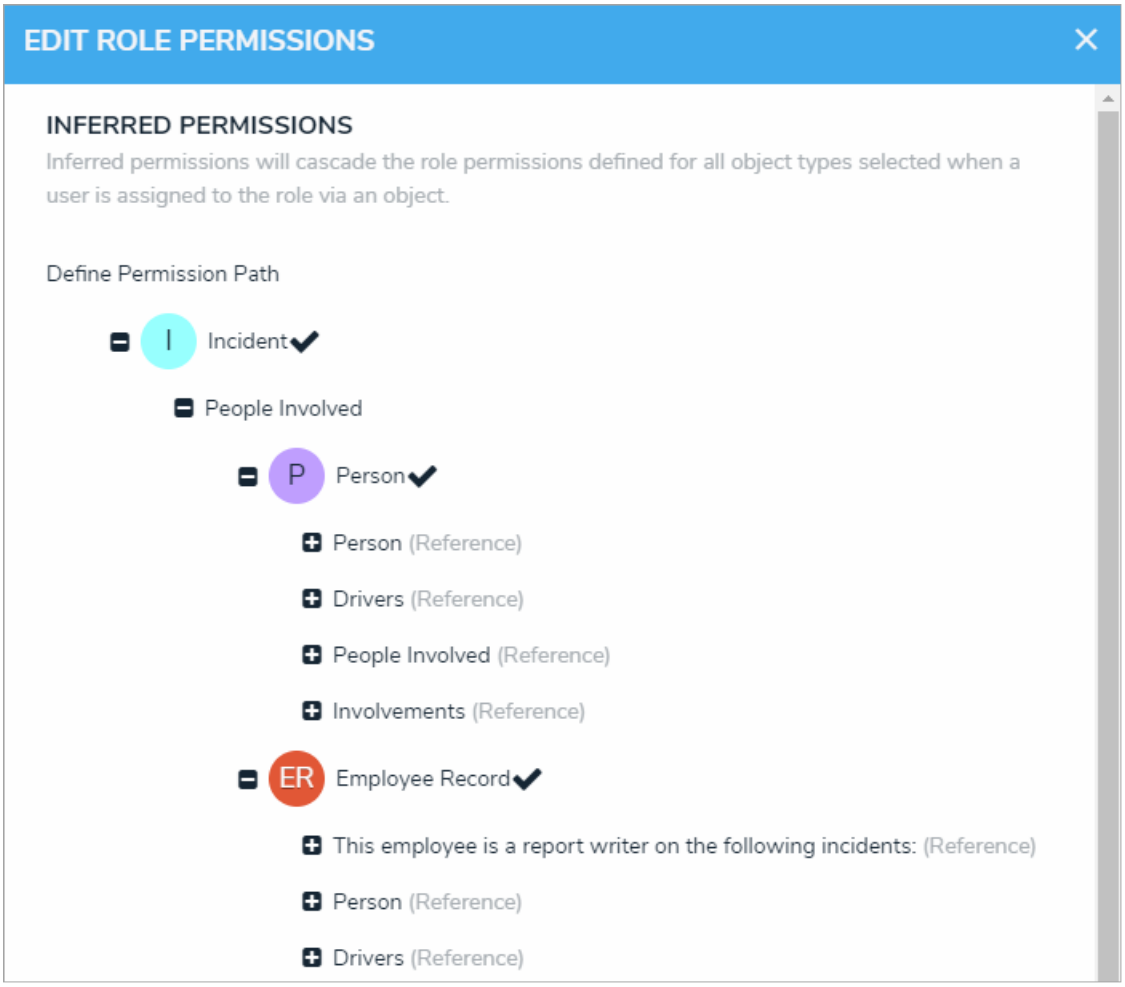
6. Click **Add Selected**.
7. To add inferred permissions to the role:

> Granting inferred permissions requires additional configurations on the role. See the Inferred Permissions section for more information on how these permissions work and how to configure the role.

   a. Click the role in the **Roles** tab to open **Edit Role Permissions**.
   b. Click the monogram, which represents the object type you're currently working in, to expand the node and reveal any relationships and references saved to the object type.

c. Click a relationship or reference to show the object types associated with that relationship or reference (e.g. clicking People Involved will show the People and Employee Record object types).

d. Click an object type to grant inferred permissions to that object type.



Granting inferred permissions. The checkmarks next to the P (People) and ER (Employee Record) monograms confirm that users in that role have access to those object types through the I (Incident) object type.

e. Click **Done**, then **Continue** to confirm.

8. To edit the role's inferred permissions, click the role in the tab to open **Edit Role Permissions**.
9. To delete the role **from the object type only**, click the icon.
10. Click **Done** when finished.

Object Properties

Properties are auto-created components that display an object's default information. Properties can be displayed on aconfigurable form or in an email template. They include:

- **Name:** The title of the object, which helps identify the object in views or search results. The header of this property appears on forms as [Object Type] Name (e.g. Incident Name).

  > ⚠ The **Name** property should be included on all your standard forms as it's used to identify objects in search results, views, data visualizations, relationships, etc. If this property is not added to your forms, users will not be able to search for and select existing objects in relationship fields or tables.

- **Description:** A description of the object.
- **Unique ID:** The unique identifier automatically assigned to the object type at the time of creation.
- **Monogram:** The letter(s) and color assigned to the object type.
- **Created By:** The user who created the object.
- **Created On:** The date the object was created.
- **Modified By:** The name of the user who last modified the object.
- **Modified On:** The date the object was late modified.
- **Workflow State:** The current state of the object.
- **Location:** The address and/or latitude and longitude coordinates of an object. See theLocations section for more information.
- **Assessment Dimension:** Adds read-only dimension data onto the form of objects that were referenced on an assessment. If an object has not been referenced on an assessment, the property will be invisible.

Name & Description Concatenation Overview

A **concatenation** pulls data from properties (including the Location property and its address components) and fields to automatically populate the **Name** and/or **Description** properties of objects. This feature is useful for ensuring important information is captured in an object's name or description and to ensure object names and descriptions are consistent across the org.

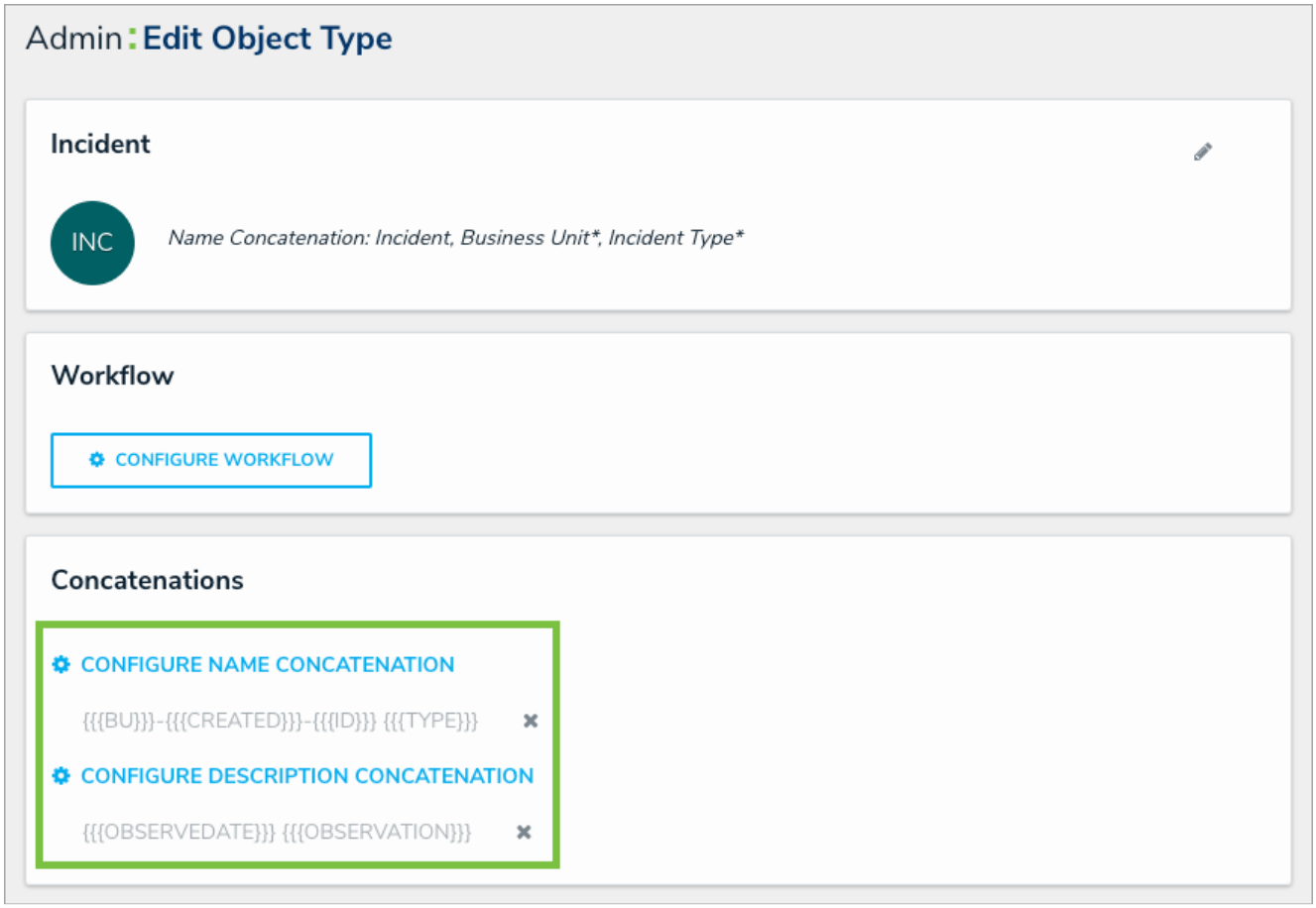
Concatenations can also be added to plain text fields. See the Text Fields article for more information.

To specify which data is populated in the **Name** and/or **Description** properties, administrators edit an object type, select a related data definition and an object type in that definition, then one or more properties or fields to create variables (similar to a formula variable), which are then used to create an expression. For example, if you created variables for the First Name and Last Name plain text fields, your expression would look similar to {{{FirstName}}} {{{LastName}}}.

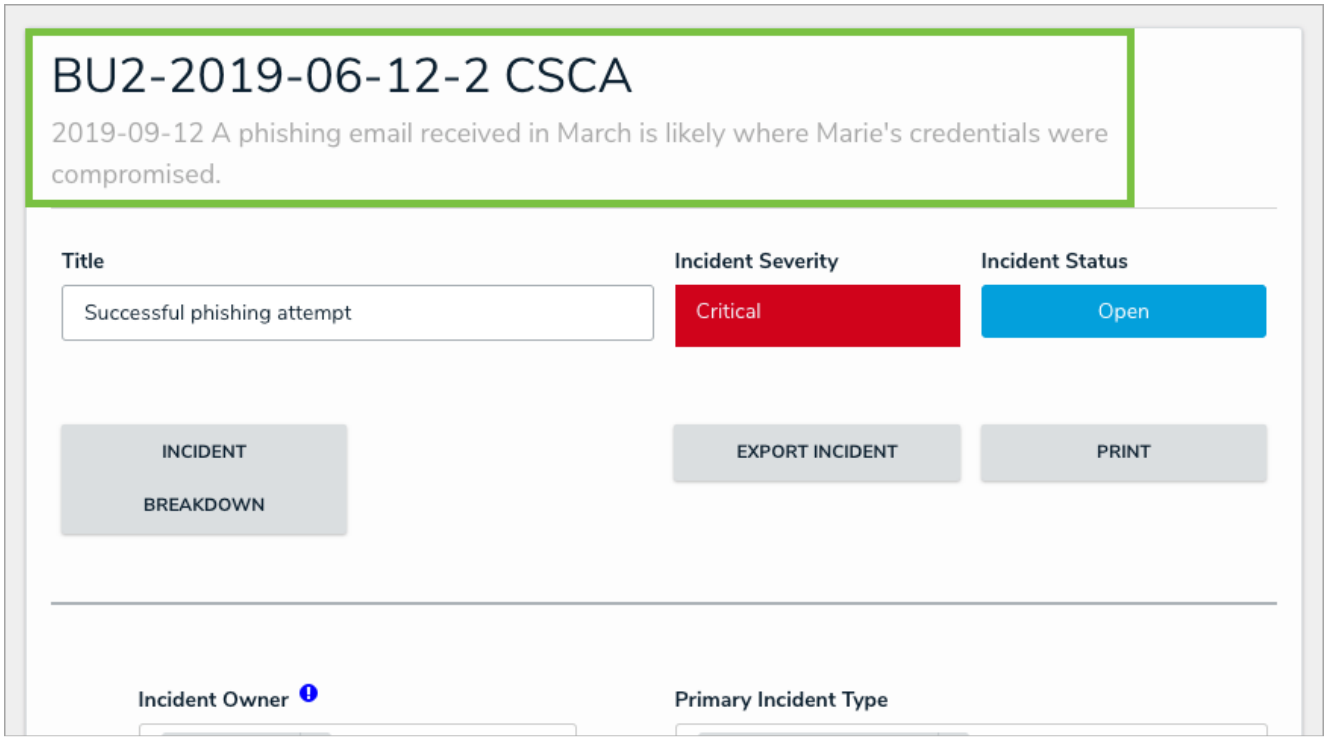
If the data definition includes additional object types related through relationships or references, you can create variables from those object types to include in the expression, which will display specific field or property data from the relationship or reference elements on the form. For example, creating a variable for the Name property on the Person object type, which is related to the Incident object type through a relationship, means that when a person is selected as witness on an incident, that person's name will be automatically populated in the incident's Name property.

EXAMPLE

When reporting incidents, your company requires that each object's name is automatically generated based on the object's unique ID, the date it was created, and the incident code. Additionally, the description of each object must display where the incident occurred, what type of incident it was, and who created the object. As such, you create variables for the Incident object type's Unique ID property, the Incident Type Code select list, and the Created On property, then add them to the expression for the Name Concatenation option on the Edit Object Type page. For the Description Concatenation, an expression is created using the Location and Incident Type select lists and the Created By property. Now, when an end user creates a new incident, the object's name and description is populated based on the variables and expressions saved to the concatenation settings.



Expressions saved on an object type's settings.



A concatenation on an object.

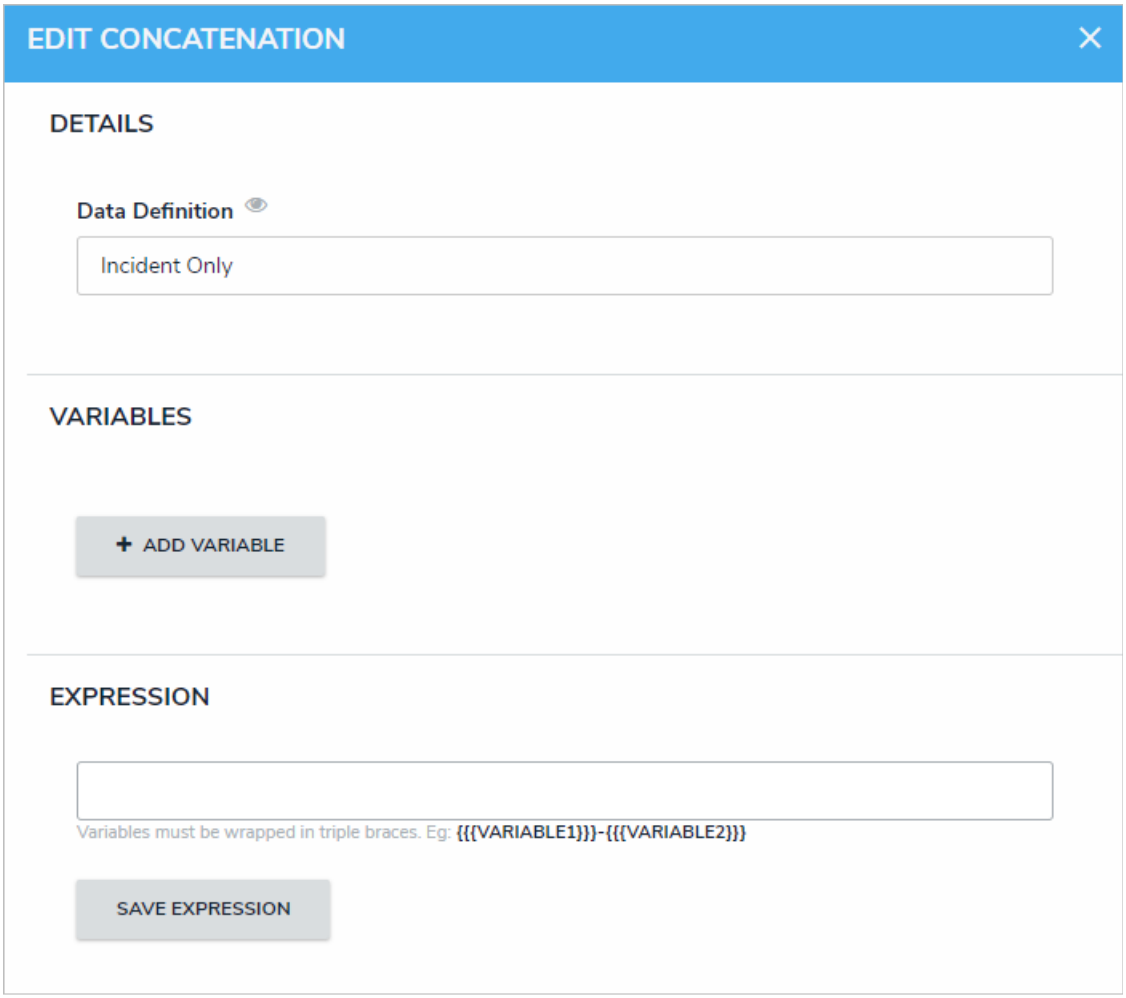
Important Notes

- Prior to creating expressions, you must ensure the required fields and **Location** property, if applicable, have been added to the object type and have been added to the relevant configurable form. The **Unique ID**, **Created By**, and **Created On** properties do not need to be added to the form as they are auto-generated and cannot be modified.
- As concatenation expressions override any values entered into an object's **Name** or **Description** properties upon saving, it's recommended these properties are **not** added to a configurable form.
- Spaces and special characters in variable names or inside the curly braces are not permitted. For example, **{{{RiskName}}}** is valid, but **{ {{Risk Name}}}** will result in an error.
- Concatenations **cannot** be applied to existing objects.
- Custom form titles or sub-titles take precedence over any concatenation expressions.
- When adding data from the **Location** property, a separate variable must be created for each address component you wish to include in the concatenation (i.e., City, State, Country, etc.).
- When the **Country** location component is added as a variable, its values are displayed using the ISO 3-character code (e.g., CAN for Canada or USA for United States).
- When the **State** location component is used as a variable, it's displayed using the ISO 2-character code. If the state or province belongs to a region that does not use 2-character codes (e.g., Australia), a 3-character code is used instead.

Add Name or Description Concatenations to an Object Type

To add name or description concatenations to an object type:

1. Ensure required the fields and Location properties (if applicable) have been added to the object type and appropriate configurable form. If the concatenation will be pulling data from other object type(s), ensure the appropriate relationships and references have been added to those object types, along with the relevant fields. See the Concatenation Overview article for more information.
2. Ensure the data definition you wish to use to filter the data has been created from the Data Definitions settings in **Administration**.
3. Click the icon in the top bar **>** **Object Types** in the **Data Model** section.
4. Click the object type or enter the name of the object type in the **Search** field, then click it to display the **Edit Object Type** page.
5. Click either **Configure Name Concatenation** or **Configure Description Concatenation** to open the **Edit Concatenation** palette.
6. Select a data definition from the **Data Definition** dropdown menu. This will determine which object types' properties and fields are available to add as variables.



A new concatenation.

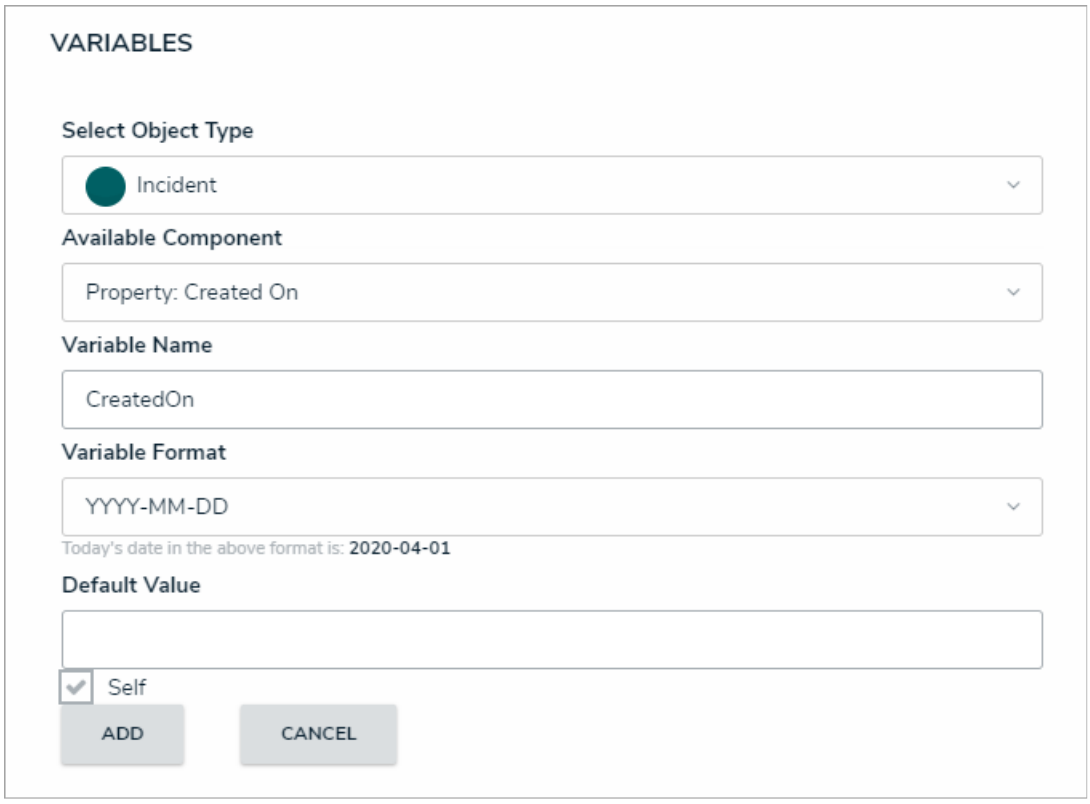
> If you want to select another data definition, you must delete the concatenation by clicking the **X** icon beside the concatenation on the **Edit Object Type** page, then recreate it.

7. Click **Add Variable**.

8. Select an object type in the data definition from the **Select Object Type** dropdown menu.
9. Select a property or field you want to auto-populate in an object's name or description from the **Available Component** dropdown menu.
    - If you selected the **Created On** property or date field, select a date format (e.g. YYYY-MM-DD) from the **Variable Format** dropdown menu.
    - If you selected the **Location** property, choose an address component from the **Select Address Component** dropdown menu (i.e., House Number, Street, City, State, ZIP Code, or Country). Note that a separate variable must be created for each address component.
10. Enter a name for the variable in the **Variable Name** field.

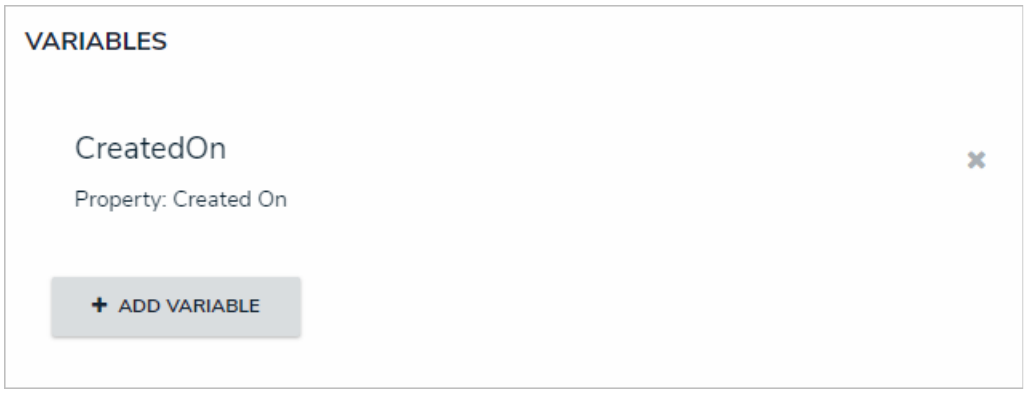
> Spaces and special characters in variable names are not permitted. For example, naming a variable **RiskName** in the **Variable Name** field is valid, but entering **Risk Name** in this field will result in an error.

11. **Optional:** To display a default word or phrase in the concatenation when the variable has no data, enter that word or phrase in the **Default Value** field (e.g., "Null" or "None provided").
12. If the variable has been created from a component on the same object type where the concatenation is saved (e.g., the Incident Name property is being saved to an expression on the Incident object type) select the **Self** checkbox.



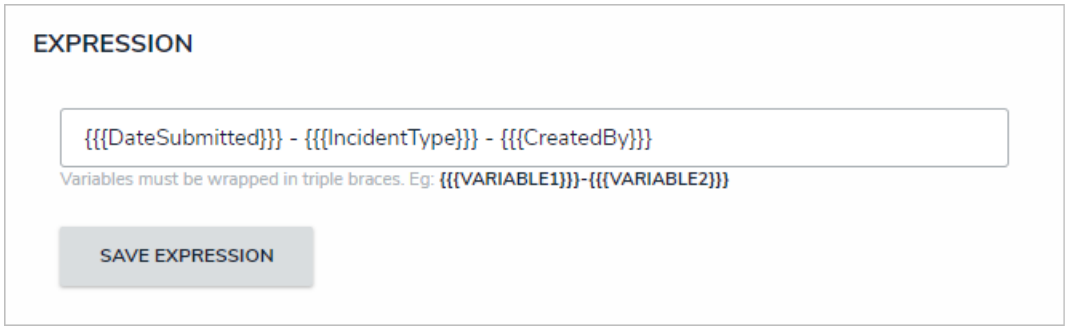
The Variables section of the Edit Concatenation palette.

13. Click **Add** to save the variable.



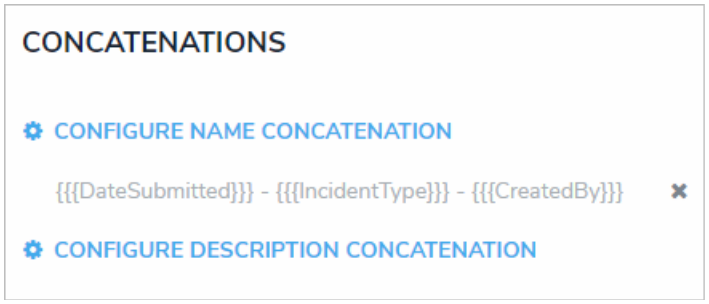
A new variable.

14. Repeat steps 7-13 above to continue adding variables as needed.
15. Type the variable names in the **Expression** field. Variables can be entered in any order, but they must be enclosed in triple curly braces (e.g. {{{CreatedBy}}}) **with no spaces or special characters within the braces**. If needed, you can include spaces and other alphanumeric characters between the variables.



An expression with variables. All variables must be enclosed in triple curly braces.

16. Click **Save Expression**.



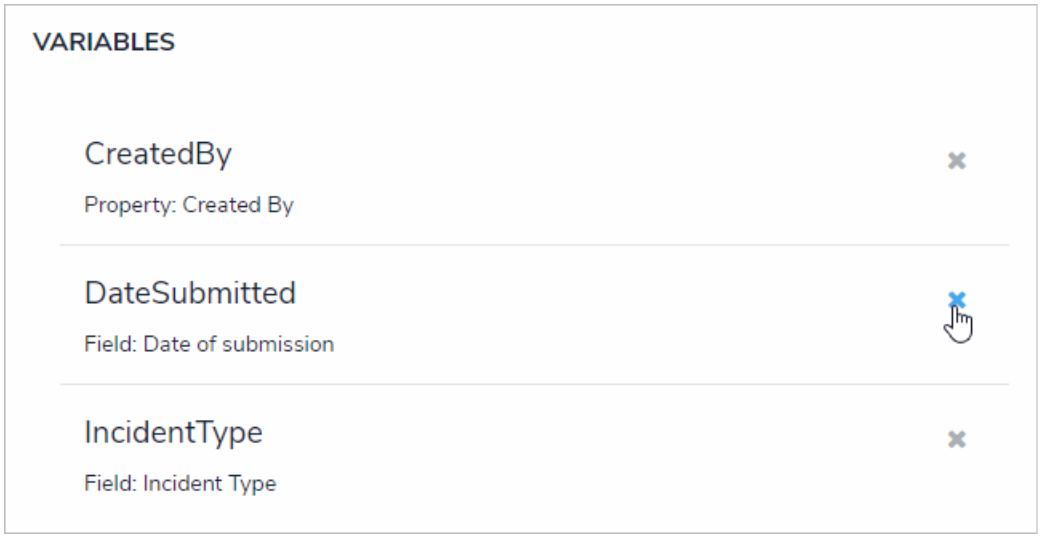
The new expression saved to the object type and displayed on the Edit Object Type page.

17. To edit a variable, it must be deleted by clicking the ✖ icon from the **Edit Concatenation** palette, then recreated.
18. To delete the concatenation, click the ✖ icon from the **Edit Object Type** page.

Edit or Delete a Concatenation

Data definitions and variables on concatenations cannot be edited; however, you can delete the concatenation to select a new definition and create new variables. To do so, open the **Edit Object Type** page, then click the ✖ beside the concatenation.

Note that deleting the concatenation will delete all associated variables. To delete a single variable, click **Configure Name/Description Concatenation** on the **Edit Object Type** page, then click the ✖ icon beside the variable in the palette.



Deleting a variable in the Edit Concatenation palette on the Edit Object Type page.

Edit or Delete an Object Type

To edit or delete an object type:

1. Click the icon in the top bar > **Object Types** in the **Data Model** section.
2. Click the object type or enter the name of the object type in the **Search** field, then click it to display the **Edit Object Type** page.
3. To edit the object type's name, description, or monogram, click the next the object type's name at the top of the page.
4. Click the tabs to edit or delete the components added to the object type.
5. To delete the object type, click the icon.

>
> If any data has been saved to or associated with the object type, it's strongly recommended that you **do not** delete it. Additionally, you will not be able to delete an object type until all its objects have been deleted.

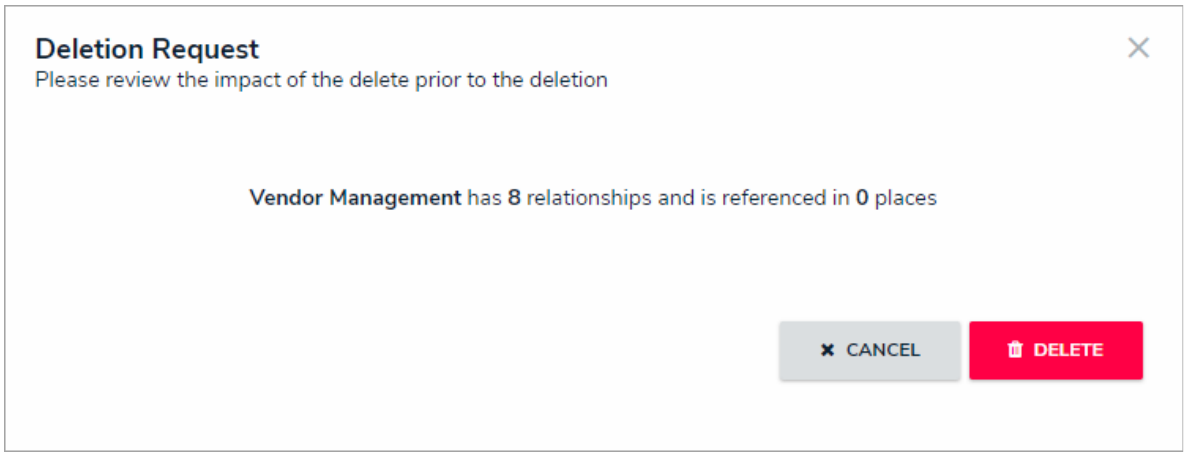
6. Click **Done** when finished.

Delete an Object

Depending on the role permissions, both administrators and end users can delete objects, however, before the object can be deleted, you will need to review the **Deletion Request** warning, which outlines how deleting the object will impact other objects that are connected through relationships or references.

To delete an object, open the object record, click the icon, review the **Deletion Request**, then click DELETE to confirm.

> Deleting an object with relationships or references will delete that object's connection to the other objects, but it will **not** delete the other objects it was related to.

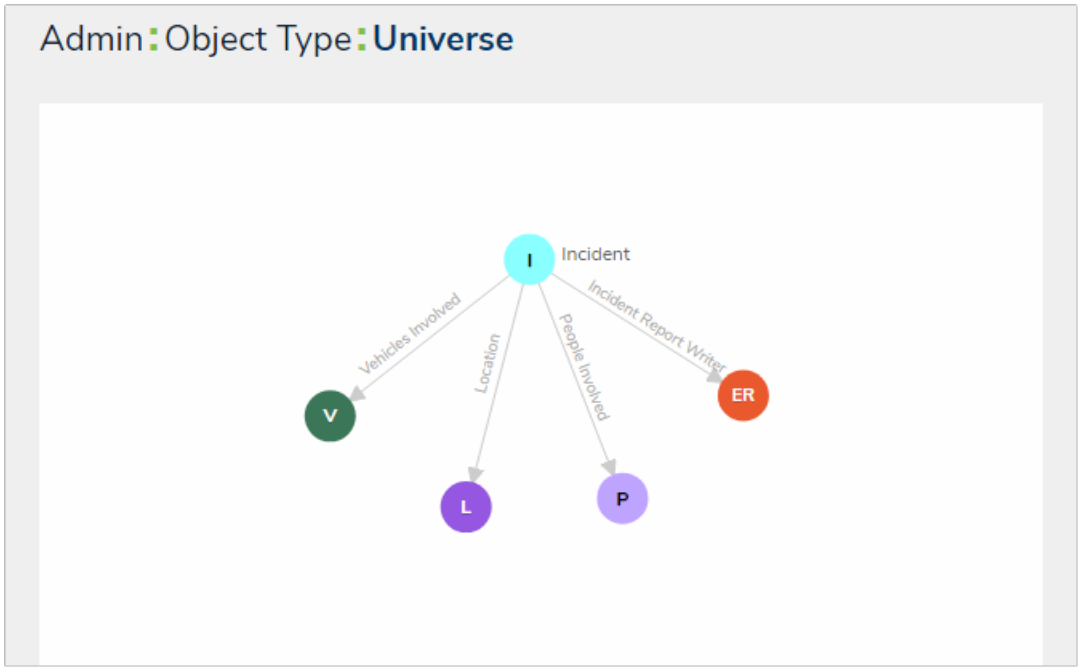


The Deletion Request warning that outlines how deleting the object will affect other objects that are connected through relationships or references

Object Type Universe

The **Object Type Universe** graph helps you visualize how all the object types in your org are associated with one another through relationships.

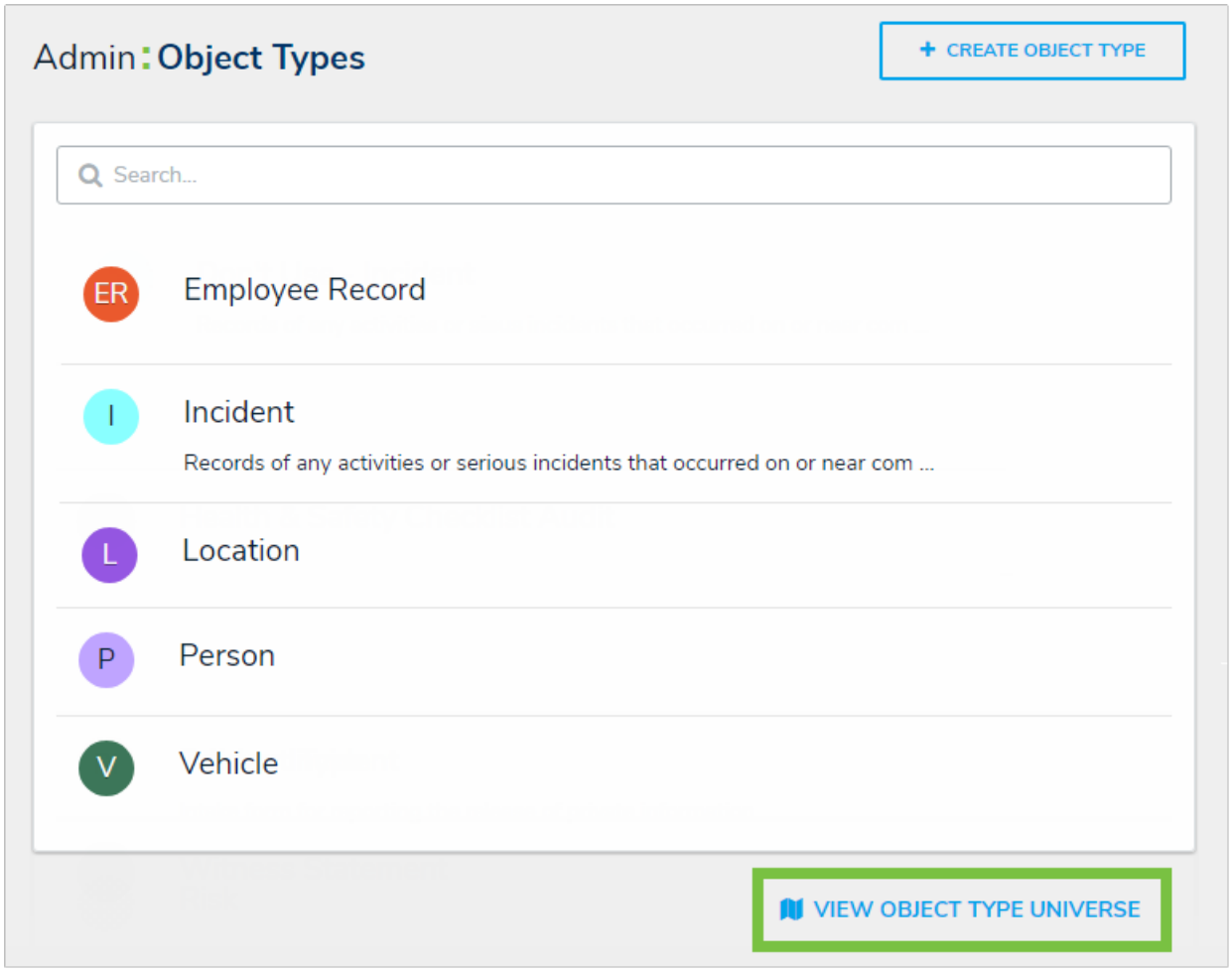
You can reveal the name of an object type by hovering your cursor over the monogram. The gray arrows indicate which object type the relationship is saved to. For example, in the screenshot below, the Incident object type is associated with the Vehicle object type through a “Vehicles Involved” relationship.



The Object Type Universe graph.

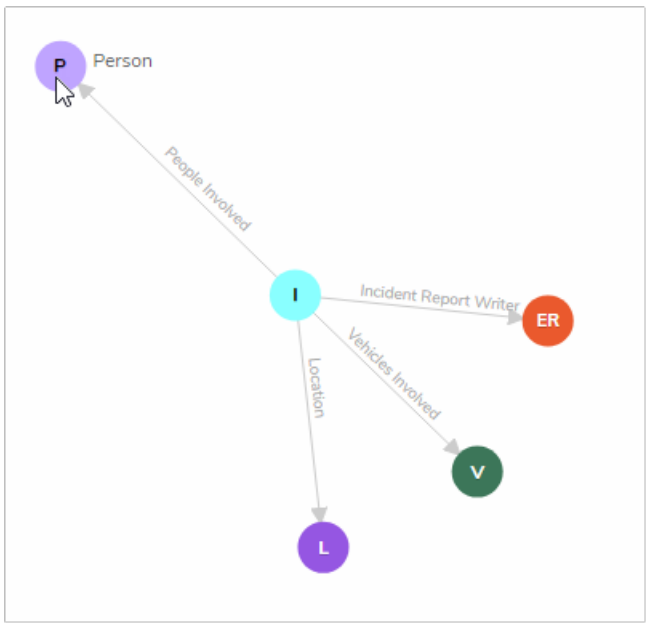
To view the Object Type Universe graph:

1. Click the icon in the top bar > **Object Types** in the **Data Model** section.
2. At the bottom of the **Object Types** page, click **View Object Type Universe** to display the graph.



The Object Types page, displaying the View Object Type Universe link at the bottom of the page.

3. To rearrange the location of a single object type or a cluster of object types, click and drag it to a new location on the graph.



Clicking and dragging a cluster of object types to a new location on the graph.

4. Click an object type on the graph to view its **Edit Object Type** page.
5. Click the back button on your browser when finished to return to the **Object Types** page.

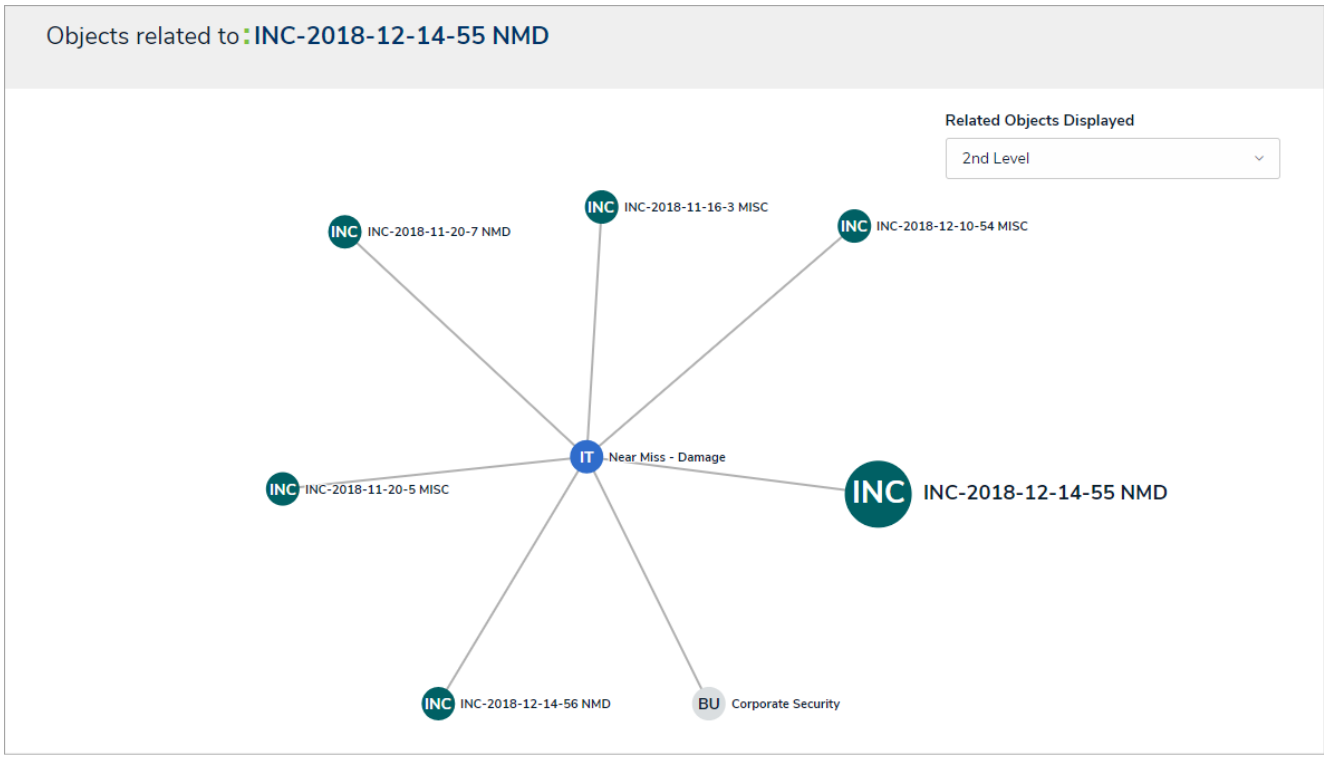
Relationship Graphs

An object's relationship graph shows how that object is connected to other objects in your organization through relationships, references, and assessments. To access the relationship graph, click the **View Relationship Graph** link at the bottom of any object.

The object the graph is opened from is the root object. To filter which related objects are displayed, select an option from the **Related Object Displayed** dropdown menu. Options include:

- **All:** Displays up to three levels of related objects. This is the default option.
- **1st Level:** Displays only directly related objects.
- **2nd Level:** Displays directly related objects and their related objects.
- **3rd Level:** Displays directly related objects and up to two levels of additional related objects.

Note that some options may not be available in this dropdown menu if additional relationship levels do not exist.



A relationship graph showing two levels of related objects.

Clicking an object will open it in a palette to the right of the page. Your role's workflow permissions control which objects appear in the graph and the form that's displayed when an object is clicked and opened. If you're an administrator, you can view a similar graph that shows relationships between object types in your organization. See Object Type Universe for more information.

Library Objects & Library Object Types

Throughout Core, you may see references to **library objects** or **library object types**. Generally speaking, these references are used to differentiate standard object types and their data from assessment types. Note, however, that this definition may vary depending on your specific implementation or app.

Inferred Permissions Overview

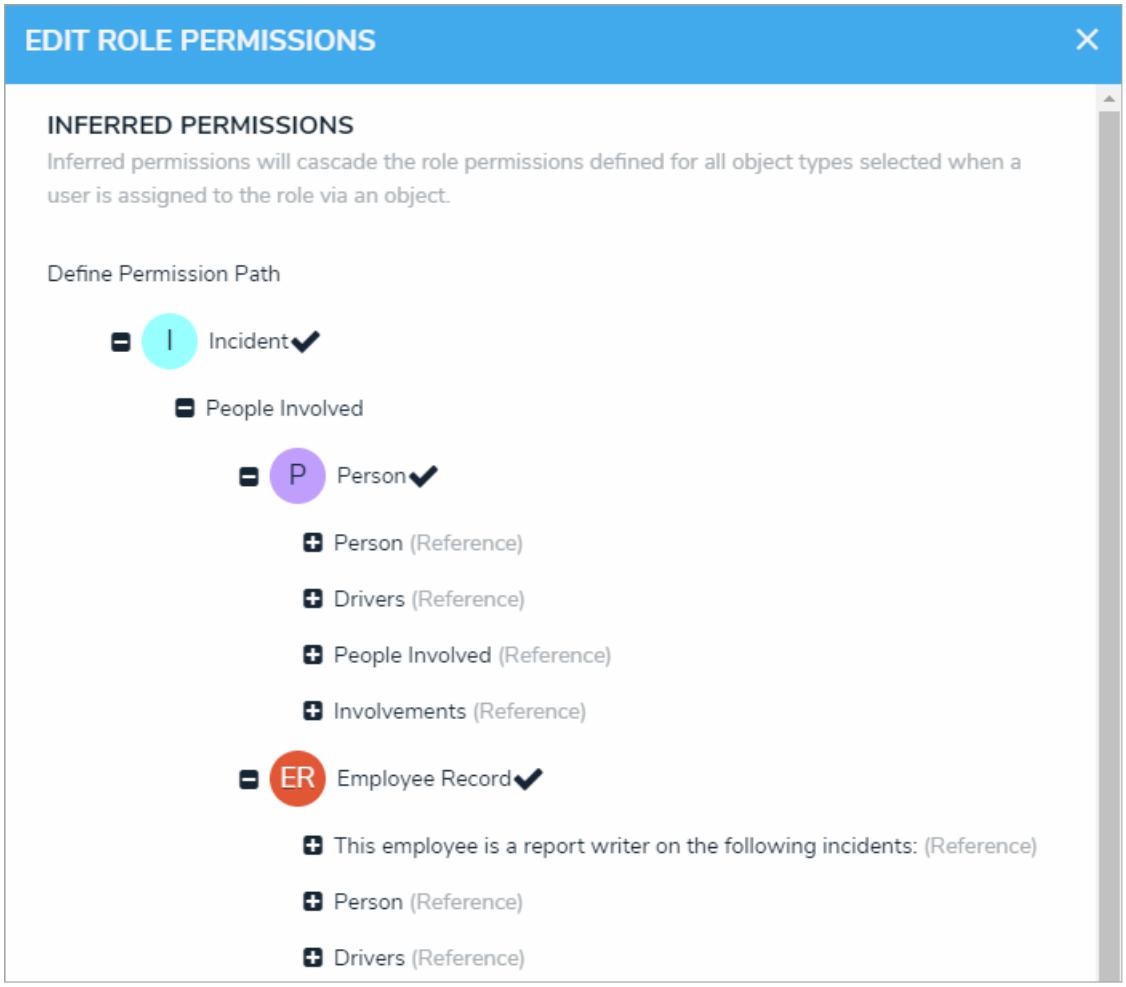
Inferred permissions allow you to give users with explicit permissions access to additional object types through relationships and references without directly granting permission through the role field on a configurable form. This ensures users within a particular role with explicit permissions are indirectly given the appropriate access to the information they need when interacting with related objects.

EXAMPLE

Hollie Peel is part of the Incident Editor role with explicit permissions. When working with existing incident objects, she may need to edit information about the people who were involved in an incident through the People Involved relationship, so she needs access to the Incident object type, as well as the Person and Employee Record object types. Therefore, the Incident, Person, and Employee Record object types are added to the Incident Editor role. After the role is configured, it's saved to the Incident object type as a component and is then configured to grant inferred permissions to the Person and Employee Record object types through the People Involved relationship. Once Hollie has been given access to an incident object (by being added to the Incident Editor role field on a form), she can edit the objects in the People Involved relationship without being granted direct access to People and Employee Record objects by another user.

Granting users inferred permissions is done using the following process:

1. Create a role.
2. Add the object types the user will have access to, including those accessed through inferred permissions, to the role.
3. Edit the workflow permissions for the object types. The rights granted here will determine the rights the user will have when accessing the object types through inferred permissions.
4. Add the role to the object type that has the relationships and references saved to it.
5. Edit the role on the object type to add inferred permissions.



Granting inferred permissions. The checkmarks next to the P (People) and ER (Employee Record) monograms confirm that users in that role have access to those object types through the I (Incident) object type.

After the above steps have been completed, a user with **Manage** rights must add a user who belongs to the selected role to an object through the role field on a configurable form. Once added, the user will have access to the object and any selected related objects based on the inferred and workflow permissions.

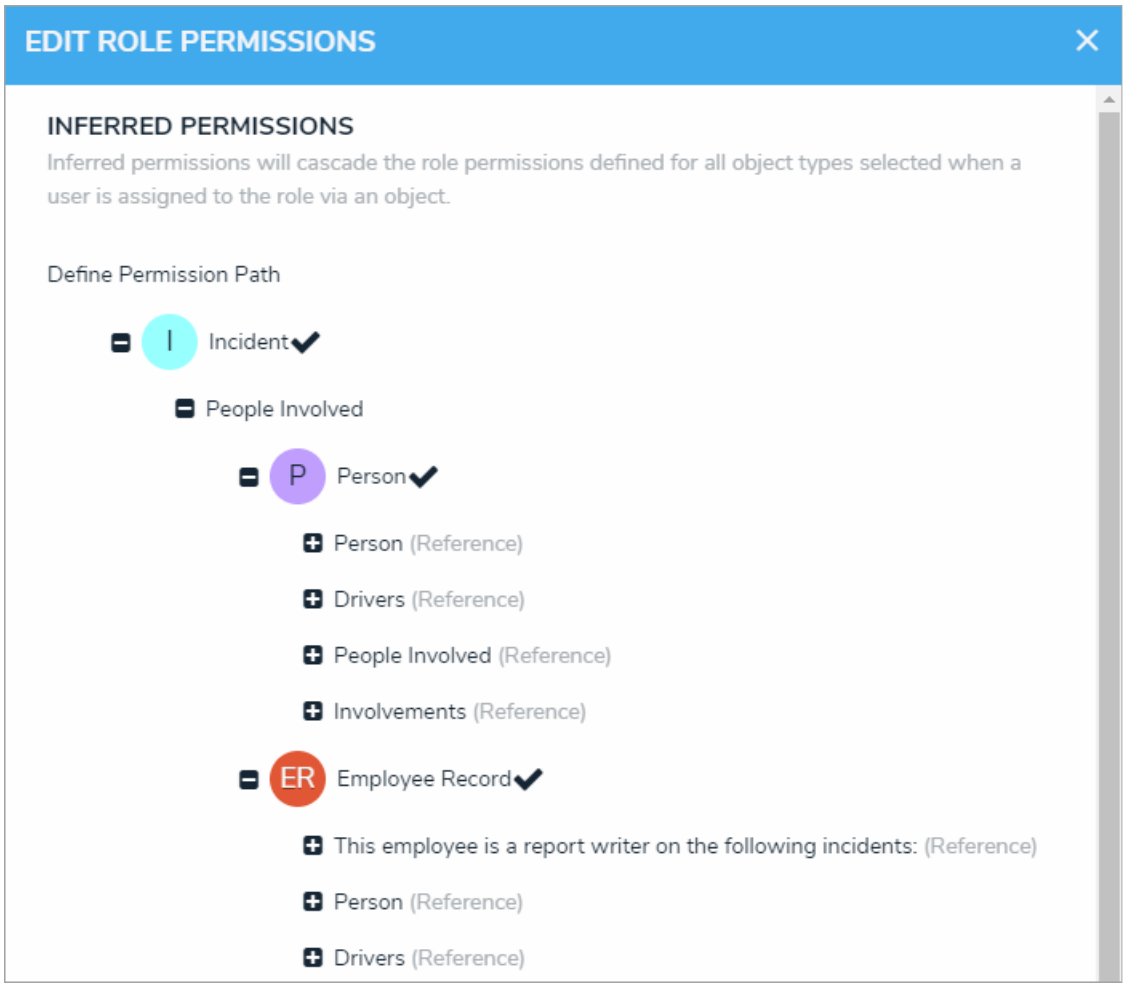
Users who are logged in at the time their role's permissions are configured will need to log out then log back in before the changes are applied.

Inferred permissions don't apply to objects that haven't transitioned out of the **Creation** state as the object has not yet been created and any users added to a role have not yet been saved.

Add Inferred Permissions on an Object Type

To add inferred permissions on an object type:

1. Click the icon in the top bar > **Object Types** in the **Data Model** section.
2. Click the object type or enter the name of the object type in the **Search** field, then click it to display the **Edit Object Type** page.
3. Add a role to the object type.
4. Click the role in the **Roles** tab to open **Edit Role Permissions**.
5. Click the monogram, which represents the object type you're currently working in, to expand the node any reveal relationships and references saved to the object type.
6. Click a relationship or reference to show any object types associated with that relationship or reference (e.g. clicking People Involved will show the People and Employee Record object types).
7. Click an object type to place a checkmark next to it and grant inferred permissions to that object type.



The Permission Path in an object type's inferred permission settings.

8. Click **Done**, then **Continue** to confirm.

Inferred permissions can be edited by opening **Edit Role Permissions** on the object type, then selecting or deselecting the additional object types as needed.

Workflow Overview

Workflows allow administrators to control the movement of data as well as define what data is displayed, where it's displayed, and which users the data is displayed to through applications, activities, search results, data visualizations, and assignments. Workflows are often used for processes, but can also be used to mark or flag certain objects (e.g. moving a Vehicle object into a Stolen state or a Person object into a Deceased state). Each object type must have a workflow.

Workflows are comprised of the following elements and are created in the order outlined below:

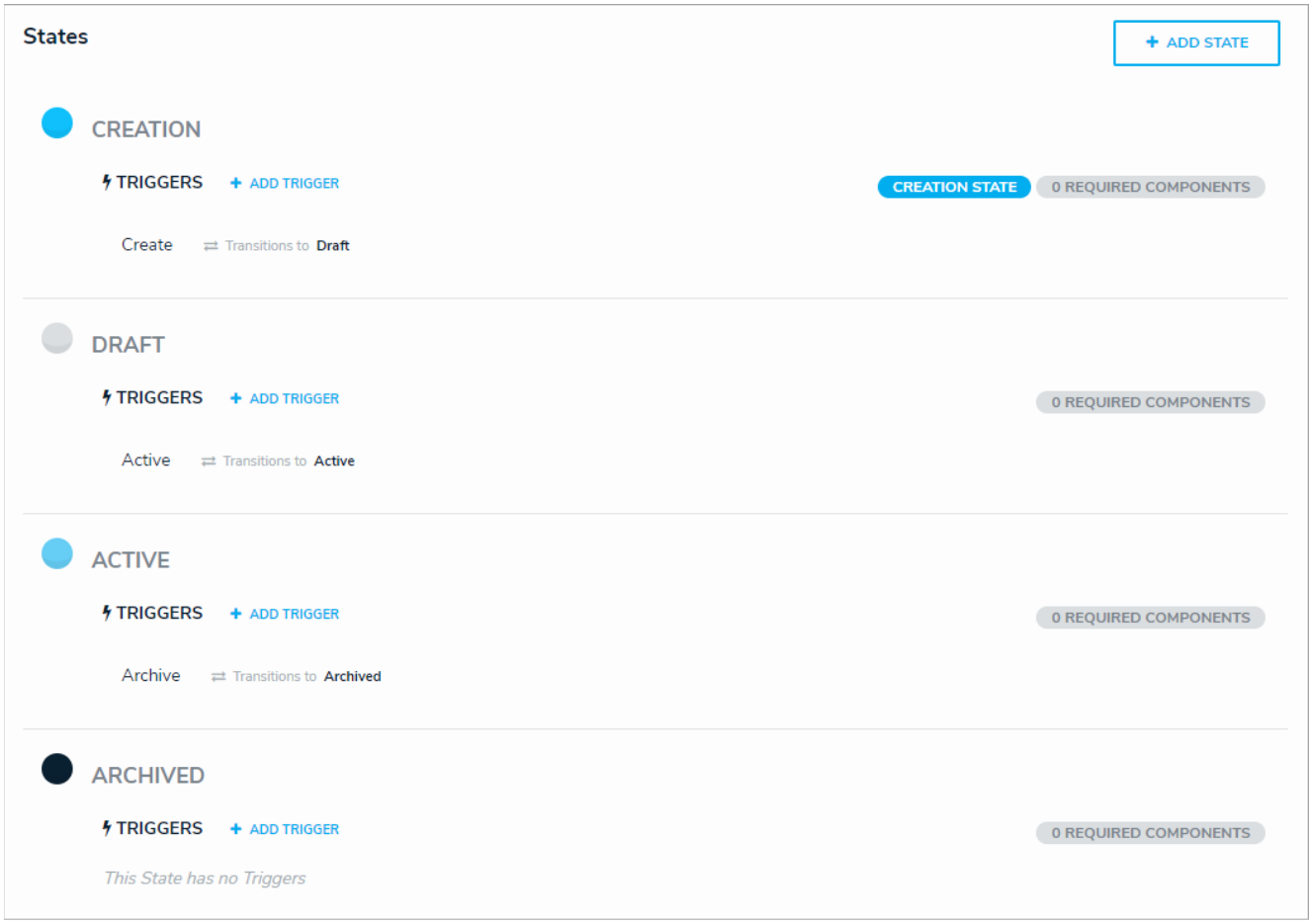
1. **States**: The various stages of the data collection process (e.g. Create, Triage, Review, Investigate, Close). You can create multiple states, but you must have at least two states in order to save an object. The **Creation, Draft**, **Active**, and **Archived** states are auto-created on every object type. When object types are added to roles, you must configure the workflow permissions for each state. Once created, workflow states can be used as variables in formulas and workflow **conditions**.
2. **Triggers:** The act that prompts the movement of an object from one state to another once a trigger is activated, which appears as button on a configurable form (e.g. clicking Create on a new Incident will move the object from the Creation state to Triage). The state an object moves to is determined by the transition saved to the trigger. Triggers may also include orchestration events, which move multiple objects into other states.
3. **Transitions:** Transitions are created on triggers and define the state the object will be moved to and any actions that will be taken (e.g. after a user clicks the Create trigger, the transition determines that the object is moved to the Triage state and an email notification is sent out to the managers who need to review it). You can create multiple transitions for each trigger.
4. **Conditions:** Conditions are added to transitions and determine which workflow state an object is moved to depending on whether certain parameters, based on variables from fields, formulas, or states, have been met (e.g. if an incident is flagged as "Injury Occurred" you can specify that the object is sent to the HR state, while other incidents that aren't flagged are moved through a standard triage workflow). You can also apply conditions to actions.
5. **Actions:** Actions are added to transitions to allow administrators to add an automated process to an object as it moves through its workflow states. Actions include sending an email or assigning users within a selected role, clearing fields, roles, or relationships from an object, adding values to select list or date and time fields, orchestration events, which move multiple objects into other states, creating an object upon transition, or duplicating data across objects.

All new object types are saved with four auto-created states: Creation (the object's entry state), **Draft, Active,** and **Archived**. You can't delete the **Creation** state, but you can rename it and change or add additional triggers and transitions. You can edit or delete the other auto-created states, however, you **must** create another state for **Creation** to transition to.

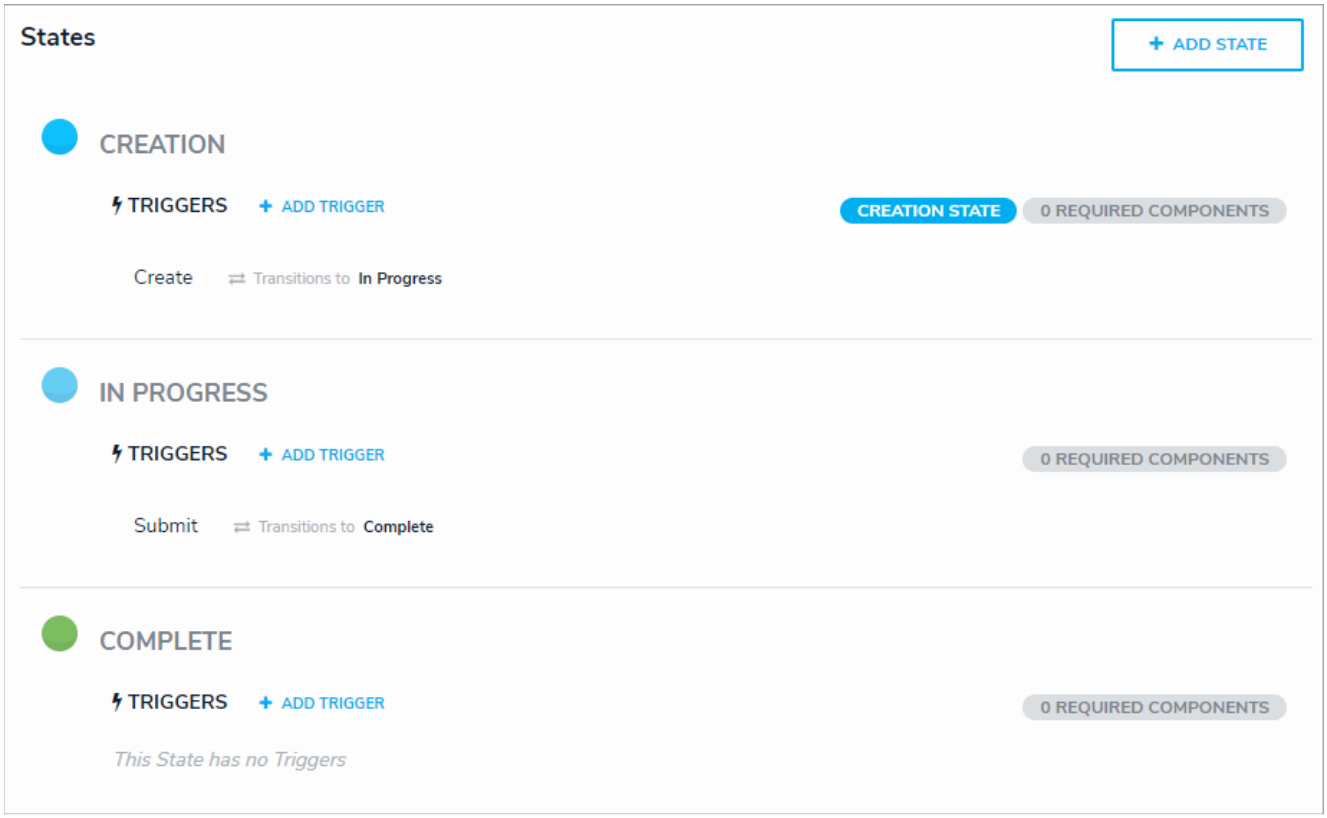
Administrators can also create multiple workflows for object types that have been added to an assessment as dimensions. See Configure Assessment Workflows for more information.

EXAMPLE

You need to create a number of states, triggers, and transitions to ensure the Incident object type goes through the proper data collection and review process. To start, you create two states: Submit for Review and In Review. On the Submit for Review state, you create the Submit for Review trigger (which is the button the user can click on the configurable form to move the object to the next state) and on that trigger, you create the Submit for Review transition with an In Review destination state. This means that when a user clicks on Submit for Review, the Incident object is automatically moved to the In Review state.



The default workflow.



A custom workflow.

Edit the Workflow Name or Description

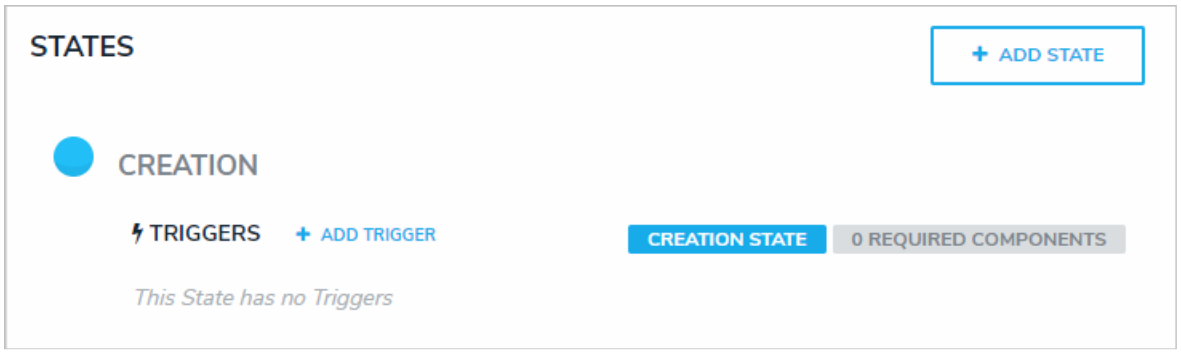
To edit the workflow name or description:

1. Click the icon in the top bar > **Object Types** in the **Data Model** section.
2. Click the object type or enter the name of the object type in the **Search** field, then click it to display the **Edit Object Type** page.
3. Click the icon next the workflow name near the top of the page.
4. Make your changes to the **Name** or **Description** fields as needed.
5. Click **Done** when finished.

Edit the Creation State

Creation is the first state in every object type's workflow and is automatically created. It cannot be deleted, nor can its name or color be edited, however, any added triggers, transitions, or actions can be edited or deleted. This state is automatically created with a trigger and transition that moves objects to the **Draft** state. This trigger and transition can be deleted, however, you must ensure a replacement trigger and/or transition is configured on**Creation**, otherwise new objects will not be created and saved.

The **Creation** state can be configured by following the instructions in the Edit or Delete a State (to add required components that must be completed before the object is completed), Add a Trigger & Transition to a State, and Edit or Delete a Trigger or Transition sections.

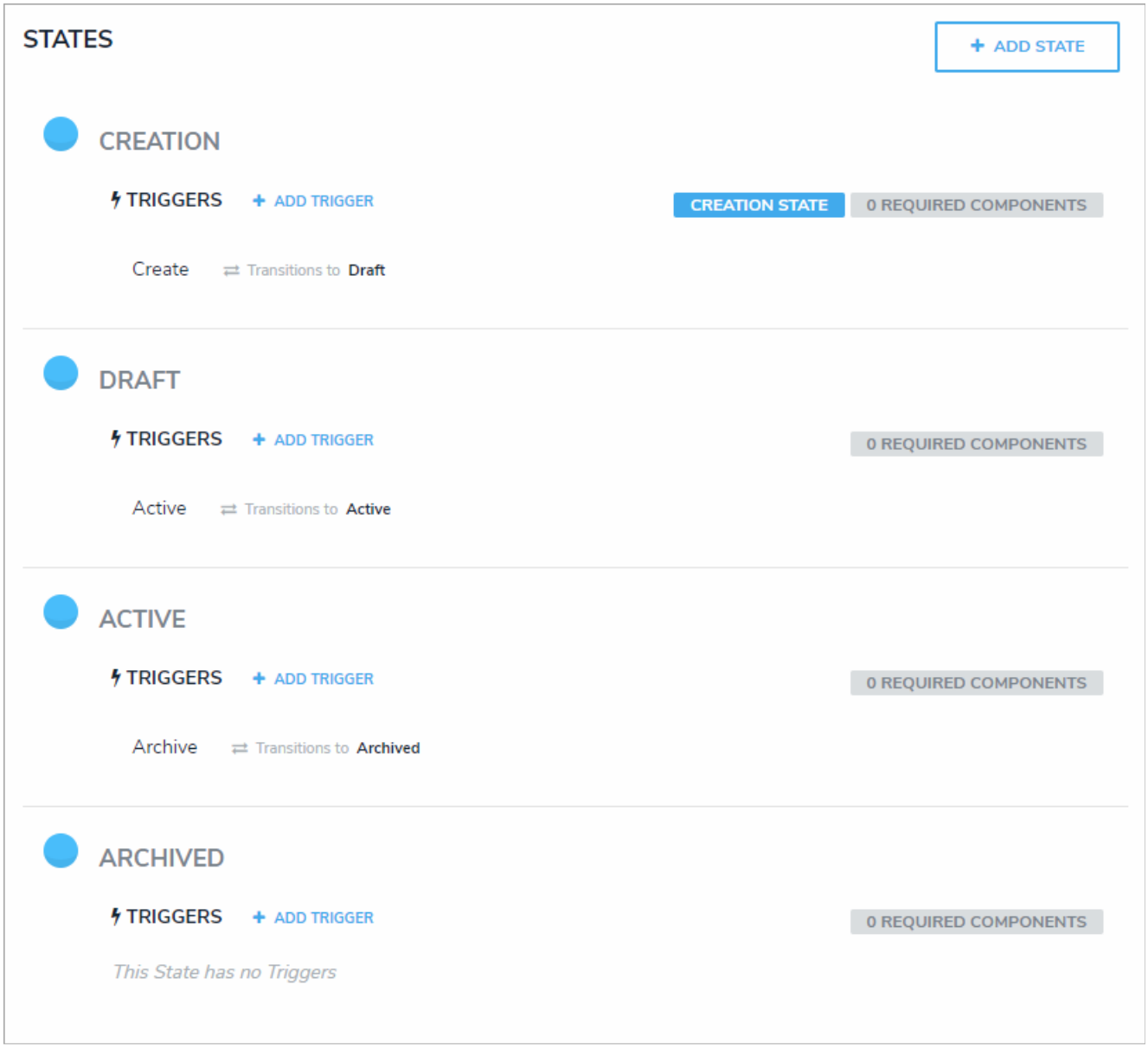


The Creation state, which appears on every object type. You can edit some of the settings of this state, but you cannot delete it.

Edit or Delete the Draft, Active, or Archived States

Like the Creation state, the **Draft**, **Active**, and **Archived** states are auto-created once an object type has been created, but you can edit or delete these states as needed. However, because the **Creation** state automatically transitions to **Draft**, you must ensure that the **Create** trigger has been set to transition to an alternate state if you choose to delete **Draft**. Failure to do so will prevent an object from being saved in the system.

You can edit or delete these states by following the instructions in the Edit or Delete a State, Add a Trigger & Transition to a State, and Edit or Delete a Trigger, Transition, or Action sections.



The default workflow that's auto-created with an object type.

Create a New State

States represent the various stages of the data collection and review process (e.g. Create, Triage, Review, Investigate, Close, etc.). States allow you to narrow down your search results, control where an object is created or viewed in an application, which fields must be completed during certain stages, and which state the object will transition to by adding triggers to the state. When a new object type is created, a default workflow state is created with it (which includes the **Creation**, **Draft**, **Active**, and **Archived** states). These states can be deleted or supplemented with additional states as needed (except for the Creation state, which cannot be deleted and allows for only limited configuration).

Once created, the new state will appear in the workflow, which you can then select when creating new transitions on other states. You can also select states to create **Relationship** or **Reference** variables in formulas or workflow conditions, which can provide a count of the objects currently in the specified state or check if some or all of the objects are in that state and return a true or false result. You can select states from the object type's workflow or any assessment workflows related to the object type.

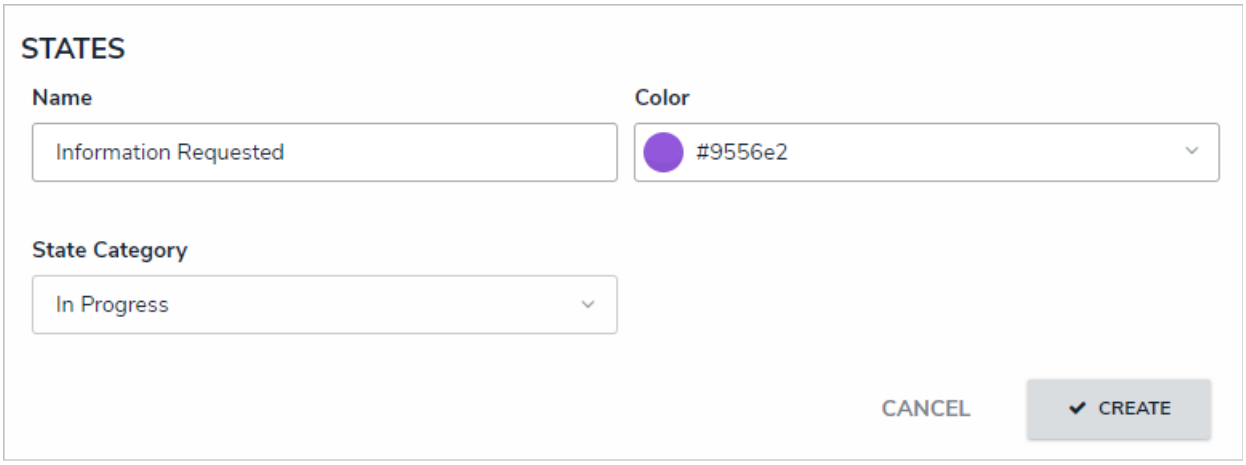
To mark certain fields, properties, or roles as required when the object is in a particular state, or to change the state's name or color, see Edit or Delete a State. To add triggers, transitions, or actions to your new state, see Add a Trigger & Transition to a State.

To create a new state:

1. Click the icon in the top bar **> Object Types** in the **Data Model** section.
2. Click the object type or enter the name of the object type in the **Search** field, then click it to display the **Edit Object Type** page.
3. Click **Configure Workflow** on the **Edit Object Type** page. If there are multiple workflows saved to the object type, click one in the list.
4. Click **Add State**.
5. Enter the state name in the **Name** field.
6. Click the **Color** dropdown menu to reveal the color picker and select a new color for the label. You can also type a hex color into this field to select a color.
7. Select a state category from the **State Category** dropdown menu to classify the new state.

> Though the **State Category** field is required, full functionality of this feature will be available in an upcoming release.

8. Click **Create.**



Creating a new state.

A new state. New states don't have any triggers or transitions saved to them, but new states can be selected on transitions on other states.

After clicking **Create**, your new state will appear in the workflow, below existing states. You can select this state when creating new transitions on other states. To add triggers, transitions, or actions to your new state, see Add a Trigger & Transition to a State.

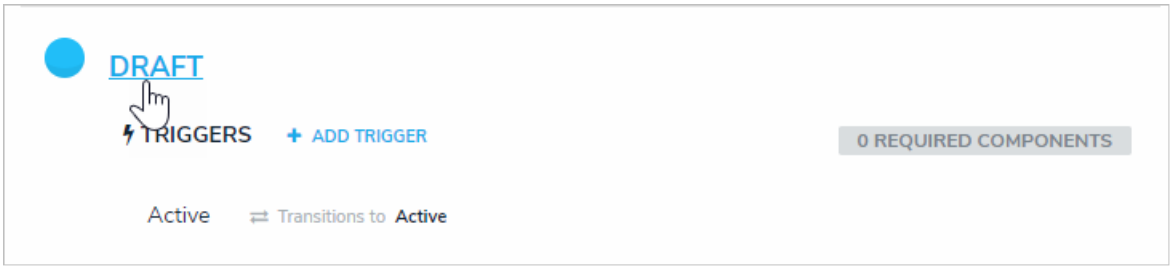
Edit or Delete a State

After you've created a state, you can edit it to change its name, color, or state category, as well as select the properties, components, or roles saved to the object type that must be completed before the object can transition to the next state.

Once created, the new state will appear in the workflow, which you can then select when creating new transitions on other states. You can also select states to create **Relationship** or **Reference** variables in formulas or workflow conditions, which can provide a count of the objects currently in the specified state or check if some or all of the objects are in that state and return a true or false result.

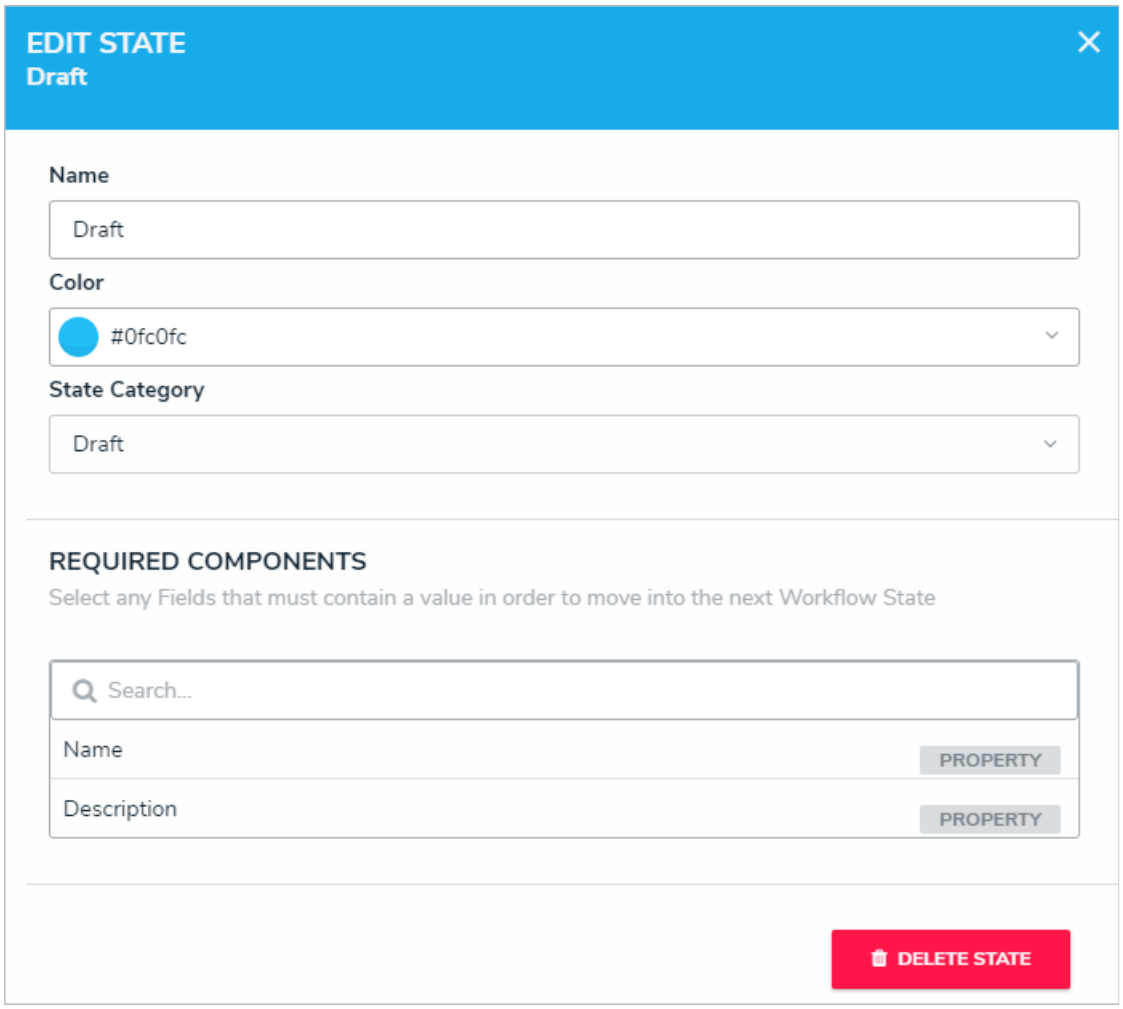
To edit or delete a state:

1. Click the icon in the top bar > **Object Types** in the **Data Model** section.
2. Click the object type or enter the name of the object type in the **Search** field, then click it to display the **Edit Object Type** page.
3. Click **Configure Workflow**. If there are multiple workflows saved to the object type, click one in the list.
4. Click the state you wish to edit to open the **Edit State** palette.



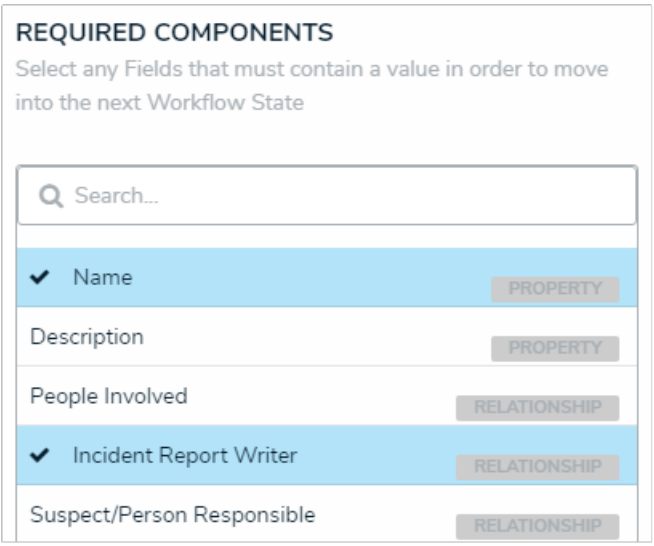
Clicking a state to open the Edit State palette.

5. If needed, enter an alternate name for the state in the **Name** field.



The Edit State palette.

6. Click the **Color** dropdown menu to reveal the color picker and select a new color for the label. You can also type a hex color into this field to select a color.
7. Use the **State Category** dropdown menu to select an alternate category.
8. If certain components must be completed or if a user from a particular role must be granted access to the object before it can move to the next state, select those components, properties, and/or roles in the **Required Components** section.



Selected fields and relationships in the Required Components section.

If you add required fields to a state, you must ensure these fields have been added to any applicable configurable forms, otherwise users will not be able to view and complete the required fields to transition the object to the next state.

The Geolocation property cannot be added as a required component on a workflow state.

9. To delete the state, click **Delete State**, then click **Yes** to confirm.
10. Click the icon when finished to close the **Edit State** window.

Add a Trigger & Transition to a State

A **trigger** is what causes an object to move from one state to another. There are three types of triggers:

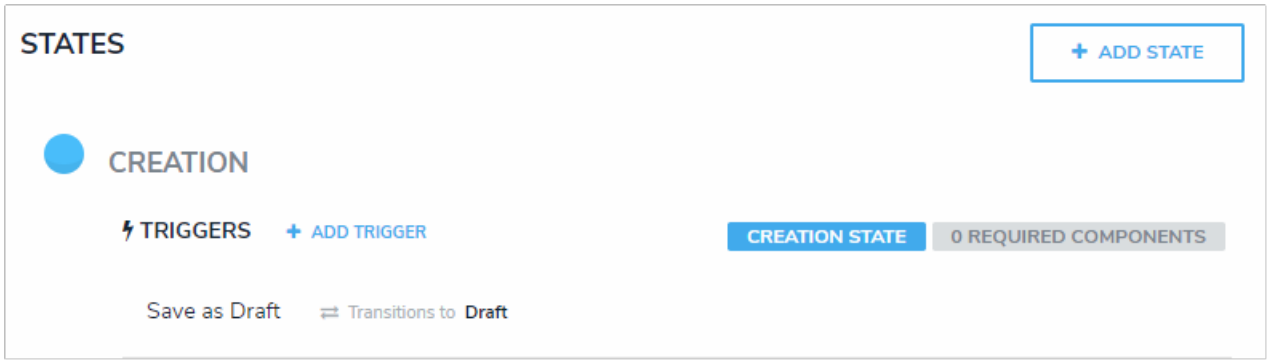
- **Button:** These triggers are added to configurable forms as buttons that a user clicks to move the object from its current state to another state (e.g. clicking the Submit for Review trigger on a form will move the object to the In Review state).
- **Timed:** Moves an object to a specified state and can perform actions on a nightly basis. For example, you can create a trigger that notifies users that a deadline is overdue or remind users to launch an assessment on a particular day. This trigger type cannot be added to the creation state. See the Timed Triggers & Nightly Emails Schedule article for more information on when these triggers are executed.

  If a single state contains multiple timed triggers with conditions, you must create separate transitions for each timed trigger.

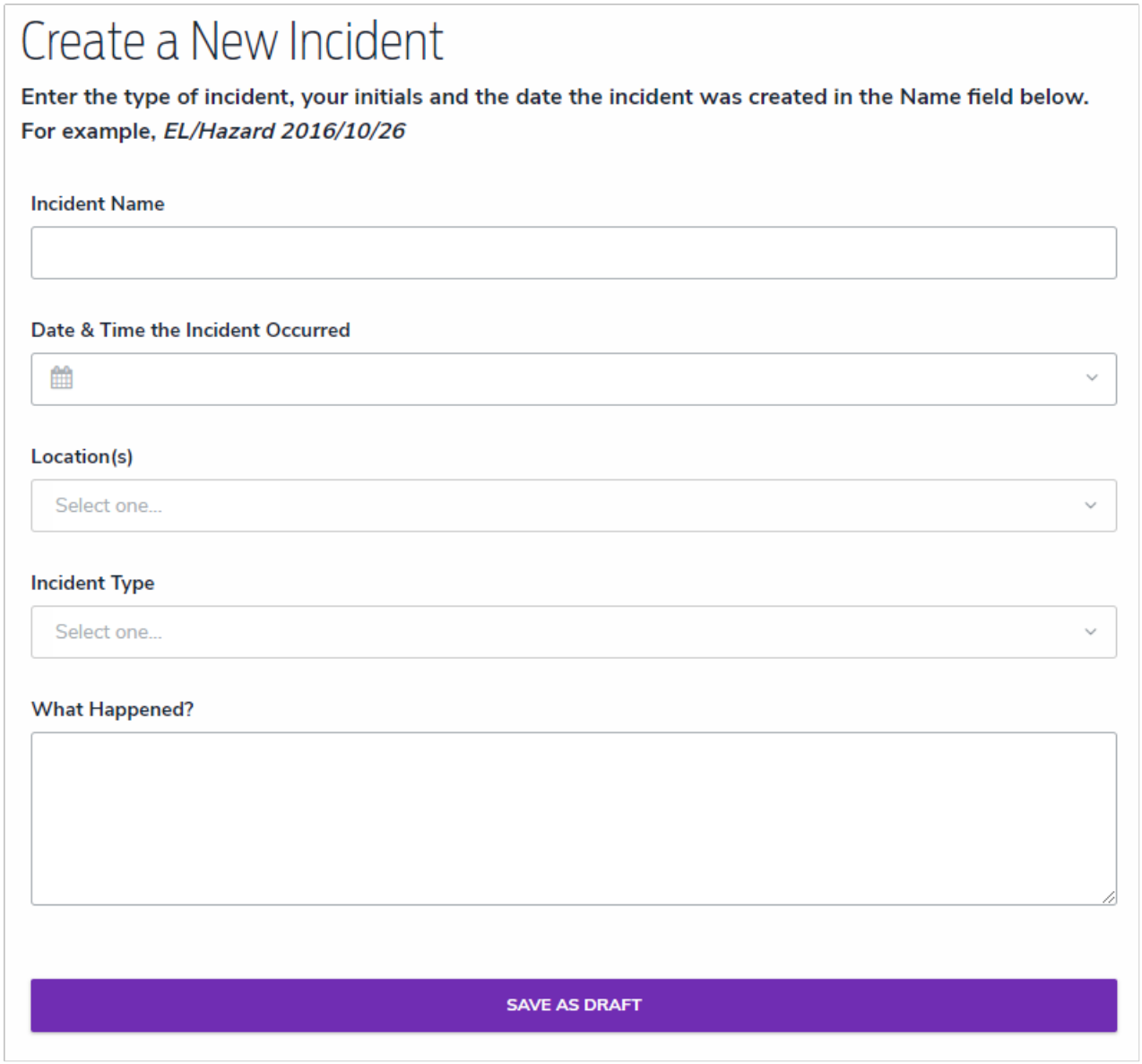
- **Consume Orchestration Event:** This trigger uses an existing Send Orchestration Event action on another state or object type to automatically transition an object to another predefined state (e.g. Closing an audit object will also automatically close all issue objects in an Open state). Note that this trigger type cannot be added to the Creation state.

The state an object is moved to is specified by creating a **transition** on the trigger. On that transition, you can create **actions** that perform certain functions once the object has moved to the next state or **conditions** that define certain requirements that must be met before an object is moved to the next state and/or an action is performed. See the Actions on Transitions category and the Add a Condition to a Transition article for more information. Multiple triggers and transitions can be saved to a single state.

All triggers must have transitions saved to them in order to successfully move the object from state to state.



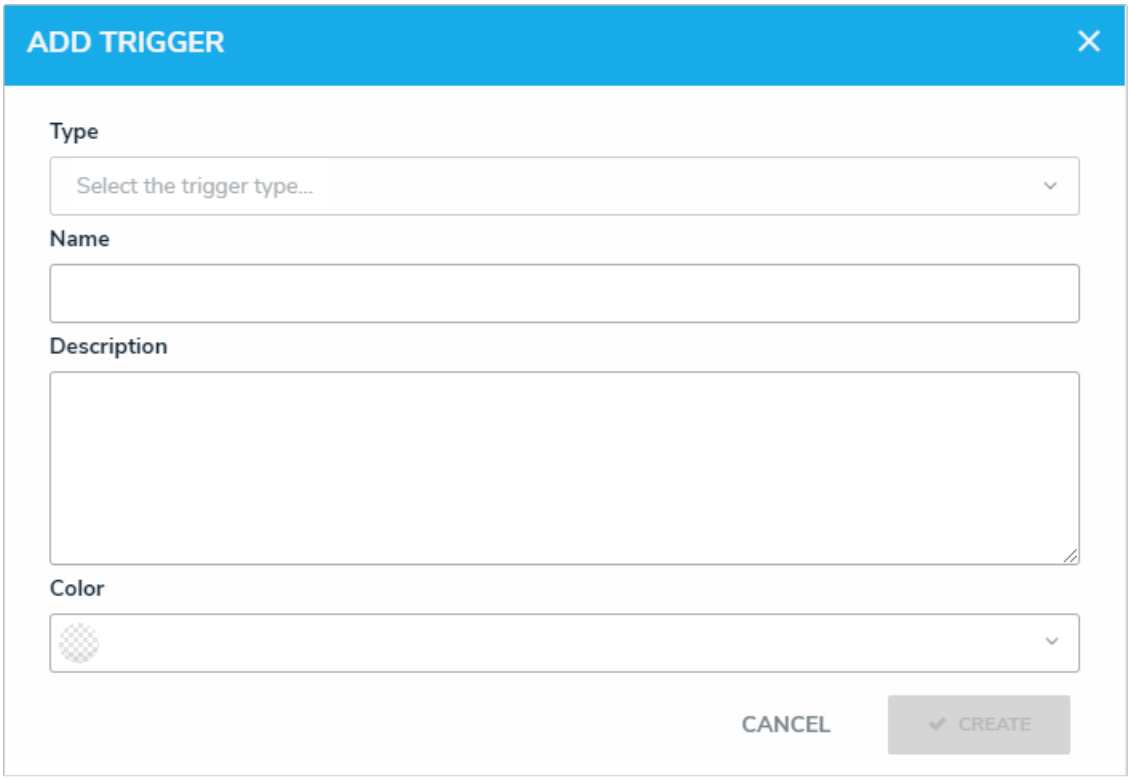
The Creation state with a trigger configured to transition to the object to the Draft state.



A configurable form for the Incident object type. The Save as Draft button is a trigger that, once clicked, will move the object to another state. In this case, the object is moved to the Draft state.

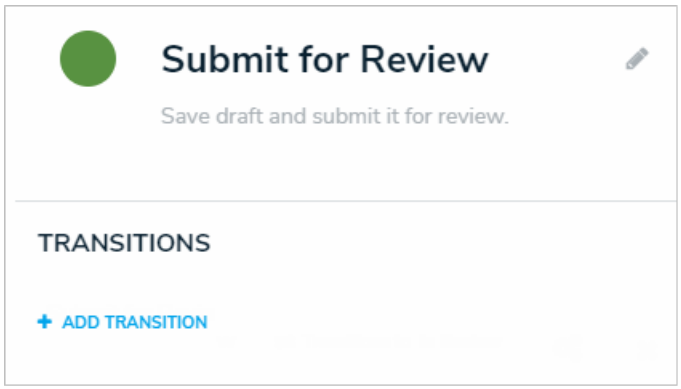
To add a trigger and transition to a state:

1. Click the icon in the top bar > **Object Types** in the **Data Model** section.
2. Click the object type or enter the name of the object type in the **Search** field, then click it to display the **Edit Object Type** page.
3. Click **Configure Workflow** (if only one workflow exists) or select the appropriate workflow.
4. Click **Add Trigger** below the state you want to add the trigger to.
5. Select either **Button**, **Timed**, or **Consume Orchestration Event** from the **Type** dropdown menu.



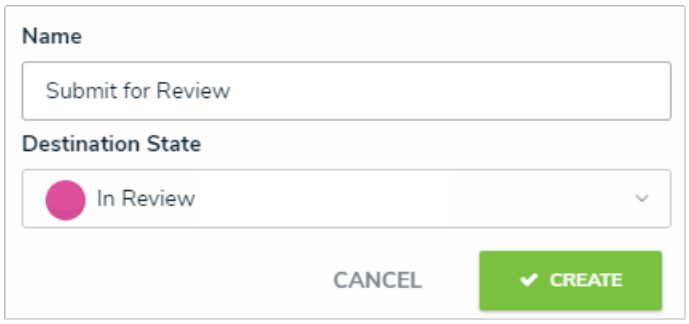
The Add Trigger palette.

6. Enter a name for the trigger in **Name** field. If you selected the **Button** type, this will appear as a button for users to click on configurable forms.
7. **Optional:** Enter a description of the trigger or include other information, such as its destination state, in the **Description** field. For the **Button** trigger type, a description will appear when clicking the icon next to the trigger when creating a configurable form and will help you identify which state and transition the trigger is associated with.
8. **Optional:** Click the **Color** dropdown menu to reveal the color picker and select a new color for the button as it will appear on a form. You can also type a hex color into this field to select a color.
9. If you selected the **Timed** trigger type, select **Nightly** from the **Frequency** dropdown menu.
10. If you selected the **Consume Orchestration Event** trigger type, select a previously created event action from the **Orchestration Event** dropdown menu. If you have not yet created an event action, you can leave this field blank and edit the trigger once an event is created. Note that options will appear in this dropdown only if an event action has been previously created using a data definition that includes the object type you're currently configuring. See Add an Orchestration Event Action on a Transition for more information.
11. Click **Create**.
12. Click the new trigger below the state on the **Edit Workflow** page to open the **Edit Trigger** palette.
13. Click **Add Transition**.



The Edit Trigger palette.

14. Enter a name for the transition in the **Name** field.
15. From the **Destination State** dropdown menu, select the state the object should move to.



Selecting the destination state for a new transition on a button trigger.

16. Click **Create**.
17. Follow the steps above to create additional triggers and transitions as needed.

Once a trigger and transition has been created, you can add conditions or actions to that transition.

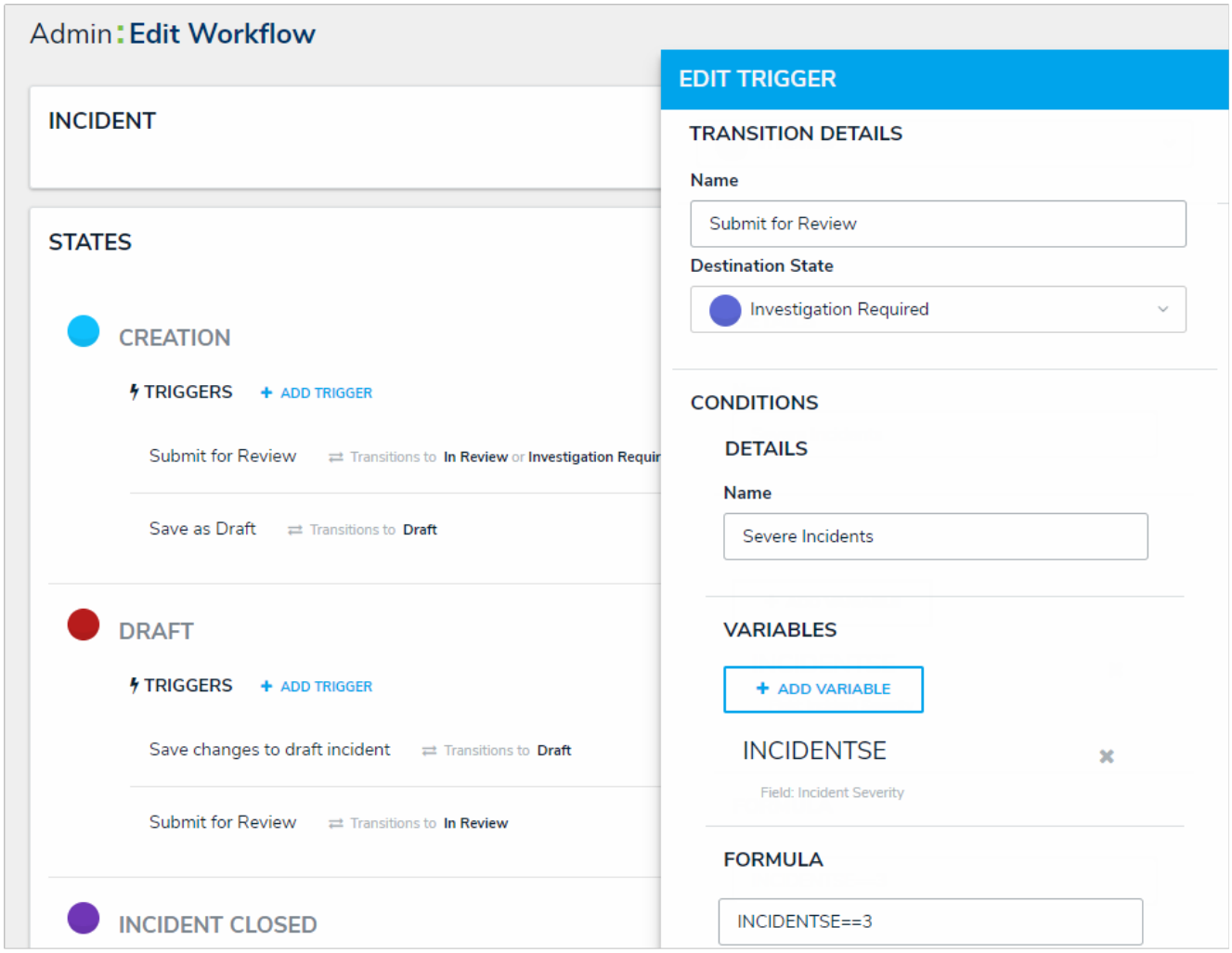
Add a Condition to a Transition

Conditions allow you to control whether an object is moved to a certain state or if an action will be performed. This is done by using fields, formulas, and workflow states to create a formula with parameters that must be met before the transition or action can occur. For more information on formulas, see the following articles:

- Formulas Overview
- Variables, Operators & Functions
- Null Values in Formulas
- Formula Examples

EXAMPLE

Your company has a policy that severe incidents must skip the typical review process and must be investigated immediately. As such, for the Incident object type workflow, you create a condition on the Submit for Review trigger that if the “Severe” option has been chosen on the Incident Severity select list, the object is automatically transitioned to the Investigation Required state once the Submit for Review trigger is clicked on a form.

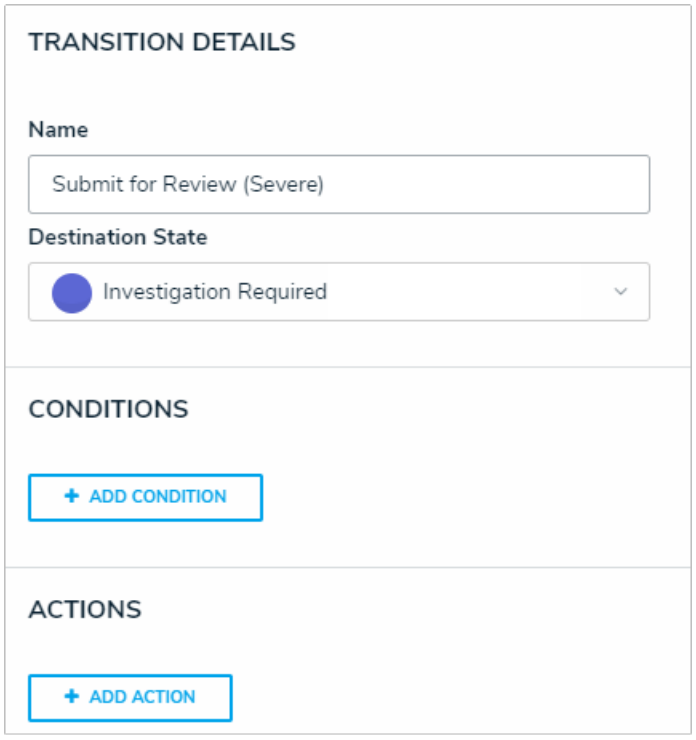


A condition on a transition, as displayed in the Edit Trigger palette on the right.

To add a condition on a transition:

Ensure the state, trigger, and transition you wish to add the condition to have already been created and configured prior to following the steps below.

1. From the **Edit Workflow** page, click a trigger to open the **Edit Trigger** palette.
2. Click the icon next to the transition.
3. Click **Add Condition**.

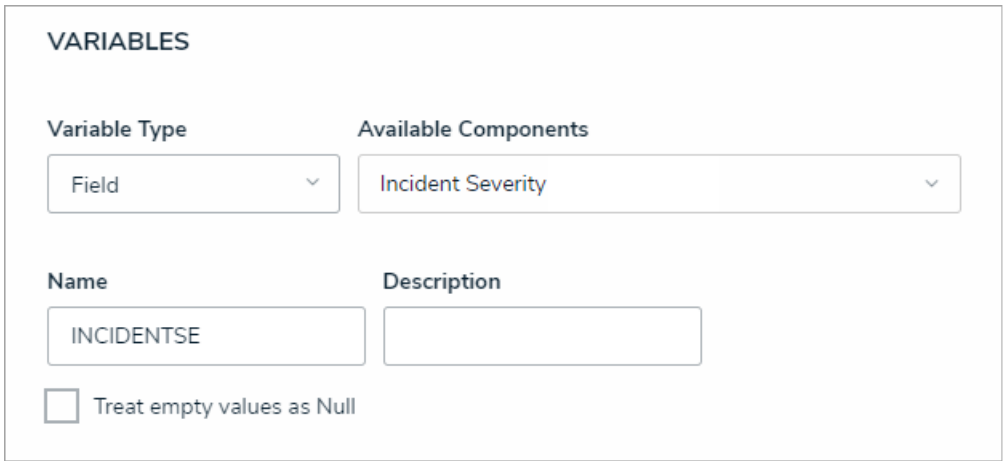


The Edit Trigger palette where you can add conditions and actions.

4. **Optional:** Enter a name for the condition in the **Name** field. Conditions are named **Default Condition Formula** by default.
5. Click **Add Variable**.
6. Select either **Field**, **Relationship**, or **Reference** from the **Variable Type** dropdown menu:
    - If you selected **Field**, choose a field or formula from the **Available Components** dropdown menu. The options in this dropdown are fields or formulas added directly to the object type.
    - If you selected **Relationship** or **Reference**:
        a. Select a relationship or reference saved to the object type from the **Relationship** or **Reference** dropdown menu.
        b. Select a field, formula, or workflow state from the **Available Components** dropdown menu. These are the fields, formulas, or states saved to the object type(s) in the relationship or reference.
        c. Select a variable sub-type from the **Sub Type** dropdown menu to specify how the data from multiple objects will be compiled or calculated. See the **Field & Formula Variables** and/or **Workflow State Variables** sections of the Variables, Operators & Functions article for more information on the available sub-types.

> Fields can be added to formulas only if they've been added directly to the object type or if they're saved to an object type associated through a relationship or reference. Only numeric fields, date fields, and select lists with numeric values added to their options are accepted in formulas. See the Fields category for more information.

7. **Optional:** Enter a name for the variable in the **Name** field. By default, the unique ID of the field or formula is automatically populated.



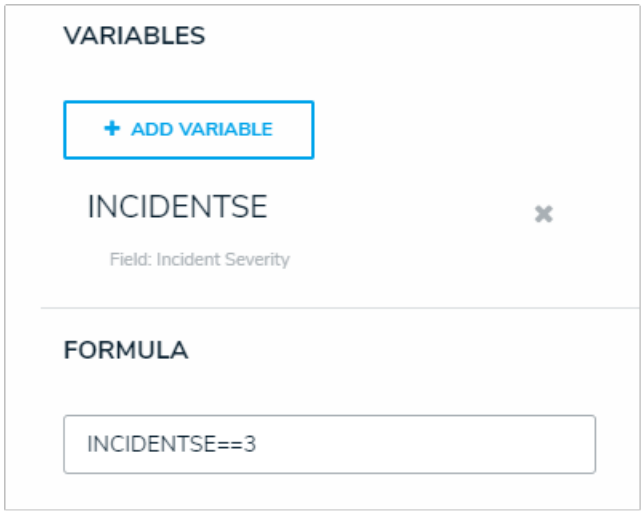
A new condition formula.

Naming a variable after a function will result in an error.

8. **Optional:** Enter a description for the formula in the **Description** field.
9. **Optional:** Select the **Treat empty values as Null checkbox** if objects with blank variables should not be assigned a zero (0) value. See the Null Values in Formulas article for more information.
10. Click **Create**.
11. Continue adding variables by following steps 5-10 above. To remove a variable, click the icon beside the variable.

An existing variable on a condition.

12. Using the variable name(s), enter a formula, including any operators and/or functions, in the **Formula** field (e.g. **INCIDENTSE==3)**). See the Variables, Operators & Functions article for more information.



Creating a new formula using the variable name.

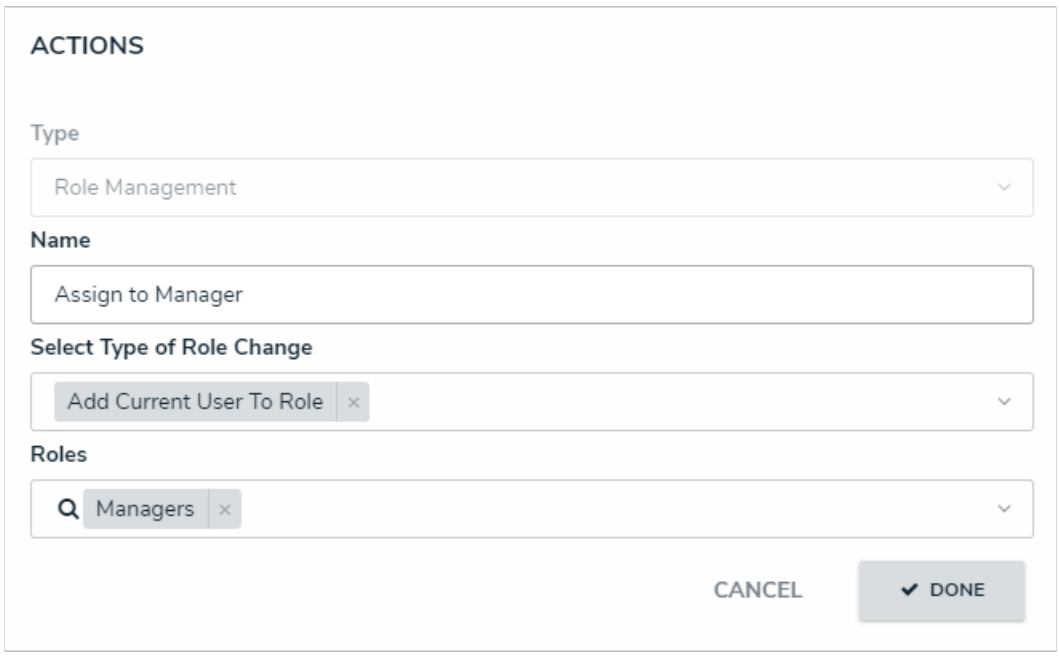
> ⚠ You must use double equal signs (==) in condition formulas. See the Variables, Operators & Functions article for more information.

13. Click **Done**.

Actions on Transitions Overview

Actions on transitions (not to be confused with actions on activities) allow you to include additional automated processes as an object moves through its workflow states. These processes include:

- **Messaging:** Sends individual emails to users within the selected roles immediately following an object's transition or as a daily email digest. Administrators can select a default or custom email template, as well as which configurable form is displayed when the user clicks the links provided in the email to view the object.
- **Role Management:** Automatically adds a user within a specified role with explicit permissions to the object once it has successfully transitioned into its next state. This action is used to allow users within the role the ability to view objects in their next states without adding them manually through the role element on a configurable form. For example, Role Management could be used should your organization wish to allow users in the Incident Creator role to be able to automatically view the incident objects they just created while those objects are in the In Review state.
- **Send Orchestration Event:** Moves multiple objects in different states or from different object types into another state. For example, when this action is added to the Audit object type, closing an audit object will also close all open issues. Once an event action has been created, a Consume Orchestration Event trigger is added to the other object types/states that will use the event. The object types this action can be added to is determined by the data definition selected when the action is created.
- **Clear Fields/Roles/Relationships:** Clears the values from selected fields, roles, or relationships on a form. These actions are helpful when users want to relaunch an assessment, but don't want to manually clear previous assessment data. Note that you cannot use this action to clear formula data.
- **Set Field Value:** Auto-completes a **Date & Time** or **Select List** field. For select lists, administrators can choose which option is auto-populated. For date and time fields, admins can auto-populate the current date, the current date plus a selected number of days, or the current date less a selected number of days. This action could be used to set time stamps for start or completion dates on assessments, set deadlines, extend deadlines, etc.
- **Create Object:** Creates a relationship or reference object when a trigger is clicked on a form. All fields will be blank, with the exception of any Name/Description or plain text field concatenations that may have been configured on the relationship or reference object type.
- **Pull Data Values:** Copies field values or relationships from related objects. To copy field values, the same fields must be added to both object types as components, while relationships must meet certain requirements. Object properties and the **Attachment** and **Image Attachment** fields are not supported in this action.



An action on a trigger.

To add an action to a transition, see the following articles:

- Add a Messaging Action to a Transition
- Add a Role Management Action to a Transition
- Add a Send Orchestration Event Action to a Transition

- Add a Clear Fields, Roles or Relationships Action to a Transition
- Add a Set Field Value Action to a Transition
- Add a Create Object Action to a Transition
- Add a Pull Data Values Action to a Transition

Add a Messaging Action to a Transition

The **Messaging** action sends an email to users within one or more selected roles once objects have successfully transitioned to the next state. To control the contents of the email, you can choose a default or custom email template and select which configurable form is displayed when the user clicks the link provided in the email to view an object. When creating this action, you must choose one of the following delivery frequencies:

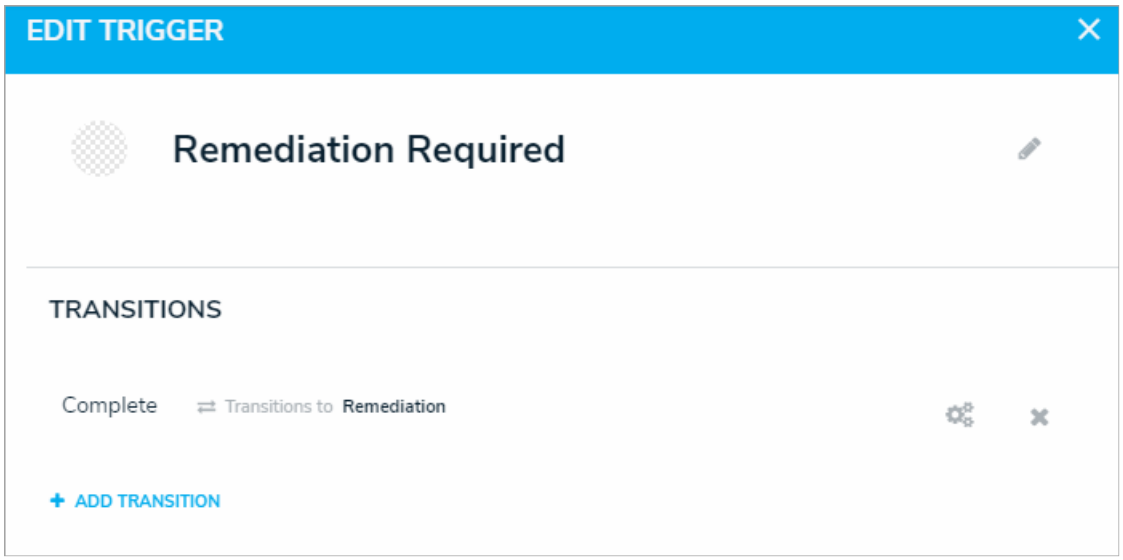
- **Immediate:** Sends an email to users in the selected role(s) immediately following the object's transition.
- **Nightly:** Sends a single email to users in the selected role(s) with a list of the objects that transitioned. If additional nightly messaging actions have been added to other workflows or object types, a single email digest with those objects will be sent to the user **only if the same role and email template has been selected on each messaging action.** If a different role and/or template has been selected for multiple workflows or object types, users may receive multiple nightly emails. See the Timed Triggers & Nightly Emails Schedule article for more information on when these emails are sent.

Before you can create this action on a workflow state, a transition must be created. See Add a Trigger & Transition to a State article for instructions.

> The role(s) added to the **Messaging** action must be properly configured for the selected object type and workflow state. See the Roles and Workflow Permissions sections for more information.

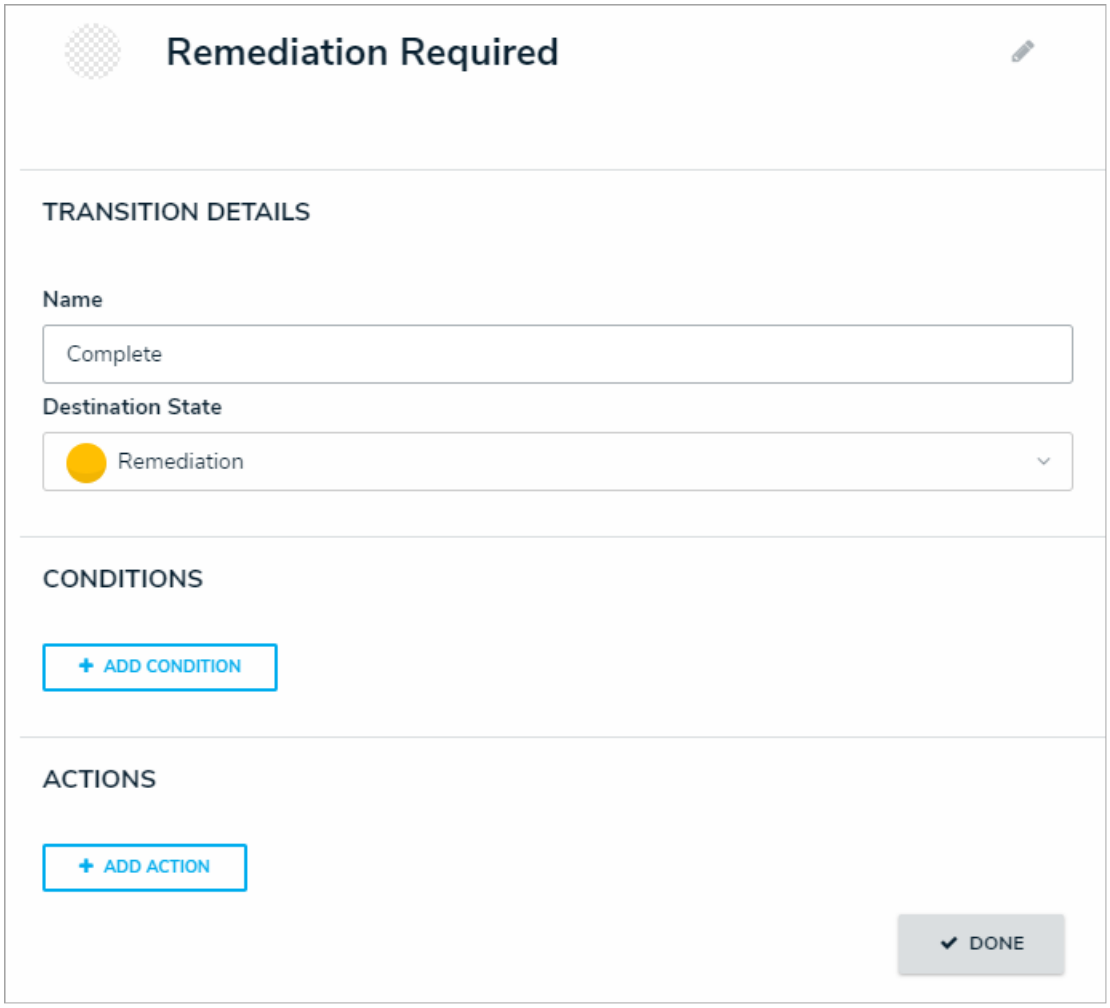
To add a Messaging action to a transition:

1. From the **Edit Workflow** page, click a trigger below a state to open the **Edit Trigger** palette.
2. Click the icon next to the transition.



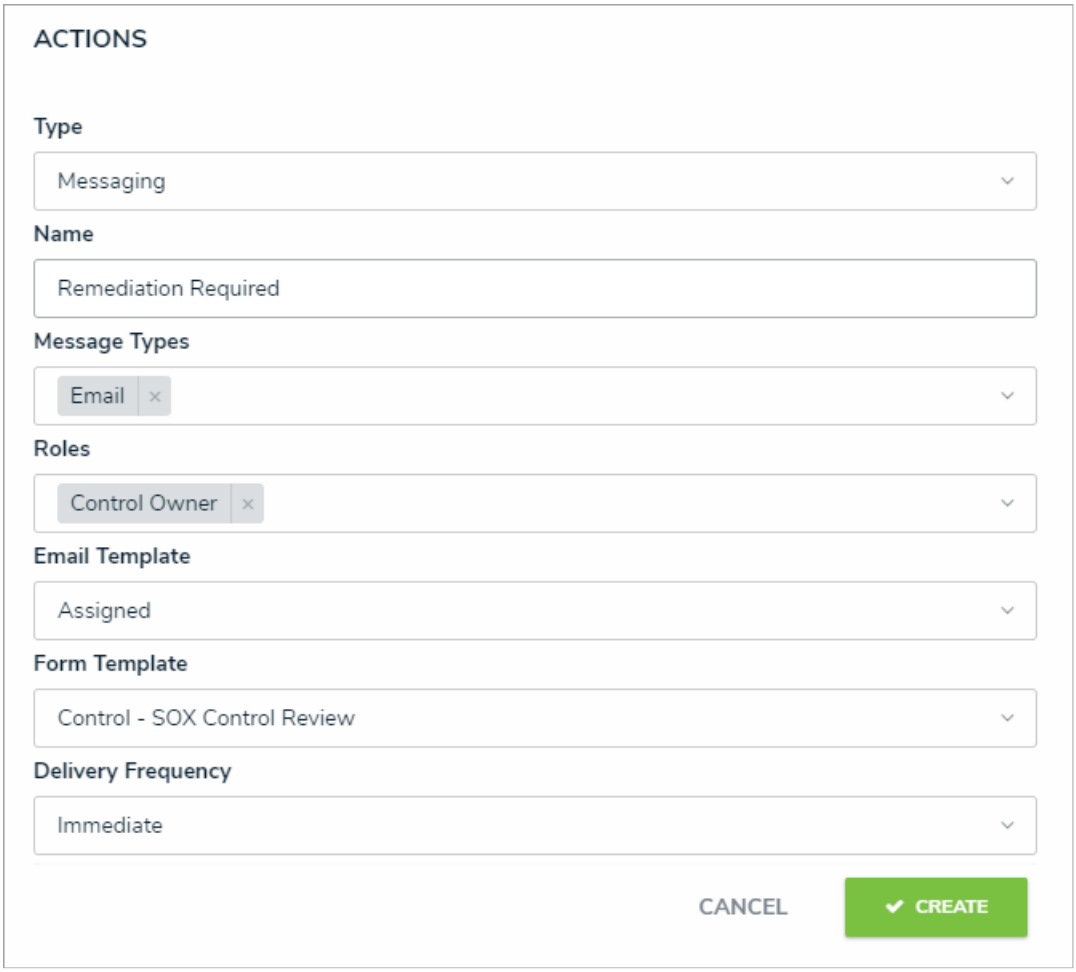
A transition on the Edit Trigger palette.

3. Click **Add Action** in the **Actions** section.



The Transition Details, Conditions, and Actions sections sections of the Edit Trigger palette.

4. Select **Messaging** from the **Type** dropdown menu.
5. Enter a name for the action in the **Name** field.
6. Select **Email** from the **Message Types** dropdown menu.
7. Select the roles that should receive the email from the **Roles** dropdown menu.
8. Select a default or custom template (if any) from the **Email Template** dropdown menu. The default templates (which may have been renamed or edited) include:
    - **Standard:** Advises the user the one or more objects can be accessed.
    - **Assigned:** Advises the user that one or more objects have been assigned to them.
9. Select the configurable form from the **Form Template** dropdown menu. This is the form that will be displayed when the user clicks on an object link in the email.
10. Select one of the following options from the **Delivery Frequency** dropdown menu:
    - **Immediate:** Sends an email to the users in the role(s) immediately following an object's transition. This is the default frequency.
    - **Nightly:** Sends an email to the users in the role(s) at 12:00 am UTC time. If additional actions with a nightly frequency have been added to other object types or workflows using the same role and email template, the user will receive a single email digest for multiple object types.



A new Messaging action.

11. Click **Create**.

Add a Role Management Action on a Transition

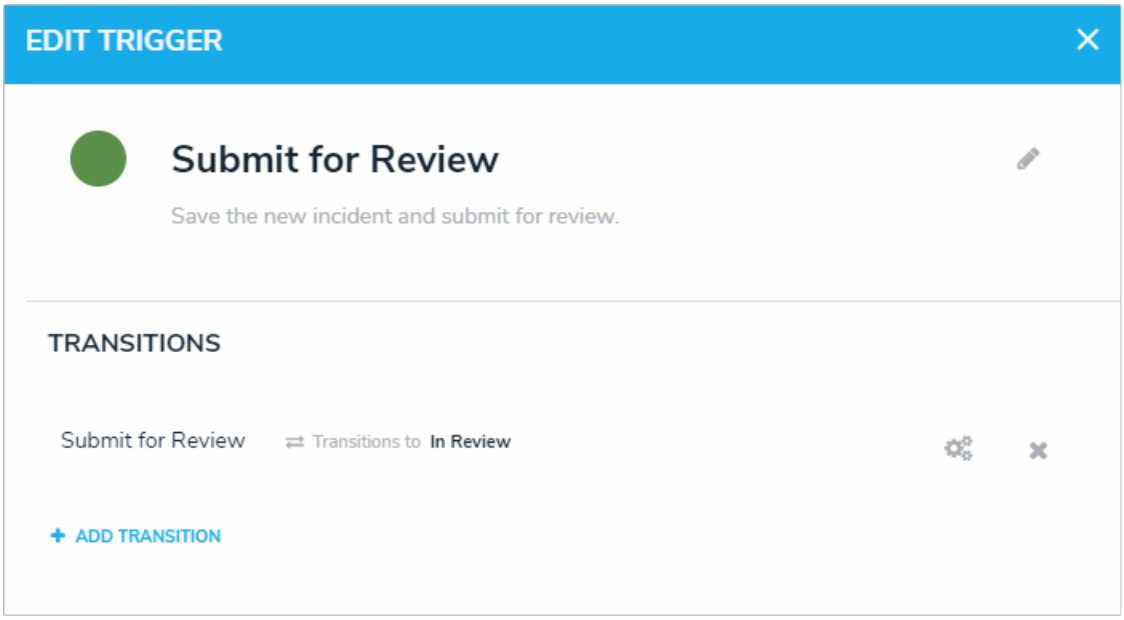
The **Role Management** action automatically adds a user within a specified role with explicit permissions to the object once it has successfully transitioned into its next state. This action is used to allow users within the role the ability to view objects in their next states without adding them manually through the role element on a configurable form. For example, this action could be used should your organization wish to allow users in the Incident Creator role to be able to automatically view the incident objects they just created while those objects are in the In Review state.

Before you can create this action on a workflow state, a transition must be created. See Add a Trigger & Transition to a State article for instructions.

> The role(s) added to the **Role Management** action must be properly configured for the selected object type and workflow state. See the Roles and Workflow Permissions sections for more information.

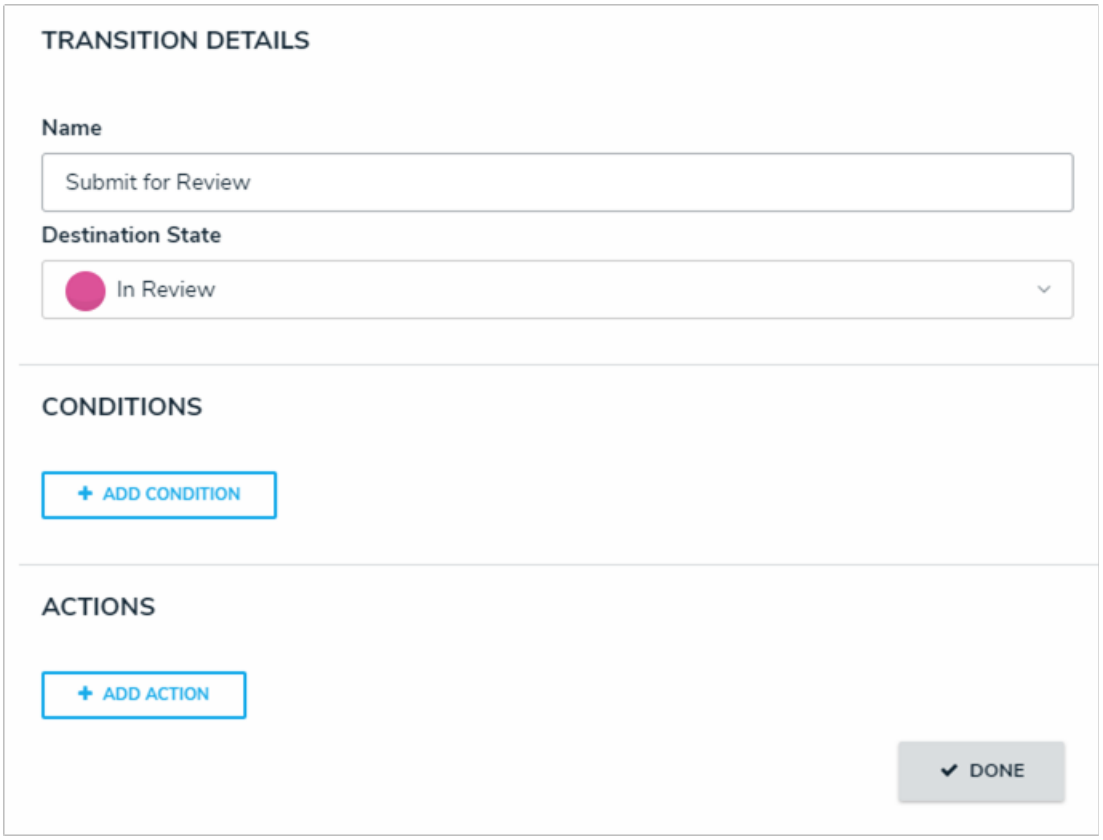
To add a Role Management action to a transition:

1. From the **Edit Workflow** page, click a trigger below a state to open the **Edit Trigger** palette.
2. Click the icon next to the transition.



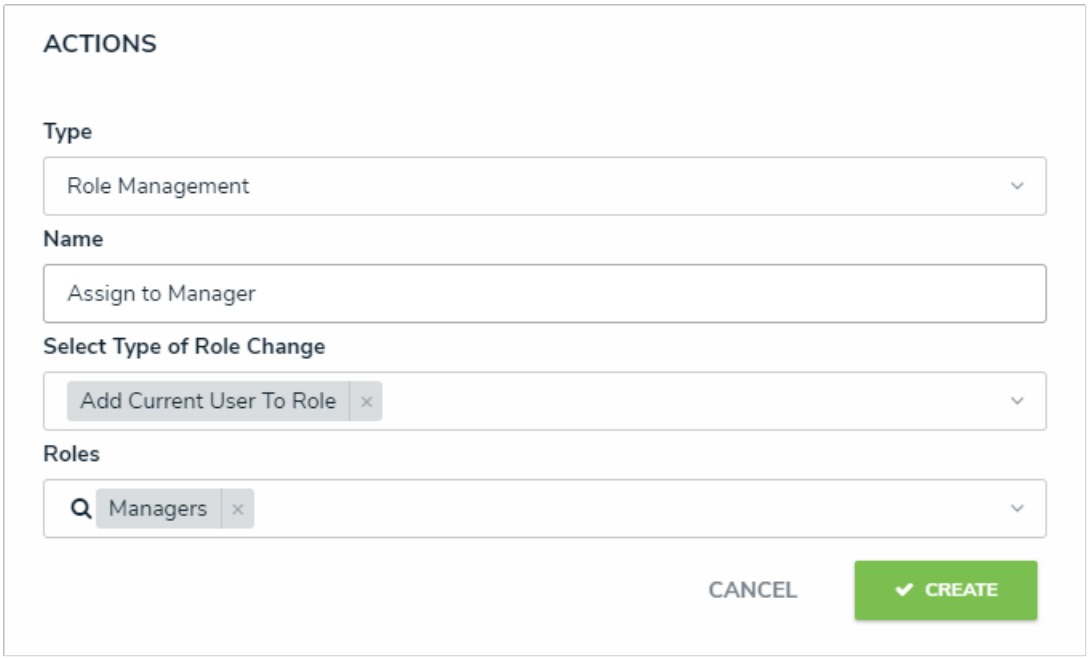
A transition on the Edit Trigger palette.

3. Click **Add Action** in the **Actions** section.



The Transition Details, Conditions, and Actions sections of the Edit Trigger palette.

4. Select **Role Management** from the **Type** dropdown menu.
5. Enter a name for the action in the **Name** field.
6. Select **Add Current User to Role** from the **Select Type of Role Change** dropdown menu.
7. Select the roles that should receive the email from the **Roles** dropdown menu.
8. Select one or more roles from the **Roles** dropdown menu or search for roles as needed.



A new Role Management action.

9. Click **Create**.

Add an Orchestration Event Action on a Transition

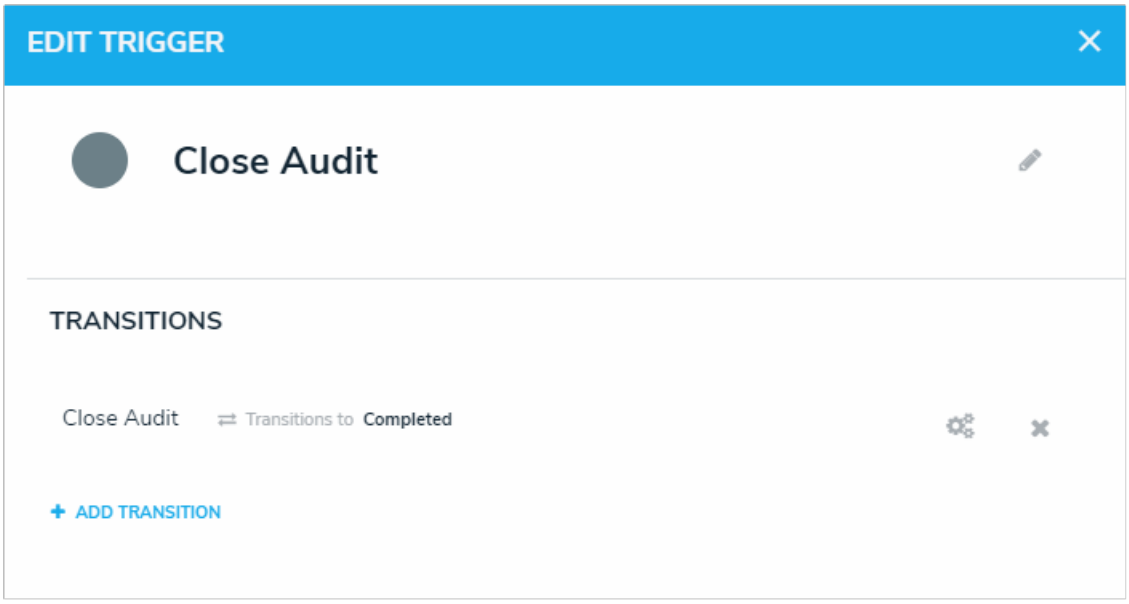
The **Send Orchestration Event** action transitions multiple objects in different states or from different object types into another state. For example, when this action is added to the Audit object type, closing an audit object will also close all open issues at the same time because those issues are no longer applicable.

Once an event has been created, it can be added to other states in the same workflow or on other object types as a **Consume Orchestration Event** trigger. The object types this action can be added to is determined by the data definition selected when the action is created.

Before you can create this action on a workflow state, a transition and **Consume Orchestration Event** trigger must be created. See Add a Trigger & Transition to a State article for instructions.

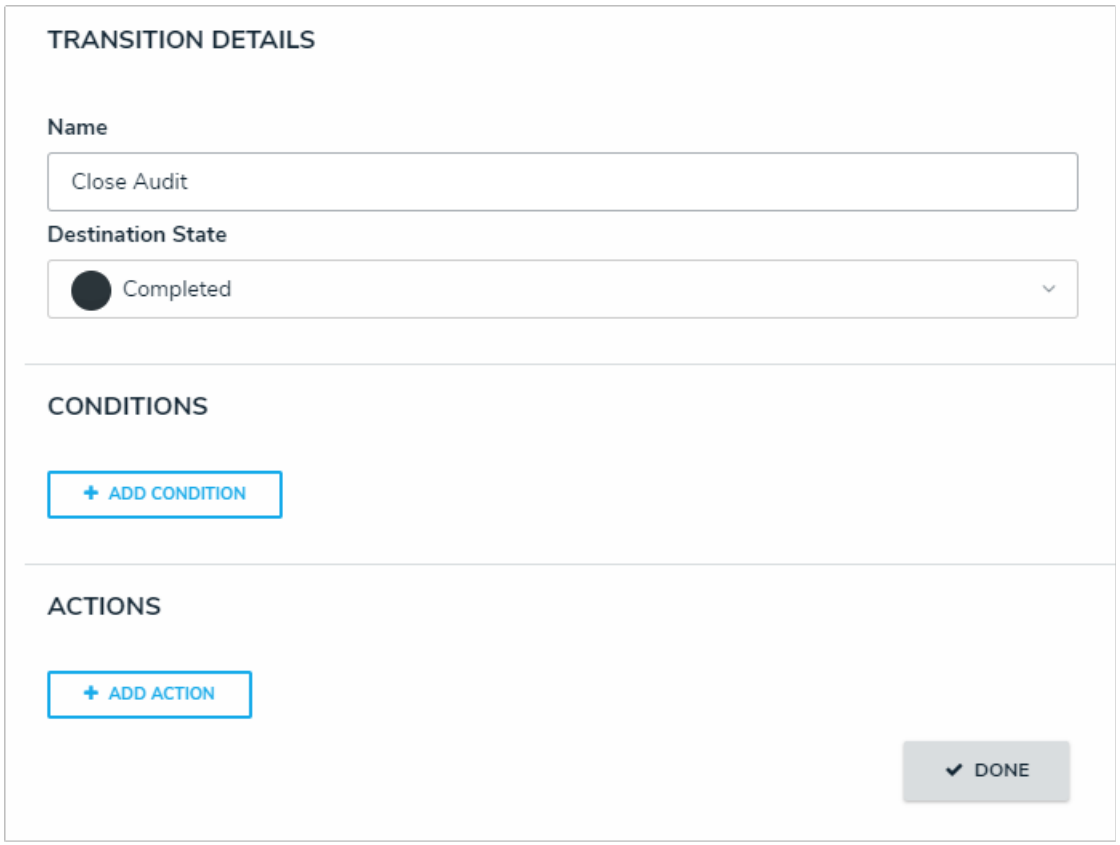
To add a Send Orchestration Event action to a transition:

1. From the **Edit Workflow** page, click a trigger below a state to open the **Edit Trigger** palette.
2. Click the icon next to the transition.



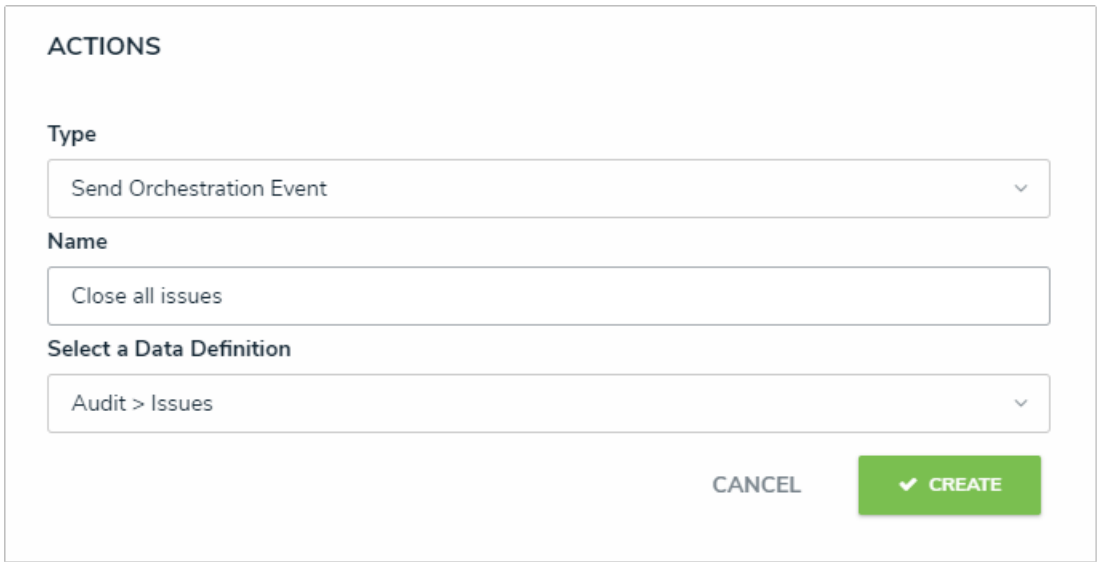
A transition on the Edit Trigger palette.

3. Click **Add Action** in the **Actions** section.



The Transition Details, Conditions, and Actions sections of the Edit Trigger palette.

4. Select **Send Orchestration Event** from the **Type** dropdown menu.
5. Enter a name for the action in the **Name** field.
6. Choose a data definition from the **Data Definition** dropdown menu. Ensure the data definition selected includes all other object types you intend to add this action to.



A new Send Orchestration Event action.

7. Click **Create**.

Once successfully created, you can add this action to additional states or object types. You can also use this action to create a trigger on the same object type or additional object types. Note that you can only add this action or trigger to object types that have been selected in the chosen data definition in step 6 above.

Add a Clear Fields, Roles or Relationships Action to a Transition

The **Clear Fields**, **Clear Roles**, and **Clear Relationships** actions clear the values from selected fields, roles, or relationships on a form (excluding formulas). These features are particularly helpful to users who are working with existing assessments because they avoid the need to go into the assessment and manually remove data that's no longer applicable.

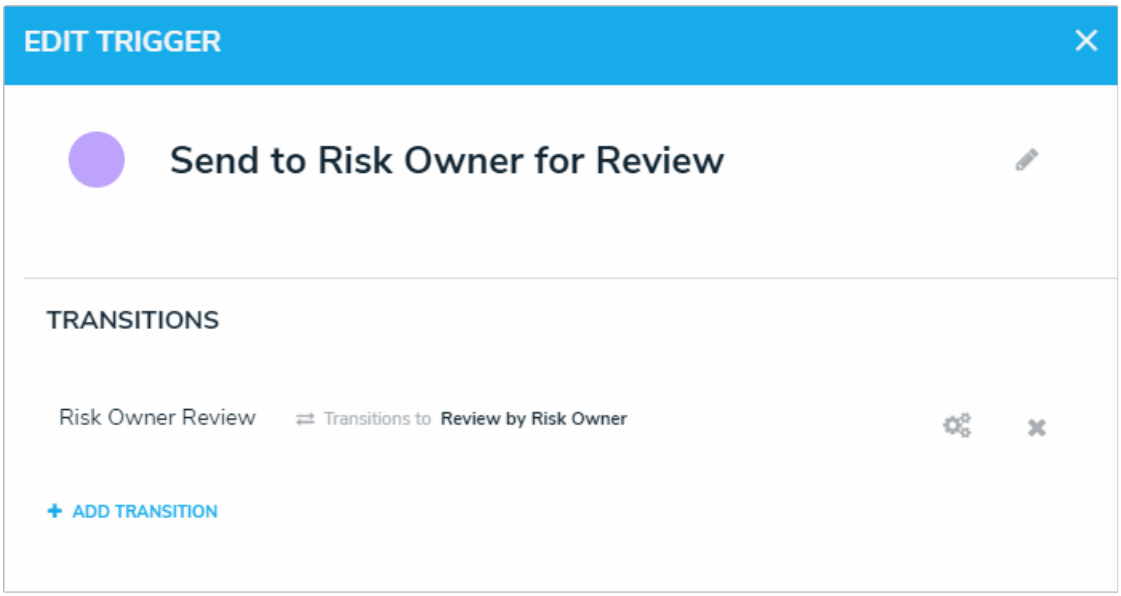
For example, the **Clear Fields** or **Clear Relationships** actions could be used when a user is relaunching an assessment, while the **Clear Roles** may be used when assigning an object type or assessment to a new user in a different role.

Before you can create these actions on a workflow state, the fields, roles, and relationships must be added to the object type as components and a transition must be created. See Add a Trigger & Transition to a State article for instructions.

> Because the **Clear Roles** action takes precedence over the **Role Management** action, avoid adding both these actions to the same transition as the **Clear Roles** action will clear all roles, including any specified in the **Role Management** action, from the form.

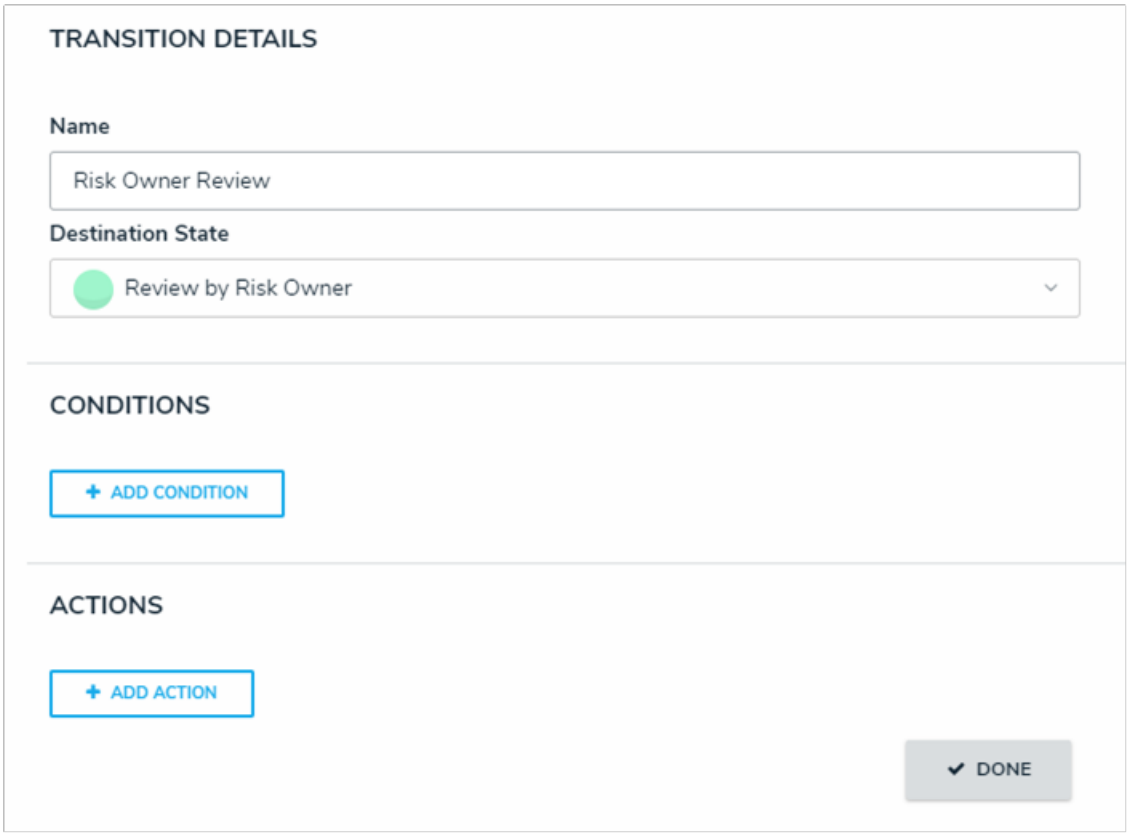
To add a Clear Fields, Clear Roles, or Clear Relationships action to a transition:

1. From the **Edit Workflow** page, click a trigger below a state to open the **Edit Trigger** palette.
2. Click the icon next to the transition.



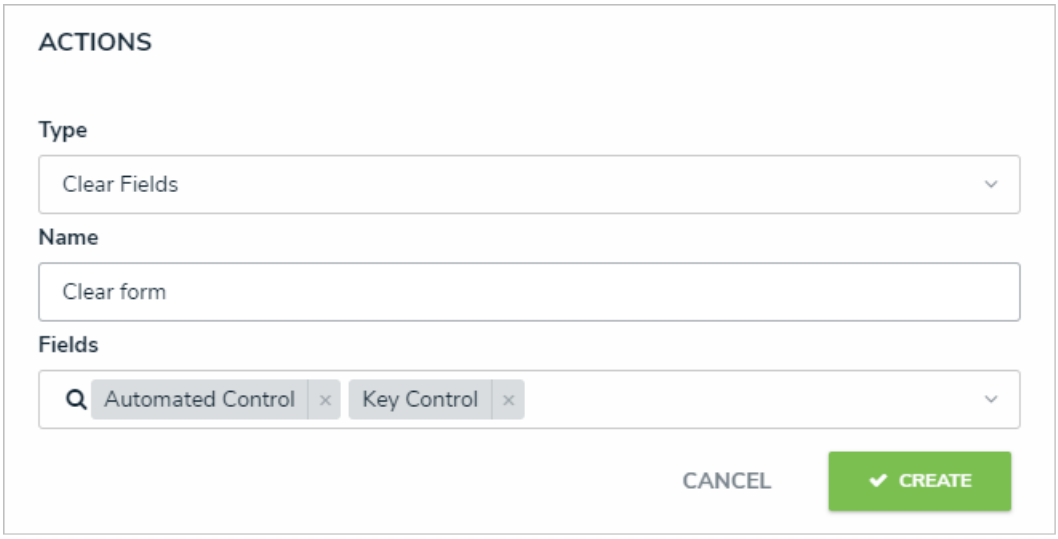
A transition on the Edit Trigger palette.

3. Click **Add Action** in the **Actions** section.



The Transition Details, Conditions, and Actions section of the Edit Trigger palette.

4. Select **Clear Fields**, **Clear Roles** or **Clear Relationships** from the **Type** dropdown menu.
5. Enter a name for the action in the **Name** field.
6. Depending on your selection in step 4 above, make the following selection in the dropdown menu:
    - If you selected **Clear Fields** in the **Type** dropdown menu, select the fields you wish to clear data from (once the object transitions) from the **Fields** dropdown menu.
    - If you selected **Clear Roles** in the **Type** dropdown menu, select the roles field you wish to clear data from (once the object transitions) from the **Roles** dropdown menu.
    - If you selected **Clear Relationships** in the **Type** dropdown menu, select the relationship fields you wish to clear data from (once the object transitions) in the **Relationships** dropdown menu.



A new clear action.

7. Click **Create**.

Add a Set Field Value Action to a Transition

The **Set Field Value Action** auto-completes one of the following fields saved to the object type:

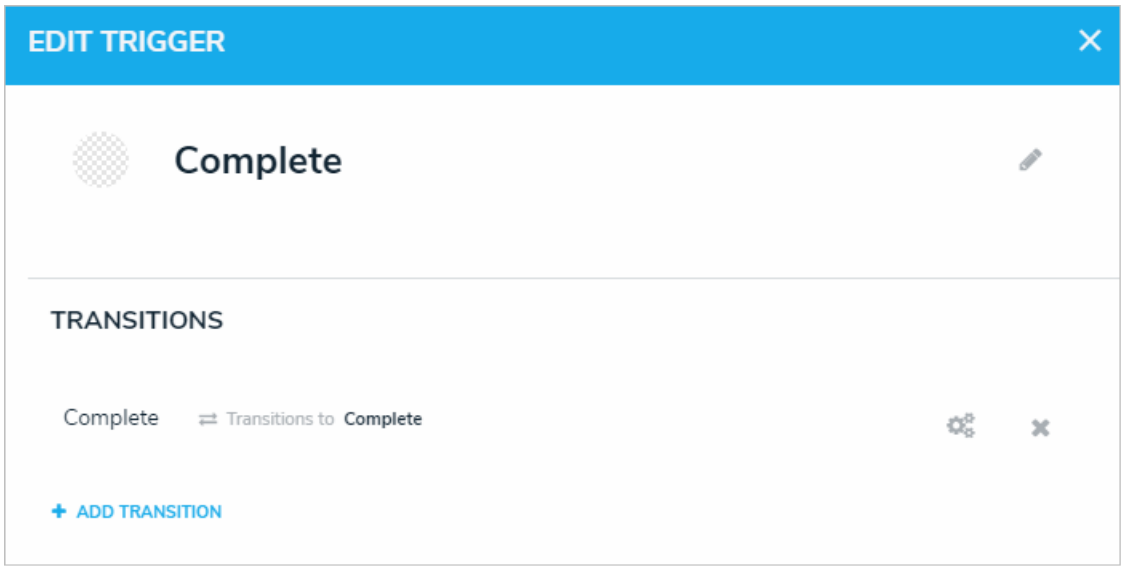
- A Date & Time field based on the date the object transitioned to the next state. For example, this action could be used to add a date to the Completed Date field once the object moves from the In Progress state to the Complete state. Administrators can choose to auto-populate the current date, the current date plus a selected number of days, or the current date less a selected number of days. This action could be used to set time stamps for start or completion dates on assessments, set deadlines, extend deadlines, etc.

  > The date and time captured in this action is in UTC time.

- A Select List field, including multi-select lists, which auto-fills a pre-defined option or options. For example, this action could be used to select a High Priority option when an Incident object moves from the Open to Escalated state.

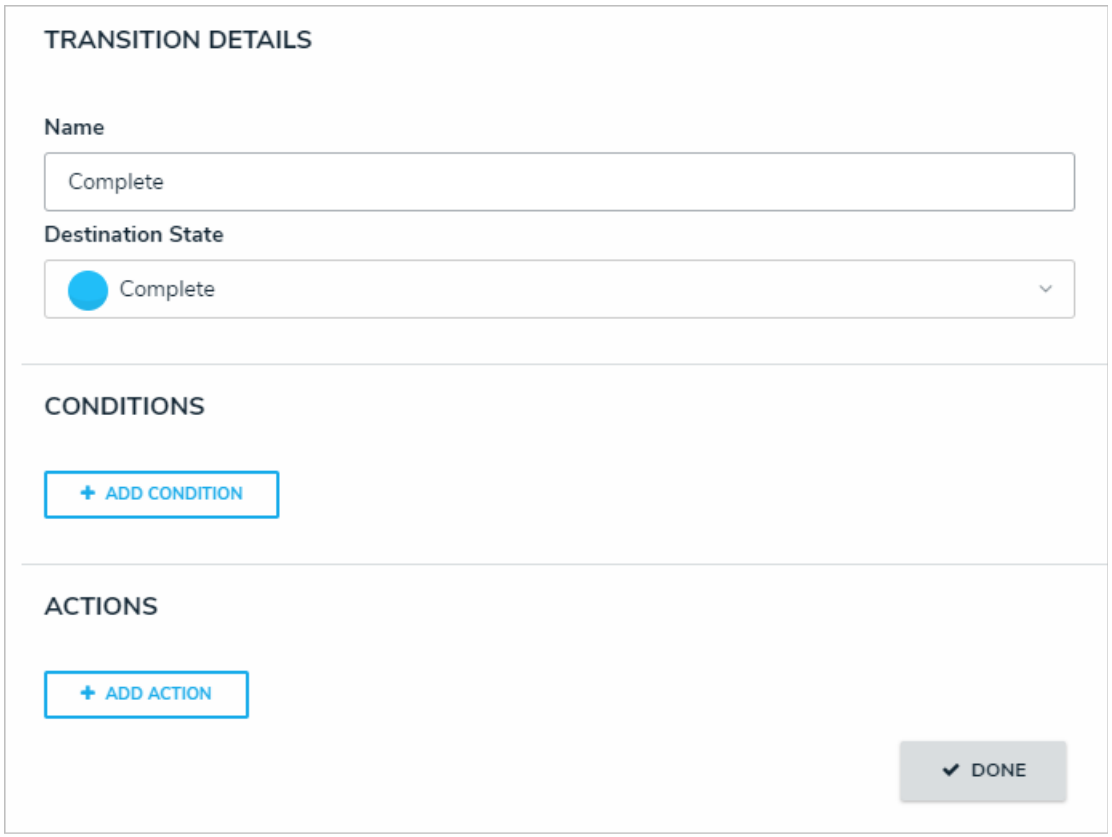
To add a Set Field Value action to a transition:

1. From the **Edit Workflow** page, click a trigger below a state to open the **Edit Trigger** palette.
2. Click the icon next to the transition.



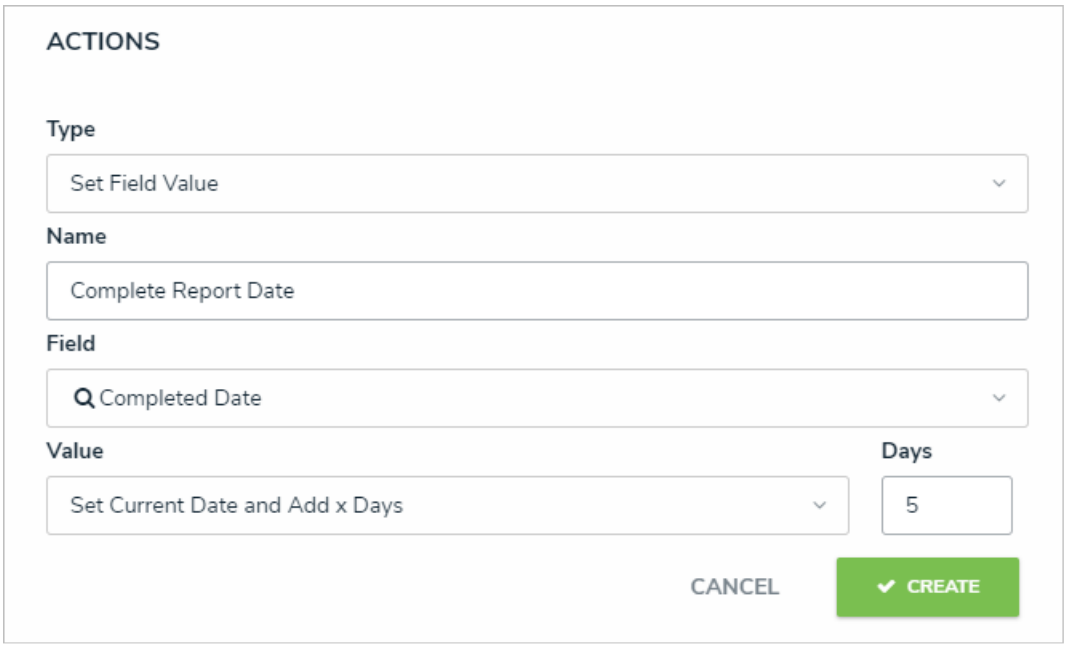
A transition on the Edit Trigger palette.

3. Click **Add Action** in the **Actions** section.



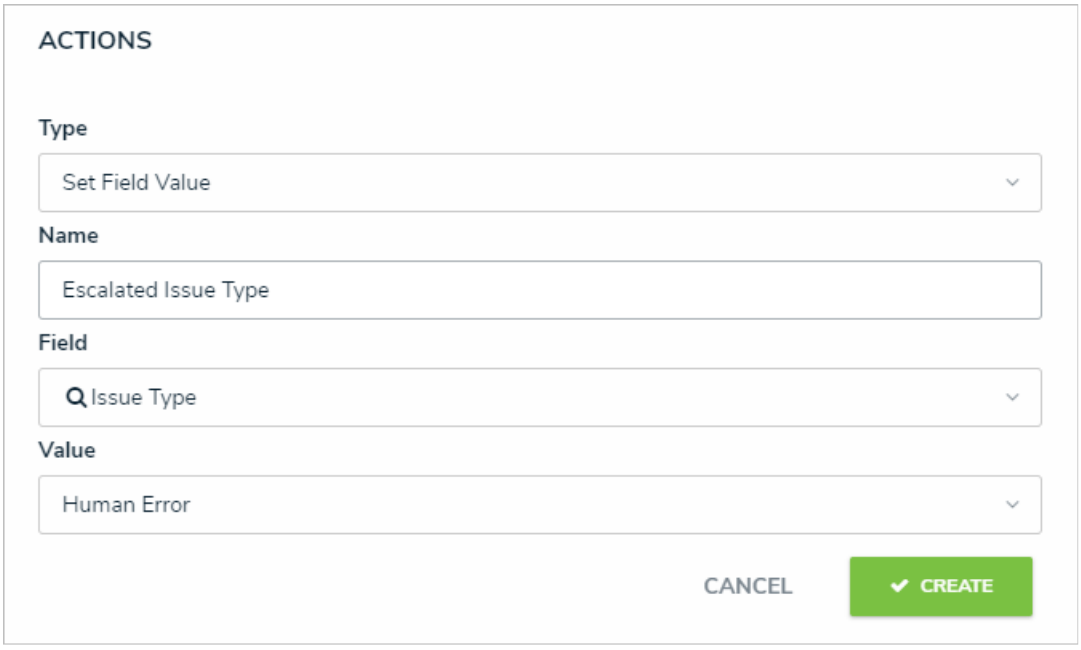
The Transition Details, Conditions, and Actions sections of the Edit Trigger palette.

4. Select **Set Field Value** from the **Type** dropdown menu.
5. Enter a name for the action in the **Name** field.
6. Select a Date & Time or Select List field added to the object type from the **Field** dropdown menu.
7. If field is a date and time field, select one of the following options from the **Value** dropdown menu:
    - **Set Current Date:** Adds the date the object transitioned.
    - **Set Current Date and Add x Days:** Adds the current date the object transitioned, plus an additional number of days. If you select this option, enter the number of days to add in the **Days** field.
    - **Set Current Date and Subtract x Days:** Adds the current date the object transitioned, but subtracts a selected number of days. If you select this option, enter the number of days to subtract from the current date in the **Days** field.



A new Set Field Value action for a date and time field.

8. If the field is a select list, choose an option from the **Value** dropdown menu. If the field is a multi-select list, you can select multiple options.



A new Set Field Value action for a select list field.

9. Click **Create**.

Add a Create Object Action to a Transition

The **Create Object** action automatically creates a new relationship or reference object and moves the originating object to the next state once the associated trigger is clicked on a form. When adding the **Create Object** action to a transition, note that:

- Only the **Button** trigger type can be selected with this action.
- This action cannot be added to a transition on the Creation state.
- All fields in the new object will be blank, with the exception of Name/Description or plain text field concatenations that may have been configured for the new object.
- If the relationship or reference object type has required fields or the user doesn't have the proper permissions to create the object, the transition will fail.

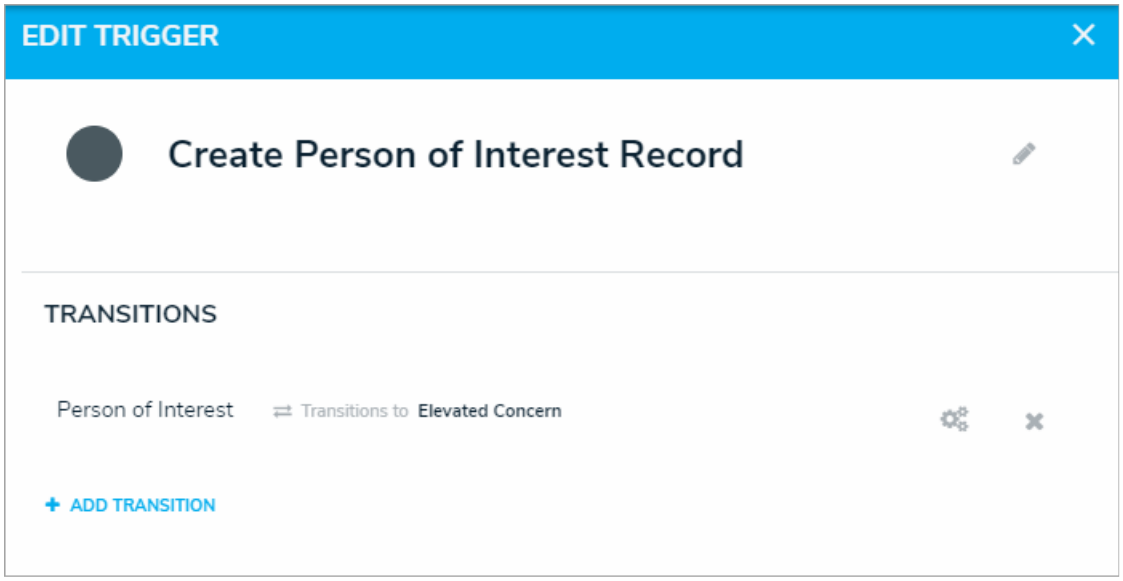
> The **Create Object** action should not be used to create objects in bulk.

To add a Create Object action to a transition:

1. From the **Edit Workflow** page, add a button trigger and transition to the appropriate state or click a trigger to open the **Edit Trigger** palette.

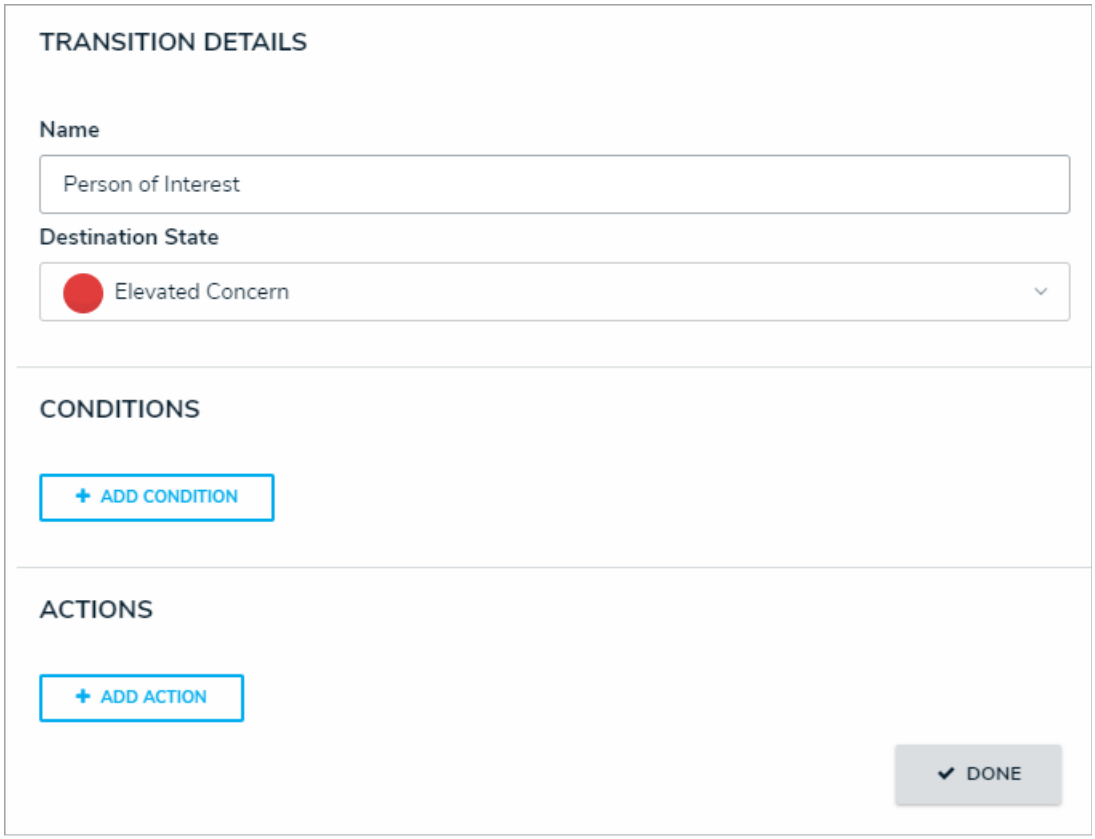
   > This action cannot be added to the **Creation** state.

2. Click the icon next to the transition.



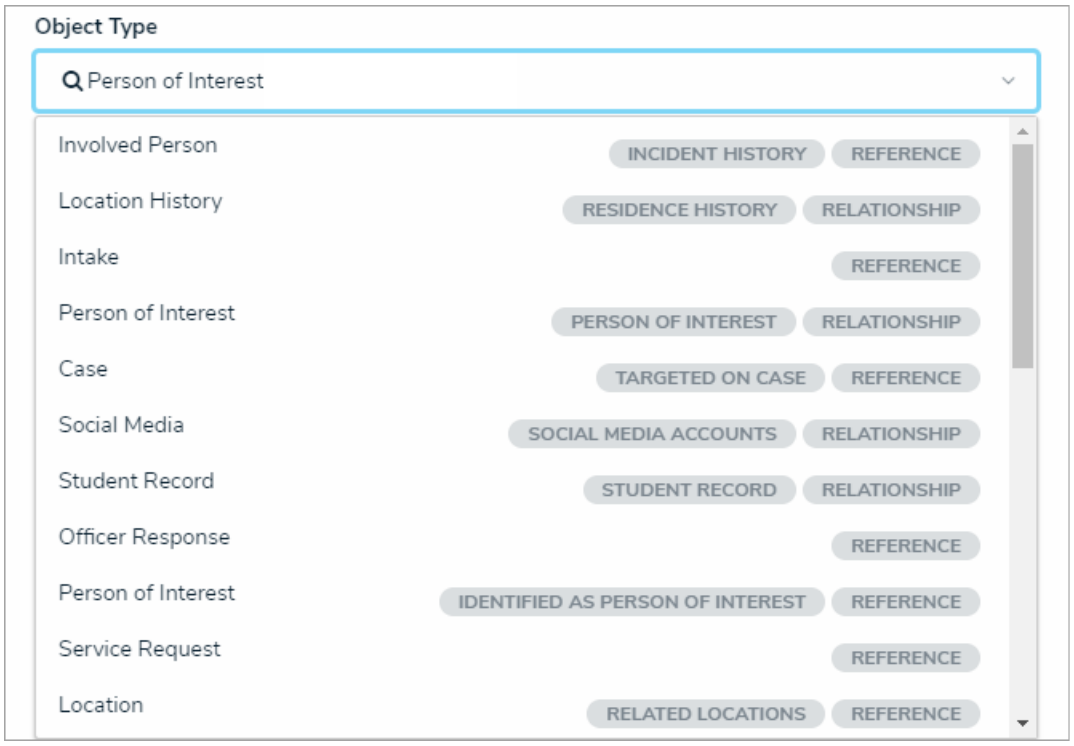
A trigger and transition on the Edit Trigger palette.

3. Click **Add Action** in the **Actions** section.



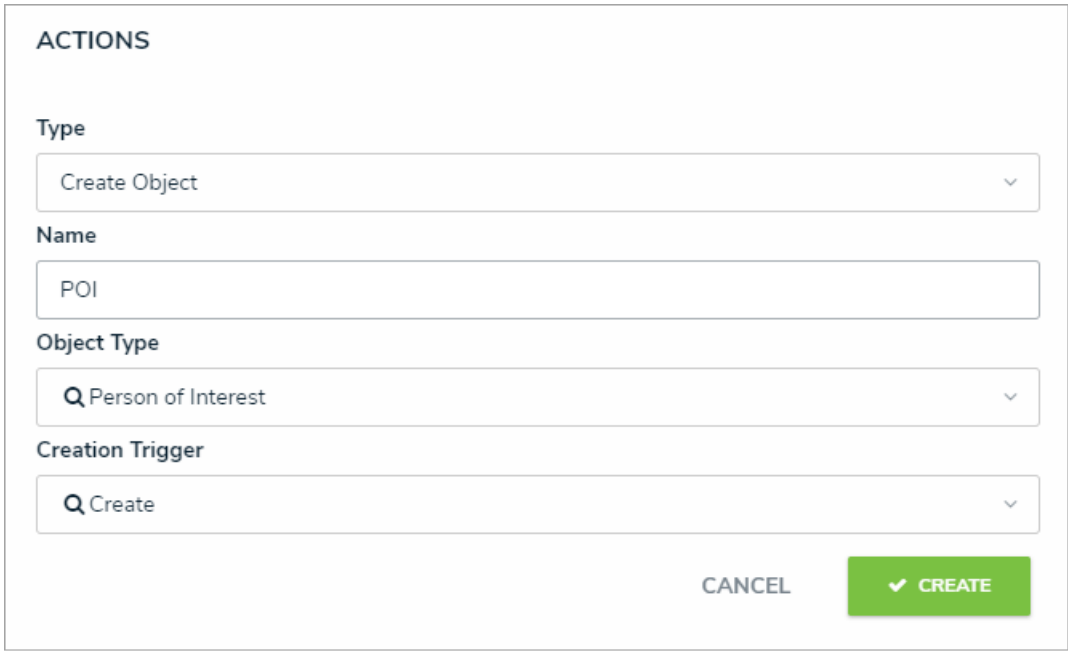
The Transition Details, Conditions, and Actions sections of the Edit Trigger palette.

4. Select **Create Object** from the **Type** dropdown menu.
5. Enter a name for the action in the **Name** field.
6. Select the object type you wish to create the object for from the **Object Type** dropdown menu. Object types are identified by their names on the left and relationship or reference name on the right.



The Object Type dropdown menu.

7. Click **Create**.



A new Create Object action.

8. Ensure the trigger for this action has been added to the appropriate configurable form and the users who will be clicking the trigger have the appropriate workflow permissions. See the State Triggers on Forms and Workflow Permissions articles for more information.

Add a Pull Data Values Action to a Transition

The **Pull Data Values** action automatically copies values from fields, the Geolocation property, and/or relationships and inserts them into the current object as it moves to the next state in the workflow. For example, if you needed to create an incident object from an activity, this action would automate the process by copying over important field, location, and relationship information.

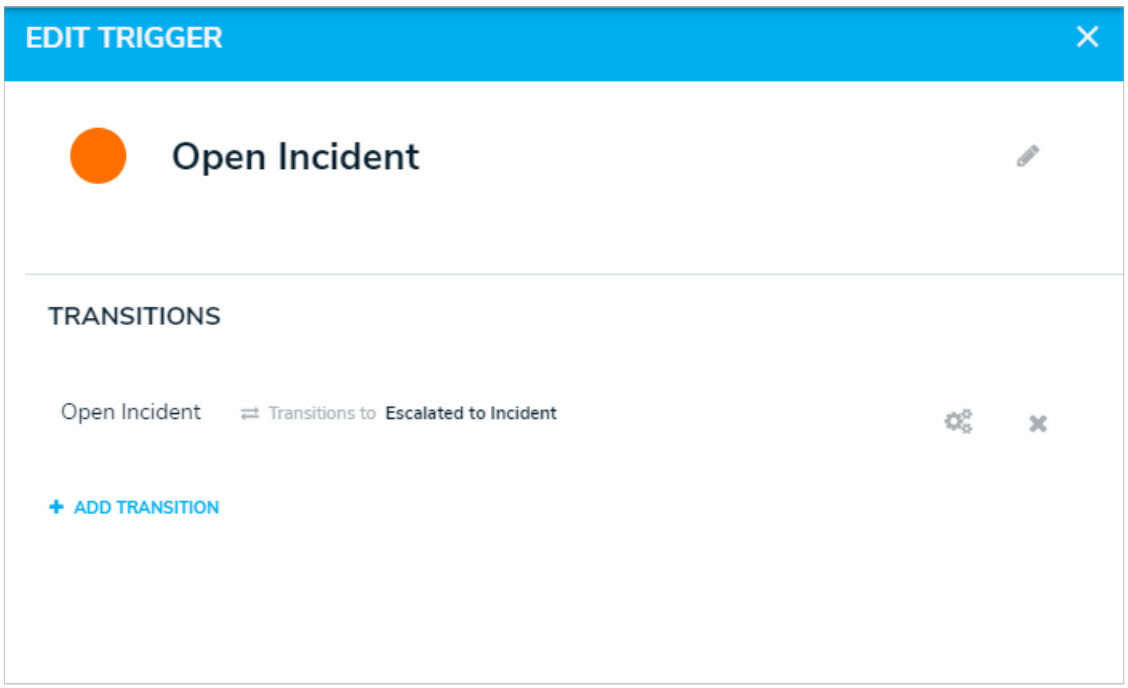
Important Notes

- Copying field values requires that those fields are added to both object types as components. See Add Fields to an Object Type for more information.
- With the exception of Geolocations, object type properties, **Attachments**, and **Image Attachments** are not supported on this action.
- To copy geolocation information, both the parent and child object types must have the **Geolocation** element added to a standard form.
- Objects that have inherited geolocation information from another object through this action will appear on any relationship maps for the object types.
- It's strongly recommended that relationships that connect to a maximum of one object are selected in this action. For example, if the Activity object is related to several Person objects through the Person of Interest relationship, the Person of Interest relationship shouldn't be selected for the action. However, if each of those Person objects are related to a single Location object through the Primary Residence relationship, the Primary Residence relationship would be ideal for the action.
- If a relationship that connects to more than one object is selected for the action, data values are pulled from the most recently created object.
- To copy relationships, both the parent and child object types must have relationships with the same name that connect to the same object type group. For example, if both the Incident (child) and Activity (parent) object types have a Person of Interest relationship to the Person object type, that relationship on Activity could be selected in the action.

Instructions

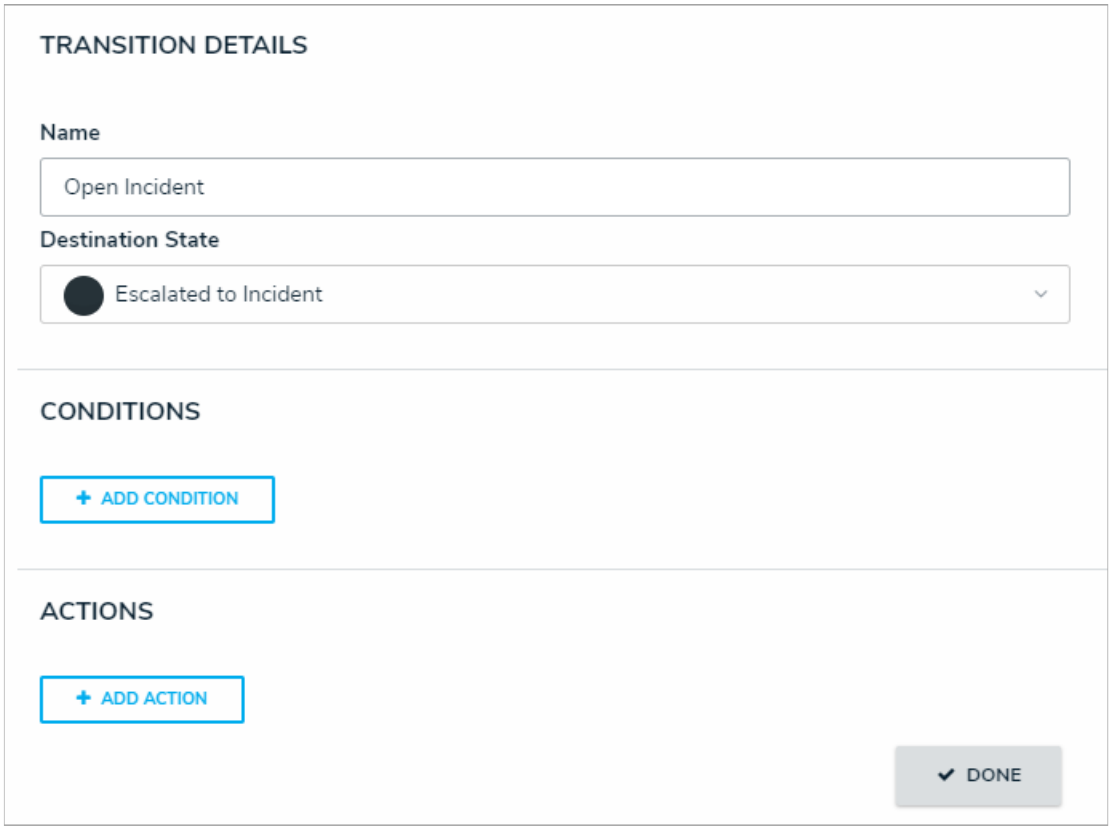
To add a Pull Data Values action to a transition:

1. From the **Edit Workflow** page, add a button trigger and transition to the appropriate state or click a trigger to open the **Edit Trigger** palette.
2. Click the icon next to the transition.



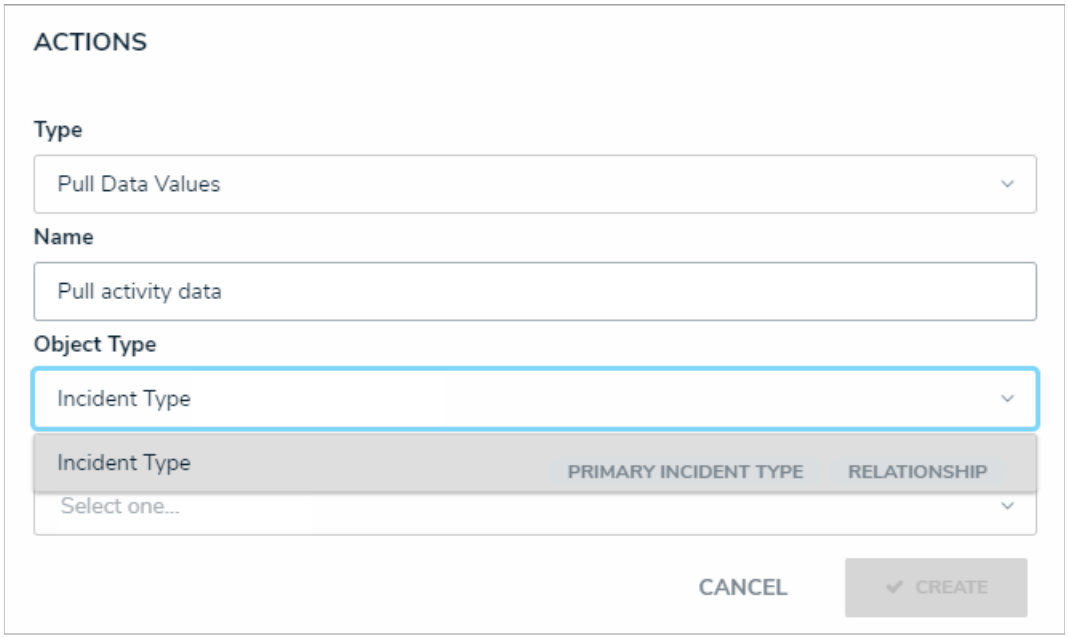
A trigger and transition on the Edit Trigger palette.

3. Click **Add Action** in the **Actions** section.



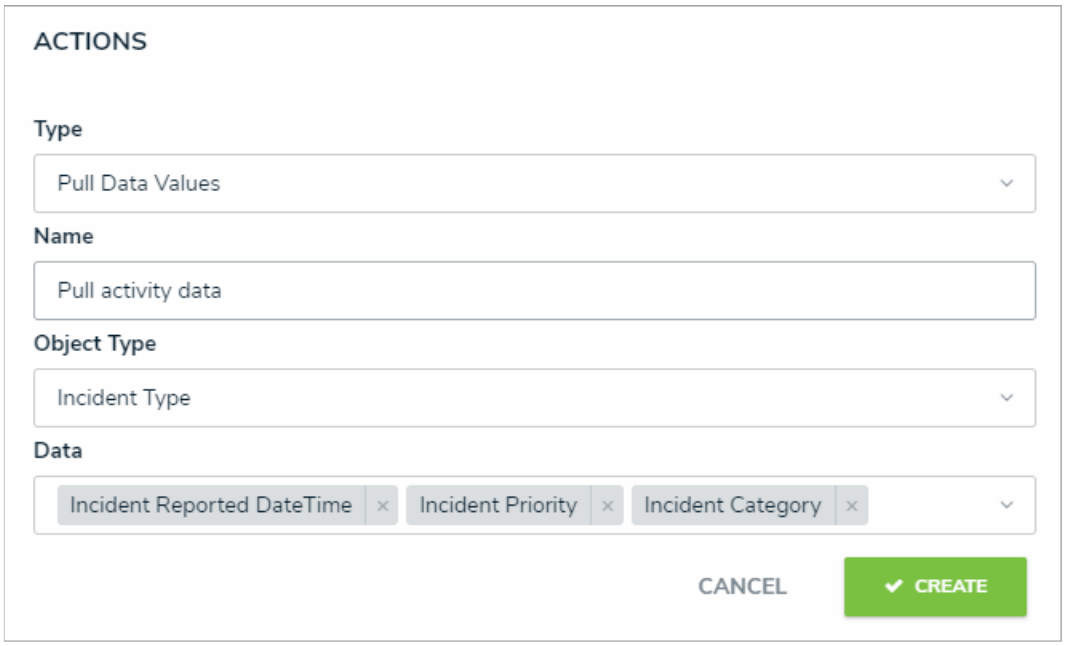
The Transition Details, Conditions, and Actions sections of the Edit Trigger palette.

4. Select **Pull Data Values** from the **Type** dropdown menu.
5. Enter a name for the action in the **Name** field.
6. Select an object type from the **Object Type** dropdown menu. Object types are identified by their names to the left and their relationship or reference name to the right. In order for object types to appear in this dropdown menu, they must meet certain criteria. See the **Important Notes** section of this article for more information.



A new Pull Data Values action.

7. Select the Geolocation property or one or more fields, relationships, or references to copy from the **Data** dropdown menu.



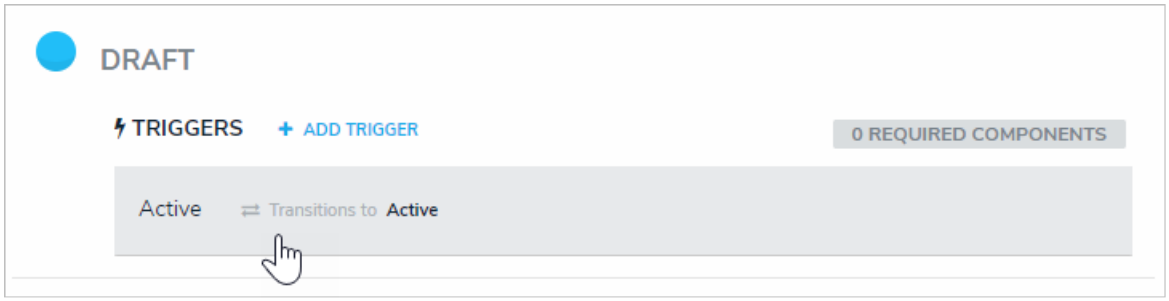
Fields selected in the Data dropdown menu.

8. Click **Create**.
9. Ensure the trigger for this action has been added to the appropriate configurable form and the users who will be clicking the trigger have the appropriate workflow permissions. See the State Triggers on Forms and Workflow Permissions articles for more information.

Edit or Delete a Trigger, Transition, or Action

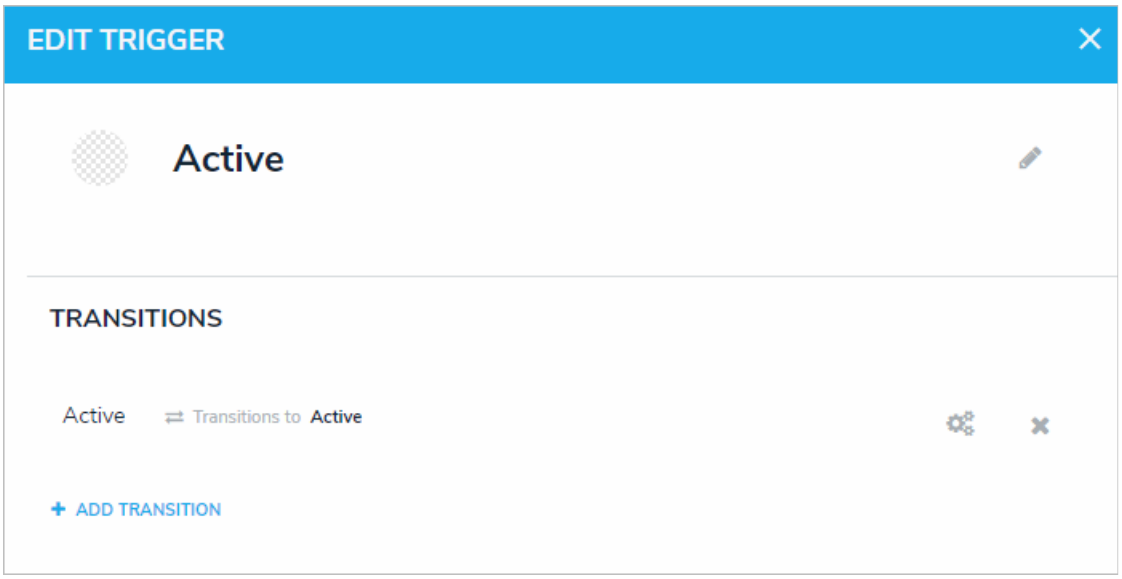
To edit or delete a trigger, transition, or action:

1. Click the icon in the top bar > **Object Types** in the **Data Model** section.
2. Click **Configure Workflow**. If there are multiple workflows saved to the object type, click one in the list.
3. Click the trigger you want to edit or delete to open the **Edit Trigger** palette.



Clicking a trigger to open the Edit Trigger palette.

4. To edit a trigger:
   a. Click the beside the trigger name to show the trigger settings.
   b. To change the trigger type, select one from the **Type** dropdown menu. See Add a Trigger & Transition to a State for more information on the different trigger types.
   c. Make changes to the name, description, and color, as needed.
   d. To delete the trigger, its transitions, conditions, and actions, click **Delete**.
   e. Click **Done** when finished.
5. To edit a transition:
   a. Click the icon in the **Transitions** section.



Transitions on a trigger. Settings can be accessed by clicking the gear icon beside the transition.

   b. Make changes to the transition name and destination state, as needed.
   c. To edit or delete a condition or action saved to a transition, click the icon beside the action or transition.

d. To delete the transition and any actions or conditions added to it, click the icon, then click **Yes** to confirm.

6. Click the icon when finished.

Timed Triggers & Nightly Emails Schedule

Timed triggers and nightly Messaging emails are executed on the same day at the same **local time** across all environments. The sections below provide details based on your organization's region.

North America

- Nightly triggers and emails begin at 7:00 UTC.
- Delivery starts for East Coast customers at 3:00 am EDT in the summer and 2:00 am EST in winter.
- Delivery starts for West Coast customers at 12:00 am PDT in the summer and 11:00 pm PST in winter.

United Kingdom

- Nightly triggers and emails begin at 2:00 am UTC.
- Delivery starts for customers in London, UK at 3:00 am BST in the summer and 2:00 am GMT in winter.

Europe

- Nightly triggers and emails begin at 1:00 am UTC.
- Delivery starts for customers in Frankfurt, Germany and Paris, France at 3:00 am CEST in the summer and 2:00 am CET in winter.

Australia

- Nightly triggers and emails begin at 16:00 UTC.
- Delivery starts for customers in Sydney and Melbourne, Australia at 3:00 am AEDT in the southern hemisphere summer and 2:00 am AEST in the southern hemisphere winter.

Formulas Overview

Similar to the formulas used in Excel, Resolver formulas perform calculations using numeric data drawn from select lists, numeric fields, other formulas, or workflow states.

To perform the calculations on this data, administrators create **variables** that represent the fields, formulas, or states. These variables are then added to a code, along with an **operator** (a character in programming and mathematics that represents an action such as add, subtract, or multiply) and/or a **function** (a block of code that performs an action, such as calculating the sum of all values). If the code is valid, the formula produces a numeric result which can be used to draw conclusions (e.g. KRI Status, Estimated Damage, Net Loss, or Average Impact).

Formulas can be used in a number of components, including:

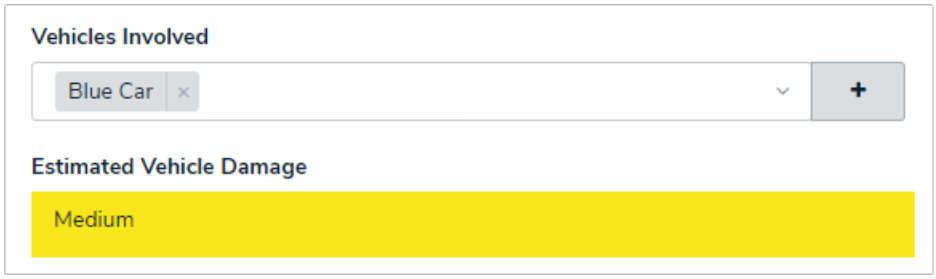
- A condition on a workflow transition to control whether an object is moved to another state;
- A configurable form as a form element with multiple display options;
- A rule on a configurable form section to control section visibility; and
- A data visualization to display formula data in a chart, table, heat map, or data grid.

Before a formula result can be displayed on a form or data visualization, it must be added to an object type as a component. Note, however, that it's still possible to pull data from formulas on a data visualization, condition, or as a variable in another formula, even if the formula results aren't displayed on a form. See Add Formulas to an Object Type for more information.

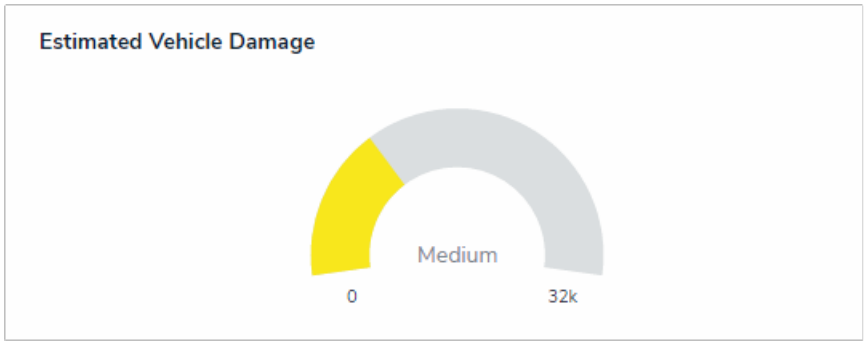
Examples

EXAMPLE

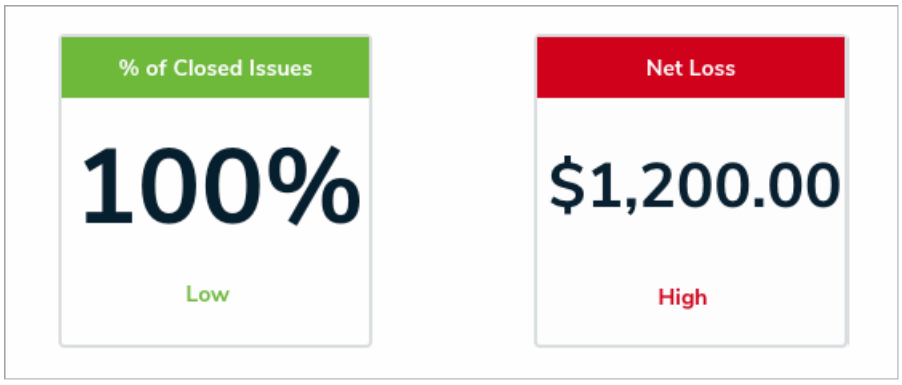
When an incident involves a vehicle, a formula that estimates a vehicle's damage as Low, Medium, High, or Very High would help managers know whether or not they should escalate the incident. To create the formula, you add a relationship that links Incidents back to the Vehicle object type, then create an "Estimated Vehicle Damage" formula that uses the Blue Book Value numeric field on the Vehicle object to estimate the severity of the damage.



A formula on an object type. In this case, the Estimated Vehicle Damage formula is pulling data from the Vehicles Involved relationship, where numeric data about the vehicle's value has been entered.



A formula displayed as a gauge on an object.



Formulas displayed as cards.

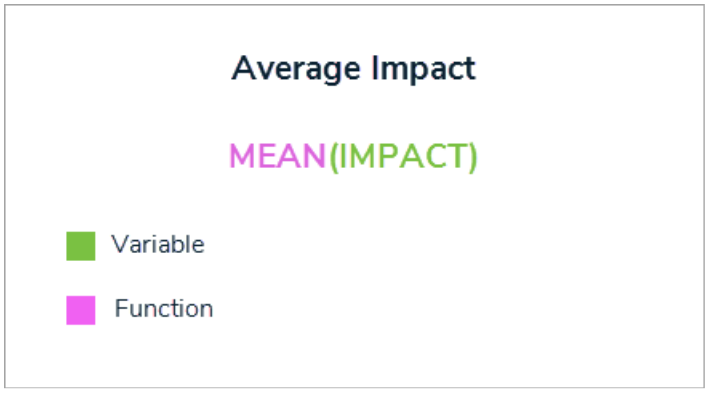
A formula displayed on a configurable form as a trending table and line graph.

Variables, Operators & Functions

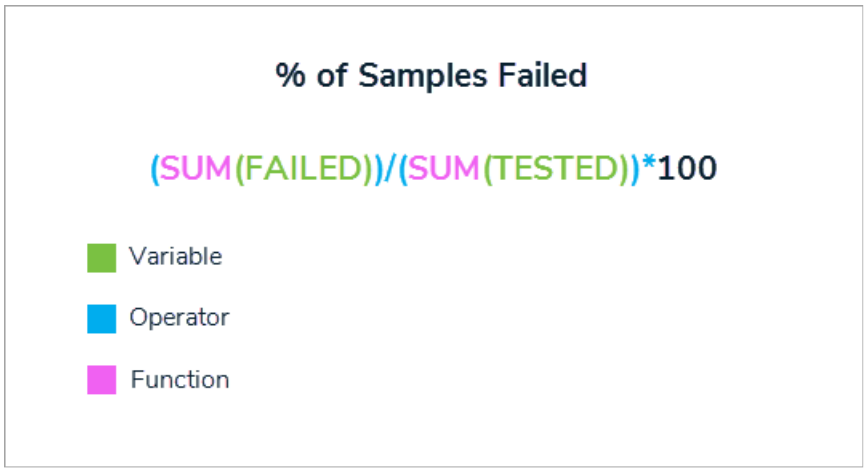
A formula uses numeric data from a select list, numeric or date field, another formula, or workflow state to perform a calculation. This code is comprised of the following components:

- **Variable:** A value on which the calculations are performed. Variables represent the values from a select list, numeric field, another formula, or workflow state. Because formulas use data that can change, all variables must be assigned a name (e.g. LIKELIHOOD for the Likelihood field) that allows the calculations to remain valid, even if the values change. If you're creating a variable using a field, formula, or state from relationship or reference object types, you must select a **variable sub-type** to specify how the data from multiple objects is compiled, calculated, and displayed.
- **Operator:** A character that represents an action. Operators are typically used to perform arithmetic actions (e.g. **+** for add or ***** for multiply), but they can also be used to group or compare variables. Operators can be used in formulas that contain a function and multiple operators can be added to a single formula.
- **Function:** A block of code that performs calculations on multiple values. For example, SUM(LOSS) calculates the total values from the Loss numeric field across multiple objects. Because functions require multiple values to complete the calculation, **Relationship** and **Reference** variable types are typically used with functions, however, it's possible to perform functions using fields or formulas added directly to the object type. Functions can be used in formulas that contain operators and multiple functions can be added to a single formula.

A formula with two variables and an operator.



A formula with a variable and a function.

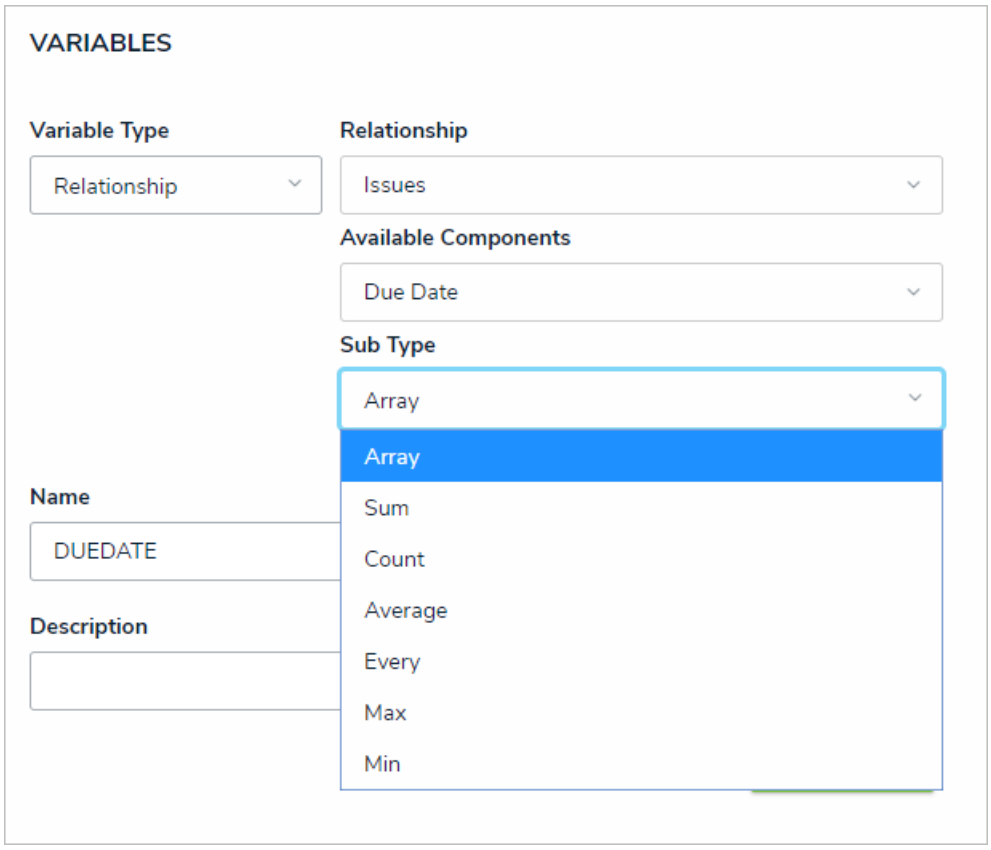


A formula with two variables, four operators (grouping, division, and multiplication), and two functions.

> The formulas, operators, and functions in this article are not an exhaustive list of available options. If your organization requires a more complex formula, contact Resolver Support for assistance.

Field & Formula Variables

Field and formula variables represent the values pulled from numeric fields, date fields, formulas, or select lists, which is the data on which the formula calculations are performed. When using fields or formulas in a **Relationship** or **Reference** variable, a variable **sub-type** must be selected to determine how the data from multiple objects will be compiled, calculated, and displayed. For information on workflow state variable sub-types, see the **Workflow State Variables** section below.



Variable sub-types for a Relationship variable. The Array subtype is selected by default.

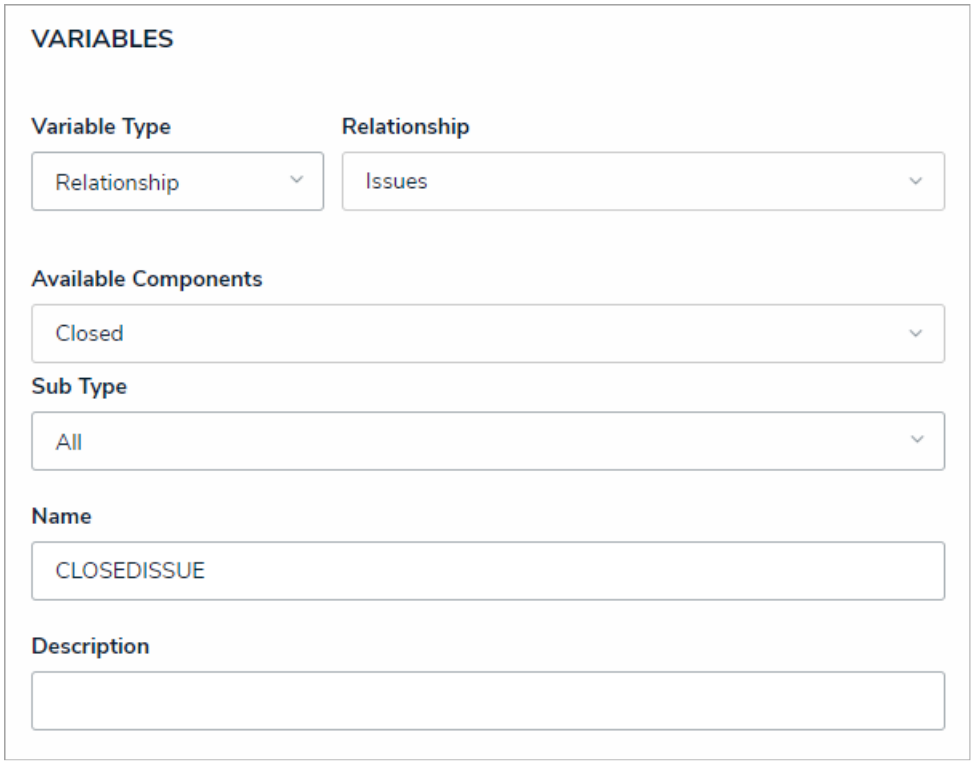
Note that the examples in the table below use VARIABLEA with a sample data set of 100, 9, 13, 4, 1. This data set represents the numeric values that would be collected from multiple objects.

SUB-TYPE NAME	DESCRIPTION	EXAMPLE
Array	Creates a set of values from the variable. To display these values in a formula, they must first be converted into a single value using a function (i.e. sum, min, max, or mean). This is the default subtype.	Selecting the Array sub-type for VARIABLEA will return the values from the variable on every object in the relationship/reference (e.g. 100, 9, 13, 4, 1). Before the data from VARIABLEA can be displayed or used within a larger formula, it must be aggregated into a single value using a function (e.g. SUM(VARIABLEA)).
Sum	Calculates a total from the variable's set of values and returns a single number. This subtype is not available for select list variables.	Selecting the Sum sub-type for VARIABLEA will return the sum of all values pulled from VARIABLEA on every object in the relationship/reference (e.g. 127).
Count	Returns the number of times a variable has been added to an object, thereby counting the number of objects in the relationship/reference.	Selecting the Count sub-type for VARIABLEA will return the number of times VARIABLEA appears on the objects in the relationship/reference (e.g. 5).

Average	Calculates an average number from the variable's set of values. This subtype is not available for select list variables.	Selecting the Average sub-type for VARIABLEA will return the sum of all numeric values in VARIABLEA, divided by the number of objects in the relationship/reference (e.g. (100 + 9 + 13 + 4 + 1) / 5 = 25).
Every	Checks if the variable contains a value on the objects in the relationship/reference. If all objects contain *any* value, a 1 (representing a **true** result) is returned. If some or all of the objects are missing a value, a 0 (representing a **false** result) is returned. This subtype does not check for specific values and is typically used in a workflow condition to control if an object can move into the next state.	Selecting the Every sub-type for VARIABLEA will check if VARIABLEA contains a value on all the objects in the relationship/reference. If all the objects contain a value, the result is 1 (**true**). If some or all of the objects are missing a value, the result is 0 (**false**).
Max	Calculates the highest number from the variable's set of values. This subtype is not available for select list variables.	Selecting the Max sub-type for VARIABLEA will return the highest number from the set of values (e.g. 100).
Min	Calculates the lowest number from the variable's set of values. This subtype is not available for select list variables.	Selecting the Min sub-type for VARIABLEA will return the lowest number from the set of values (e.g. 1).

Workflow State Variables

Workflow state variables represent the current state of one or more objects in a **Relationship** or **Reference** variable type using states from the object type's workflow or any related assessment workflows. These variables require a **sub-type** to determine how the state data will be compiled, calculated, and displayed. Both library and assessment workflow states can be selected in these variable types.



A workflow state variable type. The All sub-type is selected by default.

Note that the examples in the table below use CLOSEDISSUE as the variable, which represents the Closed workflow state of objects in the Issues relationship.

SUB-TYPE NAME	DESCRIPTION	EXAMPLE
All	Checks if all objects in the relationship or reference are in the state selected in the Available Components dropdown menu. If all the objects are in the specified state, a 1 (representing a **true** result) is returned. If some or all of the objects aren't in the specified state, a 0 (representing a **false** result) is returned. This is the default sub-type for workflow state variables.	Selecting the All sub-type for the CLOSEDISSUE variable will check if all the objects in the Issues relationship are in the Closed state. If all objects are in the Closed state, the result is 1 (**true**). If some or all of the objects are not in the Closed state, the result is 0 (**false**).
Any	Checks if any of the objects in the relationship or reference are in the state selected in the Available Components dropdown menu. If some or all of the objects are in the specified state, a 1 (representing a **true** result) is returned. If none of the objects are in the specified state, a 0 (representing a **false** result) is returned.	Selecting the Any sub-type for the CLOSEDISSUE variable will check if any of the objects in the Issues relationship are in the Closed state. If some or all of the objects are in the Closed state, the result is 1 (**true**). If none of the objects are in the Closed state, the result is 0 (**false**).

Count	Returns the number of objects in the relationship or reference that are currently in the state selected in the Available Components dropdown menu.	Selecting the Count sub-type for the CLOSEDISSUE variable will return the number of objects in the Issues relationship that are currently in the Closed state (e.g. 12).

Operators

Operators are used to perform basic calculations, compare, assign, or group data, or compare data to return a true or false (Boolean) result.

Examples in the table below that include an ellipsis (...) indicate that the operator and its components cannot be used as a standalone formula and must be part of a larger formula.

OPERATOR	NAME	DESCRIPTION	EXAMPLE	RESULT
( )	Grouping	Groups variables and operators within a formula to create a single value.	2 * (3 + 4) ...	14
+	Add		4 + 5	9
-	Subtract		7 - 3	4
*	Multiply		2 * 3	6
/	Divide		6 / 2	3
==	Equal to	Checks if the variable's value matches the value entered following the == symbol. If so, the result is **true.**	X == 4 ...	If X has a value of 4, the result is **true**.
!=	Unequal	Checks if the values of two variables are different. If they're different, the result is **true**.	2 != 3	**True**
? :	Conditional expression	Checks if the value of a variable is**true** or **false**. If **true**, the result is the value entered after the **?** symbol. If **false**, the result is the value entered after the **:** symbol.	15 > 100 ? 1 : -1	-1
<	Less than	Checks if the value of the left variable is less than the value of the right variable. If yes, the result is **true**.	2 < 3	**True**
>	Greater than	Checks if the value of the left variable is greater than the value of the right variable. If yes, the result is **true**.	2 > 3	**False**

<=	Less than or equal to	Checks if the value of the left variable is less than or equal to the value of the right variable. If yes. the result is **true**.,	4 <= 3	**False**
>=	Greater than or equal to	Checks if the value of the left variable is greater than or equal to the value of the right variable. If yes, the result is **true**.	2 + 4 >= 6	**True**
and	Logical ***and***	If both variables are **true**, the result is **true**. If either or both variables are **false**, the result is **false**.	X == 5 AND Y == 5 ...	If both X and Y have a value of 5, the result is **true**. If either X or Y has a value other than 5, the result is **false**.
or	Logical ***or***	If either or both of the variables are **true**, the result is **true**. If one or both of the variables is **false**, the result is **false.**	X == 4 OR Y == 3 ...	If Y has a value of 3, the result is **true.** If X is **false**, but Y is 3, the result is **true.** Otherwise, the result is **false.**

Functions

Functions perform a task or calculate a value. Because functions require multiple values to complete the calculation, **Relationship** and **Reference** variable types are typically used with functions, however, it's possible to perform functions using fields or formulas added directly to the object type.

NAME	DESCRIPTION	EXAMPLE	RESULT
Max	Calculates the maximum value from a variable.	max(A)	The highest numeric value of the variable A (e.g. 8).
Mean	Calculates the mean value from a variable.	mean(A)	The sum of all numeric values in variable A, divided by the amount of numbers in the set (e.g. 5 + 8 + 4 + 4 / 4 = 5.25).
Min	Calculates the minimum value from a variable.	min(A)	The lowest numeric value of variable A (e.g. 1).
Sum	Calculates the total value from a variable.	sum(A)	The total of all numeric values in variable A (e.g. 15).
timeDiff	Compares the days, months, or seconds between variables. This function requires date-related data from two **Date & Time** fields or a **Date & Time** field and the	timeDiff(A,B"days")	The difference in days between variables A and B (e.g. 5 days).

	today() function. See the Time Functions article for more information.		
timeOffset	Offsets a variable by number of seconds, days, or months. This function requires a **Date & Time** field variable. This function returns the offset date in Unix timestamp which will need to be converted manually. See the Time Functions article for more information.	timeOffset(A,1,"days")	Offsets the date in variable A by one day.
today	Returns the current date. This function does not accept any parameters (variables inside the parentheses), however, it can be used as parameters inside the **timeDiff** function.	timeDiff(A,today(),"days")	The difference in days between variable A and today's date.

Examples

For a list of common formulas, see the Formula Examples article.

Time Formula Functions

Like other formula functions, the **timeDiff** and **timeOffset** functions use date-related data to perform a calculation or task. These functions do **not** require multiple values and therefore do not require **Relationship** or **Reference** variable types or data from more than one field or formula.

timeDiff

This function returns the difference between two dates using two **Date & Time** variables or a **Date & Time** variable and the **today** function. By default, this function returns the difference between the dates in seconds, however, you can specify that the results are returned in days or hours.

Using the dates May 15, 2018 (variable A) and May 14, 2018 (variable B) as examples, this function could return the following:

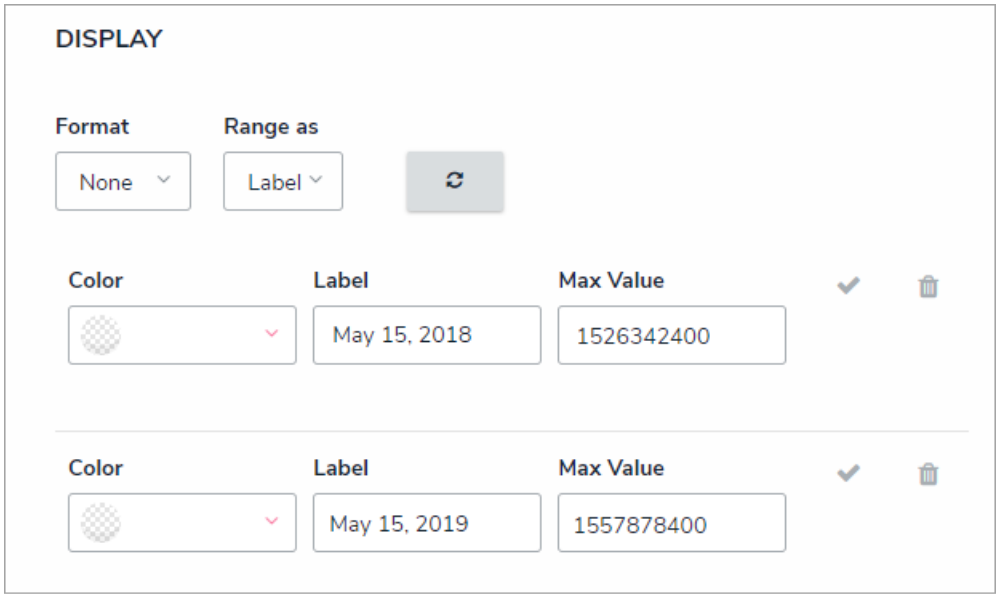
UNIT OF TIME	FORMULA	RESULT
Seconds (default)	timeDiff(A,B)	86400
Hours	timeDiff(A,B,"hours")	24
Days	timeDiff(A,B,"days")	1
Today's date (May 15, 2018), days	timeDiff(today(),B,"days")	1

timeOffset

This function offsets (adds or subtracts) seconds, days, or months from a **Date & Time** field variable.

Before using this function, note that:

- This function returns results in Unix (epoch) timestamp format (e.g. May 2018 is returned as 1525132800). **This output is not converted by Resolver Core and must be done manually.** To convert your timestamp into standard time or vice versa, see the Convert Unix Time website. To calculate the difference between two dates by seconds, days, or months, see the Unix Time Converter.
- Depending on how you intend to use the **timeOffset** function in a formula, it's possible to display the results in a standard date format by inserting the Unix timestamps into the **Max Value** field, then creating a label for the timestamp's date equivalent (see screenshot below for an example). Contact Resolver Support for additional information.



Configuring a formula's display settings to display Unix timestamps as a standard date format.

Using May 15, 2018 (variable A) as an example, this function could return the following:

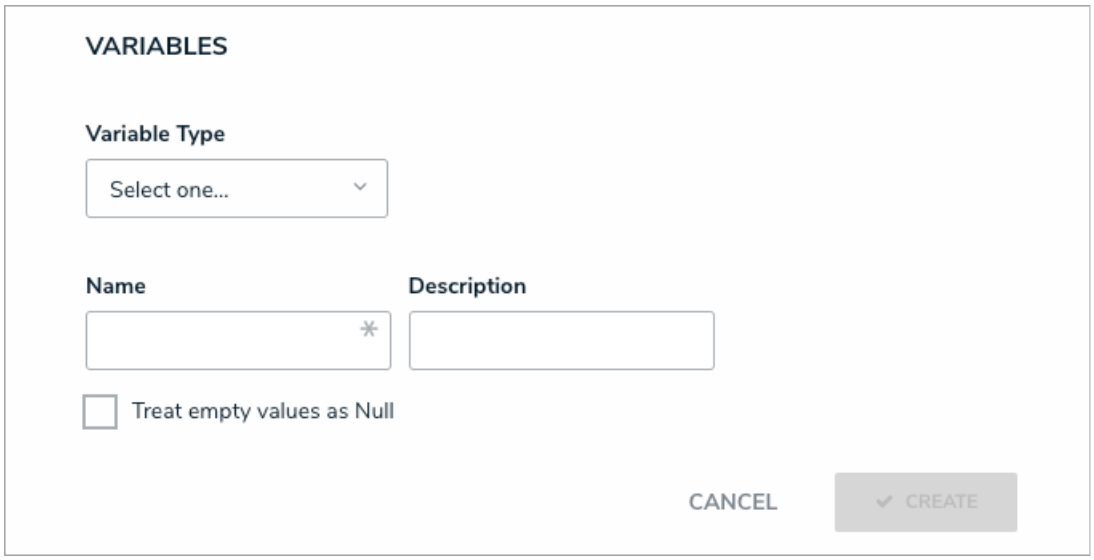
UNIT OF TIME	FORMULA	RESULT
Seconds	timeOffset(A,86400,"seconds")	1526495700 (May 16, 2018)
Days	timeOffset(A,2,"days")	1526582100 (May 17, 2018)
Months	timeOffset(A,1,"months")	1529087700 (June 15, 2018)
Days (subtracted)	timeOffset(A,-3,"days")	1526150100 (May 12, 2018)

Null Values in Formulas

By default, when an object with a blank field or formula variable is included in a formula, that variable is assigned a zero (0) value, which may produce unexpected results, depending on the kind of formula you're creating. To prevent this, administrators can select the **Treat empty values as Null** checkbox when creating or configuring formulas, which will ensure any blank variables are treated as being empty and are therefore not included in the calculation.

For example, using the Min function, you need to create a formula that calculates the lowest numerical value of a field variable. There are currently three objects with that field that will be included in the formula: Object 1 with a value of 200, Object 2 with a value of 600, and Object 3 with no value. If you create the formula without selecting the **Treat empty values as Null** checkbox, the formula's result will be 0 because Object 3 was blank and was automatically assigned 0. However, if the checkbox is selected, the formula will omit Object 3 from its calculations and produce a result of 200.

> If a formula requires input from a variable with no data and that variable has been configured to treat empty values as null, the formula will display **Invalid Result** until the variable contains data.



A new formula. Selecting the Treat empty values as Null checkbox will skip over any objects that contain blank variables.

Formula Examples

This article provides a list of common formulas. Note that these formulas contain variables and calculations that may not be applicable to your organization. For more detailed information on formulas, see the following articles:

- Formulas Overview
- Variables, Operators & Functions
- Time Functions
- Null Values in Formulas
- Add Formulas to an Object Type

Examples

When reviewing the examples below, note that:

- Variables represent numeric and date fields, select lists, workflow states, or other formulas; and
- Functions require data from multiple objects. As such, only **Relationship** and **Reference** variable types can be used with a function.

NAME	FORMULA	VARIABLES	OPERATORS	FUNCTIONS	RESULT
Average Impact	MEAN(IMPACT)	IMPACT (Inherent Impact)		Mean	Calculates the mean value of Inherent Impact from objects in the Risks relationship, divided by the number of times the variable appears on the objects.
Control Effectiveness	CONTROLEFF	CONTROLEFF (Control Effectiveness)			Provides a count of the value from the Control Effectiveness field. Note that if a count of values from multiple objects is required, a relationship or reference

					variable type used with the sum function is required.
Design Effective	DE==1?1:0	DE (Design Effectiveness)	== (equal to), ? : (conditional expression)		Checks if Design Effectiveness equals 1. If yes, the formula outputs 1, otherwise, it outputs 0.
Indicator Status	(CURRENT-TARGET)*DIRECTION	CURRENT(Current Value), TARGET (Target Value), DIRECTION (Desired Direction)	( ) (grouping), - (minus), * (multiply)		Subtracts the value of Target Value from Current Value, then multiplies the total by the value of Desired Direction.
Inherent Risk Score	IN_IMPACT*IN_LIKELIHOOD	IN_IMPACT (Inherent Impact), IN_LIKELIHOOD (Inherent Likelihood)	* (multiply)		Multiples the value of Inherent Impact by the value of Inherent Likelihood.
KRI Status	TYPE==1 AND CV>LL AND CV	TYPE (Type), CV (Current Value), LL (Lower Limit), UL	== (equal to), and (logical and), > (greater than), < (less		Checks if the value of Type is 1, if the value of Current Value is greater than Lower Limit, and if the value of Current

		(Upper Limit)	than), ? : (conditional expression)		Value is less than Upper Limit. If yes, the formula outputs a value of 1, otherwise it outputs 2.
Material Weaknesses	IC==2?1:0	IC (Issue Classification)	== (equal to), ? : (conditional expression)		Checks if the value of Issue Classification is 2, If yes, the formula outputs a value of 1, otherwise it outputs 0.
Maximum Likelihood	MAX(LIKELIHOOD)	LIKELIHOOD (Inherent Likelihood)		Max	Calculates the highest numeric value of Inherent Likelihood from objects in the Risks relationship.
Net Loss	TOTALLOSS-TOTALRECOVERED	TOTALLOSS (Total Loss Amount), TOTALRECOVERED (Total Recovered Amount)	- (minus)		Subtracts the value of Total Loss Recovered from Total Loss Amount.
No. of Open Actions	SUM(OA)	OA (Open Actions)		Sum	Calculates the sum of values of Open Actions from objects in the Processes relationship.

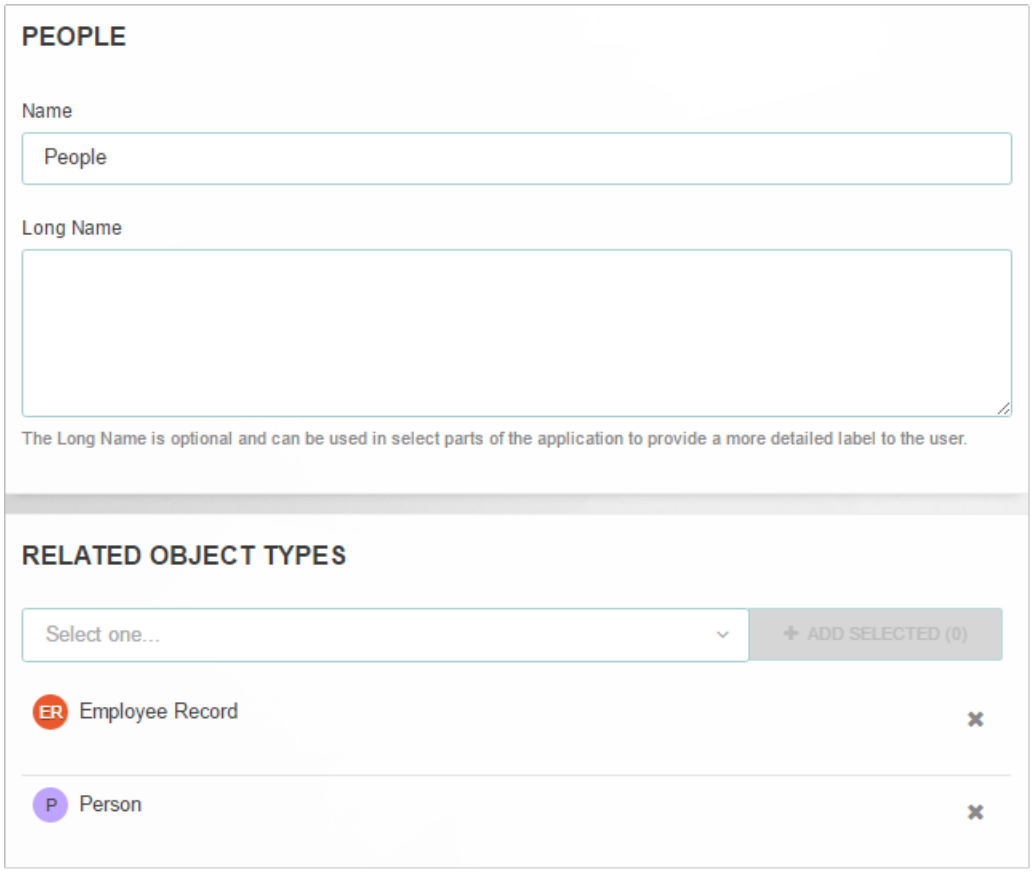
Percentage of Samples Failed	(SUM(FAILED))/(SUM(TESTED)*100	FAILED (No. of Samples Failed) TESTED (No. of Samples Tested) Control	/ (divide), * (multiply)	Sum	Divides the sum of values of No. of Samples Failed by the sum of No. of Samples Tested from objects in the Tests relationship, then multiplies the total by 100.
Percentage of Testing Complete	TESTING/PLANNED*100	TESTED (No. of Samples Tested), PLANNED (Total Samples Planned)	/ (divide), * (multiply)		Divides the value No. of Samples Tested by Total Samples Planned, then multiplies the total by 100.
Time to Fix	timeDiff(DATECOMPLETED,DATEIDENTIFIED,"days")	DATECOMPLETED (Issue Resolution Date), DATEIDENTIFIED (Issue Identification Date)		timeDiff	Displays the difference, in days, between the Issue Resolution Date and the Issue Identification Date.
Total Cost	QTY*COST	QTY (Quantity), COST (Cost)	* (multiply)		Multiples the value of Quantity by Cost.

Object Type Groups Overview

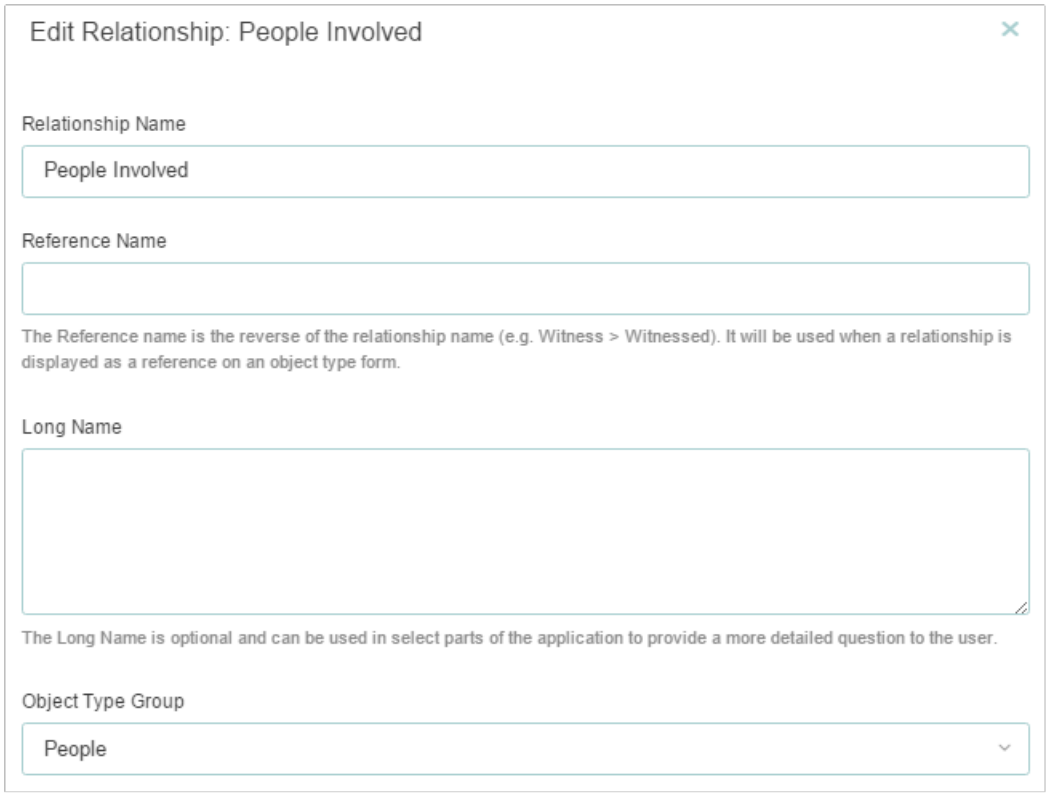
Object type groups assemble one or more object types into a category to create relationships. Object type groups are required when creating relationships because they allow users to create and draw data from multiple object types via a single relationship, which thereby prevents administrators from having to create multiple relationships for each relevant object type.

EXAMPLE

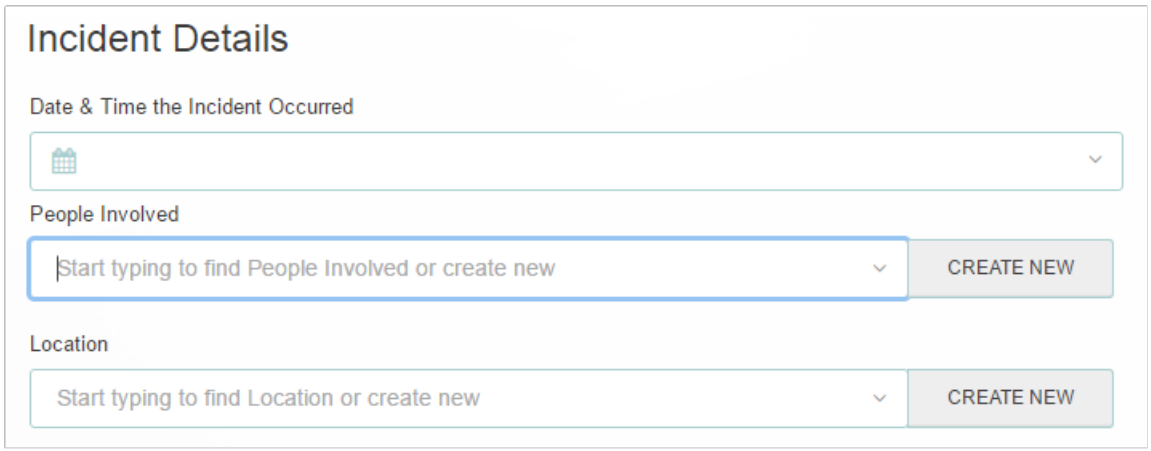
Because the person creating an Incident object may not be the same person who was directly involved in the incident (e.g. witness, victim, suspect, etc.), you want to track these people, whether they are an employee or visitor. To do this, you create a People object type group and add the Employee Record and People object types, then select this group when creating a People Involved relationship on Incident. Now, when an Incident object is created, the user can select an existing record or create a new one from either the Employee Record or Person object types in the People Involved field on a form.



An object type group. In this case, the People group has the Employee Record and Person object types saved to it. This group will be used to create the People Involved relationship on the Incident object type.



The People Involved relationship that will appear on the Incident object type. Note that the People object type group has been selected on this relationship.

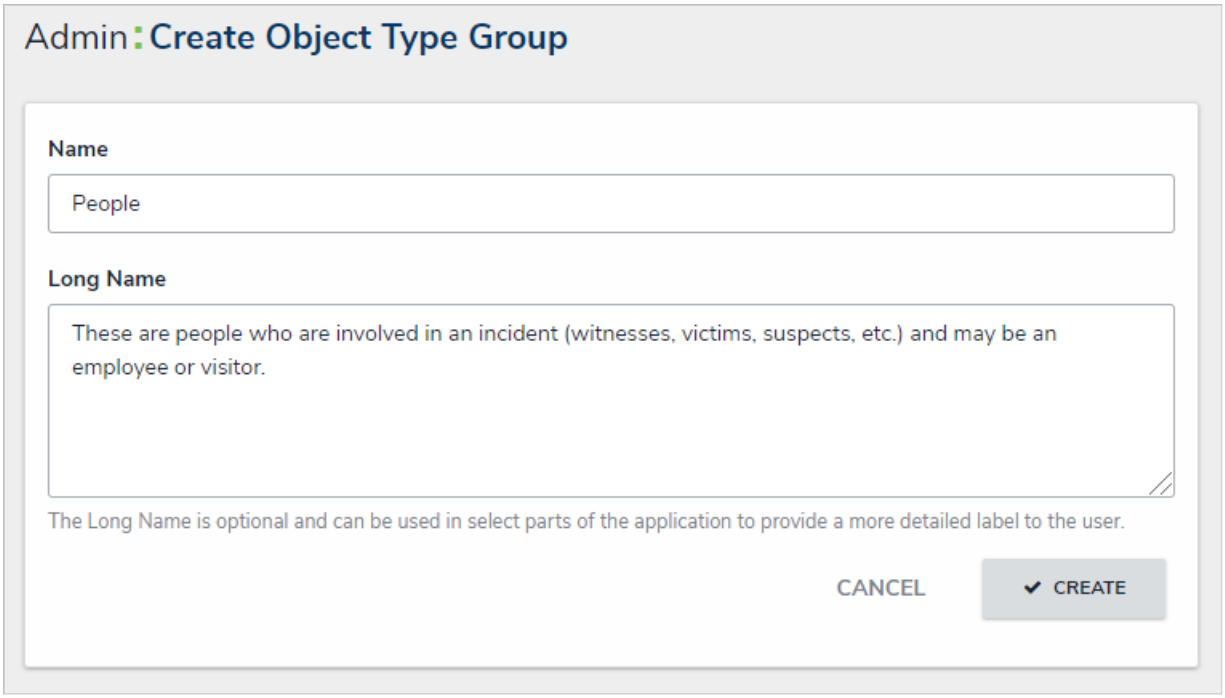


The People Involved relationship as it appears on a new Incident object.

Create a New Object Type Group

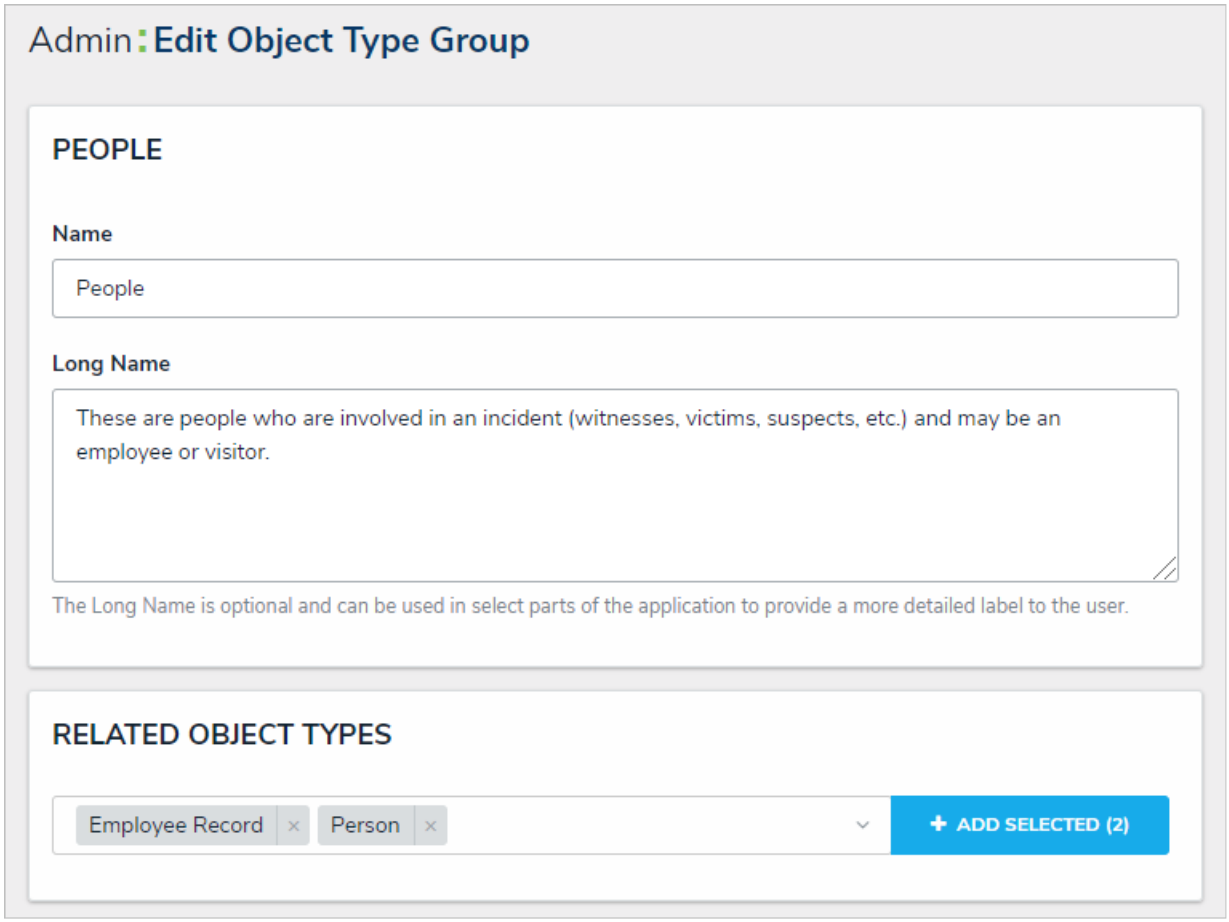
To create a new object type group:

1. Click the icon in the top bar > **Object Type Groups** in the **Data Model** section.
2. Click **Create Object Type Group**.
3. Enter a name for the object type in the **Name** field.
4. **Optional:** Enter a brief description of the object type group in the **Long Name** field, which will appear below the object type when editing it.



The Create Object Type Group page.

5. Click **Create** to display the **Related Object Types** section.
6. In the field in the **Related Object Types** section, enter the name of the object type you want to add or select it from the dropdown menu. Continue to add more object types as needed.



A new Object Type Group. After clicking Create, the Related Object Types section is displayed.

7. Click **Add Selected**.
8. Click **Done** when finished.

Edit or Delete an Object Type Group

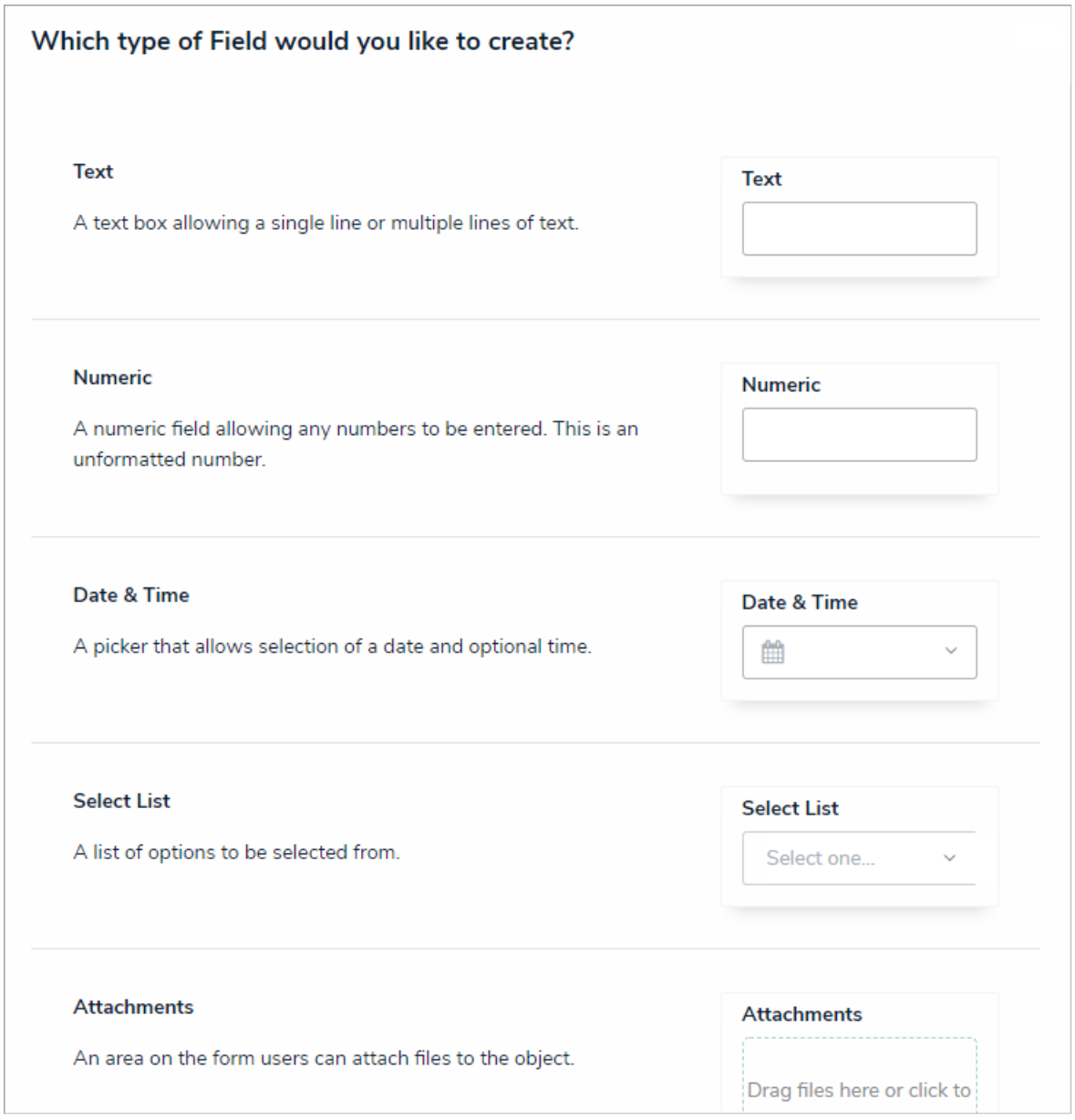
To edit or delete an object type group:

1. Click the icon in the top bar > **Object Type Groups** in the **Data Model** section.
2. Click the object type group you want to edit to display the **Edit Object Type Group** page.
3. Enter an alternate name in the **Name** or **Long Name** fields, as needed.
4. To add an additional related object type, enter the name of the object type you want to add or select it from the dropdown menu in the **Related Object Types** section, then click **Add Selected**.
5. To remove a related object type, click the icon next to that object type.
6. To delete the object type, click the icon, then click **Yes** to confirm.
7. Click **Done** when finished.

Fields Overview

An object type's fields are where users will input data. Fields are available in the following formats:

- **Text**: A text field that allows for a single line or multiple lines of text, optional concatenation, and rich text formatting.
- **Numeric:** A field that allows for numbers.
- **Date & Time:** A picker that allows you to select the date and time. All dates and times are saved and displayed in UTC format.
- **Select List:** A dropdown menu with multiple options to choose from.
- **Attachments:** An area on the form that allows users to upload files or URLs. Supported document files are searchable by keywords or upload dates.
- **Image Attachment:** A field through which images can be uploaded and embedded onto a form.



Available field types (Image Attachment not shown).

Once a field has been created, it can be added as a component to any object type. All added fields appear on the object type's default form, but you can select which fields will appear when creating a configurable forms. Once linked to an object type, all fields, except for **Attachments** and **Image Attachments**, can be embedded in an email template as variables when the Messaging action is triggered on a workflow.

The same field can be added to multiple object types; however, any changes made to the field's settings (e.g., deleting the field or modifying the field's name, select list options, minimum/maximum characters, date and time format, etc.) will be applied to all related object types.

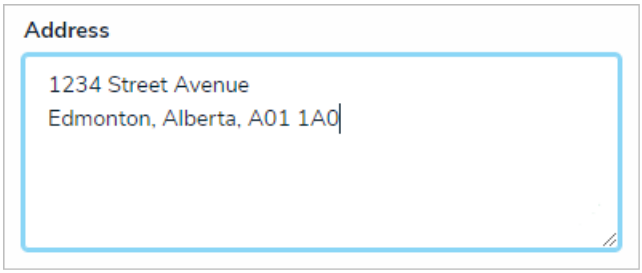
You can confirm if a field has been added to an object type by opening the field's **Editing Field** page, then reviewing the **Related Object Types** section at the bottom of the page. You can click an object type in this section to view its **Edit Object Type** page.

The **Fields** settings allow you to create, edit, and delete fields, which can then be added to an object type, but you can also create and add fields from the **Edit Object Type** page. See Add Fields to an Object Type section for more information.

Text Fields

A text field allows users to enter a single line or multiple lines of plain text or rich text formatting, depending on the field's settings, with optional concatenations.

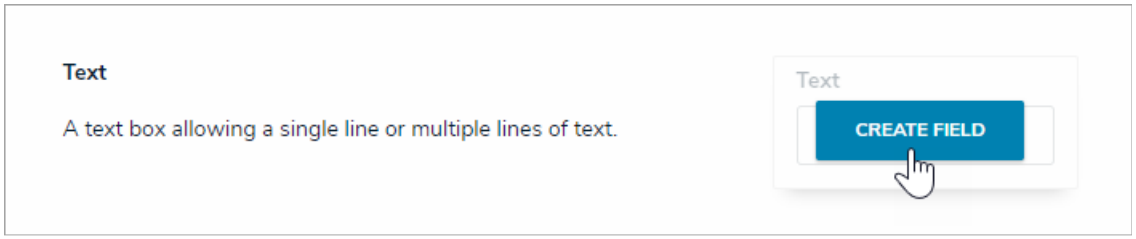
For more information on adding concatenations, see the Text Field Concatenations article. For more information on enabling rich text formatting, see the Rich Text Formatting article.



A multiple-line plain text field on an object.

To create a text field:

1. Click the icon in the top bar > **Fields** in the **Data Model** section.
2. Click **Create Field.**
3. Hover your cursor over the **Plain Text** field type, then click **Create Field**.

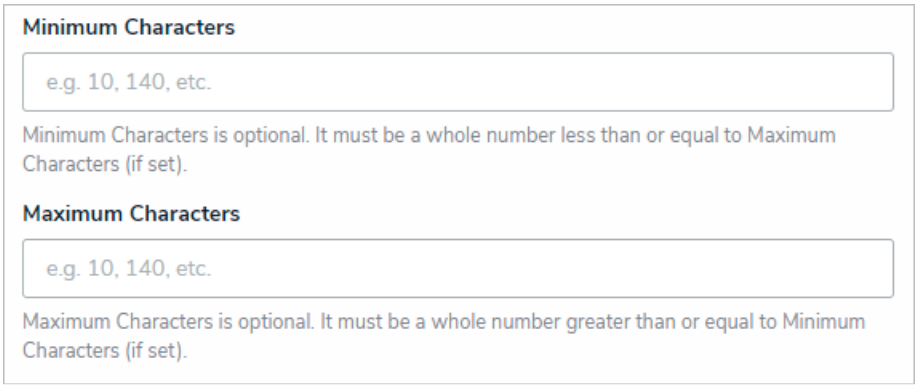


The Text field type.

4. Enter a name for the field as it will appear on an object type in **Field Name**.
5. **Optional:** If needed, provide additional information or instructions on completing the field in the **Long Name** section, which can be styled using Markdown. You can choose to display a field's long name on configurable forms.

The Field Name and Long Name fields.

6. Select one of the following text types:
    - **Single Line:** For a single line of plain text.
    - **Multiple Lines:** For multiple lines or paragraphs of plain text.
    - **Rich Text Format:** For up to 20,000 characters in an RTF editor. See the Rich Text Formatting article for more information.
7. **Optional:** To enter character requirements for single or multiple line text types:
    a. Enter a minimum number of characters the user must enter in the field. If you select a maximum number of characters in step 7 below, the minimum number must be less than or equal to the maximum.
    b. Enter a maximum number of characters the user can enter in the field. If you selected a minimum number of characters in step 6 above, the maximum number must be greater than or equal to the minimum.



The Minimum Characters and Maximum Characters fields.

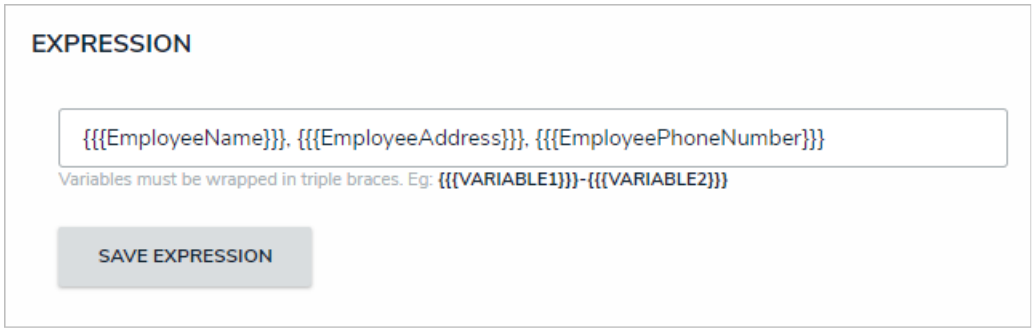
8. Click **Create** to will display the **Editing Field** page.

Text Field Concatenation

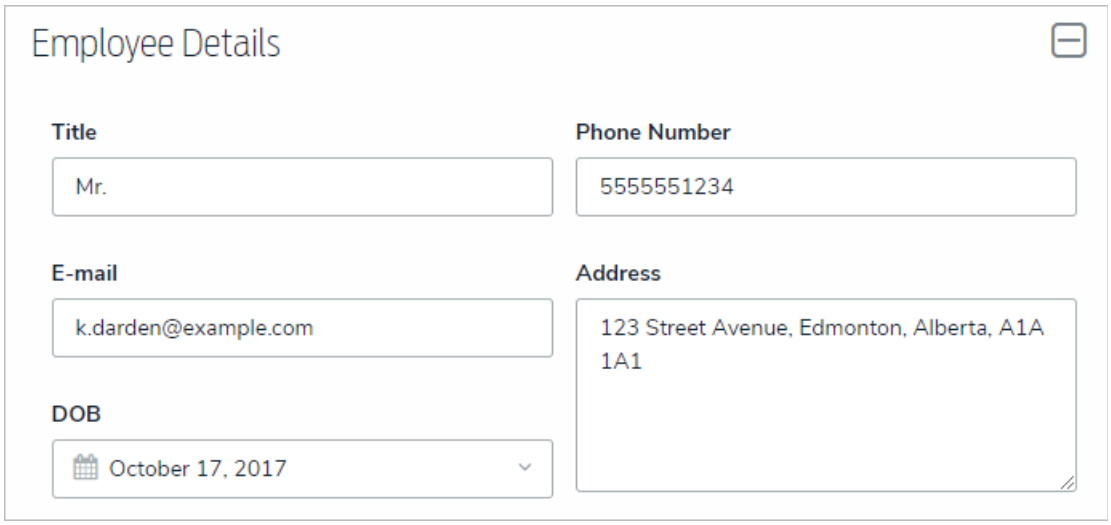
Concatenations pull data from properties (including the Location property and its address components) and fields to automatically populate the values into the plain text fields.

> Concatenation can also be added to the **Name** and **Description** properties on an object type. See the Name & Description Concatenation Overview article for more information.

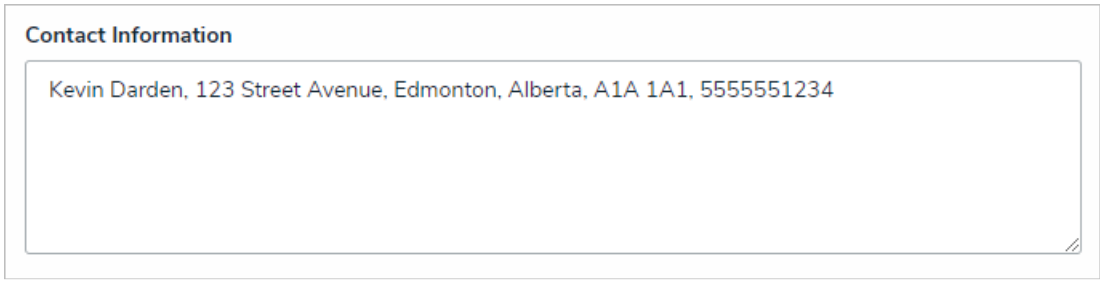
To specify which data is populated in the field, administrators edit a plain text field, select a data definition and an object type in that definition, then one or more properties or fields to create variables, which are then used to create an expression. For example, if you created variables for the City and Address select list fields, the expression would look similar to {{{City}}}, {{{Address}}}.



An expression with variables. All variables must be enclosed in triple curly braces.



The fields used as variables in an expression.



The variable fields successfully populating in the Contact Information field from the fields used in the previous screenshot.

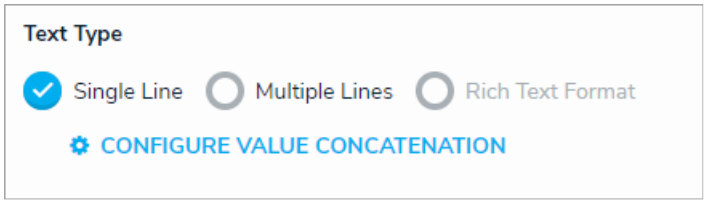
Important Notes

- Concatenations **cannot** be applied to existing objects or rich text formatting field types.
- Unlike concatenations on an object type, you can select any data definition within the org to filter which properties and fields are available for variables.
- Prior to creating expressions, you must ensure the required fields and **Location** property, if applicable, have been added to the applicable object types in the selected data definition.
- Spaces and special characters in variable names or inside the curly braces are not permitted. For example, **{{{RiskName}}}** is valid, but **{ {{Risk Name}}}** will result in an error.
- When adding data from the **Location** property, a separate variable must be created for each address component you wish to include in the concatenation (i.e., City, State, Country, etc.).
- When adding the **Country** location component as a variable, these values are displayed using the ISO 3-character code (e.g., CAN for Canada or USA for United States).
- When the **State** location component is used as a variable, it's displayed using the ISO 2-character code. If the state or province belongs to a region that does not use 2-character codes (e.g., Australia), a 3-character code is used instead.

Instructions

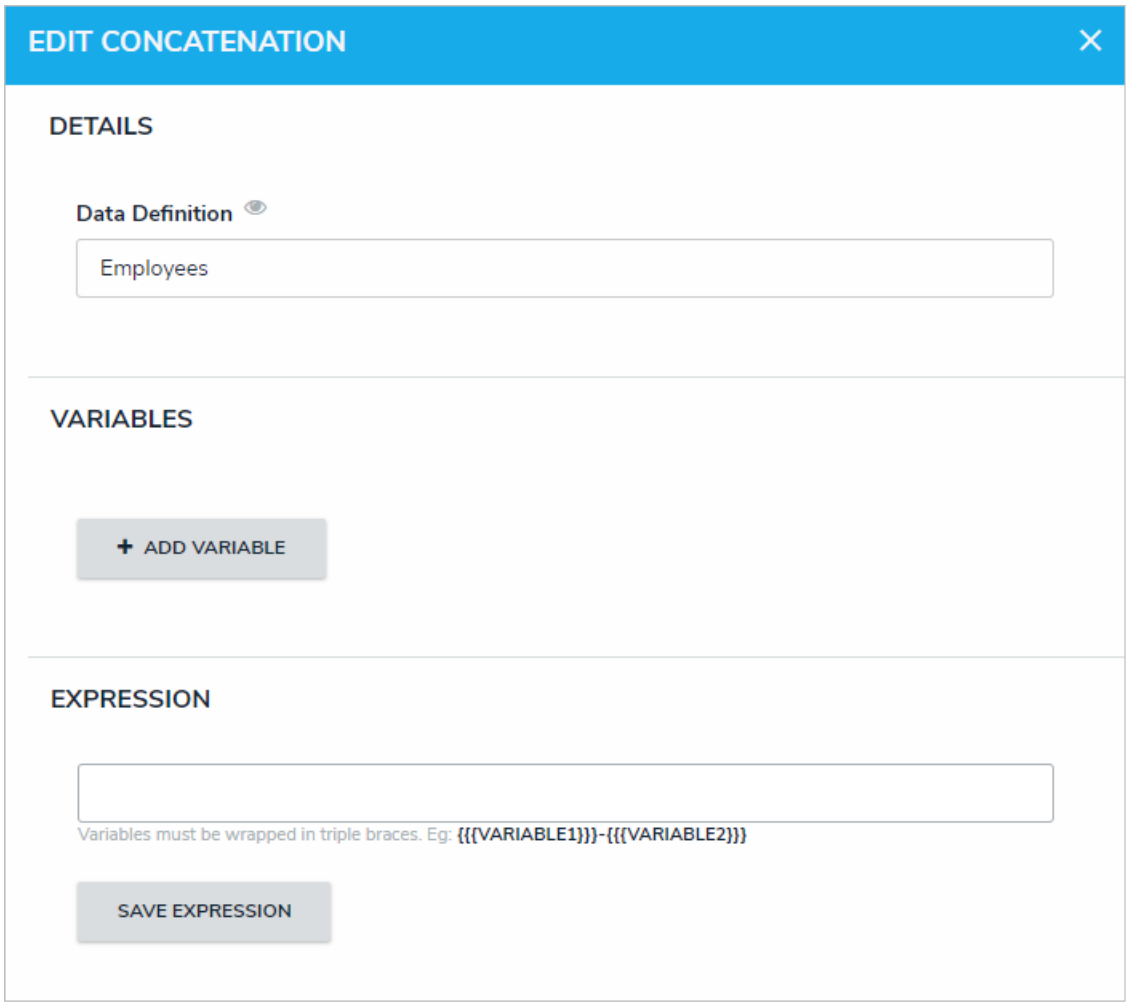
To create a concatenation on a text field:

1. Create a new text field, ensuring the **Single Line** or **Multiple Lines** text type is selected.
2. Click **Configure Value Concatenation** in the **Text Type** section to display the **Edit Concatenation** screen. This option will not appear until the field is saved.



The Text Type section.

3. Select a data definition from the **Data Definition** dropdown menu. This will determine which object types' properties and fields are available to add as variables.



A new concatenation with no variables or expression.

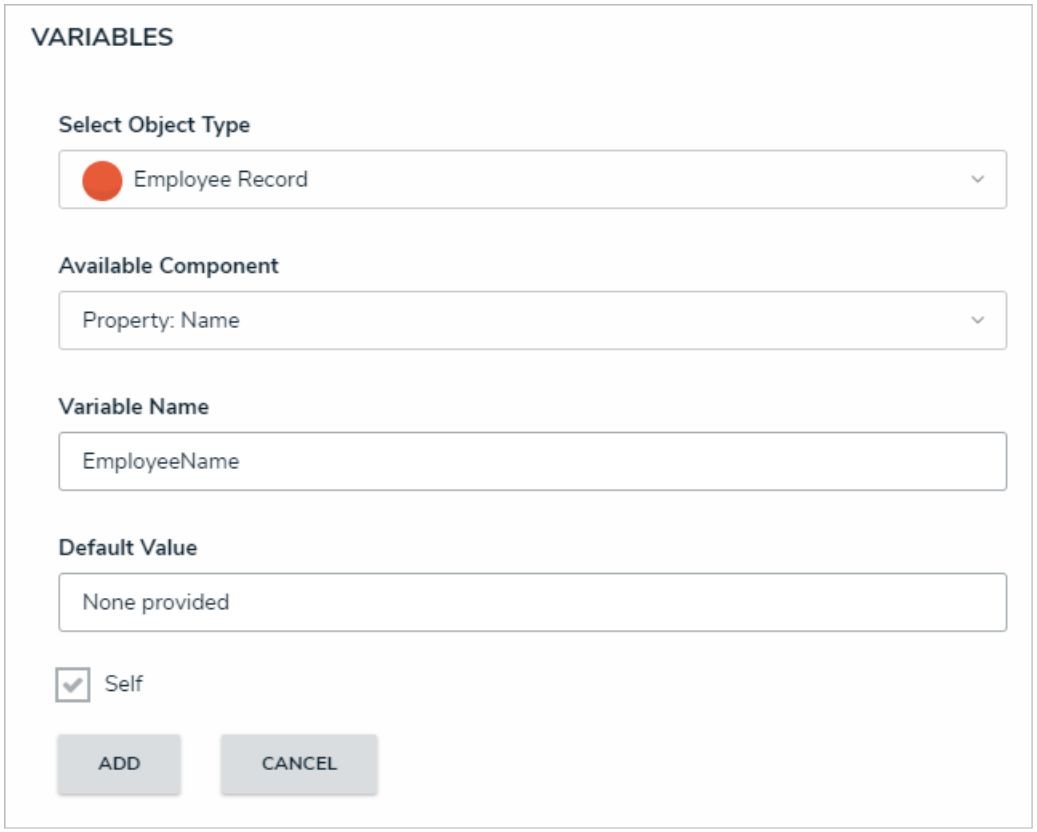
> If you want to select another data definition, you must delete the concatenation by clicking the **X** icon beside the concatenation on the **Editing Field** page, then recreate it.

4. Click **Add Variable**.
5. Select an object type in the data definition from the **Select Object Type** dropdown menu.
6. Select a property or field you want to auto-populate in an object's name or description from the **Available Component** dropdown menu.
    - If you selected the **Created On** property or date field, select a date format (e.g. YYYY-MM-DD) from the **Variable Format** dropdown menu.
    - If you selected the **Location** property, choose an address component from the **Select Address Component** dropdown menu (i.e., House Number, Street, City, State, ZIP Code, or Country). Note that a separate variable must be created for each address component.
7. Enter a name for the variable in the **Variable Name** field.

> Spaces and special characters in variable names are not permitted. For example, naming a variable **RiskName** in the **Variable Name** field is valid, but entering **Risk Name** in this field will result in an error.

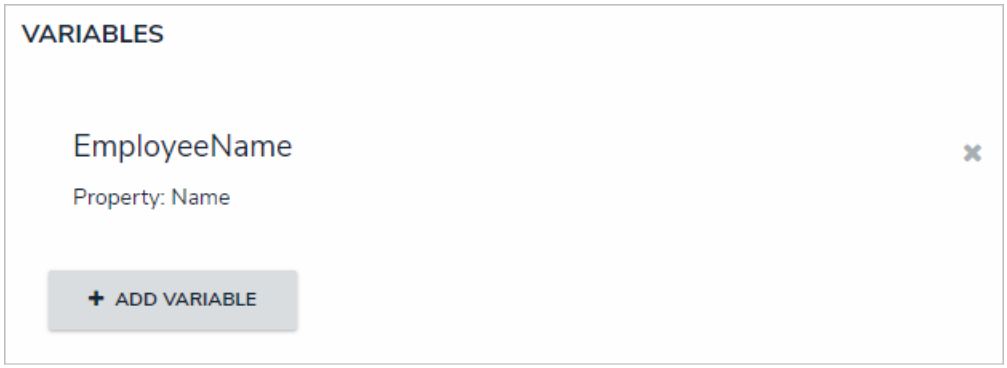
8. **Optional:** To display a default word or phrase in the concatenation when the variable has no data, enter that word or phrase in the **Default Value** field (e.g., "Null" or "None provided").

9. If the variable is from the same object type where the plain text field is saved as a component, (e.g. the plain text field is saved to the Employee Record object type and the variable you're creating is also from a property or field also on the Employee Record object type) select the **Self** checkbox.



Creating a new variable in the Edit Concatenation palette.

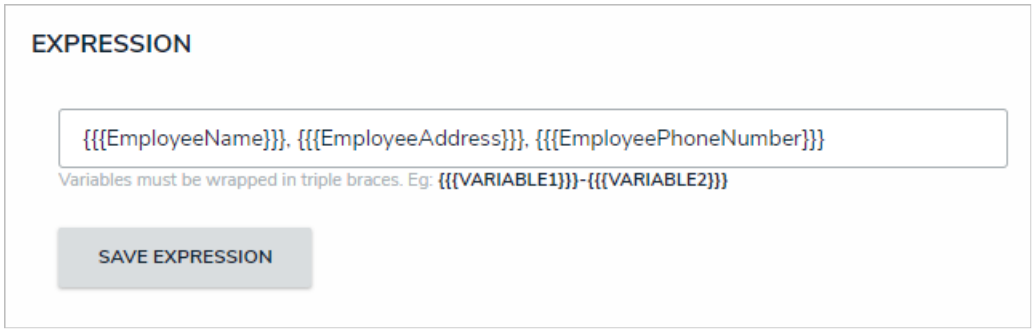
10. Click **Add** to save the variable.



A new variable, which can now be included in the expression.

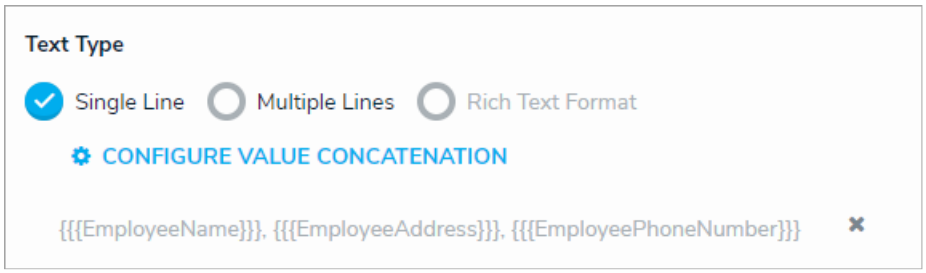
11. Repeat steps 4-10 above to continue adding variables as needed.

12. Type the variable names in the **Expression** field. Variables can be entered in any order, but they must be enclosed in triple curly braces (e.g. {{{CreatedBy}}}) **with no spaces or special characters within the braces**. If needed, you can include spaces and other alphanumeric characters between the variables.



An expression with variables. All variables must be enclosed in triple curly braces.

13. Click **Save Expression**.



A concatenation saved to the field.

14. To edit a variable, it must be deleted by clicking the ✖ icon from the **Edit Concatenation** palette, then recreated.
15. To delete the concatenation, click the ✖ icon from the **Editing Field** page.

Rich Text Formatting

When creating a new text field, admins can enable the **Rich Text Format** option, which saves the field as a text box that allows that allows users to:

- Apply headings, bold, italic, underline, or strikethrough formatting.
- Apply left, right, or center text alignment.
- Create and continue numbered and bulleted (ordered and unordered) lists.
- Embed URLs.
- Enter up to 20,000 characters of text.
- Enable a focused view of the text editor.

RTF can be applied and/or is displayed on configurable forms, data grids, report tables, repeatable forms, printed forms or reports, and reports exported into Word, Excel, or PDF format. Basic formatting is also supported when importing data into RTF fields. To enable RTF, select the **Rich Text Format** option when creating the field.

> When printing a form or report with RTF from your browser, note that some formatting is not preserved or displayed as expected. For the best results, it's recommended that RTF data is printed from a report exported into PDF format. If the data is on a configurable form, it can be displayed through the repeatable form element, then exported into PDF.

A Rich Text Format field displayed in focused mode.

Rich Text Format Editor

OPTION	ICON	DESCRIPTION	KEYBOARD SHORTCUT	EXAMPLE
Copy	NA	Copies a selection of text to the clipboard.	Ctrl+C (Windows) or Command+C (Mac)	N/A
Cut	N/A	Cuts a selection of text and copies it to the clipboard.	Ctrl+X (Windows) or Command+X (Mac)	N/A
Paste	N/A	Pastes copied text into the field.	Ctrl+V (Windows) or Command+V (Mac)	N/A
Undo	N/A	Removes the last change made to the text.	Ctrl+Z (Windows) or Command+Z (Mac)	N/A
Redo	N/A	Re-applies a change that was previously made to the text.	Ctrl+Y (Windows) or Command+Shift+Z (Mac)	N/A
Heading styles		Applies heading styles from a dropdown menu of options (headings 1 through 6). The default setting is **Normal** (no heading styles applied).	N/A	Example Example
Bold		Bolds the text.	Ctrl+B (Windows) or Command+B (Mac)	**Example**
Italic		Italicizes the text.	Ctrl+I (Windows) or Command+I (Mac)	*Example*
Underline		Underlines the text.	Ctrl+U (Windows) or Command+U (Mac)	Example
Strikethrough		Strikes through the text.	N/A	~~Example~~
Remove formatting		Removes formatting from the selected text.	N/A	N/A
Alignment		Applies left (default), center, or right text alignment.	N/A	Example (left) Example (center) Example (right)
		Creates bullet or number lists. Pasting a list		• Example • Example

Lists		from Word will automatically enable a list style in the editor.	N/A	1. Example 2. Example
Links		Creates a link using the highlighted text. Links can also be created without display text by typing or pasting the full URL in the textbox. Clicking a link will open it in a new tab in your browser. Note that all URLs must include http:// or https://	N/A	Resolver (with display text) https://www.resolver.com (no display text)
Save		Saves changes made to the field. Clicking outside the editor will also save your changes. Drafts of your changes are retained in the field, but will not appear elsewhere until explicitly saved.	N/A	N/A
Focus mode		Enable or disable focus mode.	N/A	N/A

Data Import

Using the following HTML tags, limited formatting can be applied when importing data into an RTF field:

- **Bold:**
- **Italic:**
- **Strikethrough:**
- **Ordered list:**
  1.
  2.
- **Unordered list:**
  -
  -

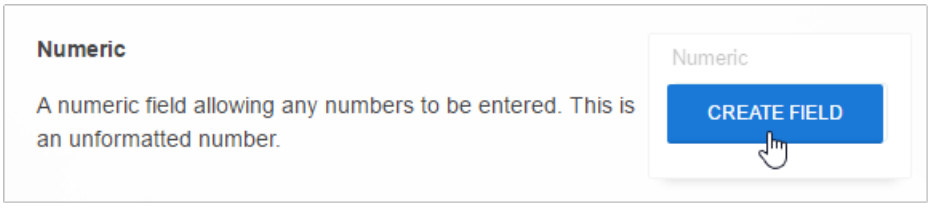
Numeric Fields

A numeric field allows users to type numbers into a form. These fields can also be configured to display trending data when added to a standard form on an object type.

A numeric field on an object.

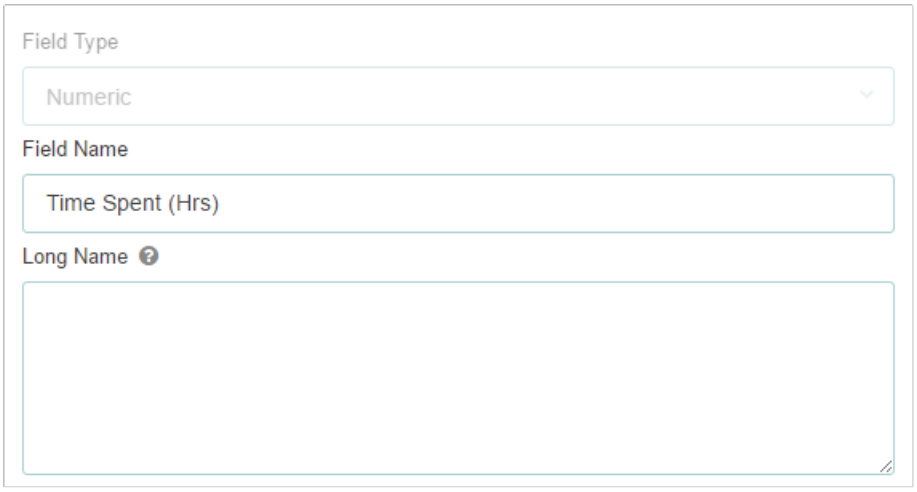
To create a numeric field:

1. Click the icon in the top bar > **Fields** in the **Data Model** section.
2. Click **Create Field**.
3. Hover your cursor over the **Numeric** field type, then click **Create Field**.



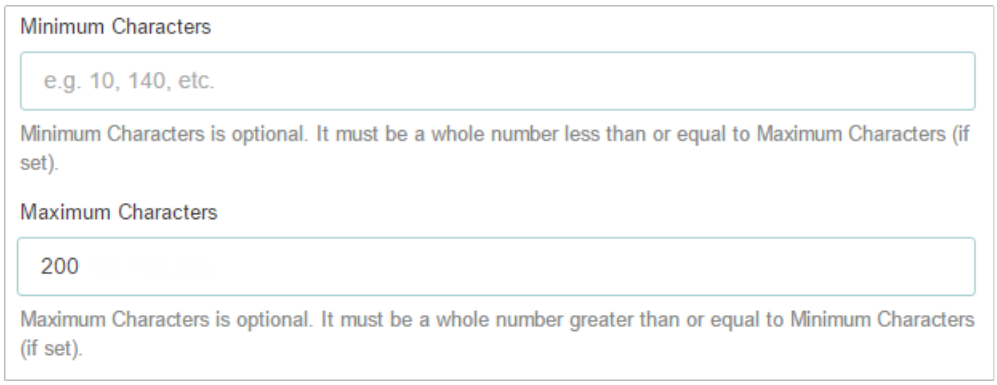
The Numeric field type on the Field Types settings page.

4. Enter a name for the field as it will appear on an object type in **Field Name**.
5. **Optional:** If needed, provide additional information or instructions on completing the field in the **Long Name** section, which can be displayed on configurable forms.



The Name and Long Name fields.

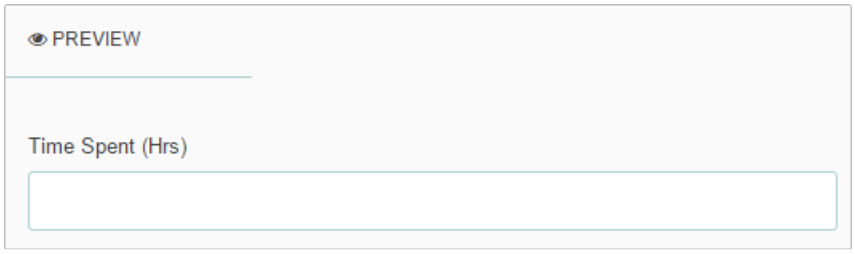
6. **Optional:** Enter a minimum number of characters the user must enter in the field. If you select a maximum number of characters in step 7 below, the minimum number must less than or equal to the maximum.
7. **Optional:** Enter a maximum number of characters the user can enter in the field. If you selected a minimum number of characters in step 6 above, the maximum number must less than or equal to the minimum.



The Minimum and Maximum Characters fields within a new plain text field.

> Though the **Number Type** dropdown displays **Number**, **Currency**, **Percent**, and **Phone Number**, only **Number** can be selected, as the remainder of the options are currently in beta testing.

8. Use the **Preview** section to confirm the field is correct.

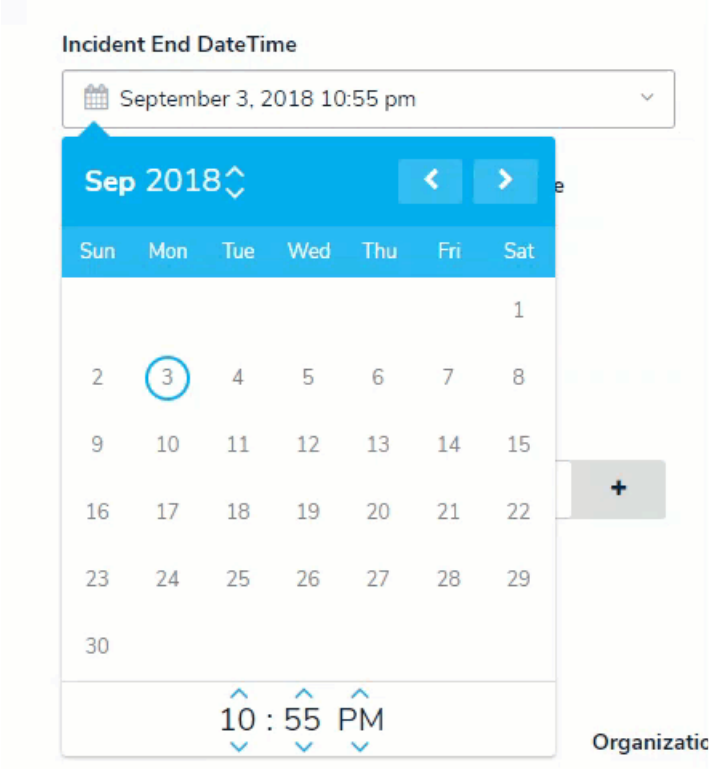


The Preview section of a new numeric field. You can enter sample text in this field to confirm if the field settings, such as minimum or maximum characters, are correct.

9. Click **Create**.

Date & Time Fields

The **Date & Time** field allows users to select the date or the date and time from a pop-out calendar. From this calendar, you can type a year or use the dedicated arrows to select one, select a month from the arrows or the dropdown menu, and select a day by clicking it. To choose a time, use the arrows, or type the exact hour, minutes, and AM or PM in the fields. All dates and times are stored and displayed in UTC format.

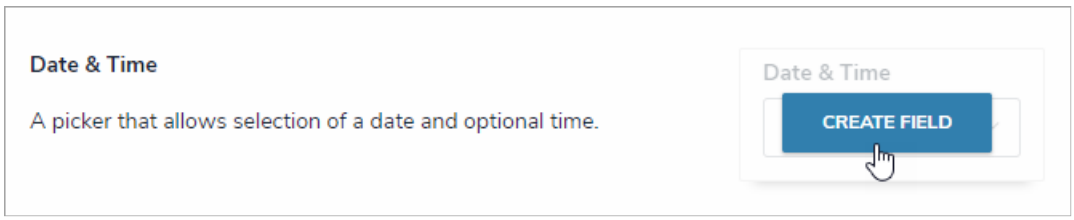


A Date & Time field.

> Once this field type is created and saved, you can make adjustments to the date's display format; however, you cannot add or remove the time from the format without deleting then recreating the field.

To create a date and time field:

1. Click the icon in the top bar > **Fields** in the **Data Model** section.
2. Click **Create Field**.
3. Hover your cursor over the **Date & Time** field type, then click **Create Field**.



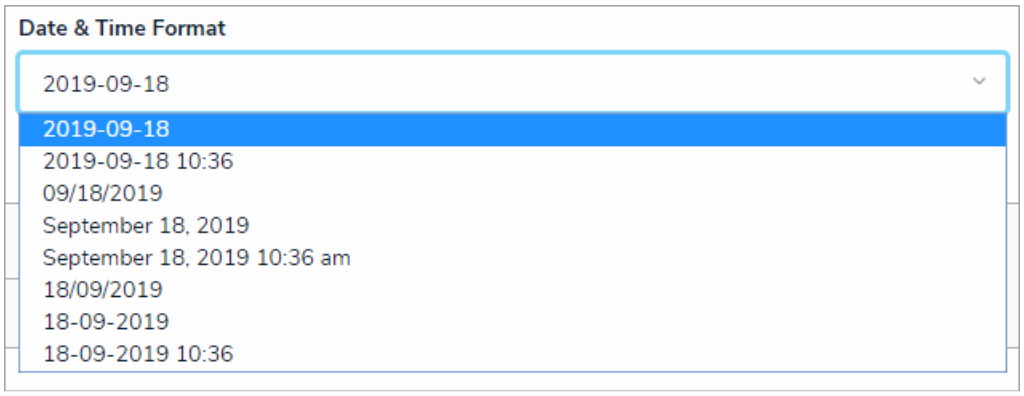
The Date & Time field type on the Field Types page.

4. Enter a name for the field as it will appear on an object type in **Field Name**.
5. **Optional:** If needed, provide additional information or instructions on completing the field in the **Long Name** section, which can be displayed on

configurable forms.

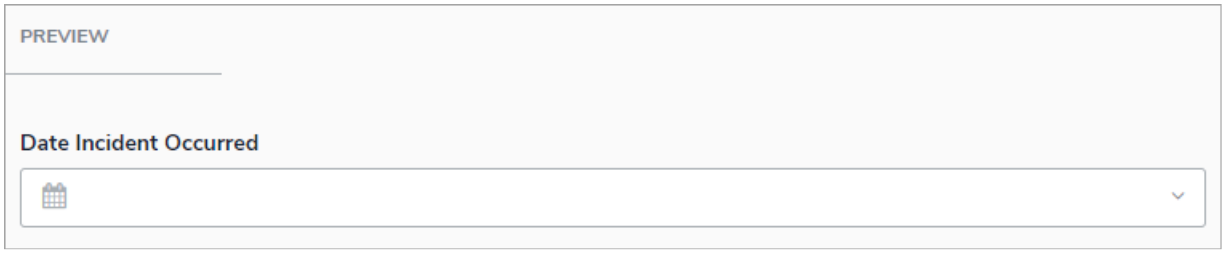
The Name and Long Name fields.

6. Select the date and time format from the **Date & Time Format** dropdown menu. Note that once the field is created, you will not be able to edit the format to include or remove the time.



The Date & Time Format dropdown menu.

7. Use the **Preview** section to confirm the field is correct. Click the field to preview how the date and time will be displayed.



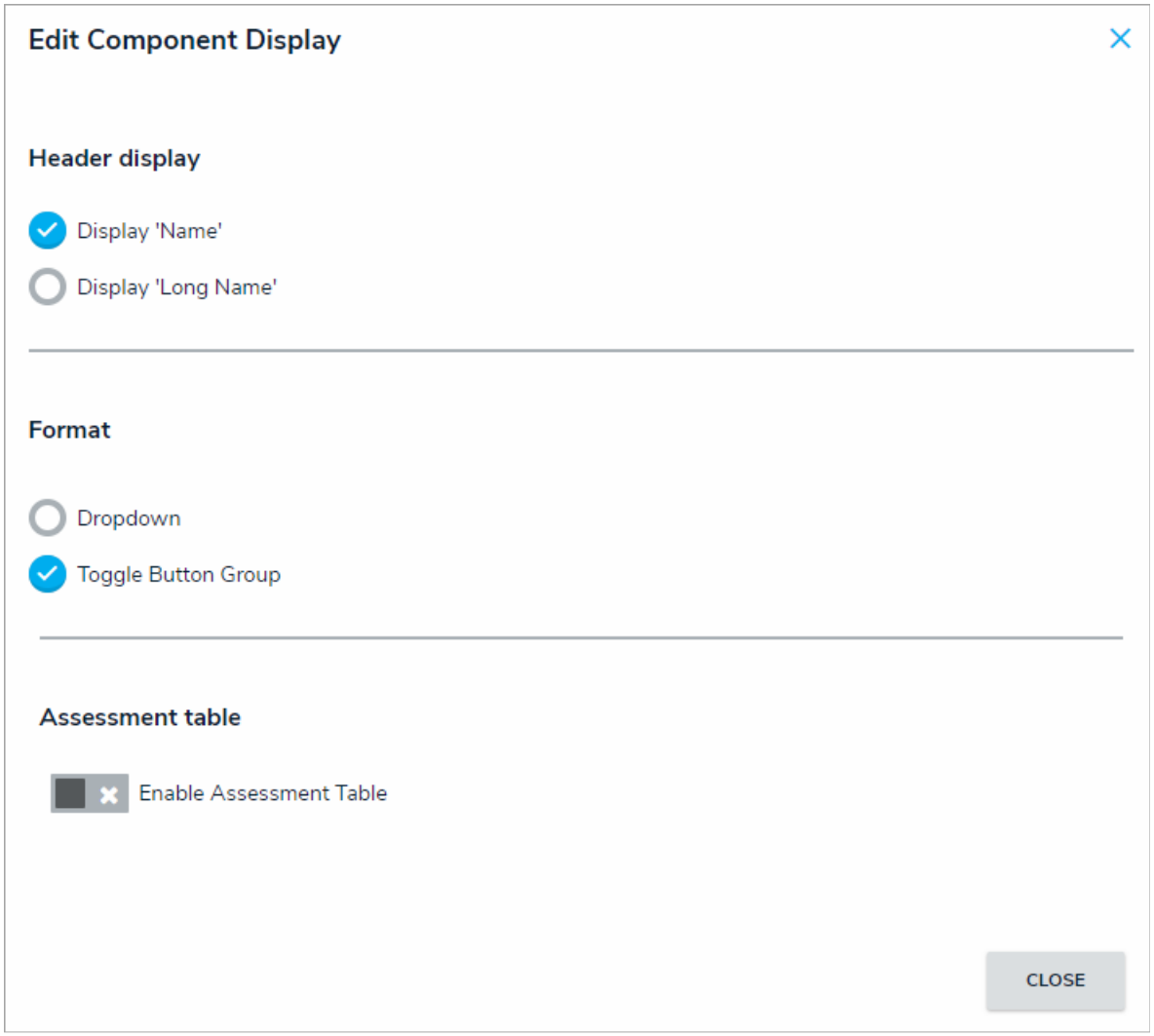
The Preview section of a new date and time field. You can select a sample date and time in this field to confirm the settings are correct.

8. Click **Create**.

Select List Fields

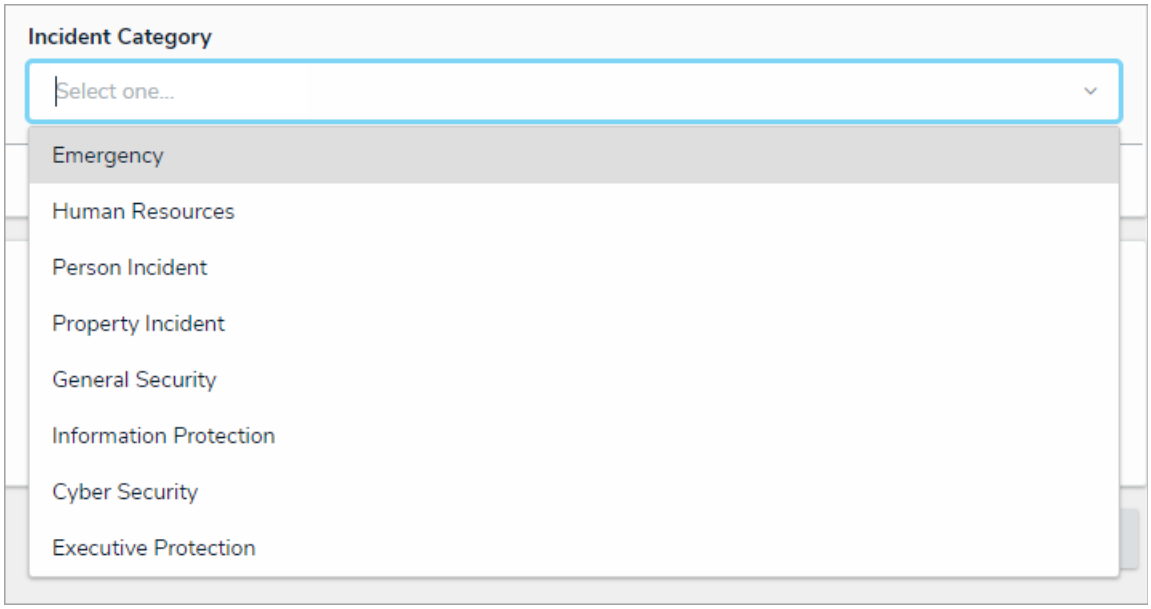
A **select list** is a field type that allows users to select one or more options. You can choose to create a single select list (users can only select one option from the field) or a multi-select list (users can select multiple options from the field). Single select lists with **five options or fewer** can also be configured to display trending data when added to a standard form on an object type.

By default, both single and multi-select lists appear on forms as dropdown menus. Admins can configure single select lists to appear as a group of buttons, provided the list has five options or fewer. To enable this option, add the select list to the form canvas, click the icon in the top-right corner of the field to open the **Edit Component Display** window, then select **Toggle Button Group** in the **Format** section. For more information on adding elements to configurable forms, see the Add Elements to a Standard Form and Fields on Forms articles.

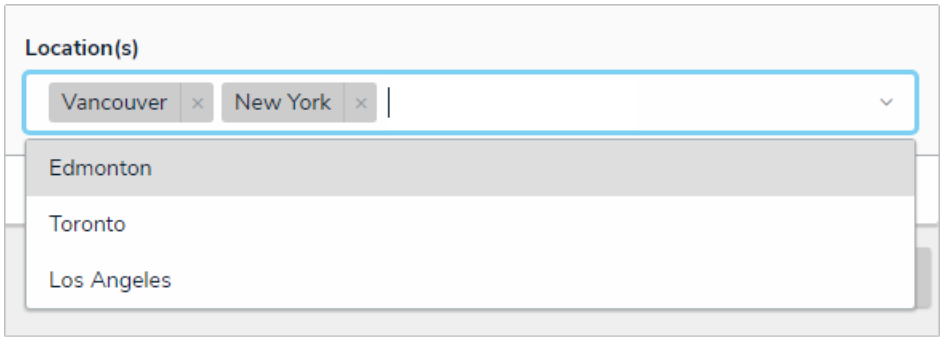


The Edit Component Display window, which is available when configuring a field added to a standard form.

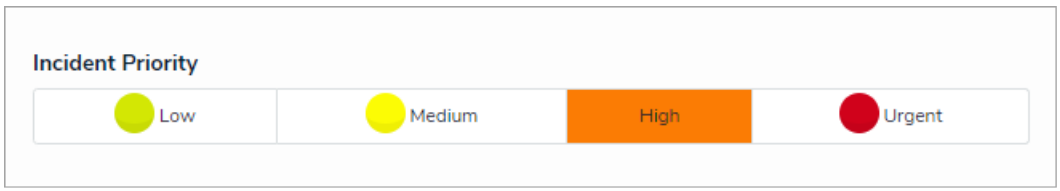
This field type can also be used in formulas, provided the options in the select list contain a numeric value (see step 12 below).



A select list field on an object.



A multi-select list field on an object.



A select list appearing as a group of options on a form.

Instructions

To create a new select list:

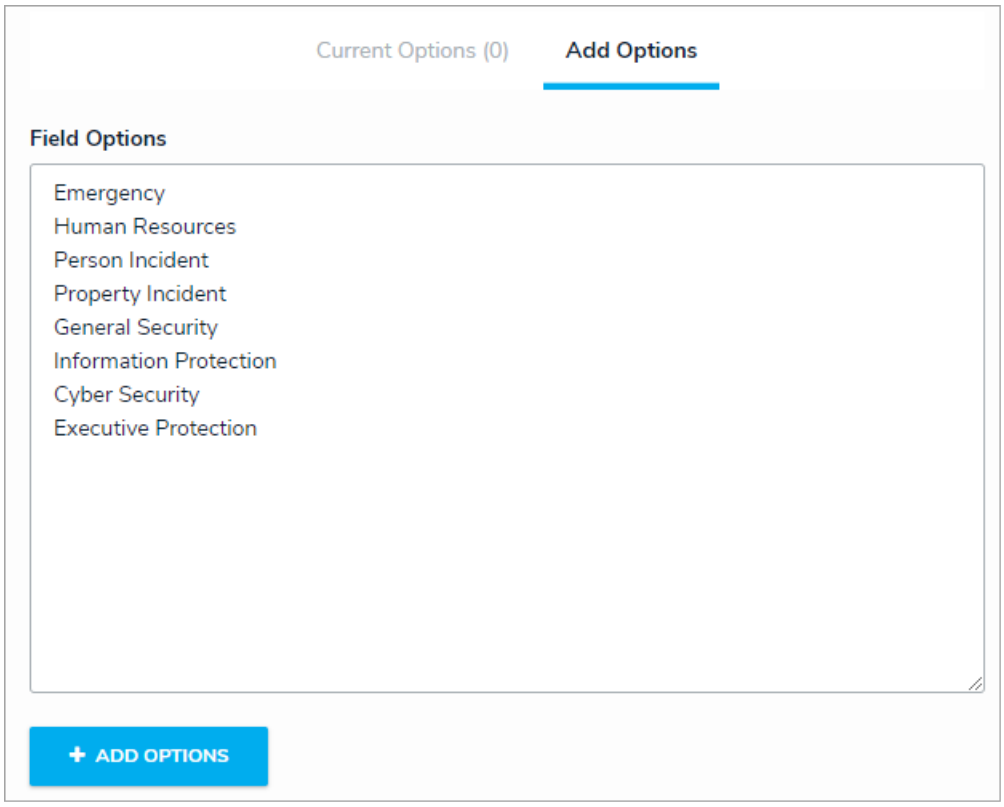
1. Click the icon in the top bar > **Fields** in the **Data Model** section.
2. Click **Create Field**.
3. Hover your cursor over the **Select List** field type, then click **Create Field**.

The Select List field type on the Fields page.

4. Enter a name for the field as it will appear on an object type in **Field Name**.
5. **Optional:** If needed, provide additional information or instructions on completing the field in the **Long Name** section, which can be displayed on configurable forms.

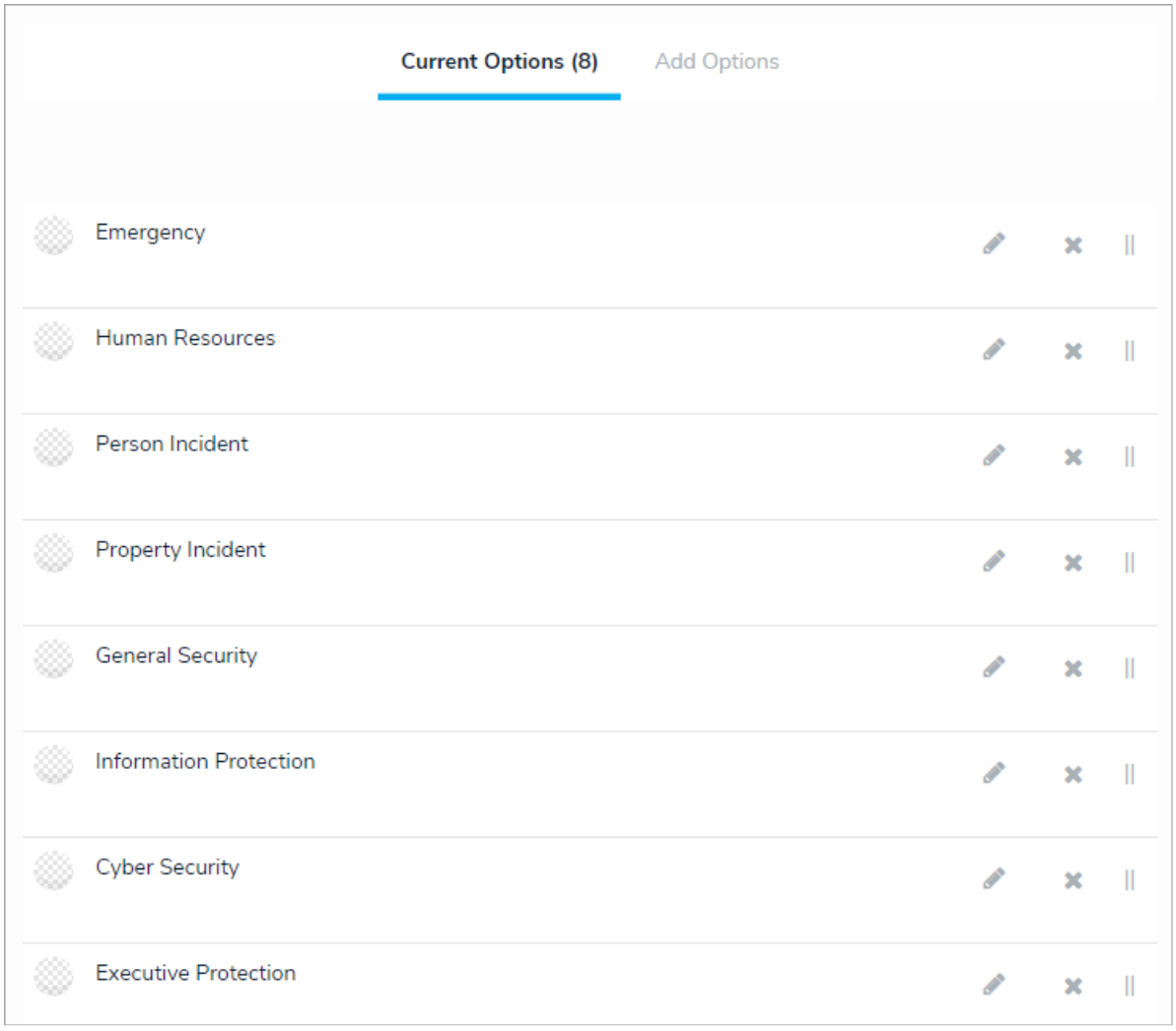
The Field Name, Long Name, and Selection Type fields.

6. Select either **Single** or **Multi** from the **Selection Type** dropdown menu. A **single** select list means the user can only select one option, while a **multi** select list allows the user to choose more than one option.
7. Ensure the **Add Options** tab has been selected.
8. Enter the options that will appear in the dropdown menu. Each option must be separated by a line break by pressing **Enter** on your keyboard.



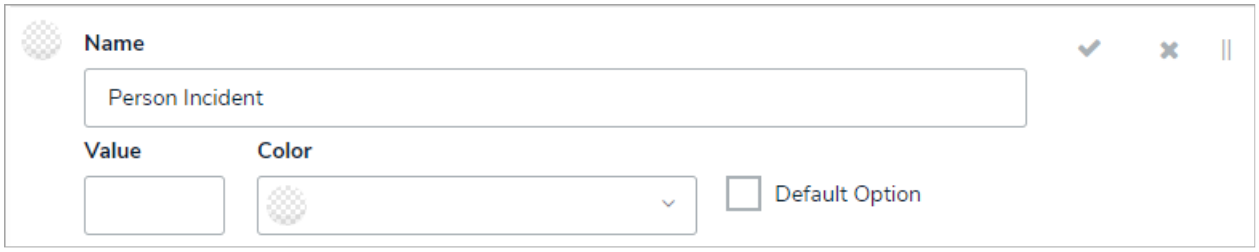
Entering the options a user can choose from in the select list field.

9. Click the **Add Options** button. This will automatically select the **Current Options** tab.



Saved select list options.

10. Click the icon next to an option to view the settings for an option.



Option settings.

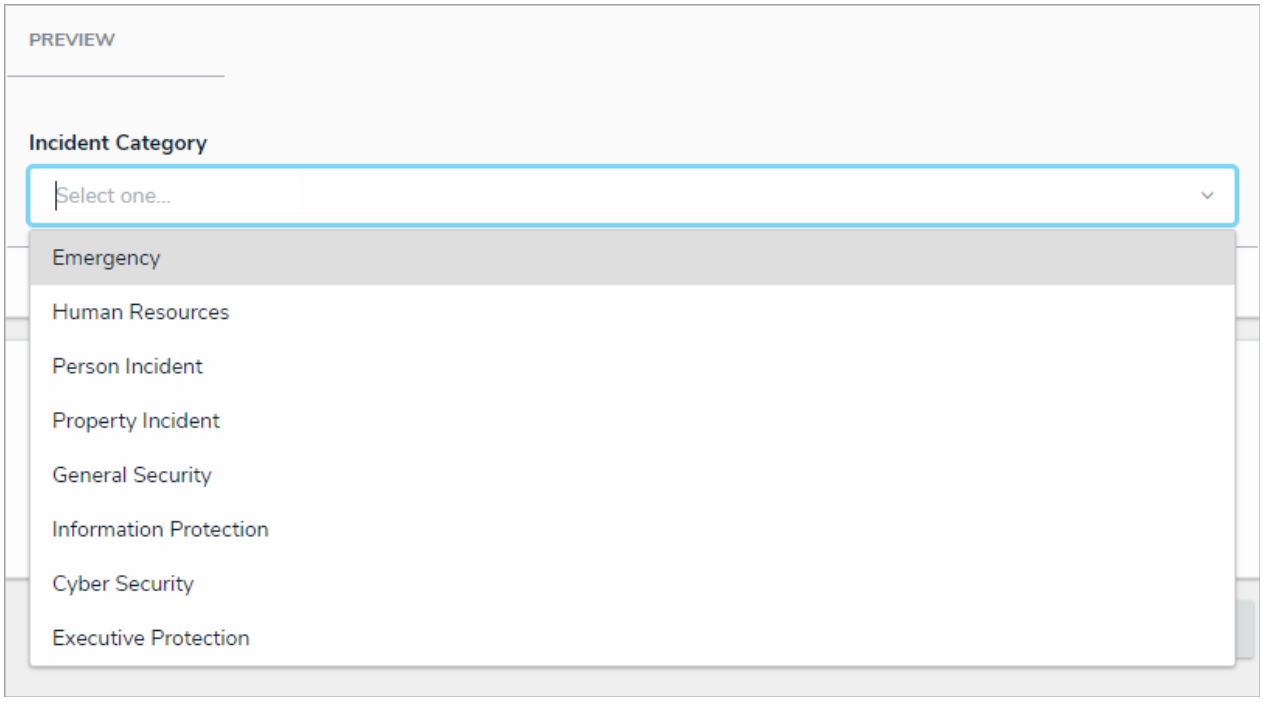
11. Enter an alternate name for the option in the **Name** field, if needed.
12. If this select list is to be used in a formula, enter a number for the option in the **Value** field. Repeat this step for each option.

> A formula will display an **Invalid Result** error if it attempts to pull data from a select list option that does not have a value. To avoid this, ensure a numeric value is applied to all select list options.

13. Click the **Color** dropdown menu to reveal the color picker. You can either click a color to select it or type a hex color into this field. This color will

appear next to the options in the select list dropdown menu.

14. Select the **Default Option** checkbox if you want the option to be automatically selected in the list when it appears on the object type. If changing the default option on a select list previously saved on one or more objects, note that:
    - **If the select list on the object shows a value (option)**, the value **will not** be updated to reflect the new default.
    - **If the select list on an object shows the previous default value (option)**, the previous default **will not** be updated to reflect the new default.
    - **If the select list on an object does not show a value (option), default or otherwise** it **will** be updated to reflect the new default.
15. Click the ✔ icon to close the settings for that option.
16. Repeat steps 9-14 to continue editing the options as needed.
17. To rearrange the order the options will appear on the select list, click and drag the ‖ icon next to an option.
18. To delete an option, click the ✖ icon.
19. Use the **Preview** section to confirm the field is correct.

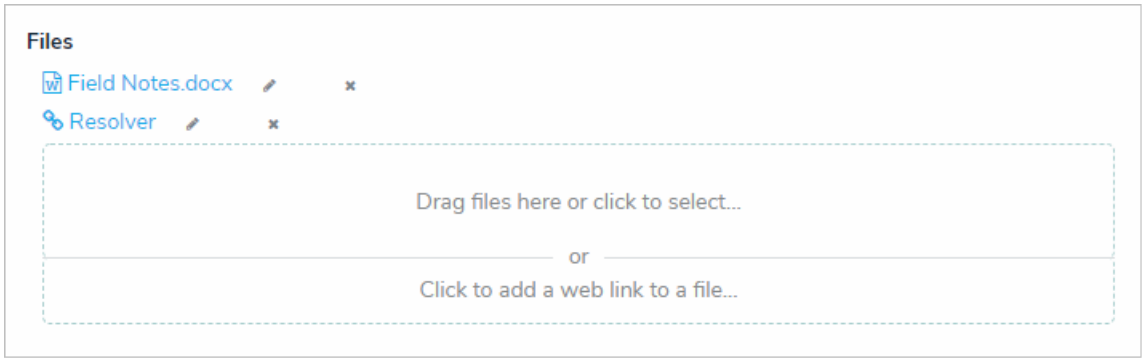


A preview of the new field.

20. Click **Create.**

Attachments

The **attachments** field allows users to upload files, URLs (web links), or both to an object. Most standard file types are accepted by this field; however, there are some restrictions (see below). If a supported document file is uploaded to this field, it's possible to search for those documents by keywords in the file name and/or contents or by upload date. See the Attachment Searches article for more details.

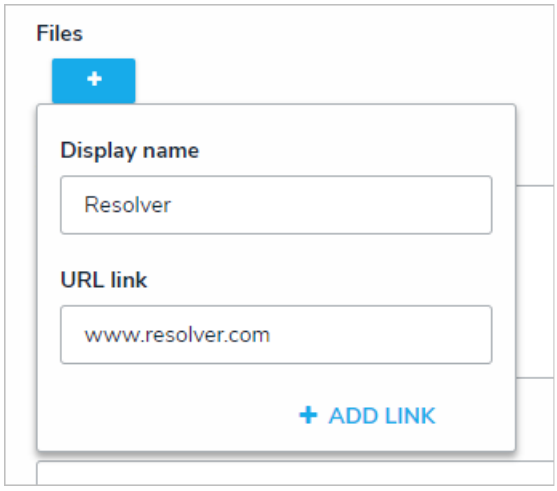


An attachment field (file and web link).

When the **File only** or **File and web link** option is selected in the field's settings, users can upload files (up to 100 MB in size) or web links by clicking the file or web link upload area on a form (as shown in the screenshot above).

If the **Web link only** option is selected, users can upload a link by clicking by clicking the + the icon (as shown in the screenshot below). If the optional display name for the web link is not included, the full URL will be displayed. Clicking the link will open the site in a new tab in your browser.

This field type cannot be embedded as a variable in an email template.



An attachment field with the Web link only option selected.

File Restrictions

- .ade
- .adp
- .app
- .asp
- .as
- .bas

- .bat
- .cer
- .chm
- .cmd
- .com
- .cpl
- .crt
- .csh
- .der
- .exe
- .fxp
- .gadget
- .hlp
- .hta
- .inf
- .ins
- .isp
- .its
- .jar
- .js
- .jse
- .ksh
- .lnk
- .mad
- .maf
- .mag
- .mam
- .maq
- .mar
- .mas
- .mat
- .mau
- .mav
- .maw
- .mda
- .mdb
- .mde
- .mdt
- .mdw
- .mdz
- .msc
- .msh

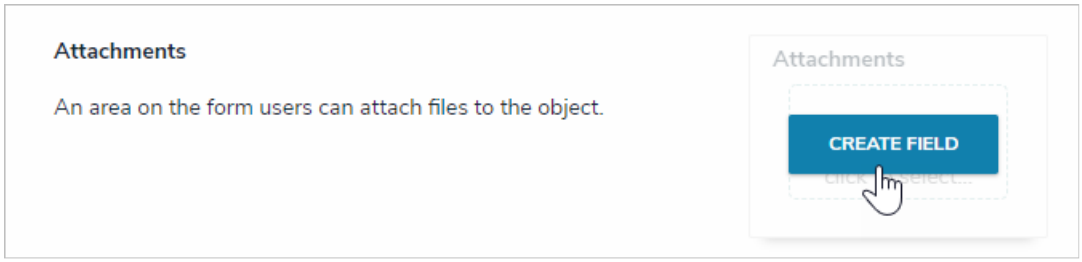
- .msh1
- .msh1xml
- .msh2
- .msh2xml
- .mshxml
- .msi
- .msp
- .mst
- .ops
- .pcd
- .pif
- .plg
- .prf
- .prg
- .ps1
- .ps1xml
- .ps2
- .ps2xml
- .psc1
- .psc2
- .pst
- .reg
- .scf
- .scr
- .sct
- .shb
- .shs
- .tmp
- .url
- .vb
- .vbe
- .vbs
- .vsmacros
- .ws
- .wsc
- .wsf
- .wsh
- .xnk

Note that files that contain the word **compressed** cannot be uploaded.

Instructions

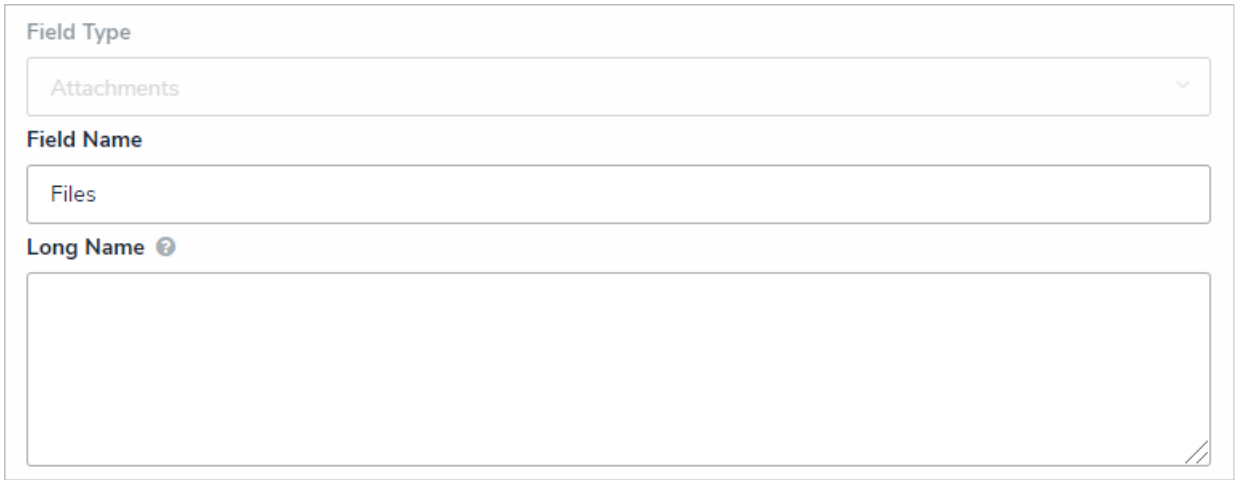
To create an attachment field:

1. Click the icon in the top bar > **Fields** in the **Data Model** section.
2. Click **Create Field**.
3. Hover your cursor over the **Attachment** field type, then click **Create Field**.



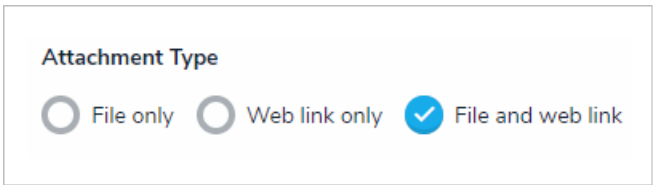
The Attachment field option after clicking Create Field.

4. Enter a name for the field as it will appear on an object type in **Field Name**.
5. **Optional:** If needed, provide additional information or instructions on completing the field in the **Long Name** section. You can choose to display a field's long name on configurable forms.



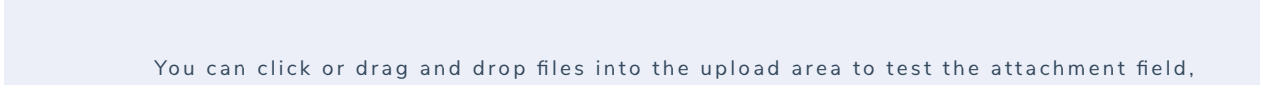
The Name and Long Name fields.

6. Select one of the following options from the **Attachment Type** section:
   - **File only:** Users can upload files (up to 100MB in size) to an object.
   - **Web link only:** Users can upload URLs to an object.
   - **File and web link:** Users can upload files (up to 100MB in size) and URLs to an object.



The Attachment Type section.

7. Use the **Preview** section to confirm the field is correct.



however, you will not be able to successfully upload a file as this is a preview only.

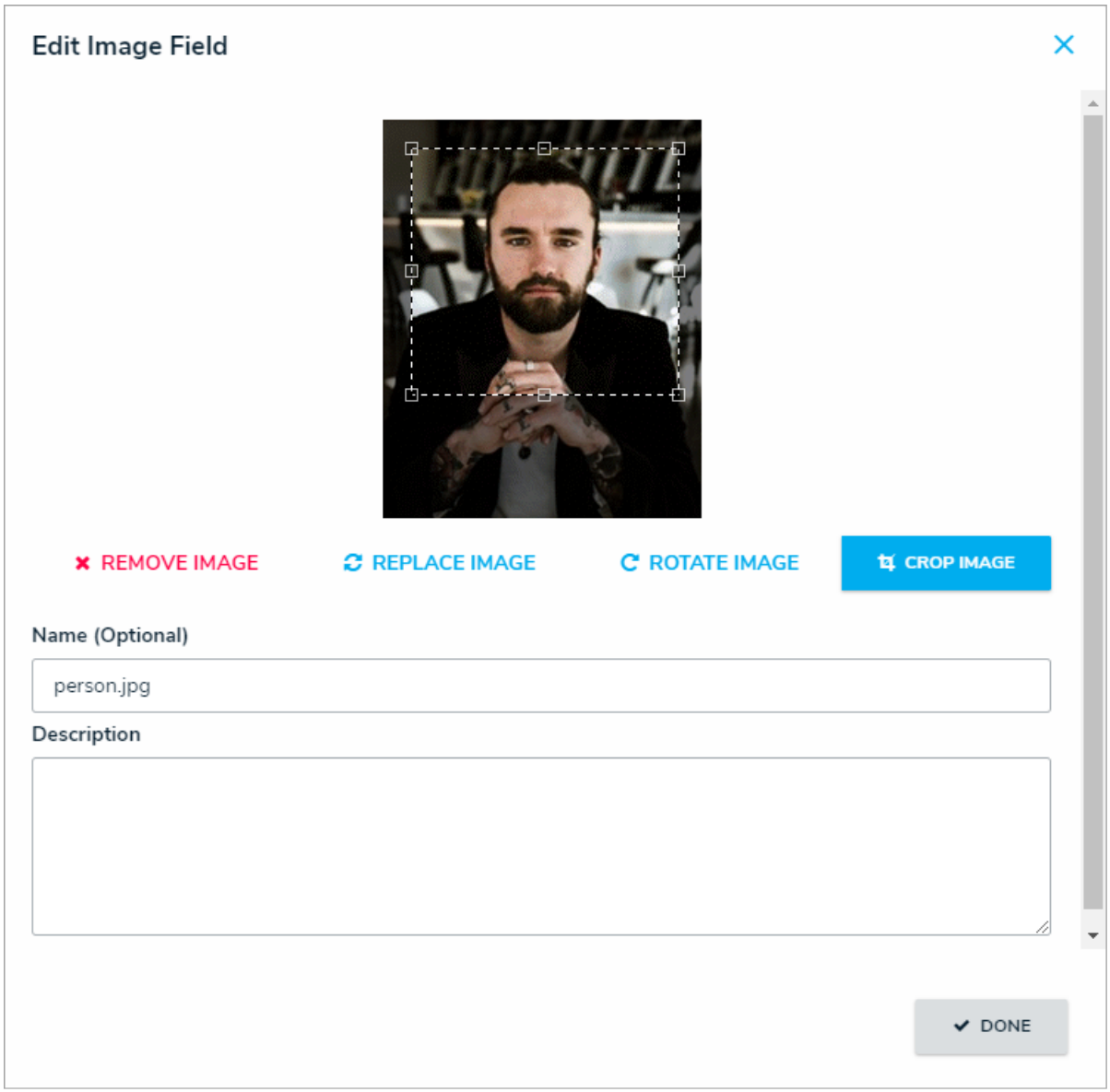
8. Click **Create**.

Image Attachments

The attachments field allows users to upload image files (up to 100 MB in size) to an object and display the image directly on the form. This field accepts the following image file types:

- .JPEG
- .GIF
- .PNG

Once a file is uploaded to a form, hovering your cursor over that image then clicking **Click to Edit Image** will open the **Edit Image Field** window, where you can delete, replace, rotate, or crop the file, or enter a new file name or description.



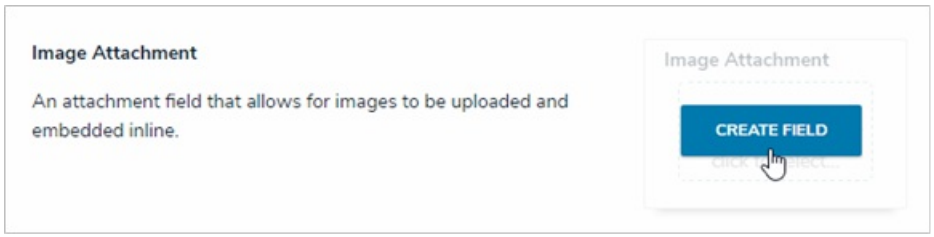
The Edit Image Field window.

Note that you can upload images through the Attachments field, but the image will not be displayed on the form. This field type cannot be embedded as a variable in an email template.

Instructions

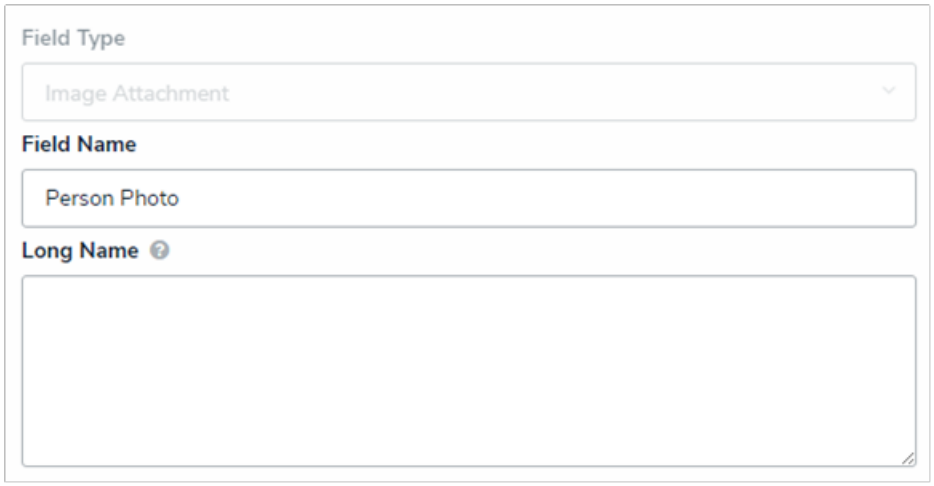
To create an image attachment field:

1. Click the icon in the top bar > **Fields** in the **Data Model** section.
2. Click **Create Field**.
3. Hover your cursor over the **Image Attachment** field type, then click **Create Field**.



The Image Attachment field option after clicking Create Field.

4. Enter a name for the field as it will appear on an object type in **Field Name**.
5. **Optional:** If needed, provide additional information or instructions on completing the field in the **Long Name** section, which can be styled using Markdown. You can choose to display a field's long name on configurable forms.



The Name and Long Name fields.

6. Use the **Preview** section to confirm the field is correct.

> You can click or drag and drop files into the upload area to test the attachment field, however, you will not be able to successfully upload a file as this is a preview only.

7. Click **Create**.

Edit or Delete a Field

Important Notes:

- If needed, you can change the field's unique name by clicking the icon next to the **Unique Name** field to unlock and edit it; however, it's **strongly recommended** that you do not change the unique name as its default value is used throughout the Core system and altering it may interfere with existing data.
- Any changes to the field's settings are applied to all related object types.
- Deleting a field will remove it from all related object types.

To edit or delete a field:

1. Click the icon in the top bar > **Fields** in the **Data Model** section.
2. Enter the name of the field in the **Search** field or click on a field in the list.
3. Make changes to the field's name as needed, including the **Field Name** and **Long Name**.
4. Make any other changes to the field as needed.
5. To delete the field, click the icon, then click **Yes** to confirm.
6. Click **Done** when finished.

If the field has been added to one or more object types, those object types will appear in the **Related Object Types** section at the bottom of the **Editing Field** page. Click the object type to view its **Edit Object Type** page.

Locations Overview

The **Location** property allows users to record and view the location of an object through an address field, pins on a map, or both, on a standard configurable form. Through this feature, users can visualize where events or incidents are occurring to help identify high-risk areas.

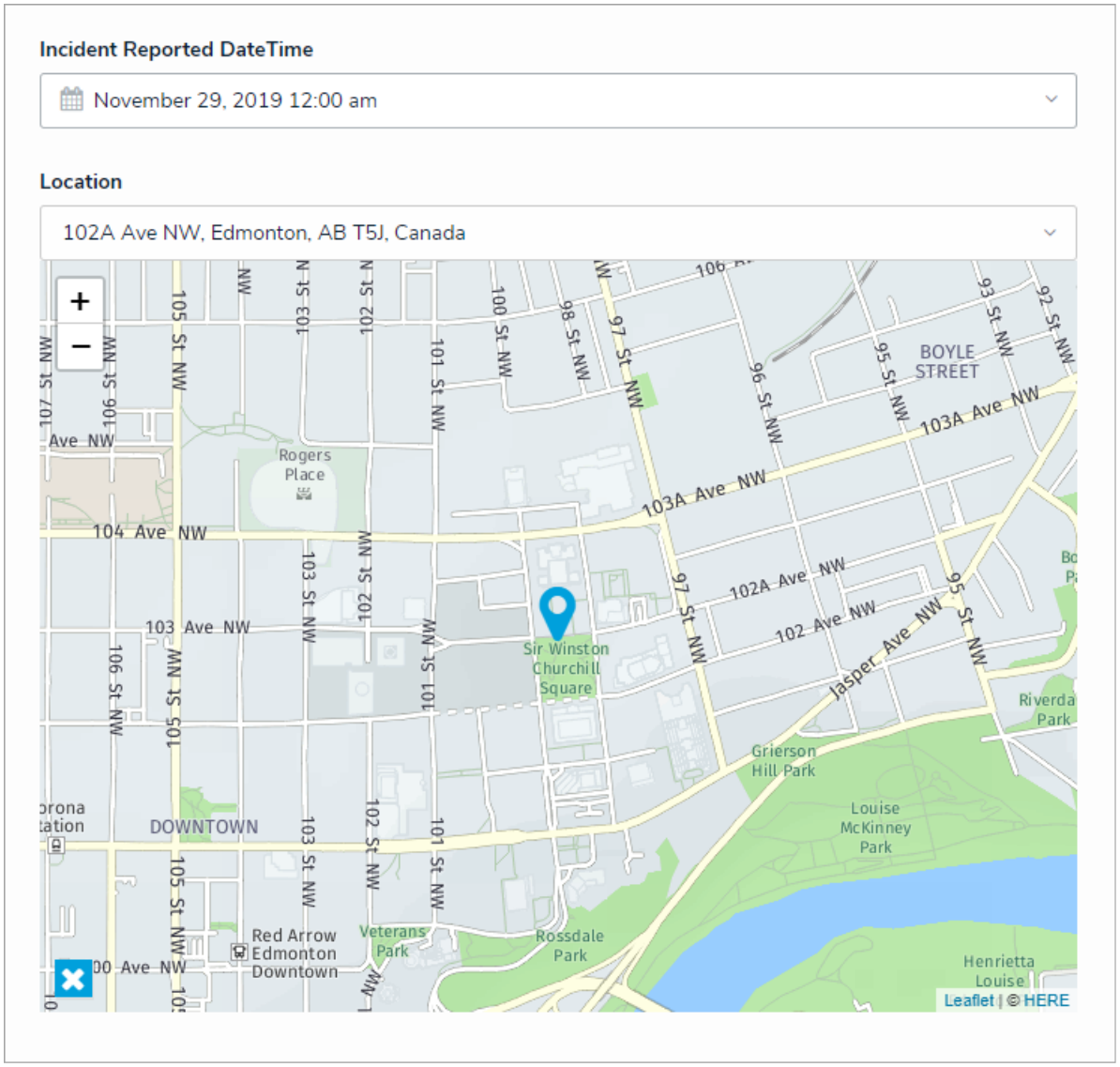
When both the address field and map are displayed, entering an address automatically places a pin and vice versa. Relationship and reference form elements can also be configured to display location information as a map or table.

For instructions on adding and configuring this property on a form, see the following articles:

- Add the Location Property to a Form
- Show Location Data in a Relationship or Reference

For instructions on adding, viewing, or importing location data, see the following articles:

- Add Location Data to an Object
- View Relationship & Reference Location Data
- Import Location Data



The Locations property, configured as an address field and map, as it appears to end-users on a standard form.

Available Functionality

In addition to collecting and displaying location data on an object, this property can be used with the following:

- **Relationships and References:** Shows the locations of relationship and reference objects on a map. Clicking a pin on a relationship or reference map will display additional object information in a palette. See the Show Location Data in a Relationship or Reference for more information.
- **Preferred Language:** Allows end-users to search for and select addresses in the language chosen in the user's profile or browser settings (preferred language). Note that:
    - If the your preferred language is not supported, English will be displayed by default.
    - Users can view location data on an existing object in a language other than English provided both the location data and user's preferred language match. For example, if the location data was recorded in French, a user with Russian as a preferred language would only be able to view it in English.
    - Map tooltips with additional address details are displayed in the language used when the data was recorded, provided the preferred language of the user who recorded the data and the user currently viewing the tooltip match.
    - Location data on reports and relationship maps are always displayed in English.
- **Concatenation:** Pulls location data to display complete or partial address information in a plain text field or in the **Name** and/or **Description** properties on an object type, using address components as variable (i.e., House Number, Street, City, etc.). Note that:
    - Map rendering in concatenations is not supported.
    - When **Country** is used as a variable, it's displayed using the ISO 3-character code (e.g., CAN for Canada).
    - When **State** is used as a variable, it's displayed using the ISO 2-character code. If there is no 2-character code, 3 characters are used (e.g., Australia uses 3 characters for states/provinces, but North America uses 2).
- **Repeatable Forms and Tables:** Displays address details as text in repeatable forms (including their PDF exports) and report tables (including their PDF, Word, and Excel exports). If no street address is assigned to an object, coordinates are displayed. Map rendering is **not** supported.
- **Search Filters:** Global search results can be narrowed down by applying **Location** filters, which include:
    - By House Number
    - By Street
    - By City
    - By Zip Code
    - By Country
    - By State

  Users can enter 3-letter ISO codes (e.g., searching for **CAN** or **Canada** will return all results for Canada). Searching by coordinates is **not** supported.
- **Required Components:** Prevents an object from moving to the next workflow state until an address is selected. When marked as required, the address search bar is highlighted in yellow. If the property is configured to display as **Map Only**, the map border is highlighted in yellow.
- **Pull Data Values Workflow Action:** Copies location data between two objects using the Pull Data Values workflow action; however, both object types must have the **Location** property added to one or more forms.
- **BI Connectivity:** If BI connectivity is enabled for your organization, location data can be reported on using a BI tool.
- **Imports:** Imports location data via JSON file or the Data Import feature; however, addresses and coordinates are not verified as accurate or complete. See the Import Location Data article for more information and requirements.

Important Notes

- This feature does not currently support:
    - Multiple languages (English only).
    - Rendering on data visualizations or their components (i.e., data export report and data grids), **except** repeatable forms (including their PDF exports) and tables (including their PDF, Excel, and Word exports).

    - Map rendering on any reports, including repeatable forms or tables.

- If location sharing is enabled on your browser, auto-complete suggestions are provided in the address field, and the map is centered based on your current approximate location. As such, it's recommended location sharing is enabled on your browser for more accurate results. Note that a slight delay may occur when the form is initially loaded after sharing your location.
- Core will ask users to share their location once, unless their browser is configured to always ask or their settings are later modified. For more information on enabling location sharing, see the Share your location article on the Google Support site for Chrome, and the Change security and privacy settings for Internet Explorer 11 on the Microsoft Support site.

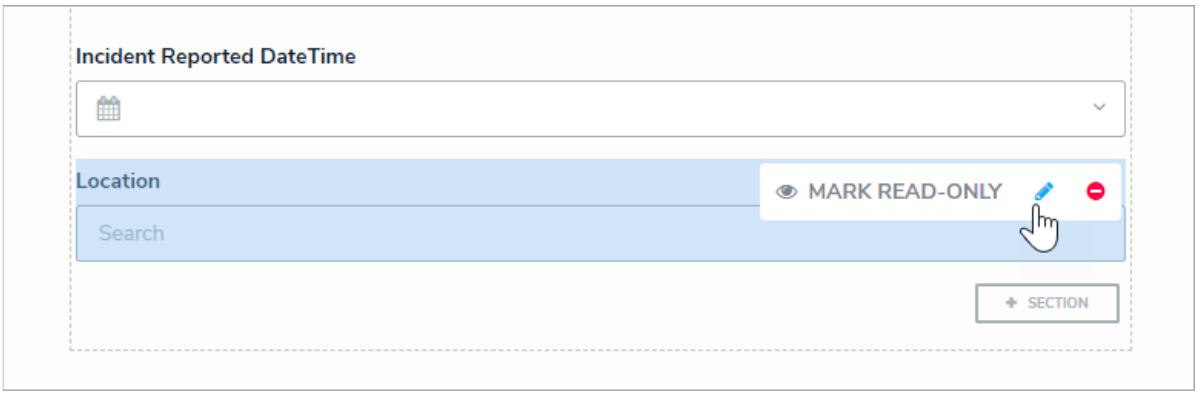
Best Practices

- Maps should not be displayed on form sections smaller than 33% in width.
- Due to the amount of canvas space required to display the map on a form, this display option should be used sparingly and under specific circumstances (e.g., to visualize the distance between multiple related objects or if the location does not have a known address).
- Location sharing should be enabled on your browser for more accurate results when searching for or selecting a location.
- When importing latitude and longitude coordinates, 6 decimal places should be used for consistency (e.g., 54.123793, -113.127389).
- Clicking location data in a relationship or reference table will open a palette that displays the address field, map, or both, depending on its configuration. For more complete information when viewing the palette, it's recommended that the map or map and address information is configured to be displayed.

Add the Location Property to a Form

To add a location to a form:

1. See the Locations Overview article to review a list of important notes and best practices.
2. Create or open a standard form.
3. Drag and drop the **Location** property from the **Properties** section of the **Form Elements** palette. This property appears on the canvas as **Location** and is configured to display the address field only, by default.
4. To configure the property's display:
    a. Hover your cursor over **Location** on the canvas, then click the the icon to open the **Edit Component Display** window.



The Location property on the form canvas.

    b. Select one of the following options:

- **Address Only:** Users can only type and view an address in a text field. If location sharing is enabled on their browser, auto-complete suggestions will appear based on their current location as the user is typing.
- **Map Only:** Users can only select and view a location via pins on a map. If a location hasn't been previously assigned to the object and location sharing is enabled on the user's browser, the map will be centered on the user's current location.
- **Address & Map:** Users can select and view a location through the both the address field and map. Selecting a location in the address field will automatically place a pin on the map and vice versa.

The Edit Component Display window.

    c. Click **Close** when finished.

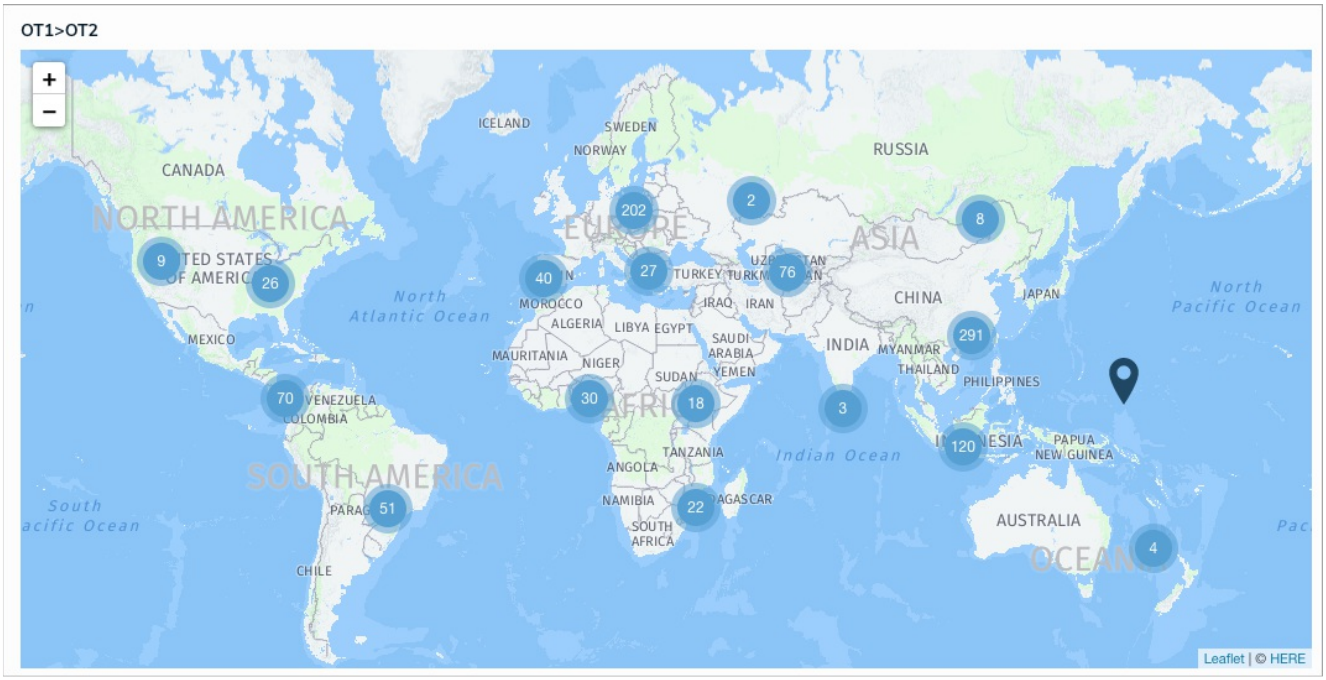
5. To mark the field as read-only, hover your cursor over **Location** on the canvas, then click **Mark Read-Only**. When this property is read-only, addresses are displayed but are greyed out, and the map cannot be dragged or zoomed in or out, nor can its pins be moved or deleted.

For information on viewing and selecting a location on an object, see the Add Location Data to an Object article.

Show Location Data in a Relationship or Reference

Relationship and reference elements can be configured on forms to display location data for both the originating object and related objects via a map or a relationship or reference table.

When viewing a relationship map on a form for the originating object, that object's location is represented by a **light blue** pin, and any relationship objects are represented by **dark blue** pins. When viewing a reference map from the relationship object, the relationship object is represented by a **light blue** pin and any reference objects are shown with **dark blue** pins. Depending on the number of pins and zoom level of the map, multiple pins may be displayed as clusters. Clusters display a number, which represent the number of location pins in each cluster. For information on viewing related location data as an end-user, see the View Relationship & Reference Location Data article.



A map displaying pins representing the originating object (light blue) and its relationship objects (dark blue).

Objects cannot be viewed, edited, or created through location maps.

Important Notes

- Clicking a location cell in a relationship/reference table or a pin on a map will open a palette that displays the address field, map, or both, depending on its configuration. For additional information when viewing the palette, it's recommended that the map or map and address information is displayed on the form selected for the palette.
- The relationship and reference object types must also have the **Location** property added to one or more of their forms. If no location data is collected through this property, no data will be displayed in the map or table. See the Add the Location Property to a Form for more information.
- For a complete list of important notes and best practices, see the Locations Overview article.

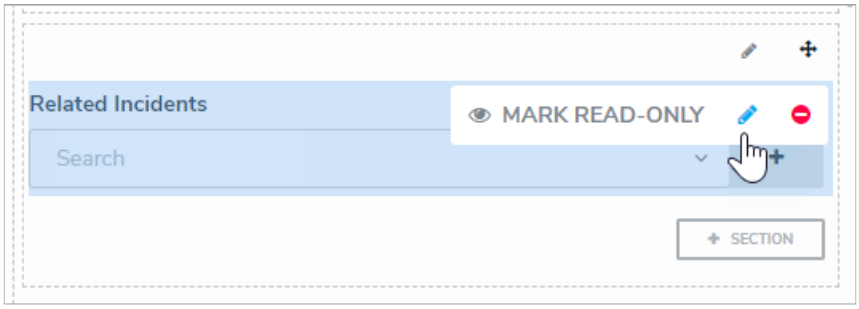
Instructions

This article provides instructions for configuring a relationship or reference element to display location data. For more detailed configuration instructions, see the Relationships on Forms and References on Forms articles.

To display location data on a relationship or reference element on a form:

1. See the Locations Overview article to review a list of important notes and best practices.

2. Create or open a standard form.
3. Drag and drop an element from the **Relationships** or **References** section of the **Form Elements** palette.
4. Hover your cursor over the element on the canvas, then click the the icon to open the **Edit Component Display** window.



A relationship element on a form canvas.

5. To display geolocation data in a table, click **Table** in the **View Relationship as:** section, then select the **Location** property, along with any other components you wish to include.
6. To display geolocation data in a map, select **Map** in the **View Relationship as:** section.

> Selecting the **Map** option disables the **Enable Create** and **Enable Advanced** format options.

7. **Optional:** If you selected **Table** in step 5 above, select a form from the dropdown menu in the **Object Type Forms** section. This form will be displayed when a user clicks a table row and opens the palette.
8. Click **Close** when finished.

Import Location Data

Location data can be imported via JSON files and the Data Import tool; however, when using the import tool, the template spreadsheet does **not** automatically generate columns for this property. As such, these columns must be added manually to **Row 4** of the template for the appropriate object type **exactly** as shown below:

- **geo-latitude**
- **geo-longitude**
- **geo-houseNumber**
- **geo-street**
- **geo-city**
- **geo-state**
- **geo-zipcode**
- **geo-country**

	A	B	C	D	E	F	G	H	I	J	K
1	Object Type ID										
2	Activity										
3											
4	**External Ref ID**	**Name**	**Description**	**geo-latitude**	**geo-longitude**	**geo-houseNumber**	**geo-street**	**geo-city**	**geo-state**	**geo-zipcode**	**geo-country**
5				54.123793	-113.127389				Alberta		Canada
6											
7											
8											
9											
10											
11											
12											

Columns and data entered for on a data import spreadsheet. These columns must be added manually.

Other Requirements & Important Notes

- The **geo-latitude** and **geo-longitude** columns and respective lat/long coordinates are mandatory for all location imports, including locations with complete addresses. All other columns are optional.
- Address information, including partial addresses, are imported into the **Location** address field (if displayed) as is. Auto-complete is not supported on imported addresses.
- Coordinate data is successfully imported using any number of decimal places; however, for consistency, it's best practice to use 6 decimal places (e.g., 54.123793, -113.127389).
- When importing coordinates, latitudes must range from -90 to 90 and longitudes must range from -180 to 180. If the coordinates are outside of these ranges or are null/empty, the import will fail and show an error message.

See the Data Import section for detailed information and instructions on importing data.

Add Location Data to an Object

Location data is location assigned to an object through the **Location** property on a standard form. Locations can be added through an address field, map, or both, depending on how the property was configured by an administrator. This article provides instructions for end-users on adding or viewing location information through an object's configurable form.

For instructions on configuring this property as an administrator, see the following articles:

- Locations Overview
- Location Relationship & Reference Data
- Add the Location Property to a Form
- Import Location Data

Instructions

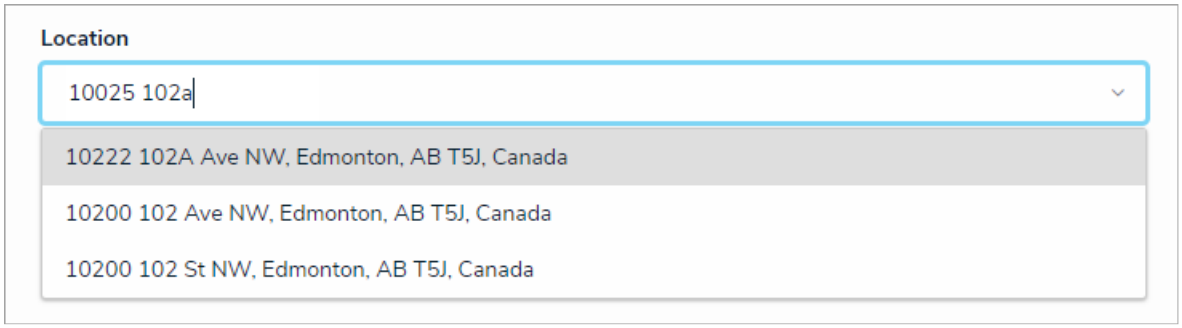
If location sharing is enabled on your browser, auto-complete suggestions are provided in the address field and the map is centered based on your current approximate location. As such, it's recommended location sharing is enabled on your browser for more accurate results. Note that a slight delay may occur when the form is initially loaded after sharing your location.

The location sharing prompt from Chrome.

The system will ask for your browser's location data once, unless your browser is configured to always ask or the settings are later modified. For more information on enabling location sharing, see the Share your location article on the Google Support site for Chrome, and the Change security and privacy settings for Internet Explorer 11 on the Microsoft Support site.

Address

To add location data to an object through the address field, begin typing an address then select it from the results.

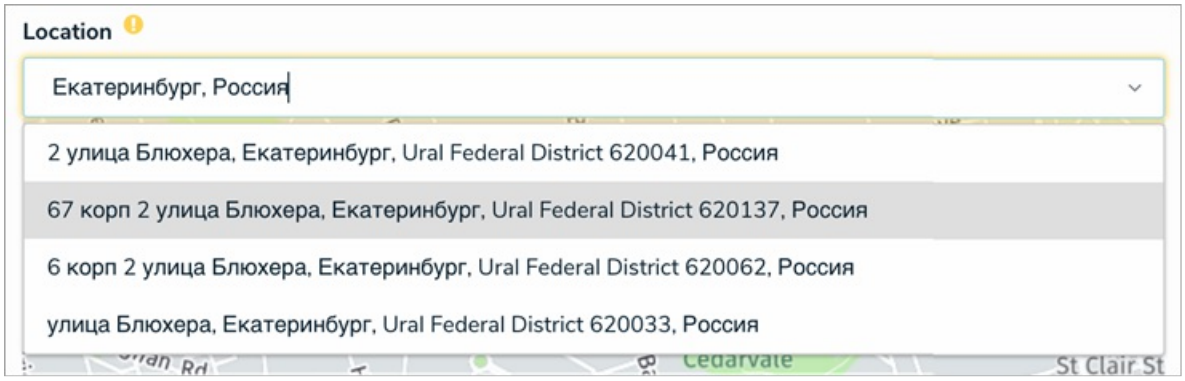


The Location address field.

If your browser or user profile has a preferred language selected, the address bar will display results based on that selected language, provided the language is supported. When searching for a location in a preferred language, note that:

- If the your preferred language is not supported, English will be displayed by default.

- Users can view location data on an existing object in a language other than English provided both the location data and user's preferred language match. For example, if the location data was recorded in French, a user with Russian as a preferred language would only be able to view it in English.
- Map tooltips with additional address details are displayed in the language used when the data was recorded, provided the preferred language of the user who recorded the data and the user currently viewing the tooltip match.
- Location data on reports and relationship maps are always displayed in English.

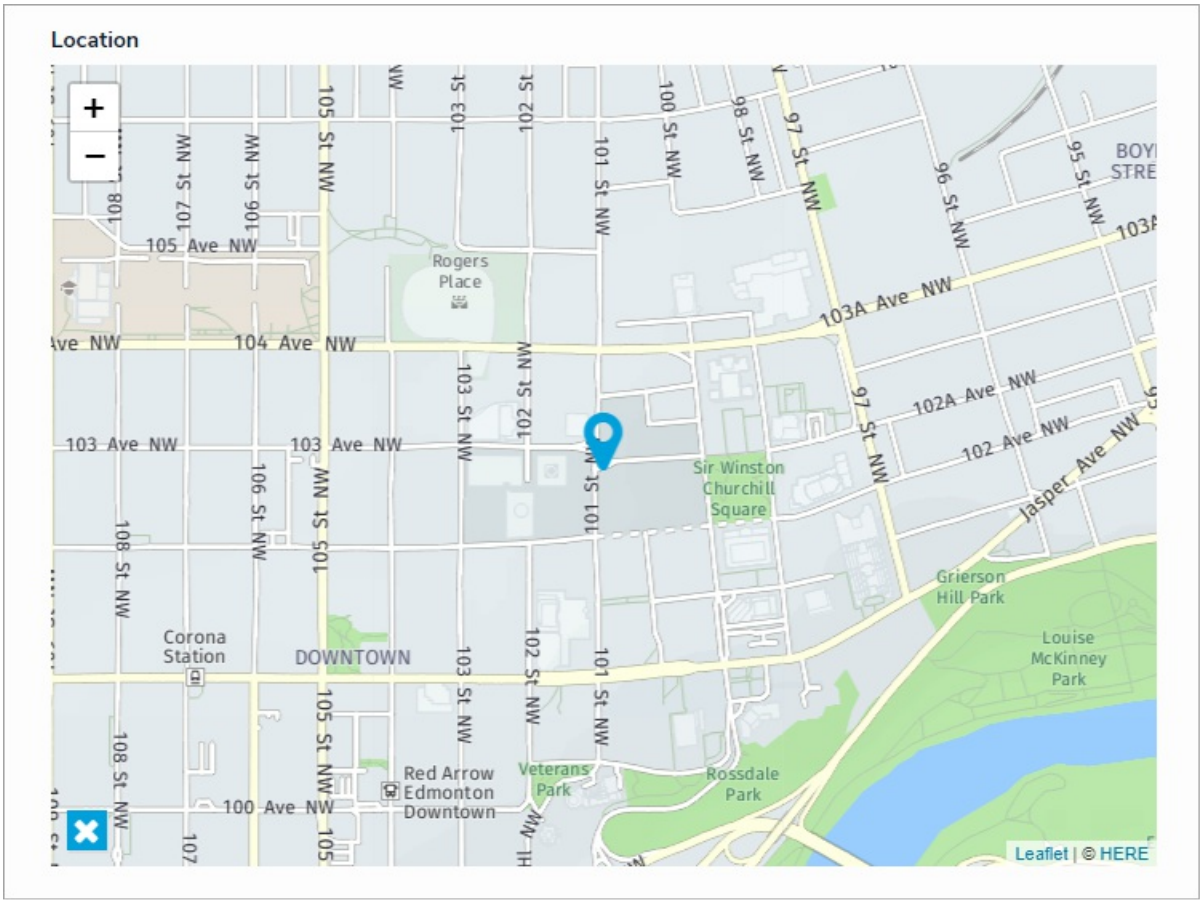


The Location address field displaying search results in the user's preferred language.

Map

To add location data to an object on the map, use the + and − icons on the map to zoom in or out or click anywhere on the map and drag your cursor to move it. To place a pin, click and drag the icon at the bottom-left of the map to the desired location.

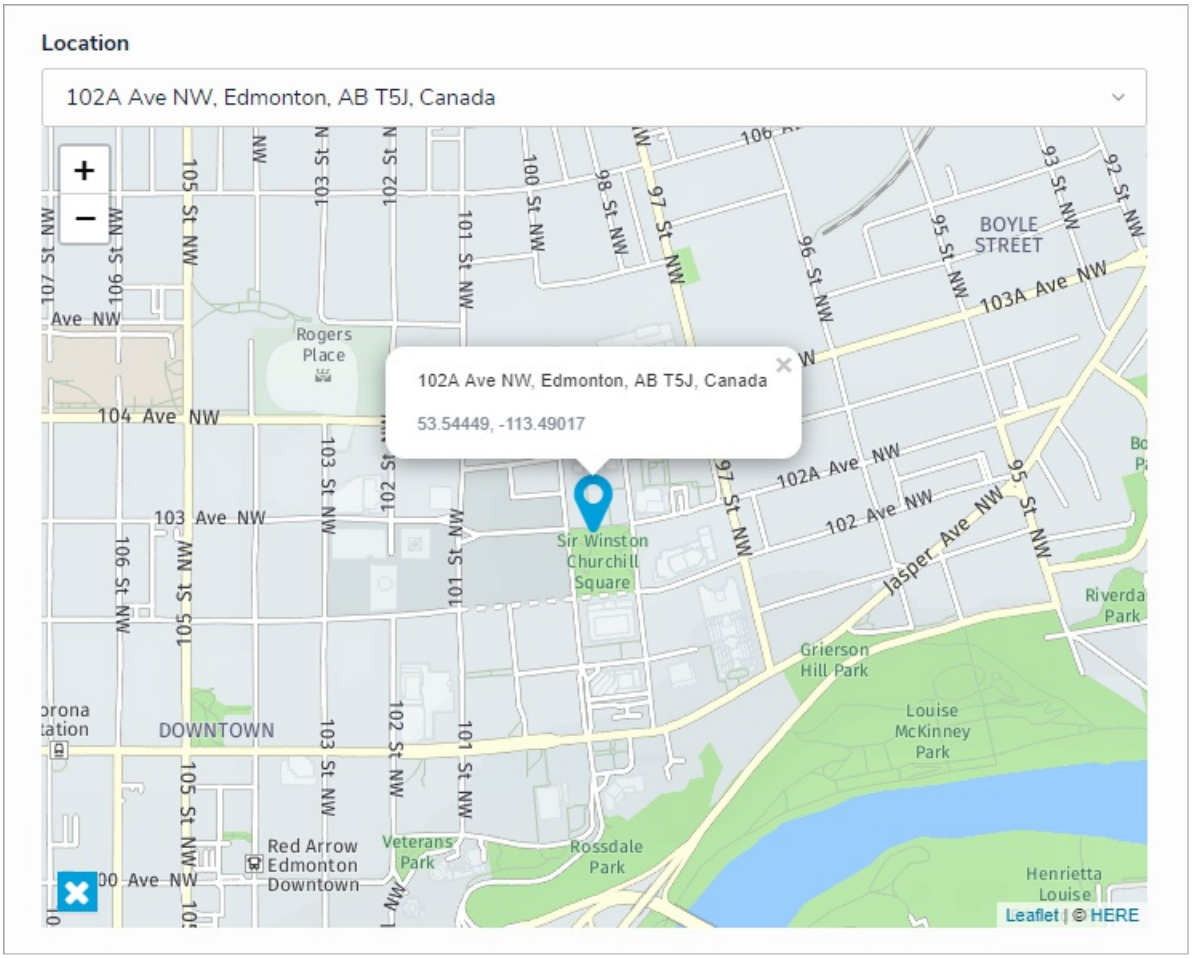
Dragging the pin allows you change the current location and clicking the pin will display the address and coordinates in a tooltip.Hovering your cursor over a pin will display a tooltip with address details. If the selected location has no address (e.g., a field or a lake), the tooltip will display the latitude and longitude coordinates. To remove the pin, click icon at the bottom-left of the map.



A Location map.

Address & Map

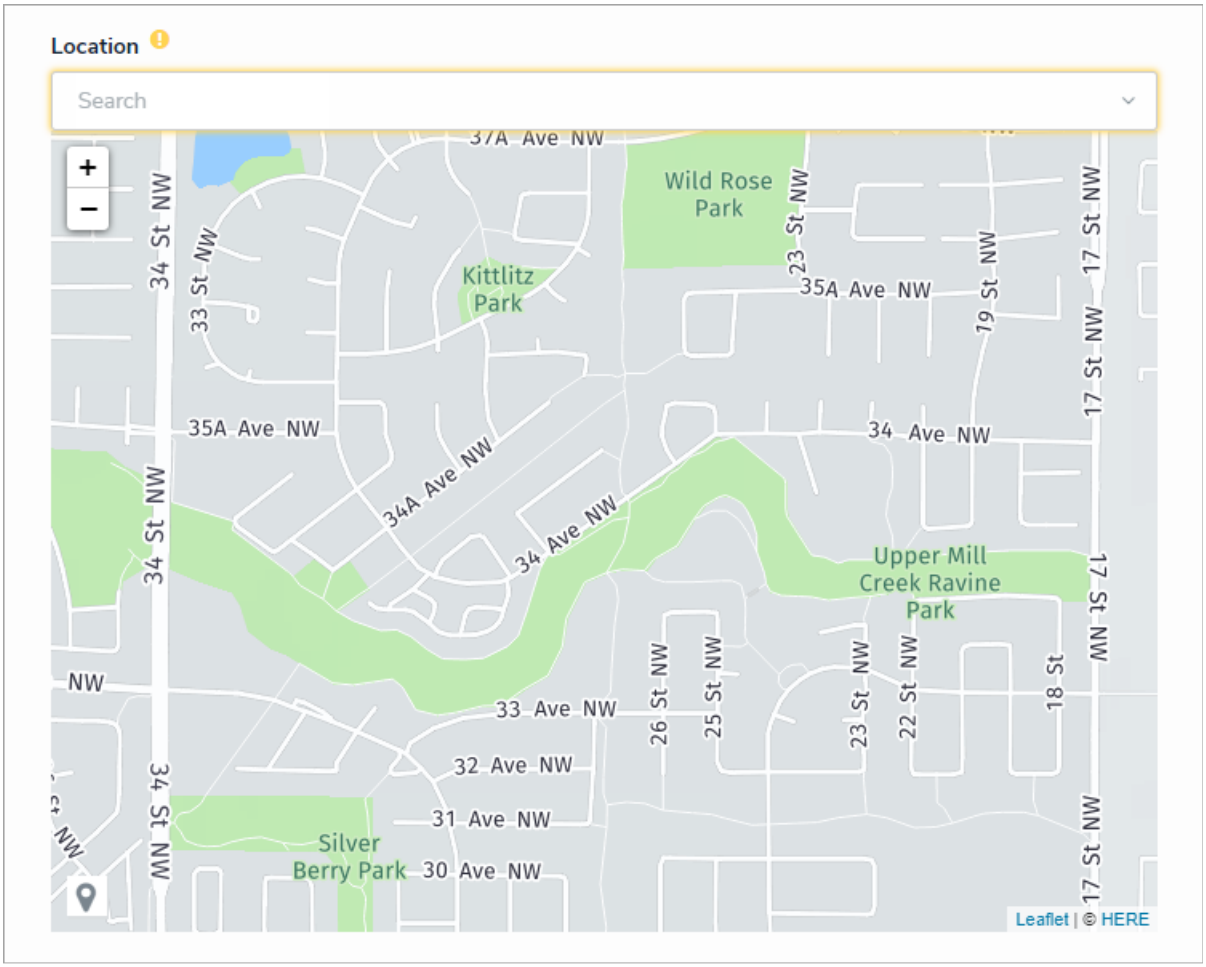
When both the address field and map are enabled, entering an address in the field will place a pin on the map, and placing or moving the pin on the map will automatically populate an address in the field. Note that it's possible to move or place a map pin on a location without an address (e.g., a field or lake); however, these locations may only populate partial or approximate addresses.



The Location field and map. Clicking a pin on the map will display its address and coordinates in a tooltip.

Required

If the Location property is marked as required by an administrator, location information must be added to the property before the object can move to the next workflow state. The address bar of required locations are highlighted in yellow. If the property is configured to display a map only, the map is highlighted in yellow.

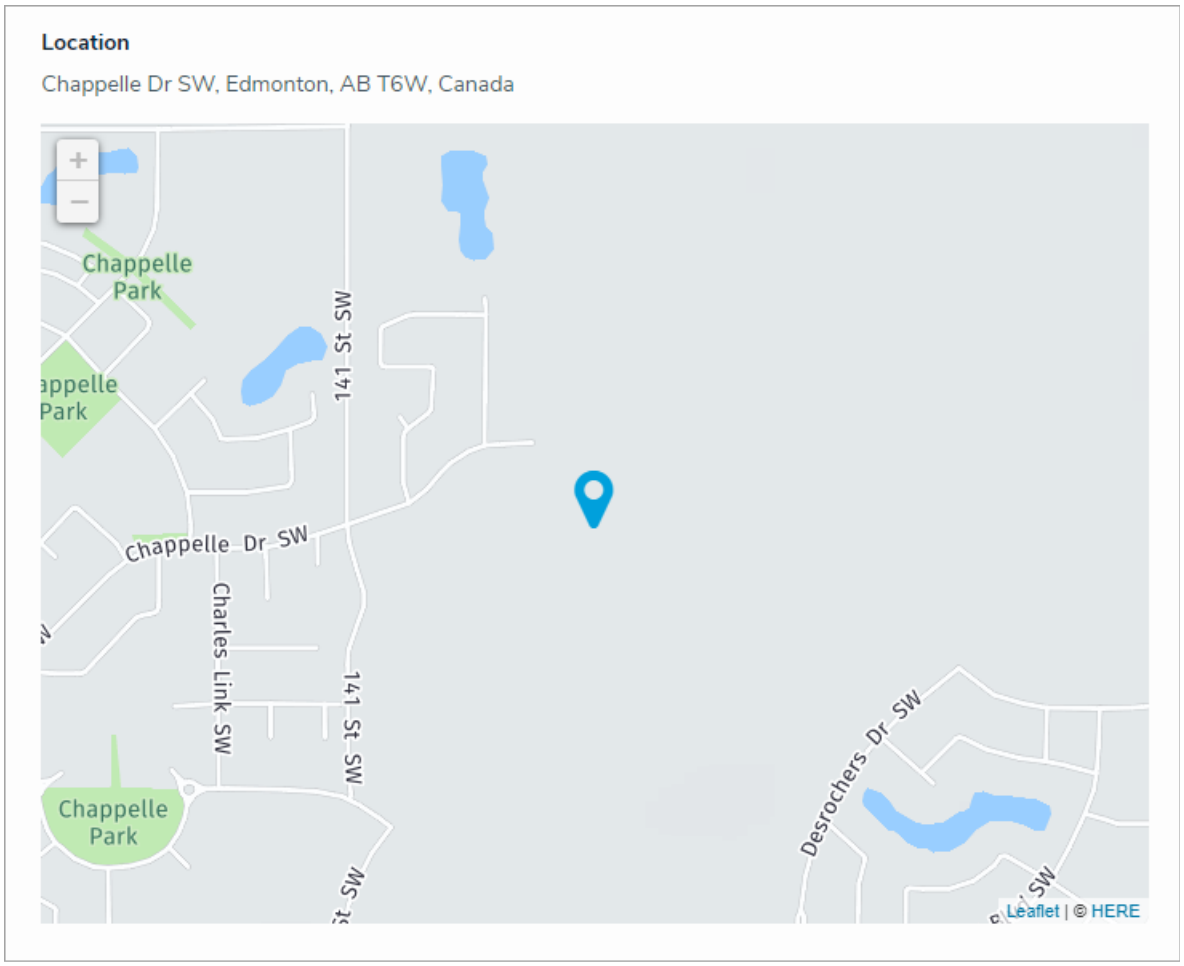


A required Location property on a form. Address bars are highlighted in yellow. If only the map is displayed, it's highlighted in yellow.

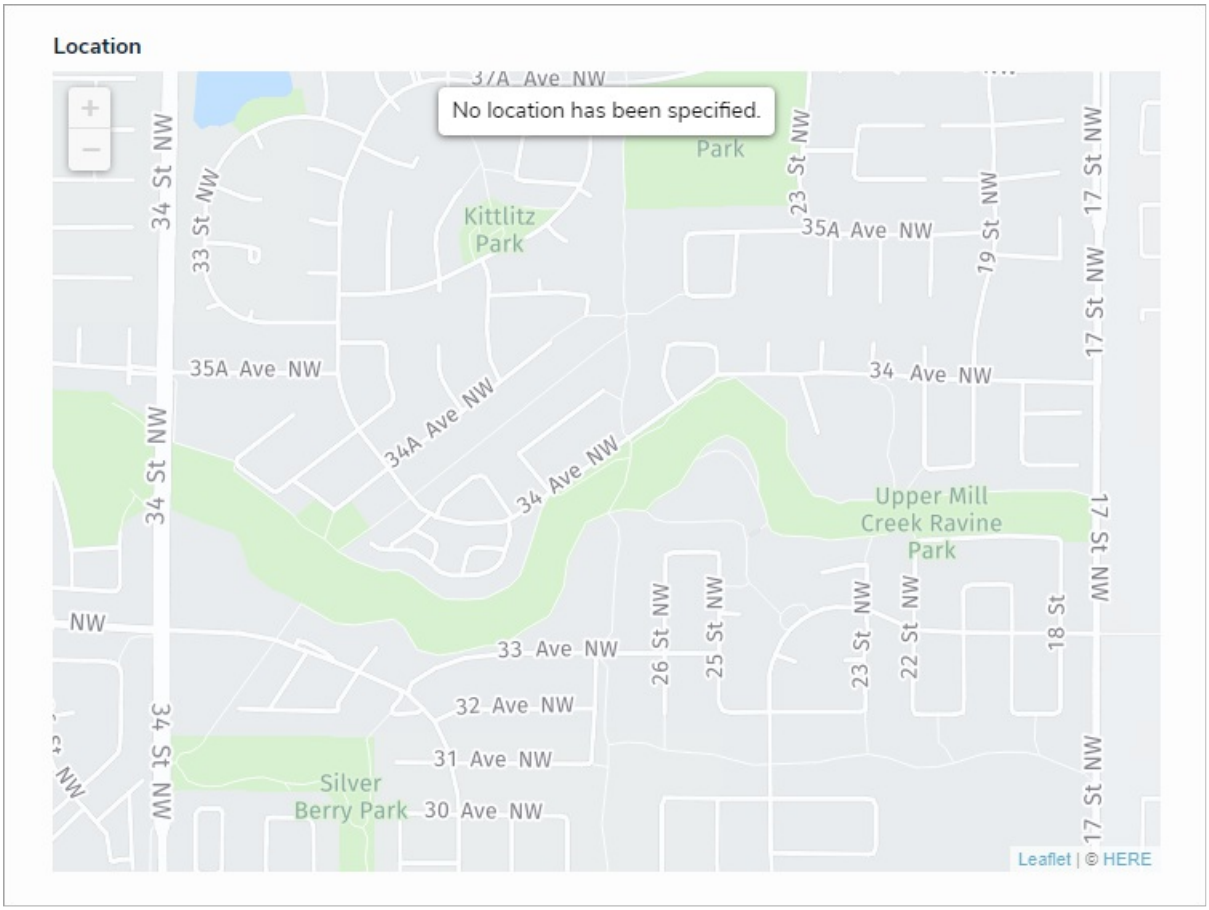
Read-only

If the **Location** property is marked as read-only by an administrator:

- Addresses, if any, are displayed but cannot be modified.
- Map pins cannot be placed, deleted, or moved.
- The map cannot be dragged or zoomed in or out.
- Hovering your cursor over a pin on the map will display the address and coordinates of the location in a tooltip.
- The address bar is hidden on objects with no location data. If the map is configured to display, a greyed out map with a **No location has been specified** message is shown.



A read-only Location property on a form. Addresses and pins cannot be modified and the map cannot be dragged or zoomed in or out.



A read-only map with no location data.

Relationships & References

Relationships and references can be configured on forms to display location data for both the originating and related objects via a map or a relationship or reference table. For more detailed information, see the View Relationship & Reference Location Data article.

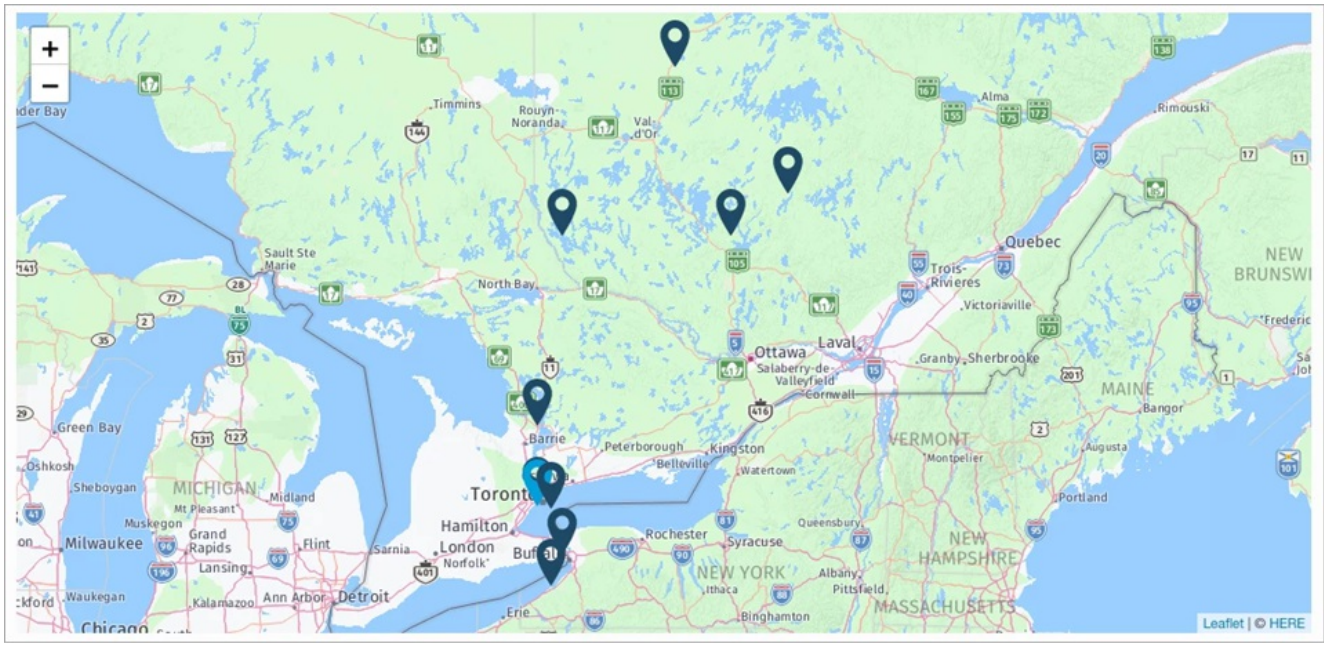
View Relationship & Reference Location Data

Relationship and references can be configured on forms to display location data for both the originating object and related object(s) via a map or a relationship or reference table.

> Objects cannot be viewed, edited, or created through location maps.

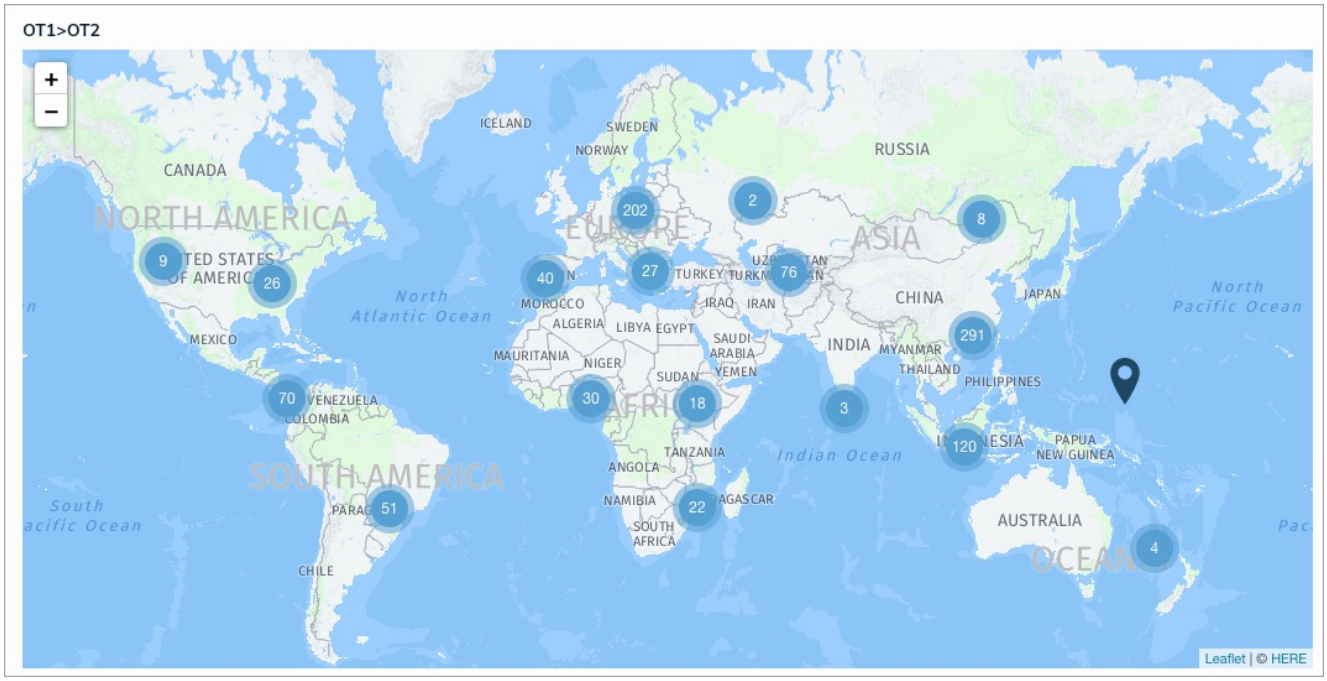
Map

When viewing a relationship map from the originating object, the originating object's location is represented by a**light blue** pin, and any relationship objects are represented by **dark blue** pins. For references, the relationship object is shows a **light blue** pin and any reference objects show **dark blue** pins.



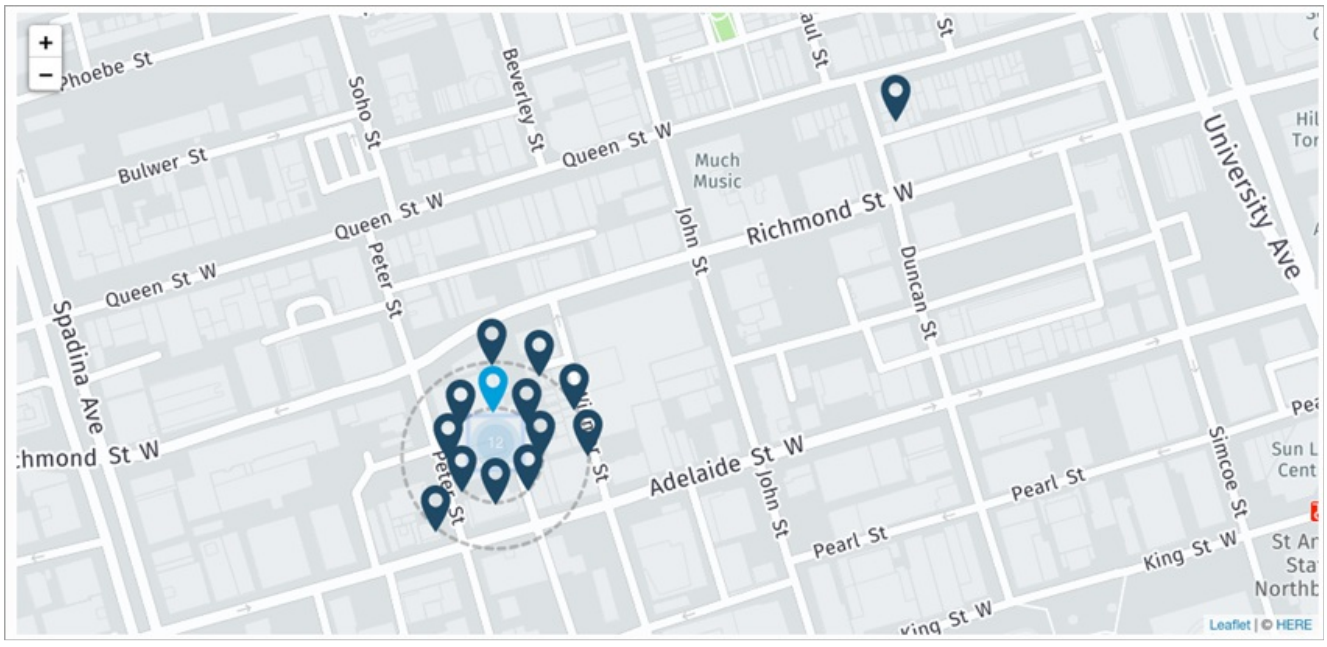
A map displaying pins for the originating (light blue) and its relationship objects (dark blue).

When multiple pins are placed within close proximity of one another, they're displayed in clusters with a number, which represents the number of pins in each cluster. Clicking a cluster will automatically zoom the map into the clusters to display additional pins, depending on the zoom level. Zooming out will automatically condense the pins and clusters by bundling them together, depending on the zoom level.



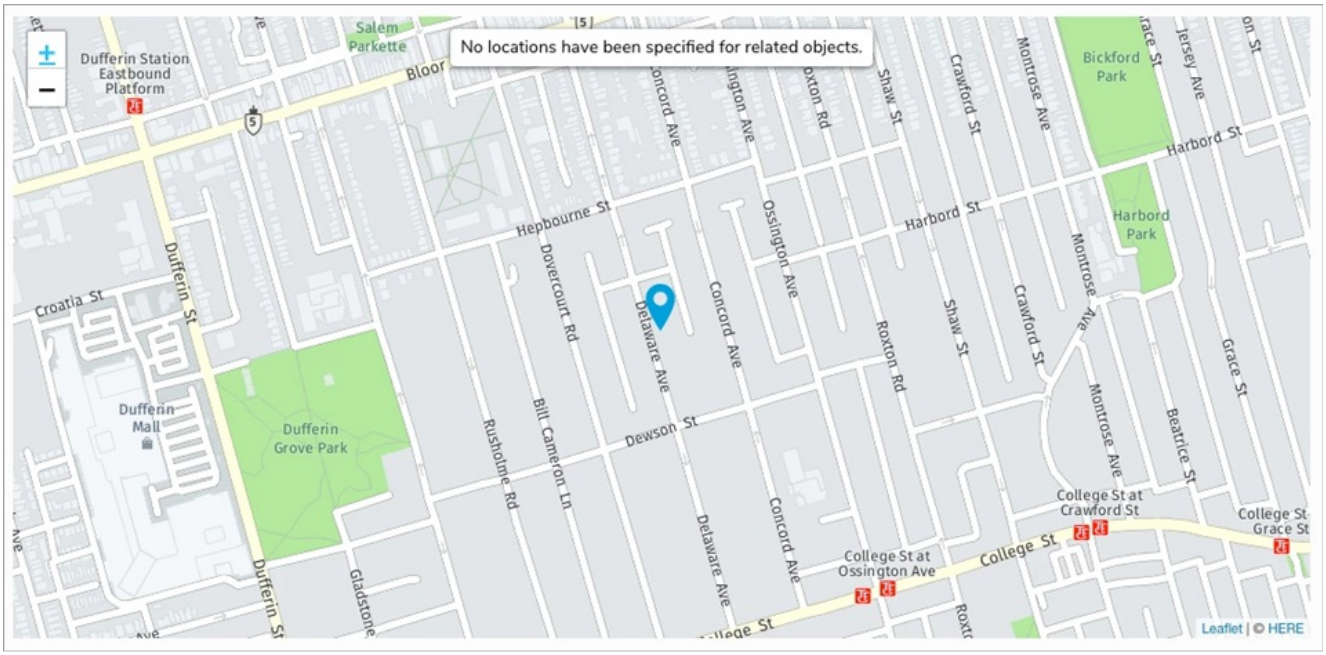
A relationship map displaying pin clusters.

When a cluster contains multiple pins placed at the same or nearby location, zooming in on the cluster displays the pins on **helping circles** to prevent the pins from overlapping. All pins on the innermost circle are spaced evenly apart until full. Additional pins are placed clockwise on the next surrounding circle(s), starting at 12:00. Note that pins are placed on the helping circles at random.



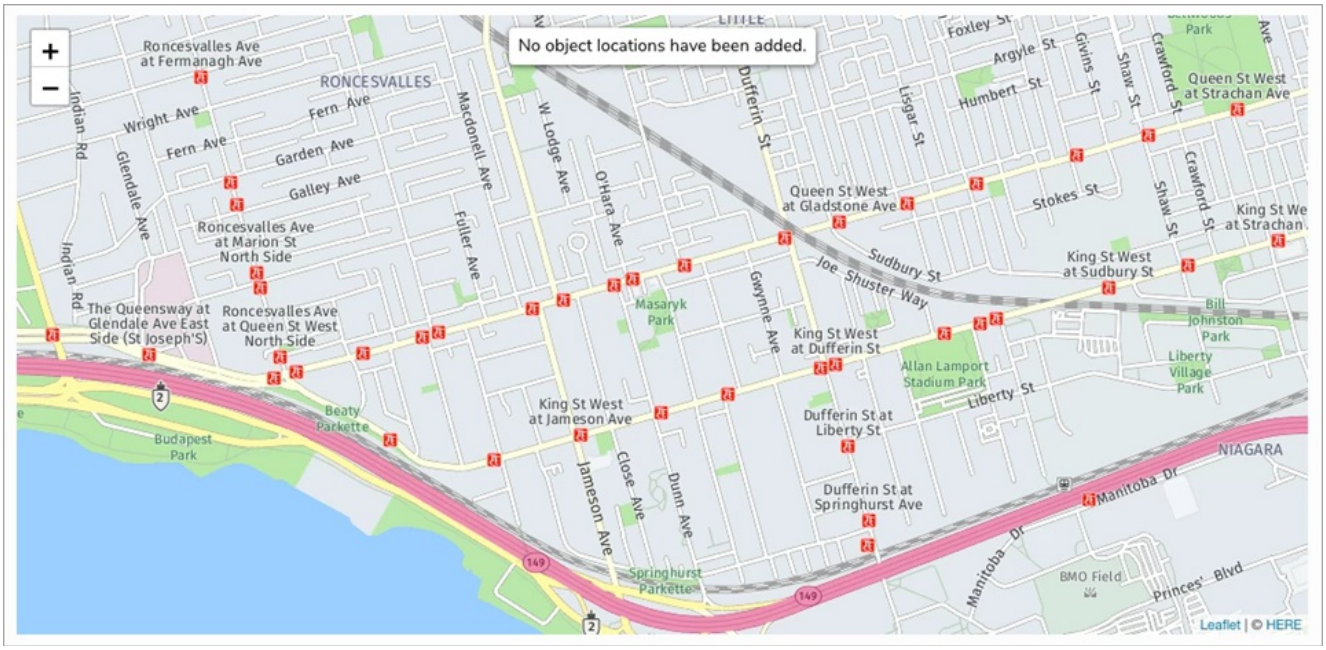
A cluster of pins placed on helping circles.

If the originating object has location data, but the related objects do not, the map will display a **No locations have been specified for related objects** message.



A map with location data for the originating object only.

If neither the originating nor the related objects have location data, the map will display a **No object locations have been added** message.



A map with no location data available.

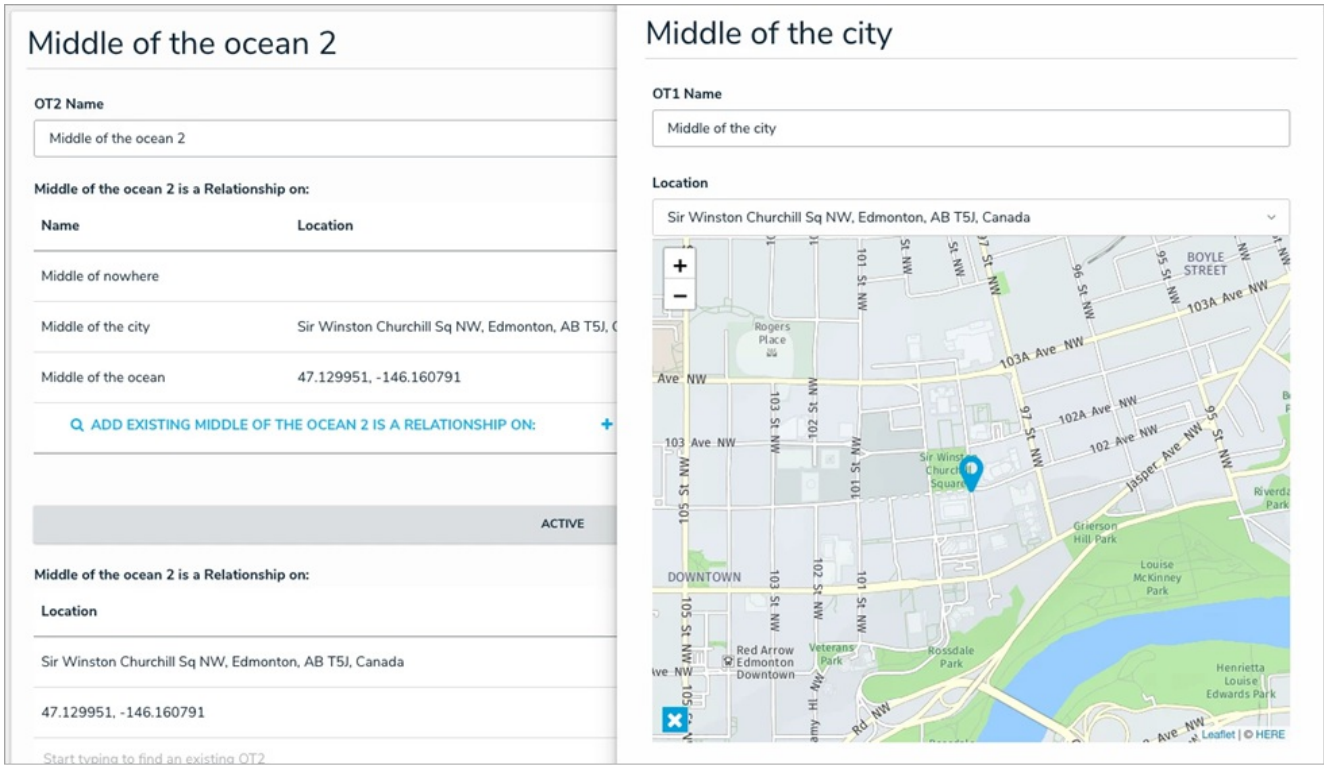
By default, the map is zoomed out to show all location pins. Clicking the + and − icons zooms the map in or out, while clicking and dragging moves it. Clicking a pin on the maps will display the object name, address (if any), and coordinates.

Relationship & Reference Tables

Location data can appear in a relationship or reference table as addresses and/or latitude and longitude coordinates. Clicking a row will display a palette with more information.

Middle of the city 2	10104 109 St NW, Edmonton, AB T5J 1M7, Canada	
Middle of the ocean 2	39.198205, -153.540053	

Location data on a relationship table.



Location data displayed in a palette after clicking a row in a table.

Assessments Overview

Assessments allows users to collect, review, and assess object data (e.g. audit, investigation, control assessment, etc.) continuously or from a particular point in time using dimensions (e.g. locations, business units, quarters, etc.).

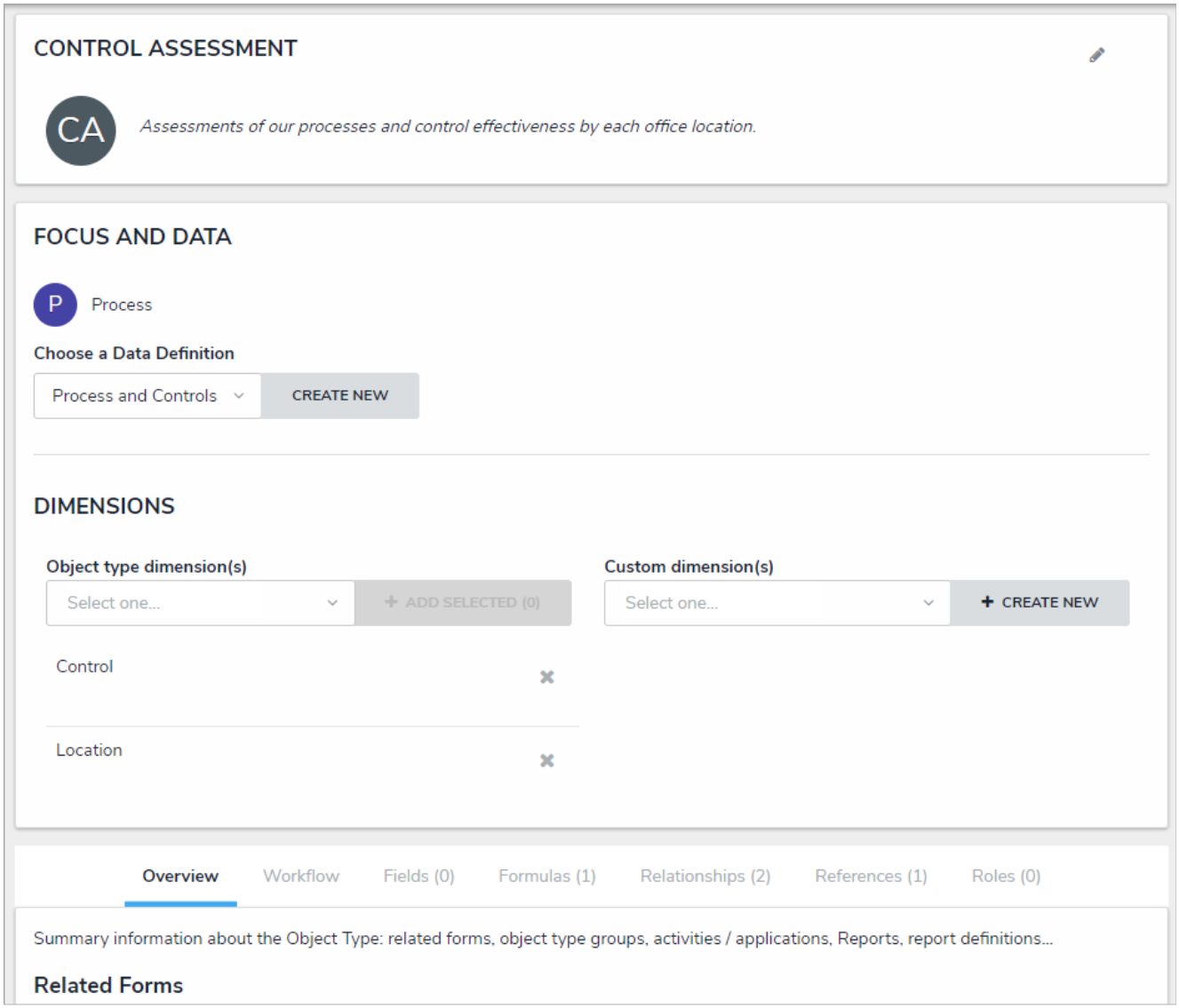
Though there are some additional features and configurations, assessments have a functionality similar to object types. With assessments you can:

- Configure their workflows;
- Add components;
- Create configurable forms or data visualizations;
- Create an assessment object through an activity or Quick Create;
- Add them to object type groups, roles, actions, or views;
- Search for assessment objects; and
- Create or update assessment data through Data Import.

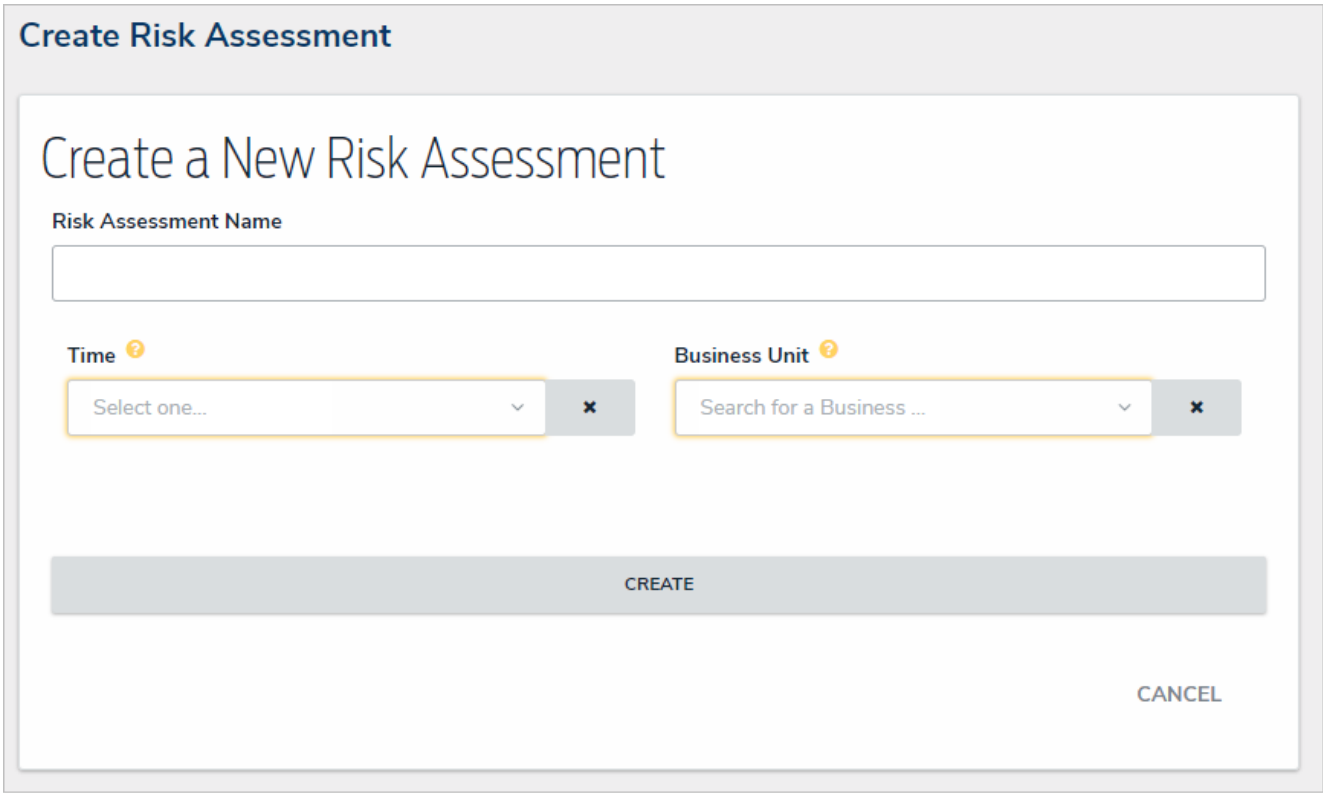
The data added to an assessment is defined by a **focus** object type (similar to an anchor on a data visualization), a **data definition** (also similar to data definitions on a data visualization) and **dimensions** (which help you categorize the data). Assessments are then added to an action where users can input the assessment name. A navigation form is then launched, which allows users to view, filter, and explore objects to add to the assessment, before creation (launch). See the Scope & Launch Overview article for more information.

EXAMPLE

Your organization has a number of compliance processes in place. To ensure the processes and their controls are effective, they must be regularly reviewed by each office location. To do this, you would create an assessment, titled Control Assessment, with the Process object type as the focus. Through the data definition, you select the Control object type which is related to Process through a relationship, then create a Location custom dimension, with an option for each office location in your company. Lastly, you add components to the assessment, just as you would for an object type, which includes a select list that summarizes the overall effectiveness of the controls. Once the new assessment has been added to an action, users can generate assessment data based on a selected process, location, and control, then determine if the controls are effective based on the formula.



The Edit Assessment page. In this case, the focus object type is Process, the Control object type was added through the data definition, and Location is a custom dimension.



A new assessment before scope and launch.

Creating an assessment includes the following steps:

1. Create and configure the object types that will be used in the assessment.
2. Create an assessment:
    a. Select a focus, data definition, and dimensions.
    b. Configure the workflow for the assessment and any other object types in the assessment.
    c. Add components (fields, formulas, relationships, and roles). See the Object Types section for more information on adding each component.
3. Add the assessment to each applicable role, then configure its permissions, including any inferred permissions. Ensure **Manage** permissions have been enabled for each role that will be creating assessments.
4. Create a new navigation form using the same data definition selected on the assessment.
5. Create a configurable form for the assessment and add the Assessment Context element and Open Assessment Scoping action to the form.
6. **Optional:** Add the Assessment Dimension property to the form of an object type that was used as a dimension or reference object on a previous assessment. Adding this property will display the assessment data as a read-only reference.
7. Add the assessment to an action so users can create assessment objects through an activity.
8. **Optional:** Add the assessment to a view to display the existing assessment objects through an activity.
9. **Optional:** Add assessment data to a form to view past assessment data through an Assessment Table.
10. **Optional:** Add the assessment to a data visualization to analyze its data.

Focus, Data Definition & Dimensions

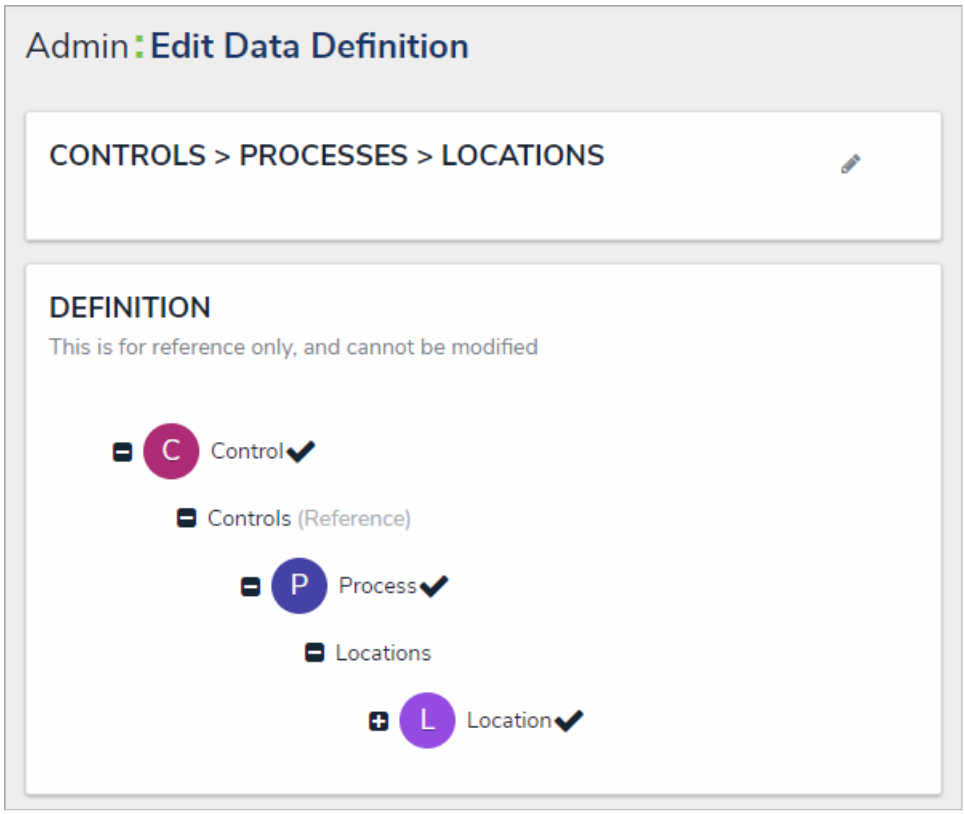
When creating an assessment, you must first select an object type to use as the **focus**, which determines which object types you can select when creating a **data definition**.

The data definition allows you to choose which additional object type(s) an assessment's data is drawn from using the focus object type's Data Path. The **Data Path** displays all the relationships and references associated with the focus object type, so you can select any related object types that you may want in the assessment. When object types are selected through the data definition, you can configure or create new workflows for them or flag them as reference data.

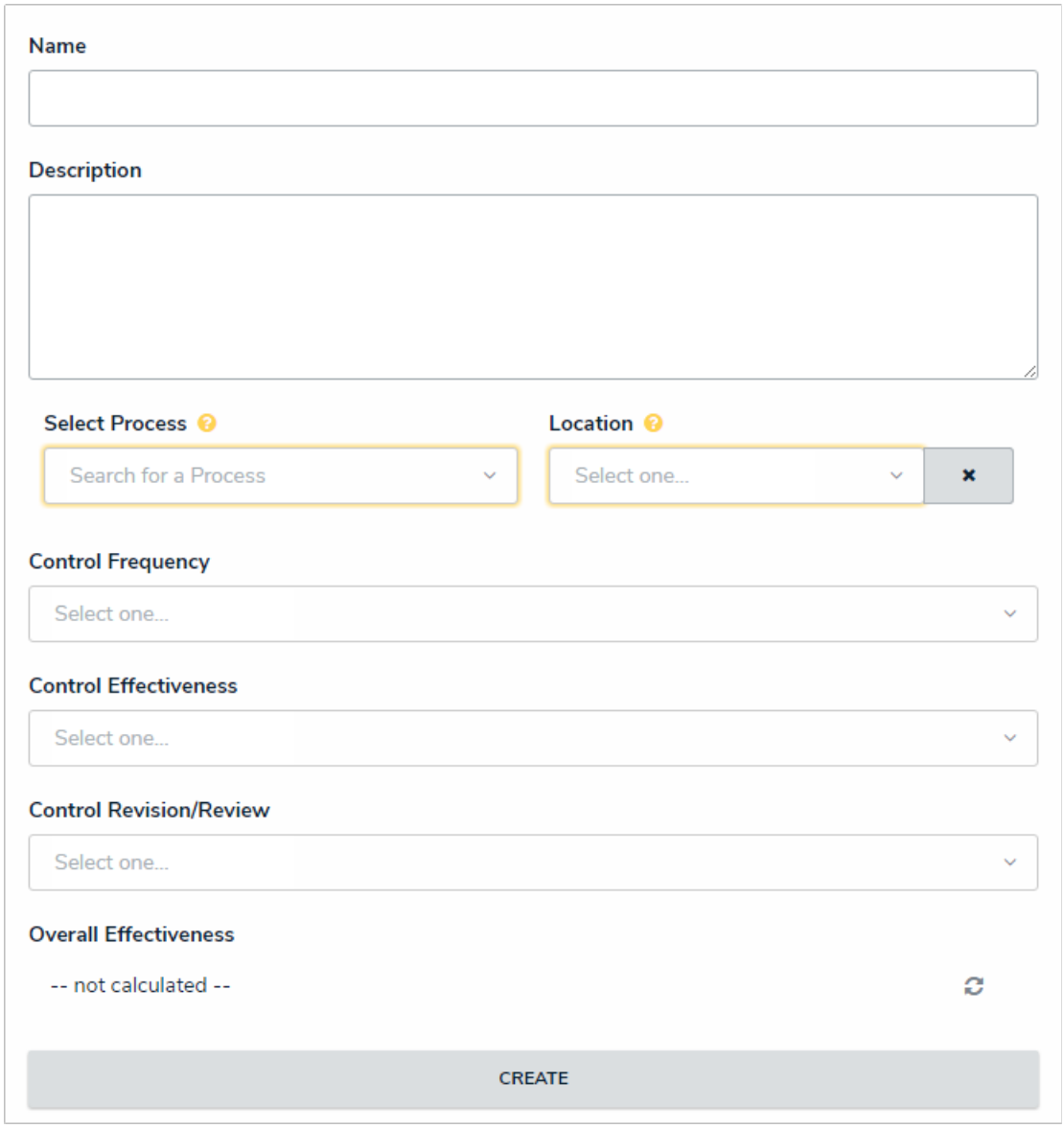
To categorize the assessment data, the following dimensions (assessment context) can be added:

- **Object Type Dimensions:** Allows users to add existing object types outside the data definition to the assessment as context (e.g. Business Unit). Users cannot create new objects through object type dimensions, but can view or edit the objects when scoping the assessment.
- **Custom Dimensions:** Similar to a select list, this dimension type appears on an assessment as a dropdown menu with options that you define in the **Custom Dimension** settings.

Both custom and object type dimensions appear on assessment forms as required fields, however, users are required to complete only one dimension before scoping. If scoping has not been enabled on the assessment, all dimension fields must be completed before the assessment is created. Any selections made in the dimension fields cannot be modified once the assessment has been saved.



The data path of a definition. The selected object types in the path determine which dimensions can be added to an assessment.



A new blank assessment object with Process as the focus object type and Location as a custom dimension.

You can check if an object type is associated with any data definitions by going to **Administration > Object Types**, clicking the object type to open the **Edit Object Type** page, then reviewing the **Related Data Definitions** section in the **Overview** tab. You can also view all the data definitions in your org in the Data Definitions section in **Administration**.

Instances & Reference Data

Once an assessment object is created, **instances** of each existing focus object added to the assessment's dimensions, along with any objects added to a relationship or reference on the assessment, are automatically created. Instances contain the same data as the original objects, except they're assigned unique IDs that are .1 number higher than the original, with any additional instances on the same object being assigned IDs that continue incrementally (e.g. .2, .3, .4, etc.). You can identify instances in a view because they display the dimensions from the related assessment below their names. For example, selecting the Payroll object with a unique ID of P-5 on an assessment will result in an automatically created instance of that object with the same data, but with a unique ID of P-5.1 and the Edmonton (Location) dimension displayed on the view. Instances from previous assessments can be reassessed. When this happens, an additional .1 increment is added to the instance's unique ID (e.g. P-5.1.1).

If objects in an assessment should **not** have instances created, administrators can flag object types in the selected data definition as **references.** Reference data in an assessment is considered to be important, secondary data that needs to be included, but not actually assessed. If a relationship between the assessment and a reference object type has been created, the relationship and reference form elements can be used to view, add, or edit data on a reference object.

Examples of assessment reference data include business units, locations, departments, products, teams, or legislation. Object types are flagged as references in the **Workflow** tab on the **Edit Assessment** page. See the Assessments Workflows section for more information on configuring the workflows to toggle instances on or off.

EXAMPLE

Because you're creating an assessment that evaluates your company's processes and the effectiveness of their controls at each office location, the focus object type of your assessment would be the Process object type. The data definition would then display all the object types related to Process through relationships and references where you would select the Control and Location object types. The Process and Location object types are used to create dimensions on the assessment, but Location is flagged as reference data. Now when a user selects a particular Process object when creating a new assessment, both the Process and Control objects will have new instances created. Meanwhile, because the Location object type was flagged as reference data, it appears on the assessment, but no instances of the Location object are created.

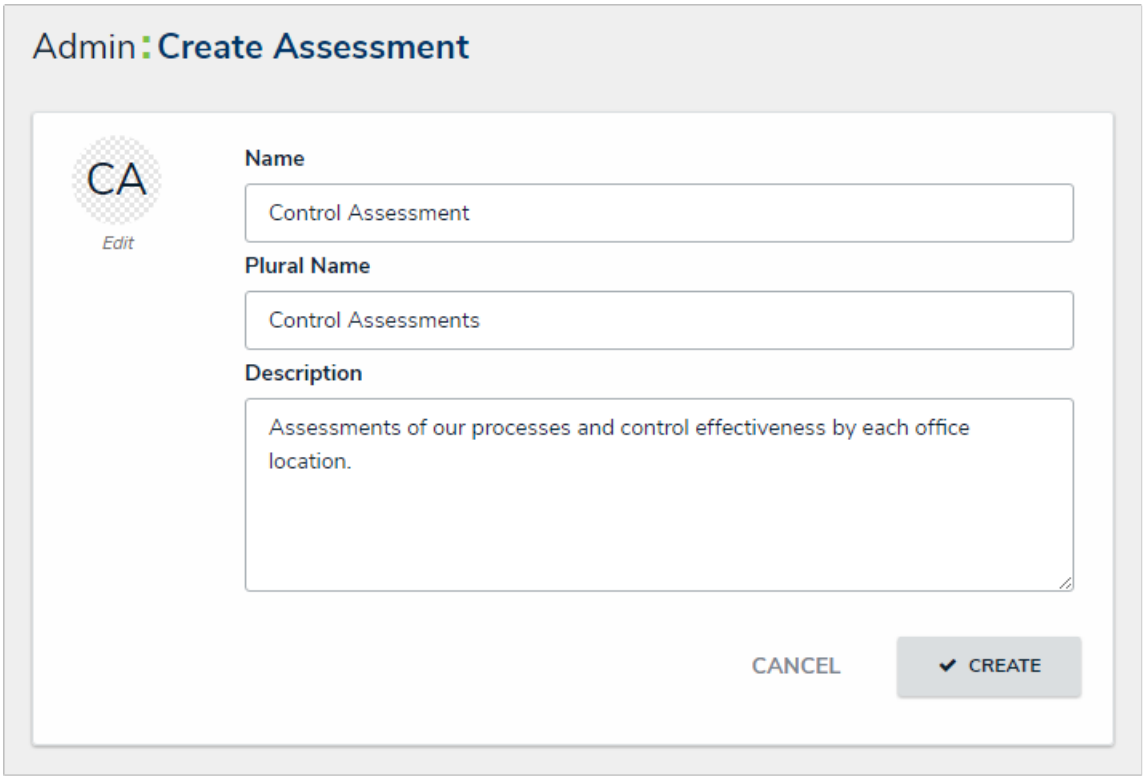
An example of an instance in a view, identifiable by the .1 increment added to the unique ID and the assessment dimensions (in this case, Q1 and Edmonton).

Create a New Assessment Type

Once an assessment type has been created, you can add it to data visualizations, object type groups, relationships, roles, configurable forms, actions, and views.

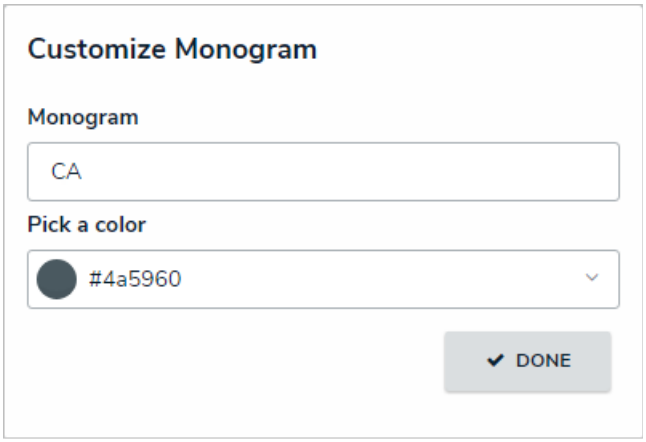
To create a new assessment type:

1. Click the icon in the top bar > **Assessments** in the **Data Model** section.
2. Enter a name for the assessment in the **Name** field.
3. **Optional:** Enter a plural name for the assessment type in the **Plural Name** field, which will appear when viewing a list of the objects for the assessment (e.g. "View Control Assessments" instead of "View Control Assessment").
4. **Optional:** Enter a description of the assessment type in the **Description** field, which will appear on the **Assessments** and **Edit Assessment** pages.



The Create Assessment page.

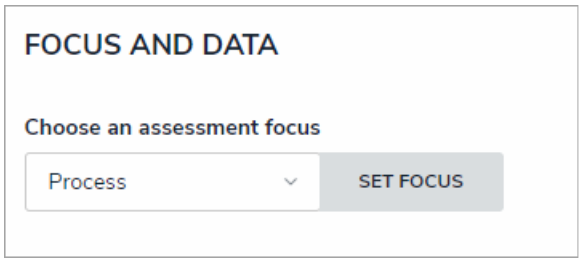
5. **Optional:** To edit the assessment monogram:
    a. Click the monogram icon to the left of the **Name** field.
    b. Enter 1 to 3 characters in the **Monogram** field.
    c. Click the **Pick a color** dropdown menu to reveal the color picker. You can also type a hex color into this field to select a color.



The Customize Monogram screen.

d. Click **Done.**

6. Click **Create** to display the **Edit Assessment** page.
7. Select an object type to use as the assessment's focus from the **Choose an assessment focus** dropdown menu. The focus object type determines which object types you can select when creating or selecting a data definition.
8. Click **Set Focus**.

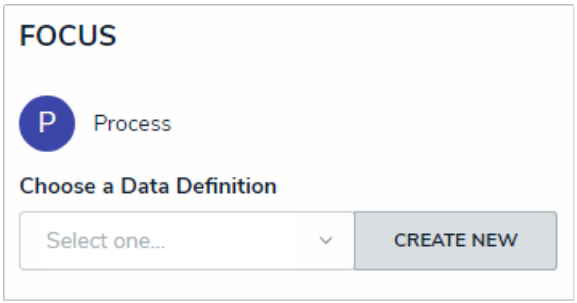


The Focus dropdown menu. The object type selected here will determine which data definition can be selected for the assessment.

Once you've clicked **Set Focus**, you cannot modify your selection.

9. To choose an existing data definition, select it from the **Choose a Data Definition** dropdown menu.
10. To create a new data definition:

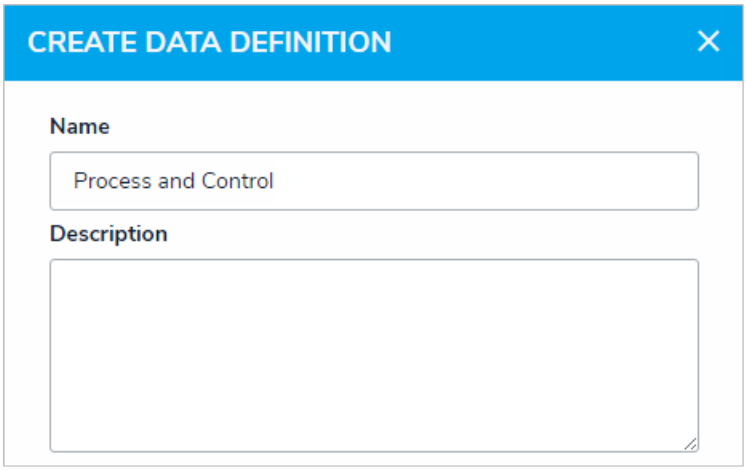
a. Click **Create New** to open the **Create** Data Definition panel.



The Data Definition section, which appears after selecting a focus.

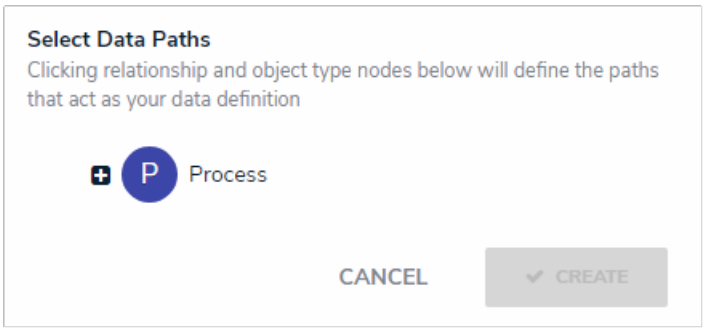
b. Enter the name for the definition in the **Name** field.

c. **Optional:** Enter a description for the definition in the **Description** field. This description will appear when reviewing the Data Definition settings.



The Create Data Definition screen.

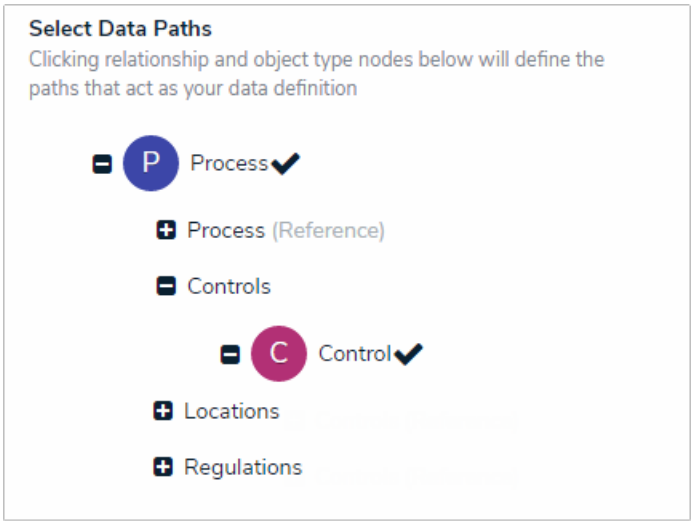
d. Click the monogram, which represents the focus object type you're currently working in, to expand the node and any reveal relationships and references saved to the focus object type.



The Data Path with no object types selected. Clicking the monogram of the focus object type will expand the tree to show all the relationships and references.

e. Click a relationship or reference to show the related object types (e.g. clicking the "Controls" relationship will reveal the Control object type).

f. Click an object type to place a checkmark next to it and add the object type to the data definition. Any object types selected in the data definition can be used as dimensions or reference data on the assessment. For example, if you selected Process as the focus and Control in the data definition, both Process and Control can be added as dimensions.



Selecting object types on a new data definition. The object types selected can then be used as dimensions or reference data.

g. Continue placing checkmarks beside the object types as needed.

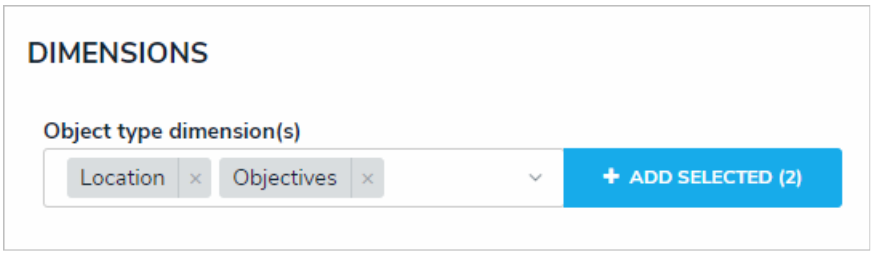
h. Click **Create** to close the palette.

> You can review the data path of the definition from the Data Definitions section in **Administration**.

11. To create a dimension from an existing object type (that will appear on the assessment as a field through which users can select an existing object):

    a. Click the dropdown menu below **Object Type Dimension(s)**, then select one or more object types that you want to appear on the assessment (e.g. selecting the Location object type will add fields on the assessment through which users can only select existing Location objects).

    b. Click **Add Selected**.



Adding object type dimensions to an assessment.

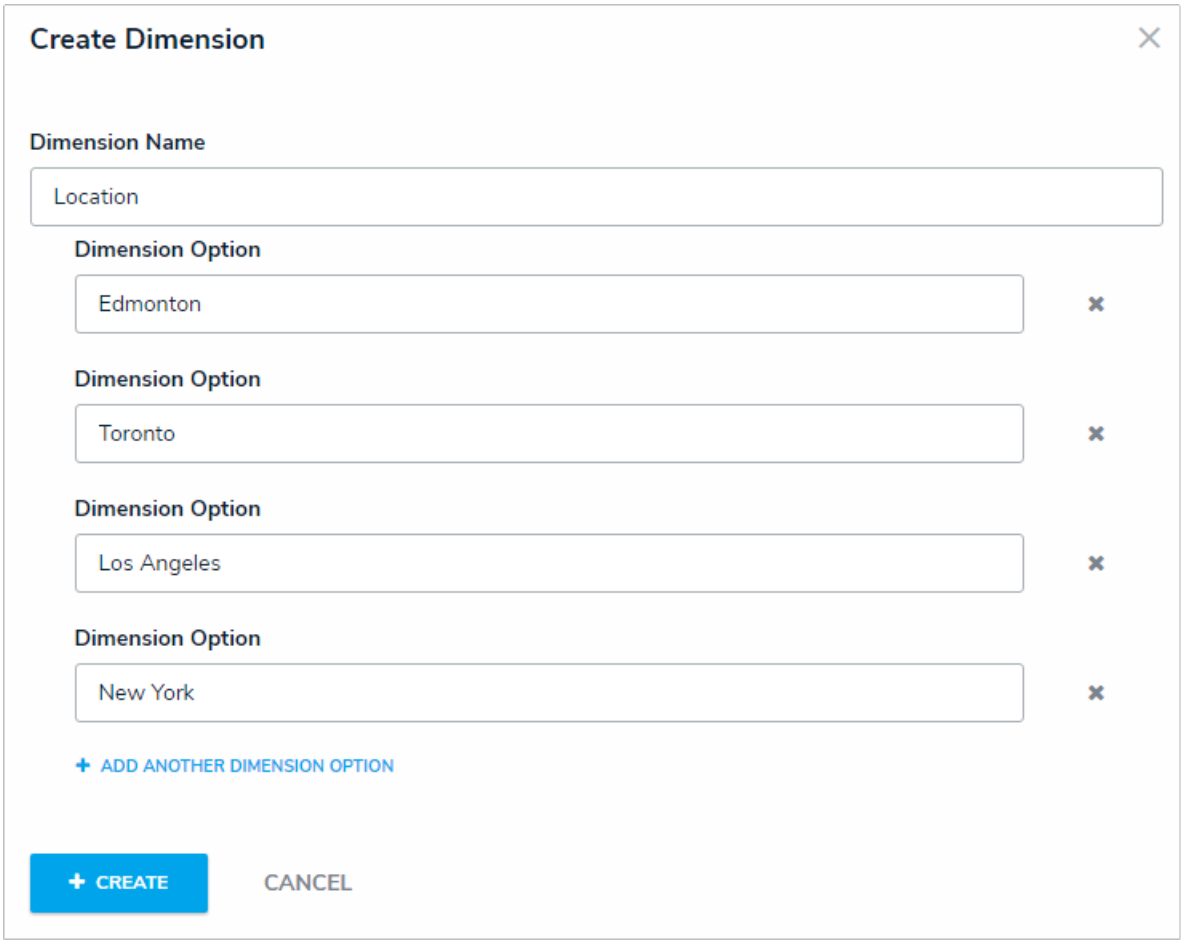
12. To create a custom dimension, which will appear on the assessment as a dropdown menu with predefined options (similar to a select list) and will **not** allow users to select existing objects:

    a. Click **Create New** from the dropdown menu below **Custom Dimension(s)**.

    b. Enter a name in the **Dimension Name** field (e.g. Location).

    c. Enter the name for an option as it will appear in the dimension (e.g. Edmonton).

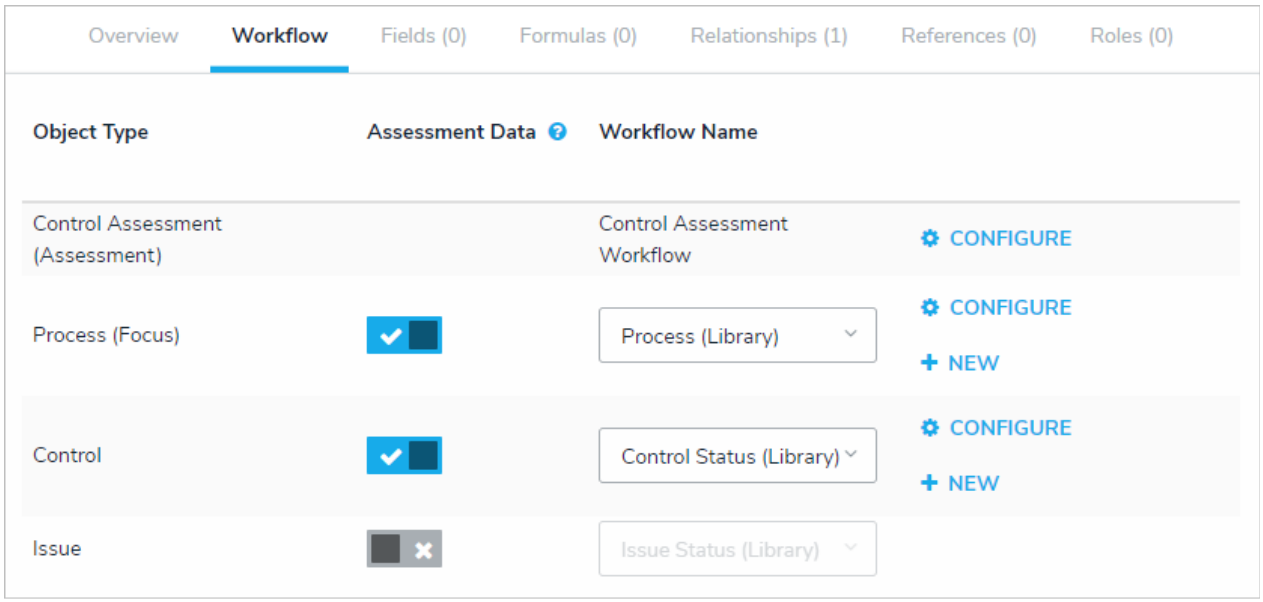
    d. Click **Add Another Dimension Option** to continue adding options.



The Create Dimension screen for custom dimensions.

e. Click **Create**.

13. Click the **Workflow** tab. From here you can configure the assessment workflow, configure or create new workflows for focus object types (object types toggled as on in the **Assessment Data** column), or flag object types as reference data. The object types on this tab are populated based on the object types selected in the assessment's data definition. See the Configure an Assessment's Workflows for more detailed information.



The Workflow tab on the Edit Assessment page.

14. Click the **Fields** tab to add fields to the assessment.
15. Click the **Formulas** tab to add formulas to the assessment.
16. Click the **Relationships** tab to add relationships to the assessment.

> To help indicate an object type is the focus of an assessment, a relationship between the assessment and the focus object type is automatically created on the assessment, which will then allow you to add a reference on the focus object type, if needed.

17. Click the **Roles** tab to add roles and configure the inferred permissions on the assessment.
18. Click **Done**.
19. Create a **navigation form** to complete the scope and launch of the assessment.
20. Create a standard configurable form for the assessment, ensuring you've added the Assessment Context element and the Open Assessment Scoping action to the form.
21. Add the assessment to an action so assessment objects can be created through an activity.
22. **Optional:** Add the assessment to a view so existing assessment objects can be viewed through an activity.

Assessment Workflows Overview

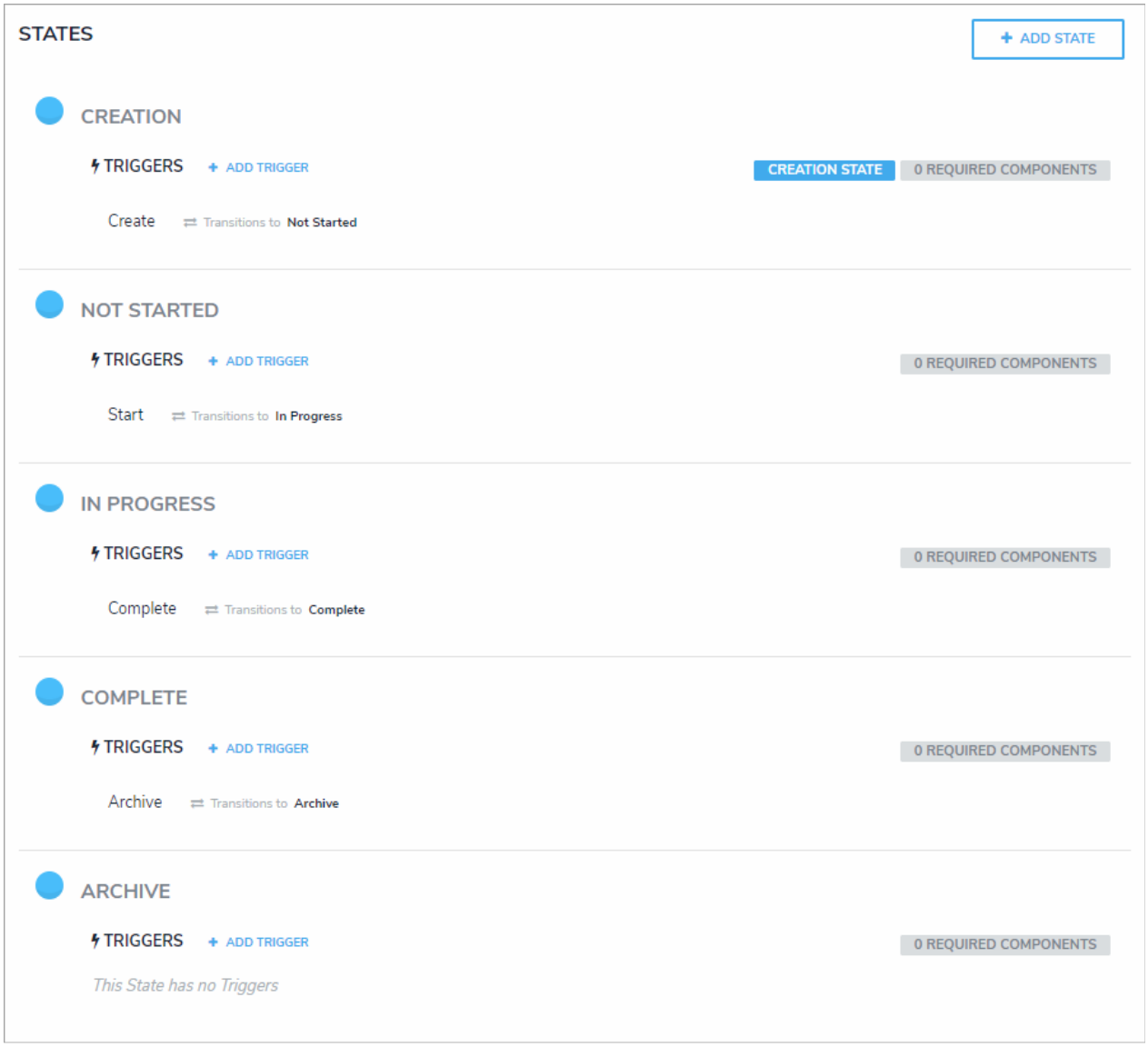
Because objects in an assessment may require different processes depending on the assessment type (e.g. Audit versus ERM), administrators can configure unique workflows for object types added to assessments.

While assessment types can only have one workflow, the object types added to an assessment can have multiple. Additional workflows can only be created in the **Workflow** tab on the **Edit Assessment** page, however, once a workflow is created, it can be used for the object type on any other assessments (if that object type has been added to the data definition). The states in those additional workflows can be used to filter the objects displayed in views, data visualizations, or search results.

The primary workflow created for each object type outside of an assessment is identified in the **Workflow** tab as **[Object Type Name] (Library).** When you create a new workflow for an object type from the **Edit Assessment** page, you can reuse that workflow in other assessments, views, data visualization filters and parameters, and searches. Reusing previously created assessment workflows is useful when an object type has similar processes across more than one assessment. For example, if the Control object type was used in the Control Self Assessment, an administrator could select that assessment's workflow when Control was used in the Audit assessment.

Each new assessment and object type is created with an automatically generated workflow that includes the following states, triggers, and transitions that can be edited, deleted, or replaced (except **Creation**):

1. **Creation:** Contains a **Create** button trigger that transitions the object to the **Not Started** state. This state cannot be deleted nor can its name or color be edited, however, the trigger can be edited or replaced as needed.
2. **Not Started:** Contains a **Start** button trigger that transitions the object to the **In Progress** state.
3. **In Progress:** Contains a **Complete** button trigger that transitions the object to the **Complete** state.
4. **Complete:** Contains an **Archive** button trigger that transitions the object to the **Archive** state.
5. **Archive:** This state contains no triggers or transitions.



The standard workflow that's created with each new assessment and object type.

The object types available in the **Workflow** tab on the **Edit Assessment** page are populated based on the data definition selected when creating the new assessment. From this tab, you can also specify whether these object types' data should actually be assessed and have instances created or should be used only as reference data. Note that you cannot create or configure workflows for object types used as reference data in assessments. For more information, see the Assessment Data & Reference Data article.

Assessment Data & Reference Data

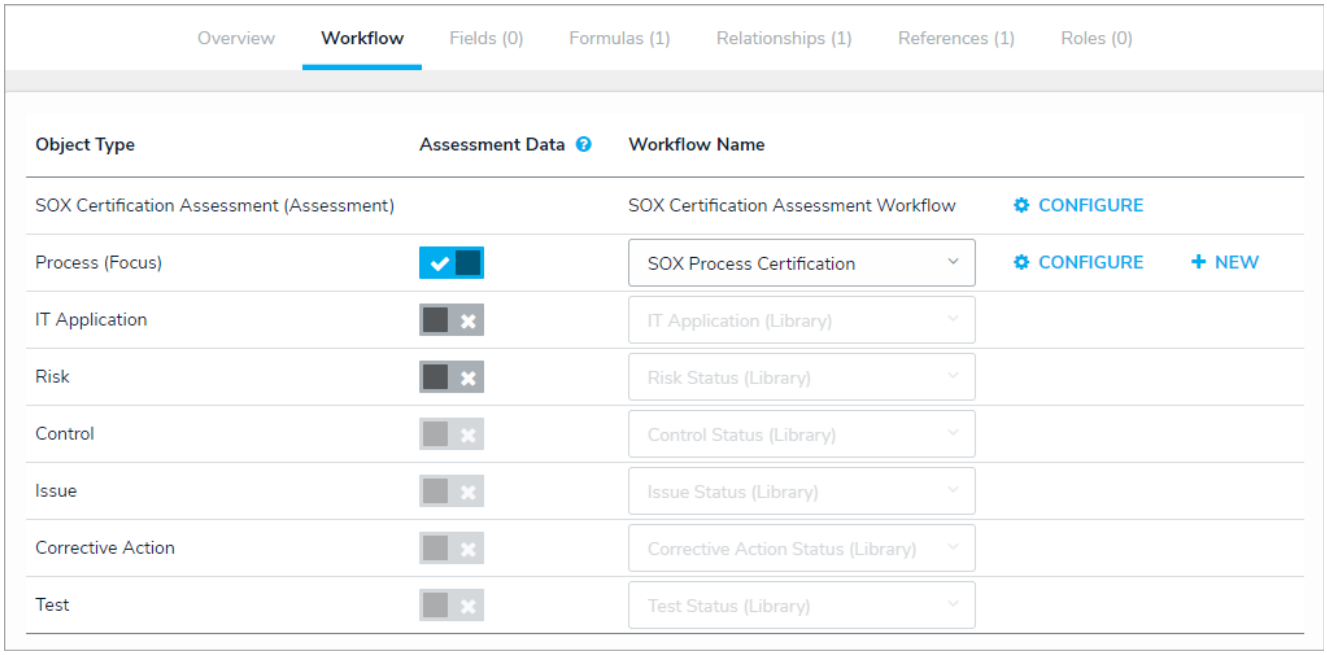
When configuring an assessment's workflow(s), administrators can choose if instances (clones) of the objects added to the assessment will be created or if they will be used only as reference data, which is considered important, secondary data that needs to be included, but not actually assessed. This is done by enabling or disabling the **Assessment Data** option in the **Workflow** tab from the **Edit Assessment** page.

By default, the **Assessment Data** option is enabled for all the object types on the **Workflow** tab, which is populated based on the assessment's data definition. When enabled, any objects added to the assessment through the dimension, relationship, or reference fields will have instances of that object created. When disabled, these objects can still be added to the dimensions, relationship, or reference fields, but no clones of the objects will be created. Specifically:

- **If Assessment Data is enabled:** Instances of objects added to the dimension, relationship, or reference fields on an assessment are created. To prevent unnecessary duplicate data, objects that were already cloned in an assessment are not cloned again if they're added to a relationship or reference field on the same assessment. For example, Assessment Data is enabled for the Control object type. The Control 1 object was added to Assessment A and the instance, Control 1.1, was created, but additional instances of Control 1 are not created when this object is added to the Risk relationship on Assessment A. However, adding Control 1 to Assessment B will create an additional instance (Control 1.2) because this object was not previously cloned in this particular assessment. This applies to library and assessment objects.
- **If Assessment Data is disabled:** Objects added to the dimension, relationship, or reference fields on an assessment are linked to the relationship/reference and/or assessment objects, but instances are not created. For example, Assessment Data is disabled for the Control object type. The Control 1 object was added to Risk Assessment A and the Risk relationship on Assessment A, but no clones of Control 1 are created. This applies to library and assessment objects on new and launched assessments.

Note that you cannot create or configure workflows for object types added to assessments unless the **Assessment Data** option is enabled. Additionally, disabling **Assessment Data** for a root object type will also disable the option for any leaf (relationship or reference) object types in the data definition.

In the screenshot below, only objects from Process will have instances created, while the IT Application and Risk object types, including the relationships and references saved to Risk (i.e. Control, Issue, Corrective Action, and Test), will not have any instances created should any of their objects be added to the assessment as dimensions or relationship or reference objects.

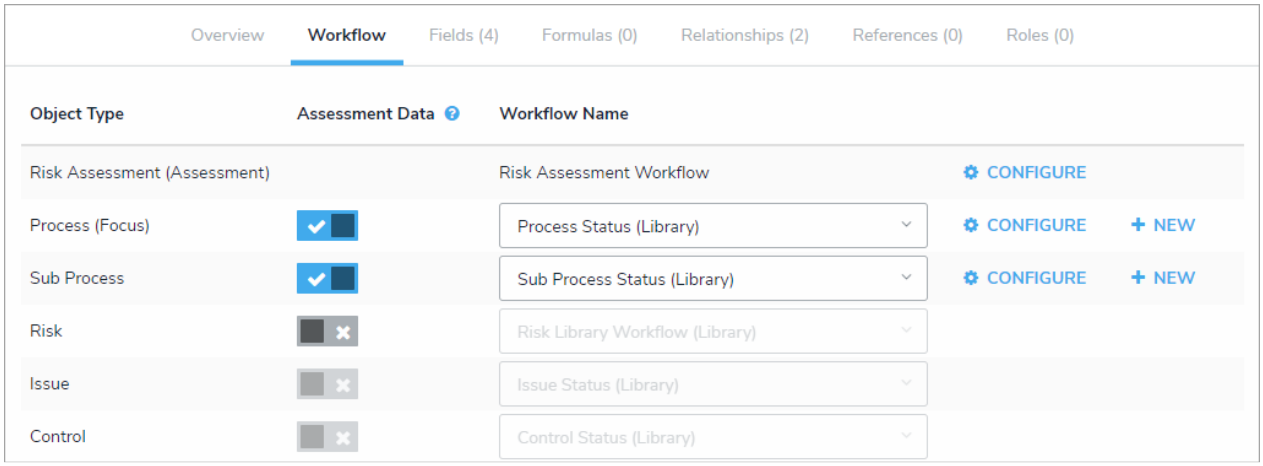


The Workflow tab of an assessment. Only the Process object type will have instances of its objects created when added to the assessment.

Configure Assessment Workflows

To configure an assessment's workflow(s):

1. Click the icon in the top bar > **Assessments** in the **Data Model** section.
2. Click the assessment or enter the name of the assessment in the **Search** field, then click it to display the **Edit Assessment** page.
3. Click the **Workflow** tab near the bottom of the page to display the object types in the assessment's data definition.



The Workflow tab on the Edit Assessment page. The object types in this tab are populated based on the data definition selected for the assessment.

4. To toggle an object type on or off as reference data:

   a. Click the icon beside an object type to toggle it and any relationship and reference object types below it, as off. To toggle an object type as on, click the icon.

   > You cannot configure the workflows of object types flagged as reference data in assessments.

5. To edit an existing workflow:

   a. Click **Configure** in the row for the assessment or appropriate object type on the **Edit Workflow** page. If an object type has multiple workflows, select it from the dropdown menu in the **Workflow Name** column, then click **Configure**.

   b. Make adjustments to the workflow states, triggers, transitions, and actions as needed. See Workflows for more information on configuring these settings.

6. To create a new workflow for object types that are **not** flagged as reference data, click **New** in the row for the appropriate object type. See the Workflows section for more information on creating a new workflow.

Edit or Delete an Assessment Type

You can edit or delete an assessment type and most of its settings **provided that the assessment has not been launched**. Once an assessment is launched, the assessment and the following data associated with it will be locked, including:

- Object types;
- Dimensions;
- Formulas, relationships, or roles; or
- Object type groups.

This article provides instructions for editing or deleting an assessment that has **not** been launched. To edit or delete any of the above data after an assessment has been launched, the assessment, the assessment objects, and instances must first be deleted. See the Delete a Launched Assessment Type for more information. For information on deleting individual assessment objects and their instances, see the Delete a Launched Assessment Object article.

To edit or delete an assessment:

1. Click the icon in the top bar **> Assessments** in the **Data Model** section.
2. Click the assessment or enter the name of the assessment in the **Search** field, then click it to display the **Edit Assessment** page.
3. To edit the assessment's name, description, or monogram, click the icon next to the assessment's name at the top of the page.
4. To edit the data definition, select an existing definition from the **Choose a Data Definition** dropdown menu or click **Create New** to create a new one.

   Selecting a new data definition will reset any configured workflows on your assessment.

5. To add a new custom dimension, select an existing custom dimension from the dropdown menu in the **Custom dimension(s)** section or click **Create New** to add a new dimension.
6. To add a new object type dimension, select an object type from the dropdown menu in the **Object type dimension(s)** dropdown menu, then click **Add Selected**.
7. To delete either a custom or object type dimension from the assessment, click the icon beside the dimension.
8. Click the tabs at bottom of the page to add, edit, or delete the components, including the workflows, of the assessment.
9. To delete the assessment, click the icon, then **Yes** to confirm.

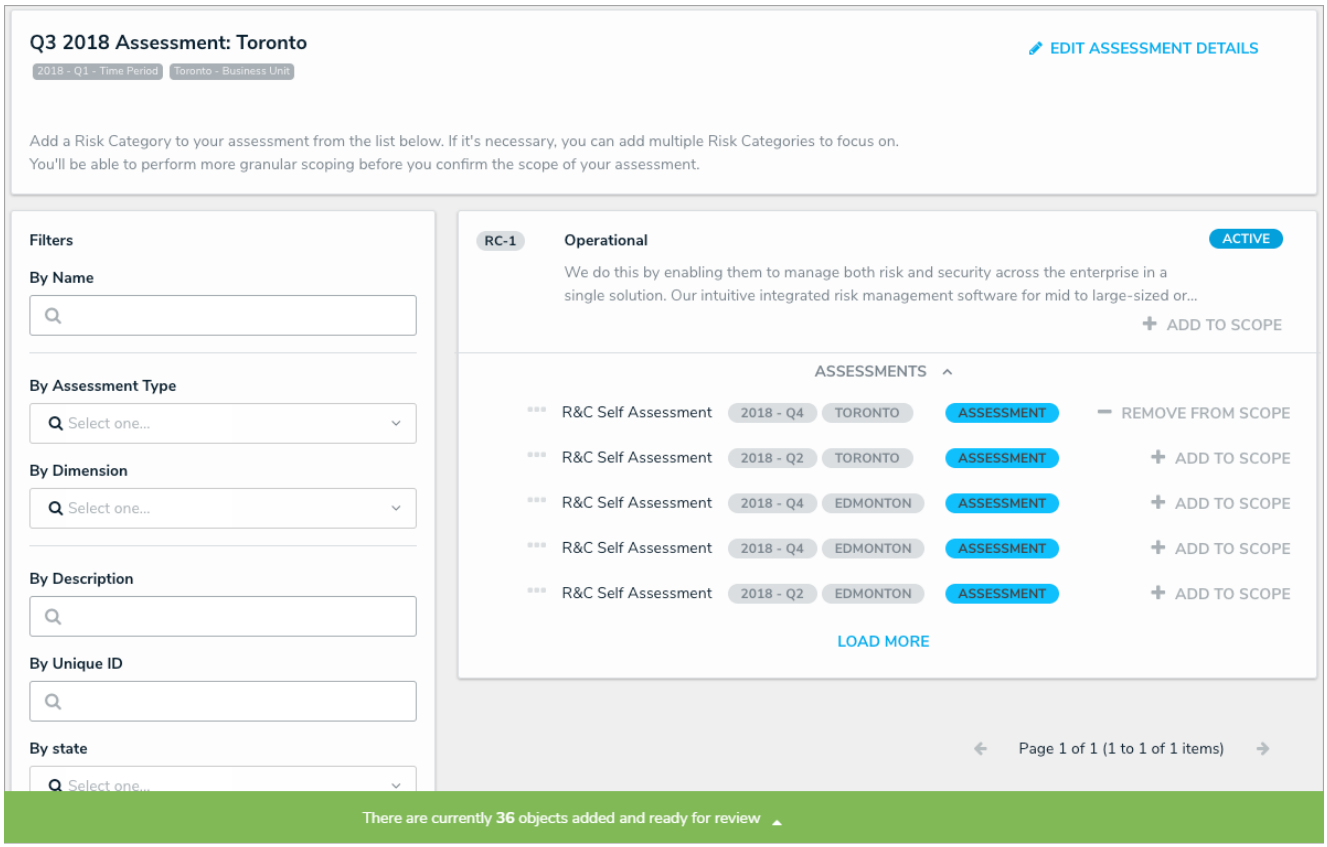
Scope & Launch Overview

When referring to assessments, **scope** refers to end users refining what will be assessed by selecting specific objects or instances, while **launch** means fully creating an assessment after completing all the steps required by end users.

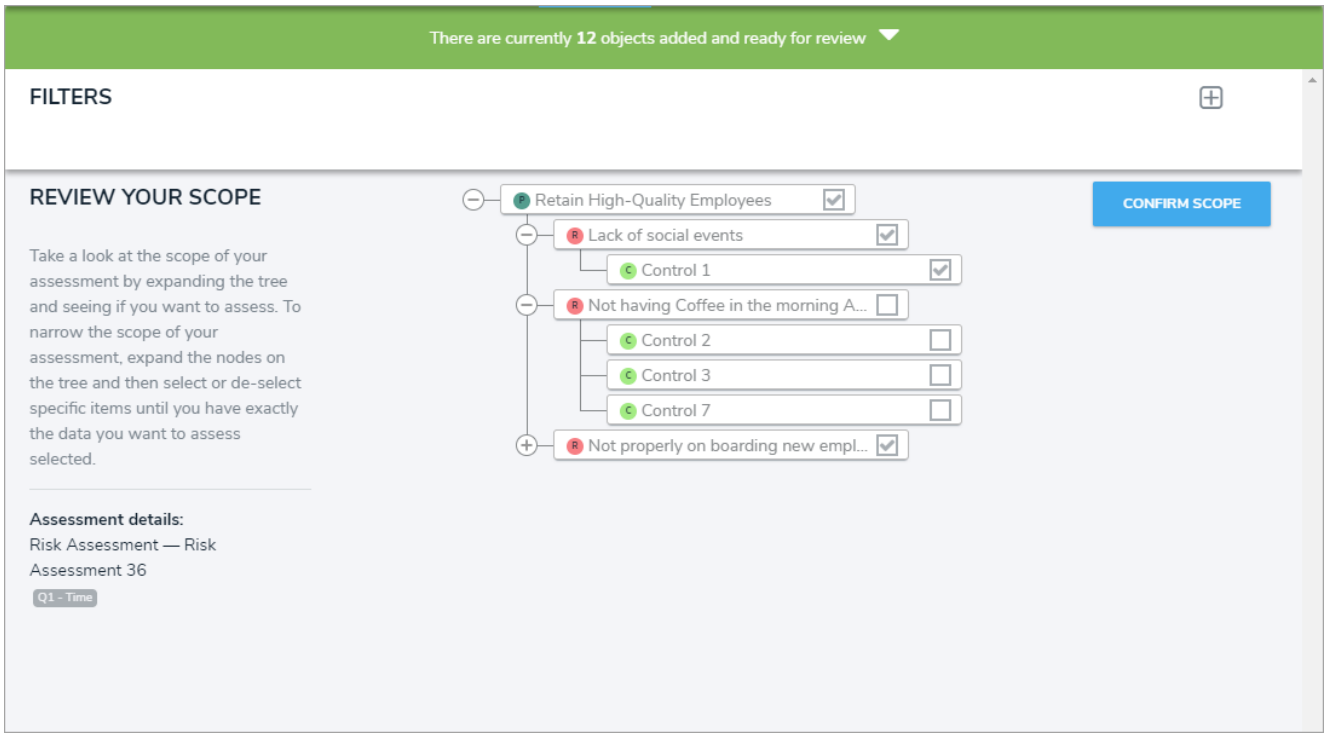
To scope, a user creates a basic assessment by entering a name and selecting at least one dimension, along with any other fields added to the assessment form. After moving the assessment out of the **Creation** state, they then click the Open Assessment Scoping form action to select objects and/or instances from the assessment focus object type(s). The data is further filtered through the use of a navigation form. The tree view on the form helps users decide if related objects are relevant and allows them to add or remove those objects from the assessment. Depending on the user's permissions, the navigation form can also allow review and editing of an object through a palette.

Navigation forms are not required when launching assessments as it's possible to use a standard form with the Assessment Context element to create new assessments, however, **navigation forms are recommended under most circumstances**. See the Navigation Form article for more information.

For information on the steps an administrator must take to allow for the scope and launch of an assessment, see the Scope & Launch Requirements article. For information on the steps an end user must take to complete an assessment, see the Scope & Launch/Create an Assessment article.



A navigation form used to scope an assessment prior to launch. After objects and instances are selected, clicking the green banner will display the navigation form.



The navigation form to allow further refinement of the assessed data.

Scope & Launch Requirements

Before an assessment can be launched using the scoping tool, an administrator must complete the following steps:

1. Create and configure the assessment from the administrative settings.
2. Create a navigation form using the same focus object type or data definition as the assessment.
3. Create a standard form to be used when creating the assessment, ensuring the **Name** and **Assessment Dimension** properties have been added, along with the Open Assessment Scoping action with the appropriate navigation form selected.
4. Using the form from step 3 or a similar form with the **Open Assessment Scoping** action, create a view for the assessment in the **Not Started** state (or equivalent) to allow users to return to assessments that have not yet been scoped.
5. Add the assessment to an action, using the form in step 3 above to allow users to create new assessments.
6. Ensure the appropriate users' roles have been properly configured to access the assessment, actions, and views.

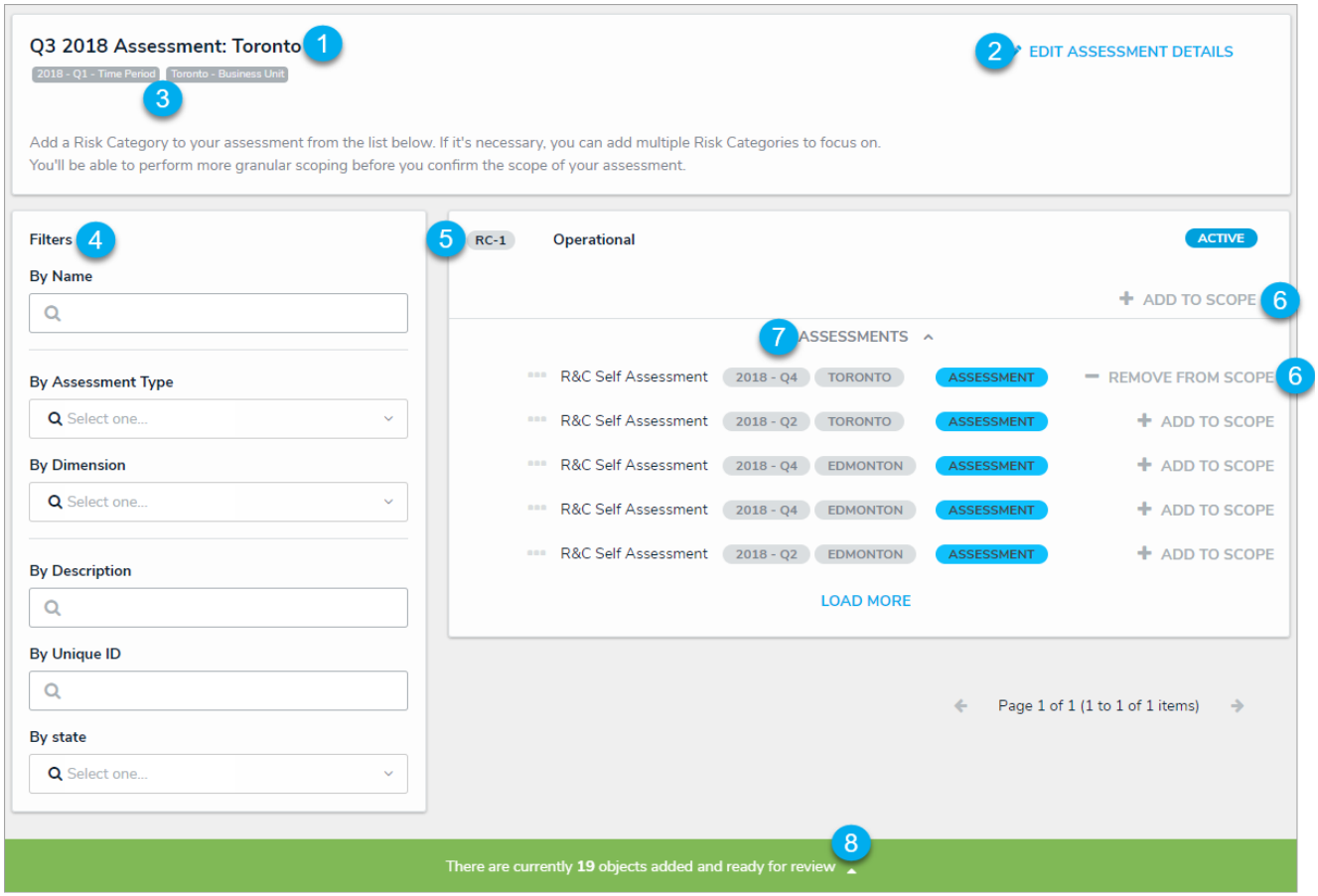
Scope & Launch Thresholds & Best Practices

To successfully scope and launch large data sets in an assessment (e.g., compliance frameworks or other objects with thousands of related objects), there are best practices that should be followed to avoid timeouts and other errors. These best practices include:

- Whenever possible, keep the total number of scoped objects per assessment to fewer than 2,000. This may mean scoping large data sets in individual assessments.
- If more than 2,000 objects must be scoped in an individual assessment, each scoped object should have fewer than 2,000 related objects and no more than 10,000 total objects per assessment. Once these thresholds have been reached, launching the assessment or adding more objects from the scoping tool or navigation form may result in a timeout.
- Add only one object with several related objects (up to 2,000 total) to the scope at a time to avoid timeouts, allowing the number in the banner at the bottom of the scoping tool page to update before adding more objects.

Note that an assessment with more than 10,000 total objects may launch successfully; however, subsequent attempts will often fail as the data in your organization grows. **Attempting to launch an assessment over the 10,000-object threshold isnot recommended, nor is this scenario covered under the Resolver Support program should errors arise.**

Scoping Tool



The scoping tool. This page is accessed by clicking an Open Assessment Scoping action on an assessment form.

1. The name of the assessment.
2. The **Edit Assessment Details** link. Clicking this link will return you to the assessment to edit or add information to the form.
3. The assessment's dimensions. These selections cannot be modified.
4. Filters that can refine the objects and instances displayed on the page.
5. Focus objects that can be added to the assessment.
6. The **Add To Scope** and **Remove From Scope** buttons to add or remove objects and instances from the assessment.
7. Instances of the object (past assessments) that can be added to the scope. If there are no existing assessment objects, this section will be hidden. Hovering your cursor over the ellipsis next to an instance will display its unique ID and the date it was created.
8. Displays the current number of objects and instances added to the scope (either directly by clicking the **Add To Scope** link or through relationships or references based on the assessment's data definition). Clicking this banner will display the navigation form.

Navigation Form

The assessment navigation form, which is accessed after adding objects and instances to the scope.

1. Displays the current number of objects and instances added to the scope from the scoping tool and through relationships and references. Clicking this banner will return you to the scoping tool.
2. Clicking this icon will display the available filters, based on the object type, that can be applied to refine the objects displayed in the tree.
3. Additional objects that can be added or removed from the scope of the assessment, which appear based on the assessment's/navigation form's data definition. Clicking the + icon will expand the nodes to reveal relationships or references on a selected object, while clicking the - icon will collapse the nodes. Deselecting a checkbox beside an object will remove it and the relationship and reference objects below it from the scope. Depending on your role's permissions, clicking an object's monogram or name in the tree will display the object's form in a palette.
4. Saves the selection of objects and instances added to the scope and launches the assessment.
5. The assessment details, including its name and dimensions.

Scope & Launch/Create an Assessment

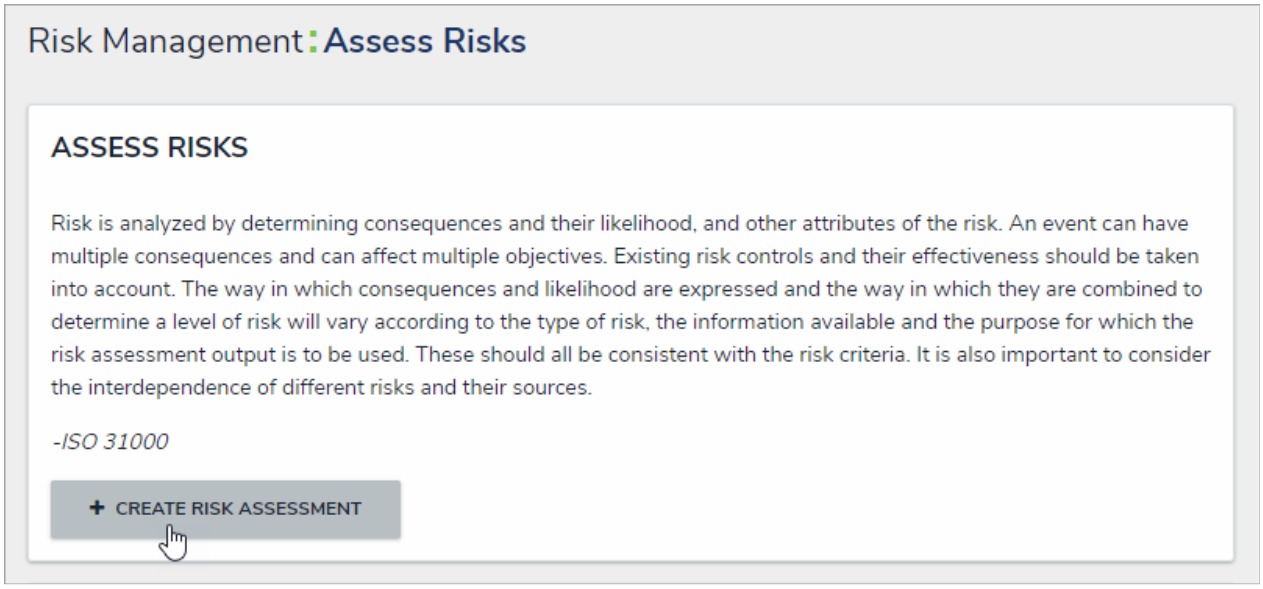
This article provides instructions for creating a new assessment then scoping and launching it immediately after creation. If the assessment was already created, it's possible to scope and launch it by opening it in a view, then following the instructions starting from step 6.

For more information on why assessments are scoped and launched, see theScope & Launch Overview article. To learn more about the user interface of the scoping tool, see the Scope & Launch User Interface article.

> The names of the forms, triggers, objects, etc. in the steps and screenshots below will vary depending on your organization's current configuration.

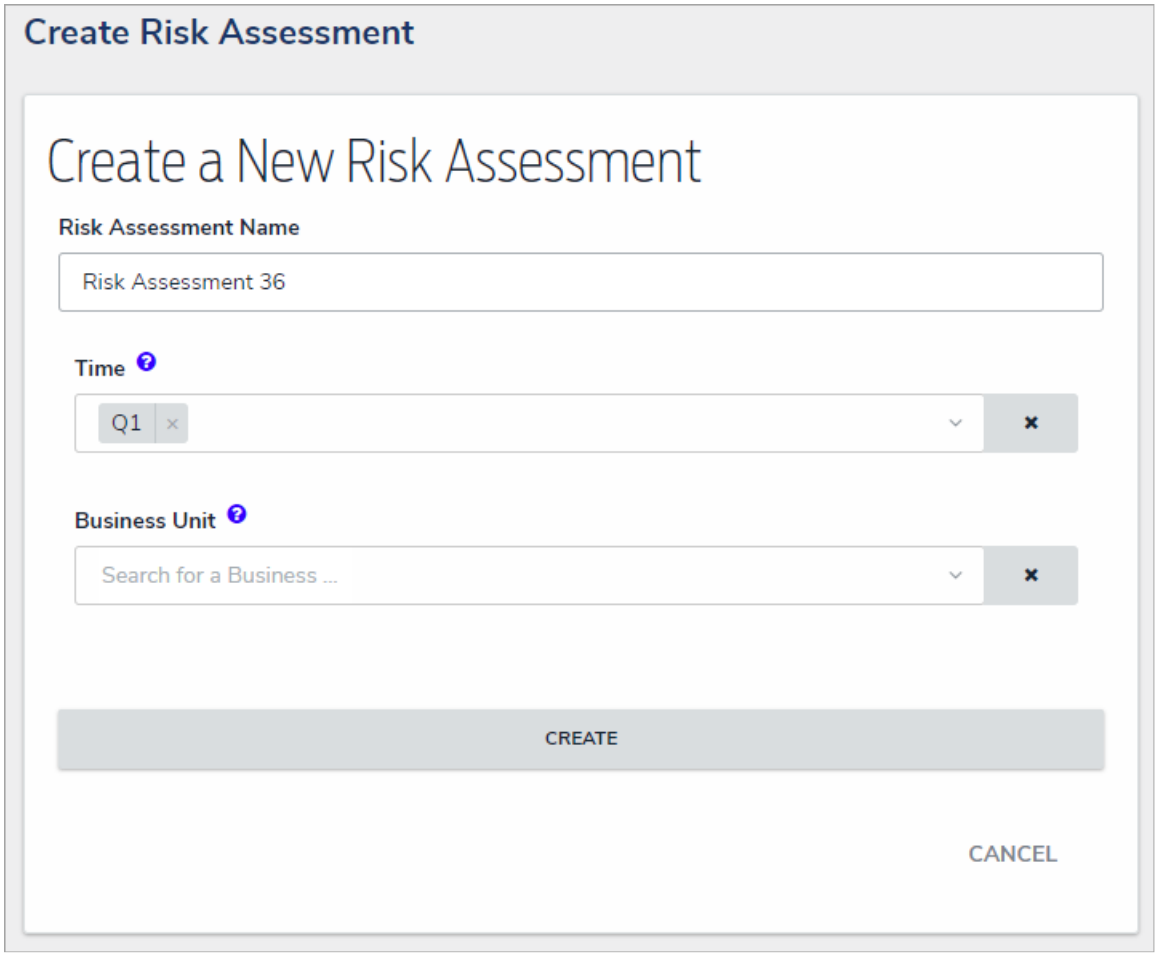
To scope and launch an assessment:

1. Navigate to the application and activity where the **Create Assessment** action is saved.
2. Click the action button to open the assessment form.



An assessment action. Clicking the button will open the assessment form.

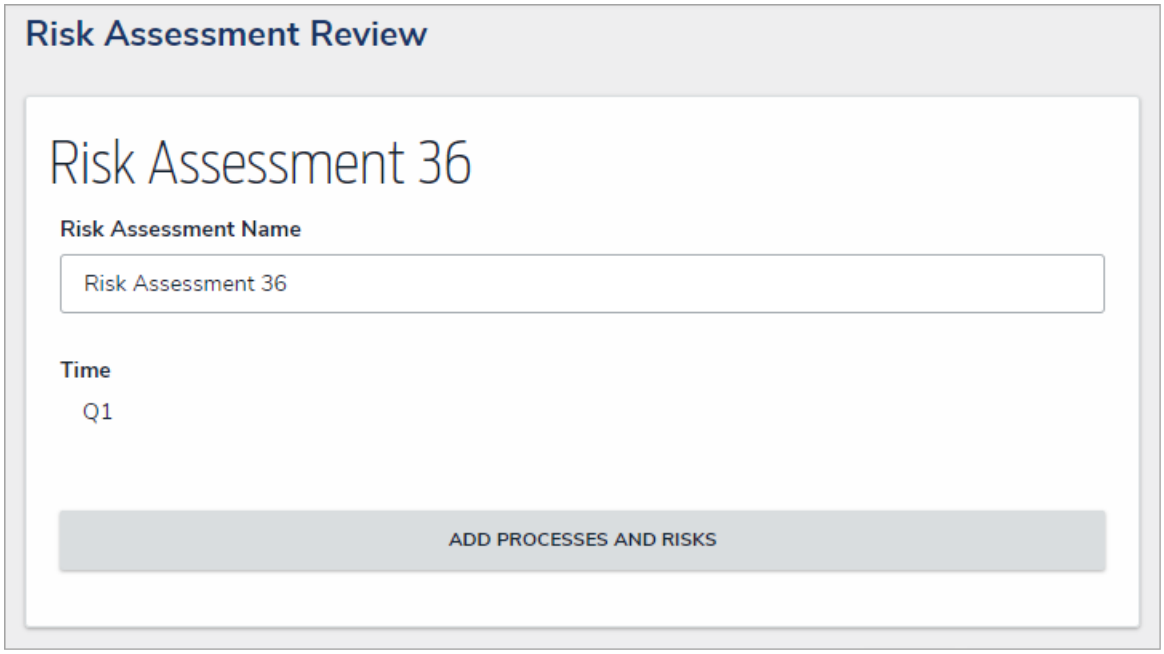
3. Enter a name for the assessment in the **[Assessment] Name** field.
4. Complete one or all of the dimension fields.



A form to create a new assessment.

The assessment dimension fields are marked as required, however, you are only required to complete **one** dimension field before you can create the assessment. Note, however, that any selections made in the dimension fields on this form cannot be undone once the assessment is saved.

5. Click the **Create** trigger to display the assessment review form.

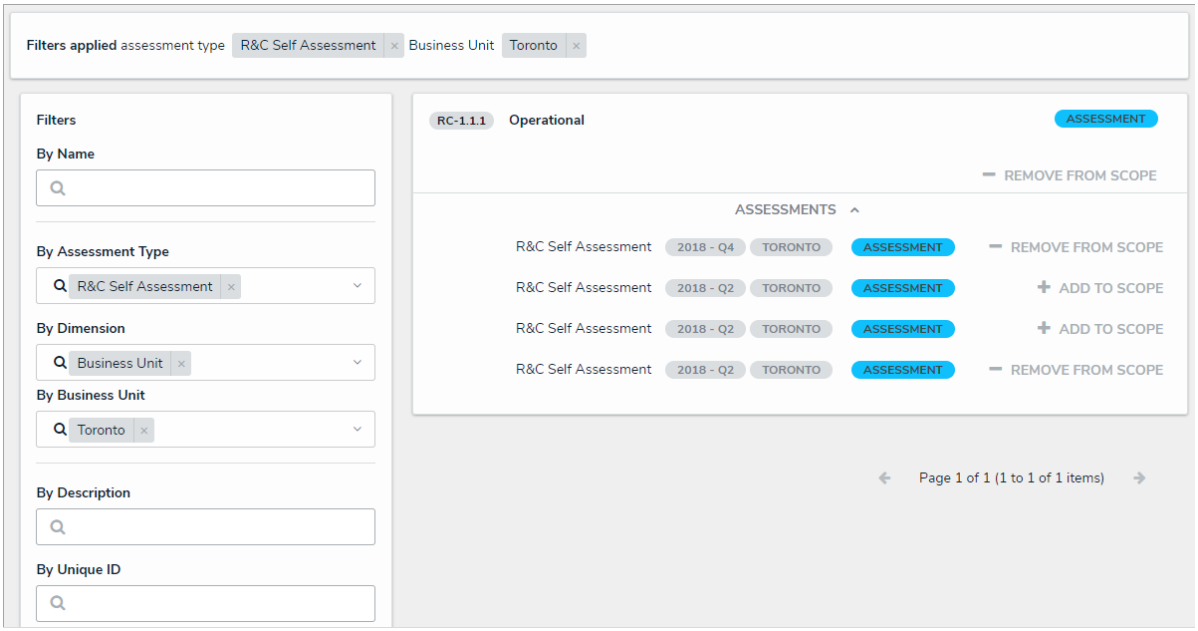


An assessment review form.

6. Click the Open Assessment Scoping action button (*Add Processes and Risks* in the screenshot above) to launch the scoping tool, which will display a list of focus objects that can be added to the assessment.

7. If needed, refine which objects are displayed by using one or more of the following default filters in the **Filters** pane to the left:

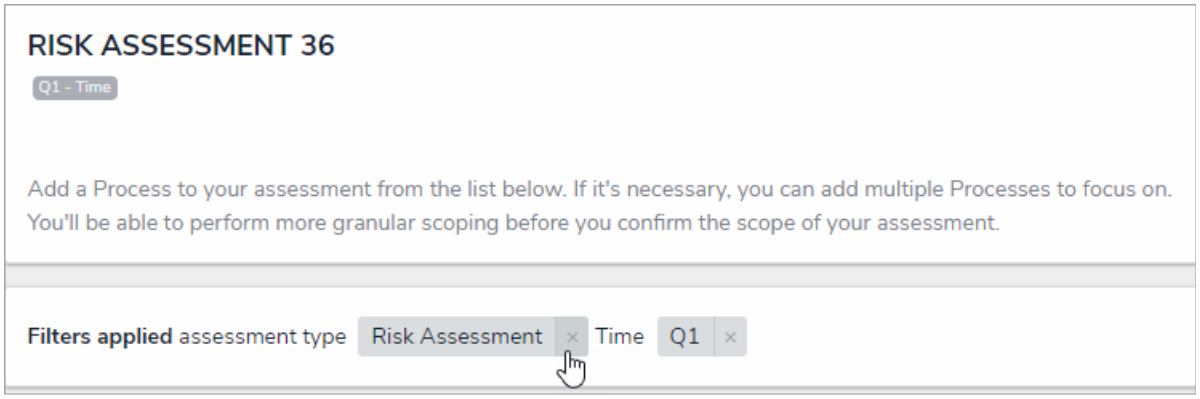
    - **Name:** Filters which objects are displayed based on their **Name** property. When entering keywords in this field, press **Enter** on your keyboard to apply the filter.
    - **By Assessment Type:** Filters results by object type or assessment type. For example, in the screenshot below, selecting R&C Self Assessment in the **By Assessment Type** filter will only display objects with instances (assessment objects) that were created through the R&C Self Assessment type. Selecting the **Library** option in this filter will hide any instances. If no instances exist for the object, the **Assessments** section will be hidden automatically.
    - **By Dimension:** Filters which instances are displayed in the **Assessments** section by object type dimension. Once one or more options are selected in the **By Dimension** filter, additional filters are displayed to allow you to further narrow down the results. For example, in the screenshot below, selecting the Time Period and Business Unit object type dimensions displays additional filter options, where you can select specific objects (in this case 2018 - Q4 and Toronto). If no instances exist for the object, the **Assessments** section will be hidden.



Applying By Assessment Type and By Dimension filters to narrow down the results.

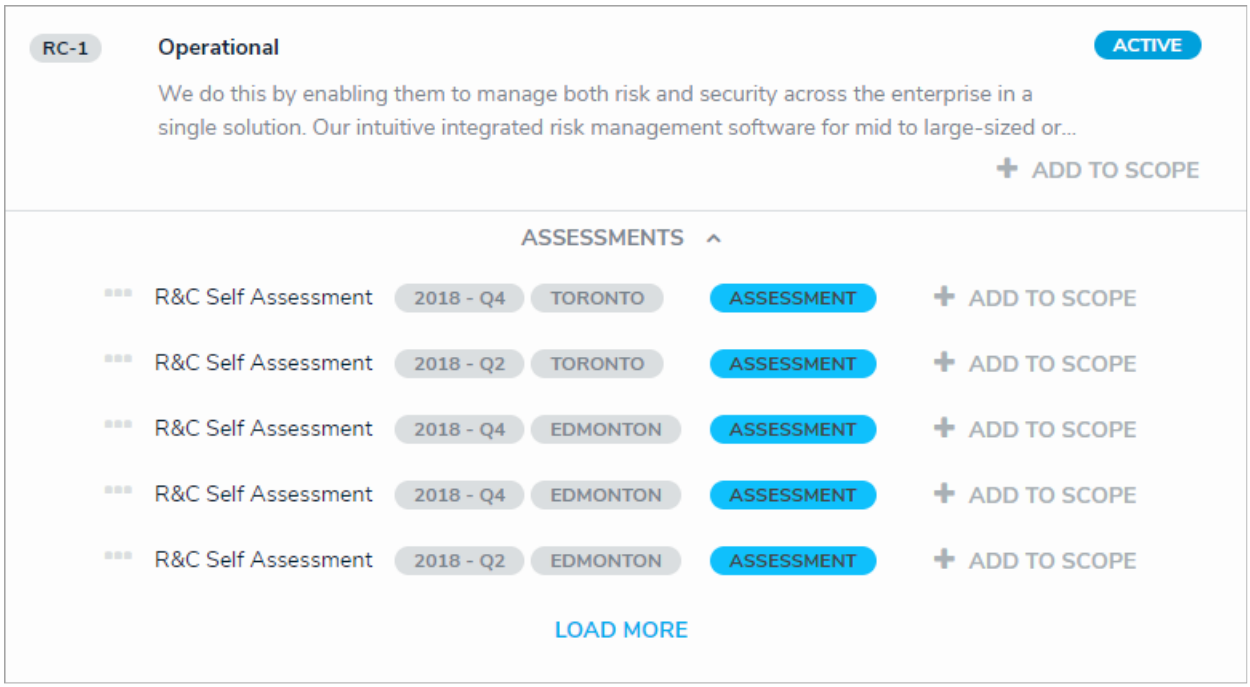
- **By Description/Unique ID:** Filters objects and instances by their **Description** and **Unique ID** properties.
- **By State:** Filters objects and instances by workflow state, including states from otherassessment workflows.
- **Other:** Additional filters based on plain text fields, select lists, and multi-select lists added to the focus object type in the assessment. When entering keywords in a text field filter, press **Enter** on your keyboard to apply the filter.

8. To remove any unneeded filters, click the **X** beside the filter in the **Filters applied** section.



Removing unneeded filters in the Filters applied section.

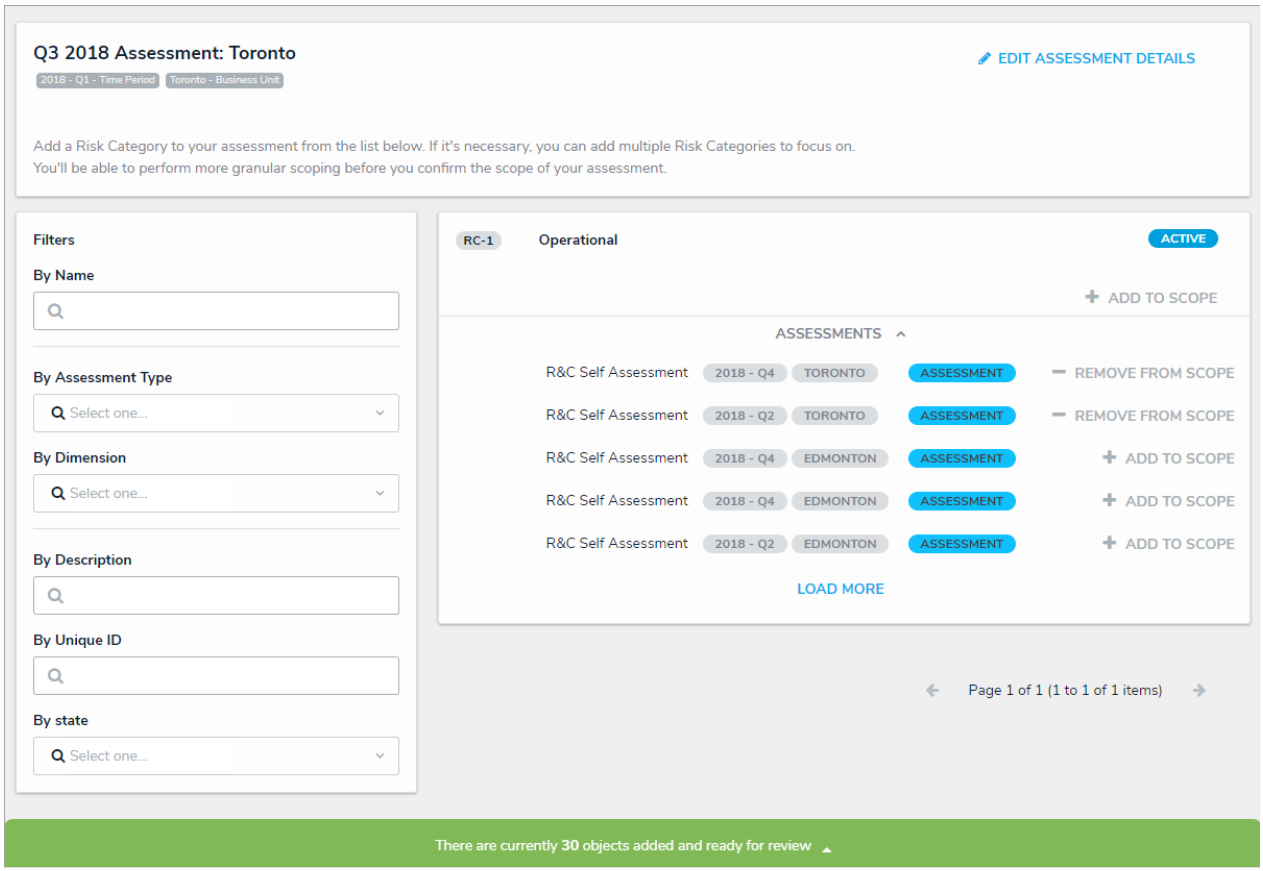
9. **Add to Scope** beside an object to add it to the assessment.
10. To add an instance to the assessment, click the **Assessments** link below an object, then click **Add to Scope**. For more information about an instance, hover your cursor over the ellipsis beside the record.



Clicking the Assessments link below an object will display any instances, which can then be added to the assessment.

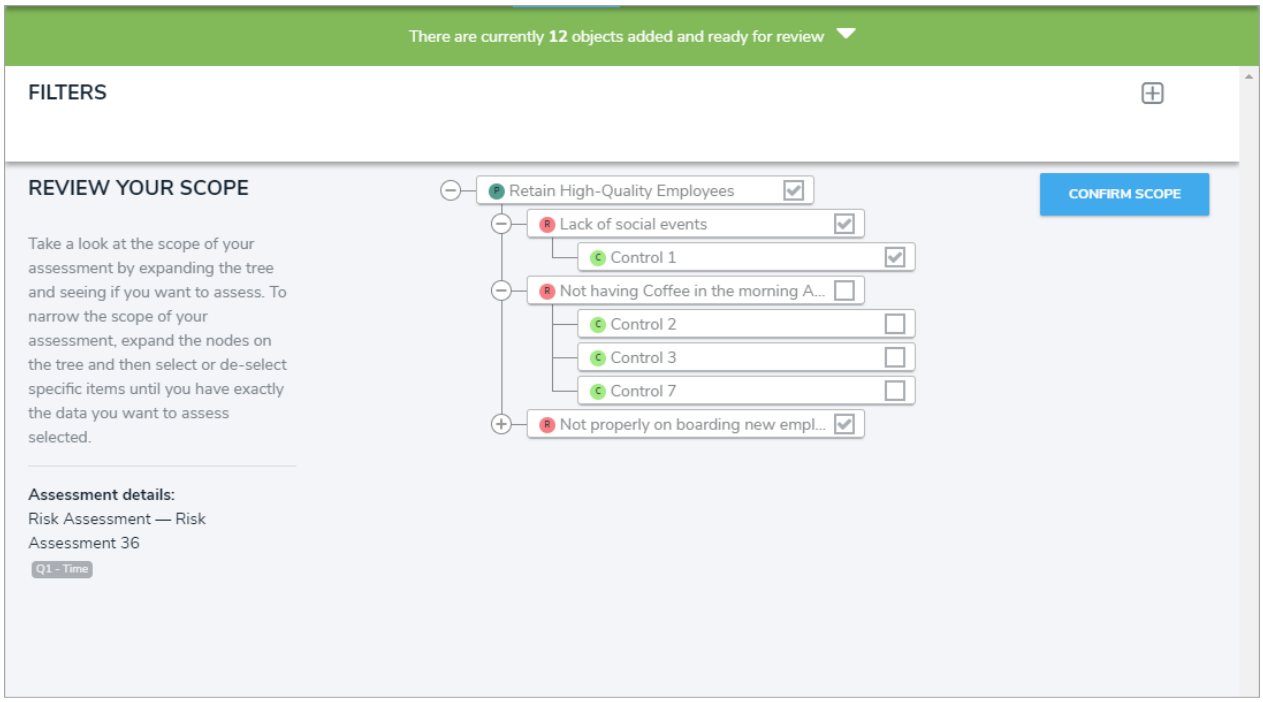
If an object has not been previously assessed, it will not have any instances and the **Assessments** link will be hidden.

11. Remove any unneeded objects or instances by clicking **Remove From Scope** beside that object or instance.
12. Click the green banner at the bottom of the page to display the assessment navigation form.



Clicking the green banner at the bottom of the page will display a navigation form where you can review and refine the objects and instances added to the scope.

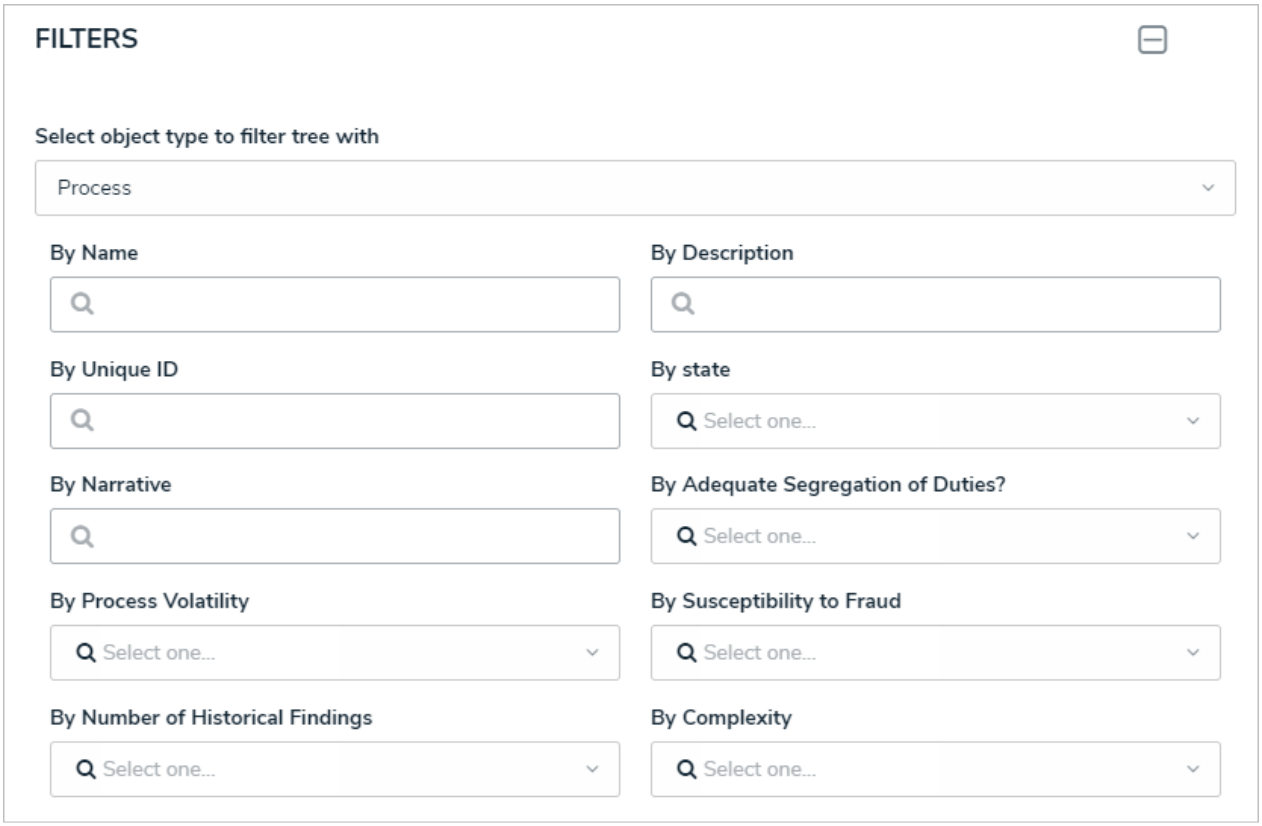
13. Click the ⊕ icons in the tree to expand the nodes in the tree and display any relationships or references to the objects added to scope. The objects displayed in the tree are determined by the data definition selected by an administrator.
14. Click the names of the objects in the tree to review them in a palette. You may be able to edit the content in the form, depending on your role's workflow permissions.
15. Deselect the checkboxes beside objects you wish to remove from the scope. By default, all objects and their relationships or references are selected (added to the scope). Deselecting an object in an upper node will automatically deselect the objects in the nodes immediately below it.



Reviewing your scope. De-selecting objects will remove them from the scope.

Instances cannot be deselected from the navigation form. To remove instances from the scope, click the green banner at the top of the page, then click **Remove From Scope** beside the instances in the **Assessments** sections.

16. To filter which objects are displayed in the tree, click the icon, then select an object type in the **Select object type to filter tree with** dropdown menu to show the available plain text, select list, property filters available for that object type. To hide the filters, click the icon.



Available filters on the navigation form.

17. Click **Confirm Scope**, then **Yes** to confirm and launch the assessment. If you created the assessment then accessed it later from a view, the form selected for that view will be displayed after clicking **Yes.** Otherwise, the form used to originally create the assessment will be displayed.

Add Data to a Previously Launched Assessment

It's possible to add data to a previously launched assessment, however, adding objects to a launched assessment's relationship or reference fields may create clones (or **instances**) of those objects or merely **link** them together, which depends on the circumstances and if the**Assessment Data** option is enabled for the corresponding object type.

To check if the **Assessment Data** option is enabled, review the Workflow tab of the **Edit Assessment** page. If needed, you can disable this option for one or more object types, add the objects to the assessment, then re-enable the option so that future objects added will have instances created.

For more information on instances and reference data and when instances or links are created, see theAssessment Data & Reference Data article.

Delete a Launched Assessment Object

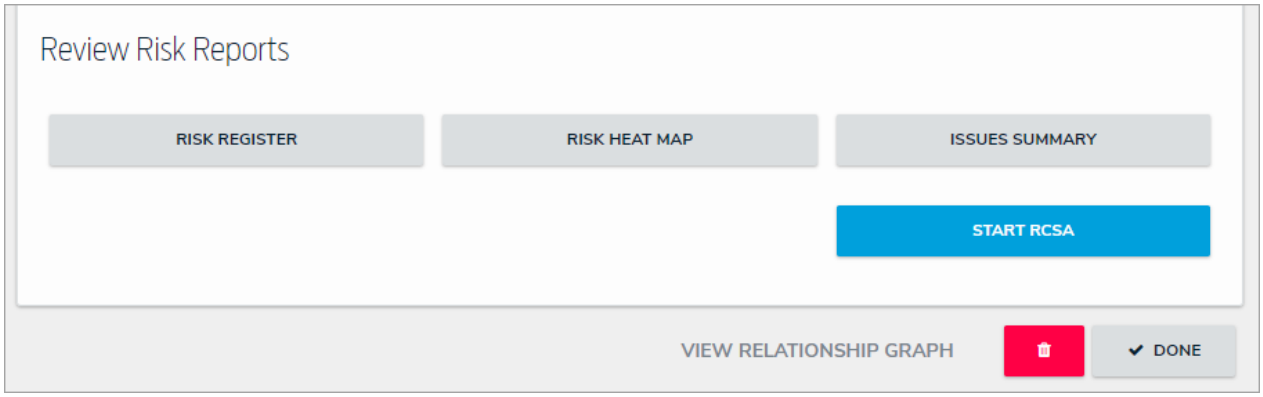
Deleting an assessment object will delete the individual object, together with any instances and links to reference data. To delete an assessment object, you must have:

- Administrative privileges enabled on your user account; and
- The assessment type added to your role with Delete permissions enabled for all states for the assessment type and object types included in the assessment **OR** All Access enabled on your user account.

Deleting an assessment object will **not** delete the assessment type. To delete a launched assessment type and all its objects and instances, see the Delete a Launched Assessment article. To delete an assessment that has not yet been launched, see Edit or Delete an Assessment.

To delete an assessment object:

1. Open the assessment object by navigating to it in a view or using the search tool.
2. Scroll to the bottom of the page to locate the icon.



The Delete icon at the bottom of an assessment object.

3. Click the icon to display the **Confirm Delete** window and review the number of objects (including instances) in the assessment that will also be deleted.

> Referenced objects mapped to the assessment are **not** deleted.

4. Type **yes** in the text field (not case-sensitive), then click **Delete**.

Delete a Launched Assessment Type

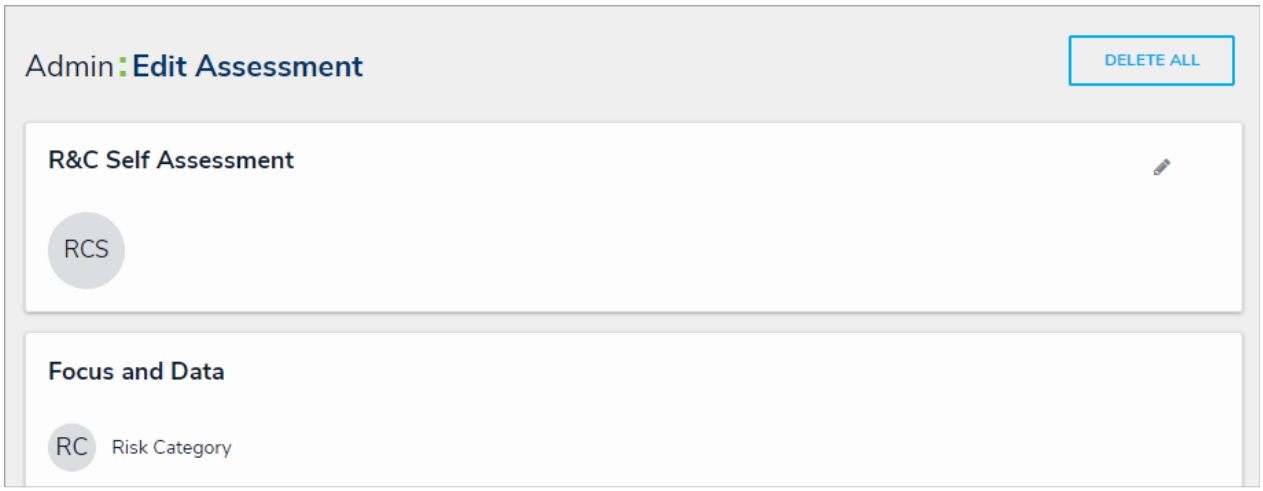
Deleting an assessment type will also delete all objects and instances associated with the assessment. To delete an assessment type, you must have:

- Administrative privileges enabled on your user account; and
- The assessment type added to your role with Delete permissions enabled for all states for the assessment type and object types included in the assessment **OR** All Access enabled on your user account.

To delete an individual assessment object and its instances, see the Delete a Launched Assessment Object article. To delete an assessment that has not yet been launched, see Edit or Delete an Assessment.

To delete a launched assessment type:

1. Click the icon in the top bar > **Assessments** in the **Data Model** section.
2. Click the assessment or enter the name of the assessment in the **Search** field, then click it to display the **Edit Assessment** page.
3. Click **Delete All** at the top-right of the page to the **Confirm Delete** screen.



The Delete All option on the Edit Assessment page.

If **Delete All** is not visible, ensure your account has admin privileges. Additionally, Delete permissions must be enabled on your role for all the assessment workflow states **OR** All Access must be enabled on your account.

4. Type **yes** in the text field (not case-sensitive), then click **Delete ALL**.

Deleting an assessment will delete **all** its objects and instances. Referenced objects mapped to the assessment are not deleted.

Data Definitions Overview

A **data definition** allows you to choose which object type(s) certain components draw their data from, including:

- Assessments
- Data Visualizations
- Concatenations
- Orchestration event actions
- Navigation forms

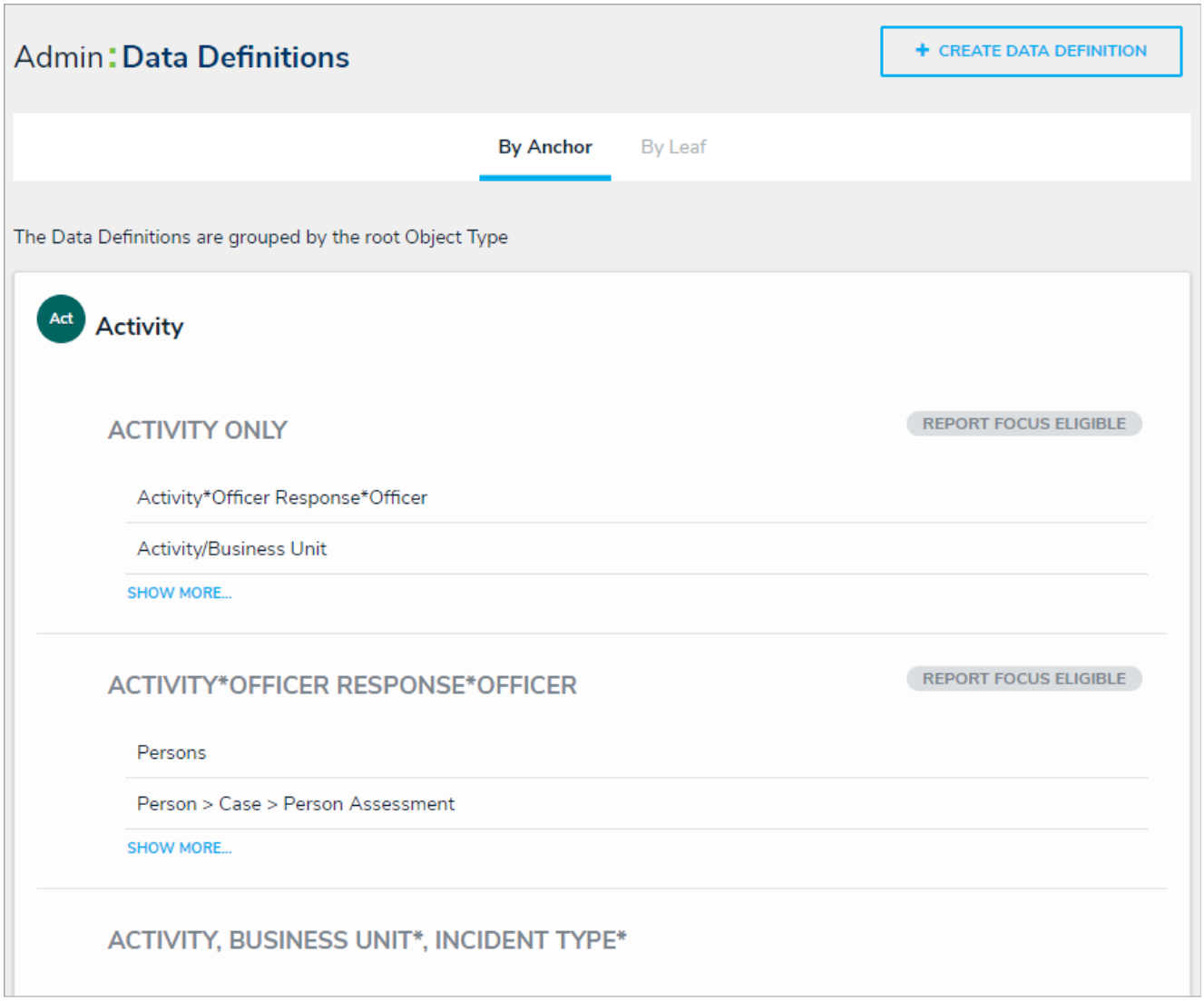
When creating a data definition, you must first select an **anchor** (root) object type, which is the starting point of your **data path**. Once an anchor is selected, the data path displays all the relationships and references associated with the anchor, so you can select the related object types you may want to include in an assessment or report. For data visualizations, once your object type selections are saved in the data definition, you can further narrow down the data by creating new or using existing sub-data definitions, known as data series, then adding them to your visualization.

Because the structure of data definition resembles a tree, the anchor object type is also known as the root, the relationships and references on the anchor are the branches, and the object types within those relationships or references are the leaves on the branches.

Through the **Data Definitions** settings in **Administration**, you can create new data definitions as well as review existing definition by selecting the By Anchor tab or the By Leaf tab on the **Data Definitions** page.

By Anchor

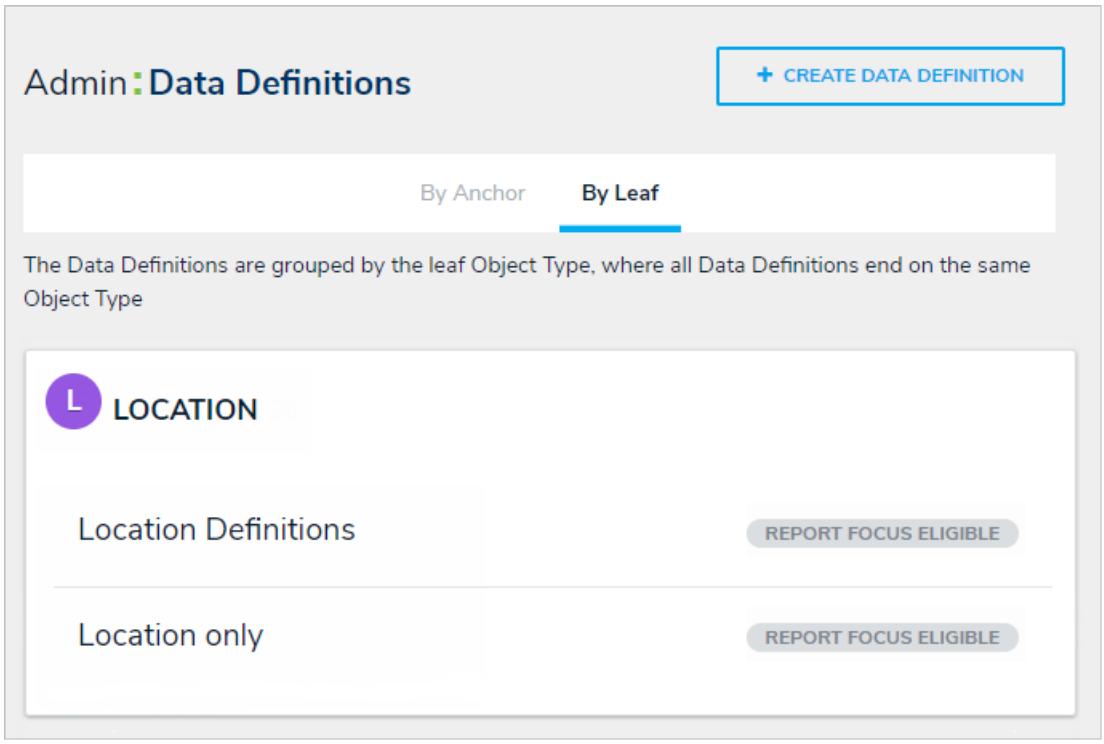
When the **By Anchor** tab is selected, the data definitions are organized alphabetically first by the anchor (root) object type, focus eligible definitions, then data series (sub-definitions). Clicking on a definition or data series will display the **Edit Data Definition** page where you can review the data path and edit the definition name and/or description.



The Data Definitions page with the By Anchor tab selected.

By Leaf

When the **By Leaf** tab is selected, the data definitions are organized alphabetically by the last object type in the data definition. All definitions displayed in the **By Leaf** tab are focus eligible. Clicking on a definition will display the **Edit Data Definition** page, where you can edit or delete the definition.



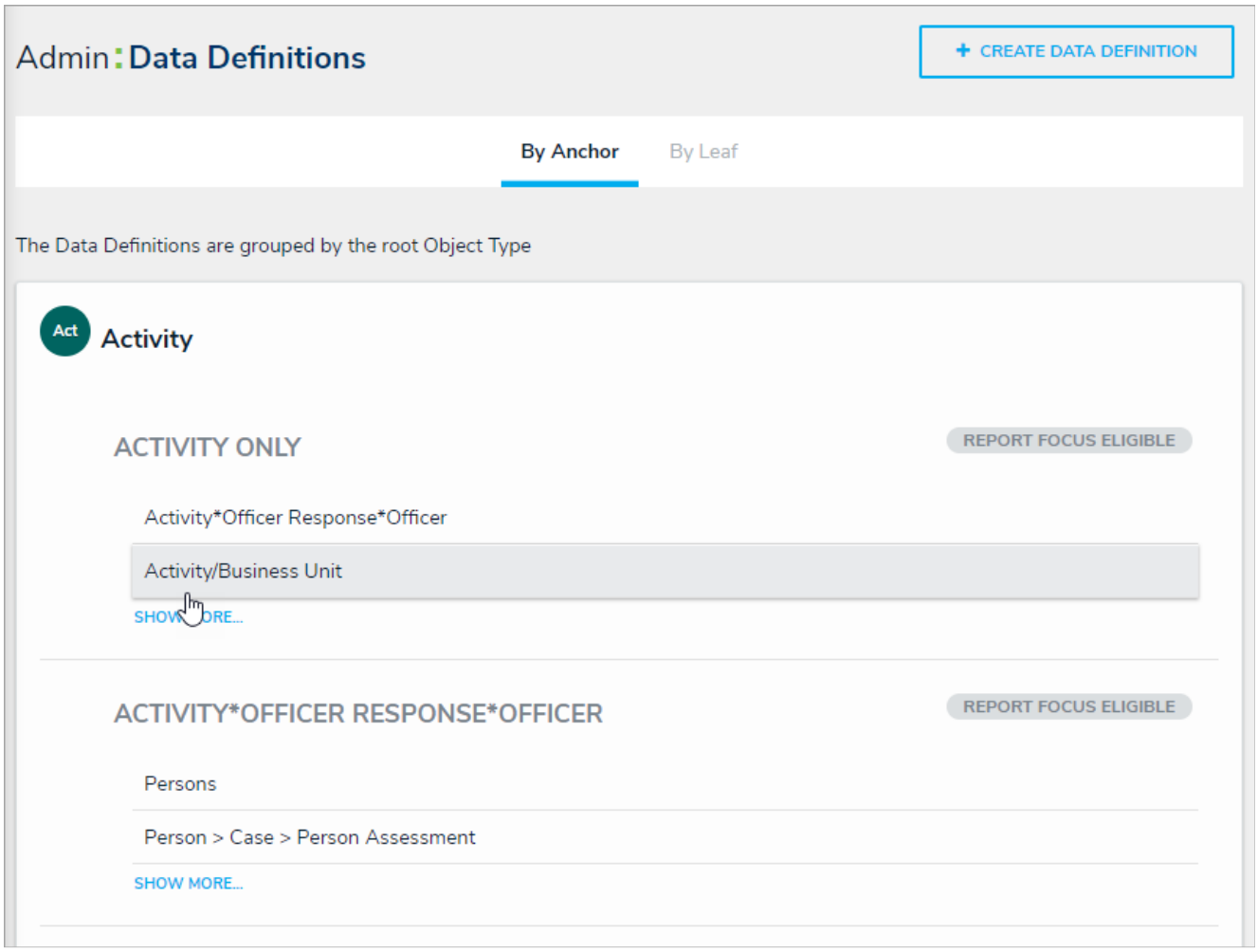
Definitions page with the By Leaf tab selected. The definitions are organized by the last object type in the data definition.

Data Series

Data series are sub-definitions that are populated based on the leaf or leaves in a data definition. Specifically, if a leaf object type has also been added as the anchor to another data definition, it will appear as a data series.

EXAMPLE

The Location Only data definition has the Location object type as its anchor, making it focus eligible. Because the Location object type has been selected on two other data definitions in the org (Risks & Controls and Time Spent (Hrs)), those definitions appear as sub-definitions below Location Only. Clicking on one of those sub-definitions, in this case, Risks & Controls, will display its data path with the Location object type as its anchor.



Clicking a sub-definition will display the Edit Data Definition page where you may edit its name and review the data path.

Sub-definitions will also appear as separate data definitions below the anchor object when the By Anchor tab is selected. A data series definition may also focus eligible, depending on the data path.

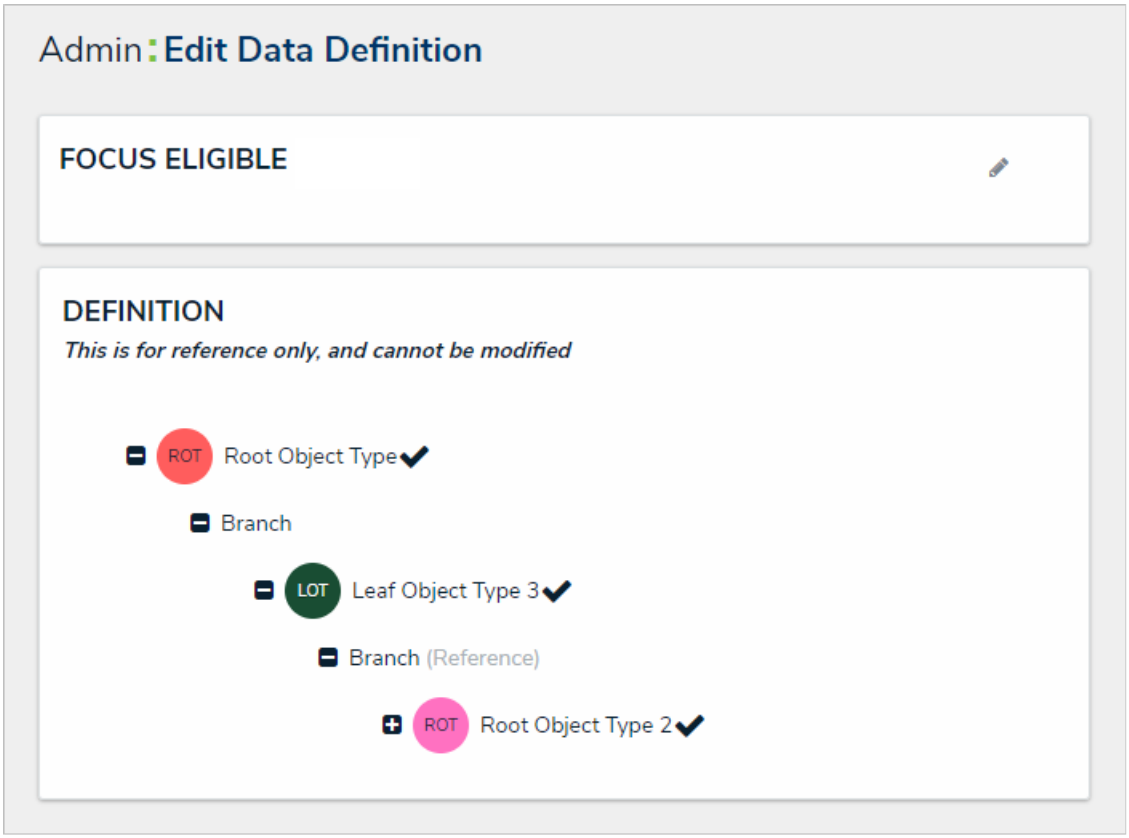
Sub-definitions/data series are required when creating a report or data grid, which allows you to further define which object type data is displayed.

Focus Eligible Definitions

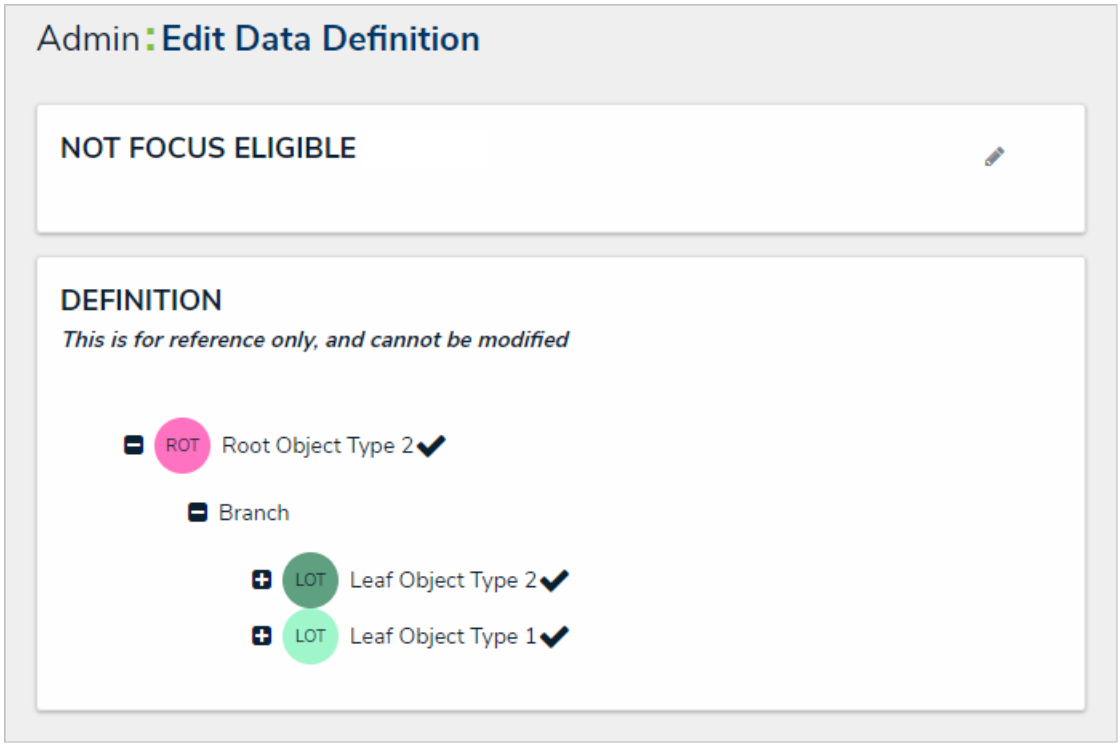
The data definitions labelled as **Focus Eligible** are definitions that can be selected when creating a new data visualization and are used to broadly specify which object type's data will be displayed in the data visualization.

A data definition cannot be focus eligible if more than one unique object types on the same level has been selected. More specifically, when creating a focus eligible definition, you can only select one unique leaf (object type) per each branch in the data path tree.

A definition can be focus eligible with multiple selections on a leaf **only** if those selections are for the same object type.



A focus eligible data definition. This data definition is eligible because only one leaf (object type) has been selected per each branch on the data path.



A data definition that is not focus eligible because more than one leaf has been selected on a single branch in the data path.

A data definition will **not** be focus eligible if more than one unique leaves have been selected per a single branch in the data path tree.

To view only focus eligible definitions, click the By Leaf tab.

Assessment Definitions

Unlike data definitions for data visualizations, you can create assessment definitions from the **Edit Assessment** page (you can still edit their names and review the data paths from the **Data Definitions** page in **Administration**). Assessment definitions can be reused for data visualizations and vice versa.

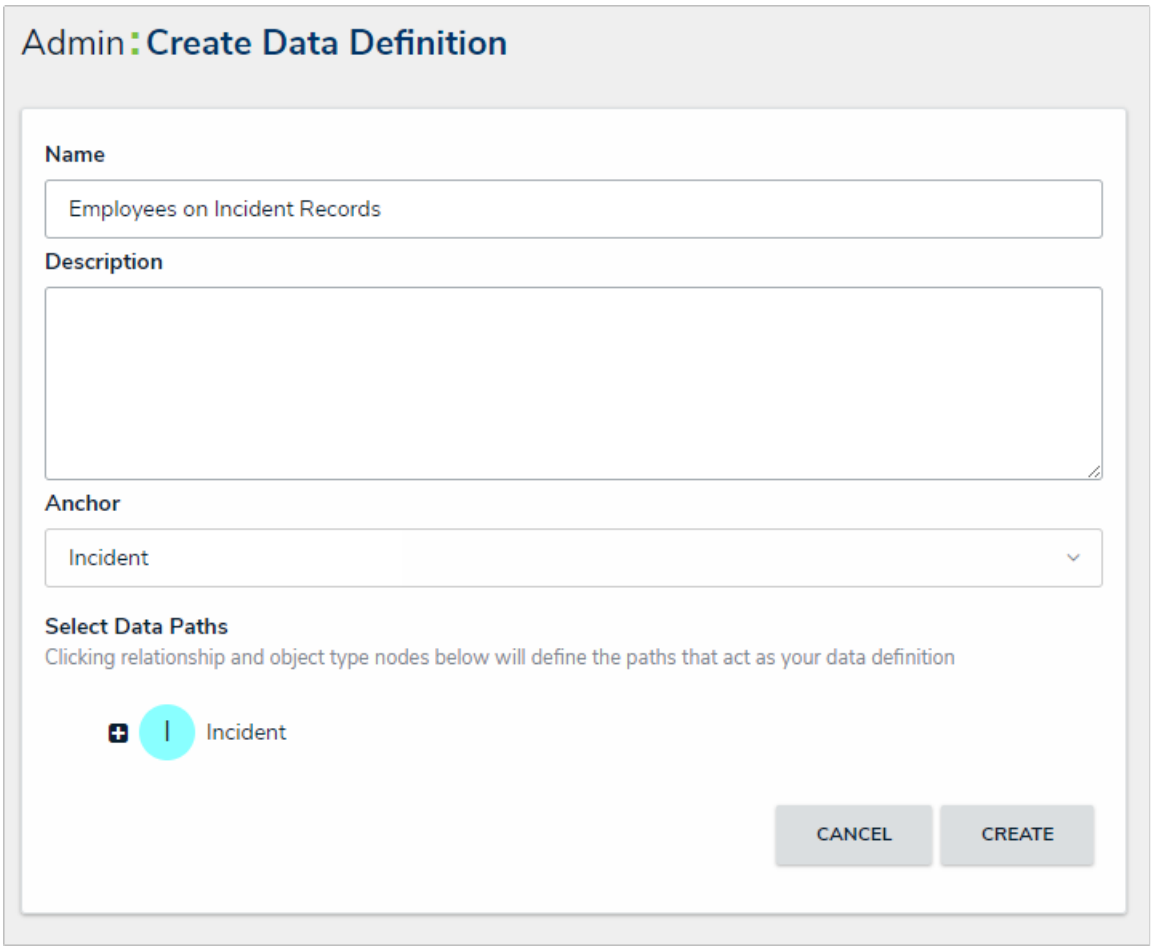
Create a New Data Definition

If you plan on creating a new data visualization or concatenation, you can select one or more existing definitions, otherwise the definitions must be created **prior** to the creating the data visualization or concatenation. If you're creating an assessment, you can select existing definitions or create a new one from the **Edit Assessment** page.

> Because the structure of data definition resembles a tree, the anchor object type is also known as the root, the relationships and references on the anchor are the branches, and the object types within those relationships or references are the leaves on the branches.

To create a new data definition:

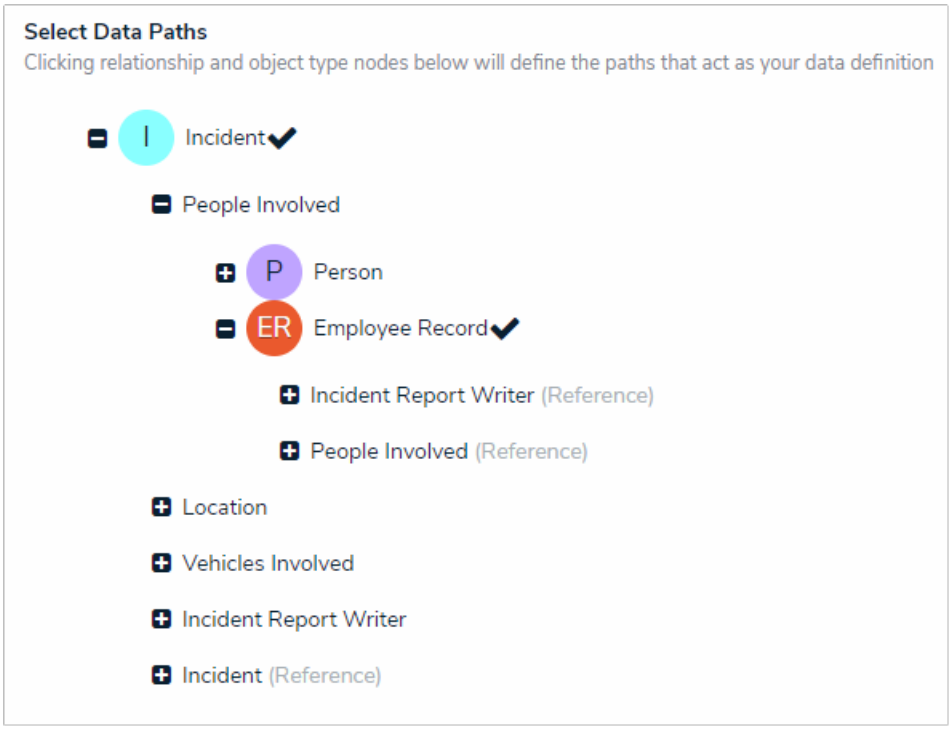
1. Click the icon in the top bar > **Data Definitions** in the **Data Model** section.
2. Click **Create Data Definition**.
3. Enter the name of the data definition in the **Name** field.
4. **Optional:** Enter a description of the data definition in the **Description** field, which will appear on the **Edit Data Definition.**
5. Select an anchor (root) object type from the **Anchor** dropdown menu. Your selection here will determine the starting point, or root, of the data path.



A new data definition that has an anchor selected, but does not yet have a defined data path.

6. In the **Select Data Paths** section, click the monogram in the first node of the tree, which represents the anchor, to select it, expand the node, and reveal any relationships and references saved to the anchor. If you only need to select one object type, skip to step 10.

7. Click a relationship or reference (branch) to show the object type(s) within those relationships or references (e.g. clicking the “People Involved” relationship will reveal the Person and Employee Record object types).
8. Click an object type (leaf) monogram to place a checkmark next to it and include it in the data definition. To remove a checkmark and remove the leaf from the data path, click the monogram again. The anchor object type is selected by default and the cannot be deselected.
9. Continue clicking the branches to reveal the relationship and reference object types and select them as needed. If necessary, click an expanded branch with no leaves to collapse it.



Selecting the object types that will be part of the data path.

If you intend to use this data definition as the focus of a data visualization, you may only select one leaf per level (branch) in the data path. See Focus Eligible Definitions for more information.

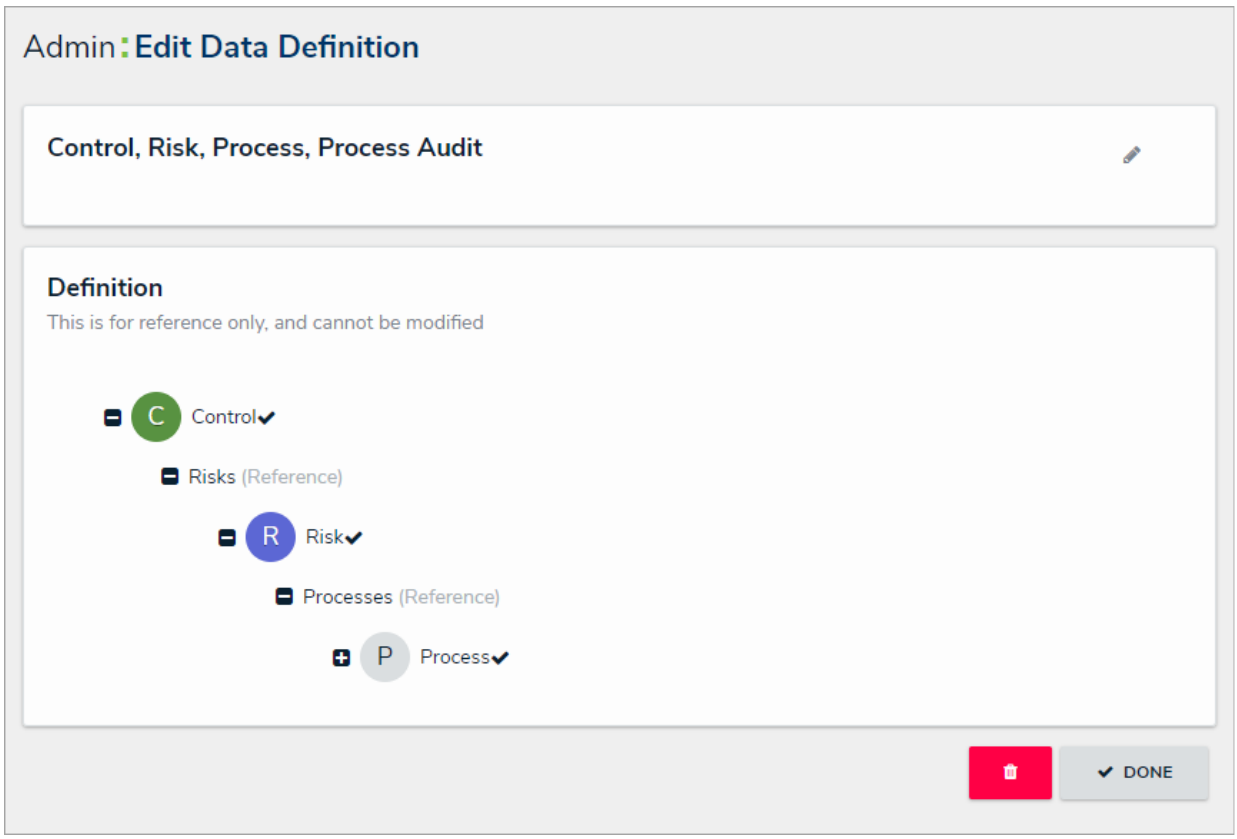
10. Click **Create** to display **Data Definitions** page. By default, this page will be displayed under theBy Anchor tab and your new definition can be found below the anchor object type you selected in step 5 above (e.g. Incident). To view the data definition by leaf, or the last object type in the data path (e.g. Employee Record), click the By Leaf tab.

Edit or Delete a Data Definition

A data definition can be deleted, provided it's not currently being used elsewhere in Core. If you wish to delete an active data definition, you can do so after removing it from or deleting the component(s) where it's being used (e.g. data visualizations or assessments). You can edit the name and description of an existing data path at any time, however, **the data path cannot be modified**.

To edit or delete a data definition:

1. Click the icon in the top bar > **Data Definitions** in the **Data Model** section.
2. Click an existing data definition to display the **Edit Data Definition** page.



The Edit Data Definition page.

3. To edit a definition's name and/or description, click the icon on the **Edit Data Definition** page and make your changes in the **Name** and/or **Description** fields.
4. To delete the data definition, click the icon, then click **Yes** to confirm. If the data definition is currently being used in another component, an error message will be displayed.

Configurable Forms Overview

Configurable forms are the forms that administrators create and customize for users to enter or view data while they work in Core. Form types include:

- **Standard Form:** Allows administrators to specify what form elements are displayed and the fields users should fill out on object types as they work in activities, reports, or tasks, depending on the current state of the object's workflow. For more information, see the Standard Form Overview article.
- **Navigation Form:** Uses a data definition to display objects as a hierarchical tree with expandable nodes, starting with the object from the anchor object type and moving down the data path. Clicking one of these objects will display a standard form or report to the right of the tree, without leaving the navigation form. For more information, see the Navigation Form Overview article.

Standard Forms Overview

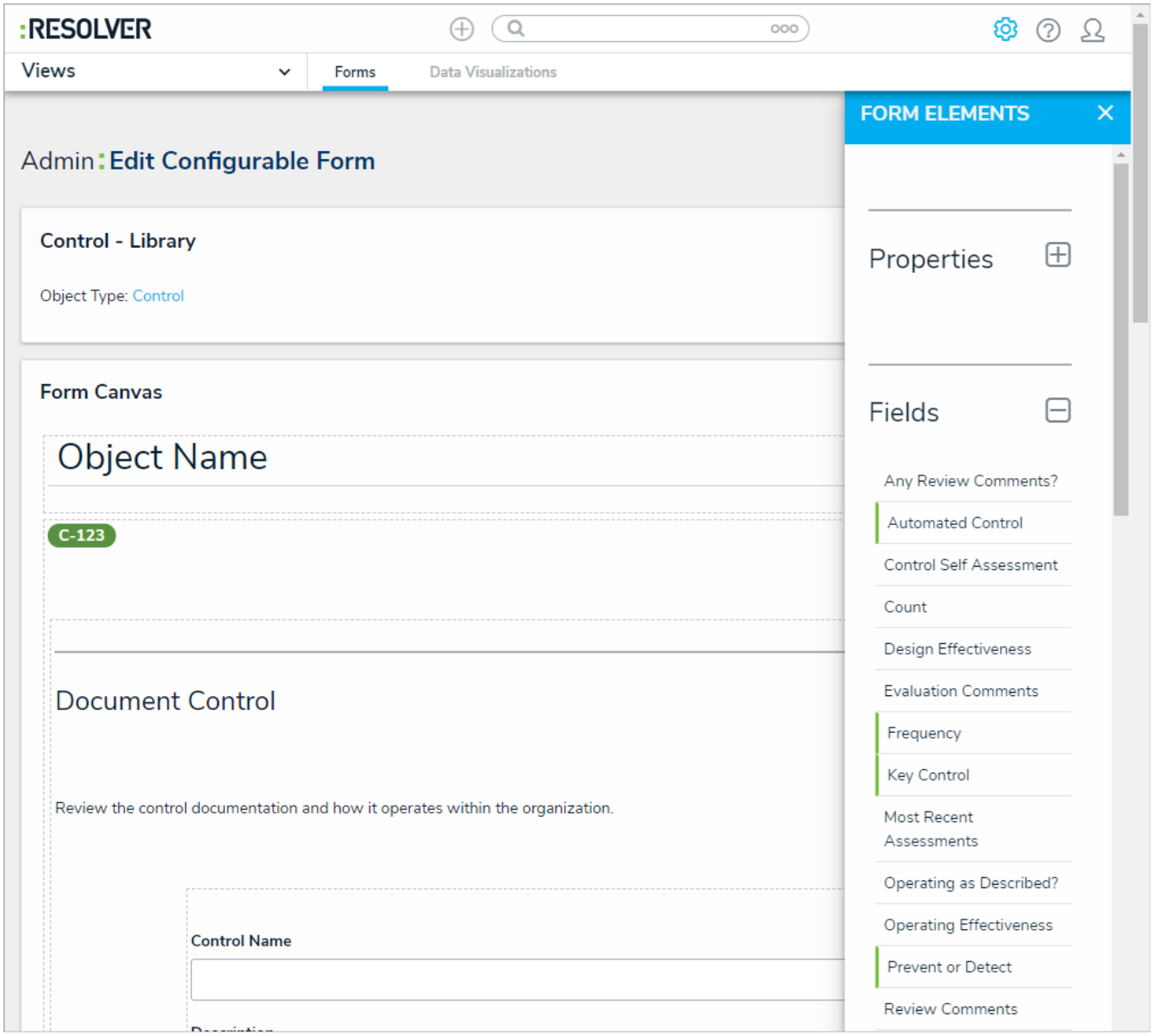
A **standard form** is a configurable form type that allows administrators to specify what form elements are displayed and the fields users should fill out on object types as they work in activities, data visualizations, or tasks, depending on the current state of the object's workflow. Whereas an object type's default form displays all the components and properties saved to it, with a standard form, you can add or remove the following elements and components:

- **Properties:** The object type's default fields, including **Name**, **Description**, **Unique ID**, **Monogram**, **Created/Modified By**, **Created/Modified On**, **Workflow Status**, Geolocation, and **Assessment Dimension.** The **Name** property should be added to all your forms as it's used to identify objects in search results, views, relationship fields/tables, etc.
- **Fields:** The fields saved to the object type as a component.
- **Relationships:** The relationships saved to the object type as a component. You can display the relationship as a field or as a table. If displayed as a table, you can select which columns appear on the object based on the fields saved to the object types in the relationship.
- **References:** The references created from the relationships saved to the object type.
- **State Triggers:** The triggers saved in the object type's workflow. When added, these triggers appear as buttons on the form that, once clicked, will move the form from its current state to another state, based on the trigger's transition.
- **Formulas:** The formulas saved on the object type as a component.
- **Roles:** The roles saved to an object type as a component that have explicit permission to view that object type. Adding roles allows you to grant certain users within that role the right to view the object.
- **Actions:** Places a button on the form that allows users to open a specified data visualization or form related to the object type or export the object data into an Excel spreadsheet. If the form is for an assessment, you can also add a button to open an assessment scoping (nav form) to complete the assessment.
- **Other (Free Form Text):** An editable text box that will appear on the form to provide instructions, headings, titles, or additional information.
- **Assessment Context:** Adds the dimension fields onto forms for assessment object types.
- **Comments:** Allows users to leave comments on objects.

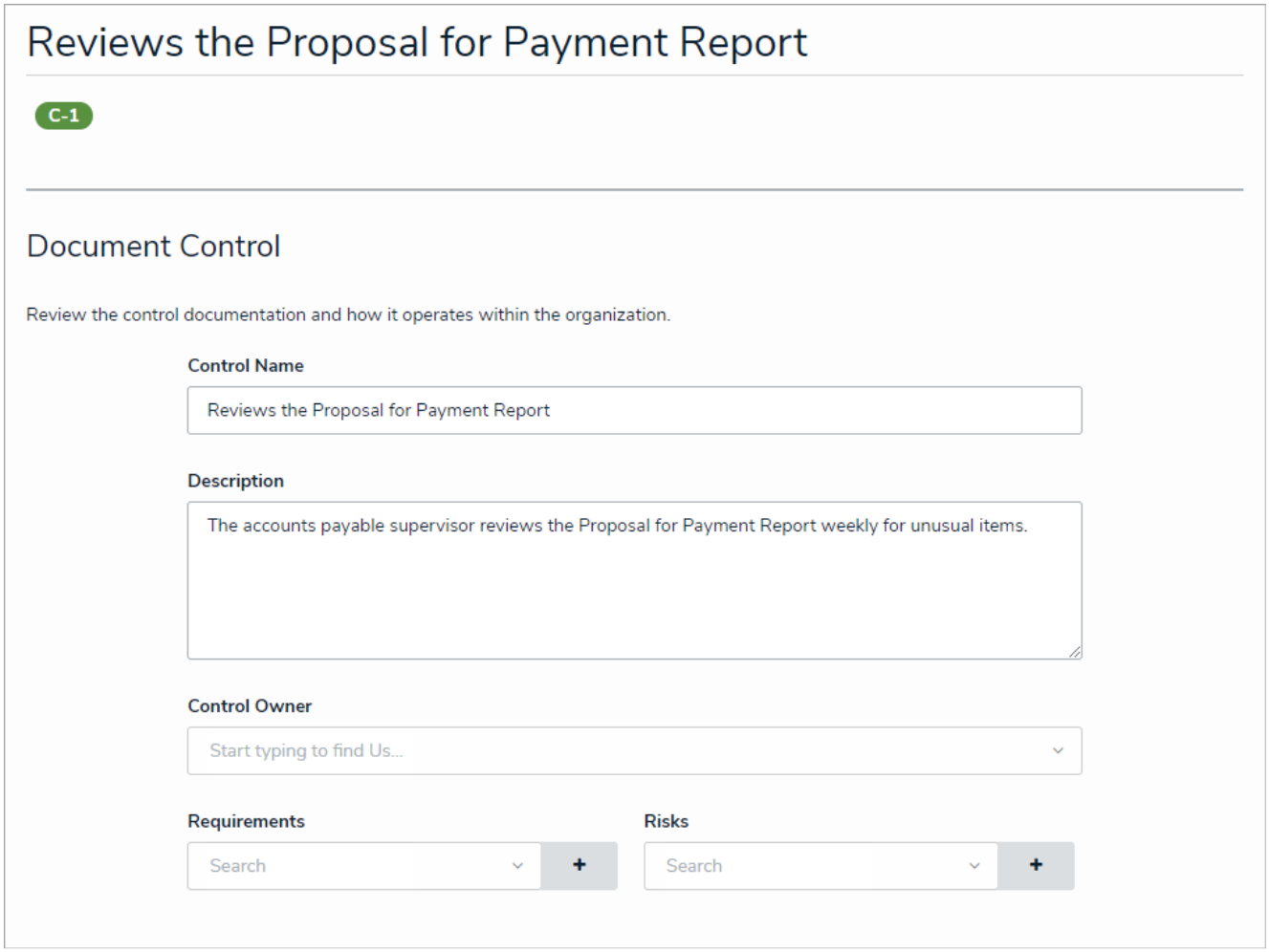
Once created, you can create duplicate forms, select a priority for forms that may be in conflict, and select which configurable form to display when creating and configuring an action, view, data visualization, or relationship table. You can also select a configurable form to display by default when users within a role are viewing an object in a particular state by configuring the role's workflow permissions.

Fields, relationships, references, formulas, and roles must be added to the object type as components and state triggers must be added to the workflow before they can be added to a configurable form.

When creating forms for use in a repeatable forms report element, note that only forms with supported elements will be displayed. See the Add Repeatable Forms to a Report for a list of unsupported elements.



The Edit Configurable Form page.



A standard form as it appears to users in a view.

You can check which forms are associated with an object type by going to **Administration** > **Object Types**, clicking the object type to open the **Edit Object Type** page, then reviewing and/or clicking on the forms in the **Related Forms** section in the **Overview** tab.

Form Design Best Practices

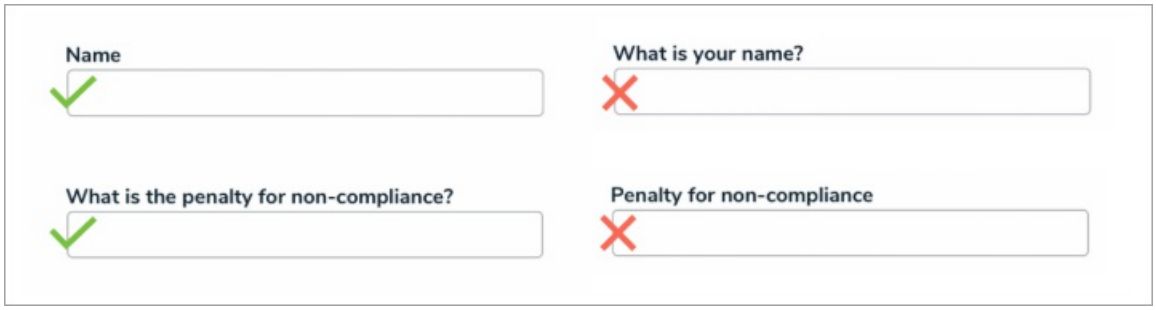
Standard configurable forms allow information to be shared between organizations and users. To help ensure data is collected as seamlessly as possible, there are a number of recommendations and best practices administrators should consider when designing a form.

Fields

Labels

Concise, single-word labels are generally recommended for simple fields. When asking the user to input data to answer a question, that question should be as straightforward and and unambiguous as possible. If the question requires some degree of complexity, think about how you would phrase the question if you were speaking to someone face-to-face.

Labels can be edited on existing fields from the Editing Field page.

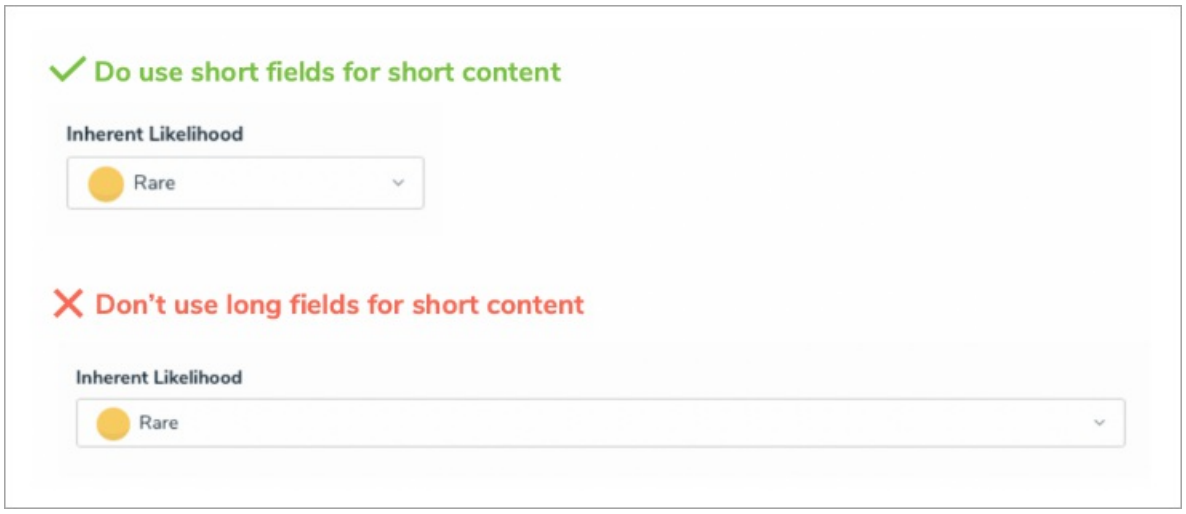


Case

Avoid using title case when creating field labels for questions or phrases. Though title case may look more official, sentence case is easier to process and therefore faster to read.

Size

Field sizes should indicate how much data is required in the field. For example, if you're adding the Name field on a form, a single line plain text field is more appropriate than a multiple line or rich text field. You can also configure the size of the field on a form by adjusting the form sections.



Layout

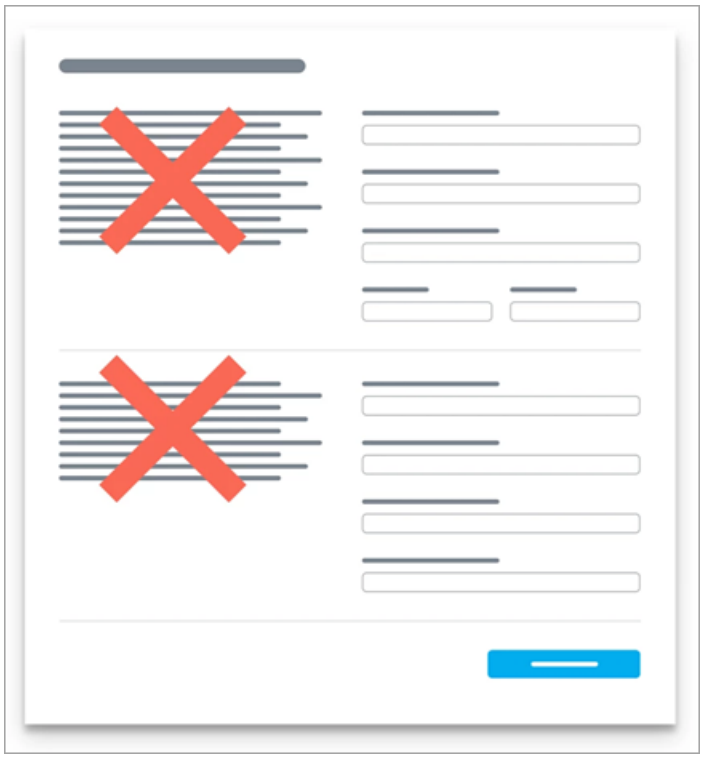
Aim to create your forms with only one column. When a form has multiple columns, it forces the user to scan the content in a Z pattern, making it harder and more time-consuming for the user to process and complete.

Help Text

Help text should be used sparingly, but there are some instances when it's useful or even essential. For example:

- The forms ask for unfamiliar data, such as information the user may not know off-hand or needs to research.
- The forms ask for sensitive data, such as a date of birth, and an explanation as to why this data is being collected.
- The user needs a guarantee that sensitive data, such as credit card information, is safe and secure.

That said, help text shouldn't be used to compensate for poorly designed forms. In fact, eye-tracking research shows that many people simply ignore excessive help text and go directly to the first input field anyway. Help text can be added to a form using the Free Form Text element.



Buttons

The text displayed on form buttons (state triggers) should inform the user of the action that will take place when the button is clicked (e.g., "Send to Risk Owner"). Primary action buttons should also be a distinct color to encourage the user to click that button under ideal conditions. The text and color of the button can be configured via the object type's workflow settings.

Buttons should also be displayed on forms in a size relative to the display text within the button. You can also configure the size of the button on a form by adjusting the form sections.

Palette Forms

When designing forms to be viewed in a palette, it's best practice to:

- Configure all sections on the form to display at 100% width.
- Place each form element on its own line, with the exception of two select lists, which can be be placed side-by-side, provided they don't contain a lot of content (i.e., long names or several options).
- Use palette forms primarily to share reference information. If a user needs to complete a lot of work, opt instead for a full-screen form.

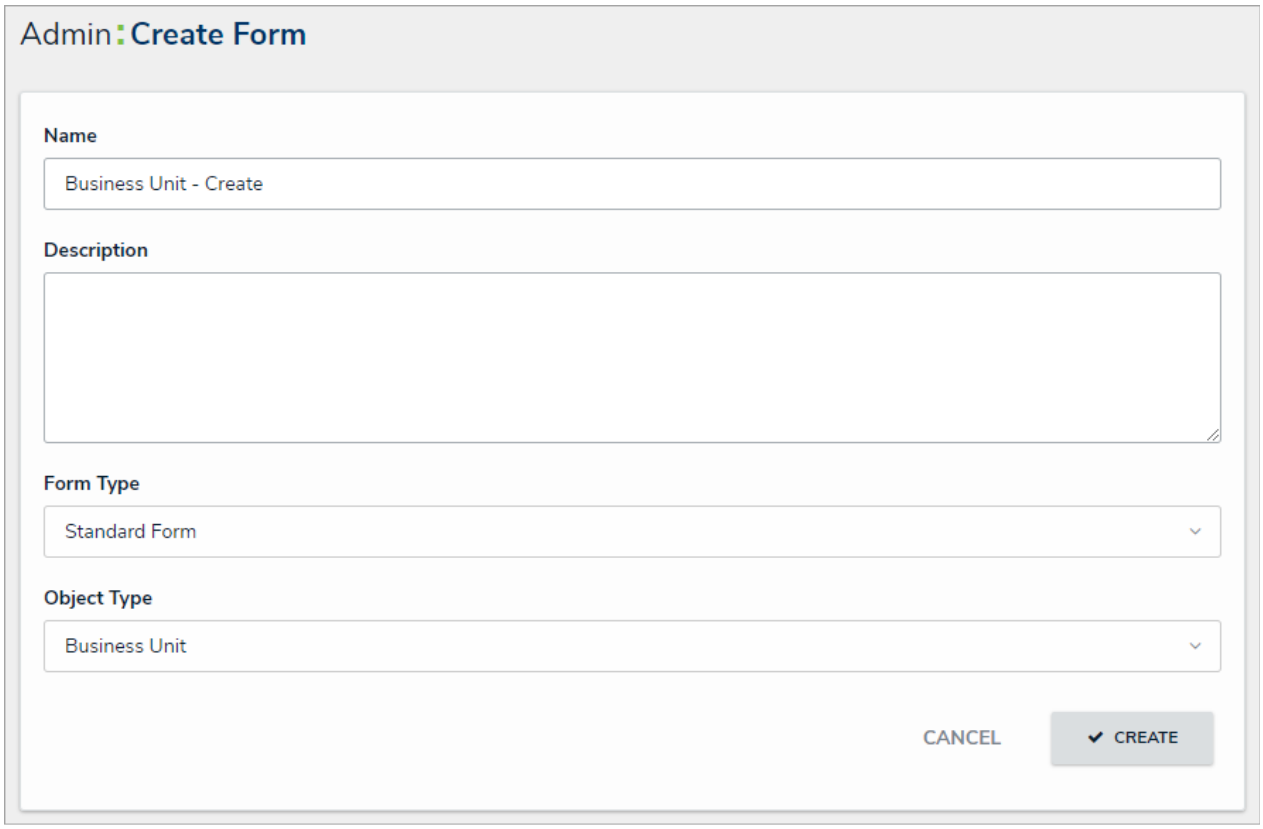
Create a New Standard Form

Once a standard form is created, you can configure its title, set the form's priority, create sections, and add elements.

> When creating forms for use in a repeatable form, note that only forms with supported elements will be displayed. See the Add Repeatable Forms to a Report for a list of unsupported elements.

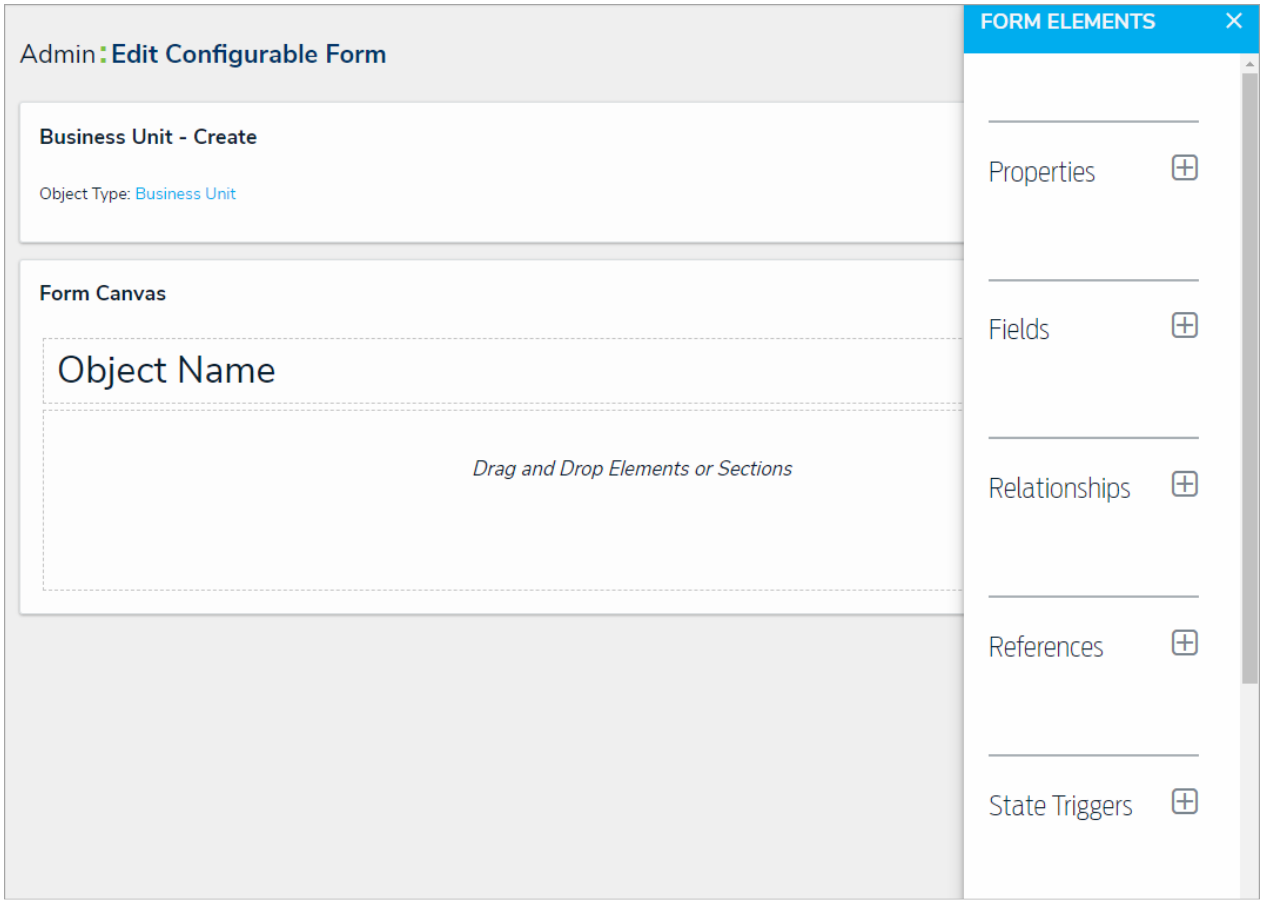
To create a new standard form:

1. Click the icon in the top bar > **Configurable Forms** in the **Views** section.
2. Click **Create Configurable Form**.
3. Enter the name of the form in the **Name** field.
4. **Optional:** Enter a brief description of the form in the **Description** field, which will appear below the form's name while editing the form and on the **Configurable Forms** landing page.
5. Select **Standard Form** from the **Form Type** dropdown menu. See the Navigation Forms section for information and instructions on creating navigation forms.
6. Select an object type from the **Object Type** dropdown menu.



The Create Form page.

7. Click **Create** to display the **Edit Configurable Form** page. From here, you can edit the standard form's title, select a priority, and add sections and elements.



The Edit Configurable Form page with a blank canvas.

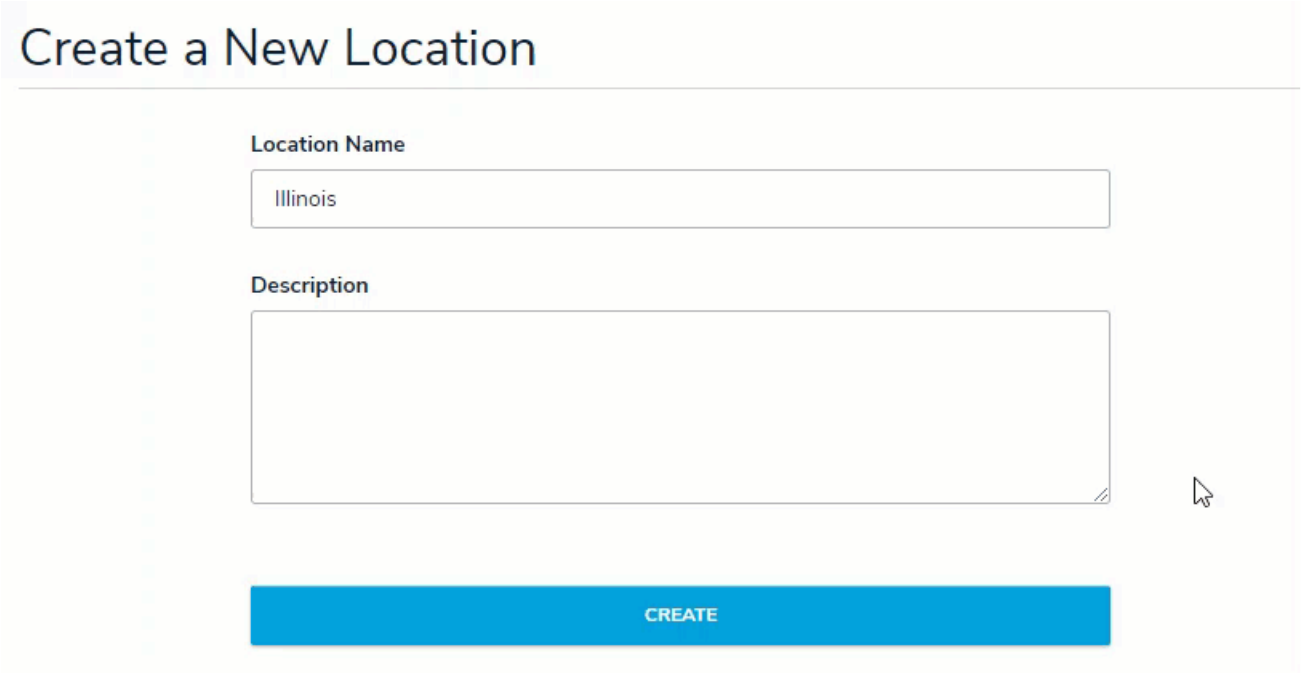
Configure a Form's Header

By default, when creating a new object, each standard form has a header of **Create a New [Object Type name]**. Once the object is created, the header is replaced with the value entered into the **Name** property on the form and no description (sub-title) is displayed. However, administrators can configure the header settings to:

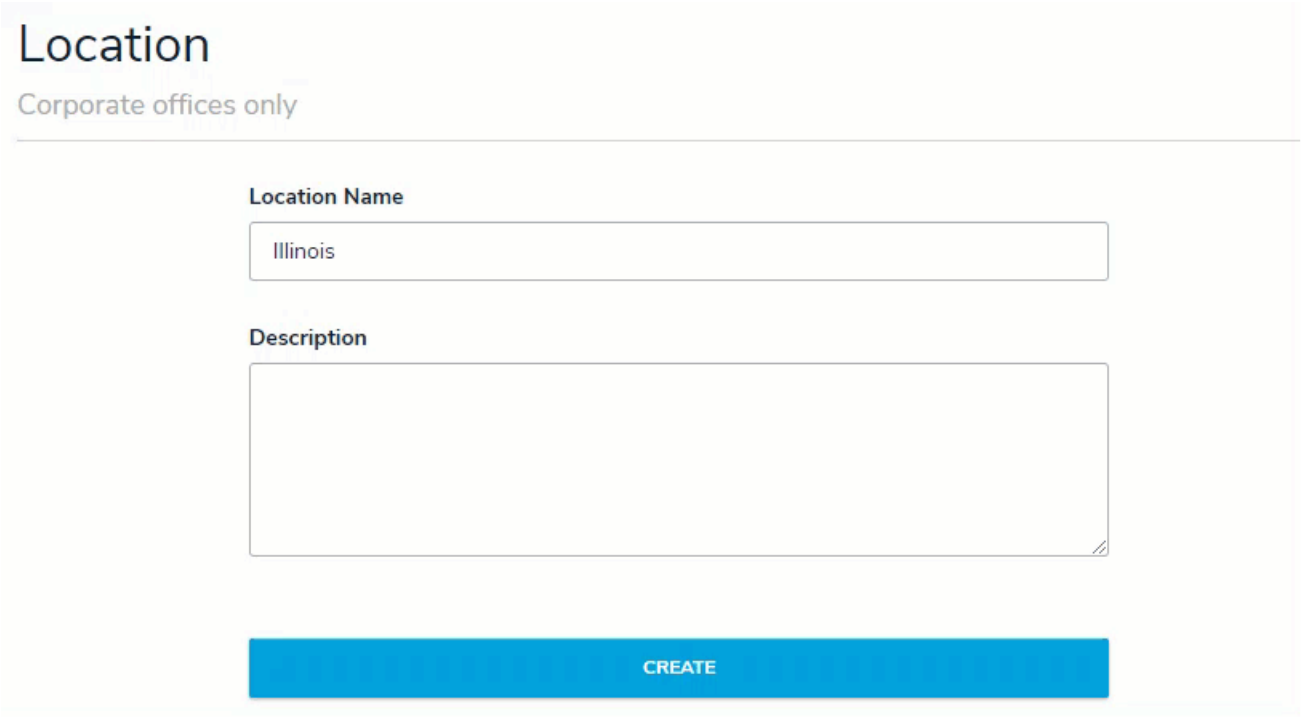
- Allow end users to edit the default title or description once the object is created. The title or description can be edited by clicking and typing directly into the header or by making changes in the **Name** or **Description** properties, provided the appropriate **Edit** permissions are enabled on the user's role and the header is not marked as read-only.
- Display a custom form header or description. Custom headers and descriptions override any concatenations and cannot be edited by end users.
- Show the current workflow state of the object across the top of the form.
- Show the object's **Unique ID** in the header to the far right of the object title.

> If applicable, concatenations on the **Name** and **Description** properties are applied to an object upon creation, but any edits made to these properties after the object is created overwrites the concatenations.

View Examples



Editing the title and description of an object.

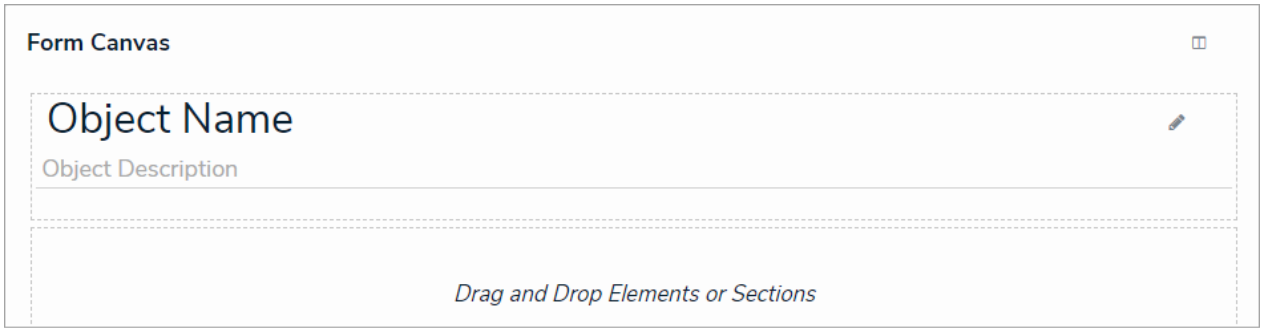


Making edits to an object's Name and Description properties will not affect the form's header when it's marked as read-only.

Instructions

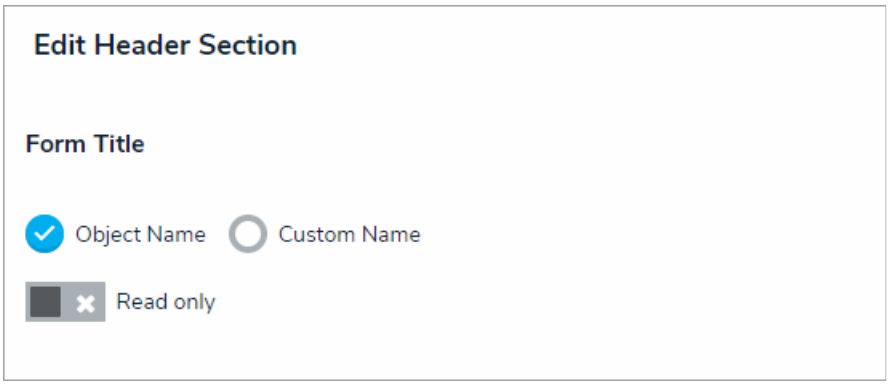
To configure a standard form title:

1. If the form is not already open, click the icon in the top bar **> Configurable Forms** in the **Views** section, then select the appropriate form.
2. Click the icon in header section of the canvas to display the **Edit Header Section** window.



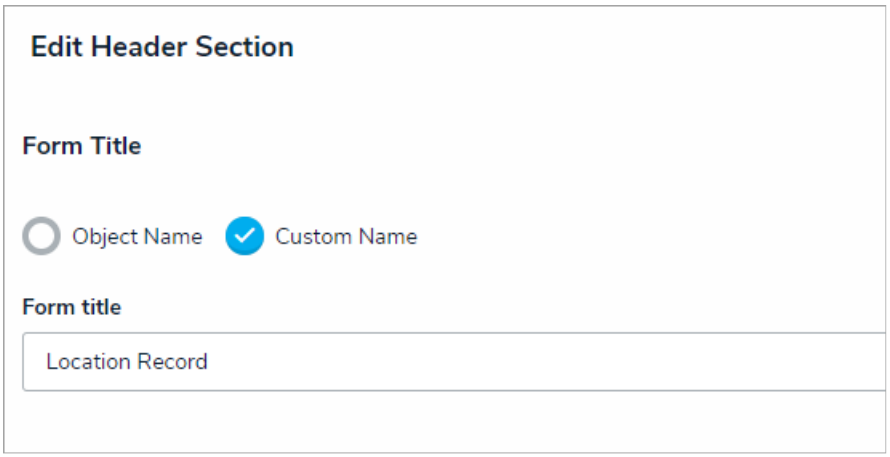
The form's name and description on the form canvas.

3. To configure the form's title, select either **Object Name** (selected by default) or **Custom Name** in the **Form Title** section:
   - If you selected **Object Name** (to display the value of the object's **Name** property as the form title):
     a. **Optional:** Click the icon beside **Read only** to mark the title as read-only. Doing so will prevent users with **Edit** permissions enabled from modifying the title. Click the icon to disable read-only.



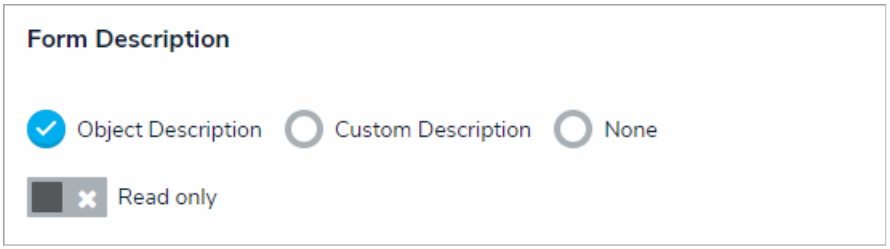
The Object Name option in the Form Title section.

- If you selected **Custom Name**:
    a. Enter the custom name in the **Form title** field. This is the title assigned to all objects created through this form and it cannot be edited by end users.



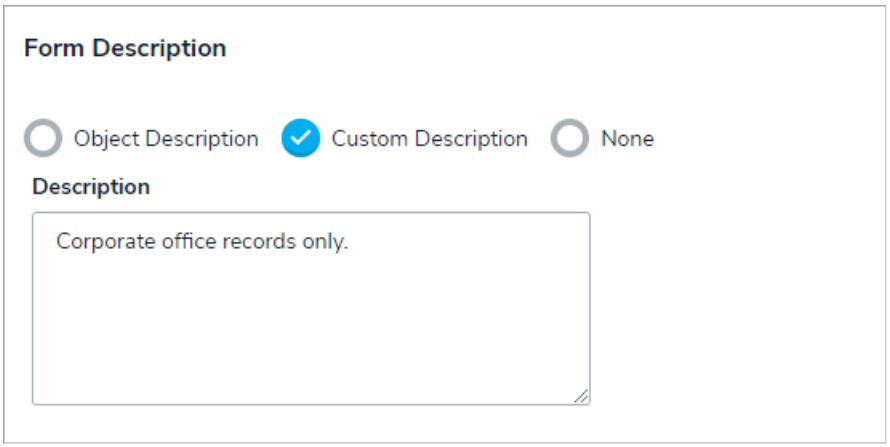
The Custom Name option in the Form Title section.

4. To configure the form's description (sub-title), select **Object Description**, **Custom Description**, or **None** (selected by default):
    - If you selected **Object Description** (to display the value of the object's **Description** property as the form sub-title):
        a. **Optional:** Click the icon beside **Read only** to mark the sub-title as read-only. Doing so will prevent users with **Edit** permissions enabled from modifying the description. Click the icon to disable read-only.



The Object Description option in the Form Description section.

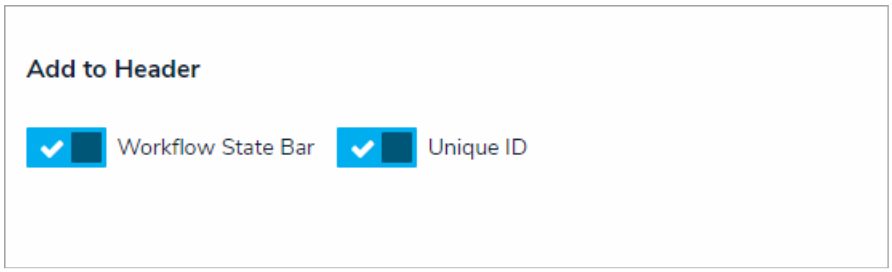
- If you selected **Custom Description**:
    a. Enter the custom sub-title in the textbox. This is the sub-title assigned to all objects created through this form and it cannot be edited by end users.



The Custom Description option in the Form Description section.

- If you selected **None**, no sub-title will appear on the form.

5. To add the current workflow state or the object's Unique ID to the top of the form, click the icon beside **Workflow State Bar** and/or **Unique ID** in the **Add to Header** section. Click the icon to disable these options as required.



The Workflow State Bar and Unique ID options in the Add to Header section.

6. Click **Done**.

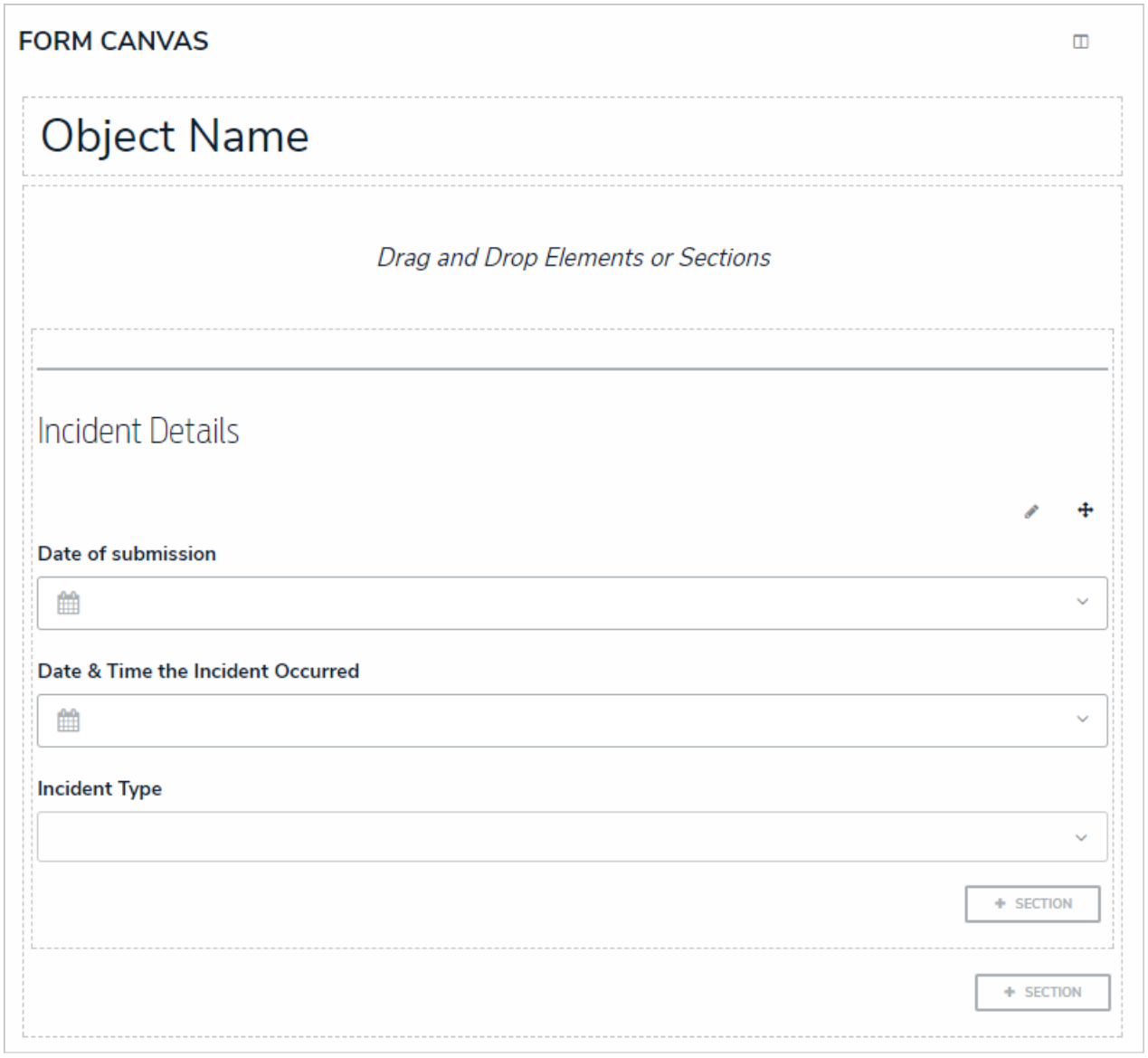
Form Sections Overview

Sections are the areas on the **standard form canvas** where you can drag and drop form elements (e.g. fields, relationships, formulas, etc.).

Sections are added to forms by clicking **+ Section** on the form canvas. Once a section has been added to a form, you can:

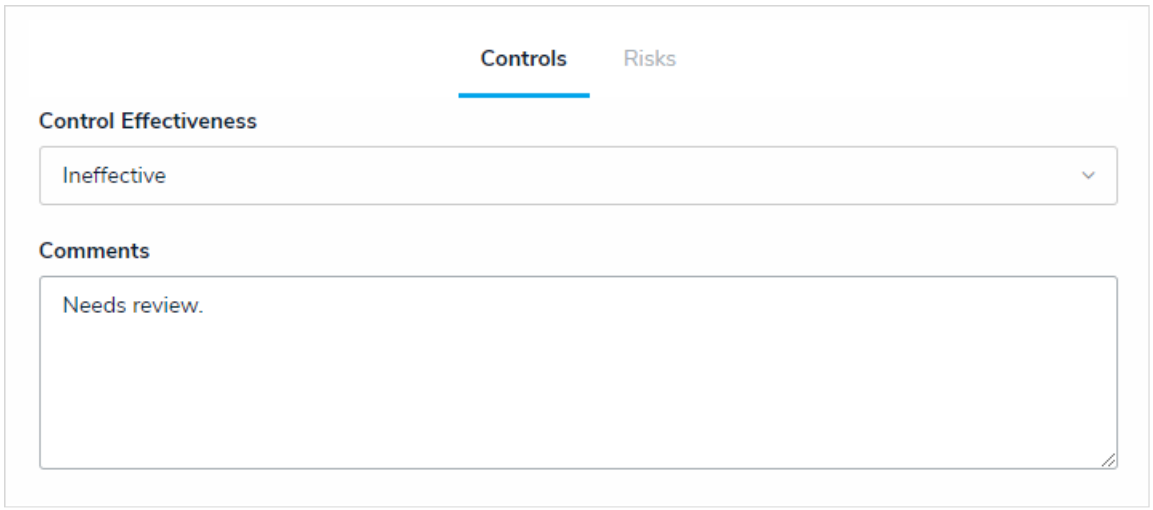
- Configure its width;
- Center it;
- Provide a section title;
- Display the section as tabs or as collapsible and expandable; and
- Create rules to specify if the section will be visible on the form.

See Add a Section to a Form for more information on configuring a section's title and display (including tabs and collapsible sections). SeeControl Section Visibility for more information on creating section rules.



A form canvas displaying a configured section.

A collapsible section with a title.



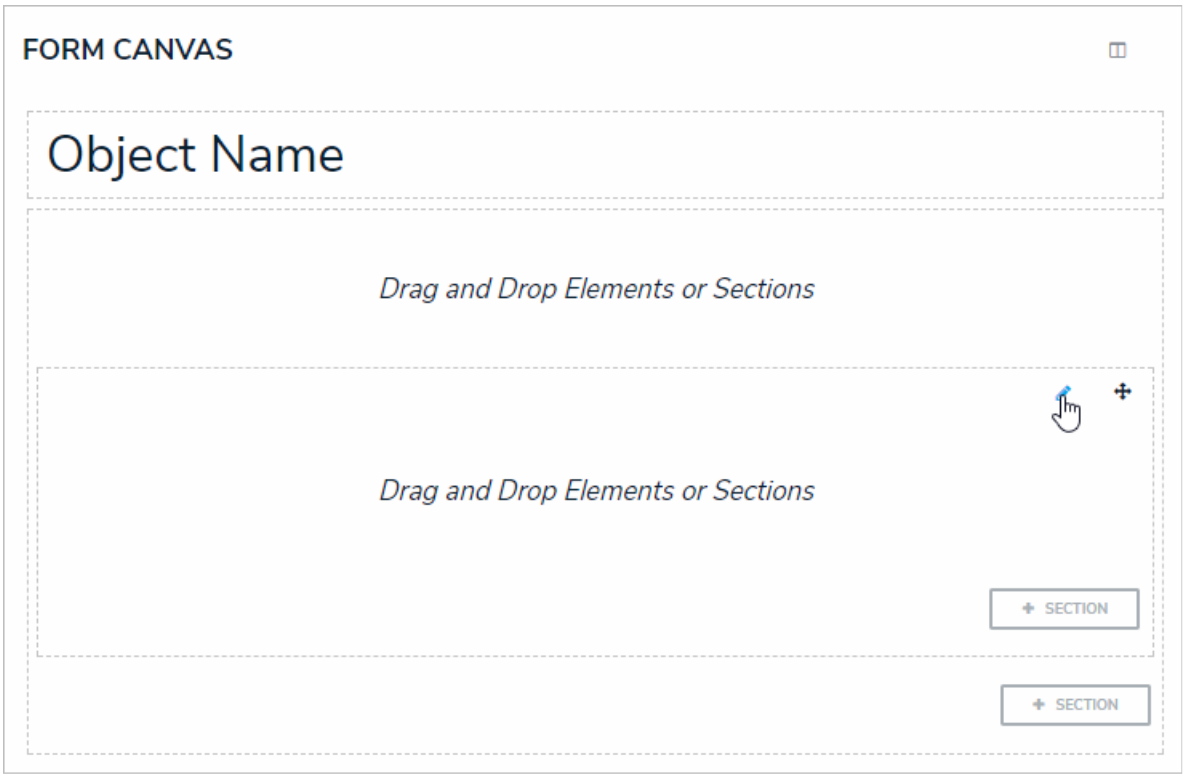
A tabbed section.

A single section cannot be both tabbed and collapsible.

Add a Section to a Form

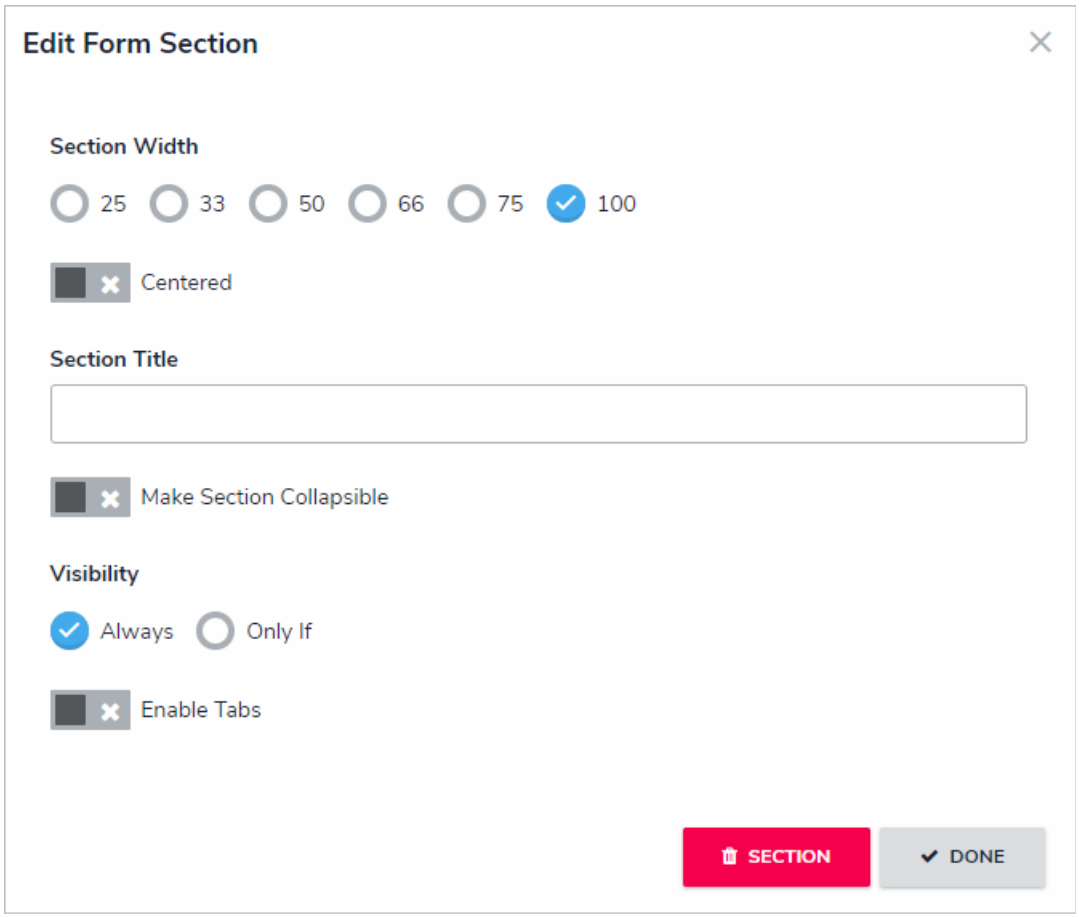
To add a new section to a standard form:

1. Create a new form or open an existing form by clicking icon in the top bar > **Configurable Forms** in the **Views** section, then selecting a form.
2. Click **+ Section** on the form canvas.
3. Click the icon in the top-right corner of the new section to display the **Edit Form Section** screen.



A new section on the form canvas.

4. Select a width from the **Section Width** section. By default, **100** (full size) is selected.

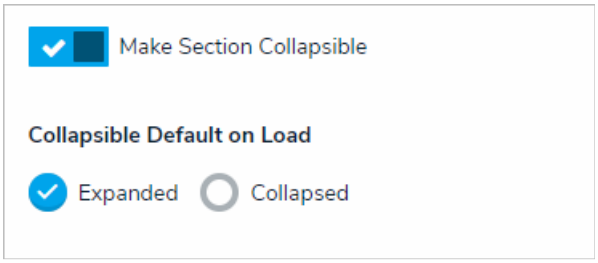


The Edit Form section screen.

5. Click the **Centered** icon to center the section on the canvas.
6. Enter text in in the **Section Title** to provide a header to the section.

> Section titles are disabled when a section is tabbed.

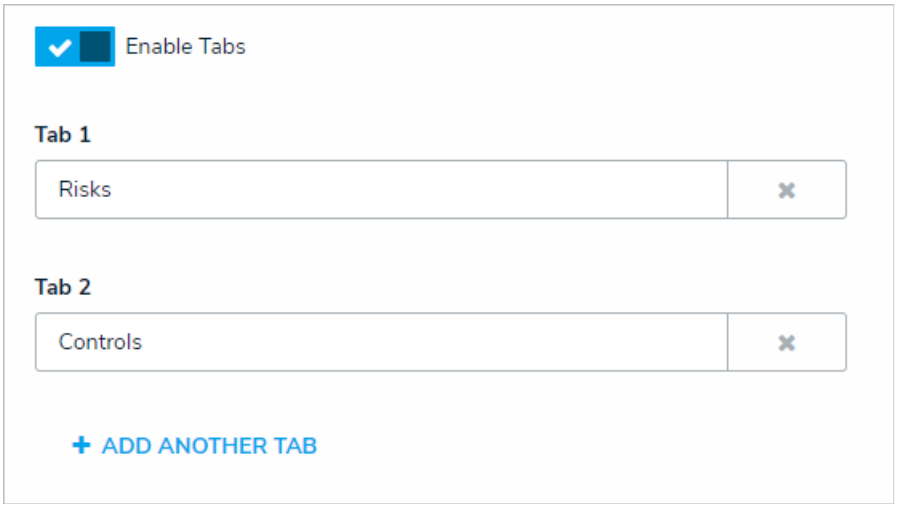
7. To make the section collapsible:
   a. Click the **Make Section Collapsible** icon.
   b. Select either **Expanded** (to show the section's contents by default) or **Collapsed** (to hide the section's contents by default) below **Collapsible Default on Load**.



The collapsible section settings.

> A single section cannot be both collapsible and tabbed.

8. To create section tabs:
   a. Click the **Enable Tabs** icon.
   b. Click +**Add Another Tab**.
   c. Enter a name for the tab in the text field.
   d. Continue steps a-c to continue adding more tabs as needed. To delete a tab, click the icon.

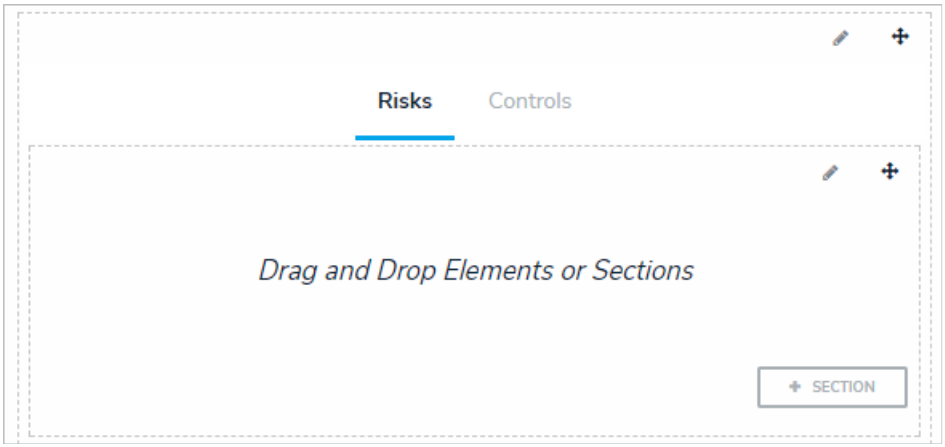


The tabs settings.

9. Click **Done** to return to the form canvas.
10. If the new section is collapsible, click the icon to expand it (if necessary) and add elements. Click the icon to collapse the section, as needed.

A collapsed section on the form canvas.

11. If the new section has tabs, click a tab and add elements. These elements will appear on the form only when that specific tab is selected.



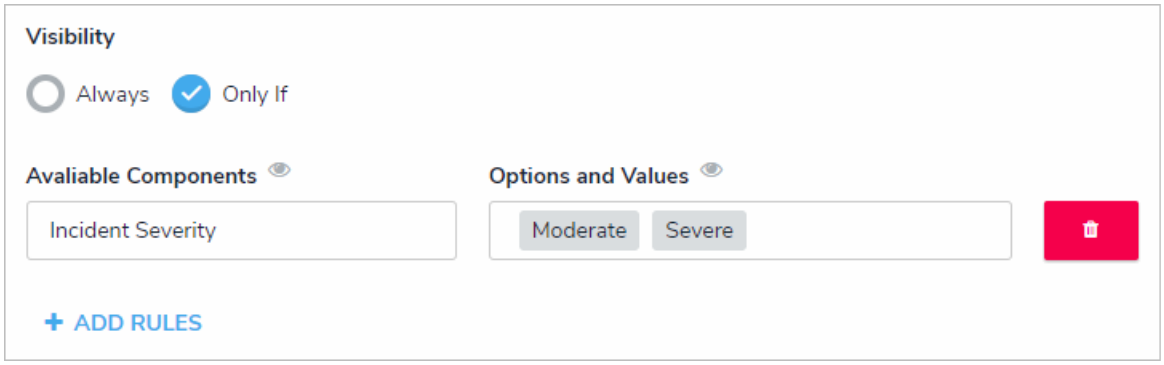
A section with tabs on the form canvas.

12. Repeat steps 2-11 to continue adding sections as needed.
13. To reposition a section on the form canvas, click the icon in the top-right corner of the section, then drag and drop it to a different area on the canvas.

Control Section Visibility (Dynamic Forms)

The **Visibility** settings in the **Edit Form Section** give administrators the option of always displaying a section and its elements on a standard form or only displaying the section once specific formula values (ranges) or select list options are selected in another section on the form. For example, when creating a new incident object, the Witness Details section is hidden from the form unless the end user chooses Yes from the Witnesses? dropdown menu.

To specify which formula values or select list options must be selected to display a certain section, at least one **rule** must be created, where you can choose a select list and/or formula, then select the required options or values. If multiple values or options are selected for a single formula or select list, any one of those values or options can be selected by a user to reveal the section (e.g. selecting Moderate OR Severe on the Incident Severity select list will successfully display the form).



The Visibility settings. In this case, the end user must select Moderate OR Severe from the Incident Severity select list before the section is displayed.

Important Notes

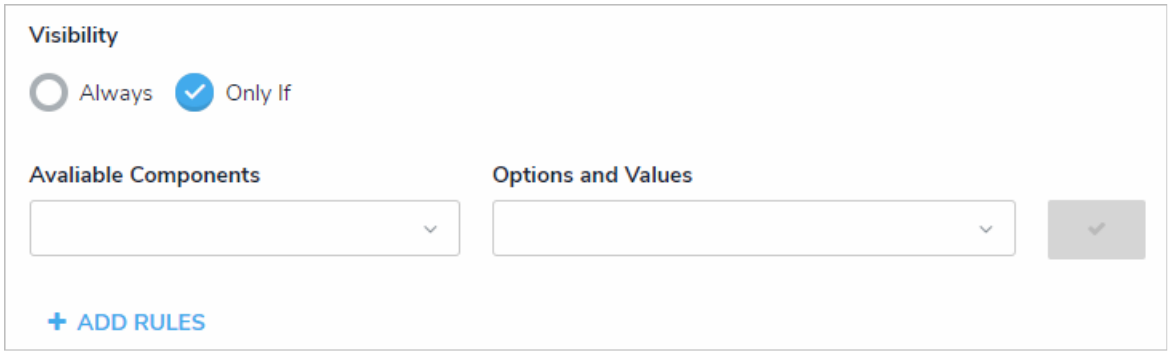
When creating sections with controlled visibility, note that:

- It's possible to configure cascading visibility by configuring additional sections to be displayed only when specific values or options are selected within another previously hidden section. For example, if a user chooses Yes from the Employee? select list in previously hidden Witness Details section, the Employee Details section will be displayed.
- Multiple rules can be added to a single section, however, doing so will create AND criteria. This means that at least one value or option must be selected from every rule to display the section.
- Adding formulas without ranges to a rule or adding formulas to rules on forms used to create new objects will prevent the section from being successfully displayed even when the criteria has been met.
- Administrators should review the width and layout of all sections on the form to ensure the hidden section displays correctly when visible.
- Selecting multiple options or values creates OR criteria. For example, if a user chooses Theft, Assault, OR Vandalism from the Incident Type select list, the Illegal Acts section will display.

Instructions

To control a section's visibility:

1. Create a new form or open an existing form by clicking icon in the top bar **> Configurable Forms** in the **Views** section, then selecting a form.
2. Click **+ Section** on the form canvas.
3. Click the icon in the top-right corner to display the **Edit Form Section** screen.
4. Select the **Only If** in the **Visibility** section. By default, **Always** is selected. If you want this section to be visible at all times, leave **Always** selected.
5. Click **+ Add Rules**.



The Visibility section of the Edit Form Section screen.

6. Choose a select list or formula with ranges from the **Available Components** dropdown menu.

> Only formulas with ranges should be selected.

7. Choose one or more select list options or formula ranges from the **Options and Values** dropdown menu. Selecting multiple options or values creates OR criteria. For example, if a user chooses Theft, Assault, OR Vandalism from the Incident Type select list, the Illegal Acts section will display.
8. Click the icon beside the rule to save it.
9. **Optional:** Click **+ Add Rules** to create an additional rule, then repeat steps 6-8 above.

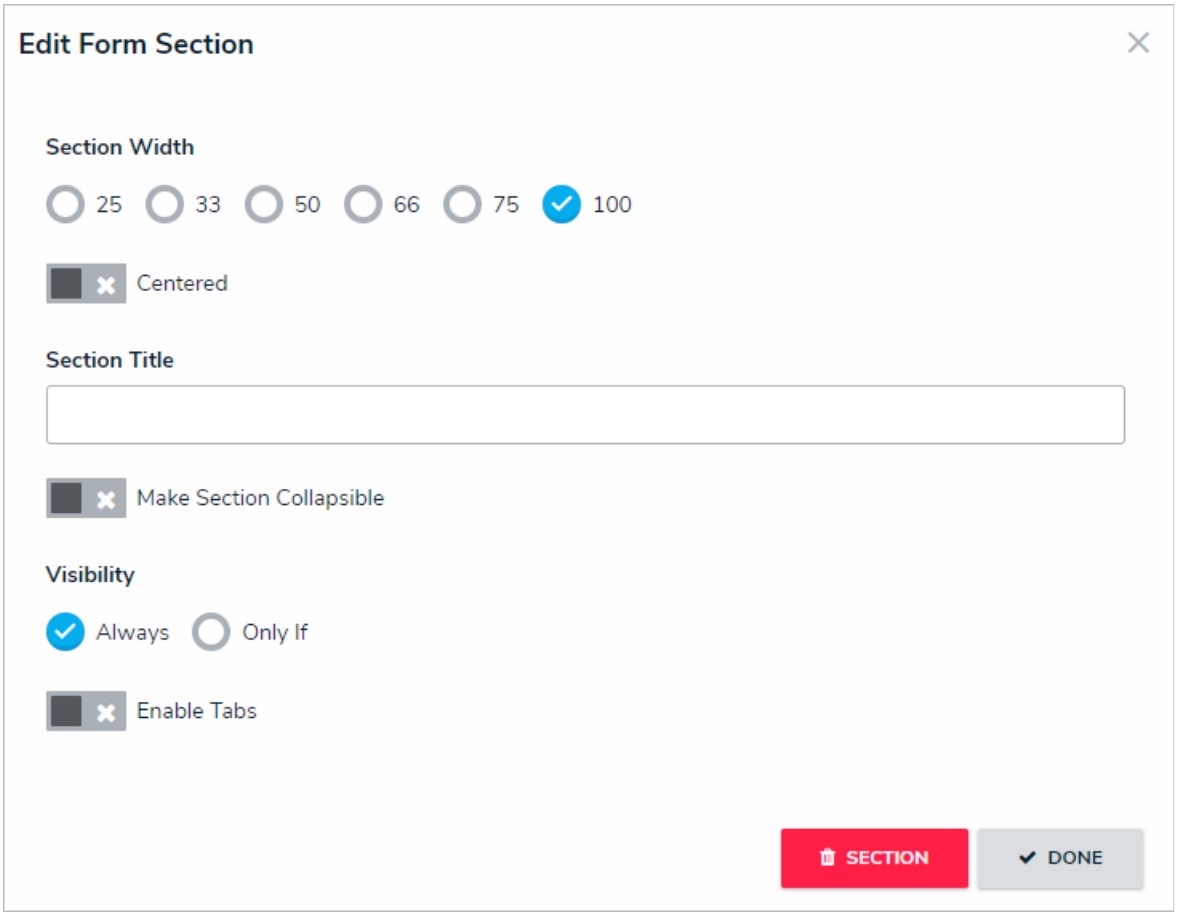
> Creating additional rules will create AND criteria. This means that at least one range or option must be selected from every rule in order to display the section.

10. Click **Done** to save the visibility settings.
11. To modify a rule, it must first be deleted by clicking the icon, then recreating it.

Edit or Delete a Form Section

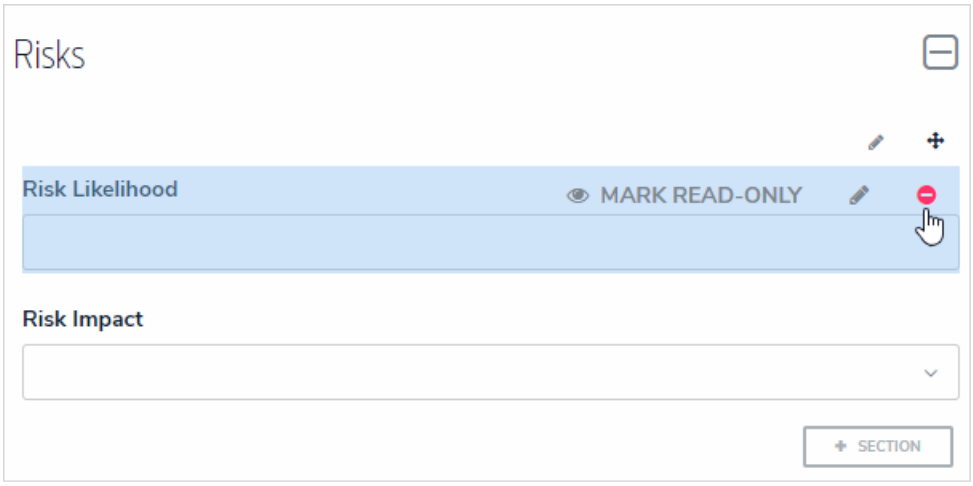
To edit or delete a form section:

1. If needed, click **Administration > Configurable Forms** to open an existing form.
2. To reposition a section on the form canvas, click the icon in the top-right corner of the section, then drag and drop it to a different area on the canvas.
3. Click the icon at the top-right corner of the section to display the **Edit Form Section** screen.



The Edit Form Section screen.

4. Make changes to the settings as needed. See the Add a New Section to a Form for information on enabling tabbed or collapsible sections and Control Section Visibility for information on creating rules.
5. If the section is empty (it does not contain any elements), click the SECTION icon, then **Yes** to confirm. If the section contains elements:
    a. Click **Done** to return to the form canvas.
    b. Hover your cursor over each element in the section, then click the icon to remove the element from the section.



Removing an element from a section.

c. Click **Yes** to confirm.

d. Continue removing elements from the section as needed.

e. Click the icon at the top-right corner of the section to return to the **Edit Form Section** screen.

f. Click the SECTION icon, then **Yes** to confirm.

Add Elements to a Standard Form

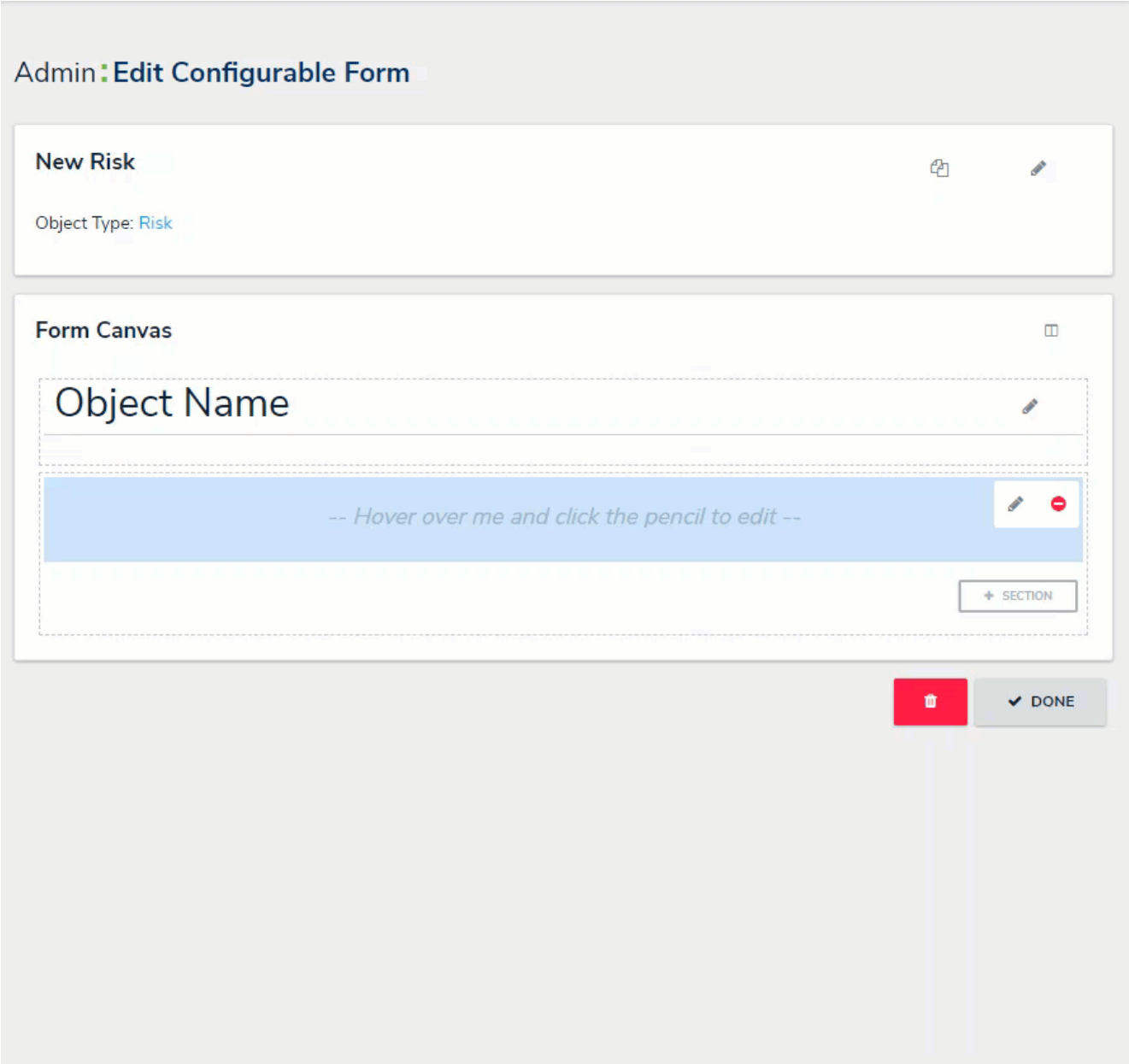
Elements (e.g. fields, relationships, formulas, etc.) can be added to a standard form by dragging and dropping them from the **Form Elements** palette and onto a section. You can open and close the palette by clicking the icon in the top-right section of the form canvas. Elements that have already been added to the canvas will appear in the palette with green to the left of their names.

If needed, you can mark added elements as read-only to users viewing the form by hovering your cursor over the element in the canvas, then clicking **Mark Read-Only**. To make an element editable again, hover your cursor over the element and click **Remove Read-Only**.

Fields, relationships, references, formulas, and/or roles can only be added to a form after they've been added to the object type as components. See the Object Types section for more information.

When creating forms for use in a repeatable form, note that only forms with supported elements will be displayed. See the Add Repeatable Forms to a Report article for a list of unsupported elements.

View an Example



Adding, removing, and editing form elements on the canvas.

Properties on Forms

The **Properties** section of the **Form Elements** allows you to add and display an object's default information, including:

- **Name:** The title of the object, which helps identify the object in views or search results. The header of this property appears on forms as [Object Type] Name (e.g. Incident Name). See the Configure a Form's Header article for more information.

  > The **Name** property should be included on all your standard forms as it's used to identify objects in search results, views, data visualizations, relationships, etc. If this property is not added to your forms, users will not be able to search for and select existing objects in relationship fields or tables.

- **Description:** A description of the object.
- **Unique ID:** The unique identifier automatically assigned to the object type at the time of creation.
- **Monogram:** The letter(s) and color assigned to the object type.
- **Created By:** The user who created the object.
- **Created On:** The date the object was created.
- **Modified By:** The name of the user who last modified the object.
- **Modified On:** The date the object was late modified.
- **Workflow State:** The current state of the object.
- **Location:** The address and/or latitude and longitude coordinates of an object. See theLocation section for more information on this property.
- **Assessment Dimension:** Adds read-only dimension data onto the form of objects that were referenced on an assessment. If an object has not been referenced on an assessment, the property will be invisible.

Fields on Forms

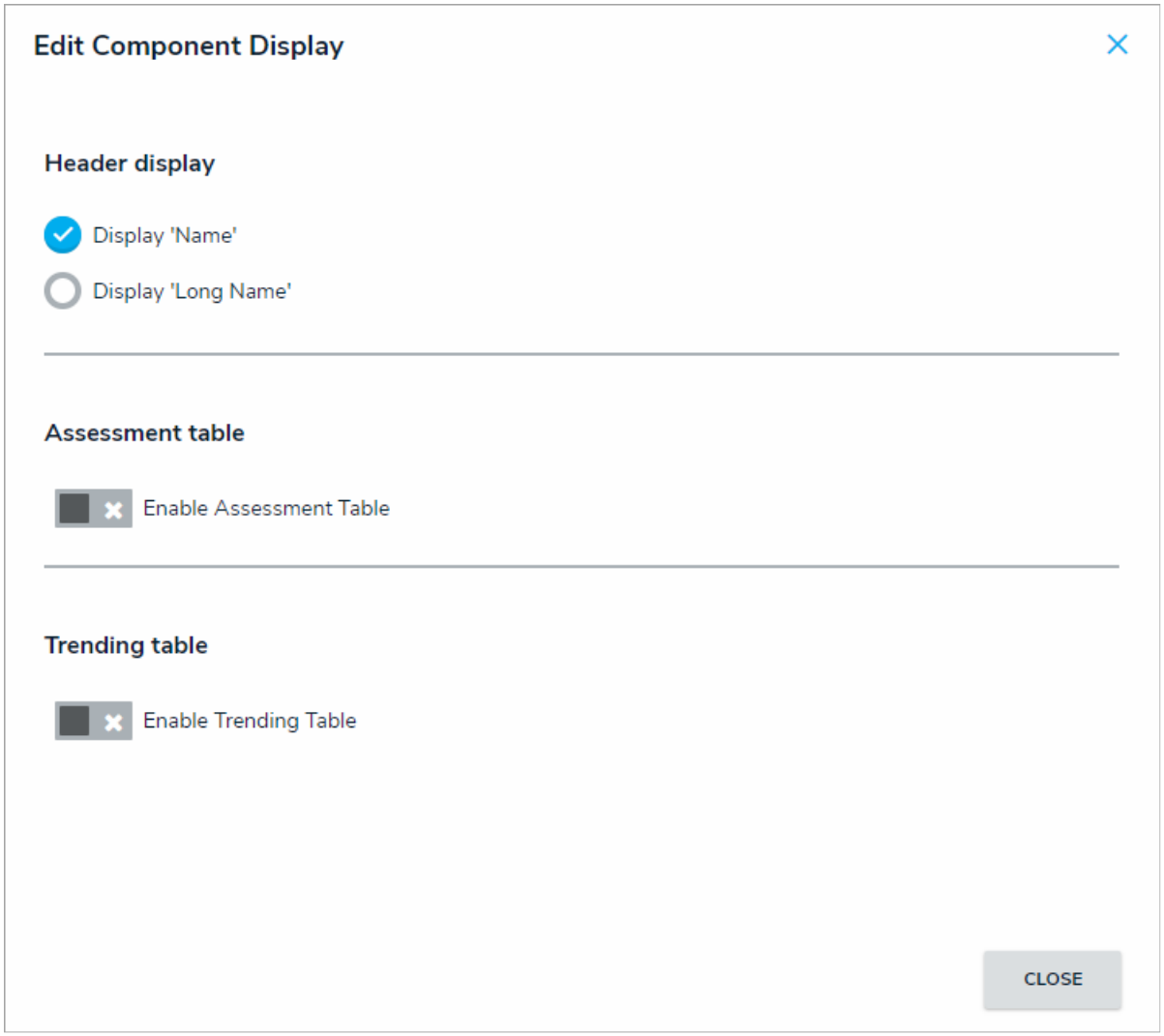
Any fields saved to the object type as components can be displayed on standard forms. See the Add Fields to an Object Type section for more information on adding fields as components on object types.

Clicking the icon in the top-right corner of the field will open the **Edit Component Display** window, where you can display the field's short name or long name.

If the field is a numeric field or select list with five options or fewer, you can enable the **Toggle Button Group** option to display the field as a group of options on the form.

Certain Fields can also be displayed as assessment or trending tables. See the Assessment Table and Trending Tables articles for more information.

A single select list displayed as a trending table and line graph.



The Edit Component Display article.

If required fields have been added to a state, you must ensure these fields have been added to any applicable standard forms, otherwise users will not be able to view and complete the required fields to transition the object to the next state.

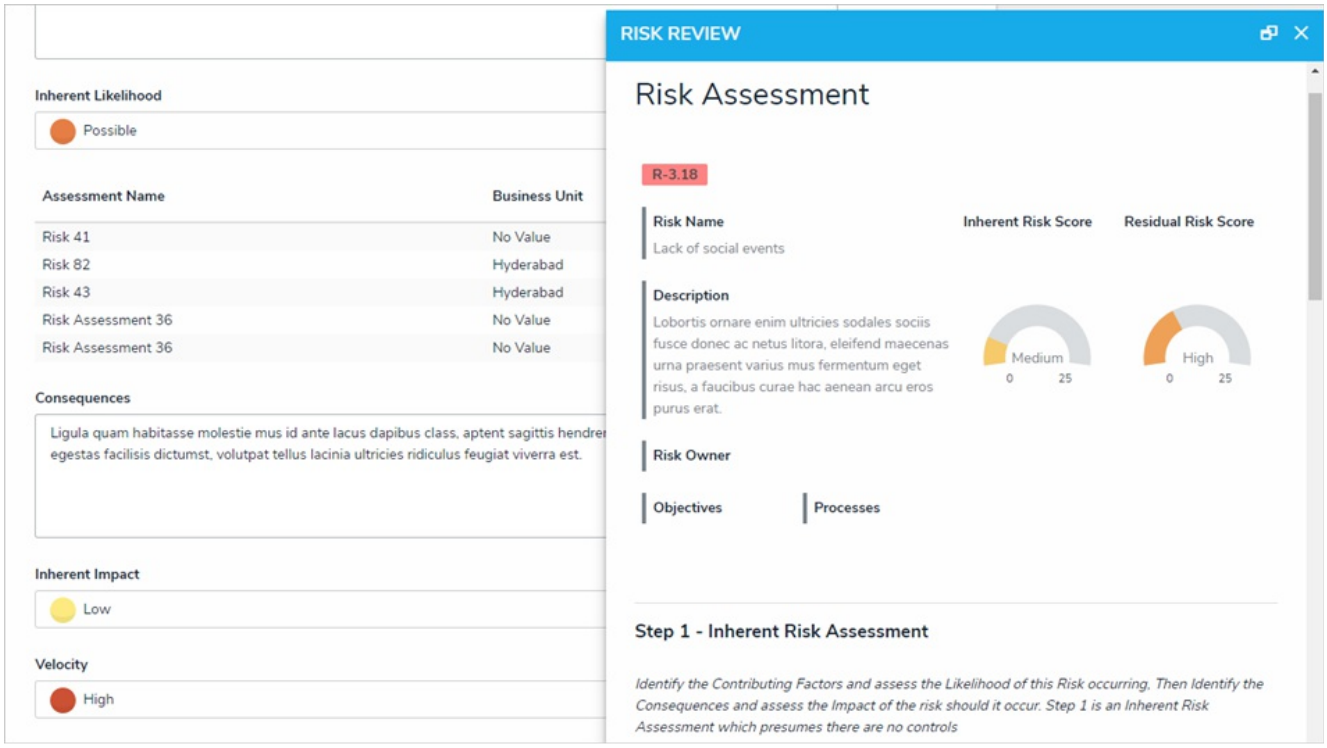
Assessment Table

An **assessment table** displays previous assessment data in a table on a standard form. The data in the table is pulled from the five most recently modified instances of the object currently displayed on the form, helping users better understand how data has changed over time and across different assessments.

This table in enabled in the settings for a plain text, numeric, select list, formula, or date and time field element on a standard form. To define what data is displayed in the form, administrators select data from the object type and assessments (properties, fields, dimensions, raw data [the numeric data of a select list] and trending data).

Users can click on data in this table to display the instance form in a palette, using either its default form or a form selected in the workflow permissions for the object type. Up to five instances will appear on the table. If a user doesn't have permission to view the instances, they will not appear in the table.

For example, with the assessment table enabled on a Risk object type form, opening that form for Risk 3 (R-3) will display the name and business units from the assessments where the instances were created. Clicking data in a cell will open the related instance in a palette (e.g. R-3.1, R-18, etc.), allowing you to review how that risk is being assessed across the organization.



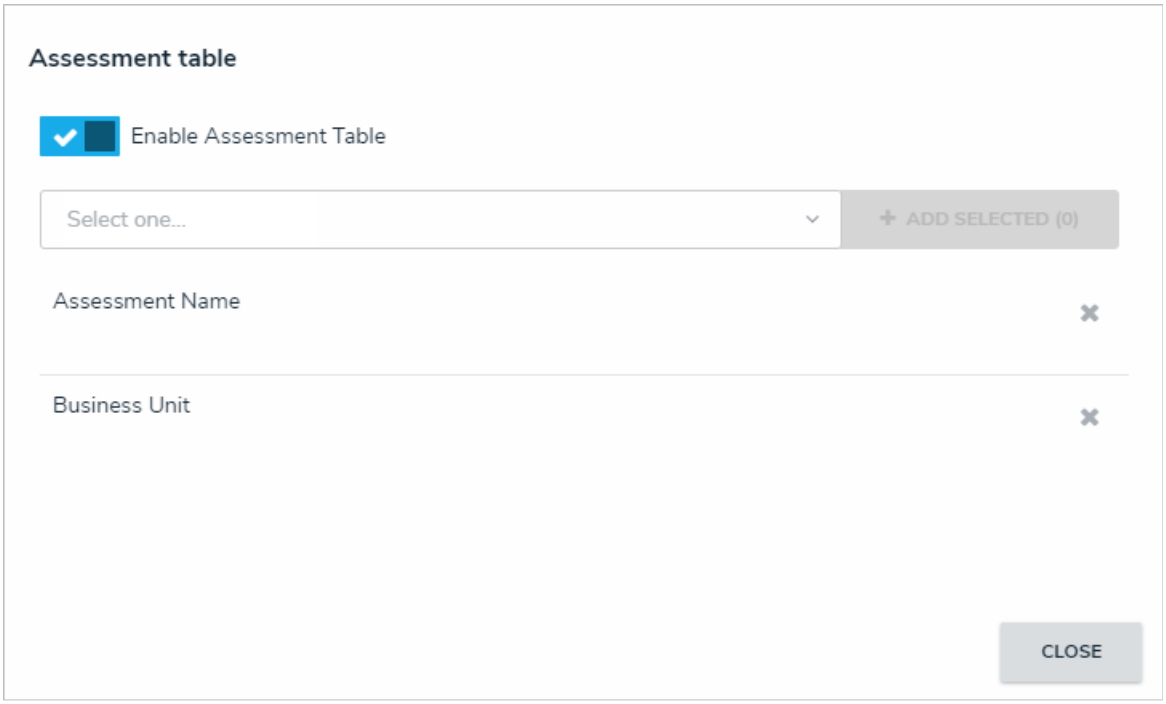
An example of the assessment table displaying an instance in a palette.

To enable the assessment table on a standard form:

1. If the form is not already open, click the icon in the top bar > **Configurable Forms** in the **Views** section, then select a form.
2. If the field has not already been added:
    a. Click the icon in the **Fields** section of the **Form Elements** palette to expand it
    b. Drag and drop a plain text, numeric, select list, formula, or data and time field to the canvas. See Fields on Forms and Add Fields to an Object Type for more information on adding fields to forms.
3. Hover your cursor over the field, then click the icon to display the **Edit Component Display** screen.

Hovering the cursor over a field on the form canvas to display the field options.

4. Click the icon beside **Enable Assessment Table**.
5. Select one of the following options from the dropdown menu to determine what will be displayed in the data:
    - **Raw Value:** The numeric value (with no label) of a select list field on which the table has been enabled (e.g. displaying the data from the "Control self-assessment" field, from which the table was enabled).
    - **Trending:** Displays up or down arrows on the form to indicate whether the field added to the table is in an upwards (higher numeric value) or downwards (lower numeric value) trend. To display trending data in this option, the other field selected in the table must contain numeric data (e.g. select lists, formulas, or numeric fields).
    - **Assessment Name:** The name of the assessment from which the instance(s) were created.
    - **Properties:** The properties of the assessment (e.g. Name, Unique ID, Description, etc.).
    - **Fields:** Any fields added to the object type or assessment.
    - **Dimensions:** The dimensions of the assessment where the instance(s) were created.
6. Click **Add Selected** to add the option to the table.
7. Continue adding options as needed.



Options added to the assessment table.

8. Click **Close** to return to the form canvas.

Relationships on Forms

Relationships can be displayed on standard forms as dropdown menus or tables, where end users can search for and/or create new objects through that relationship, depending on the element's settings. Before the relationship element can be added to a form, it must be added to the object type as a component. See Add Relationships to an Object Type for more information.

Format & Display Options

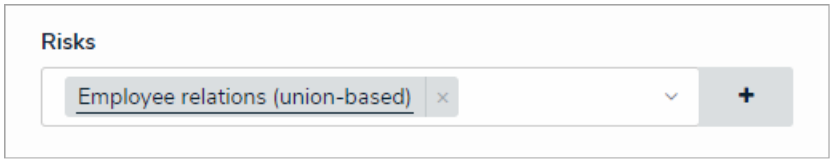
By default, relationships are added to the form canvas as a dropdown menu, displaying its name (versus the long name), but you can configure the element to choose how the relationship is displayed, which functionality is available, and which form is displayed when creating a new object.

Format options include:

- **Enable Search:** Allows users to search for and view existing objects to add to the relationship.
- **Include Archived Data in Search Results:** Allows admins to control whether archived objects will be visible when users are searching for existing objects from the relationship element. This option will not be visible if the **Enable Search** option is not selected.
- **Enable Create:** Allows users to create new objects and add them to the relationship.
- **Enable Advanced:** Allows users to search for, select, or create objects from a palette after clicking **Add Existing [Object]** or **Create New** links on the form.

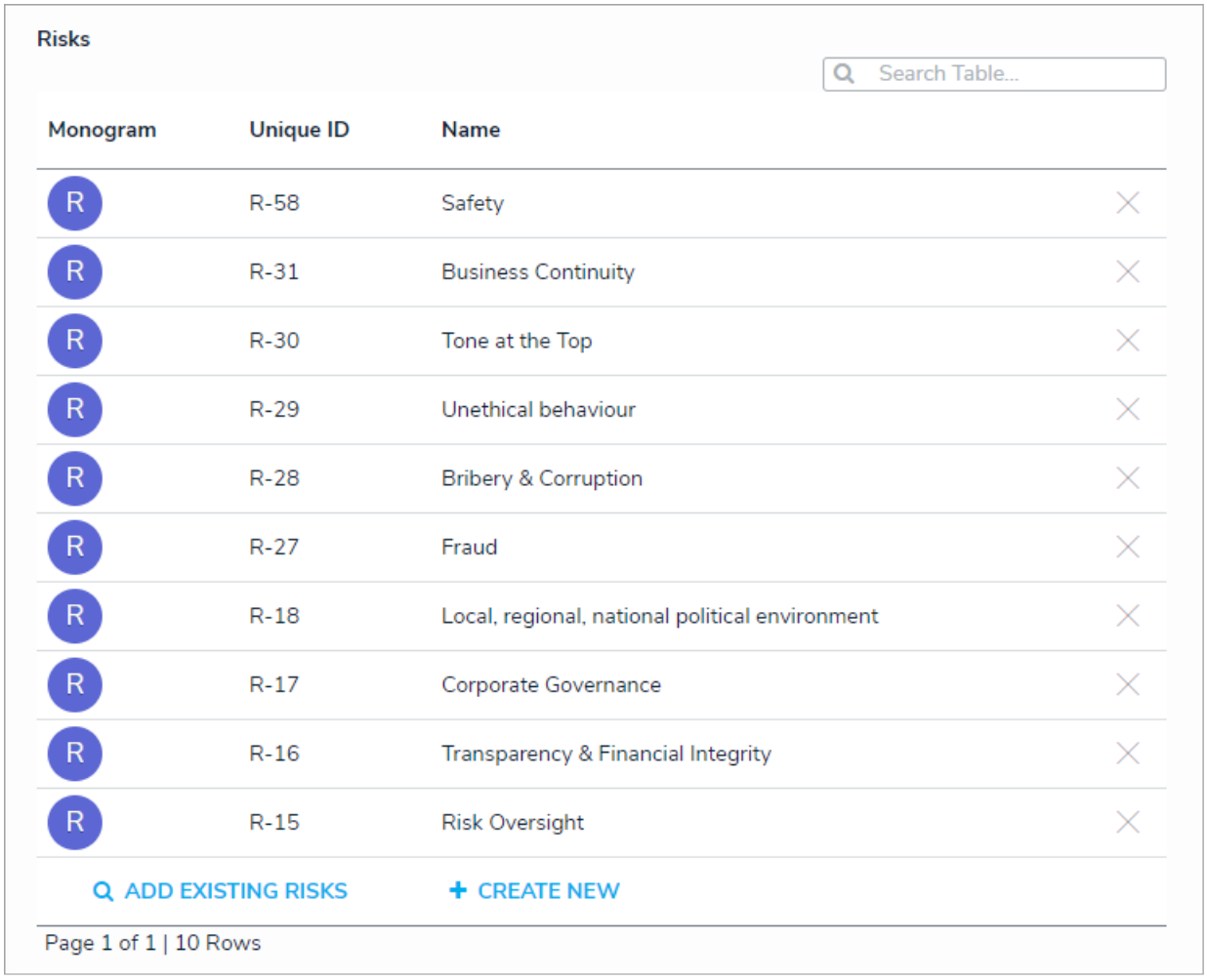
Display options include:

- **Dropdown:** Displays the relationship as a dropdown menu.



A relationship dropdown menu.

- **Table:** Displays the relationship as a table. The objects are displayed in descending order based on their **Unique IDs**.



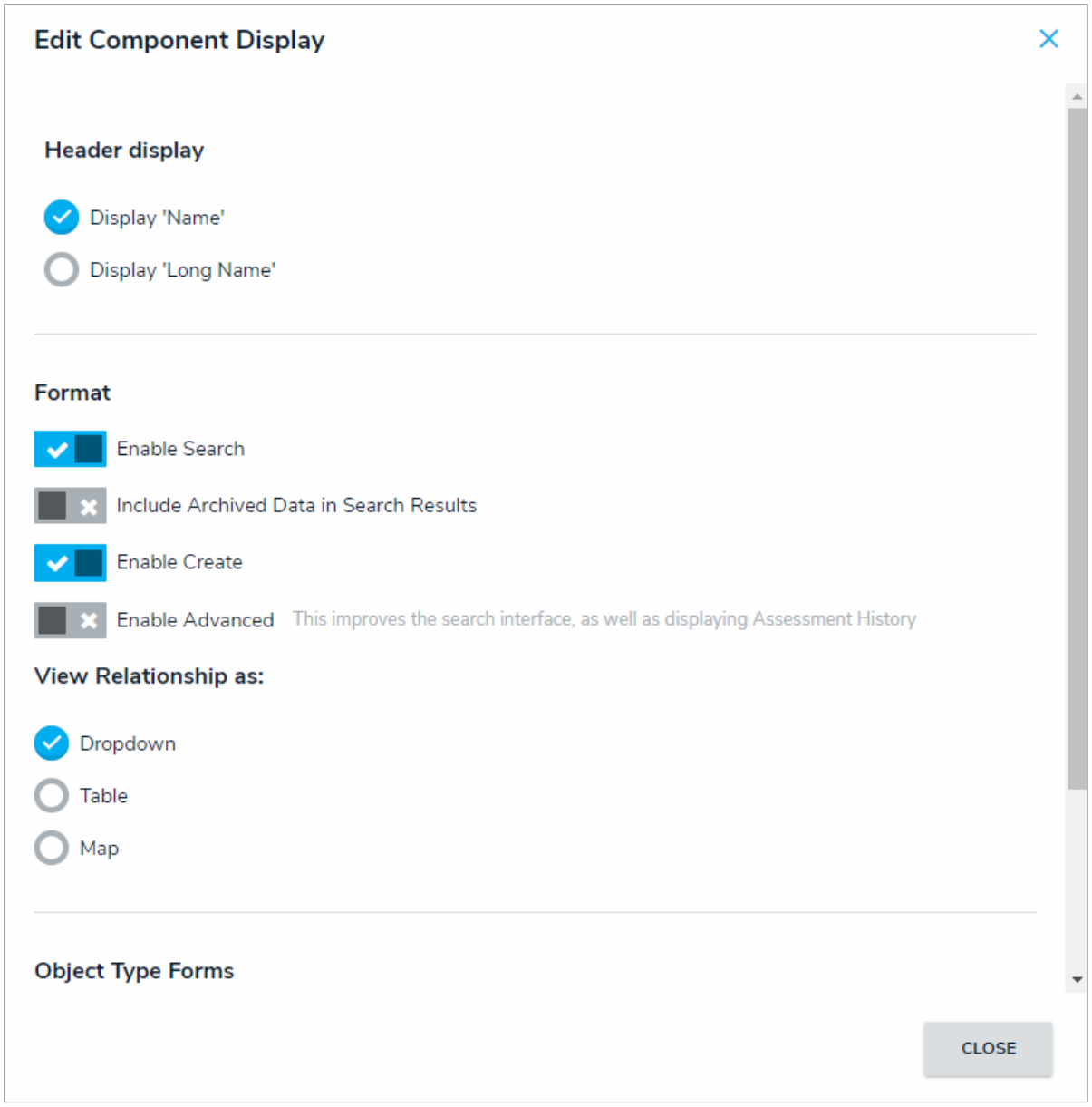
Relationships displayed as a table with search and advanced options enabled.

- **Map:** Displays a map with pins representing any recorded locations of the originating object and/or relationship objects. If location data isn't enabled or recorded, the map will not display any data. See the Locations section for more details.

Instructions

To configure a relationship on a standard form:

1. If needed, open the form you wish to add the relationship element to by clicking the icon in the top bar > **Configurable Forms** in the **Views** section, then selecting a form.
2. Add the relationship element to the form, hover your cursor over the relationship on the canvas, then click the icon to open the **Edit Component Display** window.



The Edit Component Display window.

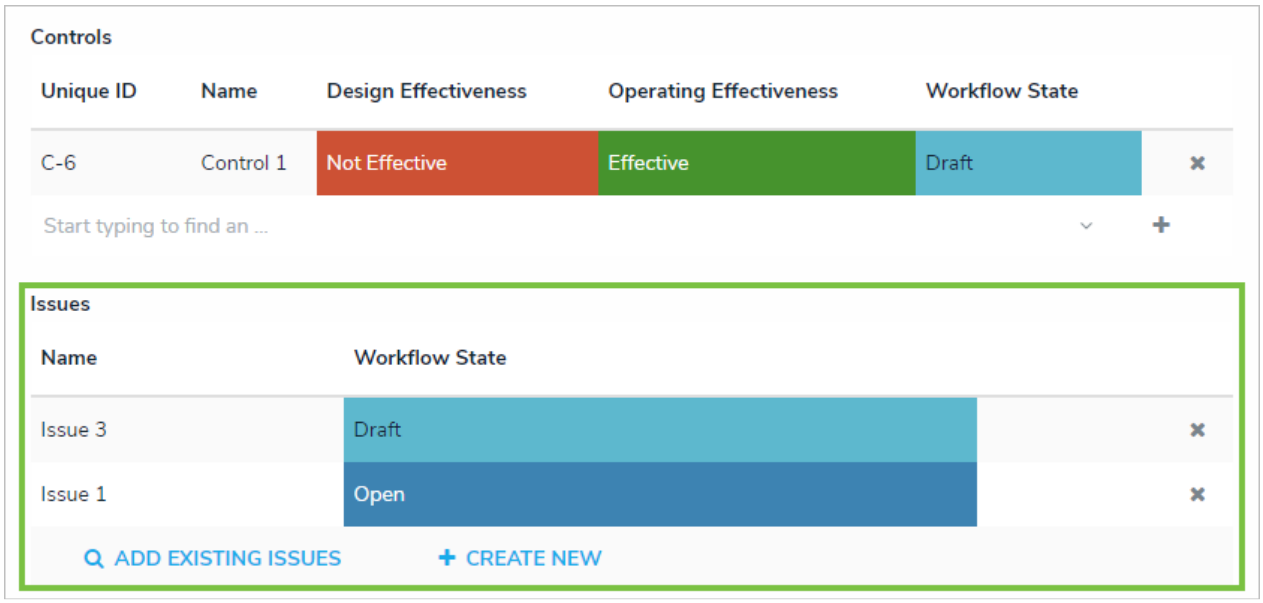
3. Click **Display 'Long Name'** to display the relationship's long name on the form. By default, **Display 'Name'** is selected. To add or edit a long name, open the Edit Object Type page for the form's object type, click the **Relationships** tab, then click the relationship to open the **Edit Relationship** palette and make changes as required.
4. Click the icon beside **Enable Search** to disable the end-user's ability to search for existing objects in the relationship.
5. Click the or icons beside **Include Archived Data in Search Results** to enable or disable the end-user's ability to search for or view archived objects through the form element. See the Archived Data section for more information.

> The **Include Archived Data in Search Results** option will not be visible if the **Enable Search** option is not enabled.

6. Click the icon beside **Enable Create** to disable the end-user's ability to create new objects through the relationship.

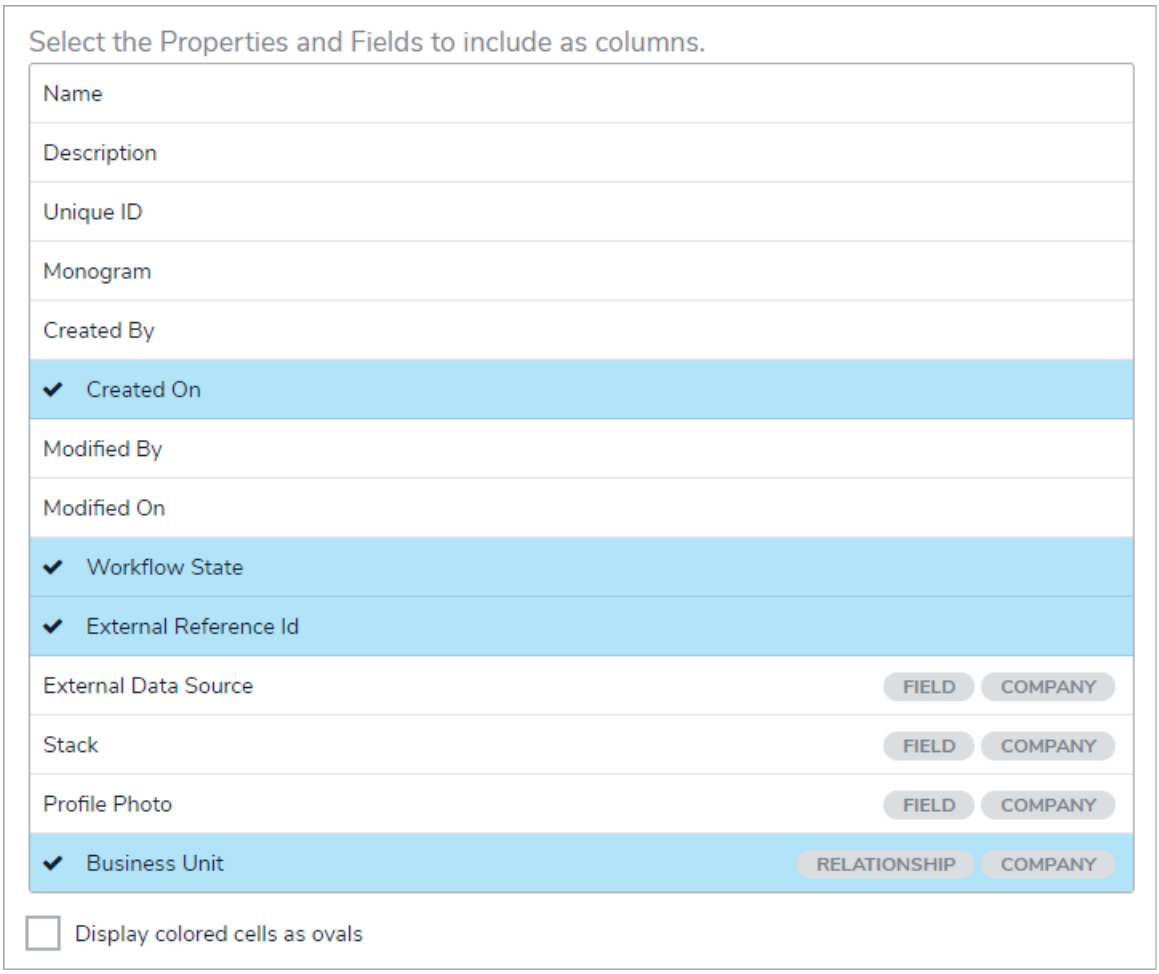
Disabling both **Search** and **Create** functionality on a relationship will make the element read-only.

7. Click the icon beside **Enable Advanced** to display the advanced user interface for the relationship. When enabled, clicking **Add Existing [Object]** will open a palette that allows users to search for and select one or more objects or assessment objects (if any) to add to the relationship.



The highlighted reference table demonstrating how the advanced display appears on a form, whereas the reference above it is displaying the default interface.

8. To display the relationship as a dropdown menu, leave **Dropdown** selected under **View Relationship as:** (selected by default).
9. To display the relationship as a table:
    a. Select **Table** under **View Relationship as:** then click to select the properties and fields from the object type(s) in the relationship that you want to include on the table as columns. The columns will appear on the table in the order they were selected in the **Build the Relationship Table** settings.



Selecting the properties and fields that will appear on the relationship table as columns.

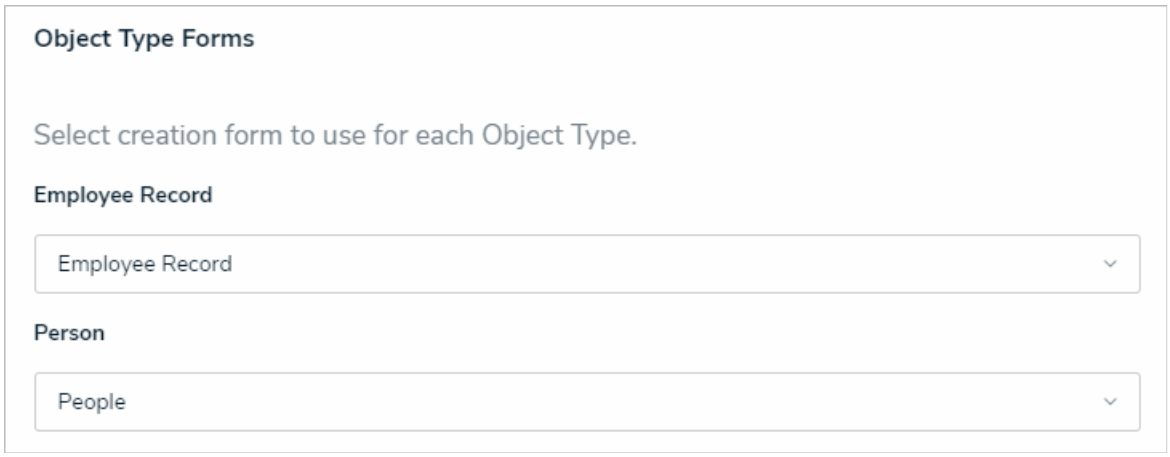
> Relationship tables with more than 10,000 rows of data will not load correctly. For larger data sets, it's recommended that a Form Action element is added to a form to redirect users to view the data in a report.

b. **Optional:** Select the **Display colored cells as ovals** checkbox to show formula or select list cells as text with colored circles. When this option is not selected, cells are displayed with text and a full background color, if any.

10. To display the relationship as a map, select **Map** under **View Relationship as:**. Selecting this option will display a map with pins representing any recorded locations of the originating object and/or relationship objects. If location data isn't enabled or recorded, the map will not display any data. See the Locations section for more details.

> Selecting the **Map** option disables the **Enable Create** and **Enable Advanced** format options.

11. For both the dropdown and table options, below **Object Type Forms**, select the form(s) the users will complete if they're creating new objects through the relationship.



Selecting the configurable form that will be displayed when an end user creates a new object through a relationship.

If no configurable form(s) have been created for the object type(s) in the relationship, the default form(s) will be selected automatically.

12. Click **Close** when finished.

References on Forms

The **References** standard form element indicates that the current object has been referenced on other objects through arelationship. Administrators can configure this element to display those other objects as dropdown menus or tables, through which end users can search for and/or create new objects. Before the reference element can be added to a form, the form's object type must be added to a relationship on another object type. See Add References to an Object Type for more information.

The data available in the **References** element belongs to the object type(s) where the relationship was originally saved. For example, if the Vehicle object type is saved in a relationship on the Incident object type, the data displayed on the form will be from Incident.

Format & Display Options

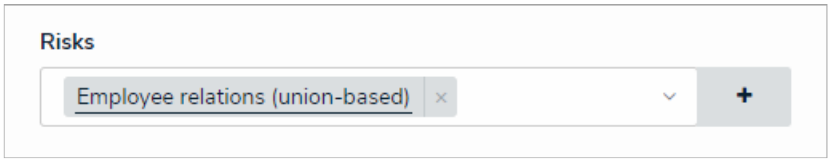
By default, references are added to the form canvas as a dropdown menu, displaying its name (versus the long name), but you can configure the element to choose how the reference is displayed, which functionality is available, and which form is displayed when creating a new object.

Format options include:

- **Enable Search:** Allows users to search for and view existing objects to add to the reference.
- **Include Archived Data in Search Results:** Allows admins to control whether archived objects will be visible when users are searching for existing objects from the reference element. This option will not be visible if the **Enable Search** option is not selected.
- **Enable Create:** Allows users to create new objects and add them to the reference.
- **Enable Advanced:** Allows users to search for, select, or create objects from a palette after clicking **Add Existing [Object]** or **Create New** links on the form.

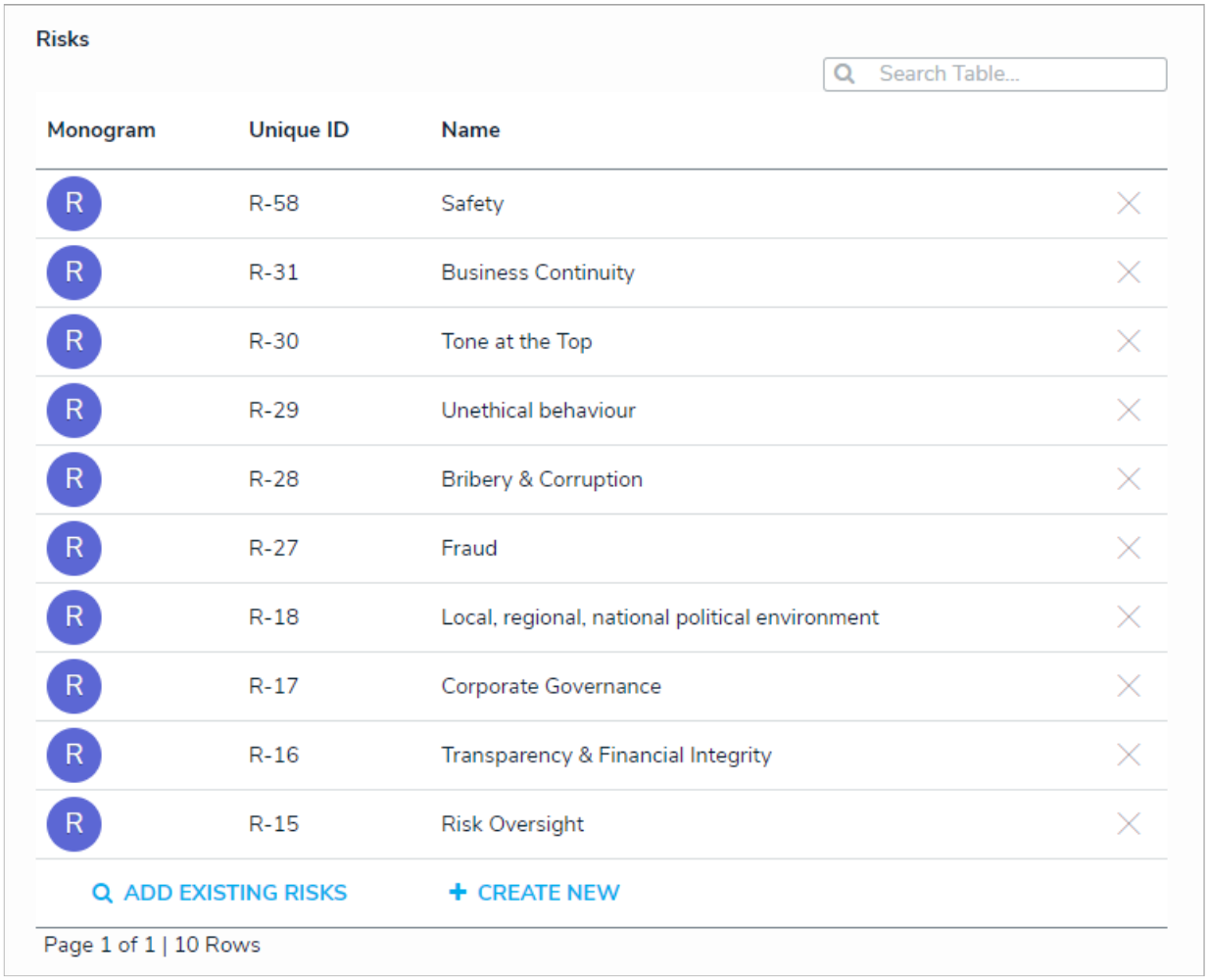
Display options include:

- **Dropdown:** Displays the reference as a dropdown menu.



A reference dropdown menu.

- **Table:** Displays the reference as a table. The objects are displayed in descending order based on their**Unique IDs**.



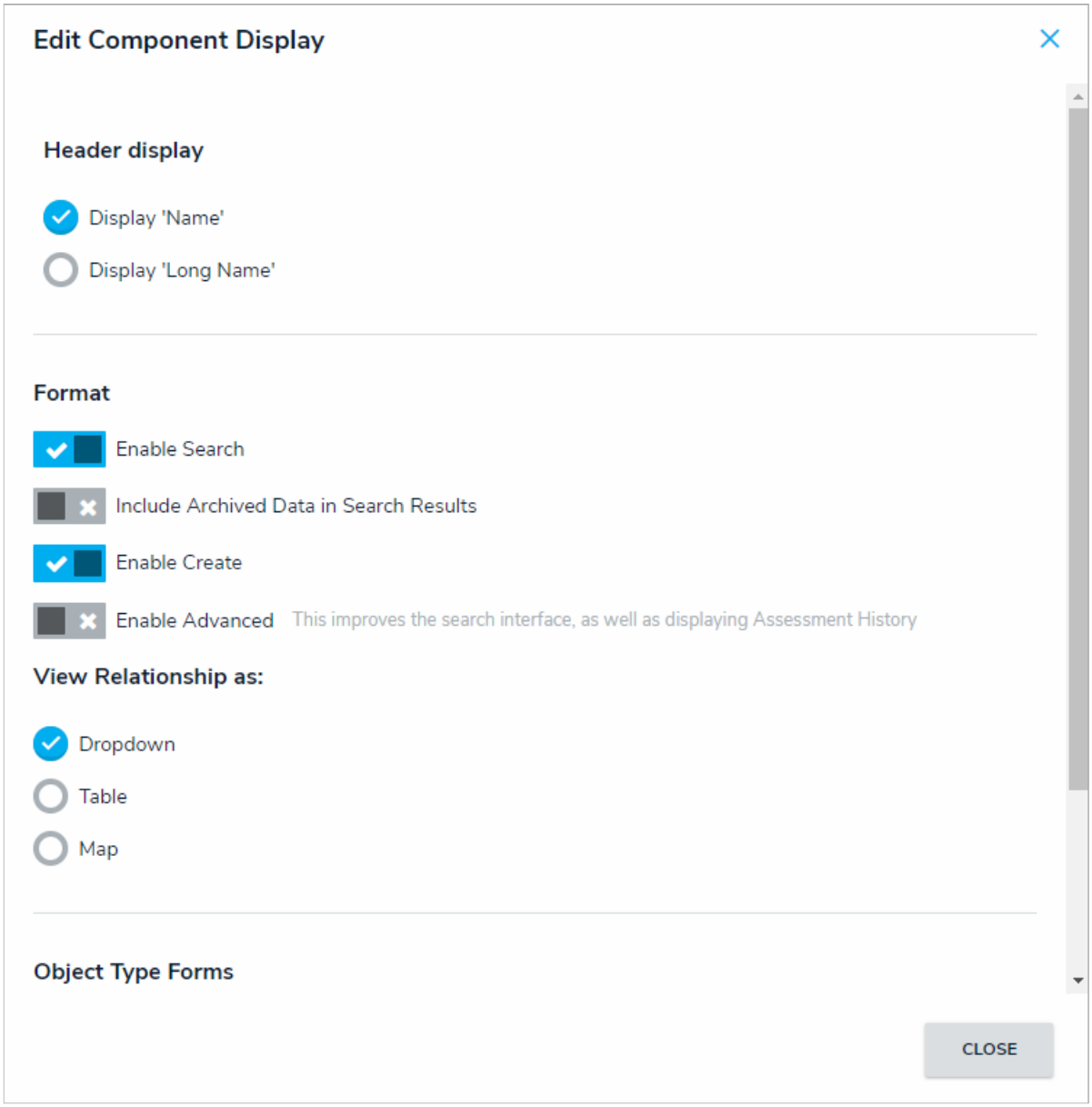
Reference objects displayed as a table with search and advanced options enabled.

- **Map:** Displays a map with pins representing any recorded locations of the relationship object and/or reference objects. If location data isn't enabled or recorded, the map will not display any data. See the Locations section for more details.

Instructions

To configure a reference on a standard form:

1. If needed, open the form you wish to add the reference element to by clicking the icon in the top bar > **Configurable Forms** in the **Views** section, then selecting a form.
2. Add the reference element to the form, hover your cursor over the element on the canvas, then click the icon to open the **Edit Component Display** window.



The Edit Component Display window.

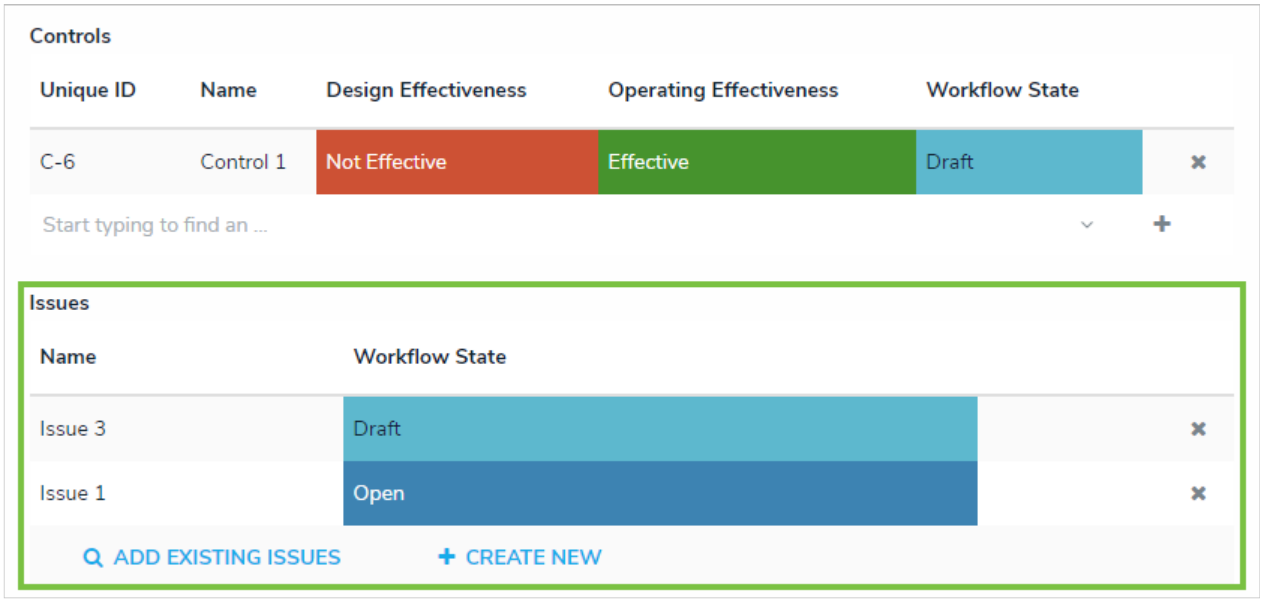
3. Click **Display 'Long Name'** if you want to display the long name of the originating relationship on the form. To add or edit the relationship's long name, open the **Edit Object Type** page where the original relationship was created, click the **Relationships** tab, then click the relationship to open the **Edit Relationship** palette.
4. Click the icon beside **Enable Search** to disable the end-user's ability to search for existing objects in the reference.
5. Click the or icons beside **Include Archived Data in Search Results** to enable or disable the end-user's ability to search for or view archived objects through the form element. See the Archived Data section for more information.

> The **Include Archived Data in Search Results** option will not be visible if the **Enable Search** option is not enabled.

6. Click the icon beside **Enable Create** to disable the end-user's ability to create new objects through the reference.

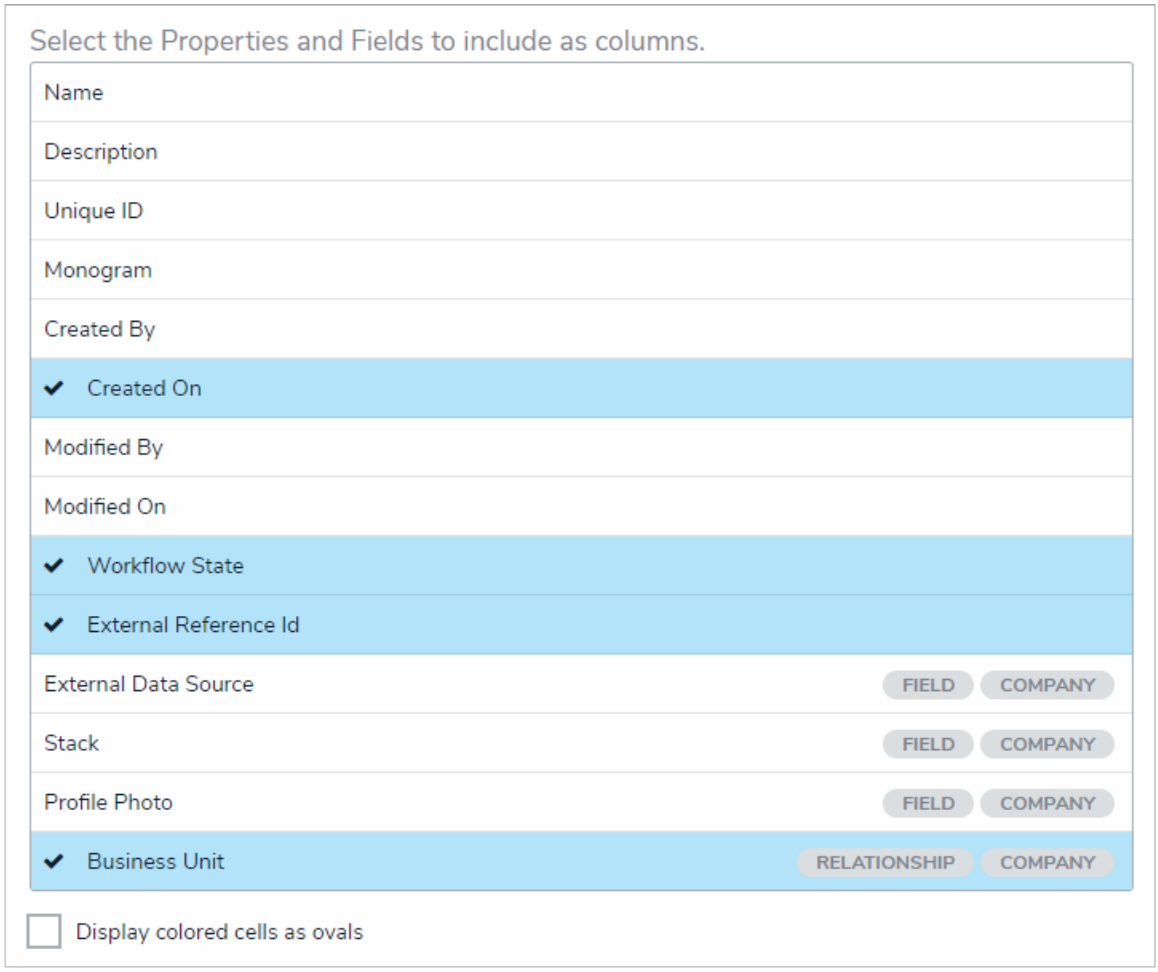
Disabling both **Search** and **Create** functionality on a reference will make the element read-only.

7. Click the icon beside **Enable Advanced** to display the advanced user interface for the relationship on a form. When this option is enabled, clicking **Add Existing [Object]** will open a palette that allows users to search for and select one or more objects or assessment objects (if any) to add to the reference.



The highlighted reference table demonstrating how the advanced display appears on a form, whereas the reference above it is displaying the default interface.

8. To display the reference as a dropdown menu, leave **Dropdown** selected under **View Relationship as:** (this option is selected by default).
9. To display the reference as a table:
    a. Select **Table** under **View Relationship as:** then click to select the properties and fields from the reference object type that you want to include on the table as columns (e.g. if the Vehicle object type is referenced in a relationship on the Incident object type, you can display properties and fields from Incident in the table). The columns will appear on the table in the order they were selected in the **Build Relationship Table** settings.



Selecting the properties and fields that will appear on the table as columns.

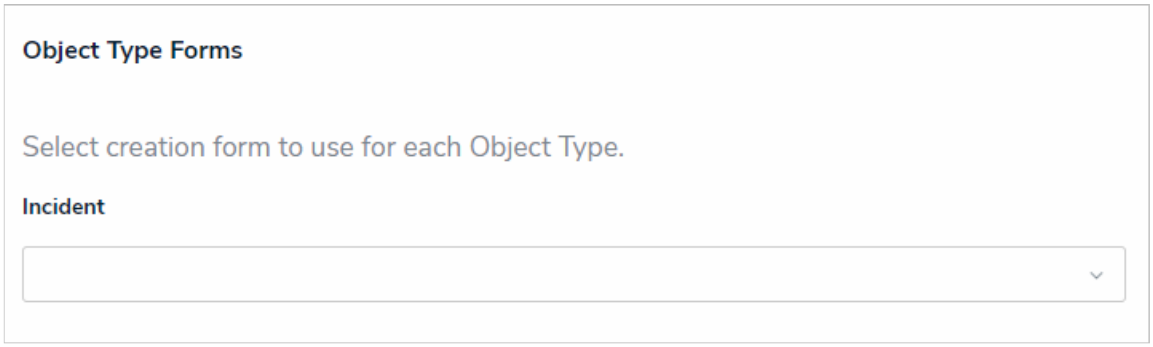
> Reference tables with more than 10,000 rows of data will not load correctly. For larger data sets, it's recommended that a Form Action element is added to a form to redirect users to view the data in a report.

b. **Optional:** Select the **Display colored cells as ovals** checkbox to show formula or select list cells as text with colored circles instead of a full background color. When this option is not selected, cells are displayed with text and a full background color, if any.

10. To display the reference as a map, select **Map** under **View Relationship as:**. Selecting this option will display a map with pins representing any recorded locations of the relationship object and/or reference objects. If location data isn't enabled or recorded, the map will not display any data. See the Locations section for more details.

> Selecting the **Map** option disables the **Enable Create** and **Enable Advanced** format options.

11. For both the dropdown and table options, below **Object Type Forms**, select the form the users will complete if they're creating a new object through the reference.



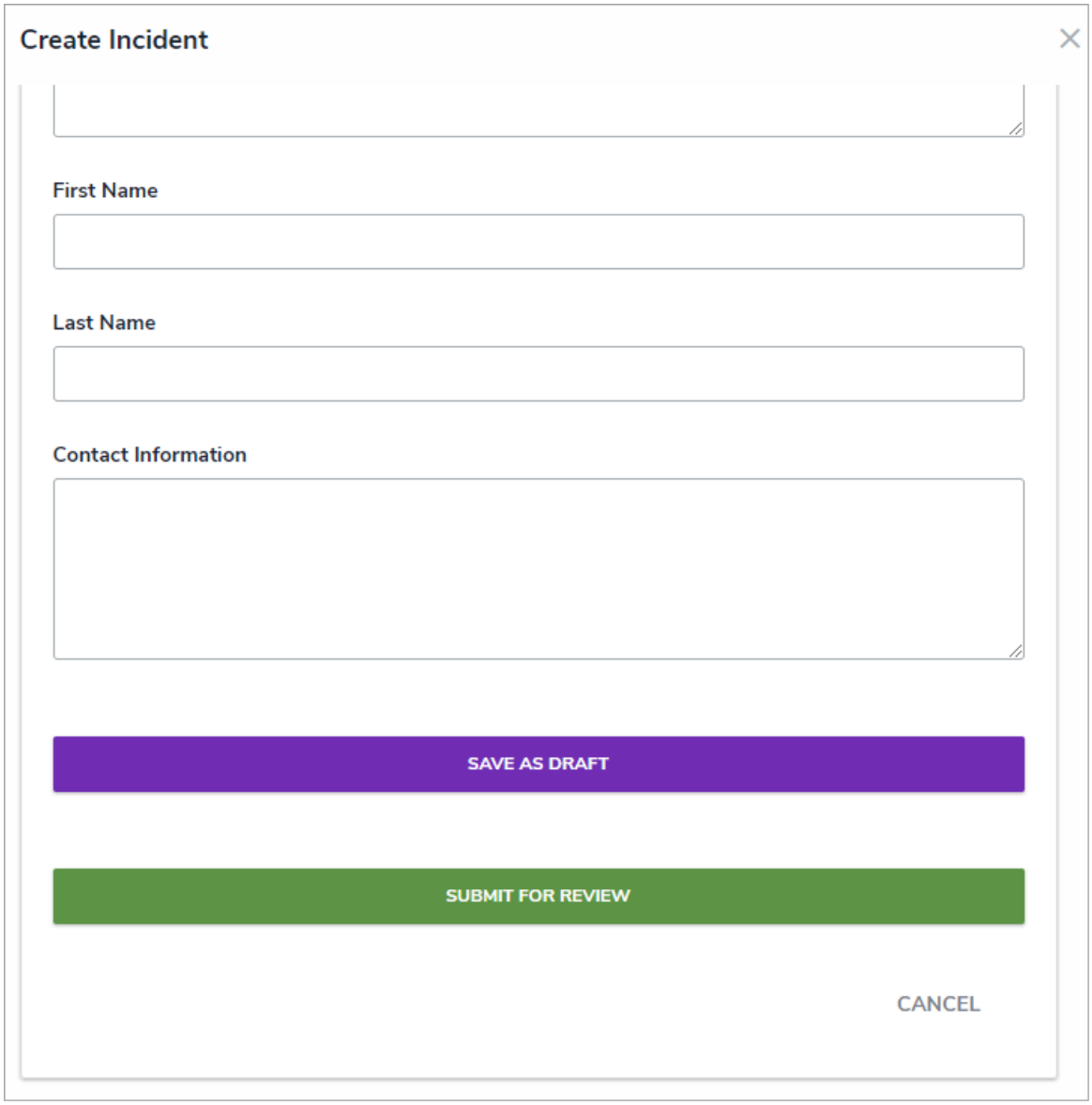
Selecting the configurable form that will be displayed when an end user creates a new object through the reference.

If no configurable form(s) have been created for the object type(s) in the relationship, the default form(s) will be selected automatically.

12. Click **Close** when finished.

State Triggers on Forms

Adding triggers to a standard form will place a button on the form that a user can click to move the object from one state to another. Triggers are configured in an object type's workflow. See the Workflows section for more information on configuring an object type's state, triggers, and transitions.



Two triggers on a standard form.

Because triggers must be associated with a state, you can add multiple triggers to a standard form, but a trigger will appear only when the object is in the state associated with the trigger. For example, users won't see the Request Additional Info trigger on the form while an object is in the Draft state because the trigger is related to the In Review state.

At a minimum, you must add a trigger associated with the **Creation** state to a standard form so users can save the object by transitioning it out of the entry state.

Roles on Forms

Roles control the data a user can create, edit, delete, view, or manage on object types and are added to object types as components. See the Add Roles to an Object Type section for more information on adding roles to object types.

Adding a role with explicit permissions to a standard form allows you to grant a user within that role permission to view specific objects, along with any other objects authorized through inferred permissions. Access to the object type is granted by adding the individual users, user groups, or specific users within a user group, to the role field on the form. Only users or user groups who have been added to the role may be selected in this field.

Users in the role can't see the object until they've been specifically selected in the role's field on the form nor can they access the object until it's in astate they're authorized to view. What the user can do with the object, including any objects accessed through inferred permissions, is controlled by the object type's workflow permissions for the selected role.

As users withglobal permissions can automatically view all the objects that belong to the object type(s) added to their role (subject to any workflow permissions), you can only add roles with explicit permissions to an object type.

EXAMPLE

Recently, an incident occurred on-site that involved violence between two employees. The Incident object, SB/Violence 2016/11/23 was created by another employee, then submitted to Kevin Darden, who is in the Incident Reviewer role with global permissions on the Incident object type. Upon reviewing the object, Kevin decides that it needs to be escalated to the Director of Human Resources, Kathleen Leighton, who will decide if an investigation is required. Because Kathleen only needs to see incidents that have been escalated, her role, HR Director, has explicit permissions to view Incident objects. Therefore, to grant Kathleen access to see this object, Kevin adds her to the HR Director role on SB/Violence 2016/11/23, so she can see and edit the object and decide if the incident requires an investigation.

A user granted access to an object through an added role on a configurable form.

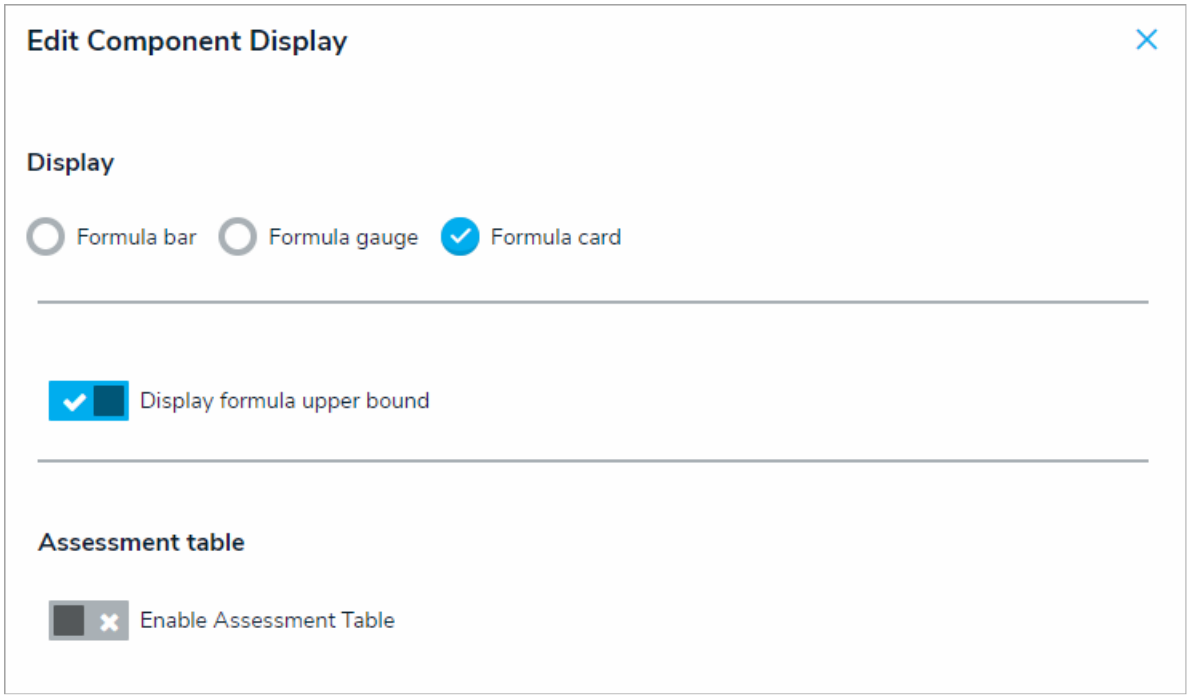
Formulas on Forms

Formulas are components that compile numeric data from variables to generate conclusions, such as Incident Severity, Estimated Damage, or Likelihood the Incident Will Recur. These conclusions can be on forms as a:

- Bar with a number, label (e.g. Low, Medium, High), or both
- Gauge
- Formula card
- Trending table or line graph.

To configure the display of the formula, add it to the canvas, then click the the icon in the top-right corner of the element to open the **Edit Component Display** window. From this window, select **Formula bar**, **Formula gauge**, or **Formula card**. For information on enabling trending data, see the Trending Tables article.

If you selected **Formula card**, you may also enable the **Display formula upper bound** option, which displays the highest maximum value assigned to all the ranges. For example, if the formula calculation was 8 and the highest possible value in the formula was 25, the card would display 8/25. If the formula is configured to show the % or $ symbols, they'll be displayed on the card along with the upper bound, if any.

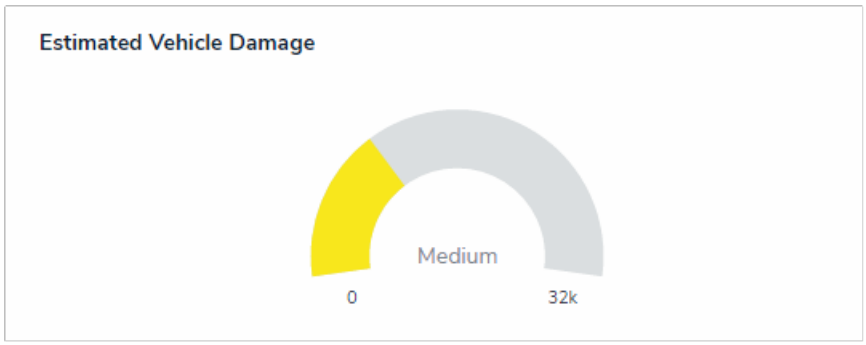


The Edit Component Display window for a formula element on the canvas.

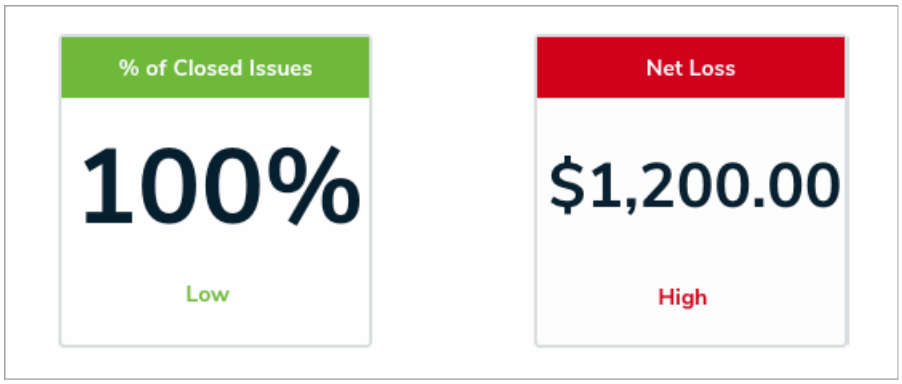
Before a formula can be added to a form, it must be added to an object type as a component. See the Add Formulas to an Object Type section for more information. For more information on adding elements to configurable forms, see the Add Elements to a Standard Form article. For more general information on formulas and how they work, see the Formulas section.

Examples

A formula bar.



A formula gauge.



Formulas displayed as cards.

A formula displayed as a line graph and trending table.

Form Actions Overview

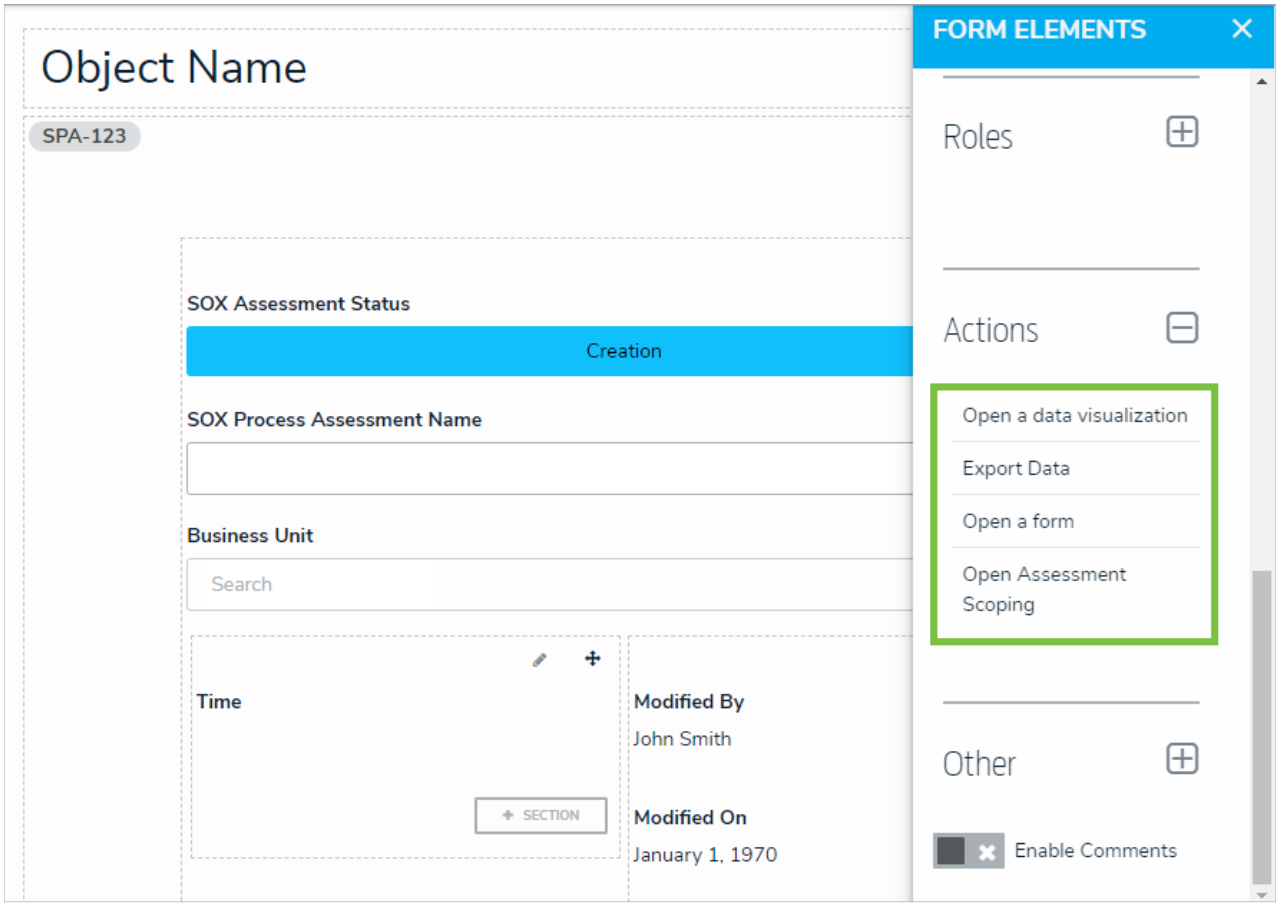
The **Actions** element allows end users to open a specified form or data visualization (including Data Analytics Export reports) by clicking a button on a standard form.

This element type is useful when the user needs to complete or print related forms throughout a process, they would benefit from being able to view report data while working in an object, or they need a summary of object data for further analysis.

Form actions include:

- **Open a form:** Opens a standard form related to the object type.
- **Open a data visualization:** Opens a report or data grid related to the object type.
- **Export Data:** Opens a report that allows users to export object data from the form's object type.
- **Open Assessment Scoping:** Opens a navigation form that allows users to view, filter, and add focus objects to an assessment.

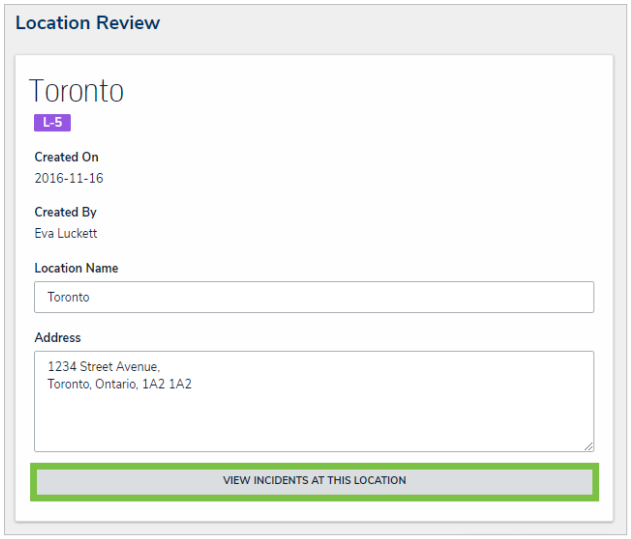
Because each form action requires data from the originating object, actions should only be added to forms for**existing** objects. Clicking an action button on a form still in the **Creation** state will display blank, read-only forms or reports with no data. If the **Open Assessment Scoping** action is added to a standard form for a new assessment, it will not be displayed until the assessment has been created.

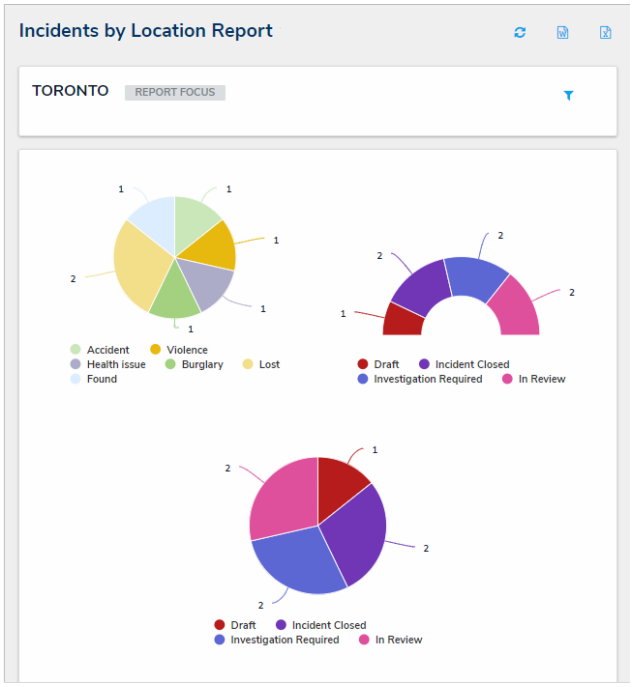


The Actions element on the Edit Configurable Form page.

Open a Data Visualization Form Action

The **Open a data visualization** action element allows end users to open a data visualization directly from an object instead of through a view. For example, if this action was added to a standard form for the Location object type and a user was working in a location object, they could click the "View Incidents at this Location" action button to view a report that outlines details about the incidents that occurred in that city.





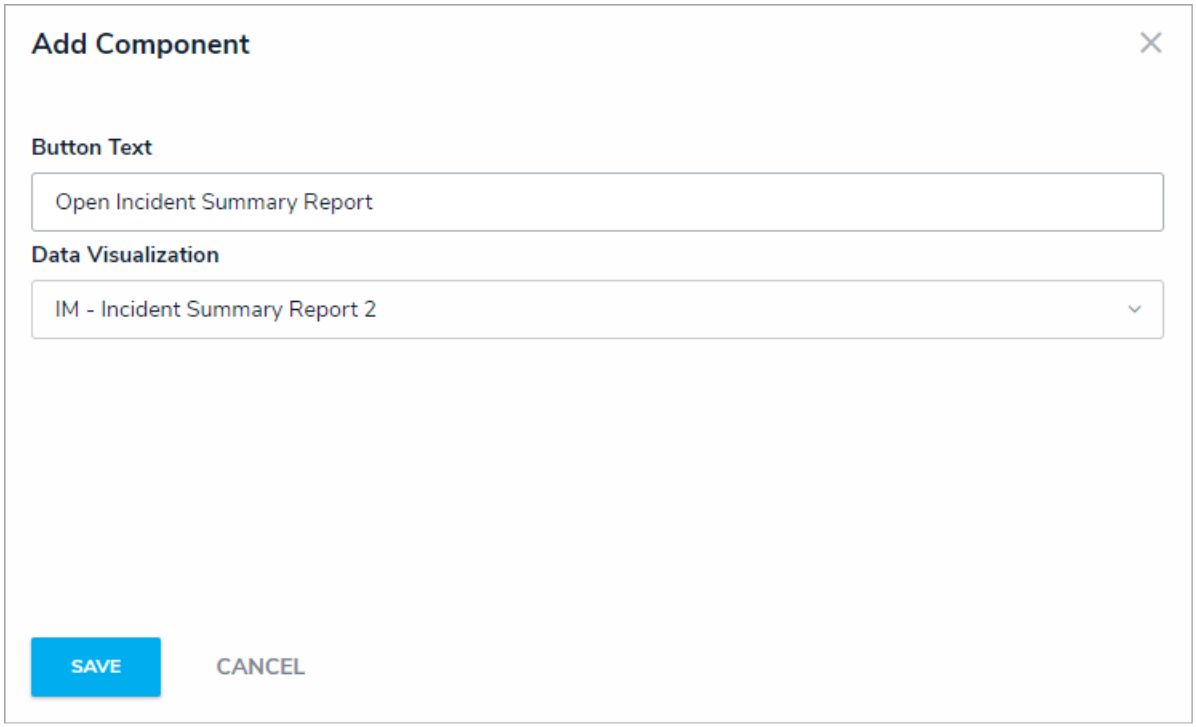
Clicking on a data visualization action on an existing object will display a related data visualization. In this case, clicking View Incidents at This Location will display the Incidents by Location Report with the Toronto object as its focus.

To add the Open a Report action to a standard form:

1. If the form is not already open, click the icon in the top bar > **Configurable Forms** in the **Views** section, then select a form.
2. Click the icon in the **Actions** section of the **Form Elements** palette to expand it.
3. Drag and drop the **Open a data visualization** element to the canvas, which will automatically display the **Add Component** screen.

> The **Open a data visualization** form action should only be added to forms for existing object types. See Form Actions Overview page for more information.

4. Enter text to display on the clickable button in the **Button Text** field.
5. Select a data visualization from the **Data Visualization** dropdown menu. You can only select visualizations that are related to the current configurable form's object type.



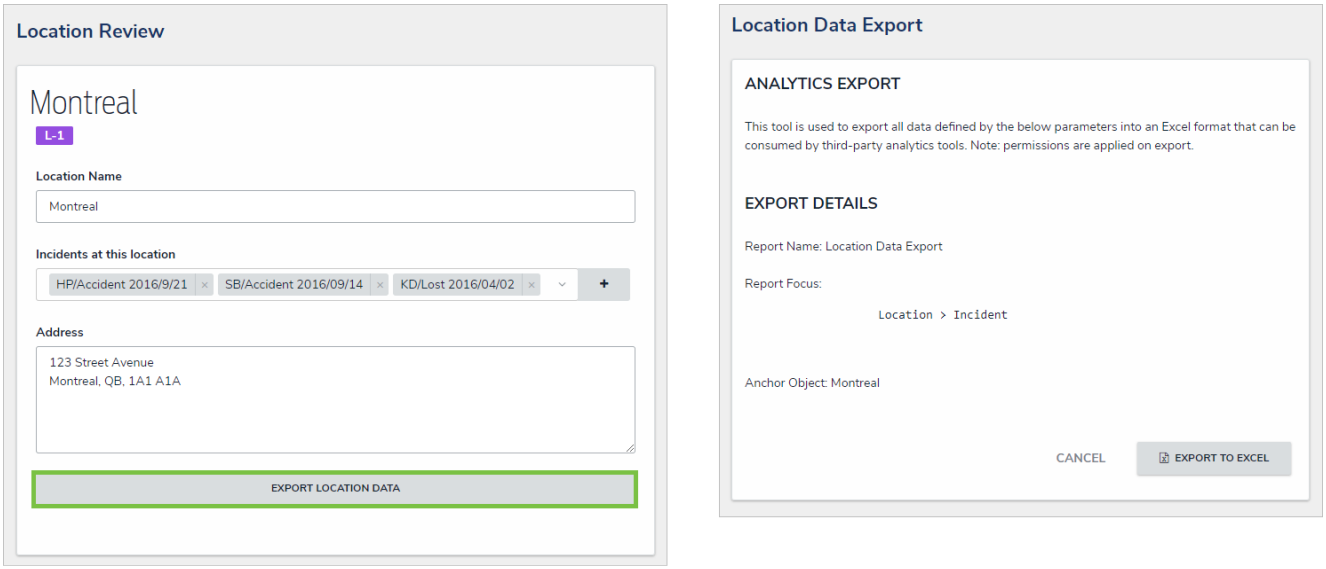
The Add Component window.

6. Click **Save** to return to the canvas.
7. To edit the action, hover your cursor over the element on the canvas, then click the icon.

Export Data Form Action

When the **Export Data** action is added to a standard form, it allows users to open a **Data Analytics Export** report directly from an object instead of an activity view or action. These report types are specifically designed to export object data (properties, fields, workflow states, relationships, and references) into an Excel spreadsheet and therefore do not display object data through report elements.

Before this element can be added to a form, a **Data Analytics** report must be created for object type. See the Create a Data Analytics Export Report article for more information.



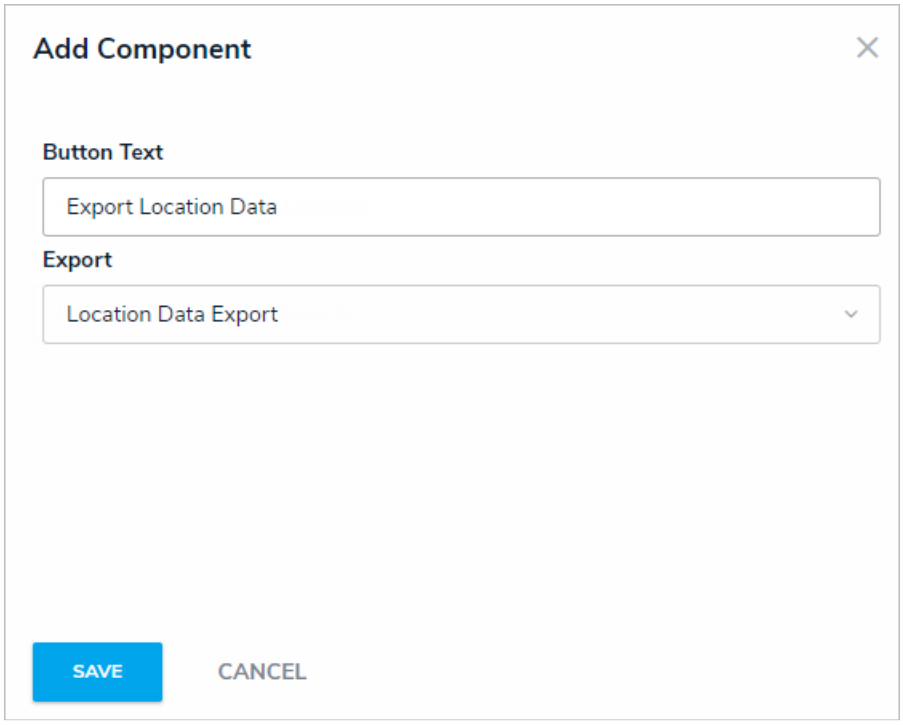
Clicking the button for the Export Data action on an object's form will display a data analytics report for that object.

To add the Export Data action to a standard form:

1. Create a data analytics report.
2. If the form is not already open, click the icon in the top bar > **Configurable Forms** in the **Views** section, then select a form.
3. Click the icon in the **Actions** section of the **Form Elements** palette to expand it.
4. Drag and drop the **Export Data** element to the canvas, which will automatically display the **Add Component** screen.

> The **Export Data** form action should only be added to forms for existing objects. See Form Actions Overview page for more information.

5. Enter text to display on the button the user will click in the **Button Text** field.
6. Select a data analytics report from the **Export** dropdown menu. You can only select a report that's related to the current configurable form's object type.

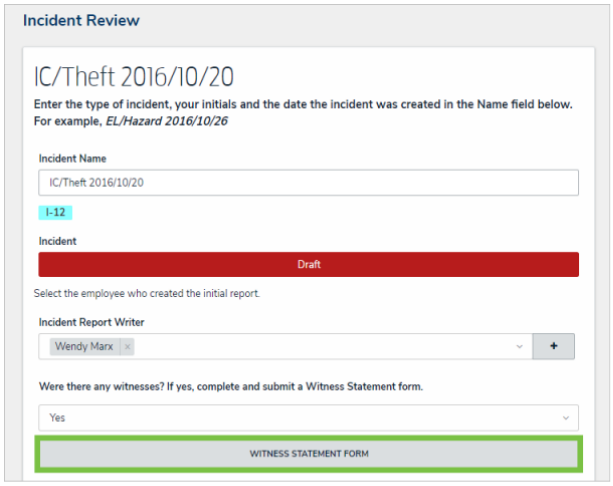


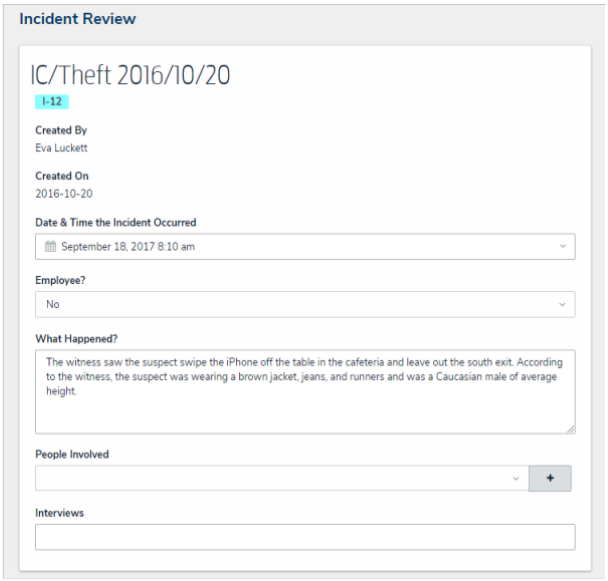
The Add Components screen for the Export Data form action.

7. Click **Save** to return to the canvas.
8. To edit the action, hover your cursor over the element on the canvas, then click the icon.

Open a Form Action

The **Open a Form** action allows end users to open a related standard form from within an existing object. For example, if the Open a Form action was added to a form for the Incident object type, a user viewing an existing incident object could click the "Witness Statement Form" action button to view, complete, or print the Incident Witness Statement form, then click Done to return to the originating object.





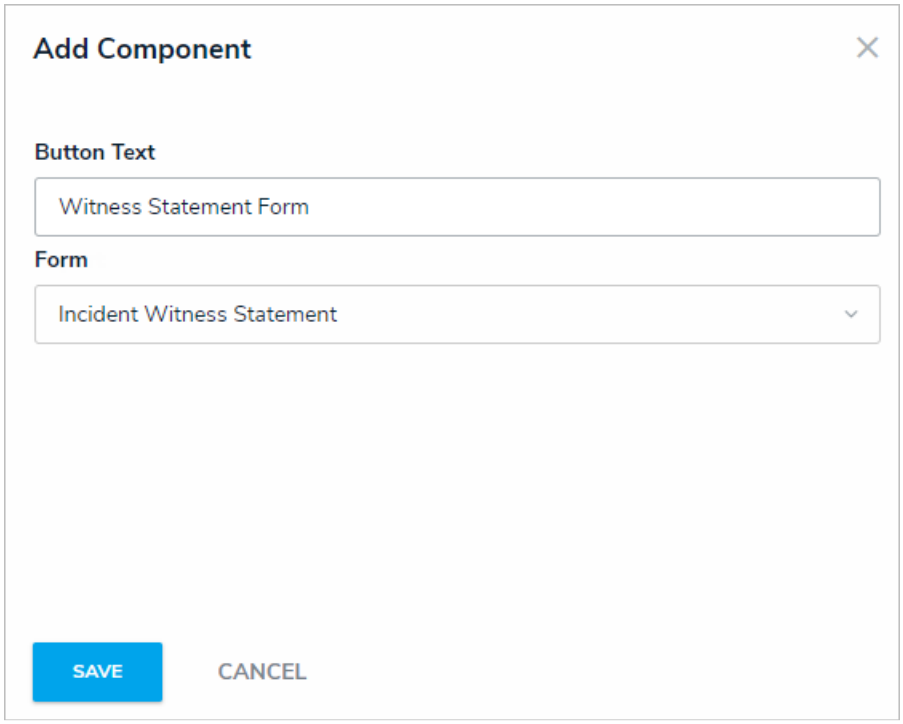
Clicking on a form action button on an existing object will open a related form. In this case, clicking the Witness Statement Form button will open the Incident Witness Statement form.

To add the Open a Form action to a standard form:

1. If the form is not already open, click the icon in the top bar > **Configurable Forms** in the **Views** section, then select a form.
2. Click the icon in the **Actions** section of the **Form Elements** palette to expand it.
3. Drag and drop the **Open a Form** element to the canvas, which will automatically display the **Add Component** screen.

> The **Open a Form** action should only be added to standard forms for existing object types. See Form Actions Overview page for more information.

4. Enter text to display on the clickable button in the **Button Text** field.
5. Select a form from the **Form** dropdown menu. You can only select forms that are related to the current configurable form's object type.



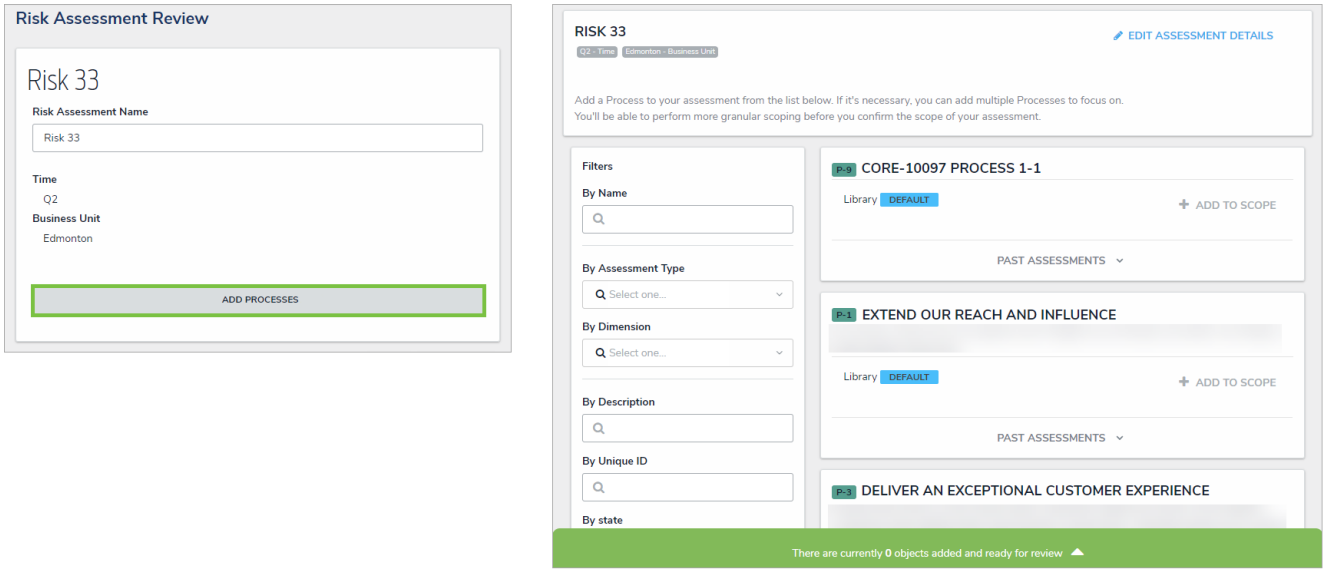
The Add Component screen for the form action element.

6. Click **Save** to return to the canvas.
7. To edit the action, hover your cursor over the element on the canvas, then click the icon.

Open Assessment Scoping Form Action

The **Open Assessment Scoping** form action provides access to the scoping tool where users can review, filter, and add focus objects to complete the launch of an assessment. This action requires the use of a navigation form created for the same object type as the assessment focus or with the same data definition as the assessment.

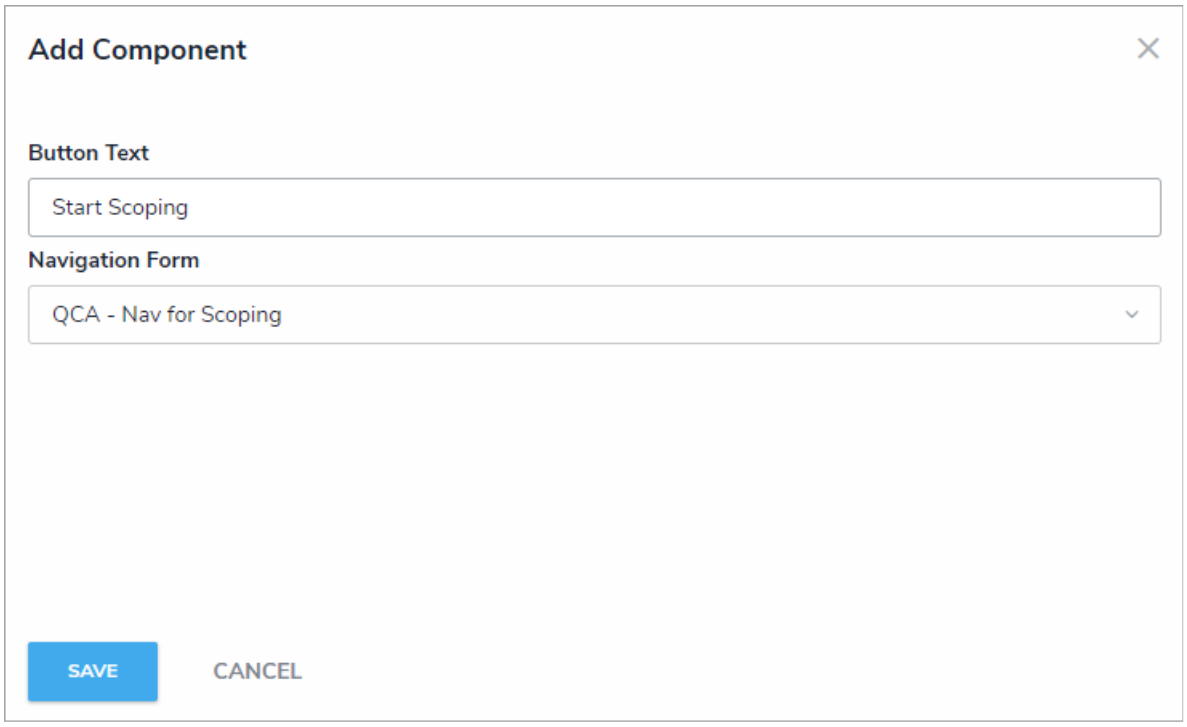
This action can be added to standard forms for assessments, however, the action will not be displayed until the assessment is moved out of the creation state.



Clicking on the Open Assessment Scoping form action on an existing assessment opens the scoping tools where focus objects can be added.

To add the Open Assessment Scoping action to a form:

1. Ensure the appropriate data definition and navigation form has been created.
2. If the form is not already open, click the icon in the top bar > **Configurable Forms** in the **Views** section, then select the appropriate form.
3. Click the icon in the **Actions** section of the **Form Elements** palette to expand it.
4. Drag and drop the **Open Assessment Scoping** element to the canvas, which will automatically display the **Add Component** screen.
5. Enter text to display on the clickable button in the **Button Text** field.
6. Select a navigation form from the **Navigation Form** dropdown menu. The options in this menu are navigation forms with the same object type as the assessment focus or with the same data definition.



The Add Component screen for the assessment scoping form action.

7. Click **Save** to return to the canvas.
8. To edit the action, hover your cursor over the element on the canvas, then click the icon.

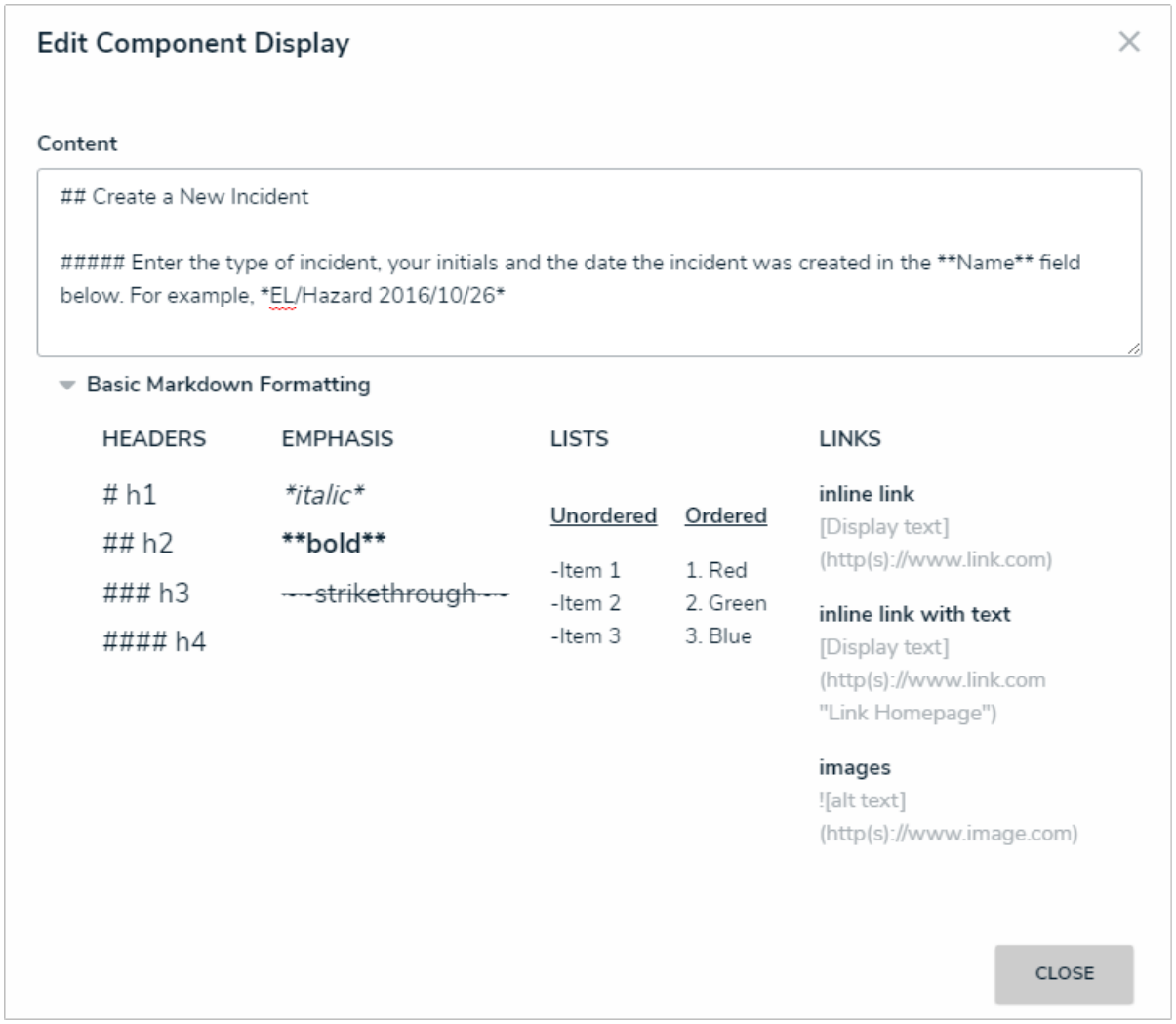
Free Form Text (Other) on Forms

Through the free form text element, you can add headers, titles, instructions, or additional information to your configurable forms. Text can be styled using Markdown formatting.

Free form text added to a form.

To add free form text on a configurable form:

1. After adding the free form text element to your form, hover your cursor over the element, then click the icon.
2. Enter the text in the **Content** text box.
3. **Optional:** Apply Markdown formatting to the text. To view popular styles, click the icon next to **Basic Markdown Formatting**.



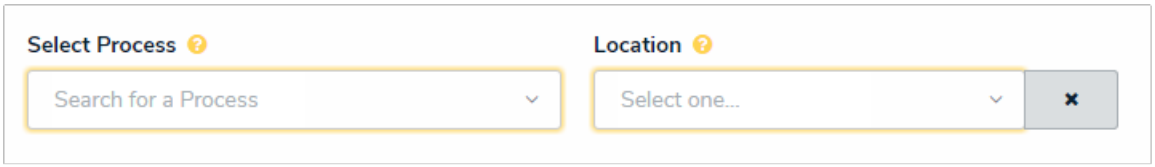
Free form text styled with Markdown formatting.

4. Click **Close** when finished.

Assessment Context (Other) on Forms

If you're creating a configurable form for an assessment, you must include the **Assessment Context** element, which will add fields for the assessment's dimensions onto the form. If this element is not added to the form, you will not be able to successfully create a new assessment object.

This element is not available to forms for non-assessment object types.

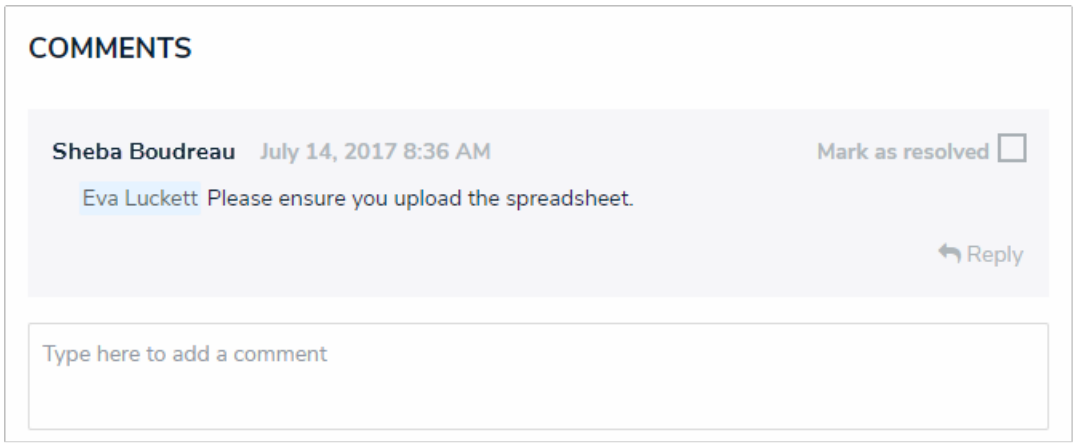


The Assessment Context element on a form. This element adds the assessment's dimensions to the form, which are required when creating a new assessment instance.

Comments

The **Comments** element allows users to leave comments on objects. When enabling comments on a form, note that:

- Clicking **Reply** will create a new comment thread.
- You can tag other users in both comments and replies. To do so, type the @ symbol and begin typing the user's name, then click to select the user. You can tag more than one user per comment or reply.
- Tagged users will receive an email notification with a link to the object where the comment is posted, however, if that user doesn't have permission to view the object, he or she will not be able to view the object or comment.
- If a user makes a comment and their account is later deleted, their comment remains intact.
- To edit a comment, click the text within the comment. Comments marked as resolved cannot be edited.
- Disabling comments on a form does not delete the comments. They will reappear on the form once comments are enabled.
- Comment activity is captured in the Audit Trail.



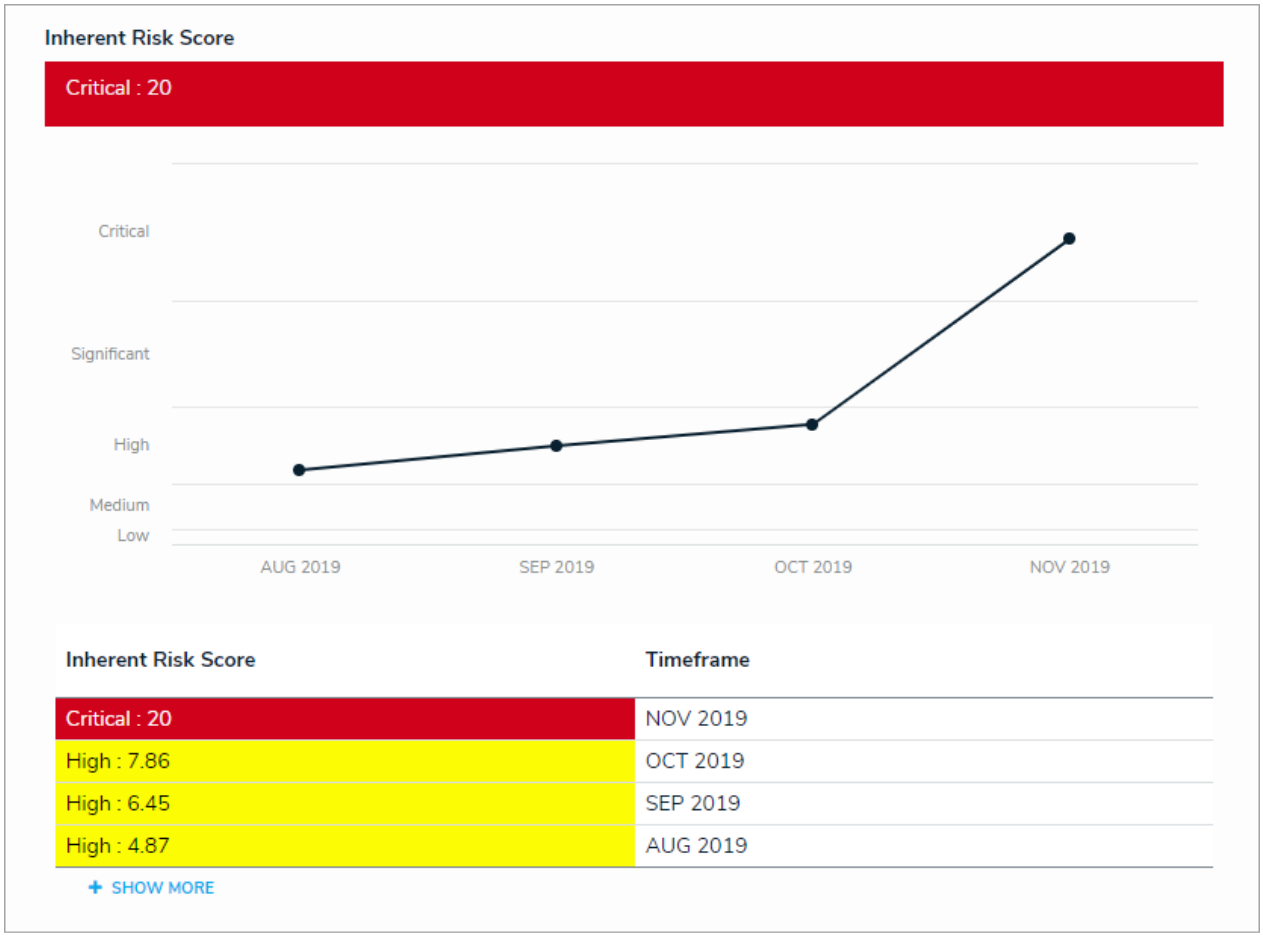
A comment as it appears on a form.

To enable comments, which appear at the bottom of an object, click the icon beside **Enable Comments** in the **Form Elements** palette. To disable comments, click the icon.

Trending Tables

Trending tables display single select list, numeric field, and formula data in a line graph or table on standard configurable forms and repeatable forms, allowing users to analyze how objects or values change over multiple timeframes. For example, trending tables could be used by:

- Risk users to compare the current risk score to previous risk scores within a specific timeframe.
- Risk executives to run a repeatable form on a report to review how their top 10 risks are trending.
- Incident users to compare the number incidents logged at a specific location and timeframe.
- Users who review dashboard reports to identify important trends in the data (e.g., Incidents by Location).



Trending data displayed as a line graph and table on a form. Clicking Show More will display more data in both the graph and table.

Trending data can be configured for daily, weekly, monthly, quarterly, bi-annual, or annual timeframes. Clicking **Show More** will populate additional trending data on both a trending table and line graph, if available.

Important Notes

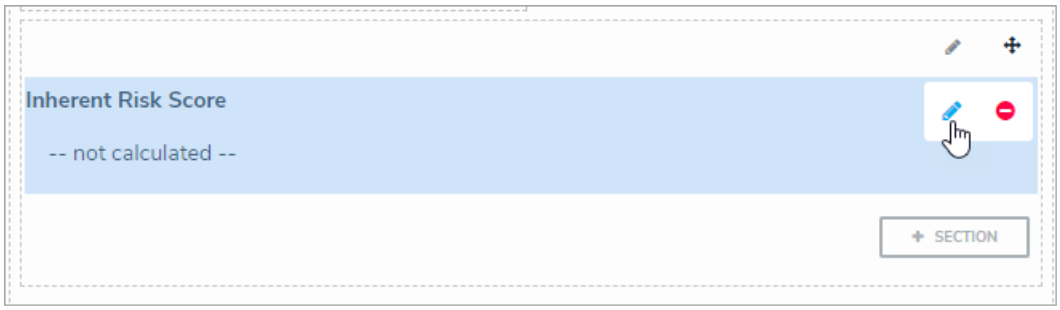
- When selecting a timeframe, note that:
  - The trending form element only shows historical values. For example, if you're reviewing monthly trends and the current date is May 19, 2019, the most recent value displayed would be for April 2019.
  - The data displayed uses values that are valid at the end of the timeframe. For example, the monthly value for March 2019 is based upon the valid data that was available at 11:59 p.m. on March 31, 2019.
  - These elements are populated using available data only. For example, if there is only enough data to populate three values for the selected timeframe, only three values will be displayed.
- Some organizations may not have enough data to use this feature for longer timeframes (i.e., quarterly, bi-annually, and annually).

- For best results:
    - Add two to three, but no more than ten trending elements per form.
    - Add no more than 100 trending elements across all repeatable forms. For example, if a report has 25 repeatable form objects, there should be no more than 4 trending objects per repeatable form for a total of 100.

Instructions

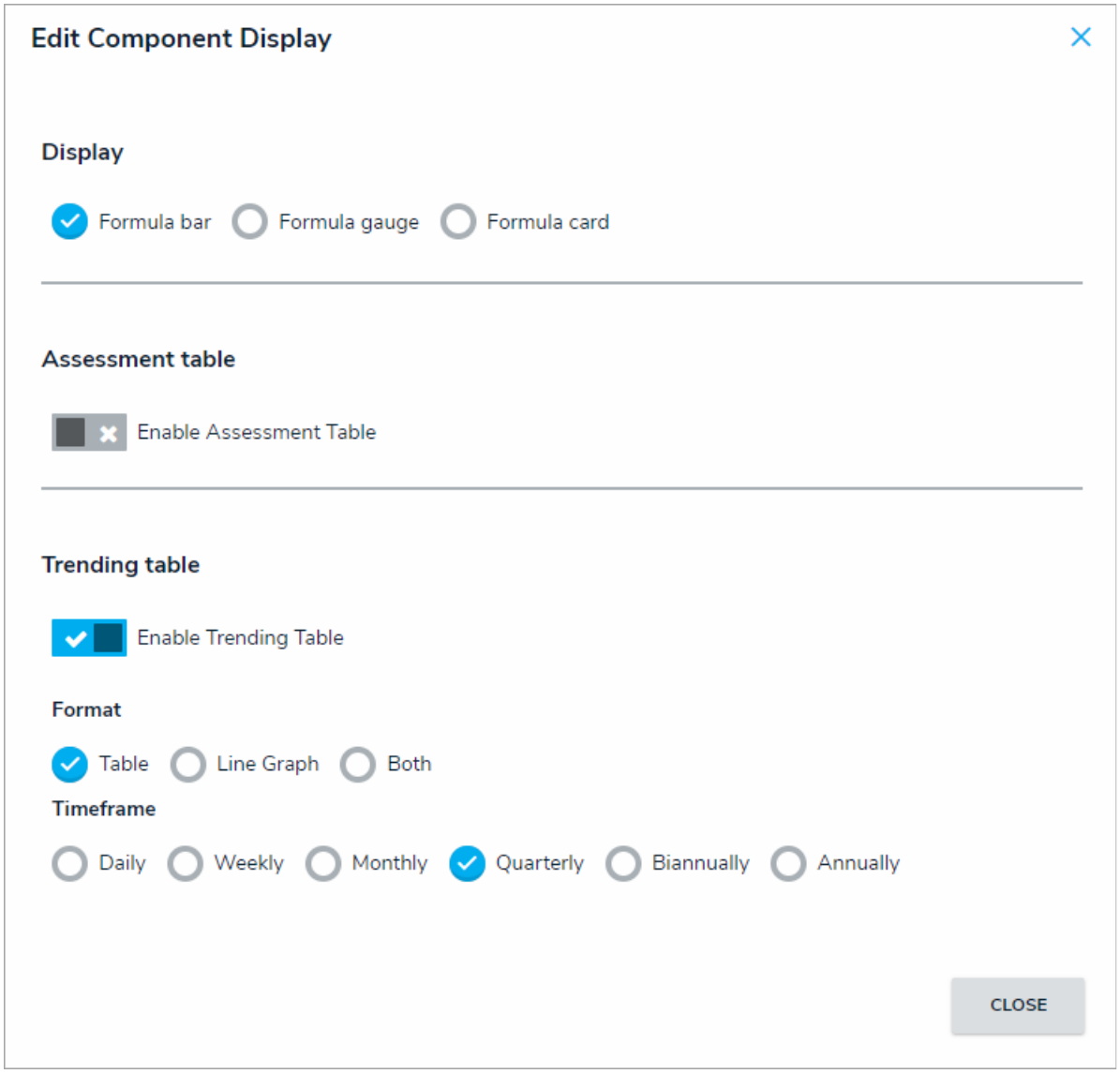
To display trending data on a standard form:

1. Ensure the object type selected for the form has a single select list, numeric field or formula added to its components. Note that recently added fields or formulas may not have enough data for longer timeframes.
2. Create or navigate to appropriate standard form.
3. Drag and drop the field or formula from the **Form Elements** palette to a section on the canvas.
4. Hover your cursor over the field or formula, then click the icon to open the **Edit Component Display** window.



The pencil icon on a form element.

5. Click the icon beside **Enable Trending Table.**



The Edit Component Display window. The trending table options are hidden until enabled.

6. Choose how the data will be displayed by selecting **Table**, **Line Graph**, or **Both** in the **Format** section.
7. Select a timeframe for the trending data in the **Timeframe** section.

> Trending tables and line graphs only show available data. For example, if there is only enough data to populate three values within a selected timeframe, only three values will be displayed. See the **Important Notes** section above for more information on the timeframes.

8. Click **Close** when finished.

Form Conflict Overview

If a user belongs to two or more roles that have permission to view the same object, but each role should be accessing that object through a different standard form including forms displayed in a palette, a **form conflict** exists. By default, Core will display the most recently created form to the user; however, you can identify forms that are potentially in conflict by impersonating the user, navigating to one of the forms, then assigning priorities to the forms to control which one should be displayed first.

EXAMPLE

Caroline is a user added to the Risk Owner and Control Owner roles, both of which have permission to access the Control object type. You create two forms for the Control object type: the Control Owner form for the Control Owner role, which is completely editable, and the Risk Owner form for the Risk Owner role, which is read-only except for a few fields. As the control owner for Control 1, Caroline needs to access this object and make changes; however, because the Risk Owner form was created after the Control Owner form, the Risk Owner form is displayed, preventing her from making the required changes. To remedy this, you edit both forms to assign the Control Owner form a 2 priority and Risk Owner a 1 priority. With these forms prioritized, the next time Caroline needs to edit a control object she owns, she'll be able to make all the changes as needed.

For information on checking for form conflicts and assigning form priorities, see theIdentify a Conflict & Set a Form's Priority article.

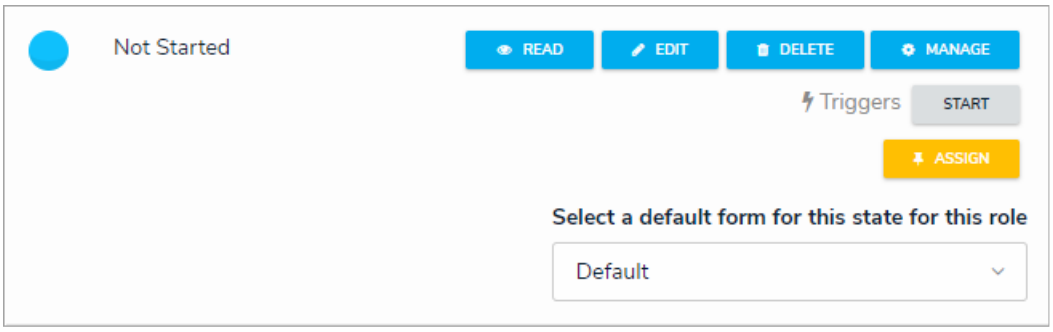
Identify a Conflict & Set a Form's Priority

If a user belongs to two or more roles that have permission to view the same object, but each role should be accessing that object through a different standard form, including forms displayed in a palette, a form conflict exists. To resolve this, administrators can use the impersonation feature to identify any conflicts, then assign number priorities to the forms to ensure the correct form is displayed.

> By default, all forms are assigned a 0 priority. If no form conflict exists, the forms will be displayed based on the administrative configurations.

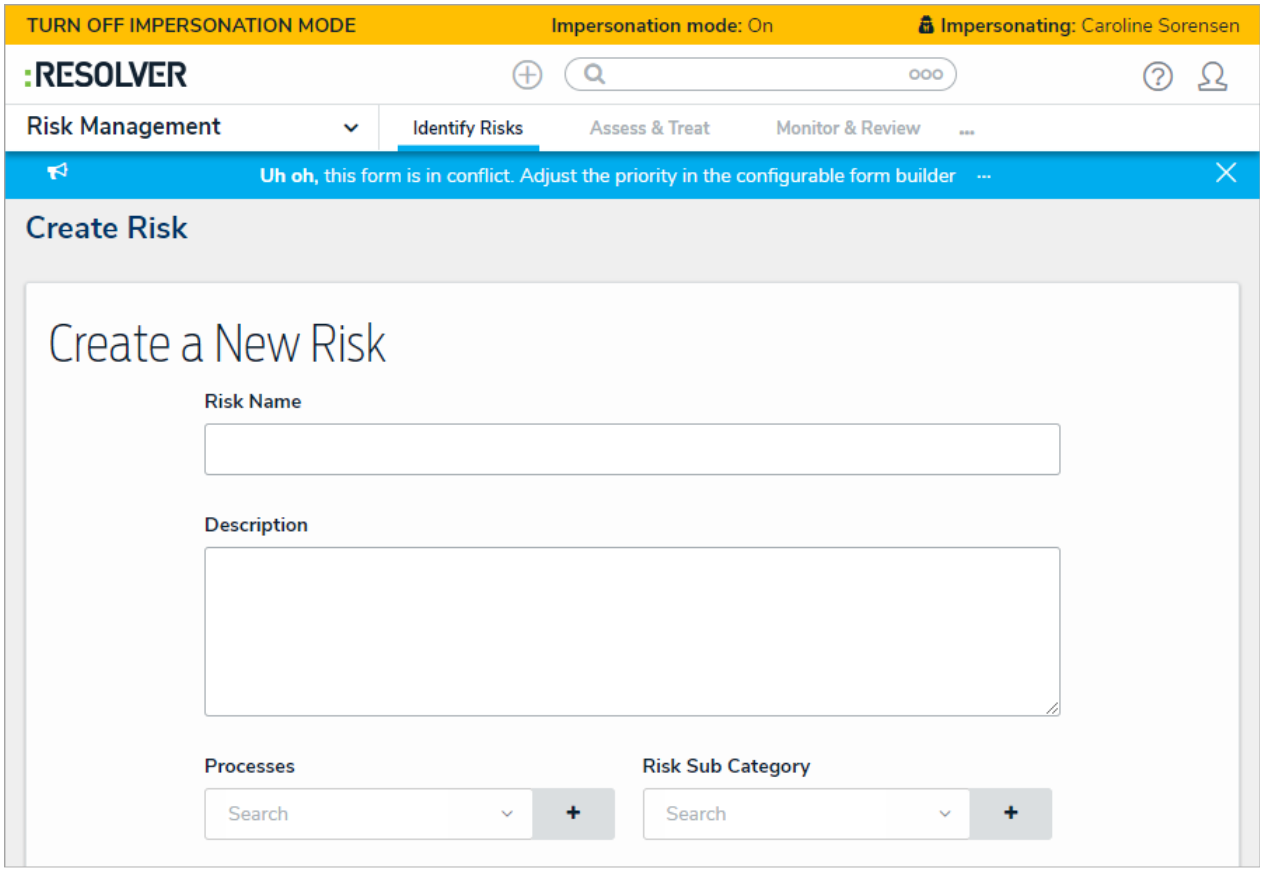
To identify a conflict and set a form's priority:

1. Assign the user you'll impersonate to an object by:
    - Adding the user via the role element on a form, then creating a view using the object type's default form; or
    - Assigning the user via the **Assign** permission on the role, ensuring the **Default** option is selected for the appropriate state in the **Select a default form for this state for this role** dropdown menu in the role's workflow permissions. This method should be selected if you'll be using the search function to locate the object once **Impersonation Mode** is activated.



The Assign option for a role's workflow permissions with the Default option selected.

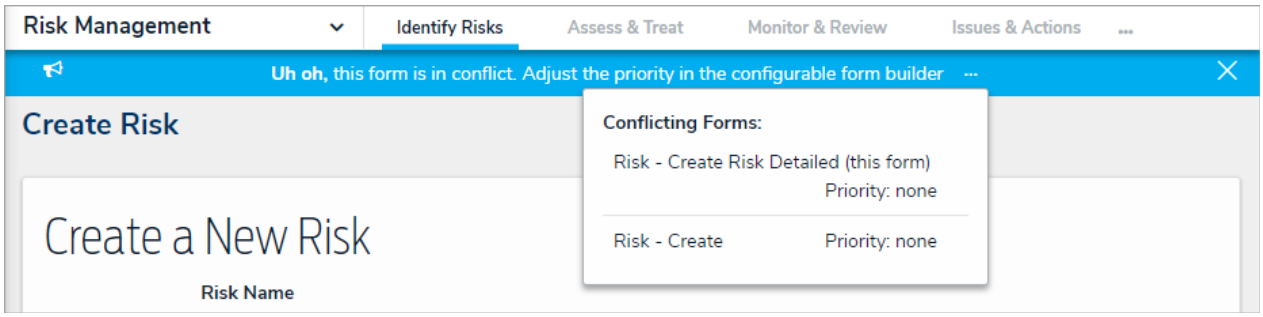
2. Click the icon in the top bar > **Users** in the **People** section.
3. Click **Impersonate** beside the name of the user to turn on **Impersonation Mode**. See the Impersonate Another User article for more information on using this feature.
4. Navigate to the object according to the assignment method in step 1. If a conflict exists, a blue banner will be displayed.



Viewing a form that's in conflict while in Impersonation Mode.

If a form and a palette are both in conflict, two blue banners will appear at the top of your screen.

5. Click the ellipsis in the blue banner to display the forms in conflict.

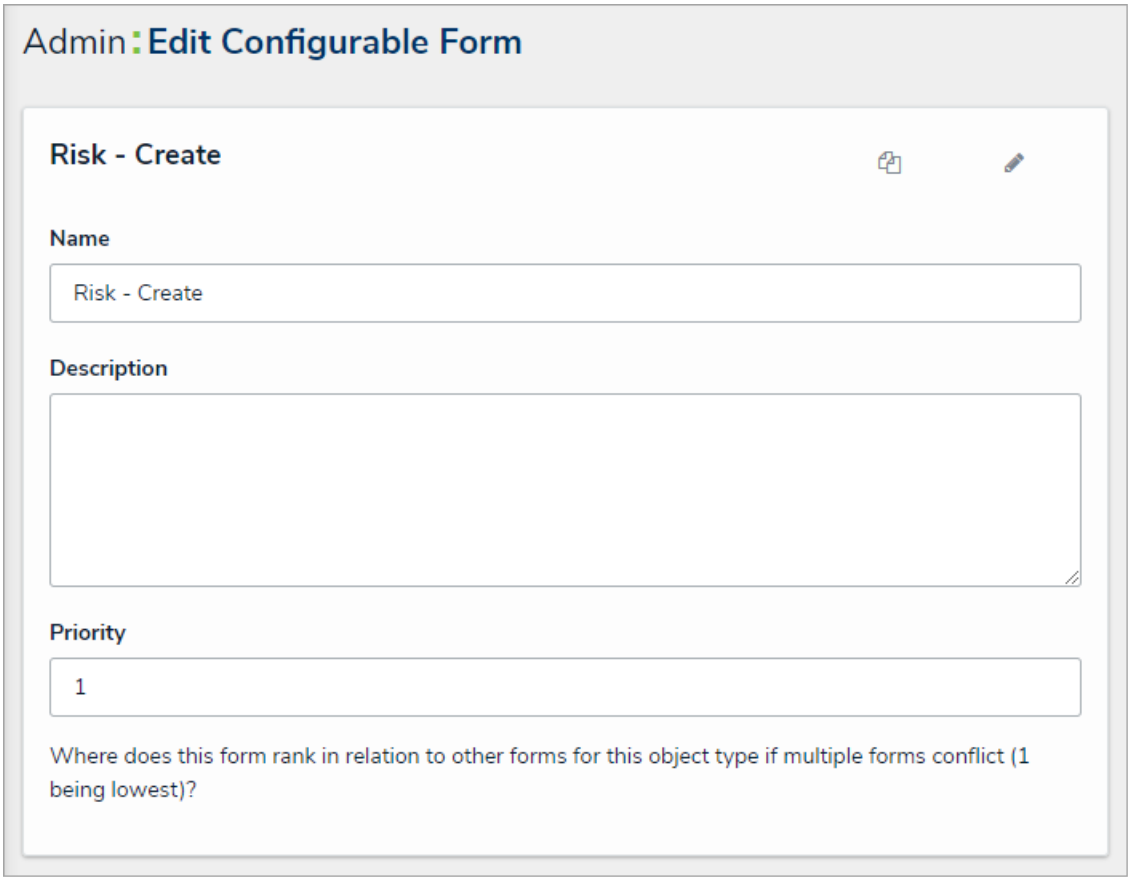


Clicking the ellipsis in the blue banner will display all the forms that are currently in conflict for the impersonated user.

6. Click a form to display the **Edit Configurable Form** page, which will disable **Impersonation Mode**.
7. Click the icon at the top of the page to display the **Name**, **Description**, and **Priority** fields.
8. Enter a number in the **Priority** field, noting that:
    - This field accepts up to nine numeric characters, with a range of -999999999 to 999999999.
    - The higher the number entered, the higher the form's priority, with negative numbers being lower (e.g. -1 is a lower priority than 0). For

example, if you assign one conflicting form a 1 priority and the other conflicting form a 2 priority, the form with a 2 priority would be displayed before the form with a 1 priority.

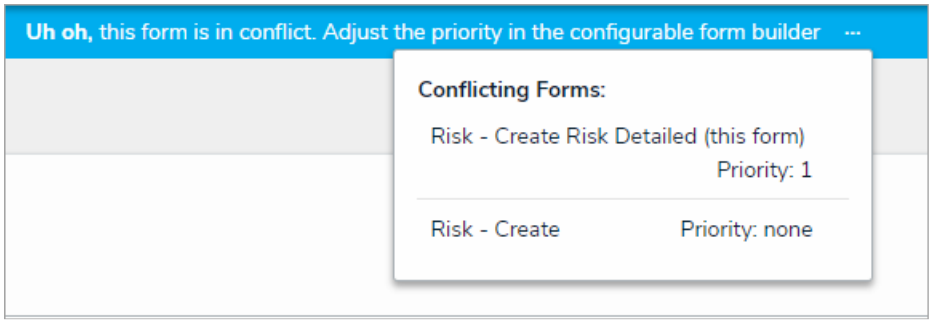
- By default, all forms are assigned a 0 (none) priority.



Assigning a priority to form to remove any form conflicts.

9. **Optional:** Repeat the steps above to assign other conflicting forms a priority. Note that if the form you wish to display to the user has been assigned a higher priority than all other conflicting forms, it's not necessary to assign lower priorities to those forms.

Entering **Impersonation Mode** for the user after assigning a priority will still display the blue banner to indicate that a potential form conflict exists. However, clicking the ellipsis will display the priorities assigned to the conflicting forms and allow you to edit them as needed.



Clicking the ellipsis in the blue banner will display the forms' priorities, if any.

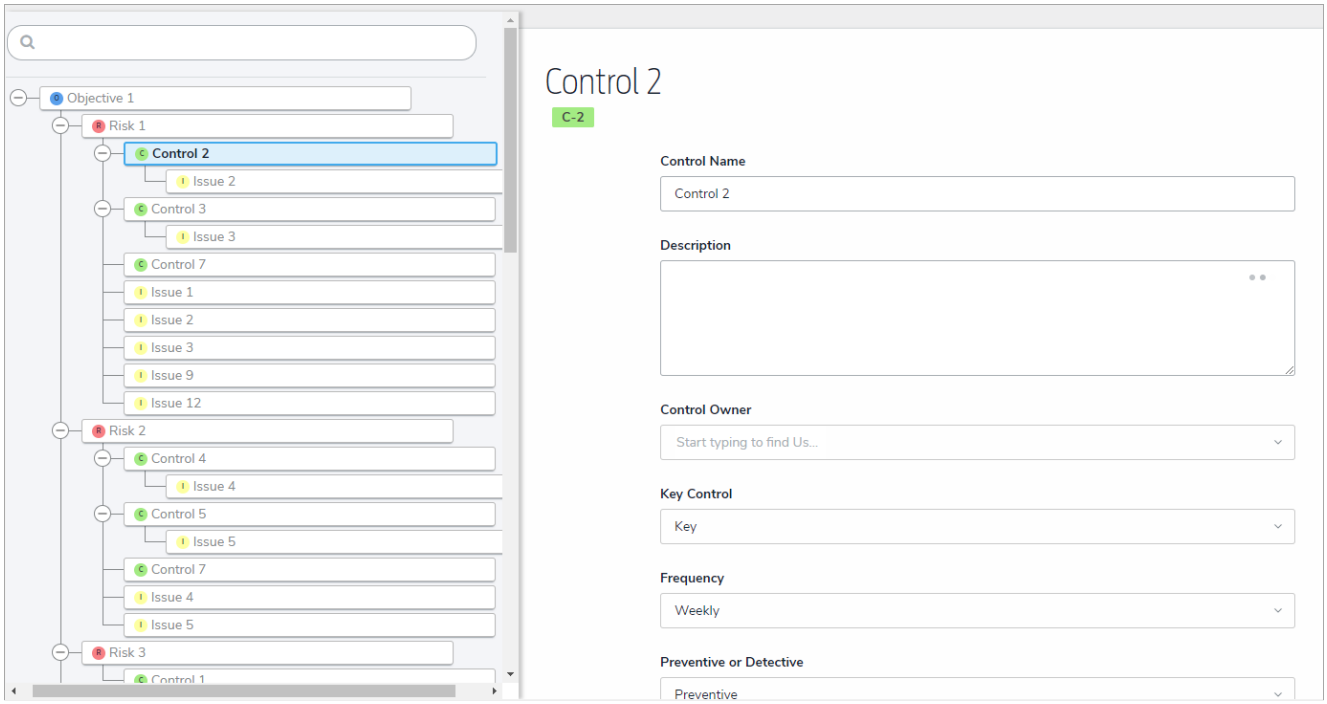
Navigation Form Overview

A **navigation form** is configurable form type that uses a data definition to provide visual context for users working with objects or assessments. This form type makes it easier to understand how each object relates to one another while providing easy access to those objects without leaving the current form.

Whereas a standard form merely contains the elements and fields added by an administrator, objects in a navigation form are represented as a hierarchical tree with expandable nodes in a panel to the left, starting with the object from the anchor object type and moving down the data path. Clicking one of these objects will display a standard form or data visualization to the right of the tree, without leaving the navigation form.

If a user doesn't have permission to view a specific object, that object and any others below it in the tree will not be visible. Users can narrow down which objects are displayed in the tree by using the search field in the left panel.

Navigation forms are available to end users through a view, through the link emailed to a user through the Messaging action in a workflow, or when clicking an object on the My Tasks page. These forms are also used to scope and launch assessments. See the Scope & Launch section for more information.

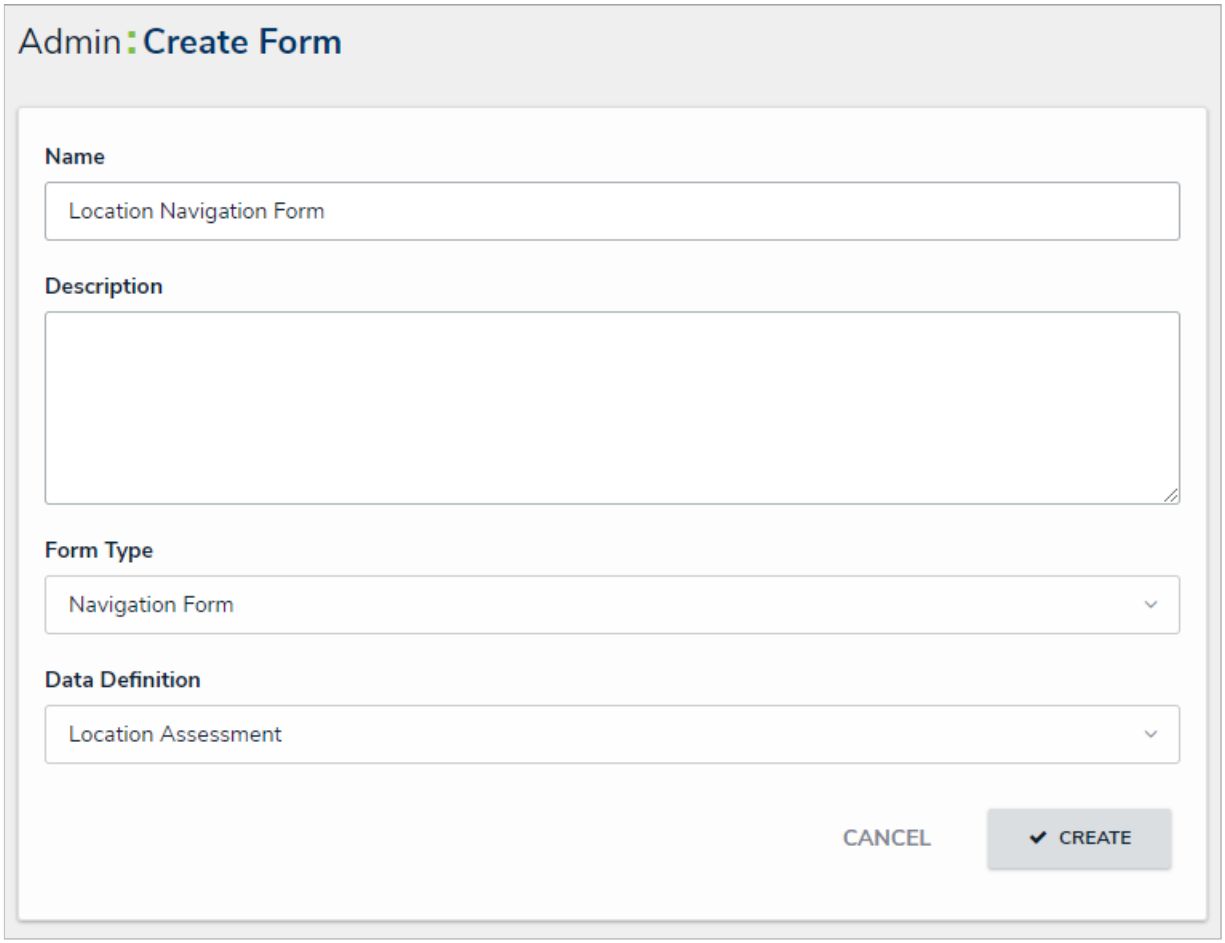


A navigation form as it appears to users in a view.

Create a Navigation Form

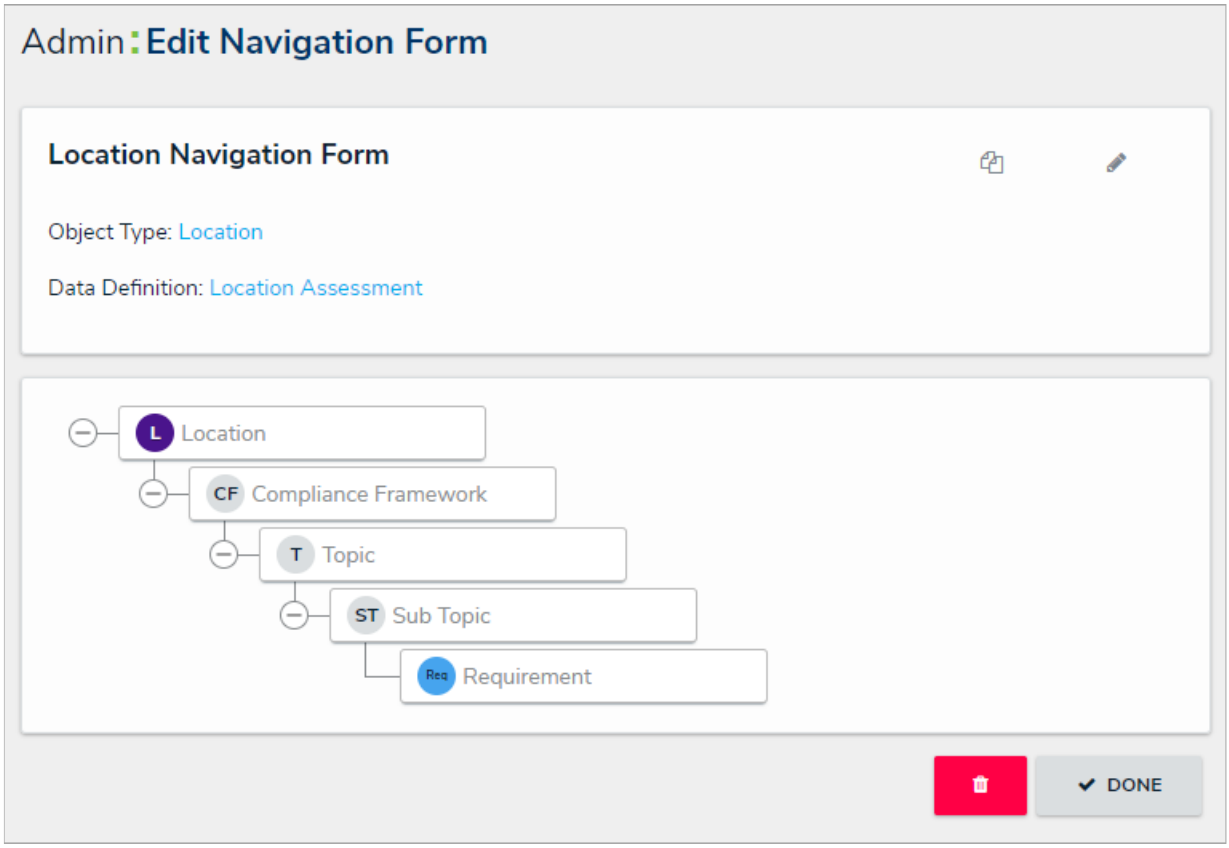
To create a new navigation form:

1. Click the icon in the top bar > **Configurable Forms** in the **Views** section.
2. Click **Create Configurable Form**.
3. Enter the name of the form in the **Name** field.
4. **Optional:** Enter a brief description of the form in the **Description** field, which will appear below the form's name while editing the form and on the **Configurable Forms** landing page.
5. Select **Navigation Form** from the **Form Type** dropdown menu.
6. Select a data definition from the **Data Definition** dropdown menu. This will determine which objects will appear in the tree on the form. If a user doesn't have permission to view an object, that object and any others below it in the tree will not be visible. See Data Definitions for more information.



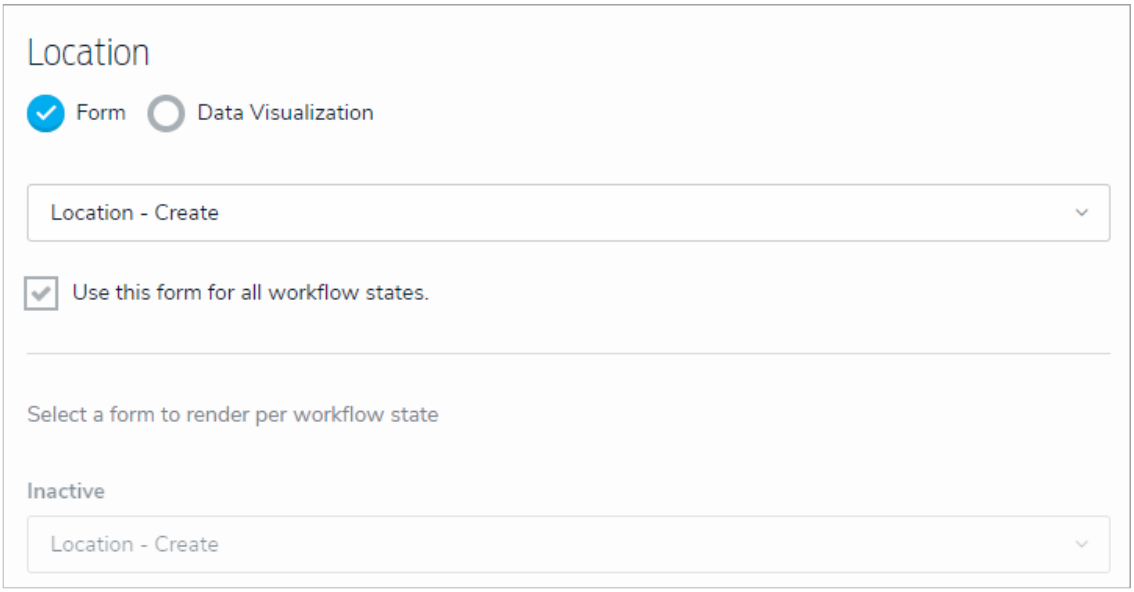
The Create Form page.

7. Click **Create** to display the **Edit Navigation Form** page.



The Edit Navigation Form page.

8. Click the first object type in the tree (this is the anchor object type).
9. Select either **Form** or **Data Visualization** to choose what's displayed to a user (a standard form or report) when they click an object type node in the tree.
    - If you selected **Form**:
        a. Select a form for the object type from the dropdown menu.
        b. **Optional:** Deselect the **Use this form for all workflow states** checkbox if you wish to specify which form to display for each state in the object type's workflow. If you deselected this checkbox, select a form from the dropdown menus below.



Selecting a standard form to display when a user clicks an object type in the nav form.

- If you selected **Data Visualization**:

    a. Choose a report for the object type from the **Select a data visualization to render** dropdown menu. If you do not select a specific form or report to display, any form selected in the object type's workflow permissions for its current state will display by default.

Selecting a data visualization to display when a user clicks an object type in the nav form.

> Data grids are not currently supported in navigation forms.

> It's recommended that repeatable form reports are not added to nav forms as doing so may cause performance issues, depending on the amount of data displayed in the form or report.

10. Continue clicking through each object type in the tree to choose which form or report is displayed to the user.
11. Click **Done** when finished.

Once the form is successfully created and configured, it can be added to a view, the Messaging action in a workflow, or when clicking an object on the My Tasks page.

Edit or Delete a Configurable Form

To edit or delete a configurable form:

1. Click the icon in the top bar > **Configurable Forms** in the **Views** section.
2. Click the form you want to edit or enter the name of the form in the **Search** field, then click it to display the **Edit Configurable Form** page.
3. To edit a navigation or standard form's name, description, and/or priority, click the icon next to the form's name.
4. To edit a standard form's title, section, or element, click the icon on the canvas to see additional options.
5. To delete the configurable form, click the icon, then click **Yes** to confirm.
6. Click **Done** when finished.

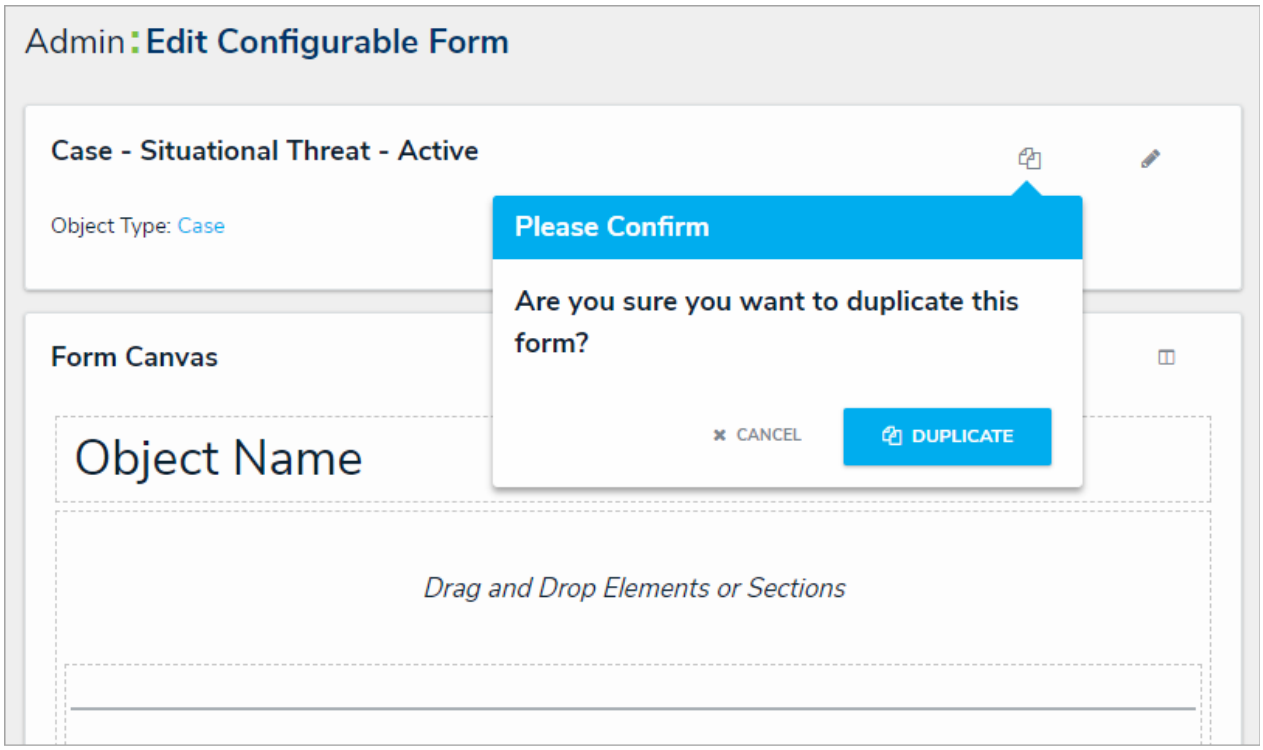
Create a Duplicate Configurable Form

Creating a duplicate form allows you to create similar forms (for both navigation and standard form types) for the same object type without having to entirely recreate a new form.

Newly duplicated forms are created with a _COPY suffix (e.g. creating a duplicate of a form called “New Incident” will create a new form called “New Incident_COPY”). You can edit the name and description for duplicate navigation and standard forms, and the elements and sections on a duplicate standard form, however, a duplicate form can only be associated with the same object type as the original form.

To create a duplicate configurable form:

1. Click the icon in the top bar > **Configurable Forms** in the **Views** section.
2. Click the form you want to duplicate or enter the name of the form in the **Search** field, then click it to display the **Edit Configurable Form** page.
3. Click the icon to the far right of the form’s name.
4. Click **Duplicate** to confirm and to display the **Edit Configurable Form** page for the duplicate.



Duplicating a form.

5. If needed, click the **X** icon to close the **Form Palette**, then click the icon to the right of the form’s name to edit the name and description as necessary.

A duplicate form. Duplicate forms are created with a _COPY suffix in their names.

6. Click the icon to display the **Form Palette** and add form elements as needed.

> See the Add Elements to a Standard Form section for more details on configuring each form element.

Data Visualizations Overview

The **Data Visualizations** feature allows you display or export object data through a **report**, **data grid**, or **export report**. All data visualizations require a focus eligible data definition and one more or more data series (for reports and data grids).

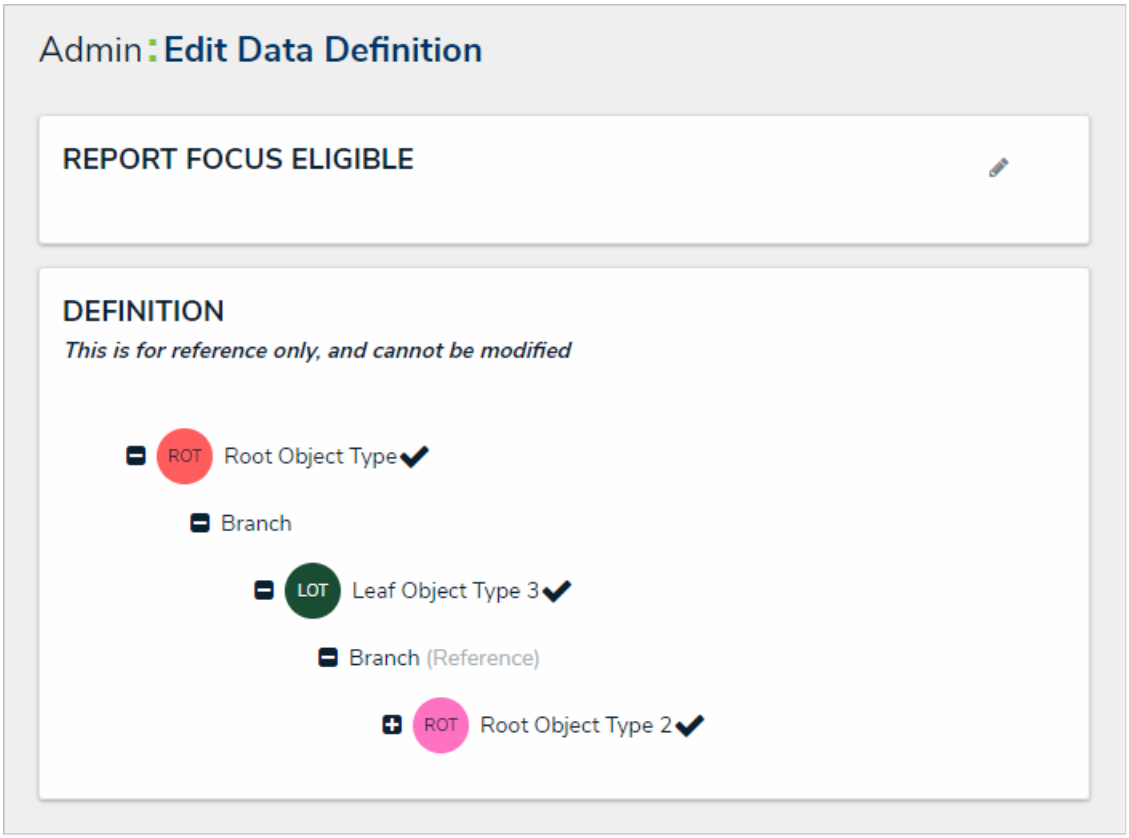
Once a data visualization has been added to an application, end users can perform a variety of actions, including starring reports, applying filters, and editing or exporting data.

See the Reports, Data Grid, or Data Analytics Export sections for more information on each data visualization type.

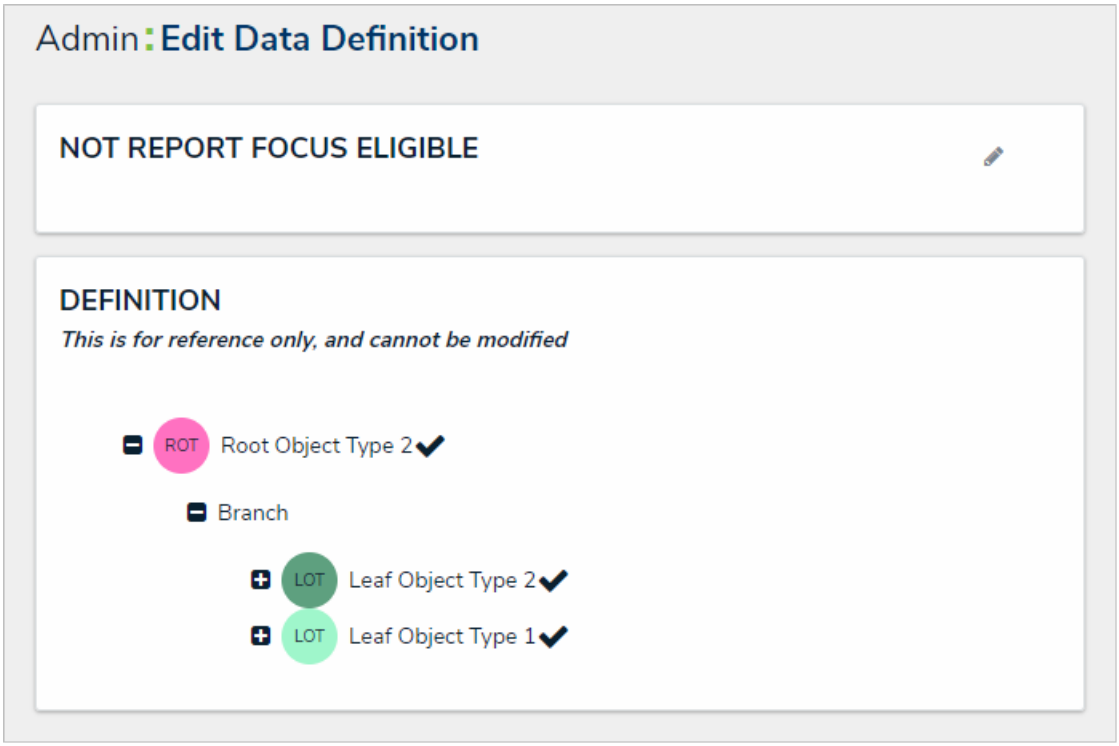
Focuses & Data Series

Data visualizations rely on two types of data definitions: focuses and data series.

A **focus** is a data definition that broadly specifies which object type's data will be displayed in a data visualization. A data definition cannot be focus eligible if more than one unique object types on the same level have been selected. More specifically, when creating a focus eligible definition, you can only select one unique leaf (object type) per each branch in the data path tree. A definition can be focus eligible with multiple selections on one leaf **only** if those selections are for the same object type.



A focus eligible data definition. This data definition is eligible because only one leaf (object type) has been selected per each branch on the data path.



A data definition that is not focus eligible because more than one leaf has been selected on a single branch in the data path, however, this definition may be used as a data series.

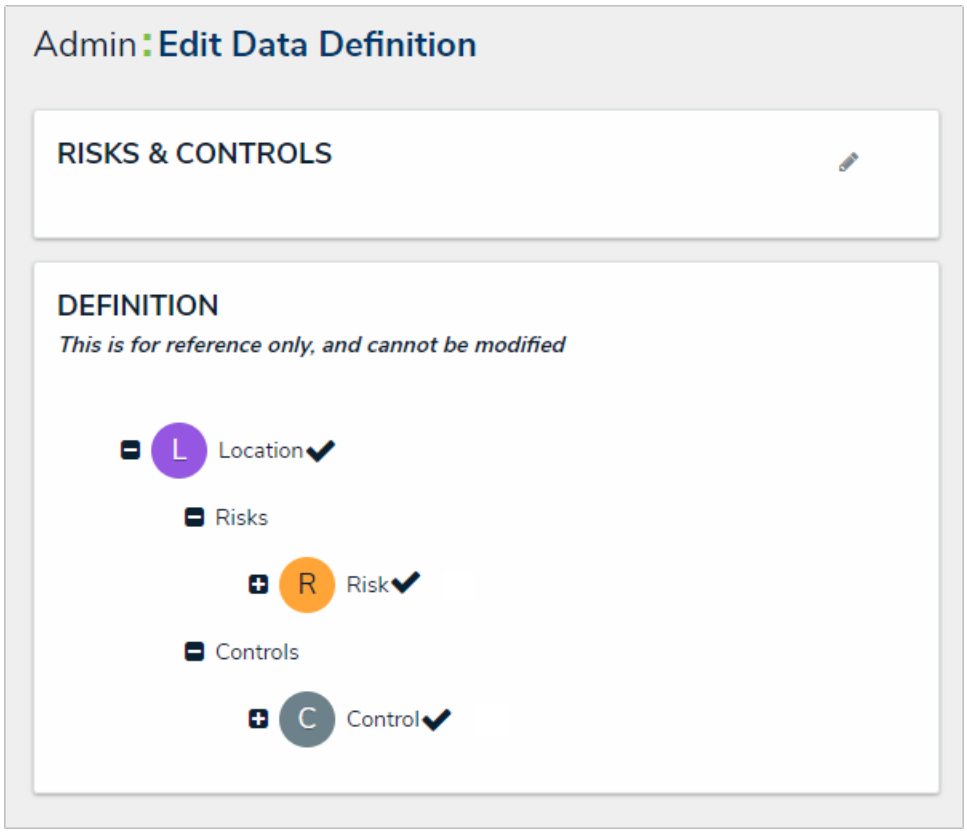
Because the structure of data definition resembles a tree, the anchor object type is also known as the root, the relationships and references on the anchor are the branches, and the object types within those relationships or references are the leaves on the branches.

When creating any new data visualization, you must select at least one existing focus eligible data definition. When creating a report or data grid, you must also select a data series definition for each report element or data grid you wish to display.

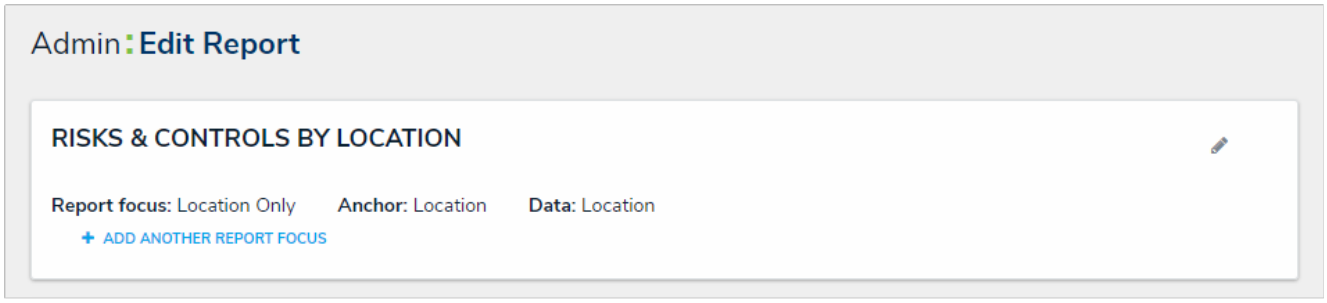
A **data series** is a sub-definition that's related to the focus definition. When adding a report or data grid element you must select a data series definition which will more specifically define which object type data the element will display. The definitions you can choose from are populated based on the object type(s) selected in your focus definition. For example, if you created a report using a focus that had the Location object type as the anchor and only object type in the data path, all definitions with Location selected in their data paths, either as the anchor or leaf, will appear as options when selecting a data series. Focus eligible definitions can also be selected as data series definitions.

EXAMPLE

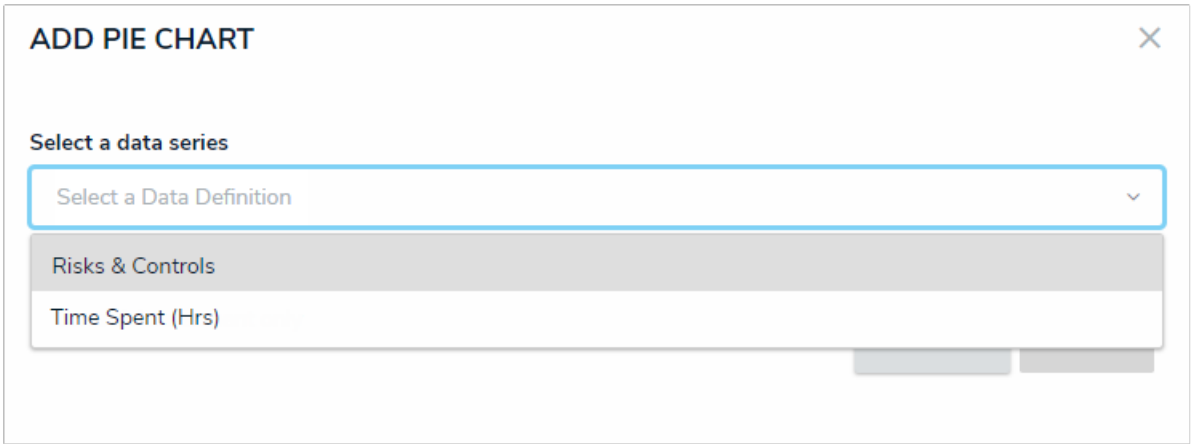
You need to create a report that assesses the effectiveness of the risks and controls in place for each location within your company. To do this, you would first create a data definition, called "Location Only," with Location as the anchor and sole selected object type to be the report focus. You then create an additional definition with Location object type as the anchor and the Risk and Control object types (which are connected to Location through relationships) as the leaves, naming the definition "Risks & Controls." Now, when you create a report, you can select the Location Only definition as the Report Focus and when you add a table, chart, or heat map, you can drill down into either the Risk or Control object types by selecting the Risks & Controls definition as the data series for each report element.



The data path for a data series definition.



The Edit Report page showing the Location Only definition is selected as the report focus and the Location object type is both the anchor and leaf.



The Select a data series dropdown menu that appears after adding a report element. The options in this menu are populated based on the report focus and its leaves, if any.

For more information on creating and viewing data definitions, see the Data Definitions section.

You can check if an object type is associated with data definitions on a report by going to **Administration > Object Types**, clicking the object type to open the **Edit Object Type** page then reviewing the **Related Data Definitions** section in the **Overview** tab.

Reports Overview

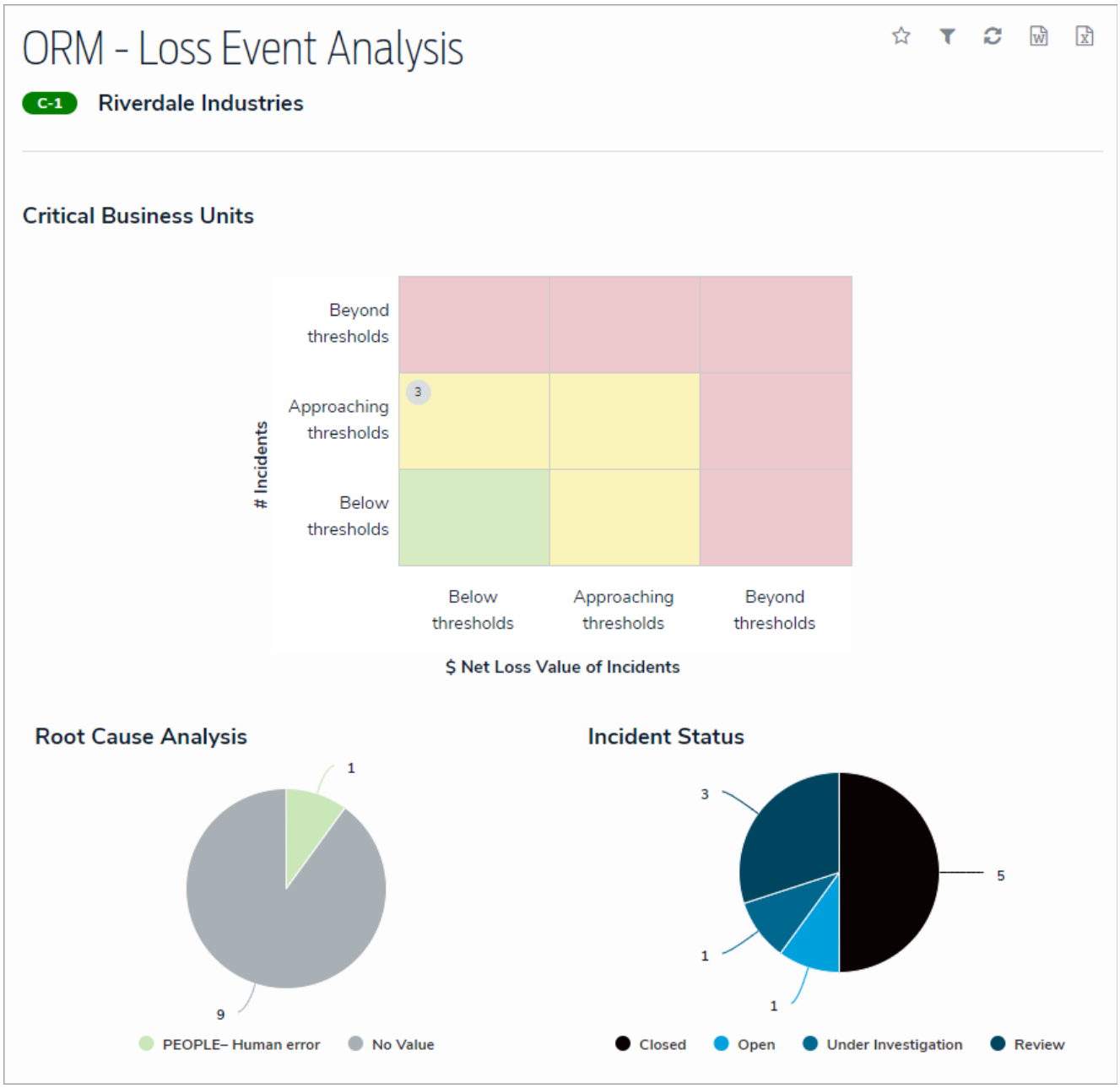
A report displays object or assessment data via one or more of the following report elements:

- Tables;
- Pie charts;
- Half-pie charts;
- Heat maps;
- Bar charts;
- Column charts;
- Repeatable forms (printer-friendly, non-editable configurable forms);
- Free form text (additional text displayed on the report with optional formatting); and
- Page breaks (to break a page when printing or exporting a report).

Each new report requires a data definition is selected as the report focus and each element (tables, charts, heat maps, or repeatable forms) added to the report canvas requires a data series to further filter the available object data. For more information on focuses and data series, see the Data Visualization Focuses & Data Series.

Only administrators can create reports, but end-users can view and star reports, apply filters, view historical data, and export report data from a view or form action.

For information on creating a report and adding form elements,Create a New Report and Report Elements.



A report with a heat map and pie charts as it's displayed to a user in a view.

Loading & Caching Report Data

To reduce loading times, previously loaded report data, including data refined through end user-applied filters, is cached for up to an hour, preventing the need to regenerate data every time a report is viewed within this 60-minute period.

Reports are reloaded when:

- The 60-minute cache period has expired.
- The report or your browser is refreshed.
- New or additional filters are applied after the report was initially loaded.
- Your session expired or you logged out.
- The browser the report was originally loaded on is closed.
- An administrator changed the configuration of the report (e.g., adding or removing parameters, filters, or object types).
- An administrator has changed the role or permissions that has access to the report.

Caching is not available on data grids.

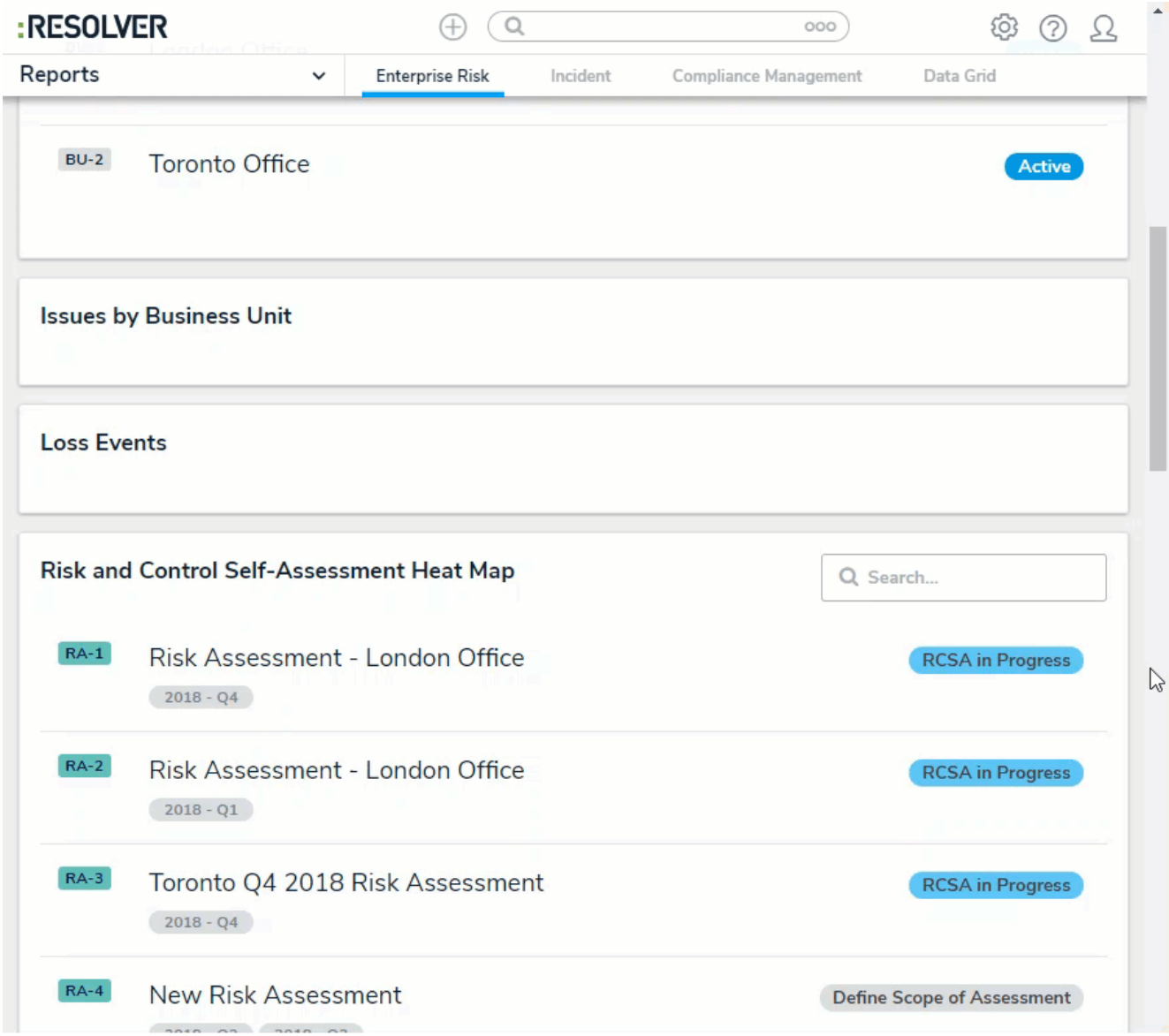
Banners

When a report is opened, a banner confirming the report data is loading appears at the top of the page, below thenav bar. You can stay on the page until the report is loaded or navigate to another area within your Core organization.

Once the report is successfully loaded, a green confirmation banner is displayed. If you stayed on the report page, the banner is auto-dismissed after 5 seconds. If you navigated away from the page or if you loaded more than one report, the banner is displayed until the **X** in the top-right corner of the banner is clicked. You can access the report and any other cached reports you navigated away from by clicking the ellipsis in the green banner, then clicking the link to open the report page.

The green banner does not display links to cached starred reports or reports loaded via a navigation form.

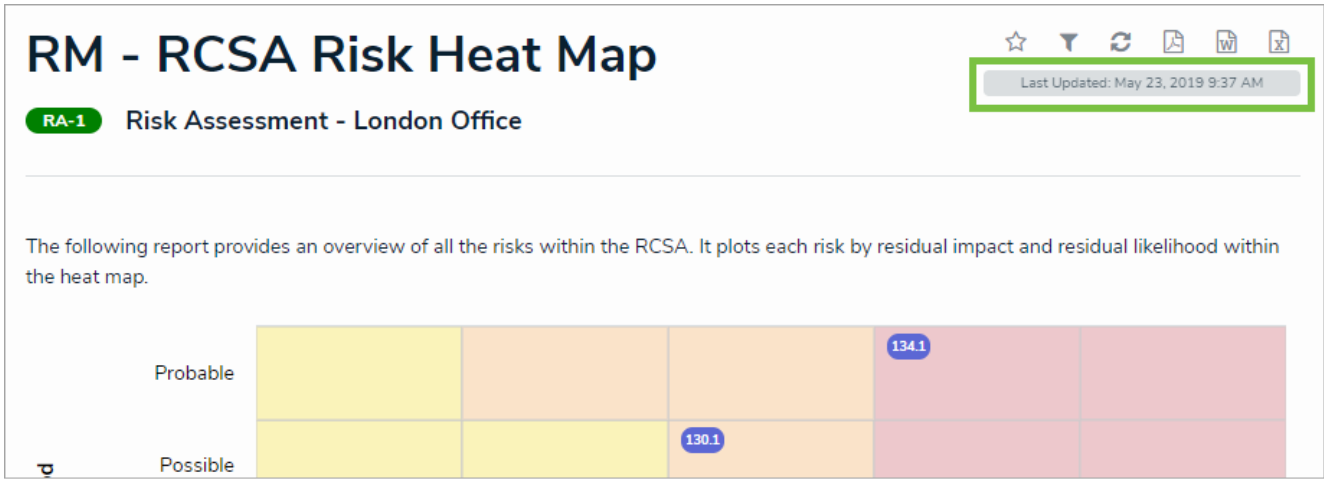
View an Example



Report banners.

Timestamps

Reports display the time and date the report was last updated/loaded **based on the current user's local timezone**. This timestamp appears on exported reports and is updated when the report is reloaded or refreshed.



A report timestamp.

Refreshing & Reloading

Cached reports do not refresh automatically to show the most recent data. To show the most recent data, the report must be reloaded by clicking the icon on the report page or refreshing your browser.

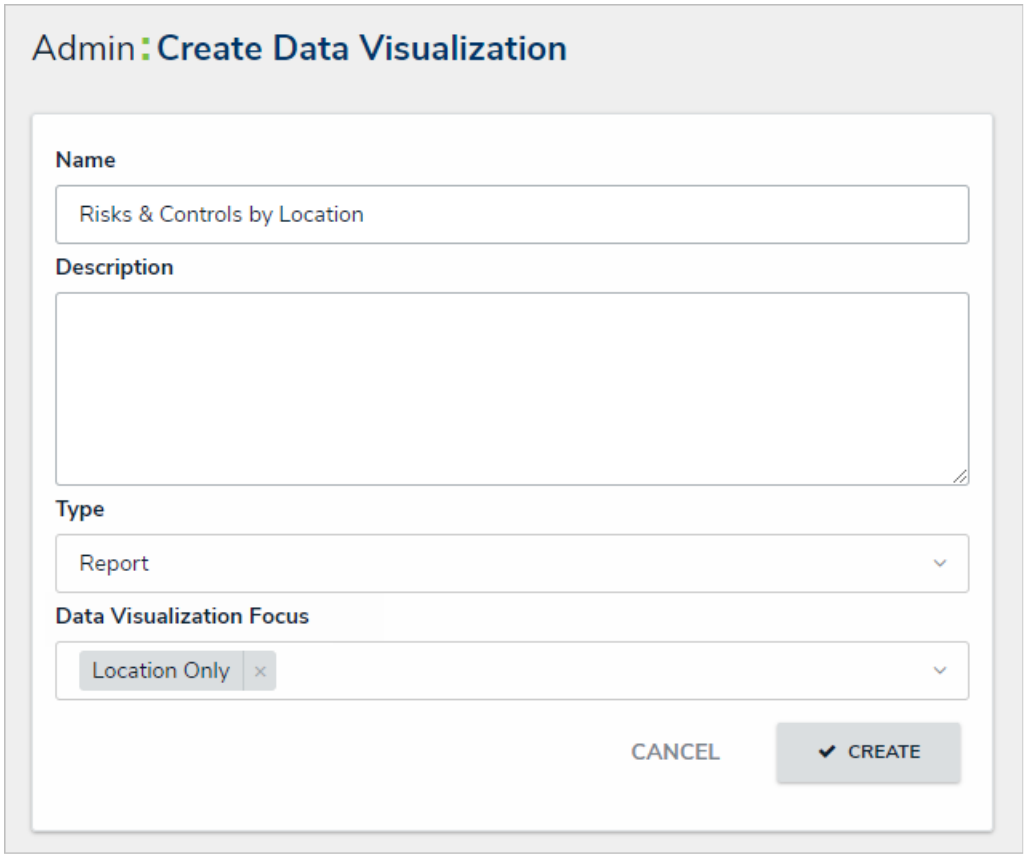
Create a New Report

When creating a new report, you must create the report container (instructions below), select ananchor, then create one or more data definitions. Note that reports created prior to Version 3.0 are configured to display archived data by default. Reports created after Version 3.0 are configured to exclude archived data by default.

See the Data Analytics Export Report or Data Grid sections for information on creating an export report or data grid.

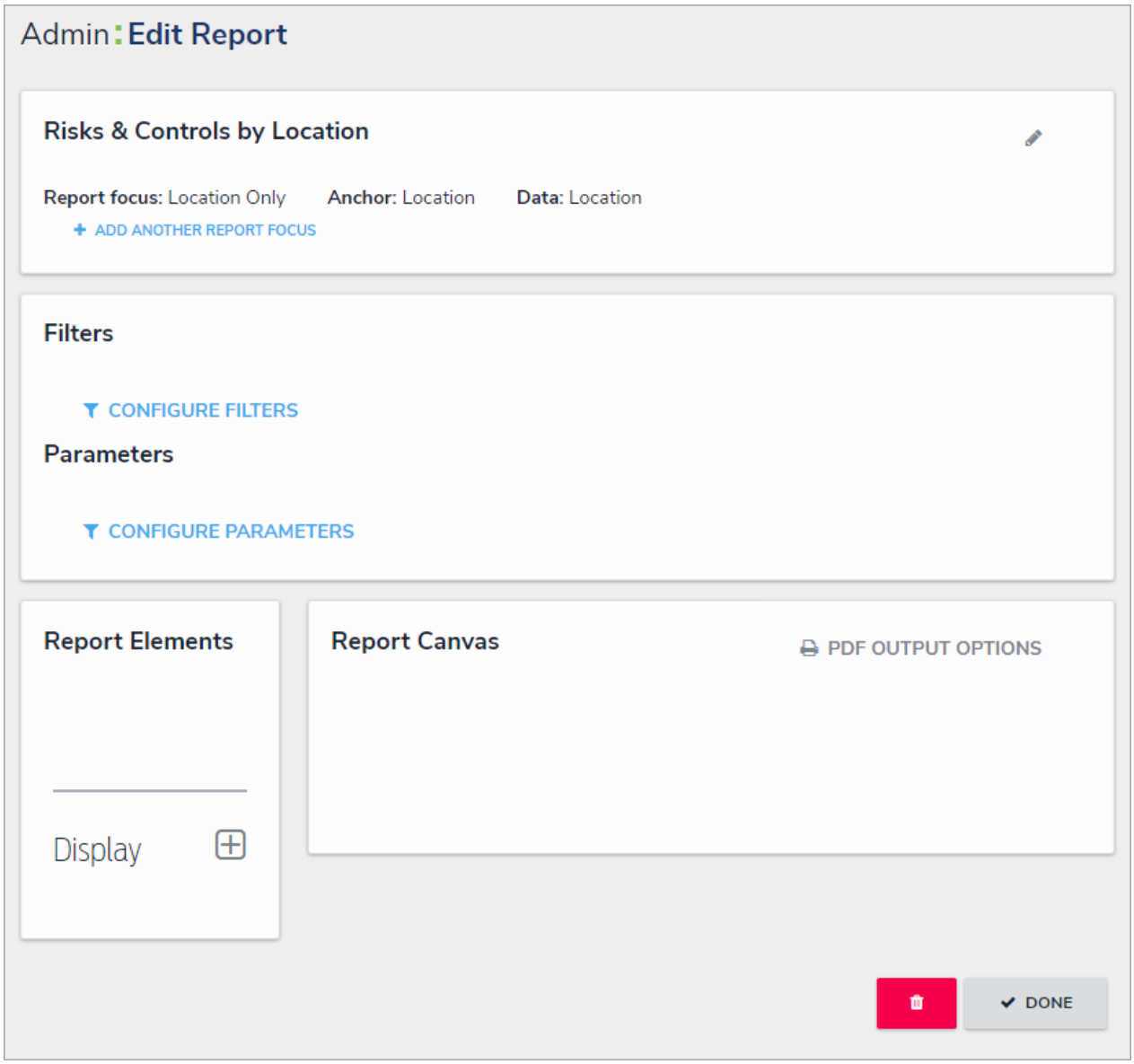
To create a new report:

1. Ensure the data definitions you intend to use for the report focus and data series have been created from the Data Definitions settings in the administrative settings.
2. Click the icon in the top bar **> Data Visualizations** in the **Views** section.
3. Click **Create Data Visualization**.
4. Enter the name of the report in the **Name** field.
5. **Optional:** Enter a description of the report. This description will appear below the report's name on the**Data Visualization** page.
6. Select **Report** from the **Type** dropdown menu. If you're creating a data analytics export or data grid, see the Create a Data Analytics Export Report or Create a New Data Grid articles for more information.
7. Select a report focus from the **Focus** dropdown menu. For example, if you wish to create a report that displays data on the risks and controls at each location in your company, you would select a report focus with the Location object type as your anchor and no other object types (leaves) selected.



The Create Data Visualization page.

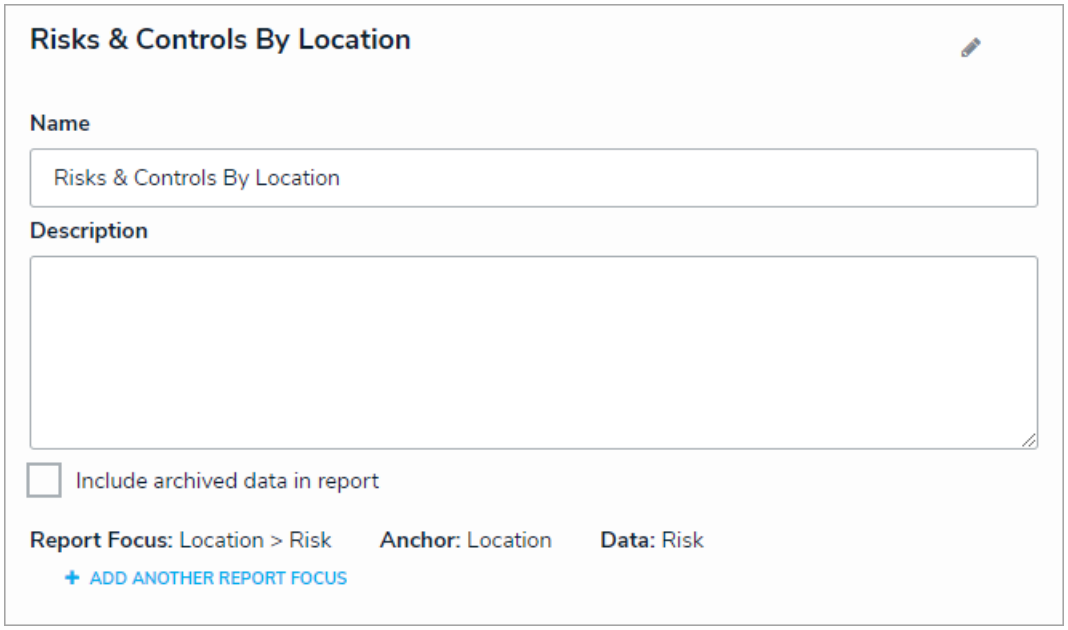
8. **Optional:** Select additional, related report focus definitions from the **Focus** dropdown menu. Selecting another report focus will provide more data series options to choose from when adding a report element (table, chart, heat map, or repeatable form).
9. Click **Create** to display the **Edit Report** page.



The Edit Report page.

10. **Optional:** To edit the report name or add a description, click the icon at the top-right of the first section on the page.

11. **Optional:** To include or exclude archived data, click the icon, then select or deselect the **Include archived data in report** checkbox. When selected, the report elements will display data from objects that are currently in an archived state. See the Archived Data section for more details.



12. **Optional:** Click **Add Another Report Focus** to include another report focus definition. Depending on the data path, selecting another report focus will provide more data series options to choose from when adding a report element (table, chart, heat map, or repeatable form).

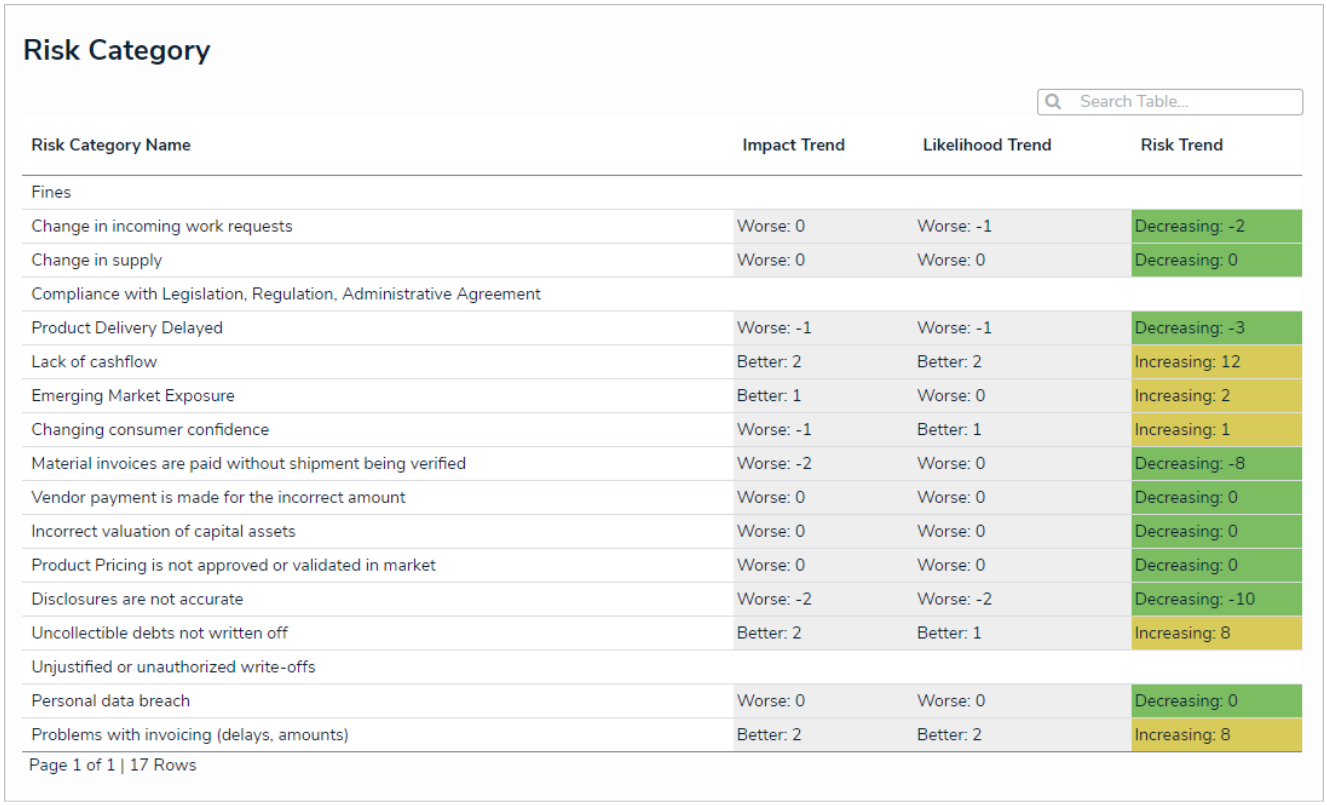
Once you've created the report and selected one or more report focus definitions, you can add charts, tables, heat maps, or repeatable forms, filters, parameters, or text.

Add a Table to a Report

Tables display selected data in text form and can be exported into a Word or Excel document from a view. Clicking on the data in any of the cells will display either the default form selected in the role permissions or an alternate form selected by an administrator in the table settings. Depending on the user's role permissions, the user may be able to view or edit the data in the form.

Tables with more than 10,000 rows of data will not load correctly. It's recommended that admins configure filters and/or apply parameters (at the report level or at the table level) to filter the data and prevent errors, improve loading times, and provide a better end-user experience.

If you need to use the Data Import feature to update existing objects, you can retrieve the objects' external reference IDs by adding the **External Reference ID** property to a table then reviewing the table in a view.



Risk Category

Search Table...

Risk Category Name	Impact Trend	Likelihood Trend	Risk Trend
Fines			
Change in incoming work requests	Worse: 0	Worse: -1	Decreasing: -2
Change in supply	Worse: 0	Worse: 0	Decreasing: 0
Compliance with Legislation, Regulation, Administrative Agreement			
Product Delivery Delayed	Worse: -1	Worse: -1	Decreasing: -3
Lack of cashflow	Better: 2	Better: 2	Increasing: 12
Emerging Market Exposure	Better: 1	Worse: 0	Increasing: 2
Changing consumer confidence	Worse: -1	Better: 1	Increasing: 1
Material invoices are paid without shipment being verified	Worse: -2	Worse: 0	Decreasing: -8
Vendor payment is made for the incorrect amount	Worse: 0	Worse: 0	Decreasing: 0
Incorrect valuation of capital assets	Worse: 0	Worse: 0	Decreasing: 0
Product Pricing is not approved or validated in market	Worse: 0	Worse: 0	Decreasing: 0
Disclosures are not accurate	Worse: -2	Worse: -2	Decreasing: -10
Uncollectible debts not written off	Better: 2	Better: 1	Increasing: 8
Unjustified or unauthorized write-offs			
Personal data breach	Worse: 0	Worse: 0	Decreasing: 0
Problems with invoicing (delays, amounts)	Better: 2	Better: 2	Increasing: 8

Page 1 of 1 | 17 Rows

A table as it's displayed in a view.

Supported Data

The following data can be selected to appear in a table:

- **Properties:** The objects' properties, including:
  - Name
  - Unique ID
  - Description
  - External Reference ID

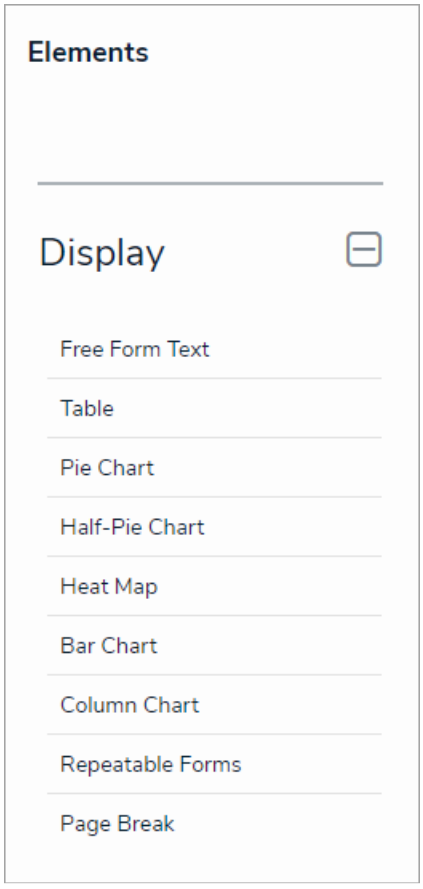
    - Created By
    - Created On
    - Modified By
    - Modified On
    - Assessment dimensions
    - Location addresses or coordinates only. If an address is not available, coordinates are displayed. Map rendering is not supported.
- **Fields:** The value of the objects' fields, including plain or rich text, numeric, date and time, select list, attachments, and formulas.
- **Relationships:** The name of relationship objects.
- **Workflow State:** The current workflow state of the objects.
- **Roles:** Displays the user(s) who have been added to an object via the role field on a form.
- **Assessment Name/Workflow State:** Displays the name of a related assessment and its workflow state.

You can also apply **parameters** that use workflow states, formula ranges, select list options, or roles to filter what data is displayed on the table. Parameters can be applied using any of the relationships saved to the table's selected data definition. You can create custom reports for the currently logged in user (e.g. My Incidents or My Risks) by applying the **Current User** parameter to the table. See step 14 below for more information.

Instructions

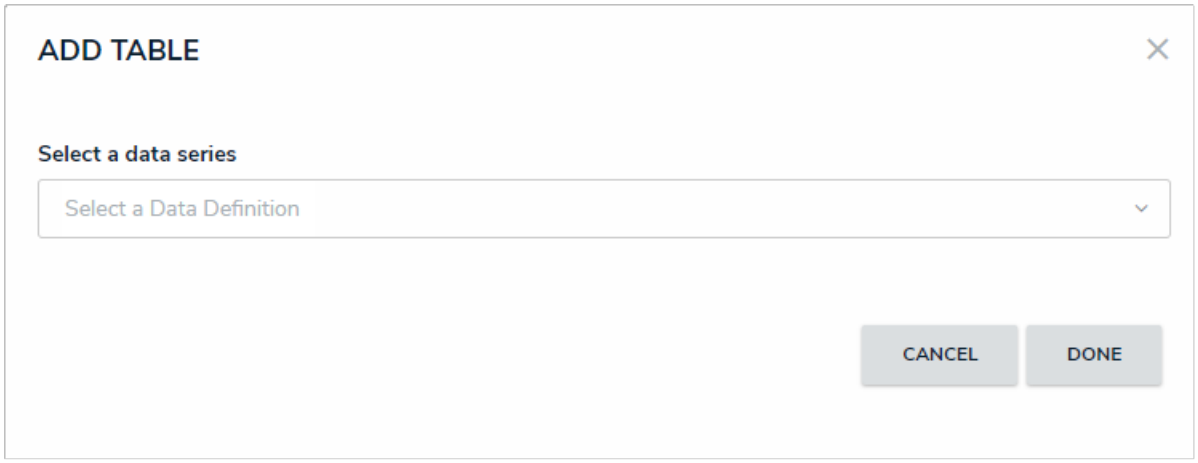
To add a table to a report:

1. In the **Elements** section, click the icon beside **Display**.



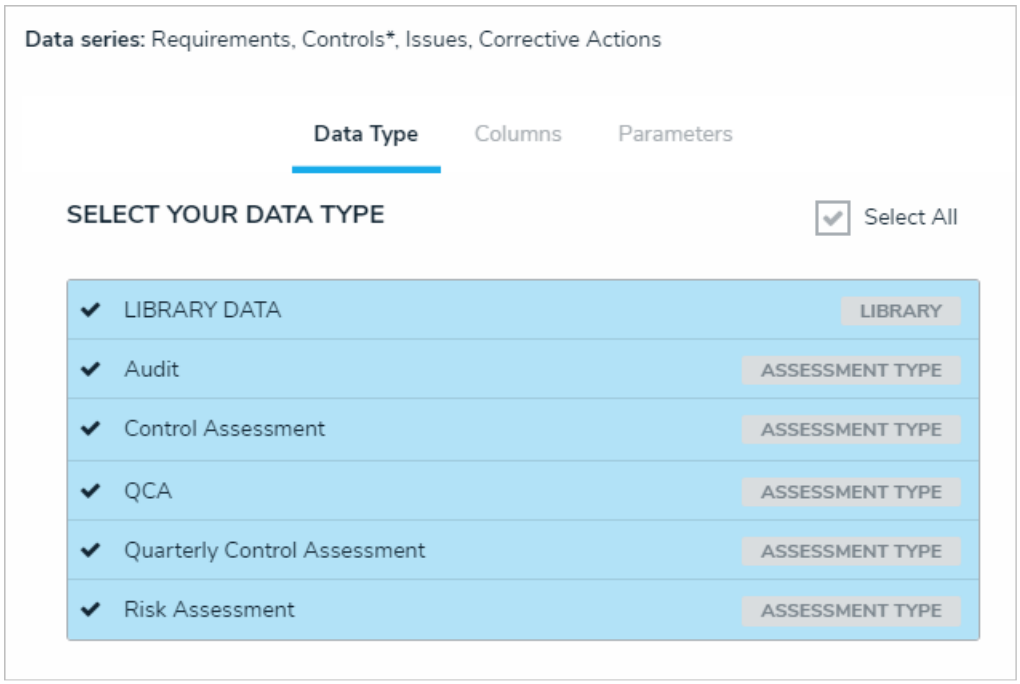
The Elements section.

2. Drag and drop **Table** from the **Elements** section to the **Report Canvas**.
3. Select a data series from the **Select a data series** dropdown menu, then click **Done**. The data definition selected here will determine which object types you can choose to display in the table.



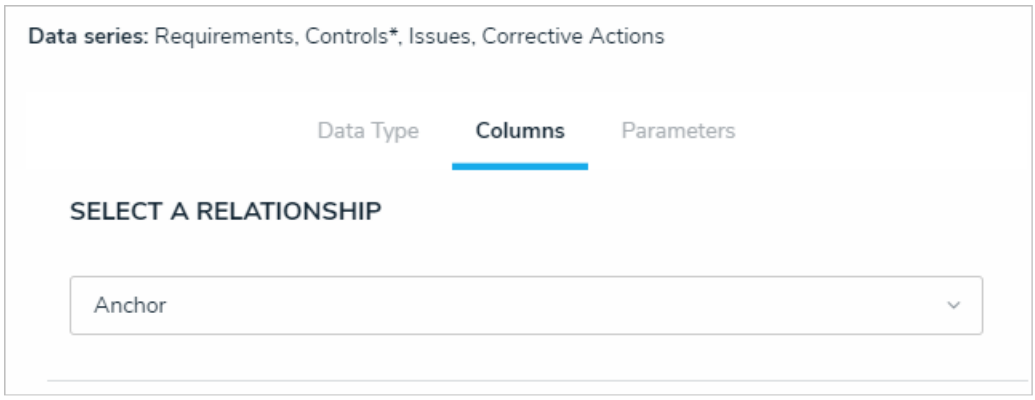
Selecting a data series.

4. Choose the data types you'd like to display in the table from the **Data Type** tab. Selecting **LIBRARY DATA** will include object type data, while selecting an **Assessment Type** will include the assessment name and workflow state. By default, all data types are selected. To make individual selections, deselect the **Select All** checkbox, then click the data type(s) you wish to include.



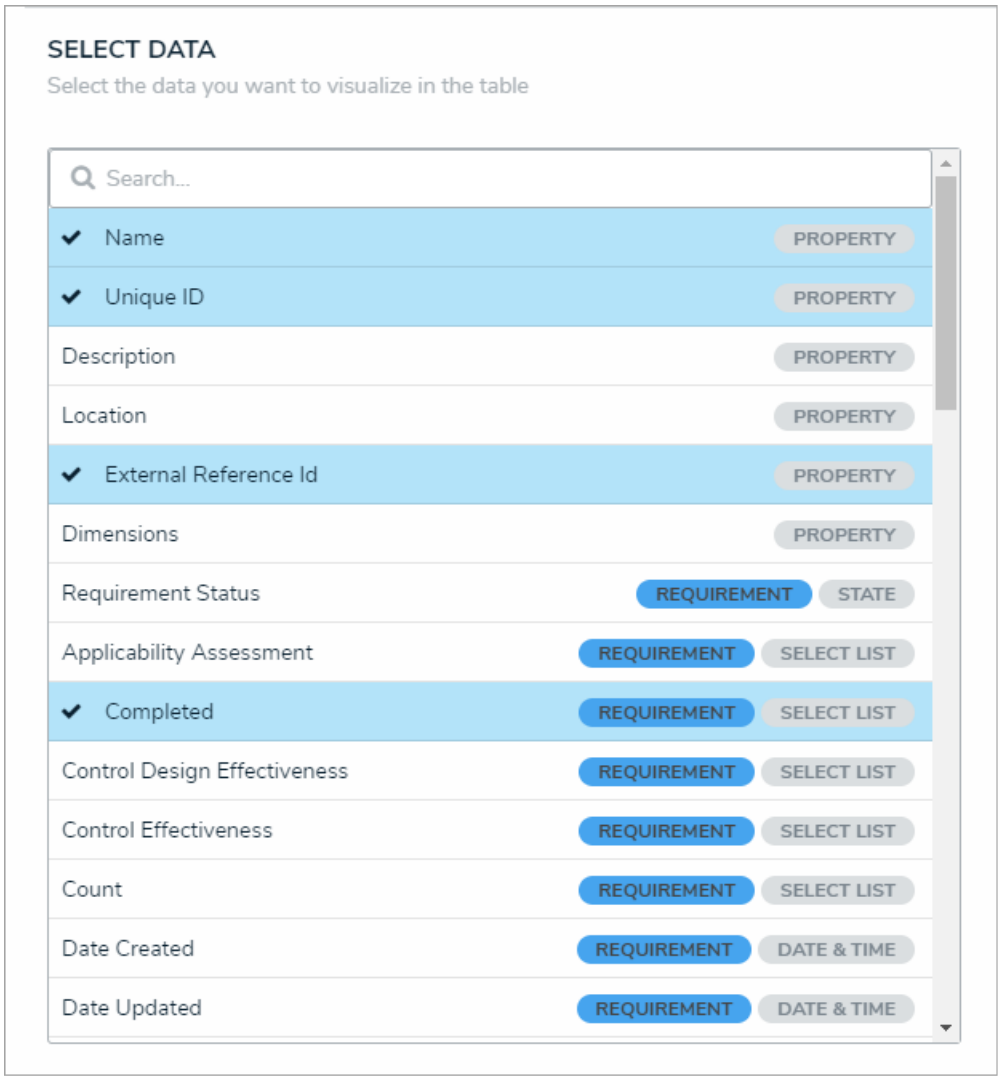
The Data Type tab.

5. Click the **Columns** tab.
6. Choose either the anchor or an object type in the data path from the **Select a Relationship** dropdown menu. The options in this dropdown menu will vary depending on the definition selected as the data series in the step above.



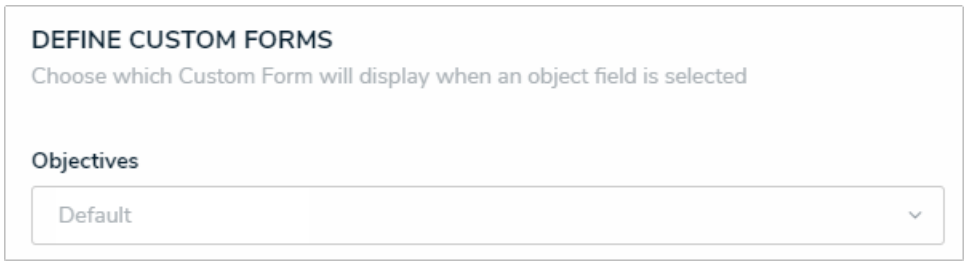
Selecting which object type's data will appear in the table.

7. Select the properties, workflow states, fields, formulas, relationships, and/or roles you want to display in the table from the **Select Data** section. Use the **Search** field to search for a particular data type, if needed. Clicking a selected data type will deselect it and remove it from the table.



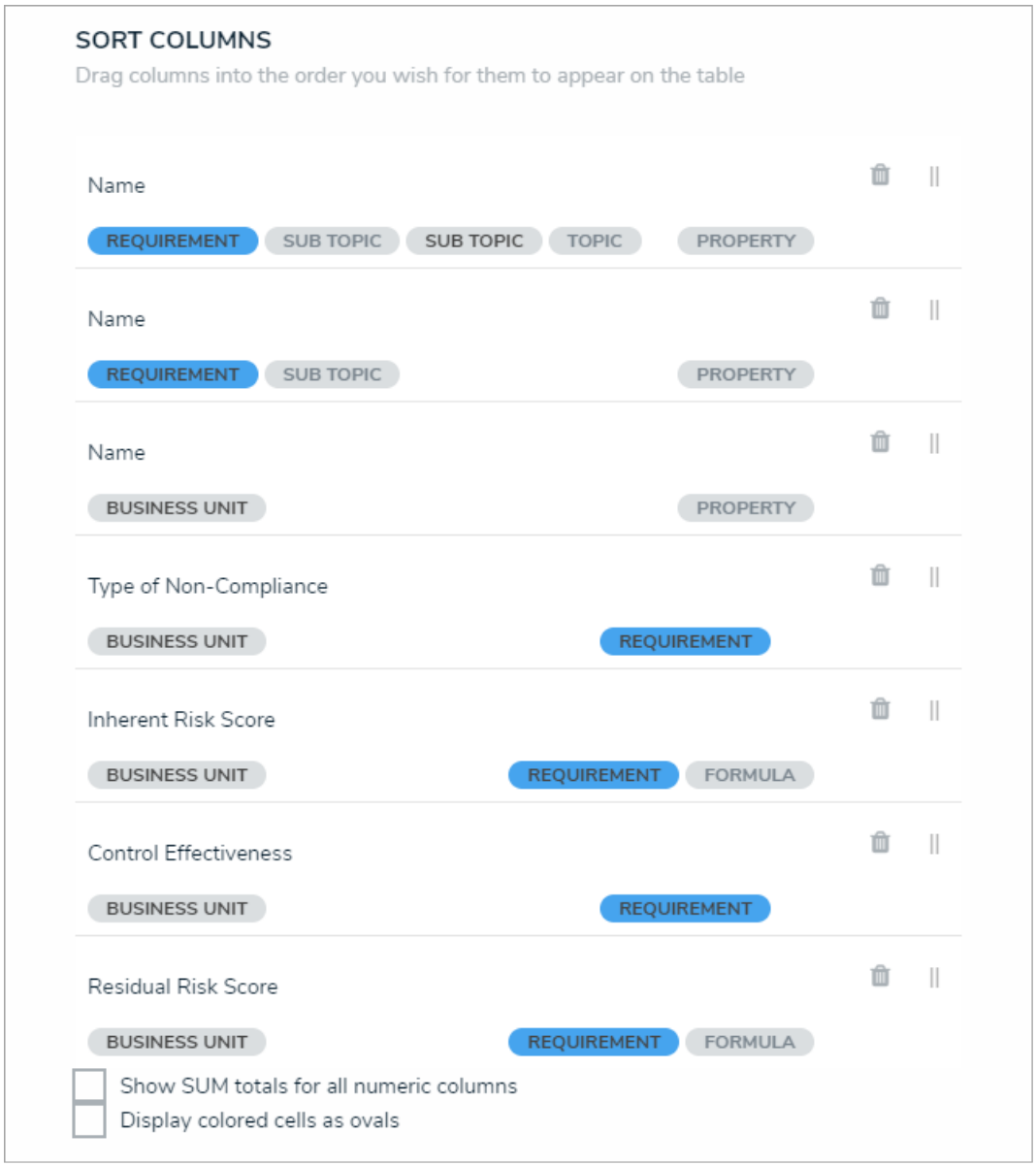
The Select Data section.

8. From the **Define Custom Forms** dropdown menu, select which form is displayed when a user clicks on data in the table. Choosing **Default** will display the form selected in the user's role permissions for the object type.



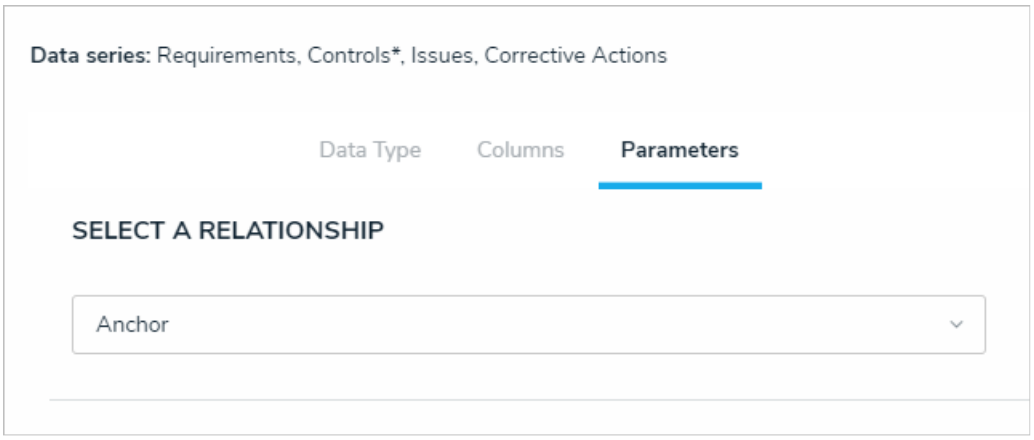
The Define Custom Forms section.

9. **Optional:** In the **Sort Columns** section, click and drag the icon next to the data types to rearrange how the columns will appear on the table.
10. **Optional:** If needed, click the icon next to the data type to delete it from the table.
11. **Optional:** Select the **Show SUM totals for all numeric columns** checkbox to display a sum total of the numeric field values on the table.



The Sort Columns section where you can rearrange the table columns or delete the data types.

12. **Optional:** Select the **Display colored cells as ovals** checkbox to show formula or select list cells as text with colored circles. When this option is not selected, cells are displayed with text and a full background color, if any.
13. Repeat steps 6-12 above to continue adding data from additional object types in the data definition.
14. Scroll to the top of the **Edit Table** palette, then click the **Parameters** tab.



The Parameter tab.

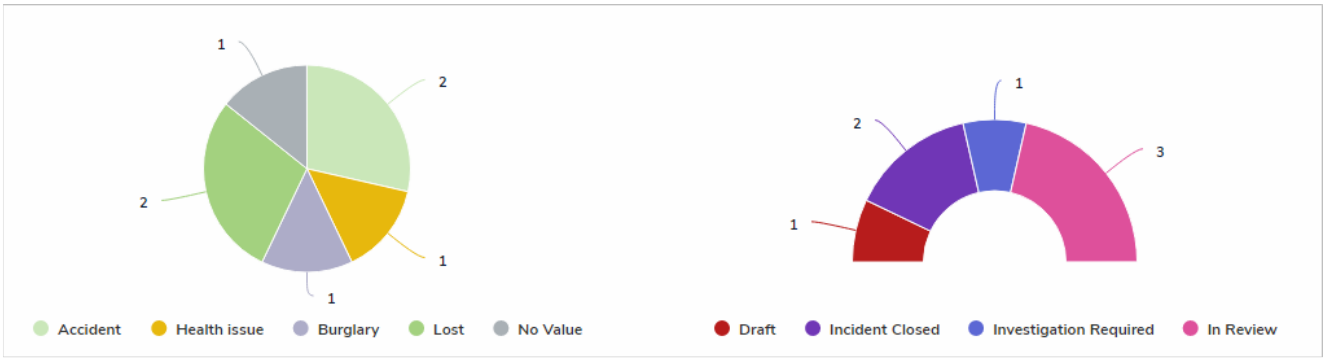
15. Choose a relationship from the **Select a Relationship** dropdown menu. The relationship selected here will determine which parameters (filters) you can apply to the table to refine the data that's displayed. If needed, you can select a relationship that differs from the relationship selected in the **Columns** tab.

> You can add parameters from an object type in the data series even if that object type isn't configured to display any data in the table.

16. Below **Define Parameters**, select one or more parameters to filter the data displayed in the report. Options include:
    - Workflow states;
    - Select list options;
    - Formula ranges (e.g. High, Medium, Low);
    - By Current User. When one or more roles are selected in this parameter, only users within those roles can view the data in the table. This feature is useful to create customized reports for specific users. The available roles are determined by the object types in the table's data series; or
    - By Date & Time Field or Created On/Modified On properties. Selecting a range in the **By [Date Field]** dropdown menu will filter the data relative to the value selected in the Date & Time field on the objects. Selecting a range in the **By Created On ([Object Type Name])** or **By Modified On ([Object Type Name])** dropdown menus will filter the data relative to the date the objects were created or modified. All date-related options filter data in UTC time. It's recommended a date parameter is used to refine large data sets for improved report performance. Options include:
        - **Today**: Show data from today's date only.
        - **Last [X] Days**: Show data within the last 30, 60, 90, or 180 days, relative to today's date.
        - **Custom**: Shows data within the dates selected in the **From** and **To** fields. The table will include objects up to the end of that date.
17. Repeat steps 15 and 16 above to add more parameters from additional object types.
18. To remove a select list, formula, or role parameter, click the **x** icon beside parameter. To delete a date parameter, click the field, then press the **Backspace** or **Delete** key on your keyboard.
19. Click **Done** to close the **Edit Table** screen.
20. Repeat the steps above to continue adding more tables to the report as needed. Once multiple elements are on the **Report Canvas**, you can rearrange them by hovering your cursor over the element, then clicking the icon and dragging the element to a new location on the canvas. To delete an element, hover your cursor over it on the canvas, then click the icon.

Add a Pie Chart or Half-Pie Chart to a Report

Pie charts display numeric data based on the data definition selected and can be displayed as a full pie chart or half-pie chart



A full pie chart and half-pie chart as they're displayed in a view.

Available Data Types

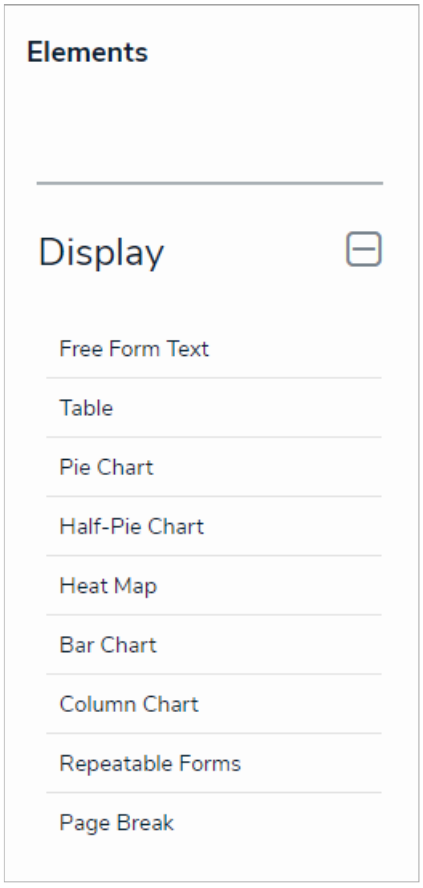
The following data types are available to display in a pie chart:

- **Numeric**: Displays numeric field data. For example, a pie chart could display the number of hours spent investigating an Incident (anchor) object using data drawn from the Time Spent (Hrs) numeric field. Selecting numeric data will require that you choose an object type or relationship to represent the data in the **Group By** section of the pie chart settings.
- **Single Select List:** Displays the number of times a select list option appears on an object. For example, a pie chart could display the number of times options from the Incident Type select list (e.g. Accident, Violence, Health Issues, etc.) appears on the Incident objects associated with a Location (anchor) object. Note that multi-select lists are not supported in pie charts.
- **Formula:** Displays the number of times formula ranges appear on an object. For example, a pie chart could display the number of times the Low, Medium, High, and No Value ranges from the Estimated Vehicle Damage formula appears on an Incident (anchor) object.
- **Relationship:** Displays the objects an anchor object is associated with through a relationship. For example, if the Employee Record object type is selected as an anchor and it appears on the Incident object type through a relationship, a pie chart could display the number of incidents the employee's name appears on. Selecting relationship data for a pie chart will require that you choose an object type or relationship to represent the data in the **Group By** section of the pie chart settings.
- **Workflow State:** Displays the workflow states and the number of objects that are associated with an anchor object. For example, a pie chart could display the number of Incident objects (and their current workflow states) that appear on a Location (anchor) object. If configured, assessment workflow states can be displayed in the chart.

Instructions

To add a pie chart or half-pie chart to a report:

1. In the **Elements** section, click the icon beside **Display**.

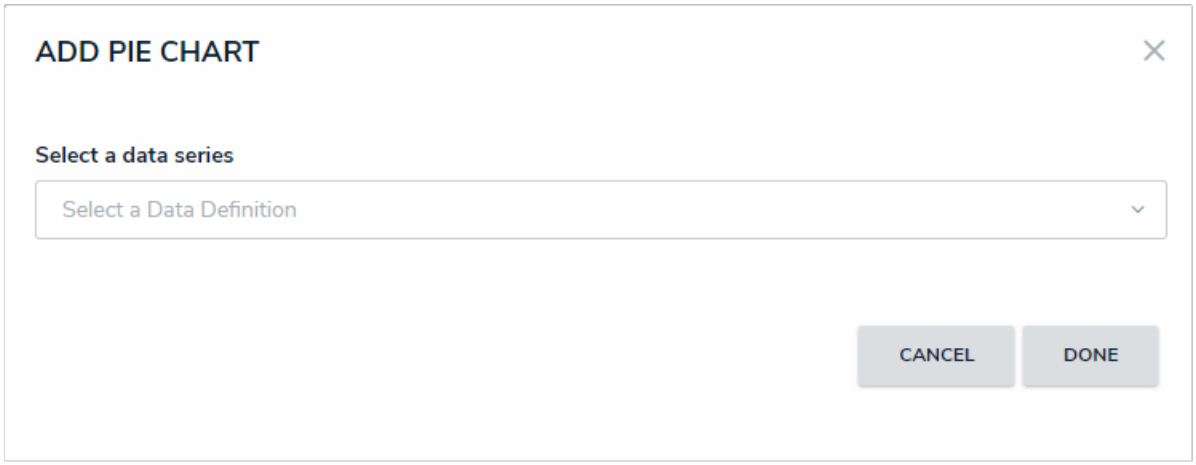


The Elements section.

2. Drag and drop **Pie Chart** or **Half-Pie Chart** from the **Elements** section to the **Report Canvas**.

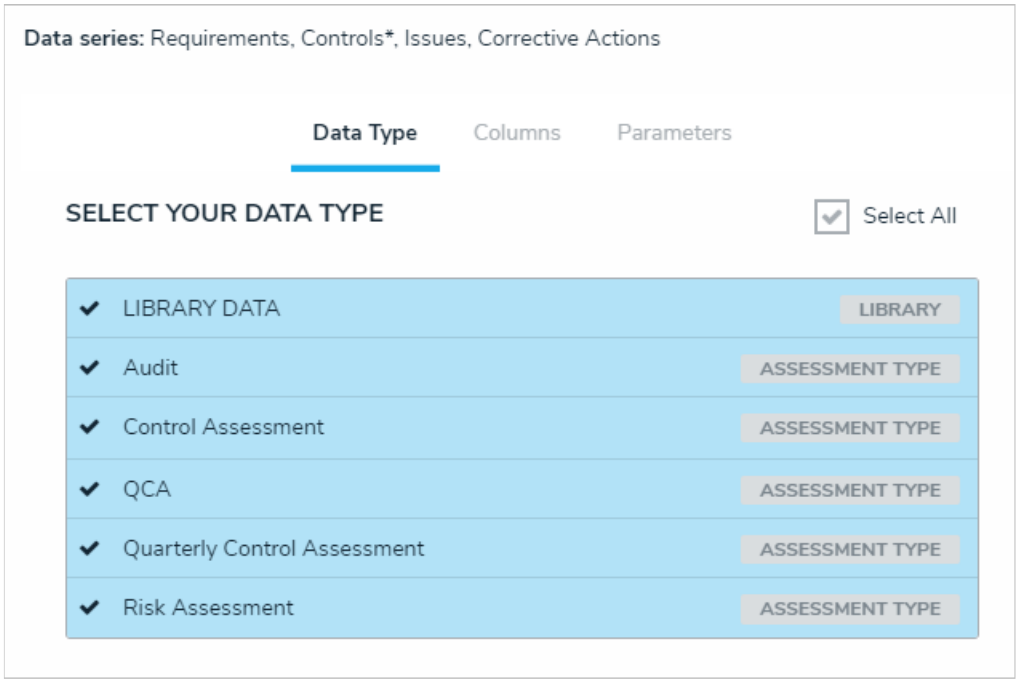
> Configurations for full pie and half-pie charts are identical. To change an existing full pie chart to a half-pie chart or vice versa, open the **Edit Pie Chart** palette and select **Pie** or **Half-Pie** in the **Configure Display** section.

3. Select a data series from the **Select a data series** dropdown menu, then click **Done**. The data definition selected here will determine which object types you can choose to display in your pie chart.



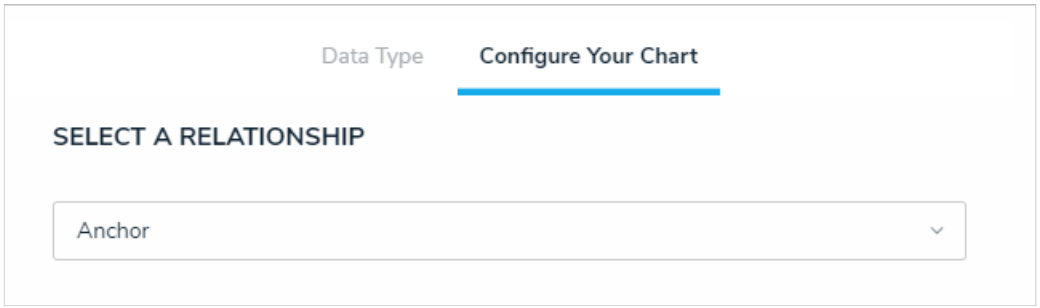
Selecting a data series.

4. Choose the data types you'd like to display in the pie chart from the **Data Type** tab. Selecting **LIBRARY DATA** will include object type data, while selecting an **Assessment Type** will include the assessment name and workflow state. By default, all data types are selected. To make individual selections, deselect the **Select All** checkbox, then click the data type(s) you wish to include.



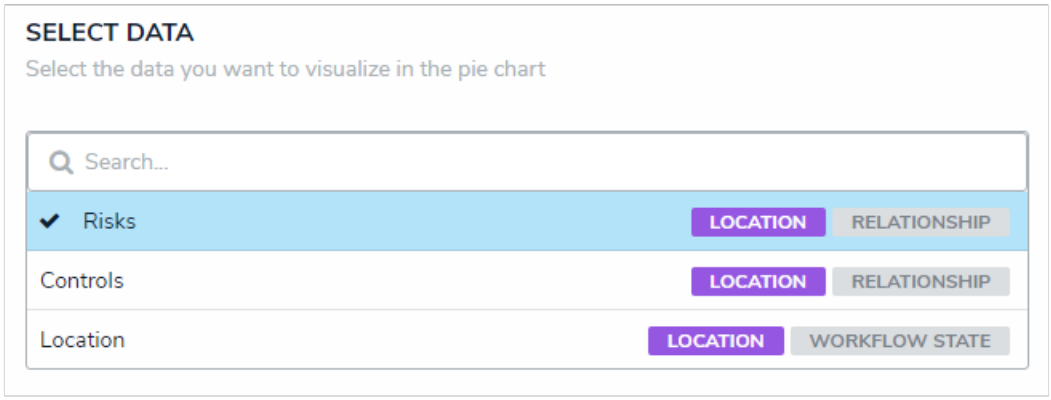
The Data Type tab.

5. Click the **Configure Your Chart** tab.
6. Choose the anchor or an object type in the data path from the **Select a Relationship** dropdown menu. The options in this dropdown menu will vary depending on the definition selected in the data series step above.



Selecting which object type's data will appear in the report.

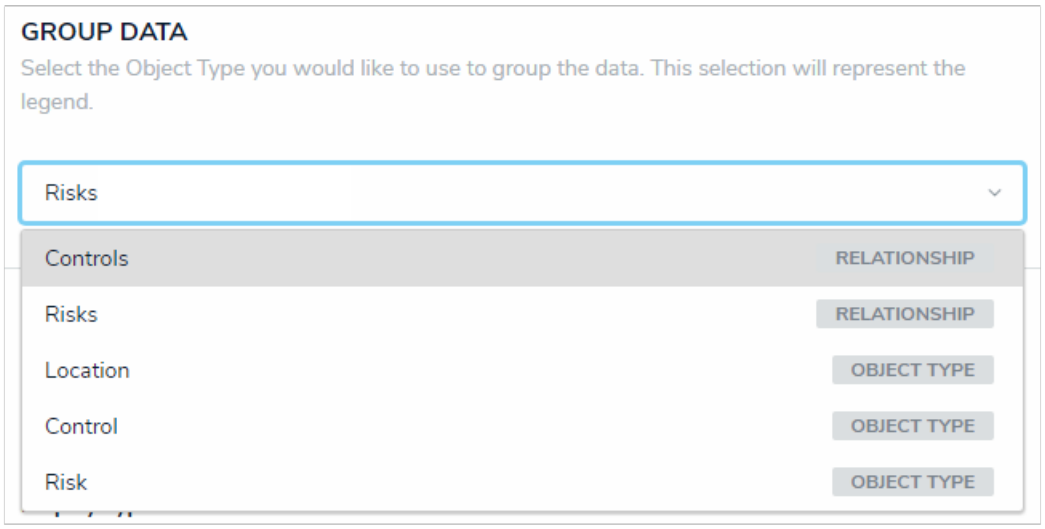
7. From the **Select Data** section, select the data (numeric, select list, formula, relationship, or state) that you wish to display in the pie chart.



The Select Data section.

> You may only select one data type to appear in the pie chart.

8. Select an object type or relationship from the **Group Data** dropdown menu. This selection will represent the legend on the pie chart and determine how the data is displayed.



The Group Data section of Edit Pie Chart palette. Your selection here will determine how the legend of the pie chart is displayed.

9. **Optional:** Enter a name for the chart in the **Chart Title** field.
10. **Optional:** To display the pie chart as a full chart or half-pie chart, select either **Pie** or **Half-Pie** in the **Configure Display** section.
11. Click **Done** when finished.
12. Repeat the steps above to continue adding more pie charts to the report as needed. Once multiple elements are on the **Report Canvas**, you can rearrange them by hovering your cursor over the element, then clicking the icon and dragging the element to a new location on the canvas. To delete an element, hover your cursor over it, then click the icon.

Heat Maps Overview

The **Heat Map** uses colors and X and Y axes to display the intersection of object data and where that object data falls on a scale. Heat maps are most commonly used when analyzing an organization's risks, the likelihood the risks will occur, and the impact on the organization should they occur. Heat maps pull their data from **data points**, which are select lists and/or formulas from the selected object type.

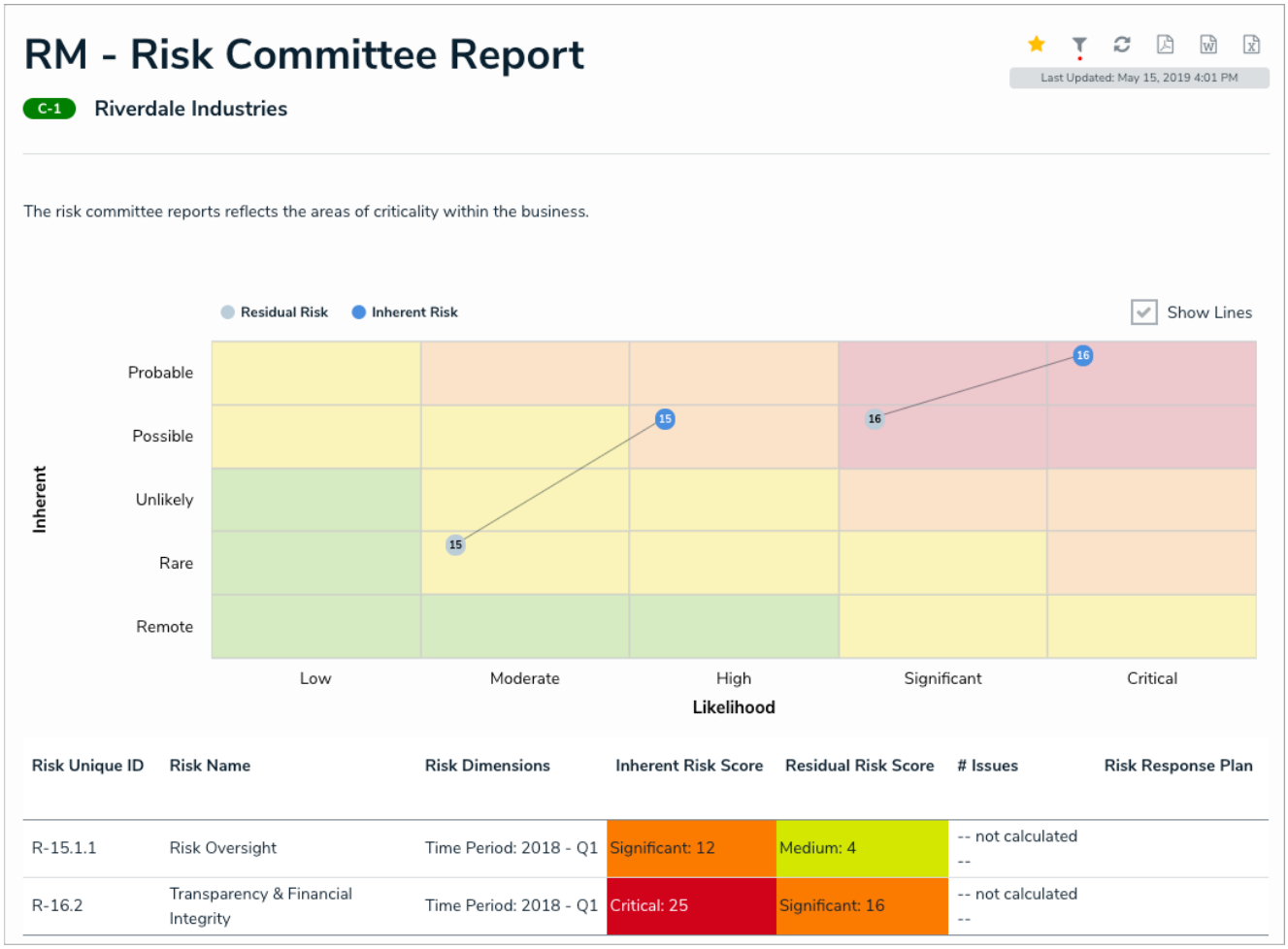
EXAMPLE

Your organization needs to track risks by each office location to implement the appropriate controls and tolerances. To do so, you create a heat map that uses the Business Unit object type as the report anchor, then select the Risk object type, which is associated with Business Unit through a relationship, through the Data Definition. This data definition will allow users to generate a report that will display all the risks at each location (Business Unit) as well as indicate the impact and likelihood of each risk on the heat map.

Clicking the objects on the map will display either the default form selected in the role permissions or an alternate form selected by an administrator in the report settings. Depending on the user's role permissions, the user may be able to view or edit the data in the form. Hovering your cursor over a circle on the heat map will display the object's full unique ID and name.

When a cell contains 10 objects or more, it will display **[No. of Objects] Items** instead of the number from the objects' unique IDs. Note that hovering your cursor over 10 or more objects will **not** display each objects' unique IDs and names, nor can you open individual objects when clicking on a cell with 10 or more.

It's recommended you create a table to accompany heat map reports, which will allow users to open individual objects in cells that contain 10 objects or more, provide additional information about the objects, and allow the object data in the table to be exported into a Word document or Excel spreadsheet as needed. Heat map data cannot be exported



A heat map with multiple data points.

Single Data Points

Single data point includes a select list or formula for both the X and Y axes, which also populate the labels on the left and bottom of the heat map. The color of the pills on the map are pulled from the selected object type's monogram color, if any, and the number from the objects' unique ID (e.g. R-4 will be displayed on the heat map as 4).

Multiple Data Points

If needed, up to six additional data points from a single object type can be added to the heat map. For example, you may need to create a heat map that shows an Inherent Risk data point using the Inherent Impact and Residual Likelihood formulas together with the Residual Risk data point using the Residual Impact and Residual Likelihood formulas.

Labels displayed in the X and Y axes are pulled from the **first** data point added to the element. Additionally, each data point is displayed in a legend and assigned one of the following preset hex color codes, based on the order each data point was created:

1. #bccdda
2. #498edf
3. #8b49df
4. **#103765**
5. #8c836a
6. #677682

Admins can name the X and Y axes with custom labels that appear outside the select list field/formula labels on the axes and can configure the map to display lines between objects that appear more than once through multiple data points.

Add a Heat Map with a Single Data Point

A heat map with a single data point includes a select list or formula for both the X and Y axes, which also populate the labels on the left and bottom of the heat map. The color of the pills on the map are pulled from the selected object type's monogram color, if any, and the number from the objects' unique ID (e.g. R-4 will be displayed on the heat map as 4).

> Adding or removing a range or option from a formula or select list currently added to an existing heat map will require that an admin clicks **Regenerate Heat Map** in the settings to refresh the report and ensure it displays correctly.

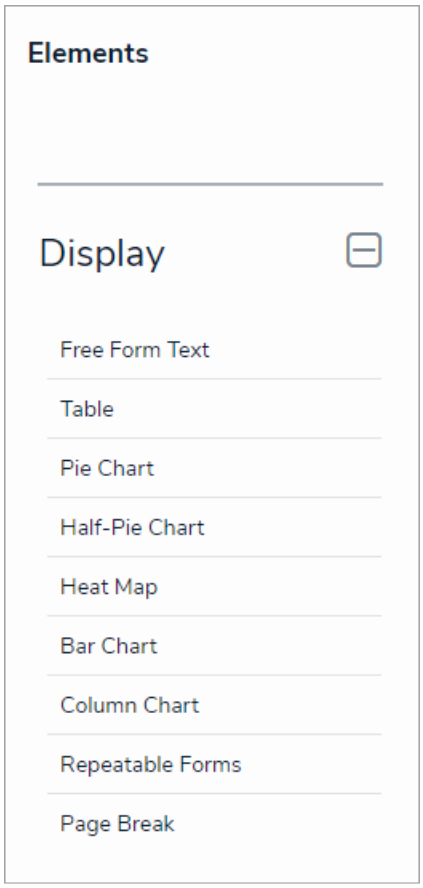
> It's recommended a table is created with heat map reports. This allows users to open individual objects in cells that contain 10 objects or more, and provide additional information about the objects.

For information on creating a heat map with more than data point, see the Add a Heat Map with Multiple Data Points article.

Instructions

To add a heat map with a single data point to a report:

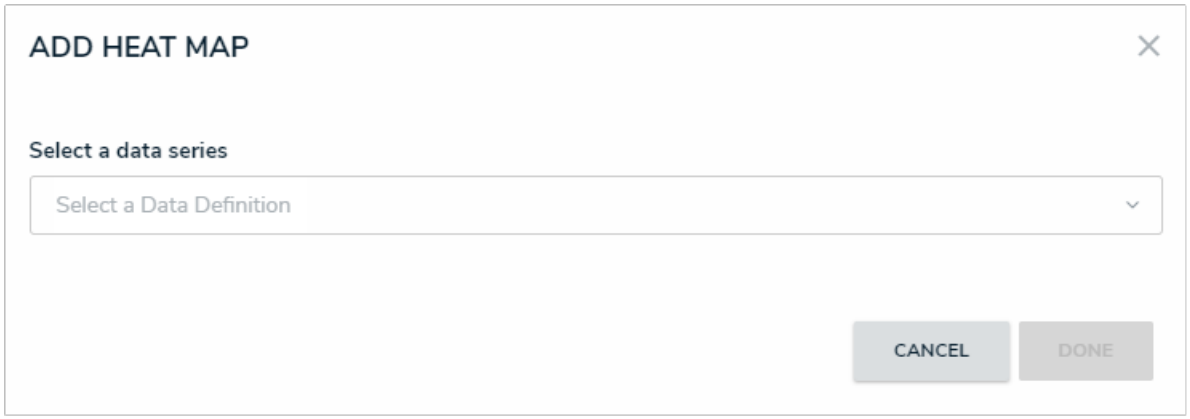
1. In the **Elements** section, click the icon beside **Display**.



The Elements section.

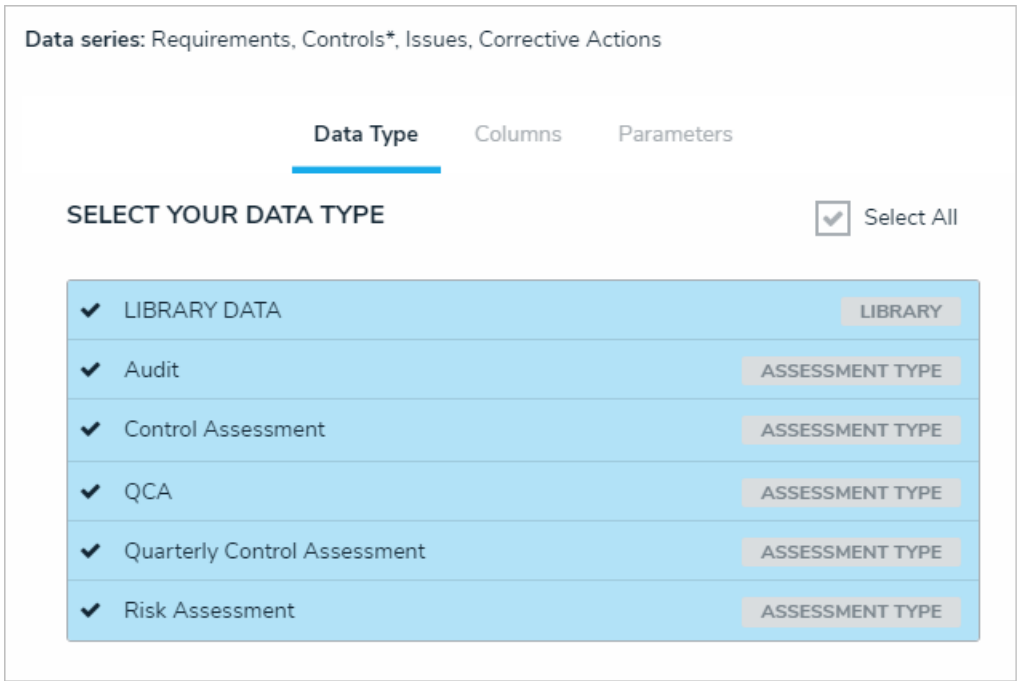
2. Drag and drop **Heat Map** from the **Elements** section to the **Report Canvas**.

3. Select a data series from the **Select a data series** dropdown menu, then click **Done**. The data definition selected here will determine which object types you can choose to display in the heat map.



Selecting a data series.

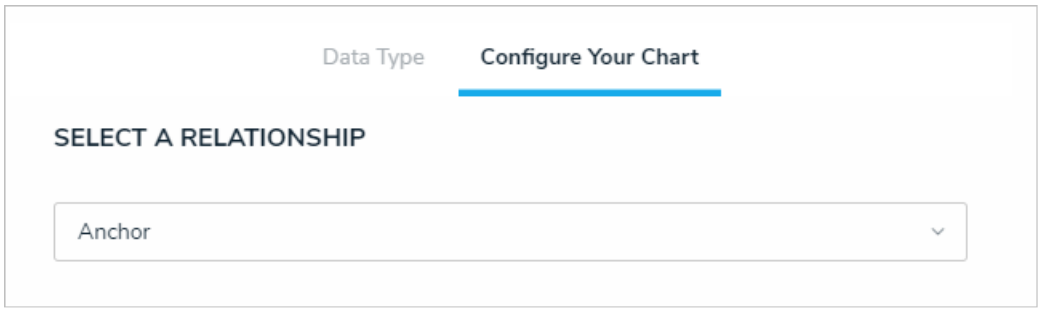
4. Choose the data types you'd like to display in the heatmap from the **Data Type** tab. Selecting **LIBRARY DATA** will include object type data, while selecting an **Assessment Type** will include the assessment name and workflow state. By default, all data types are selected. To make individual selections, deselect the **Select All** checkbox, then click the data type(s) you wish to include.



The Data Type tab.

5. Click the **Configure Your Chart** tab.

6. Choose either the anchor or an object type in the data path from the **Select a Relationship** dropdown menu. The options in this dropdown menu will vary depending on the definition selected as the data series in the step above.

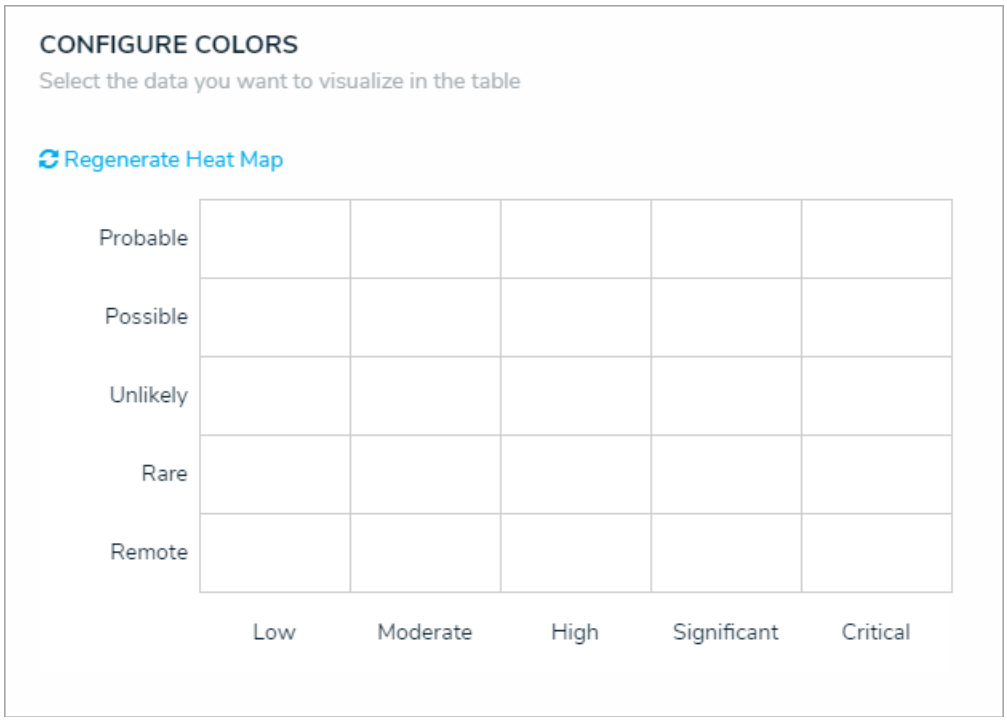


Selecting which object type's data will appear in the heatmap.

7. Choose a select list or formula saved to the object type from the **X-Axis** and **Y-Axis** dropdown menus. These selections will populate the cell labels in the X (bottom) and Y (left) axes on the report.

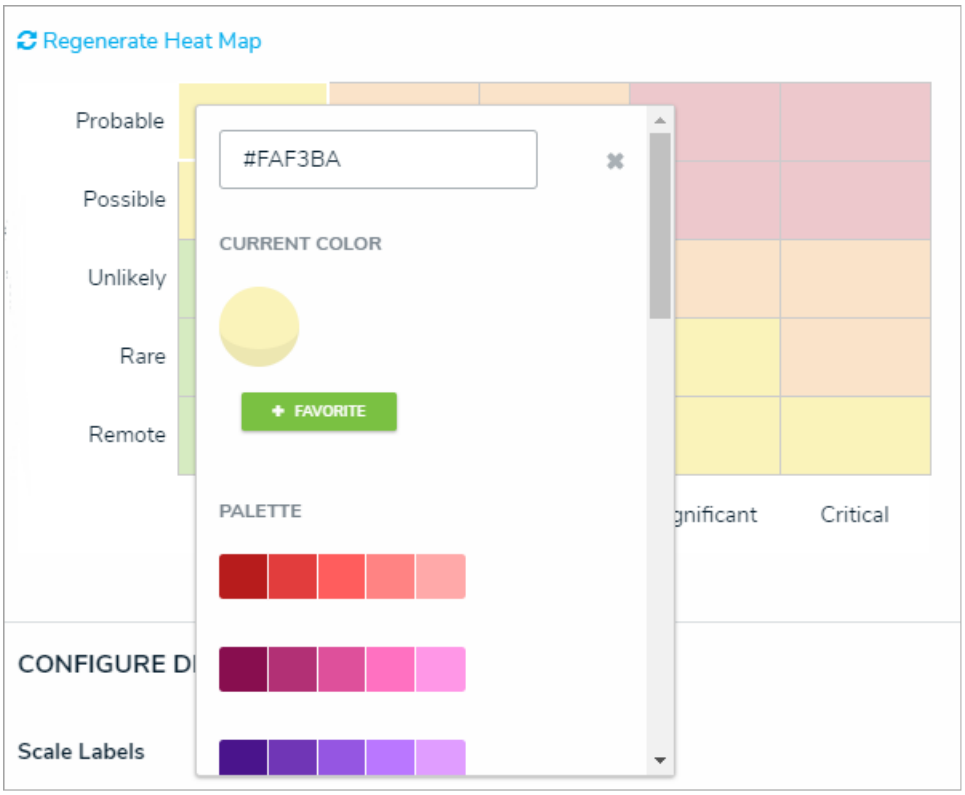
> Heat maps with a single data point display pills on the map based on the object type's monogram color, if any.

8. Click **Regenerate Heat Map** in the **Configure Colors** section to show a preview of the heat map.



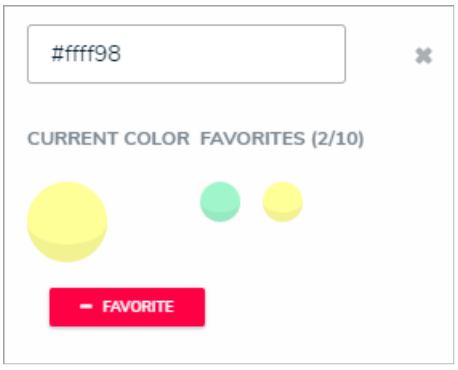
A preview of the heat map. Clicking Regenerate Heat Map will display the colors on the map for adjustment as needed.

9. To adjust the cell colors:
    a. Click a cell to display the color picker.
    b. Enter a hex color code in the text box or select a preconfigured shade from the **Palette** section.



The heat map color picker.

c. **Optional:** Click **+ Favorite** to save the color. Up to ten colors can be added and can be accessed when configuring the settings for all heat maps in your organization. To remove a favorite color, click it, then click **- Favorite**.



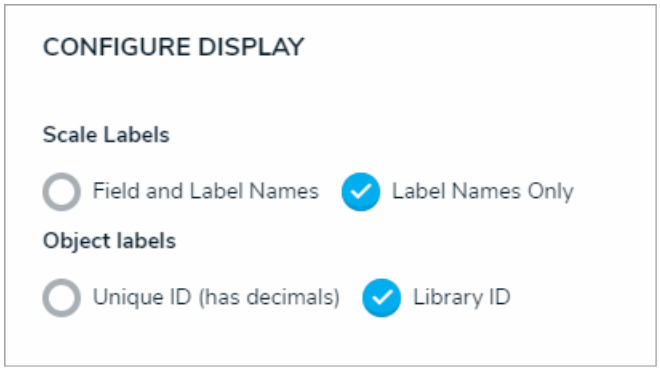
Favorite colors. Up to ten can be added.

d. Click the **x** or click outside the picker to close it, when finished.

e. To reset the cell colors to their defaults, click **Regenerate Heat Map**.

10. In the **Scale Labels** section, select either **Field and Label Names** to display the name of the select list or formula chosen in step 7 above alongside the cell labels, or select **Label Names Only** to display the options or formula labels only.

11. In the **Object Labels** section, select the **Unique ID (has decimals)** option if you want to display the decimals of any assessment instances (e.g. 32.1). Select **Library ID** if you do not want decimals displayed (e.g. 32).



The Configure Display section.

12. From the **Define Custom Forms** dropdown menu, select which form is displayed when a user clicks on data in the heat map. These options are determined by the object type selected in the **Select a Relationship** dropdown menu above. Choosing **Default** will display the form selected in the user's role permissions for the object type.
13. Click **Done** when finished.

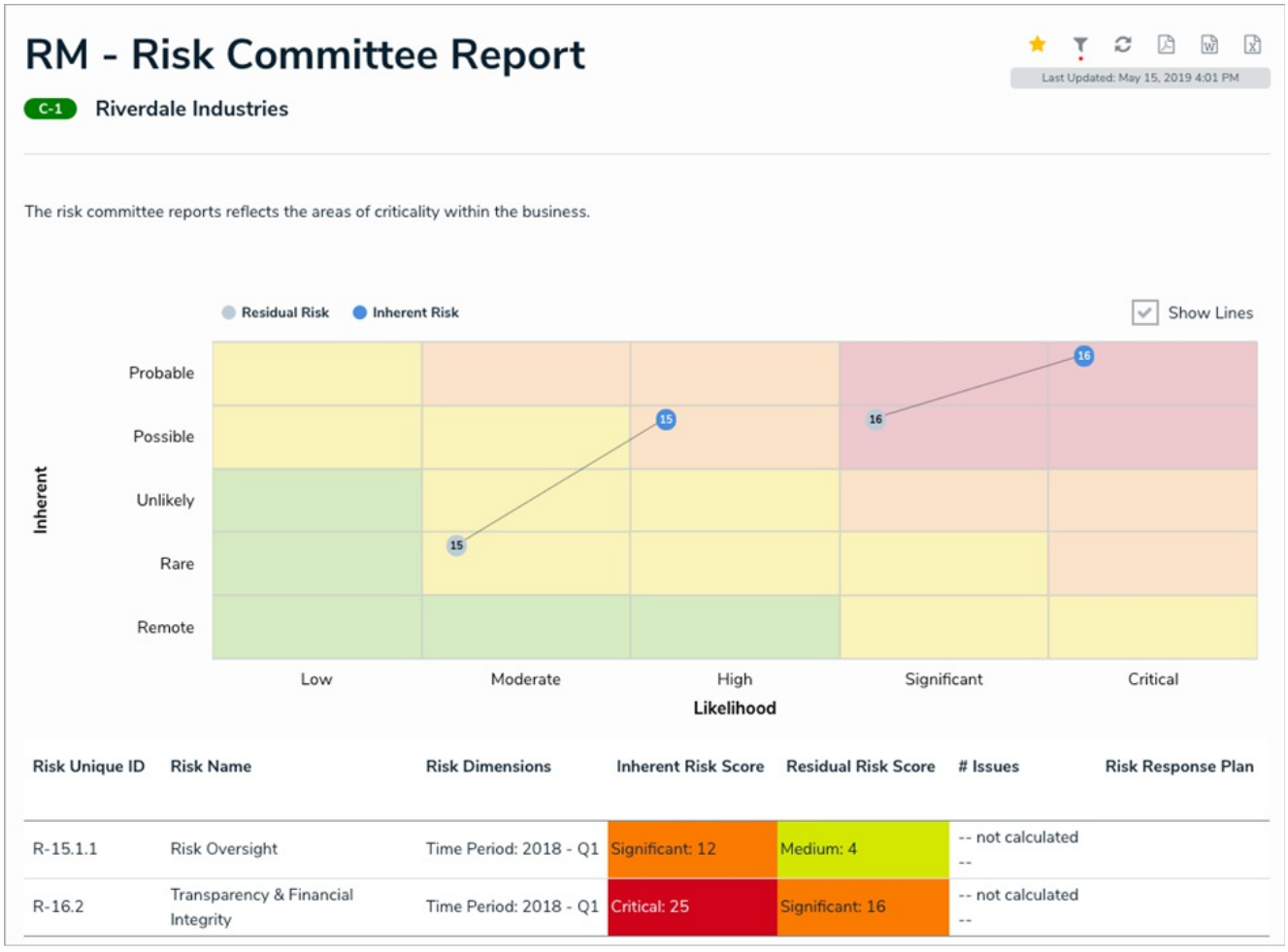
Add a Heat Map with Multiple Data Points

If needed, up to six additional data points from a single object type can be added to the heat map. For example, you may need to create a heat map that shows an Inherent Risk data point using the Inherent Impact and Residual Likelihood formulas together with the Residual Risk data point using the Residual Impact and Residual Likelihood formulas.

> Adding or removing a range or option from a formula or select list currently added to an existing heat map will require that an admin clicks **Regenerate Heat Map** in the settings to refresh the report and ensure it displays correctly.

> It's recommended a table is created with heat map reports. This allows users to open individual objects in cells that contain 10 objects or more, and provide additional information about the objects.

For information on creating a heat map with a single data point, see the Add a Heat Map with a Single Data Point article.



A heat map with multiple data points.

Labels

Labels displayed in the X and Y axes are pulled from the **first** data point added to the heat map. Additionally, each data point is displayed in a legend and assigned one of the following preset color codes, based on the order each data point was created:

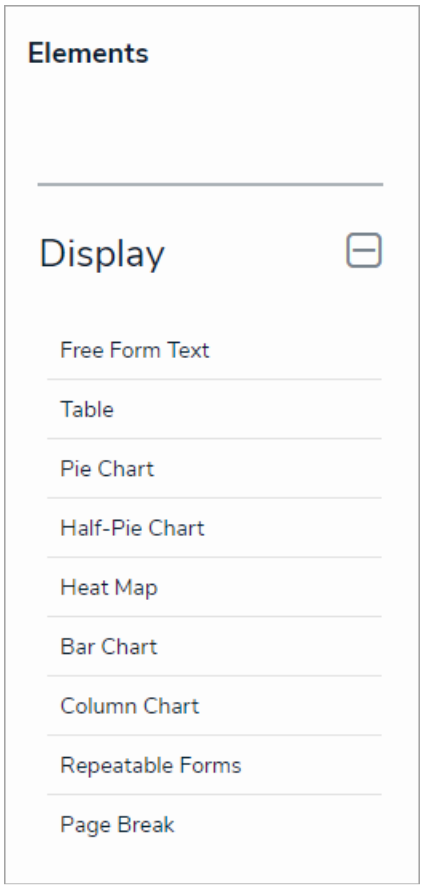
1. #bccdda
2. #498edf
3. #8b49df
4. #103765
5. #8c836a
6. #677682

Admins can name the X and Y axes with custom labels that will appear outside the select list field/formula labels on the axes and can configure the map to display lines between objects that appear more than once through multiple data points.

Instructions

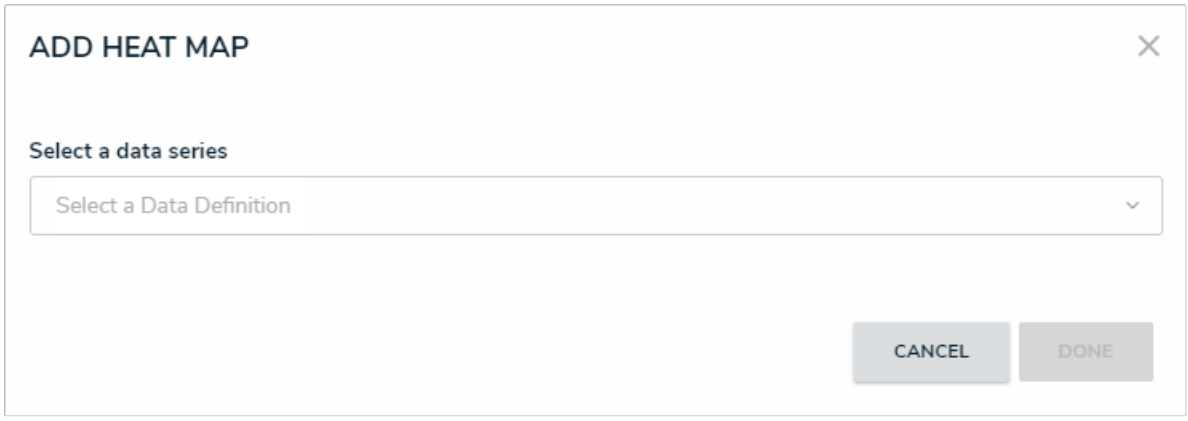
To add a heat map with multiple data points to a report:

1. In the **Elements** section, click the icon beside **Display**.



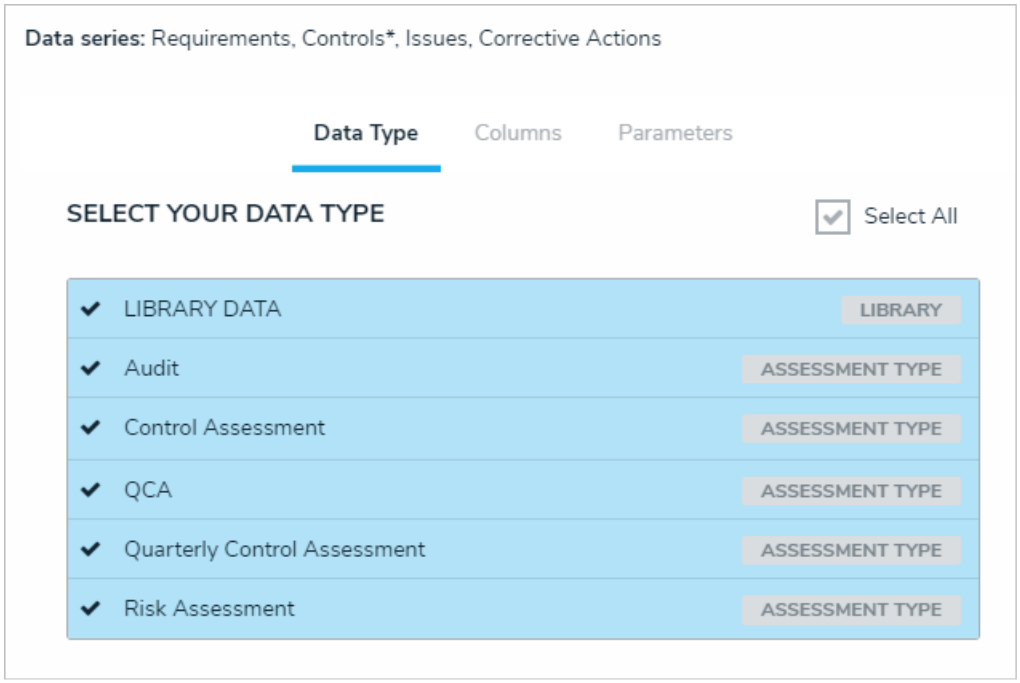
The Elements section.

2. Drag and drop **Heat Map** from the **Elements** section to the **Report Canvas**.
3. Select a data series from the **Select a data series** dropdown menu, then click **Done**. The data definition selected here will determine which object types you can choose to display in the heat map.



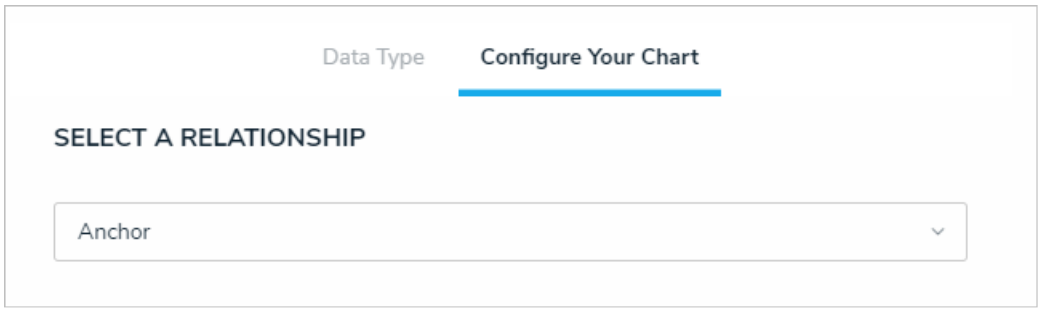
Selecting a data series.

4. Choose the data types you'd like to display in the heat map from the **Data Type** tab. Selecting **LIBRARY DATA** will include object type data, while selecting an **Assessment Type** will include the assessment name and workflow state. By default, all data types are selected. To make individual selections, deselect the **Select All** checkbox, then click the data type(s) you wish to include.



The Data Type tab.

5. Click the **Configure Your Chart** tab.
6. Choose either the anchor or an object type in the data path from the **Select a Relationship** dropdown menu. The options in this dropdown menu will vary depending on the definition selected as the data series in the step above.

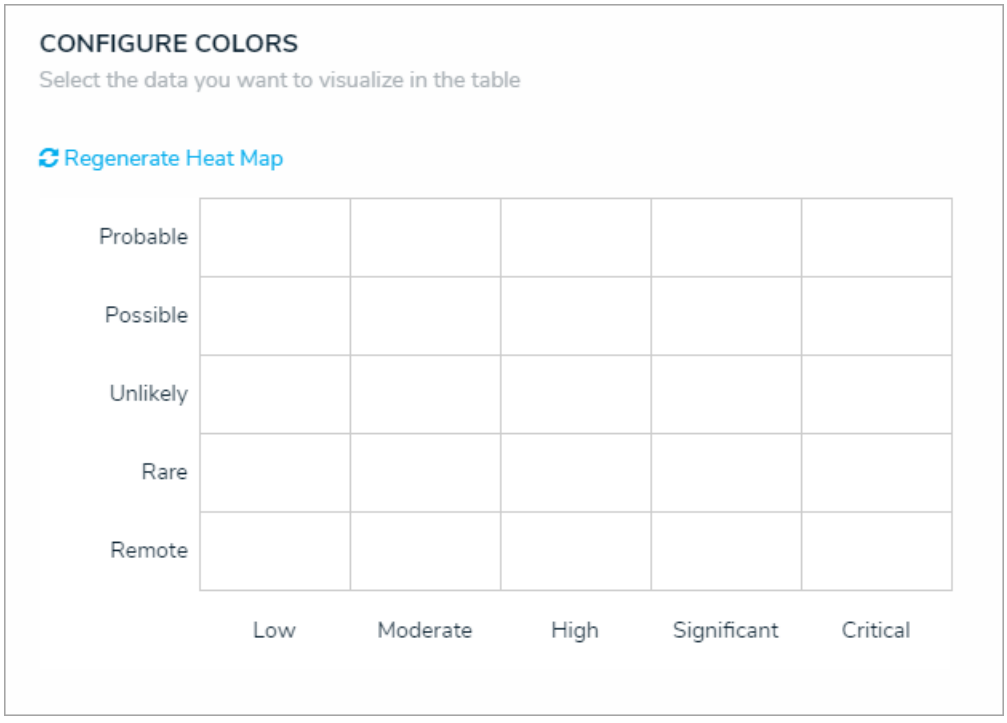


Selecting which object type's data will appear in the heatmap.

7. Choose a select list or formula saved to the object type from the **X-Axis** and **Y-Axis** dropdown menus. These selections will populate the cell labels in the X (bottom) and Y (left) axes on the report.

> The select list or formulas selected for the first data point determine which cell labels are displayed on the heat map.

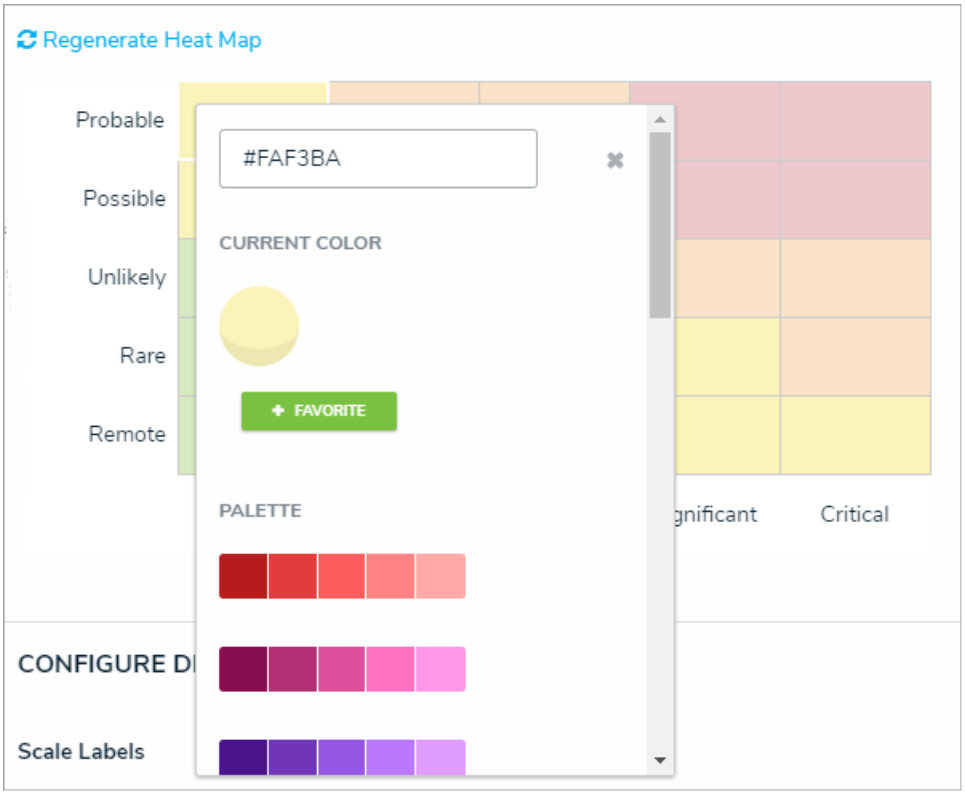
8. **Optional:** Enter a name for the data point in the legend in the **Text label for data legend** field. If this field is left blank, the data point will be assigned a **Series #** title by default. The number assigned to the series name is determined by the order the data point was created (i.e., Series 1, Series 2, Series 3, etc.).
9. Click **Add More**.
10. Choose a select list or formula in the **X-Axis** and **Y-Axis** dropdown menus to create an additional data point, then enter an optional name for the data point in the legend in the **Text label for data legend** field.
11. Continue adding more data points as needed. Up to six data points can be added per heat map.
12. **Optional:** Enter names in the **X-Axis** and **Y-Axis** fields in the **Custom Axis Labels** section to include a title for the axes on the map.
13. Click **Regenerate Heat Map** in the **Configure Colors** section to show a preview of the heat map.



A preview of the heat map. Clicking Regenerate Heat Map will display the colors on the map for adjustment as needed.

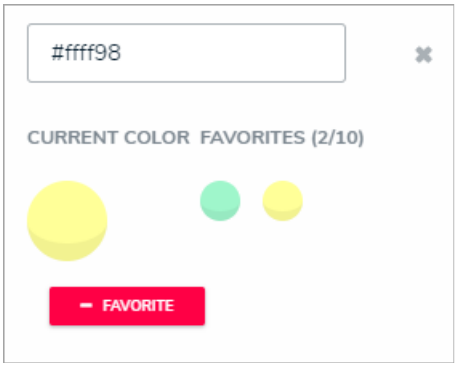
The heat map preview will **not** display data point legends or connector lines.

14. To adjust the cell colors:
    a. Click a cell to display the color picker.
    b. Enter a hex color code in the text box or select a preconfigured shade from the **Palette** section.



The heat map color picker.

    c. **Optional:** Click **+ Favorite** to save the color. Up to ten colors can be added and can be accessed when configuring the settings for all heat maps in your organization. To remove a favorite color, click it, then click **- Favorite**.



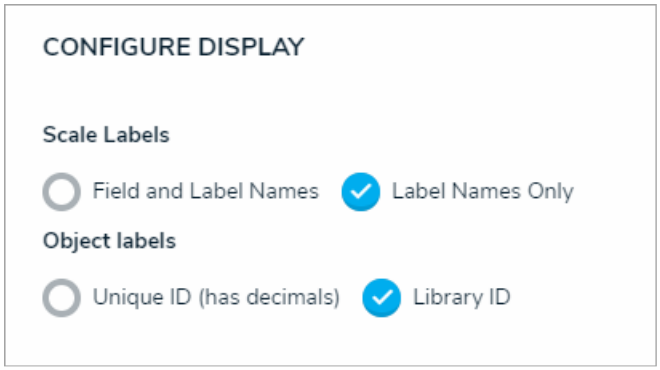
Favorite colors. Up to ten can be added.

    d. Click the **x** or click outside the picker to close it, when finished.
    e. To reset the cell colors to their defaults, click **Regenerate Heat Map**.

15. In the **Scale Labels** section, select **Field and Label Names** to display the name of the select lists or formulas alongside the cell labels. Select **Label**

Names Only to display the select list options or formula labels only.

16. In the **Object Labels** section, select the **Unique ID (has decimals)** option if you want to display the decimals of any assessment instances (e.g. 32.1). Select **Library ID** if you do not want decimals displayed (e.g. 32).



The Configure Display section.

17. In the **Connect Lines** section, select the **Display Lines** checkbox to allow end users to enable lines between objects that appear more than once on the map through multiple data points. If this checkbox is selected, you can toggle the **Show Lines By Default** option to show the lines automatically once the report has loaded.

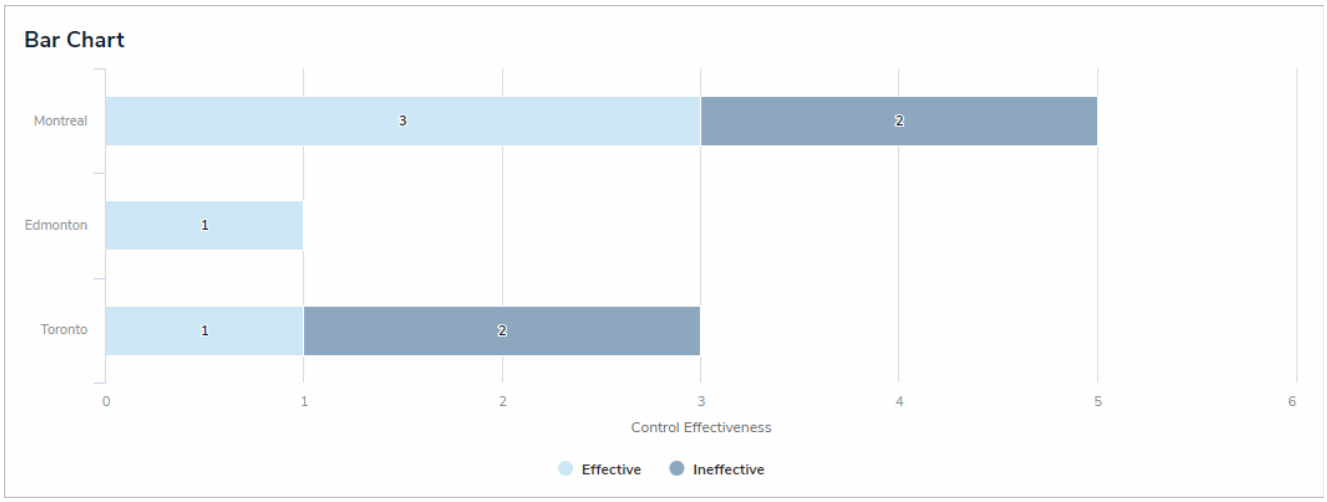
The Connector Lines section.

18. From the **Define Custom Forms** dropdown menu, select which form is displayed when a user clicks on data in the heat map. These options are determined by the object type selected in the **Select a Relationship** dropdown menu above. Choosing **Default** will display the form selected in the user's role permissions for the object type.

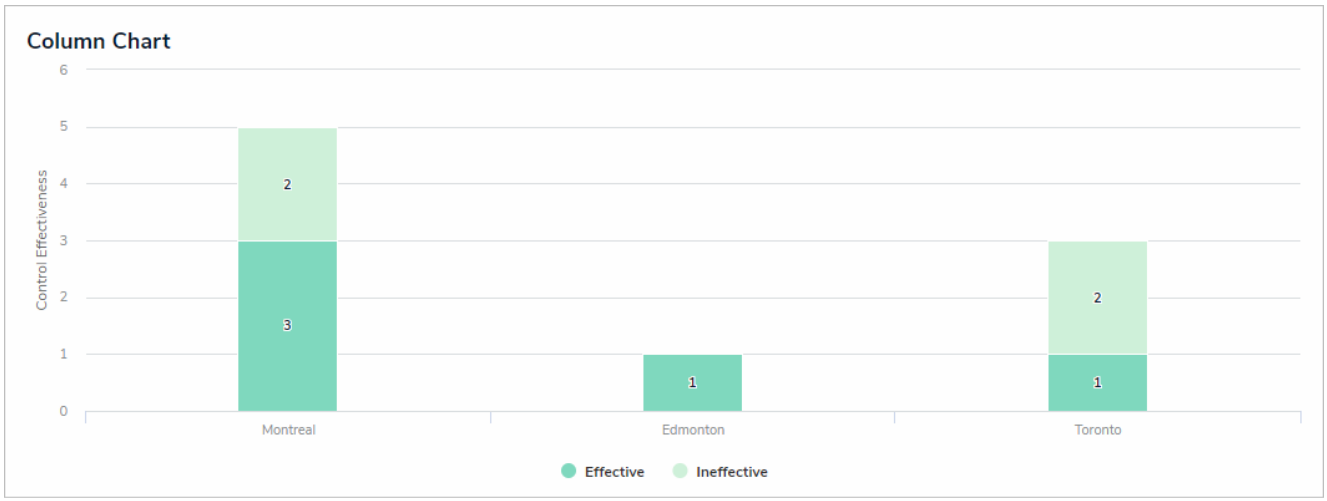
19. Click **Done** when finished.

Add a Bar Chart or Column Chart to a Report

Bar charts and column charts display numeric data based on the data definition selected.



A bar chart with grouped data.



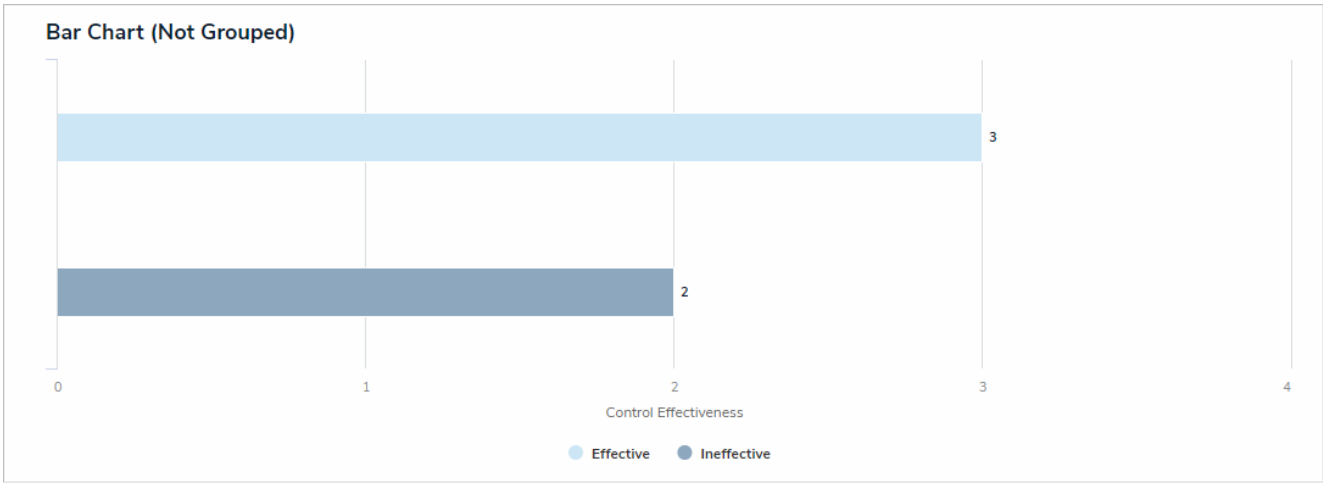
A column chart with grouped data.

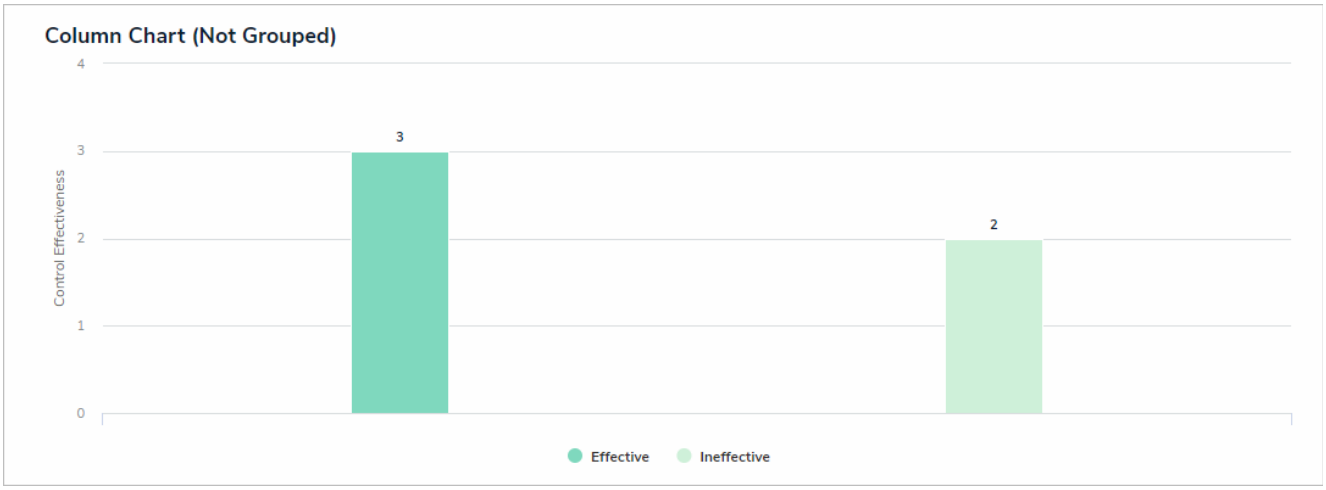
Group By

When creating a bar or column chart, you can choose if the data is grouped by an object type or relationship. For example, in the screenshots above, the reports are displaying the number of times the Effective and Ineffective select list options appear on the Incident objects where each location has been referenced (e.g. the Montreal object has been selected on five Incident objects. Three of those Incident objects were effective, while two were ineffective).

When a chart **isn't** grouped, the number of times the selected field, formula, relationship, or state appears on a single object is totalled on the chart. For example, in the screenshots below, the data has not been grouped and the charts are therefore displaying the number of times the Effective and Ineffective select list options appear on the Incident objects at the Montreal location.

An ungrouped bar chart.



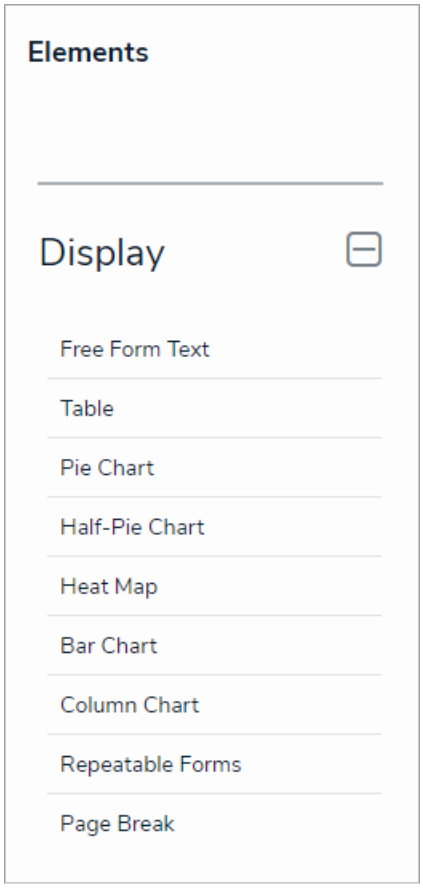


An ungrouped column chart.

Instructions

To add a bar chart or column chart to a report:

1. In the **Elements** section, click the icon beside **Display**.

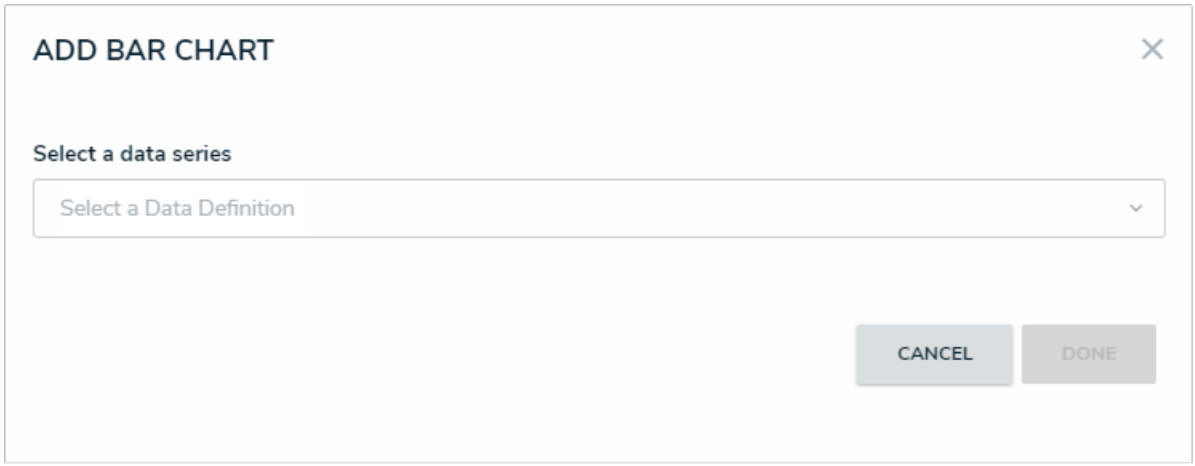


The Elements section.

2. Drag and drop **Bar Chart** or **Column Chart** from the **Elements** section to the **Report Canvas**.

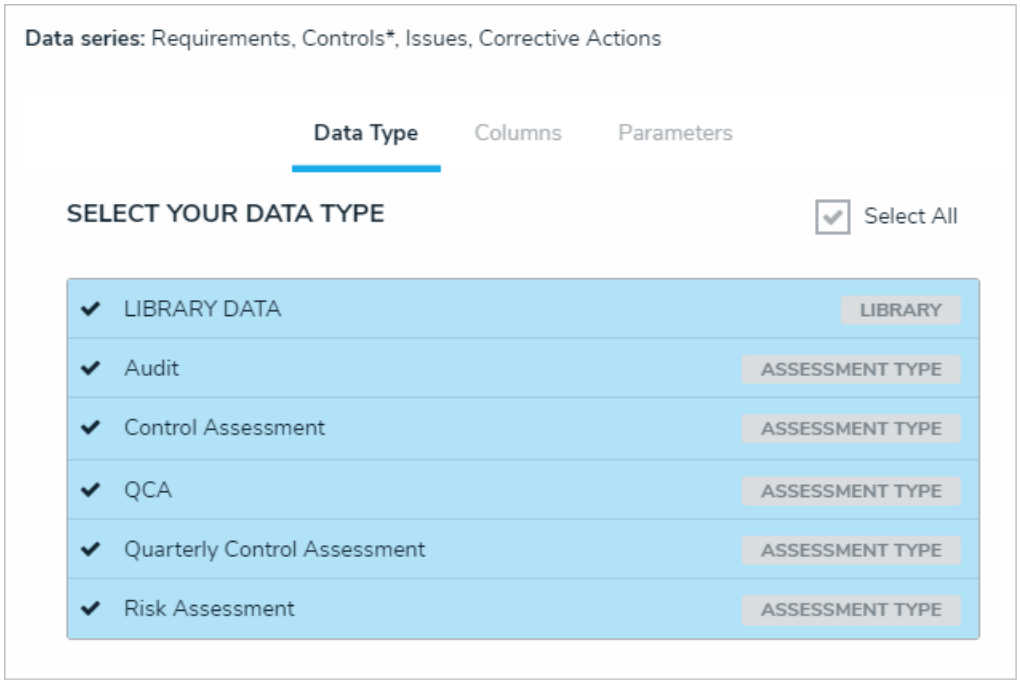
> Configurations for bar and column charts are identical. To change an existing bar chart to a column chart or vice versa, open the **Edit Chart** palette and select**Bar** or **Column** in the **Configure Display** section.

3. Select a data series from the **Select a data series** dropdown menu, then click **Done**. The data definition selected here will determine which object types you can choose to display in the chart.



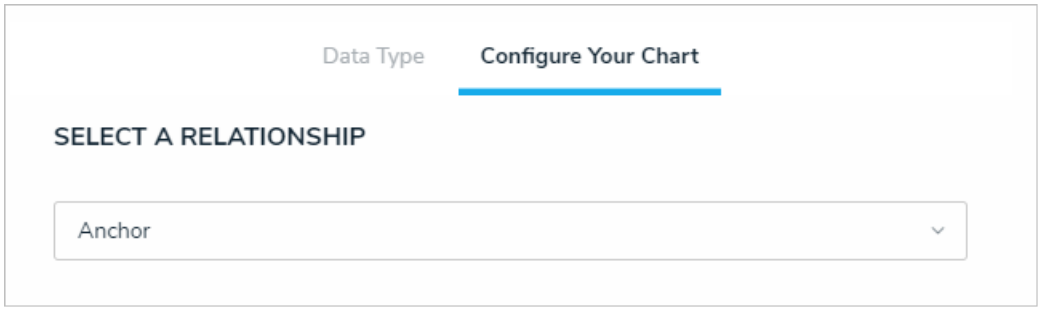
Selecting a data series.

4. Choose the data types you'd like to display in the pie chart from the **Data Type** tab. Selecting **LIBRARY DATA** will include object type data, while selecting an **Assessment Type** will include the assessment name and workflow state. By default, all data types are selected. To make individual selections, deselect the **Select All** checkbox, then click the data type(s) you wish to include.



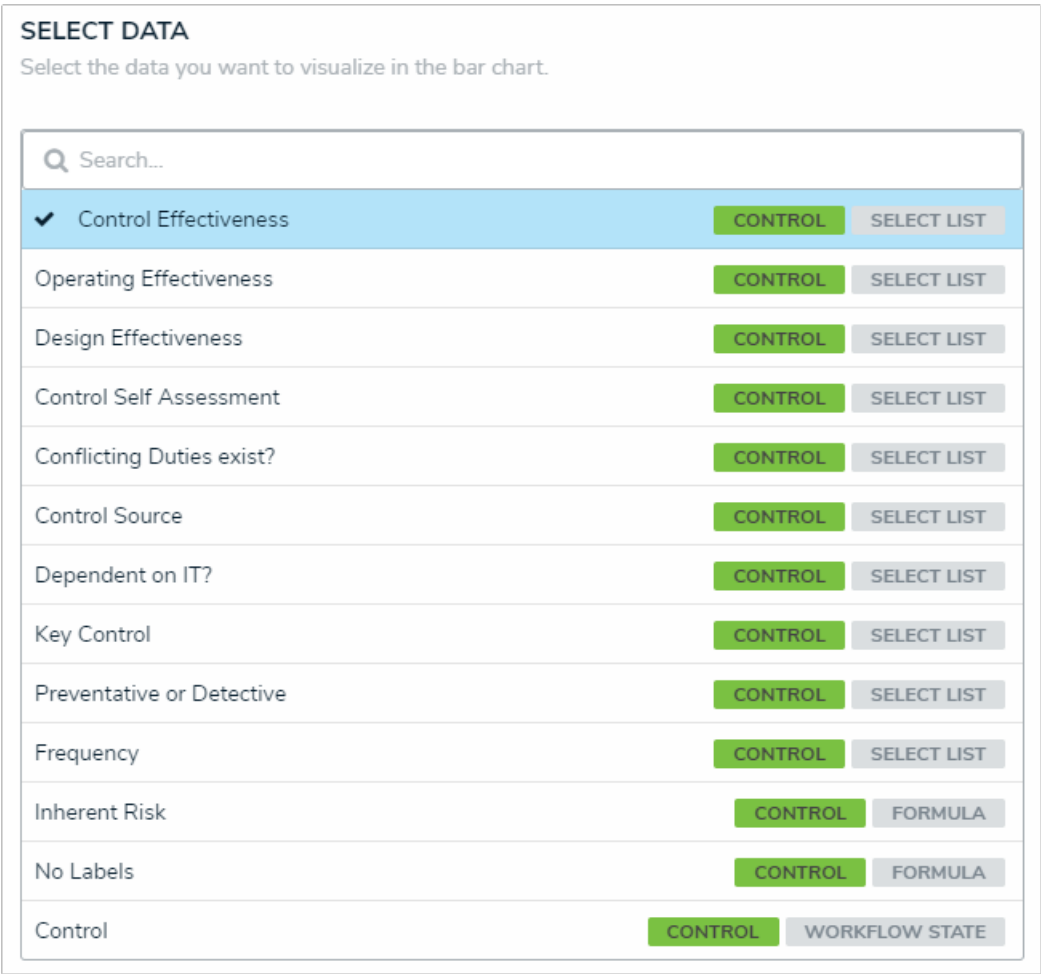
The Data Type tab.

5. Click the **Configure Your Chart** tab.
6. Choose the anchor or an object type in the data path from the **Select a Relationship** dropdown menu. The options in this dropdown menu will vary depending on the definition selected in the data series step above.



Selecting which object type's data will appear in the report.

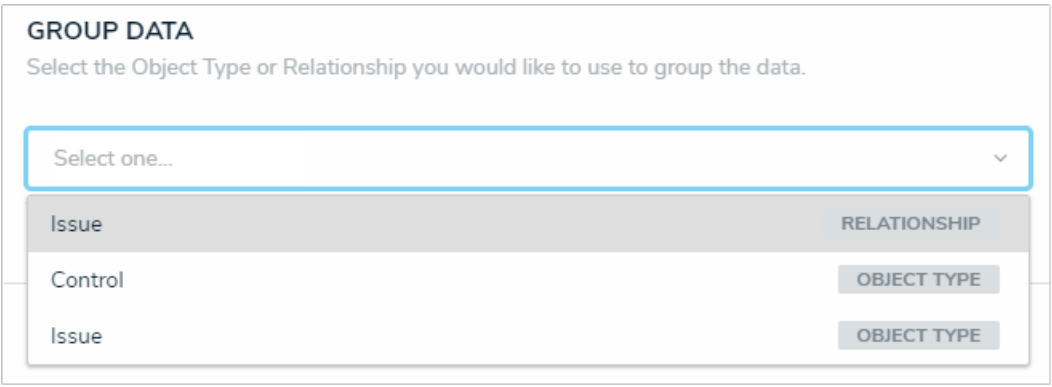
7. From the **Select Data** section, select the data (numeric field, select list field, formula, relationship, or state) that you wish to display in the chart.



The Select Data section.

You can only select one data type for each bar chart.

8. **Optional:** Select an object type or relationship from the **Group Data** dropdown menu. This selection will determine the legend to the left of the chart and the category of the data displayed. If the data is not grouped, a total count of the field, formula, or state selected in step 5 above will be displayed.



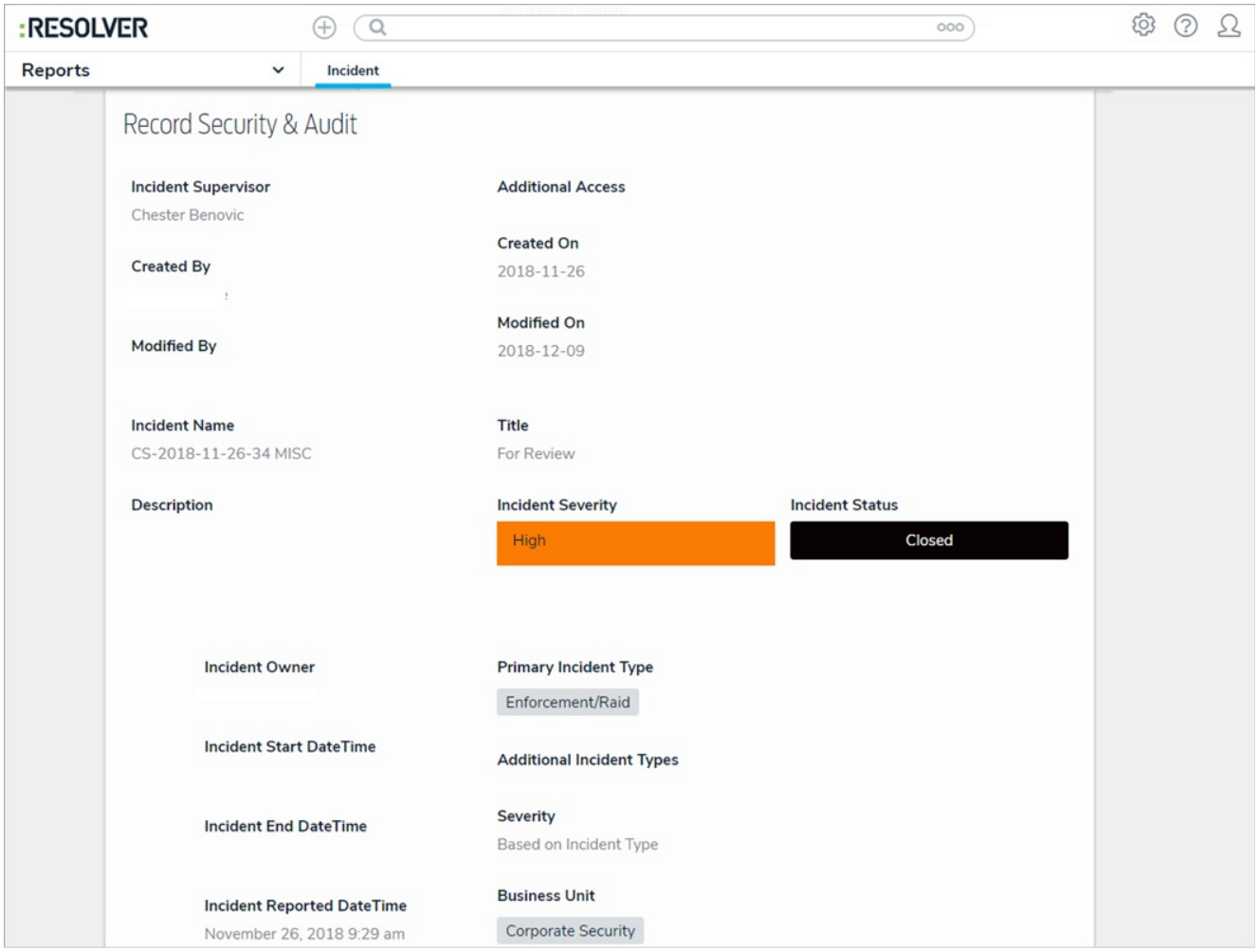
The Group Data section of Edit Chart palette. Your selection here will determine how the legend of the chart is displayed.

9. **Optional:** Enter a name for the chart in the **Chart Title** field.
10. **Optional:** To display the chart as bars or columns, select either **Bar** or **Column** in the **Configure Display** section.
11. **Optional:** If the data is grouped (see step 6), select the **Column Totals** checkbox to display a total count of the grouped data in each bar or column. If the data is not grouped, this option will be grayed out.
12. Click **Done** when finished.
13. Repeat the steps above to continue adding more bar or column charts to the report as needed. Once multiple elements are on the **Report Canvas**, you can rearrange them by hovering your cursor over the element, then clicking the icon and dragging the element to a new location on the canvas. To delete an element, hover your cursor over it, then click the icon.

Add Repeatable Forms to a Report

Repeatable forms display object data as it was entered into a form. This allows users to view and share non-editable, printer-friendly versions of completed forms with other users.

When configuring this element, admins select a data series, then define which objects will appear in the report by selecting a form and title for each relevant object type. If no form is selected for an object type, it will not appear in the report.

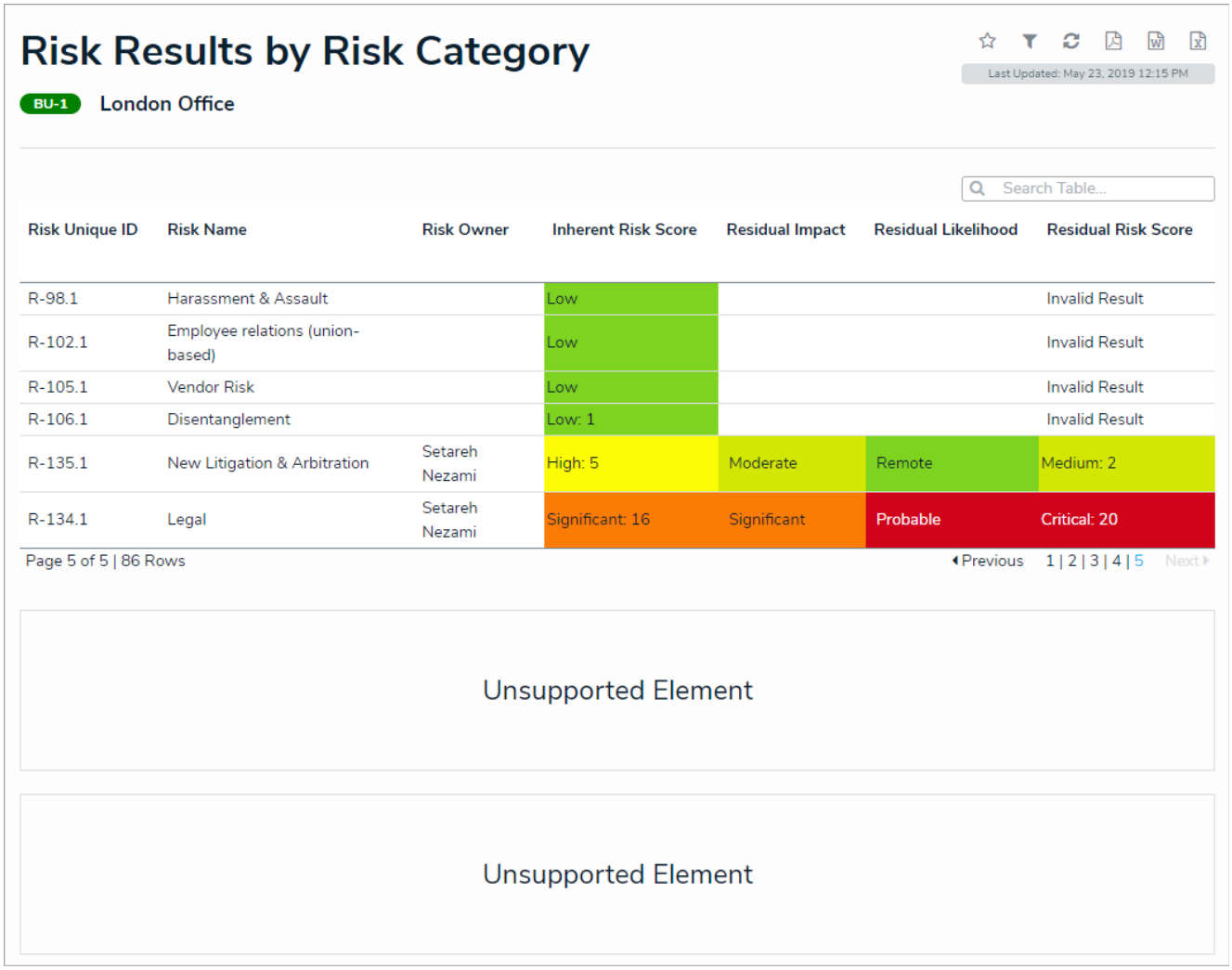


A repeatable form on a report.

Unsupported Elements

Only configurable forms with supported elements can be selected in this report. If a form with unsupported elements is selected, the form is skipped in its entirety and an error message is displayed in its place. These unsupported elements include:

- Relationship and reference tables;
- Assessment tables;
- Assessment context;
- Assessment dimensions;
- Tabs;
- Action buttons; and
- Workflow transition buttons.



A report with repeatable forms that contain unsupported elements.

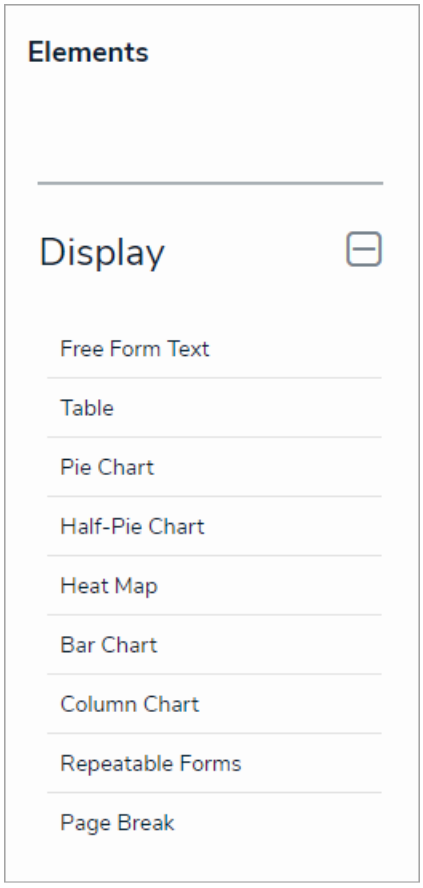
Important Notes

- Because repeatable form elements display the selected form in its entirety, reports with multiple repeatable forms may take longer to load. Additionally, for optimal loading time and performance, it's recommended that no more than 100 objects are displayed via one or more repeatable form in a single report. If you're using Internet Explorer, no more than 50 objects should be displayed.
- Add no more than 100 trending elements across all repeatable forms. For example, if a report has 25 repeatable form objects, there should be no more than 4 trending objects per repeatable form for a total of 100.
- It's recommended that repeatable form reports are not added to nav forms or starred reports as doing so may cause performance issues, depending on the amount of data displayed in the form or report.
- If a user does not have permission to see an object, the form will not be displayed on the report.
- Because this report type is designed to be read-only, certain form components will not appear in a repeatable form, including:
    - Required fields;
    - Formula updates;
    - Workflow transition buttons; and
    - Workflow states, etc.

Instructions

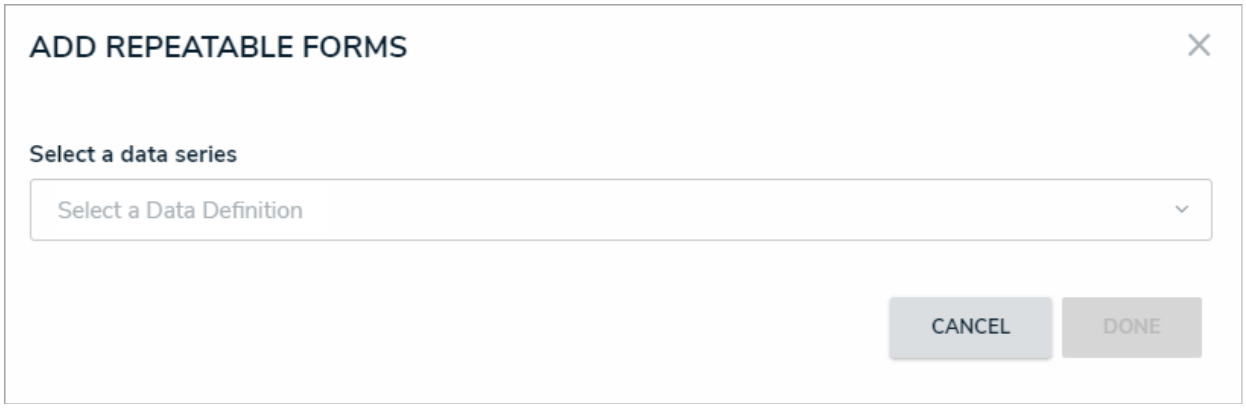
To add a repeatable form to a report:

1. In the **Elements** section, click the icon beside **Display**.



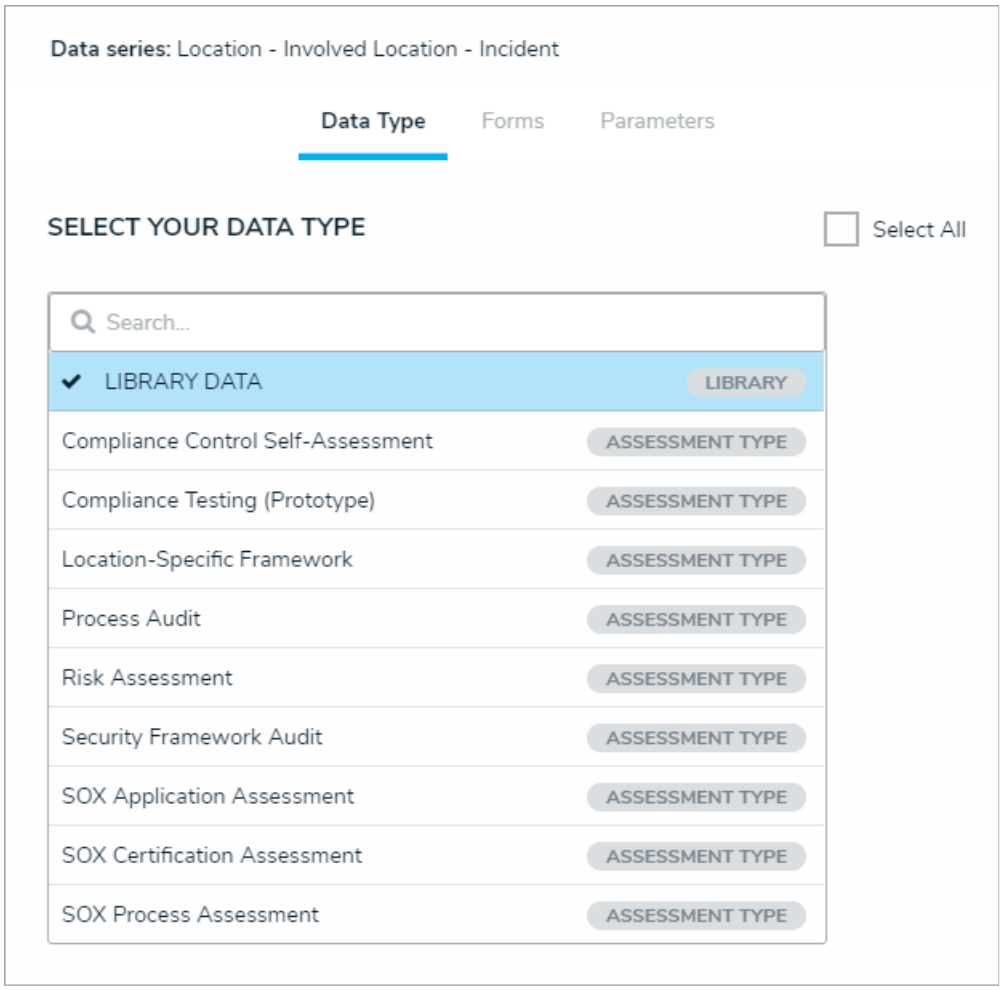
The Elements section.

2. Drag and drop **Repeatable Forms** from the **Elements** section to the **Report Canvas**.
3. Select a data series from the **Select a data series** dropdown menu, then click **Done**. The data definition selected here will determine which object types' data you can choose to display in the repeatable form.



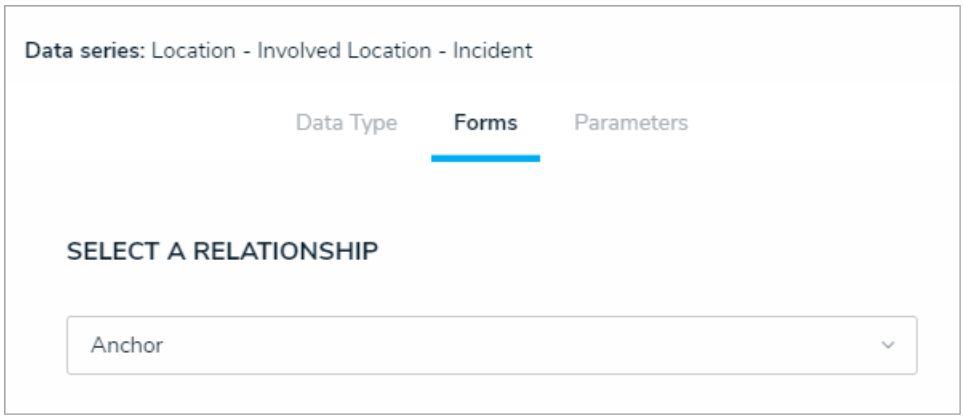
Selecting a data series.

4. Choose the data types you'd like to display in the form from the **Data Type** tab. Selecting **LIBRARY DATA** will include object type data, while selecting an **Assessment Type** will include the assessment name and workflow state. By default, all data types are selected. To make individual selections, deselect the **Select All** checkbox, then click the data type(s) you wish to include.



The Data Type tab.

5. Click the **Forms** tab.
6. Select either the anchor or an object type in the data path from the **Select a Relationship** dropdown menu. The options in this dropdown menu will vary depending on the definition selected as the data series in the step above.



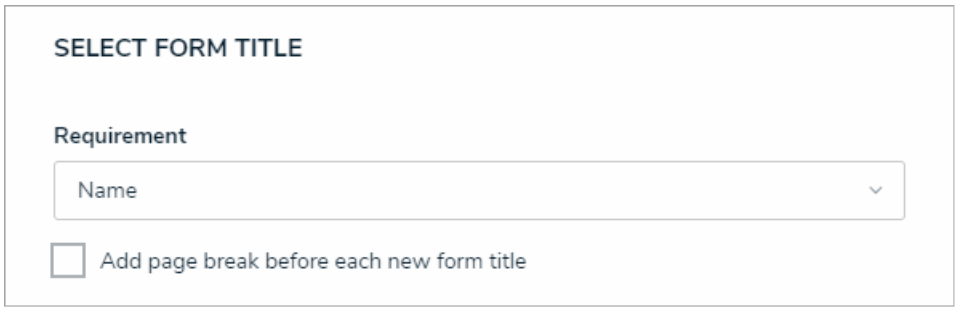
Selecting which object type's data will appear in the repeatable form.

7. Select a form from the **Define Custom Forms** dropdown menu. If the default option of **None** is selected for an object type, its objects will not be displayed in the report.

Selecting the custom form that will appear in the report.

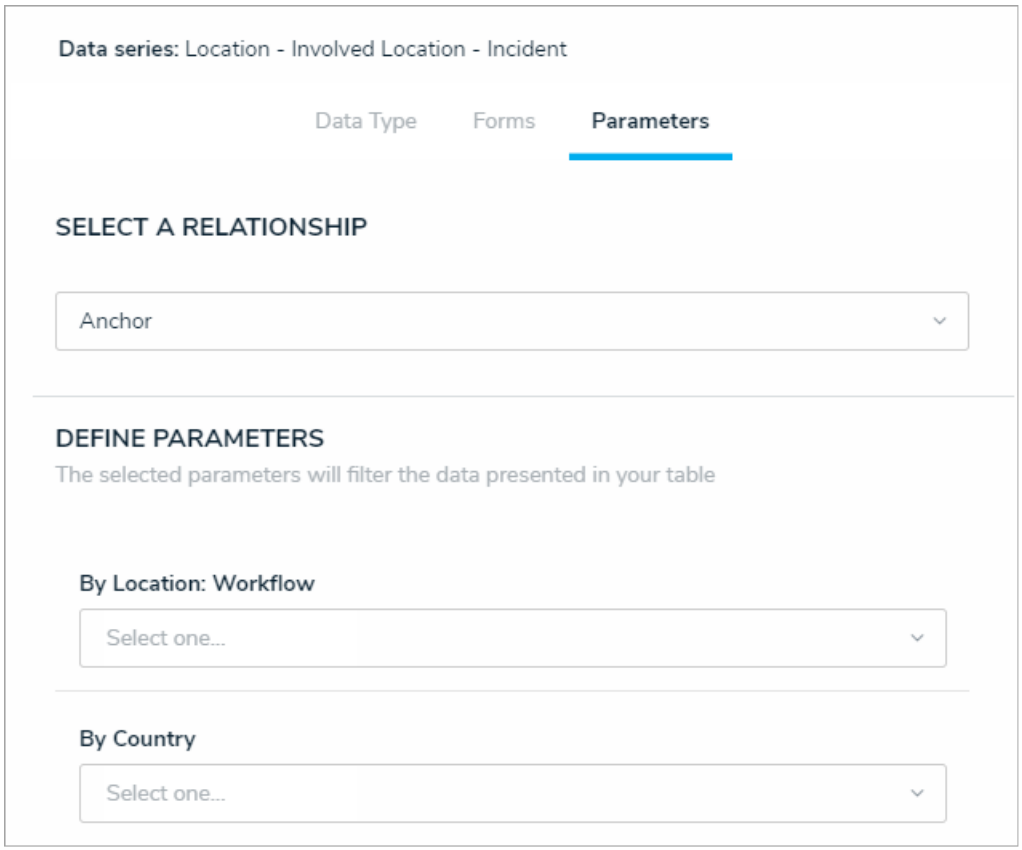
> ⚠ Selecting a configurable form with unsupported elements will prevent the repeatable form from loading on the report. See the **Unsupported Elements** section above for more information.

8. **Optional:** From the **Select Form Title** dropdown menu, select which object property will be used as the form title. If you didn't select a form in step 7 above, skip this step.



The Select Form Title section.

9. **Optional:** Select the **Add page break before each new form title** checkbox to ensure each instance of the form starts on a new page when the report is exported to PDF. If no form title was selected in step 8 above, a page break is still inserted before each instance of the form when this option is selected. If you didn't select a form in step 7 above, skip this step.
10. Repeat steps 6-9 above to add more forms and titles for additional object types.
11. Click the **Parameters** tab.



The Parameters tab.

12. Choose an object type from the **Select a Relationship** dropdown menu. The relationship selected here will determine which parameters (filters) you can apply to the form to refine the data that's displayed.

> You can add parameters from an object type in the data series even if that object type isn't configured to display any forms in report.

13. Below **Define Parameters**, select one or more parameters to filter the data displayed in the report. Options include:
    - Workflow states;
    - Select list options;
    - Formula ranges (e.g. High, Medium, Low);
    - By Current User. When one or more roles are selected in this parameter, only users within those roles can view the data in the table. This feature is useful to create customized reports for specific users. The available roles are determined by the object types in the table's data series; or
    - By Date & Time Field or Created On/Modified On properties. Selecting a range in the **By [Date Field]** dropdown menu will filter the data relative to the value selected in the Date & Time field on the objects. Selecting a range in the **By Created On ([Object Type Name])** or **By Modified On ([Object Type Name])** dropdown menus will filter the data relative to the date the objects were created or modified. All date-related options filter data in UTC time. It's recommended a date parameter is used to refine large data sets for improved report performance. Options include:
        - **Today**: Show data from today's date only.
        - **Last [X] Days**: Show data within the last 30, 60, 90, or 180 days, relative to today's date.
        - **Custom**: Shows data within the dates selected in the **From** and **To** fields. The table will include objects up to the end of that date.
14. Repeat steps 12 and 13 above to add more parameters from additional object types.
15. To remove a select list, formula, or role parameter, click the **x** icon beside parameter. To delete a date parameter, click the field, then press the **Backspace** or **Delete** key on your keyboard.

16. Click **Done** to close the **Edit Repeatable Form** palette.
17. Repeat the steps above to continue adding more repeatable forms to the report as needed. Once multiple elements are on the**Report Canvas**, you can rearrange them by hovering your cursor over the element, then clicking the icon and dragging the element to a new location on the canvas. To delete an element, hover your cursor over it on the canvas, then click the icon.

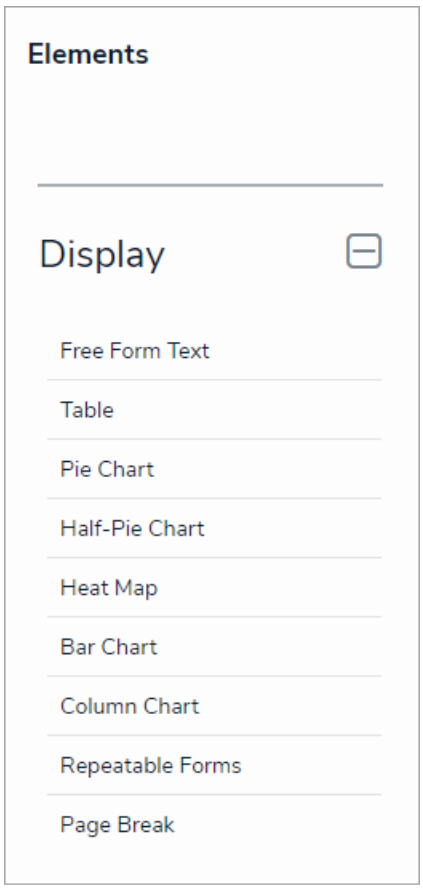
Add Page Breaks to a Report

The **Page Break** element breaks the page based on where an admin placed the element on the report canvas. This element has no effect on reports displayed in view, but it ensures printed and exported reports are displayed as required.

Instructions

To add a page break to a report:

1. In the **Elements** section, click the icon beside **Display**.



The Elements section.

2. Drag and drop **Page Break** from the **Elements** section to the **Report Canvas**.
3. Hover your cursor over the **Page Break** element to show the icon, then click and drag the element to the desired location on the canvas.

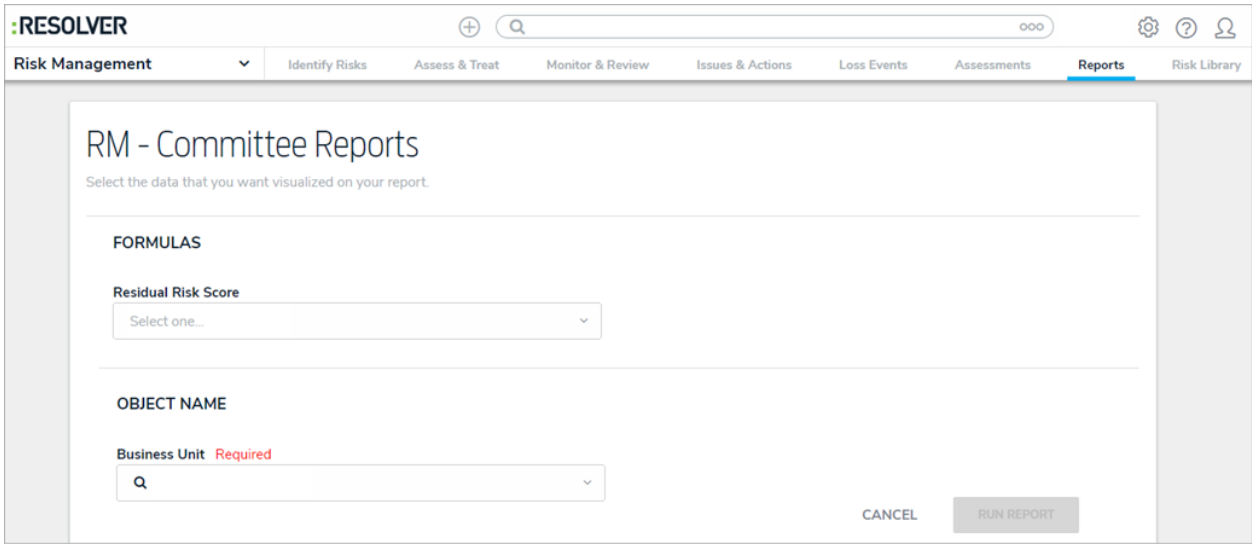
The Page Break element on the canvas.

4. Repeat the steps above to continue adding more page breaks to the report as needed. To delete an element, hover your cursor over it, then click the icon.

Add Filters to a Report

A data visualization **filter** is an optional feature that allows end users viewing a report to narrow down which data is displayed by applying one or more filters selected by an administrator. The filter options an administrator can make available to end users are determined by the object types selected in the report's data definition(s). If an admin marks a filter as **Required**, users must select a value for that filter on the **Filters** page before loading the report, otherwise users have the option to apply filters after the report has loaded. For more information, see the View a Report article.

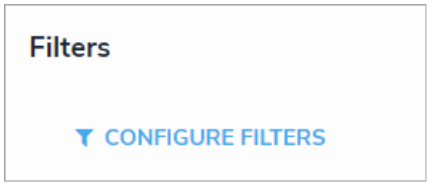
> The **Filters** feature is not available on data grids.



A required filter on the Filters screen.

To add filters to a report:

1. In the **Filters** section, click **Configure Filters**.



The Filters section.

2. From the **Configure Filters** palette, select one or more of the following filter options:
   - **Enable Filtering by Report Date:** Allows users to view historical data based on a selected date. See the Point in Time Reporting article for more details.
   - **State:** Filters the report data by the objects' current workflow state.
   - **Role:** Filters report data by users or user groups in explicit roles that have been granted direct access to objects from the report's data definition.

> A report element's data series determines if the **Roles** filter can be applied. In other words, if the role hasn't been added to the object types in the data series selected for a table, chart, heat map, or repeatable form, that role filter cannot be selected.

- **Date & Time/Select List:** Filters the report data by date and time and/or select list fields.
- **Formula:** Filters the report data by formula label.
- **Relationship:** Displays report data from a selected relationship object type and any related reference object type. For example, selecting the Risk 1 object type as a filter will also display all the Control objects that Risk 1 appears on through a relationship.
- **Object Type:** Displays report data from a selected object type or objects types.

3. **Optional**: Select the **Required** checkbox beside a filter. If the **Required** checkbox is selected for any filter, users must select a value for that filter before loading the report. Note that the **Report Date** (point in time reporting) filter cannot be marked as required.

A required filter.

4. Click the ✕ icon when finished.

Point in Time Reporting

The **Point in Time Reporting** filter allows users to view a report's historical data based on a selected date. This feature makes it possible for users with continuous assessments to view the status of assessments from previous periods (e.g., reviewing a report from a current assessment period, then rewinding the data to view results from the last quarter), or to compare and contrast non-assessment data to review the health or status trend of an organization (e.g., reviewing a report on open incidents by location, then rewinding the data to view the numbers from the previous month).

By default, point in time reporting is disabled for new and existing reports.

A report displaying historical data.

Important Notes

- To use this feature, your organization must have an active data warehouse that contains data for the desired time period. This means that point in time reporting cannot pull data that predates your data warehouse going live.
- Point in time reporting data is based on present-day permissions and users can only view historical data for objects they currently have permission to view.

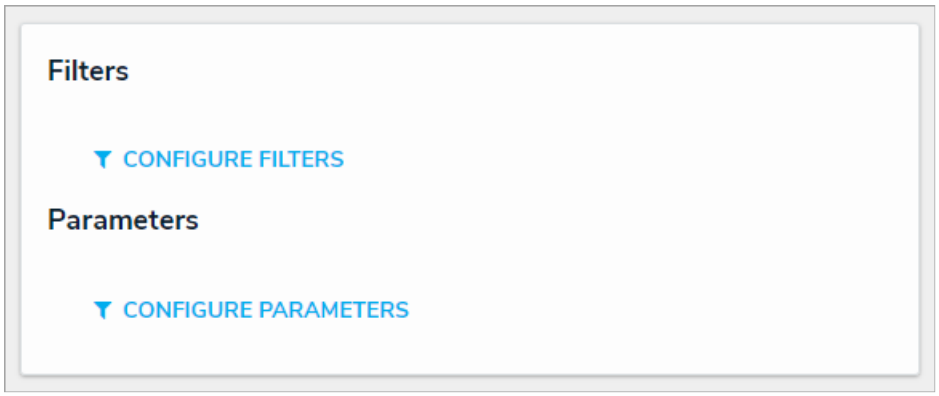
  For example, if a user previously had access to an object on January 1, but no longer has access today, the report will not include data from that object. Conversely, if a user didn't have access to an object on January 1, but has access today, the report will include data from that object.
- Report data is retrieved from the data warehouse at 23:59:59 UTC time on the selected date. There is currently no option to specify a specific time or alternate time zone.
- To prevent confusion when viewing historical report data, palette access to objects is disabled.
- Point in time reporting does **not** currently support:
  - Deleted or historical versions of attachments.
  - Location property data.
  - Assessment dimension data.
  - Marking the **Report Date** (point in time reporting) filter as required.

- Exporting historical reports to Word documents. Clicking the icon will export the present-day version of the report.

Instructions

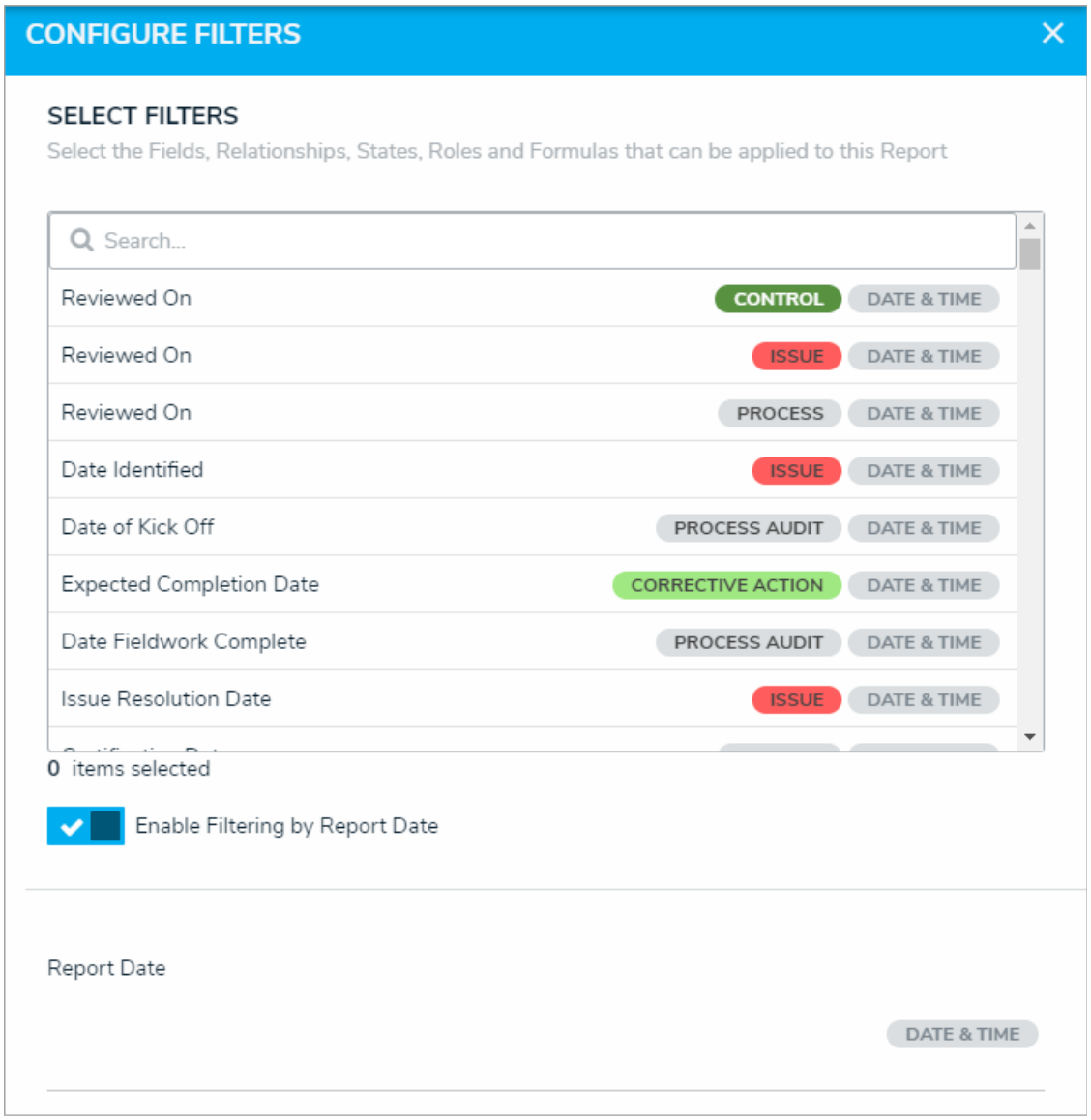
To enable point in time reporting:

1. Create or navigate to an existing report.
2. Click **Configure Filters** to display the **Configure Filters** palette.



Configure Filters on the Edit Report page.

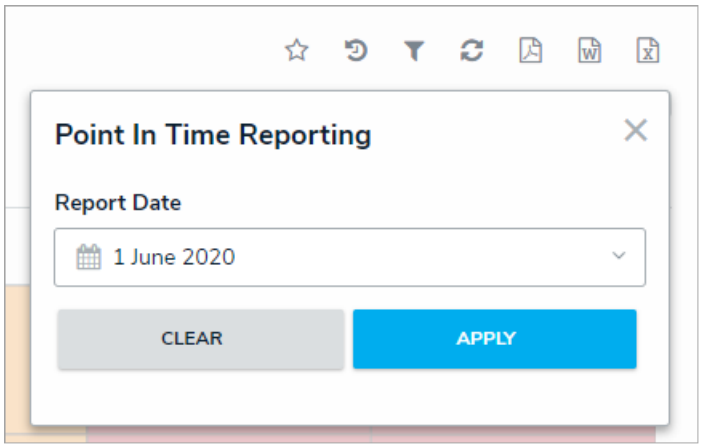
3. Click the icon beside **Enable Filtering by Report Date**.



The Report Date (point in time reporting) filter enabled in the Configure Filters palette.

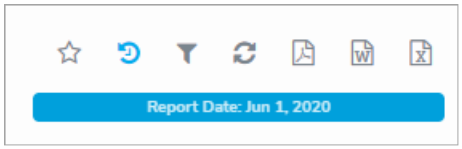
To view historical report data:

1. Navigate to a report you have permission to view.
2. Click the icon on the top-right of the report. If point in time reporting has not been enabled for this report, this icon will not be visible.
3. Click the **Report Date** field, then select a date from the calendar.
4. Click **Apply** to reload the report with historical data.



The Point In Time Reporting option.

5. To view data from a different date, click the icon, select a date, then click **Apply** to reload the report. When historical data is displayed on a report, this icon is displayed in blue.



The Point In Time Reporting icon.

6. To return to present-day data, click the icon, then click **Clear**.

Add Parameters to a Report

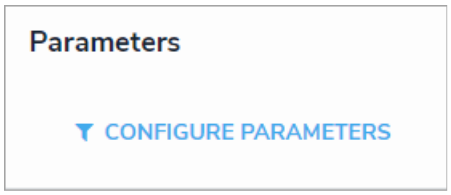
A report **parameter** controls the data displayed in a report and **all** its elements. As parameters rely on the data series selected in the element(s), parameters cannot be applied until one or more report elements have been added to the **Report Canvas**.

Only administrators can configure or apply parameters to reports.

Instructions

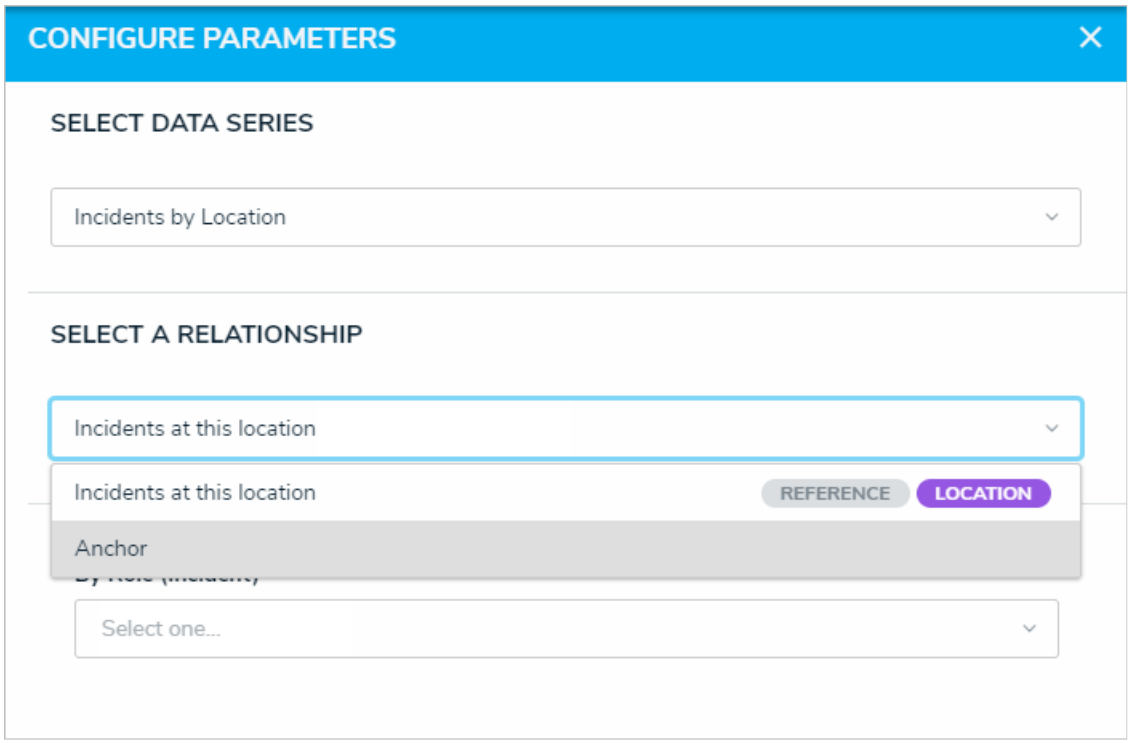
To add parameters to a report:

1. In the **Parameters** section of the **Edit Report** page, click **Configure Parameters.**



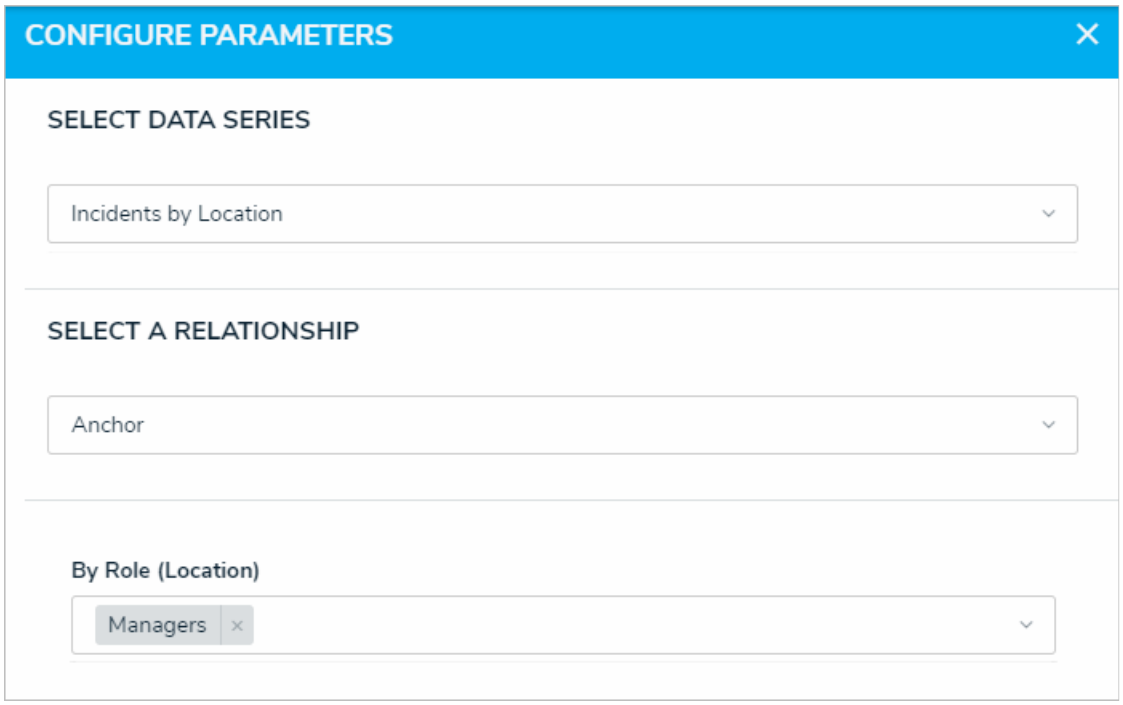
The Parameters section.

2. Select a data series from the **Select Data Series** dropdown menu, which will determine which options are available in the remainder of the fields in the palette. If no options are appearing in this dropdown menu, ensure that at least one report element has been added to the **Report Canvas**.
3. Choose either the anchor object type (report focus), relationship, or reference from the **Select a Relationship** dropdown menu.



Choosing a relationship from the selected data series.

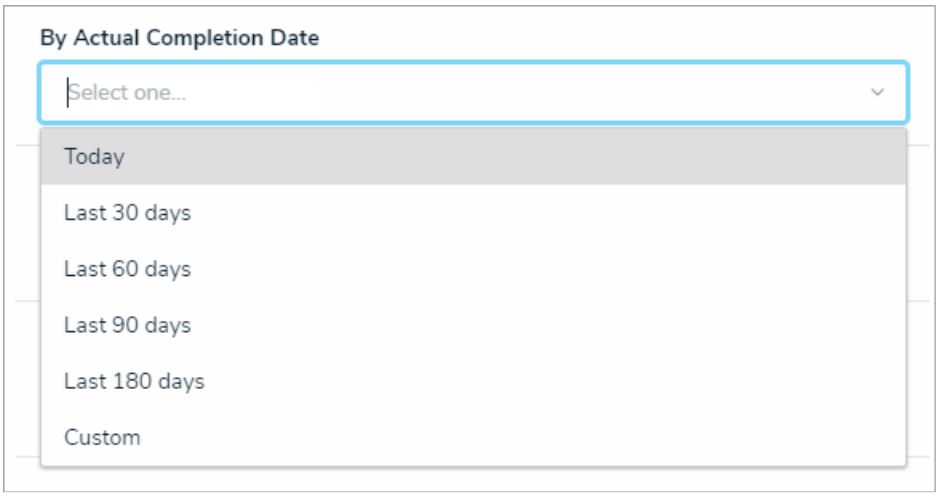
4. Select one or more roles from the **By Role ([Object Type Name])** dropdown menu, if required. Only users in the role(s) selected in this field can view the report and its elements.



The Configure Parameters palette with a role selected.

5. Click the **By [Date Field]** dropdown menu to select a range to filter the data relative to the values selected in the Date & Time field on the objects. Click the **By Created On ([Object Type Name])** or **By Modified On ([Object Type Name])** dropdown menus to select a range to filter the data relative to the date the objects were created or modified. All date-related options filter data in UTC time. It's recommended a date parameter is used. Options include:

    - **Today**: Show data from today's date only.
    - **Last [X] Days**: Show data within the last 30, 60, 90, or 180 days, relative to today's date.
    - **Custom**: Shows data within the dates selected in the **From** and **To** fields. The report or data grid will include objects up to the end of that date.



A date parameter.

6. To remove the parameter, click the **x** icon beside the role(s) in the **By Role** dropdown menu. To remove a date parameter, click the field, then press the **Backspace** or **DELETE** key on your keyboard.
7. Click the ✕ icon in the top-right of the palette when finished.

View a Report

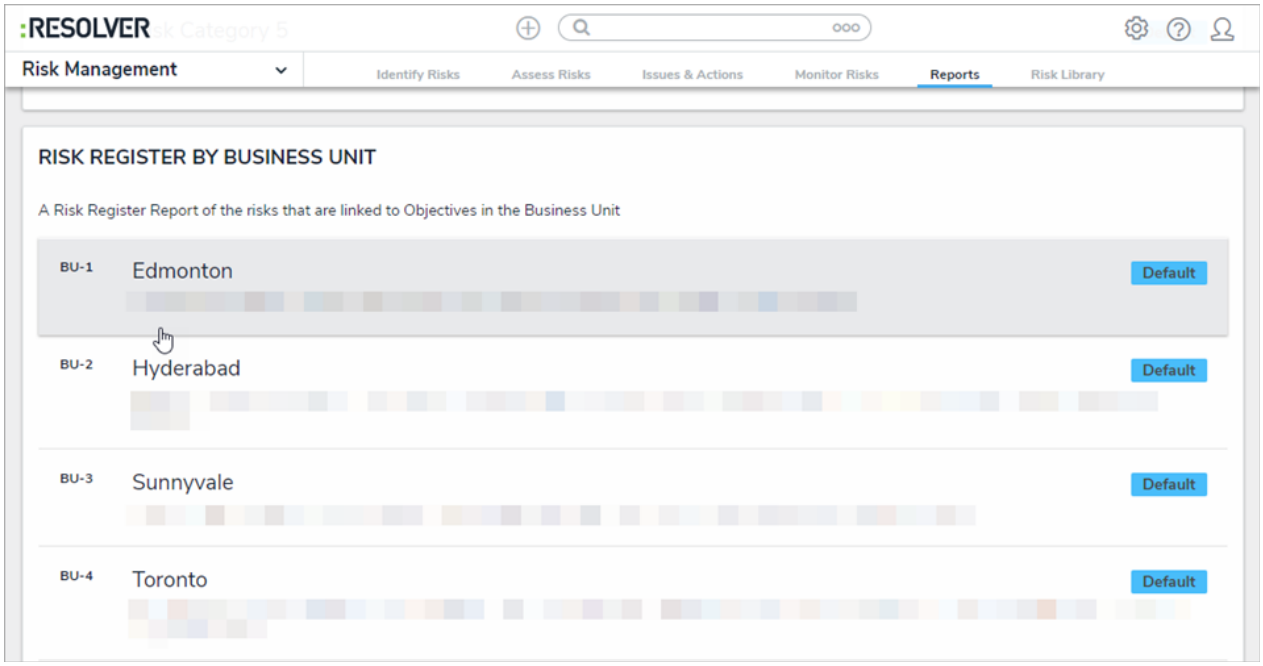
Before a report can be viewed, an administrator must first create it and add it to a view in an application. The data you can view in a report depend on your role's permissions and the report's configurations in the administrative settings.

For information on viewing a data grid or data export report, see the View a Data Grid and Export Object Data from a Data Analytics Report articles. For information on exporting a report, see the Export a Report article.

Instructions

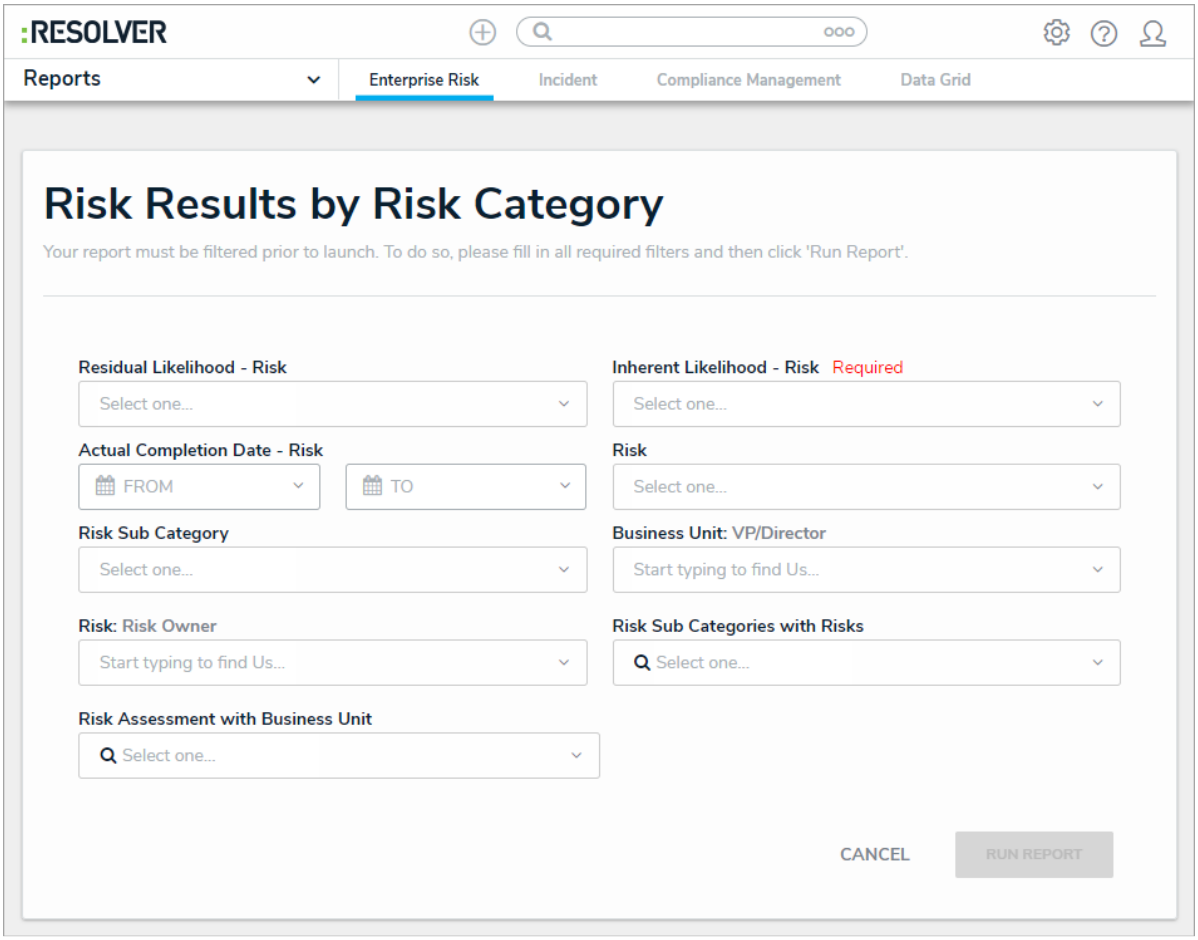
To view a report:

1. Navigate to the application and activity where the report is saved.
2. Click an anchor (root) object in the view to open the report.



Clicking on an anchor object to open a report.

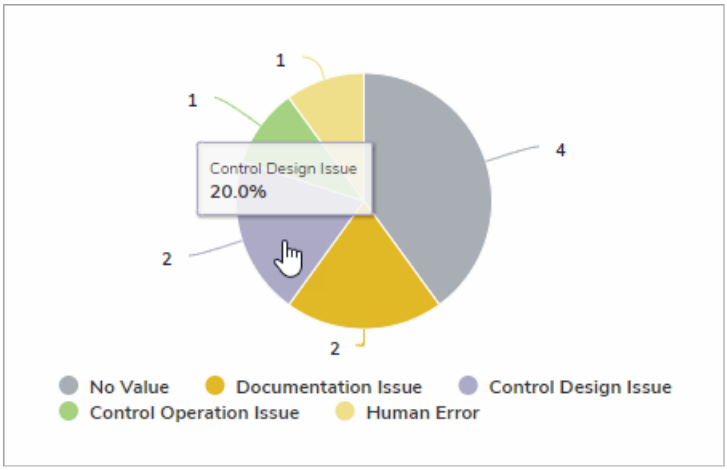
3. If a filter has been marked as required by an administrator:
    a. Apply all required filters by clicking them and selecting an option. If the filter is a search field, begin typing keywords to display a list of available options, then click to select the appropriate value.
    b. Apply additional optional filters as required.
    c. Click **Run Report**.



Filters are displayed before a report is loaded if an administrator has marked a filter as required.

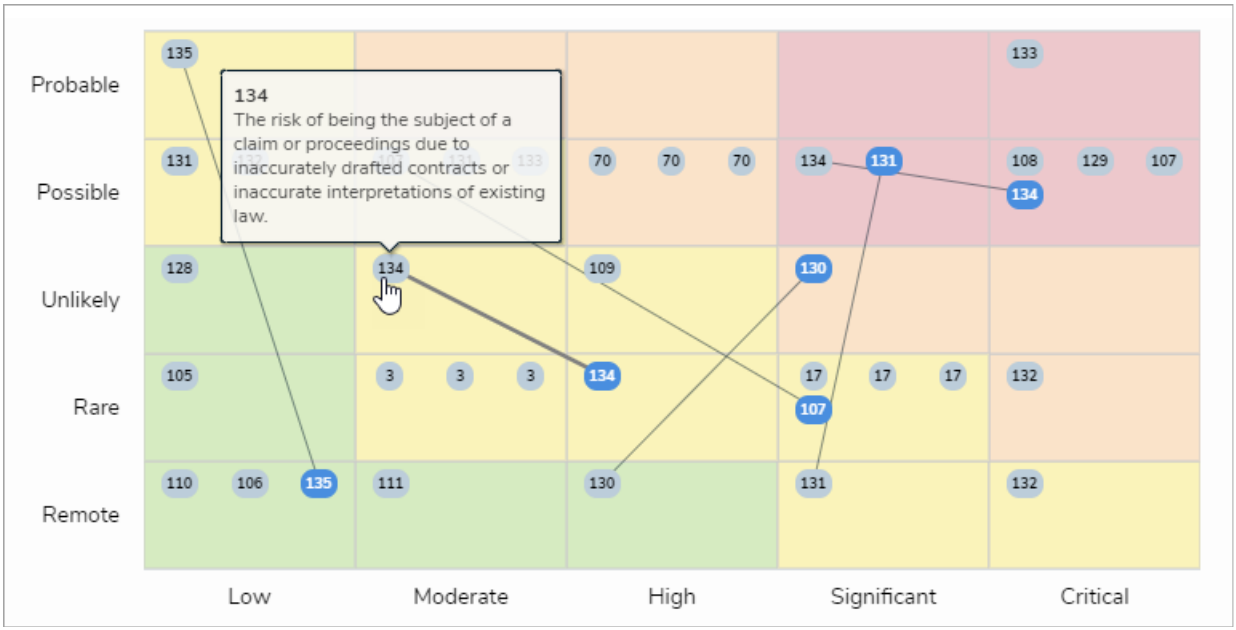
If configured by an administrator, filters can also be applied after the report is loaded. See step 9 below for more information.

4. If the report includes a bar, column, or pie chart, hover your cursor over the chart for more information about the data. Clicking on a section of a pie chart will separate it from the rest of the chart for emphasis.



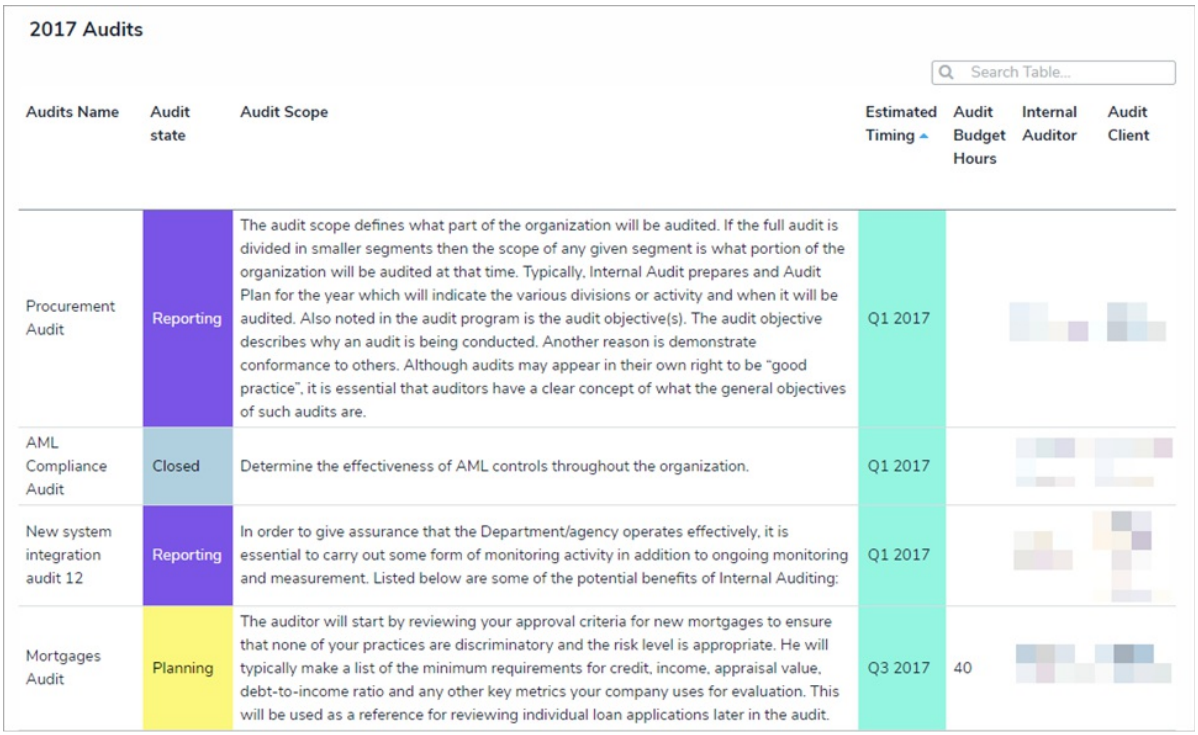
Hovering your cursor over bar, column, or bar chart will display additional information.

5. If the report includes a heat map, hover your cursor over the objects on the heat map (represented by circles and identified by their unique IDs) to display the object's description. Click the object view and/or edit it in a palette.



Hovering your cursor over an object in a heat map will display the object's description while clicking the object will open it in a palette.

6. If the report includes a table:
    a. Click a cell to open the associated object in a palette.
    b. Click a column to sort the data in the table.
    c. Click **Next** or **Previous** at the bottom of the table to scroll through any additional pages.
    d. Enter search terms in the **Search Table...** field to narrow down which data is displayed.



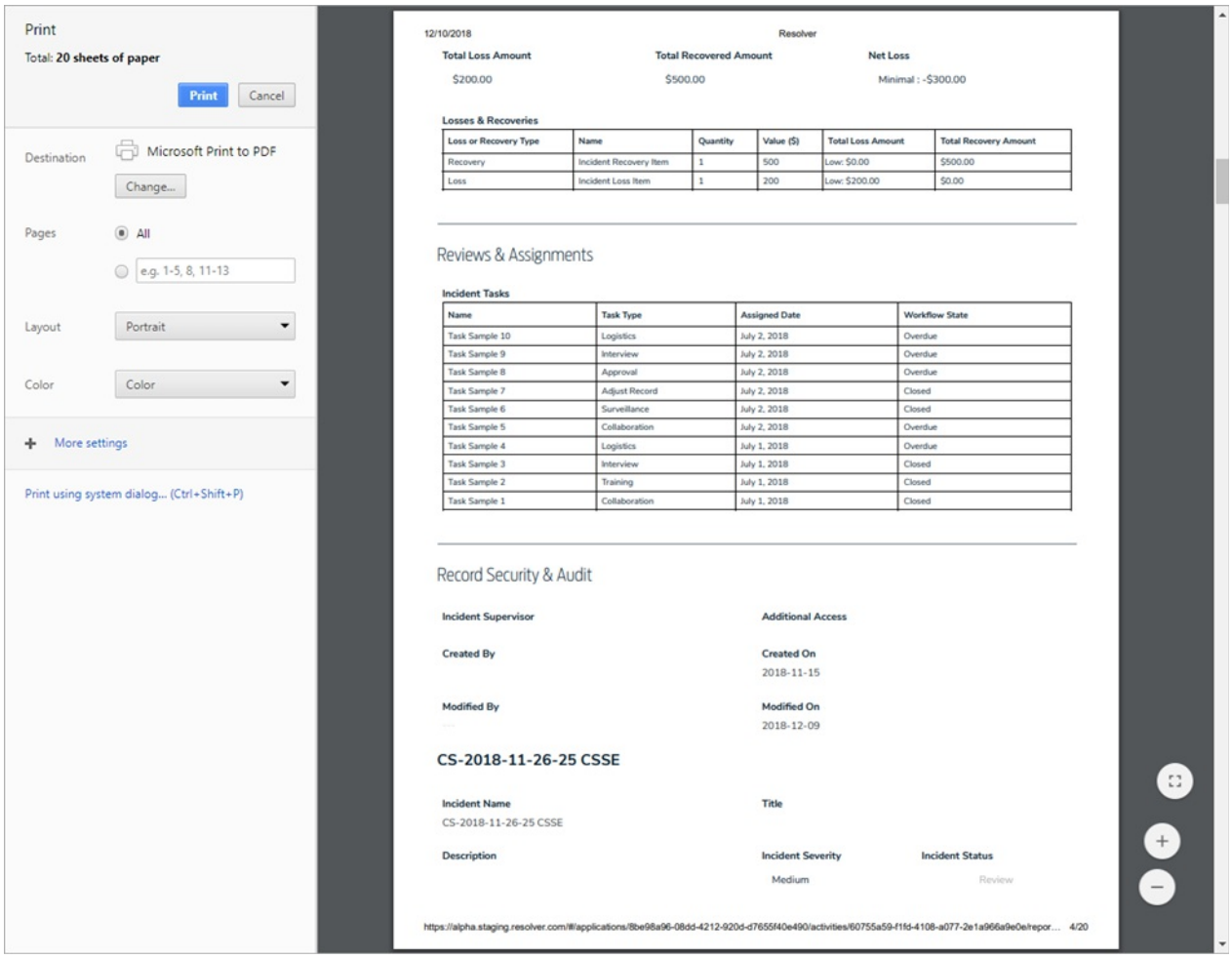
2017 Audits

Search Table...

Audits Name	Audit state	Audit Scope	Estimated Timing	Audit Budget Hours	Internal Auditor	Audit Client
Procurement Audit	Reporting	The audit scope defines what part of the organization will be audited. If the full audit is divided in smaller segments then the scope of any given segment is what portion of the organization will be audited at that time. Typically, Internal Audit prepares and Audit Plan for the year which will indicate the various divisions or activity and when it will be audited. Also noted in the audit program is the audit objective(s). The audit objective describes why an audit is being conducted. Another reason is demonstrate conformance to others. Although audits may appear in their own right to be "good practice", it is essential that auditors have a clear concept of what the general objectives of such audits are.	Q1 2017			
AML Compliance Audit	Closed	Determine the effectiveness of AML controls throughout the organization.	Q1 2017			
New system integration audit 12	Reporting	In order to give assurance that the Department/agency operates effectively, it is essential to carry out some form of monitoring activity in addition to ongoing monitoring and measurement. Listed below are some of the potential benefits of Internal Auditing:	Q1 2017			
Mortgages Audit	Planning	The auditor will start by reviewing your approval criteria for new mortgages to ensure that none of your practices are discriminatory and the risk level is appropriate. He will typically make a list of the minimum requirements for credit, income, appraisal value, debt-to-income ratio and any other key metrics your company uses for evaluation. This will be used as a reference for reviewing individual loan applications later in the audit.	Q3 2017	40		

Clicking on a cell in a table will display the associated object in a palette, while clicking on a column header will sort the data in the table.

7. To refresh the data displayed in the report, click the icon. See the Loading & Caching Report Data article for more information on refreshing and reloading.
8. If the report includes a repeatable form, you can view read-only, printer-friendly versions of object data as it was entered onto a configurable form.



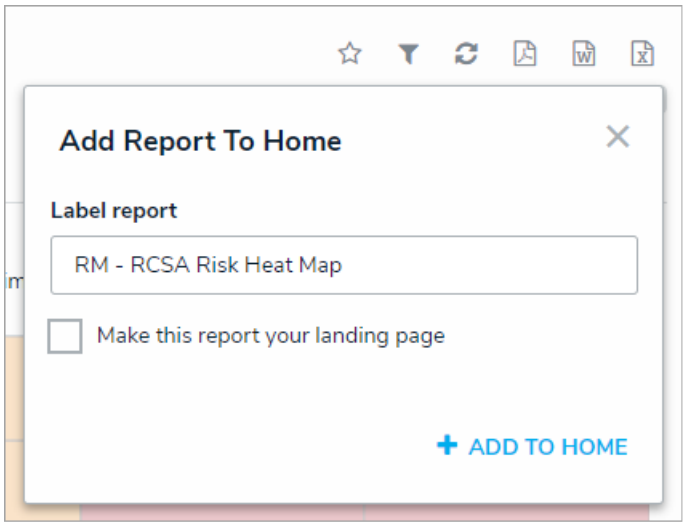
Printing a repeatable form.

> Any repeatable forms with unsupported elements will not display any object data, resulting in an error message. See the Add Repeatable Forms to a Report for a list of unsupported elements or contact your administrator.

Starred Reports

To star a report (create a tab for the report in the nav bar):

1. Click the ☆ icon at the top-right corner of the report to open the **Add Report To Home** window.
2. If needed, enter a custom name for the tab in the **Label report** field. The report's name, as saved by an administrator, appears in this field by default.



The Add Report To Home window.

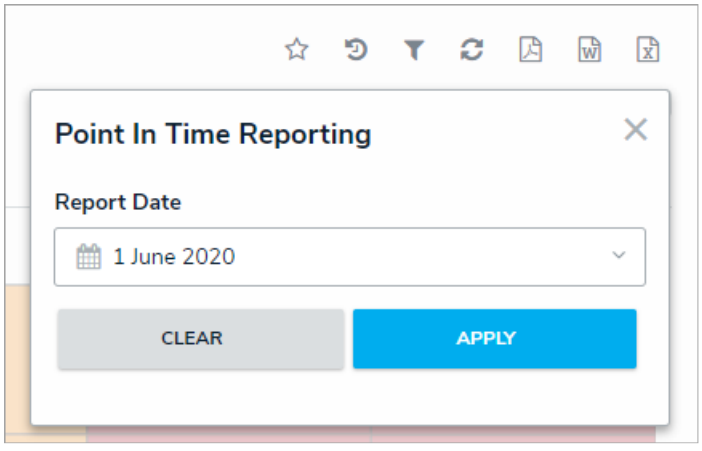
3. Select the **Make this report your landing page** checkbox if you want this report to replace the My Tasks tab or another report tab as the home page. To revert back the home page back to **My Tasks**, deselect the checkbox.
4. Click **Add To Home** to finish.
5. To delete the tab from the nav bar, click the icon, then click **Remove From Home**.

> For more information on reports added to tabs, see the Starred Reports article.

Historical Data (Point in Time Reporting)

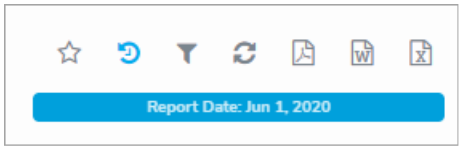
To view historical report data:

1. Click the icon on the top-right of the report. If point in time reporting has not been enabled for this report, this icon will not be visible.
2. Click the **Report Date** field, then select a date from the calendar.
3. Click **Apply** to reload the report with historical data.



The Point In Time Reporting option.

4. To view data from a different date, click the icon, select a date, then click **Apply** to reload the report. When historical data is displayed on a report, this icon is displayed in blue.



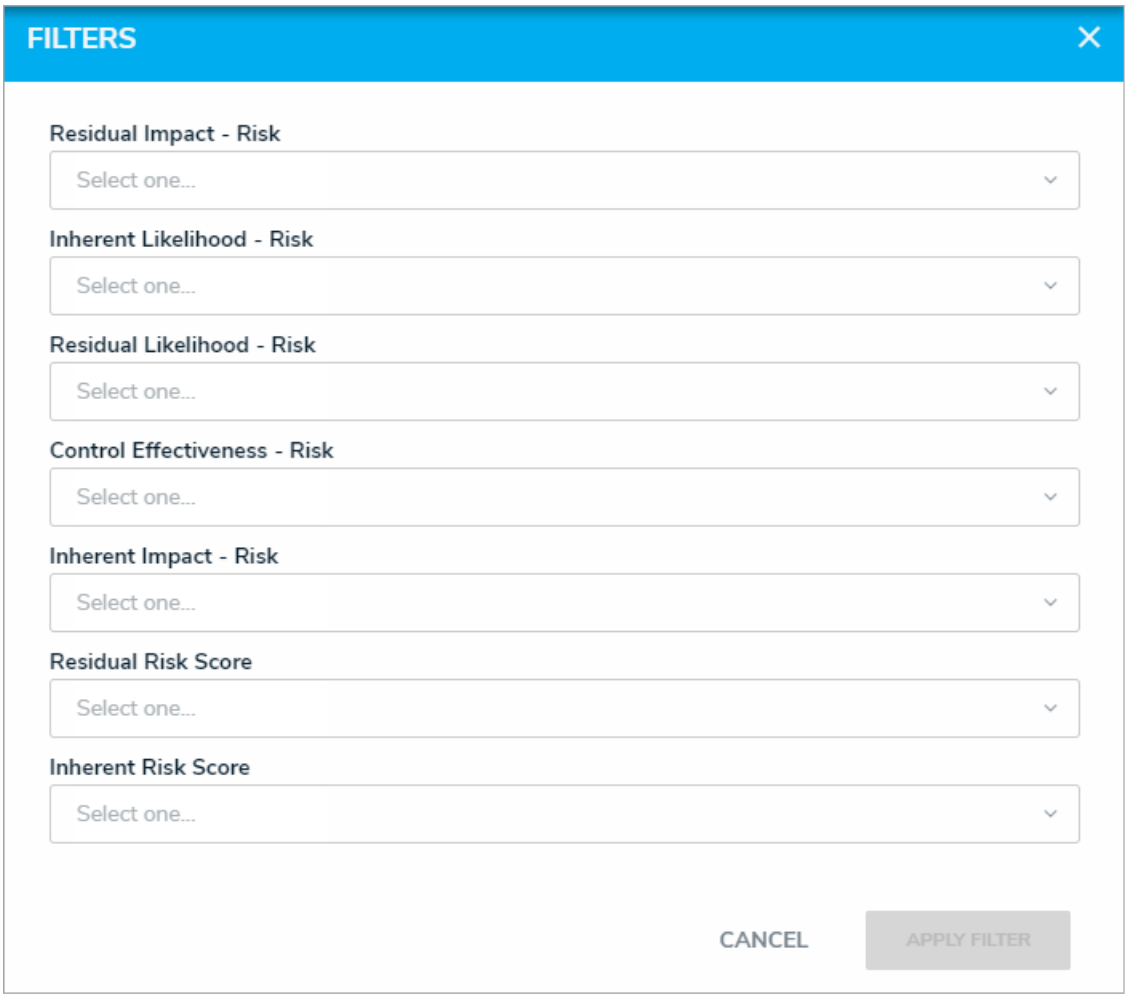
The Point In Time Reporting icon.

5. To return to present-day data, click the icon, then click **Clear**.

Filters

To apply filters to a report (if configured by an administrator):

1. Click the icon at the top-right corner of the report to open the **Filters** palette. When a report is displayed with filters applied, the filter icon will appear with a red dot ( ).
2. Apply the following filters types as needed. Note that some or all of these sections may be blank if these filter types have not been added to report by an administrator:
    - **State:** Filters the report data by the objects' current workflow state(s).
    - **Role:** Filters report data by users or user groups in explicit roles that have explicit that have been granted direct access to objects from the report's data definition.
    - **Date & Time/Select List:** Filters the report data by date and time and/or select list fields.
    - **Formula:** Filters the report data by formula label(s).
    - **Relationship:** Displays report data from one or more selected relationship object types and any related reference object types. For example, selecting the Risk 1 object type in this filter will also display all the Control objects that Risk 1 appears on through a relationship.
    - **Object Type:** Displays report data from one or more selected object types.



The Filters palette.

3. Click **Apply Filter** to close the palette and reload the report.
4. To remove a filter, click the icon at the top-right of the report, click the **x** beside the filter you wish to remove, then click **Apply Filter** to close the palette and reload the report.

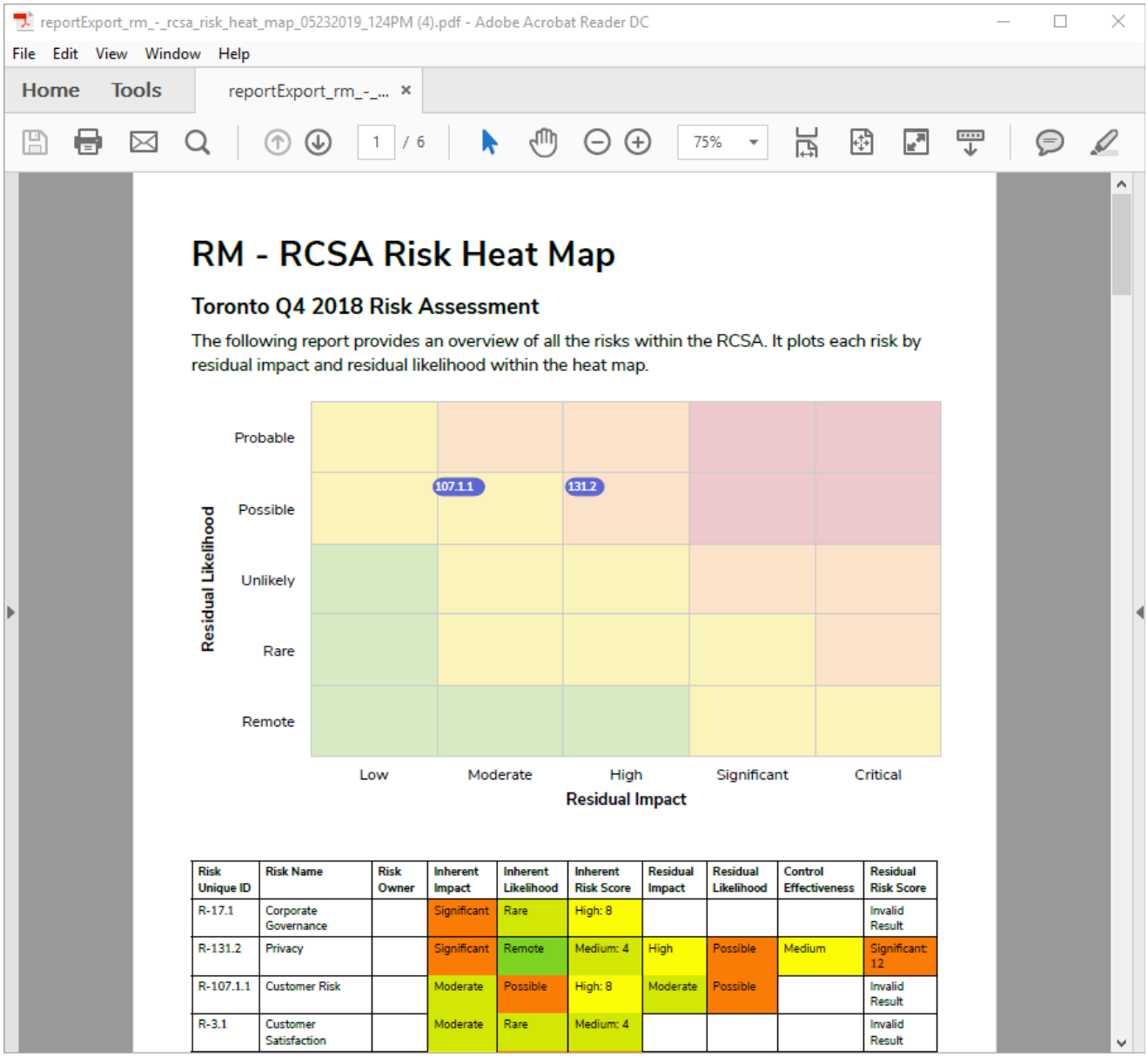
Export a Report

Report data can be exported into downloadable PDF, Word document, and spreadsheet files. However, there are some restrictions, depending on the file format and element type. All links and file attachments are disabled in exported report files.

> Exported report data is cached based on the last time the report was loaded. To ensure the files reflect the most recent data, click the refresh icon on the report or refresh your browser before exporting.

PDFs

Tables, charts, heat maps, repeatable forms, and free form text can be exported into a PDF file. The PDF file will reflect any page breaks or PDF headers added to the report canvas by an administrator.

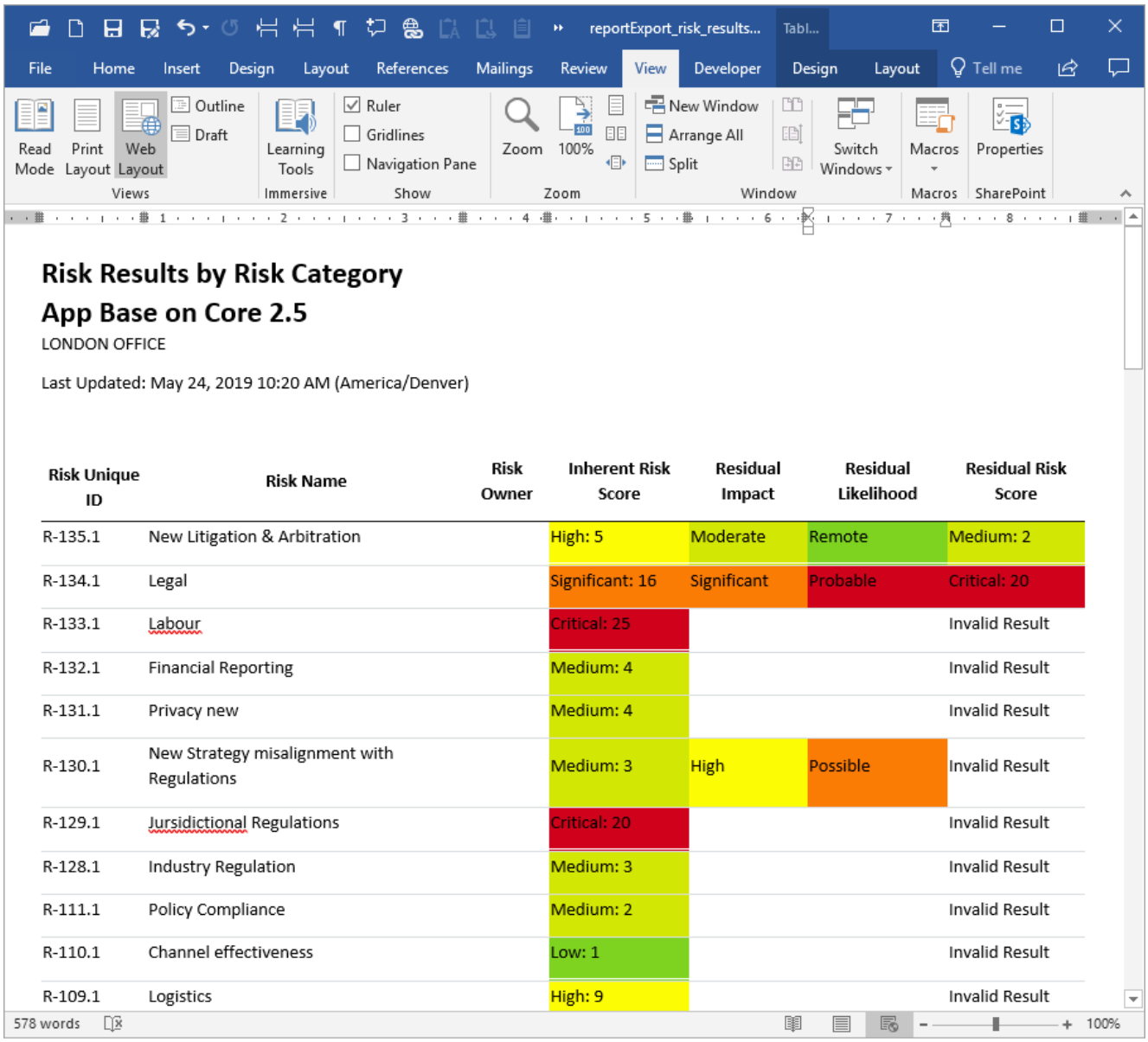


A heat map and table exported into a PDF file.

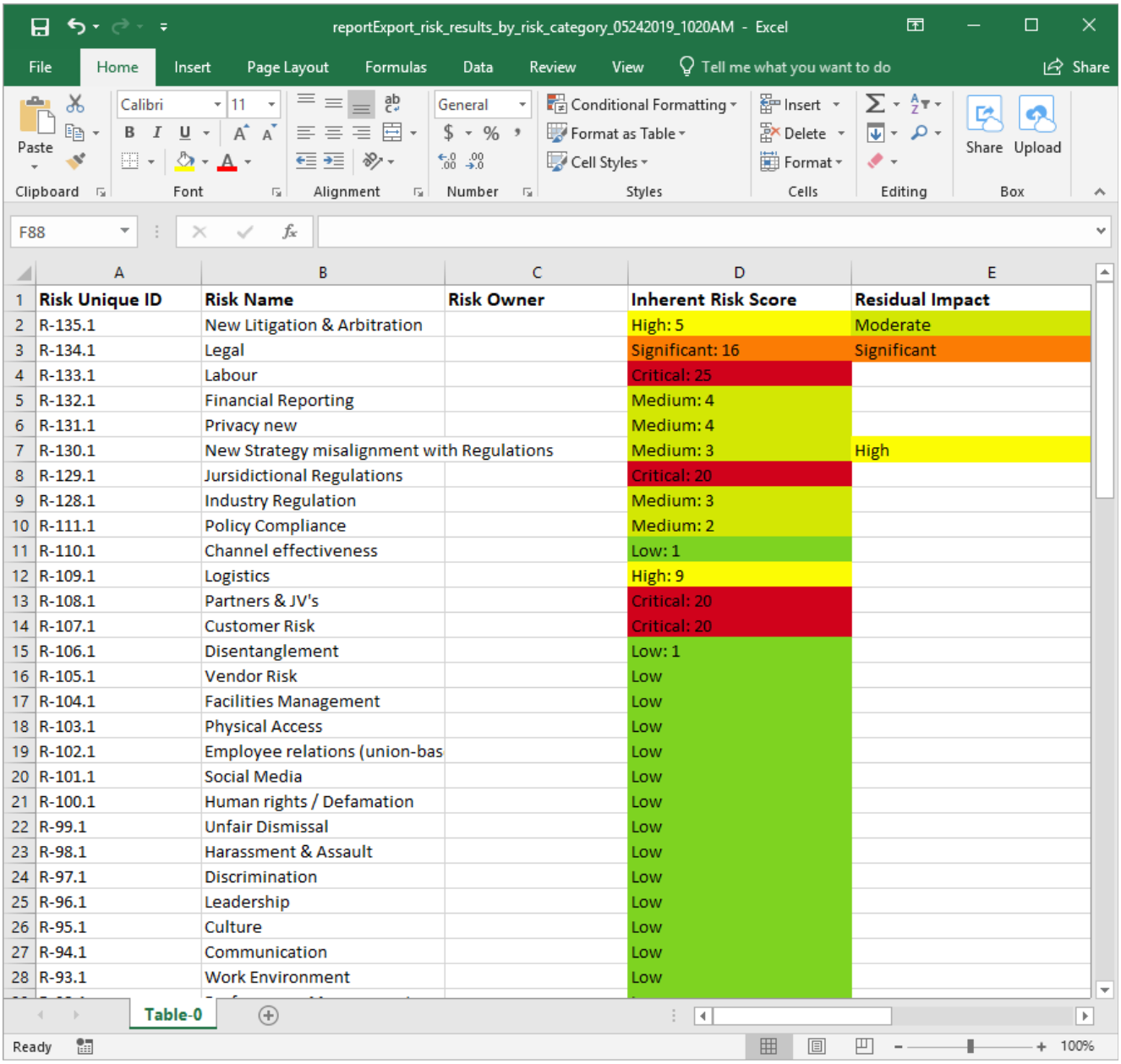
Word Documents or Spreadsheets

Only table reports can be exported into a document or spreadsheet. If the report contains other report elements, only the table data will be exported.

Point in time reporting is not currently supported. Exporting a report with historical data currently displayed will generate a file showing present-day data only.



A table exported into a Word document.



	A	B	C	D	E
1	**Risk Unique ID**	**Risk Name**	**Risk Owner**	**Inherent Risk Score**	**Residual Impact**
2	R-135.1	New Litigation & Arbitration		High: 5	Moderate
3	R-134.1	Legal		Significant: 16	Significant
4	R-133.1	Labour		Critical: 25	
5	R-132.1	Financial Reporting		Medium: 4	
6	R-131.1	Privacy new		Medium: 4	
7	R-130.1	New Strategy misalignment with Regulations		Medium: 3	High
8	R-129.1	Jursidictional Regulations		Critical: 20	
9	R-128.1	Industry Regulation		Medium: 3	
10	R-111.1	Policy Compliance		Medium: 2	
11	R-110.1	Channel effectiveness		Low: 1	
12	R-109.1	Logistics		High: 9	
13	R-108.1	Partners & JV's		Critical: 20	
14	R-107.1	Customer Risk		Critical: 20	
15	R-106.1	Disentanglement		Low: 1	
16	R-105.1	Vendor Risk		Low	
17	R-104.1	Facilities Management		Low	
18	R-103.1	Physical Access		Low	
19	R-102.1	Employee relations (union-bas		Low	
20	R-101.1	Social Media		Low	
21	R-100.1	Human rights / Defamation		Low	
22	R-99.1	Unfair Dismissal		Low	
23	R-98.1	Harassment & Assault		Low	
24	R-97.1	Discrimination		Low	
25	R-96.1	Leadership		Low	
26	R-95.1	Culture		Low	
27	R-94.1	Communication		Low	
28	R-93.1	Work Environment		Low	

A table exported into a spreadsheet.

Timestamps & Caching

Reports display the time and date the report was last updated/loaded **based on the current user's local timezone**. This timestamp appears on exported files and is updated when the report is reloaded or refreshed. To ensure your exported report files reflect the most recent data, click the icon on the report or refresh your browser before exporting. See the Loading & Caching Report Data article for more information.

Instructions

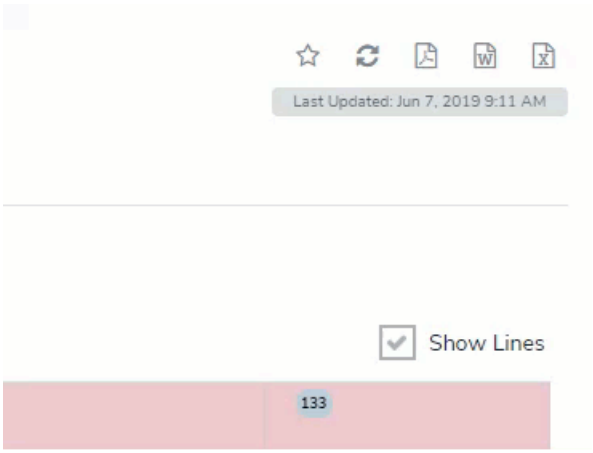
To export report data:

1. Navigate to the report you wish to export.

2. Click the icon to reload the report and refresh the data, if required.

The refresh and export icons at the top-right of a report.

3. Click one of the following icons:
   - Click the to export all report data into a PDF file.
   - Click the icon to export a report table into a Word document.
   - Click the icon to export a table report into a spreadsheet.



An ellipsis is displayed in place of the icon while the export file is generated.

Once clicked, the selected icon will be replaced with an ellipsis while the export file is generated. Depending on the amount of data displayed in the report, there may be a delay before the download is initiated and completed. Navigating away from the report page while the file is being generated will cancel the export.

4. Click the file at the bottom of your browser to open the file and save it.

Edit or Delete a Report

You cannot edit or remove the data definitions saved to a report without deleting the report then recreating it; however, edit functionality for data definitions is scheduled for an upcoming release in the near future.

To edit or delete a report:

1. Click the icon in the top bar > **Data Visualizations** in the **Views** section.
2. Click the report you want to edit or enter the name of the data visualization in the **Search** field, then click it edit it.
3. To edit the name or description, click the icon, then make your changes as needed in the **Name** and **Description** fields.
4. To include or exclude archived data from the report, click the icon, then select or deselect the **Include archived data in report** checkbox.
5. To add or remove filters, click **Configure Filters** in the **Filters** field, then click the fields, relationships, or formulas to add or remove them as filters.
6. To add or edit the header and/or logo on a PDF export file for the report, click **PDF Output Options**, then make you changes as needed.
7. To edit an element on the canvas, hover your cursor over the element, click the icon, make your changes, then click **Done** when finished.
8. To rearrange the elements on the canvas, hover your cursor over an element, click the icon and drag the element to a new location.
9. To delete an element, hover your cursor over the element, click the icon, then click **Yes** to confirm.
10. To delete a report, click the icon at the bottom of the **Edit Report** page, then click **Yes** to confirm.

Deleting a report will also delete any filters, parameters, and elements added to it.

PDF Output Options

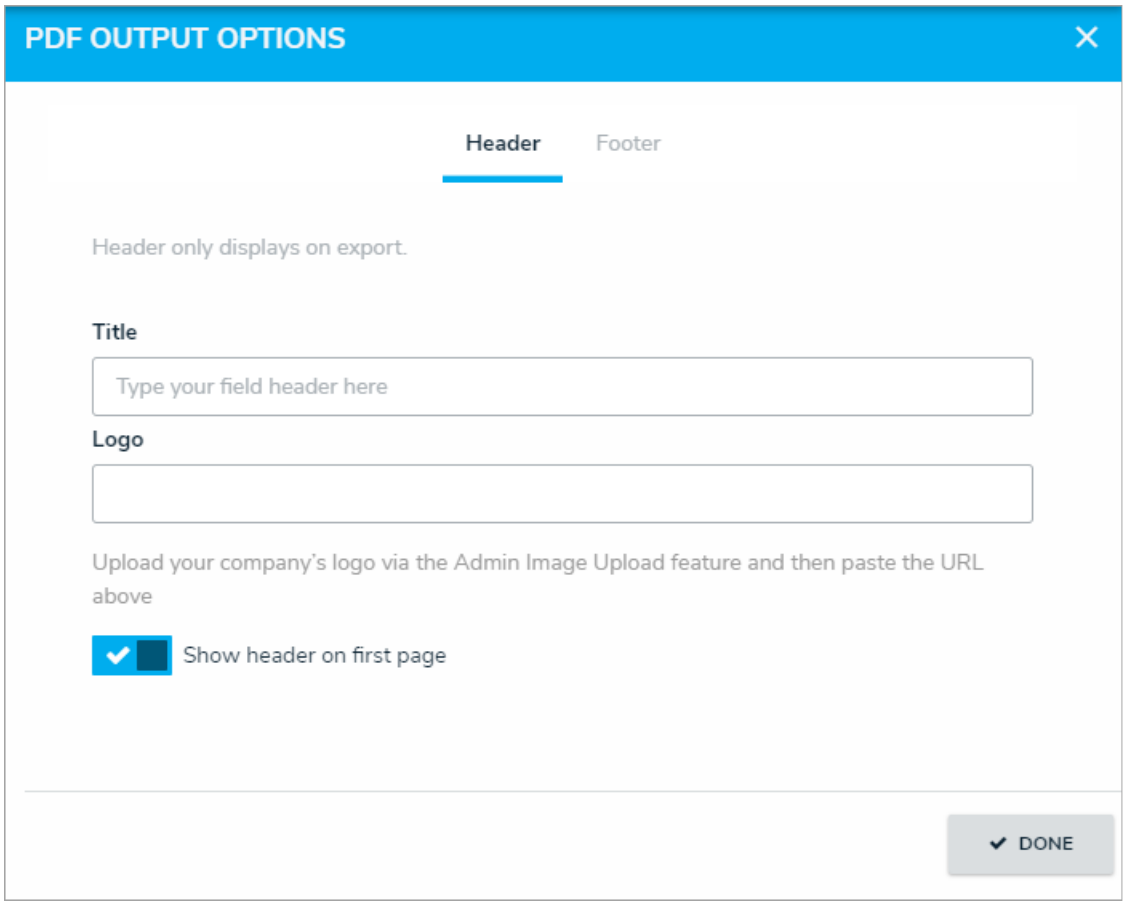
The **PDF Output Options** on a report allows you to configure a header and/or logo that will appear on reports exported into PDF files. Logos will appear at the top-left of the PDF file, and headers appear above any free form text and report elements.

A report exported into a PDF file with a header and logo.

The **Footer** option is not currently functional and will be available in a future release.

To configure the report header and logo on a PDF export:

1. Create a new report or open an existing one to view the **Edit Report** page.
2. Click **PDF Output Options** at the top-right of the **Report Canvas** to open the palette.



The PDF Output Options palette.

3. To include a header, enter text in the **Title** field.
4. To include a logo, upload an image using the Image Upload tool, then paste the link in the **Logo** field.

> Logo images uploaded through the **Image Upload** tool are automatically resized to fit within the header.

5. Click the or icons beside **Show header on first page** to show or hide the header on the first page of the report.
6. Click **Done** when finished.

Data Analytics Export Overview

Data Analytics Export reports are data visualizations that are specifically designed to allow end users to export object data (properties, fields, workflow states, relationships, and references) into an Excel spreadsheet. Although a data analytics report requires a data definition, this data visualization type does not display any report elements. Export reports can be accessed by end users through:

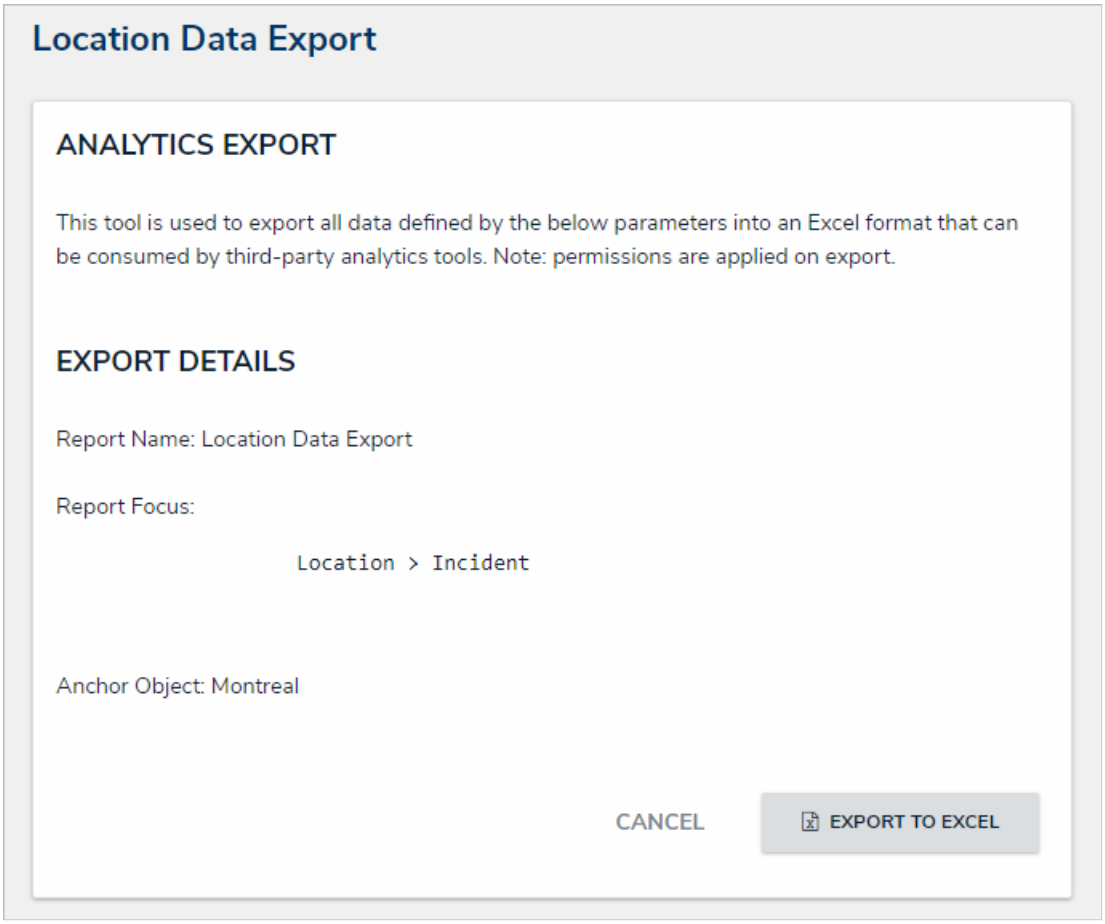
- An activity view;
- An activity action; or
- An Export Data form action.

As with other reports, a data analytics report requires a focus eligible definition to filter object type data; however, when generating this report, a specific **anchor object** (not to be confused with **anchor object type**) must be selected, either through a view, action, or form action, to specify which object's data is exported, including any data from relationship or reference object types selected in the data path. If the anchor object isn't named on any relationship or reference objects, the report will export anchor object data only.

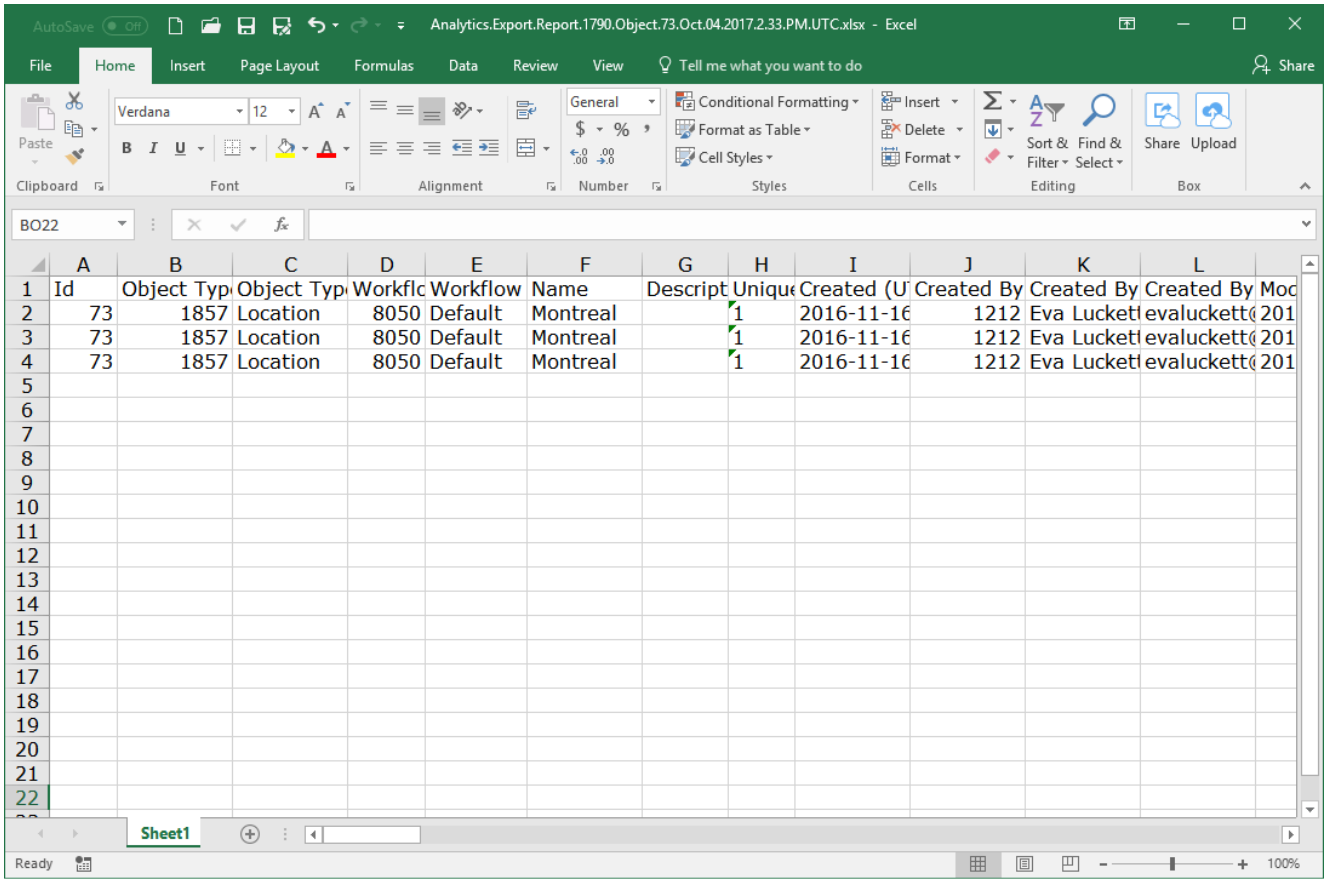
Once the report is created, users can export data through an activity view or action or the Export Data action to a configurable form.

EXAMPLE

Using a data definition with Location as the anchor object type and Incident as a reference object type, a data analytics report is created and added to a view so that users can click on a specific location object, then export its data into a spreadsheet. Specifically, when a user clicks on the Montreal object in the Location Data Export view on an activity, they'll be able to export the data from that object's properties, fields, and workflow states, along with the data of all the incident objects Montreal has been added to through a relationship.



A data analytics report in a view. Clicking the Export to Excel button will initiate download of the spreadsheet.

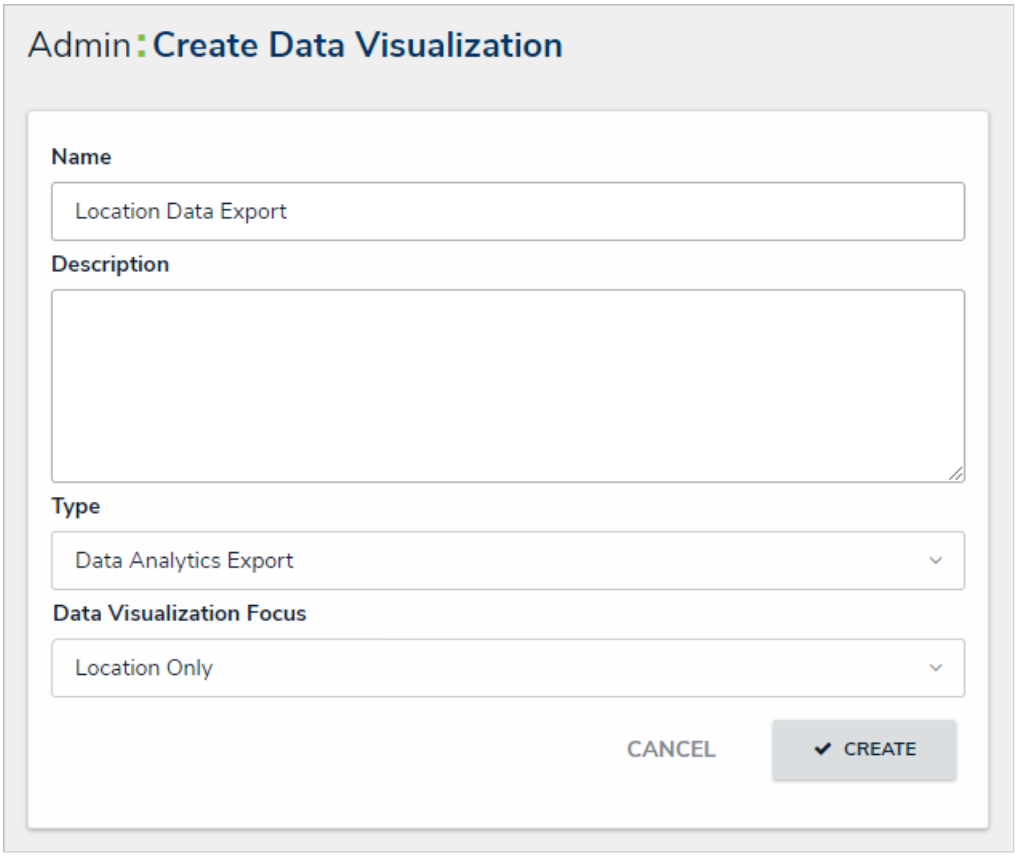


Object data exported into a spreadsheet through a data analytics report.

Create a Data Analytics Export Report

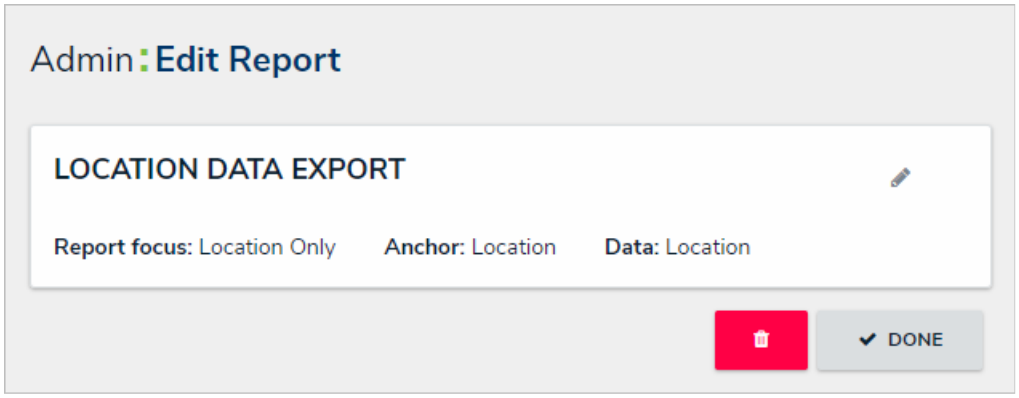
To create a Data Analytics report:

1. Ensure the data definition you wish to use for the data analytics report has been created from the Data Definitions settings in **Administration**.
2. Click the icon in the top bar **> Data Visualizations** in the **Views** section.
3. Click **Create Data Visualization**.
4. Enter the name of the report in the **Name** field.
5. **Optional:** Enter a description of the report. This description will appear below the report's name on the **Data Visualizations** page.
6. Select **Data Analytics Export** from the **Type** dropdown menu.
7. Select a focus from the **Data Visualization Focus** dropdown menu. For example, if you wish to create a report that will allow users to export Location data, you would select a report focus with the Location object type as the anchor.



The Create Data Visualization page.

8. Click **Create** to display the **Edit Report** page. From here, you can edit the name of the report, however, if you wish to change the report focus, you'll need to delete the report and recreate it.



The Edit Report page for a Data Analytics Export report.

Once the export report has been created, you can grant end users access to it by adding it to a view, action, or Export Data form action.

Export Object Data from a Data Analytics Report

Once a data export report has been created, it can be generated by end users through:

- An activity view;
- An activity action; or
- An Export Data form action.

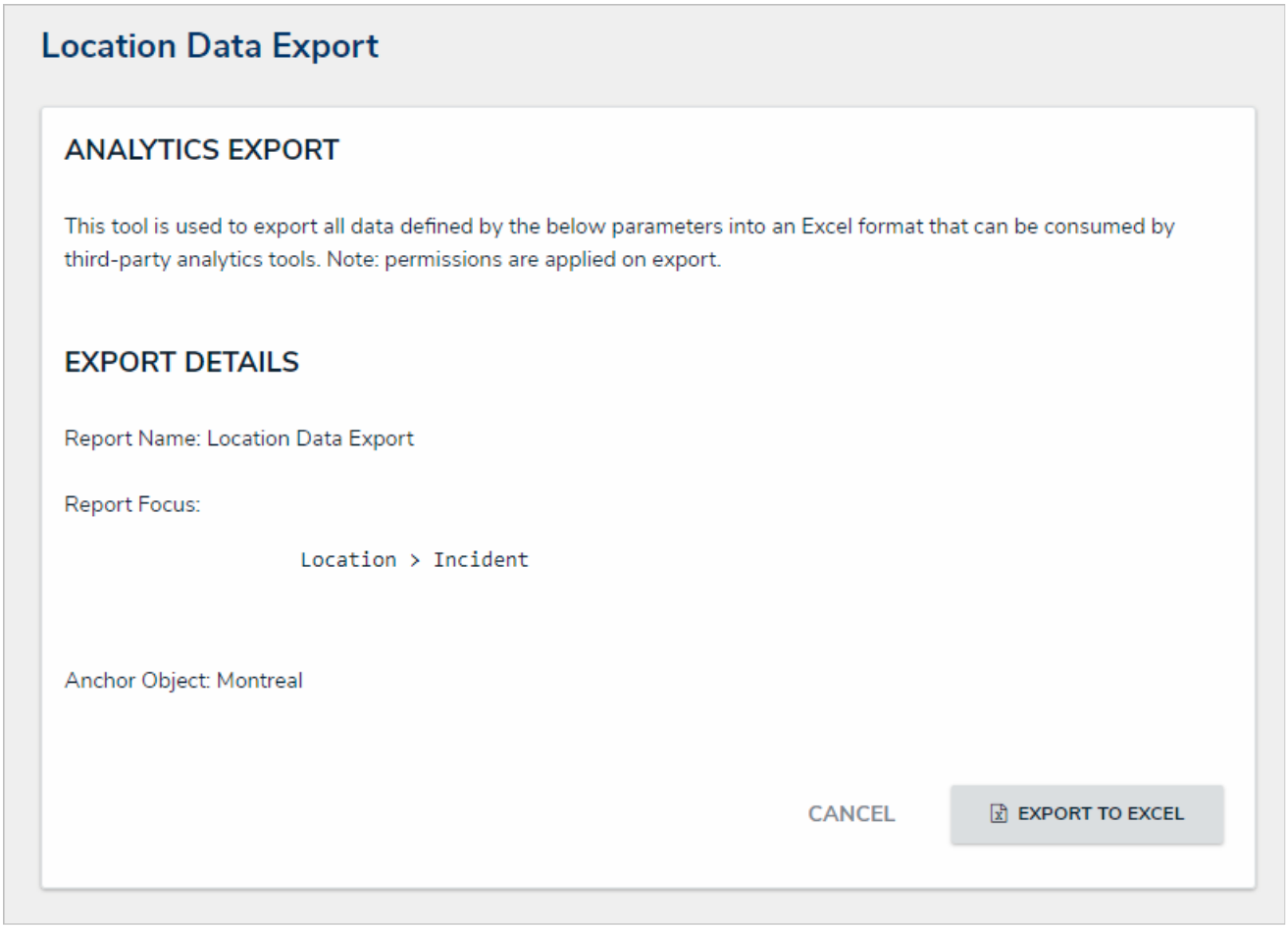
Important Notes About Generating Export Reports

If an export report failed to generate for whatever reason, the application will continue trying to create the report for up to five (5) minutes after **Export** was clicked, using the data that was available at the time the export was initiated. If, after five minutes, the report has failed or timed out, Core will pull a new set of data available from the next five-minute increment and will continue to do so until the report is created.

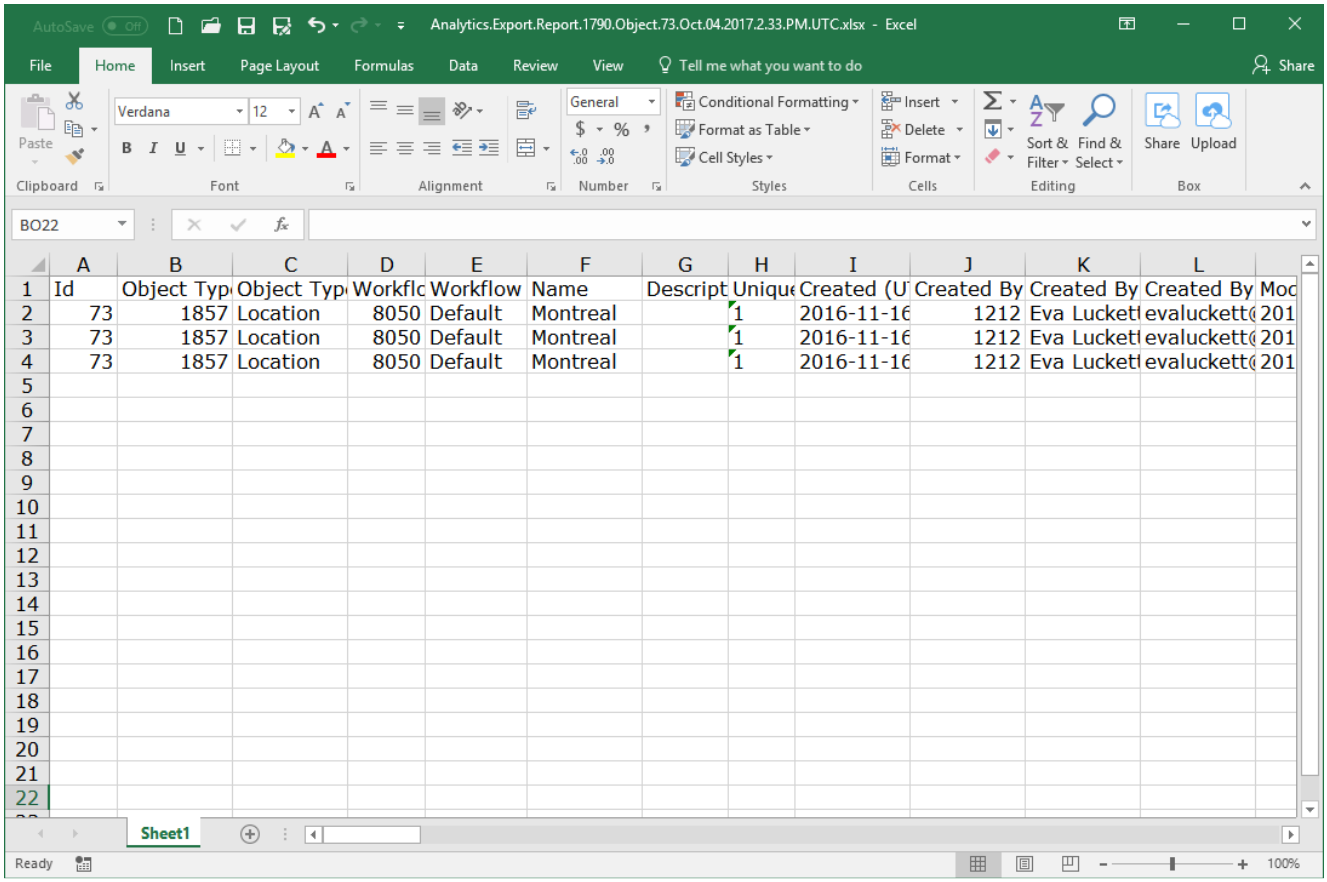
For example, if a user clicked **Export** at 1:00 pm and the report was interrupted, the application will try again to create a report that contains the data that was available at 1:00 pm. If the report is still not generated by 1:05 pm, Core will attempt to create the report using the data that was available at 1:05, instead of 1:00, when the export was originally initiated.

Also note that the **Export** button will be grayed out while the report is generating.

If the exported object has a file attachment field, only the number of files attached will be exported into the spreadsheet. If the object contains an image attachment field, it will display only a 0 (for no image attached) or a 1 (one image attached) as only one image can be attached per image attachment field.



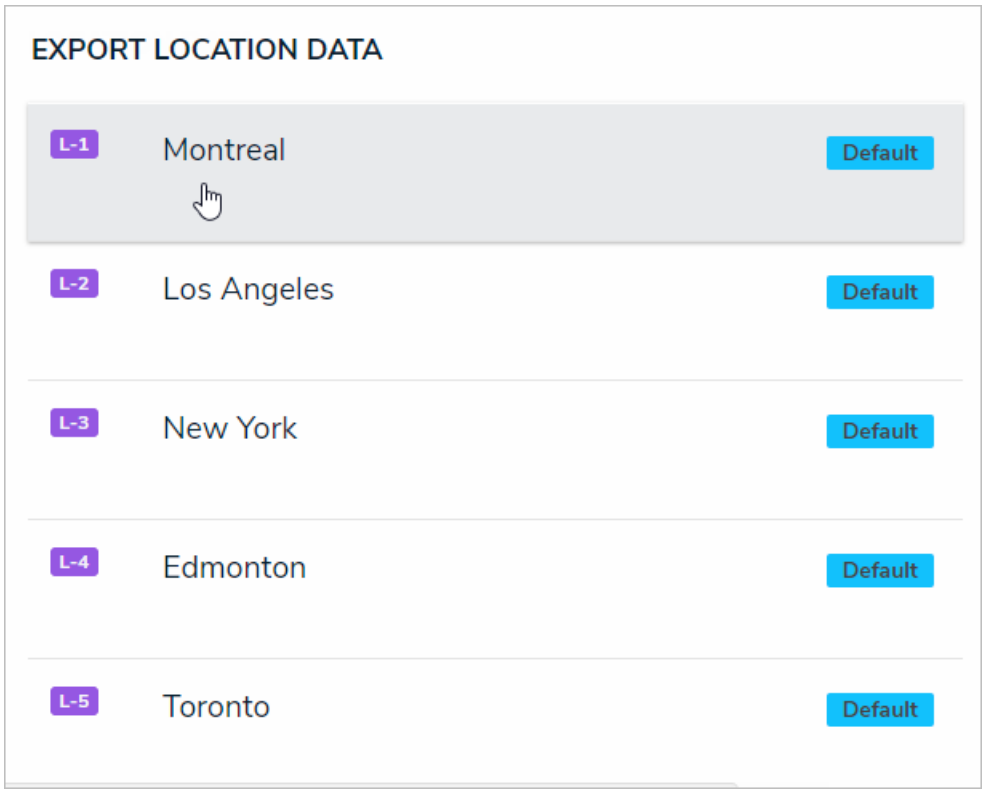
A data analytics report as it's displayed to end users after clicking an object in a view or clicking the Export Data form action button on the object.



An analytics report for the Location object.

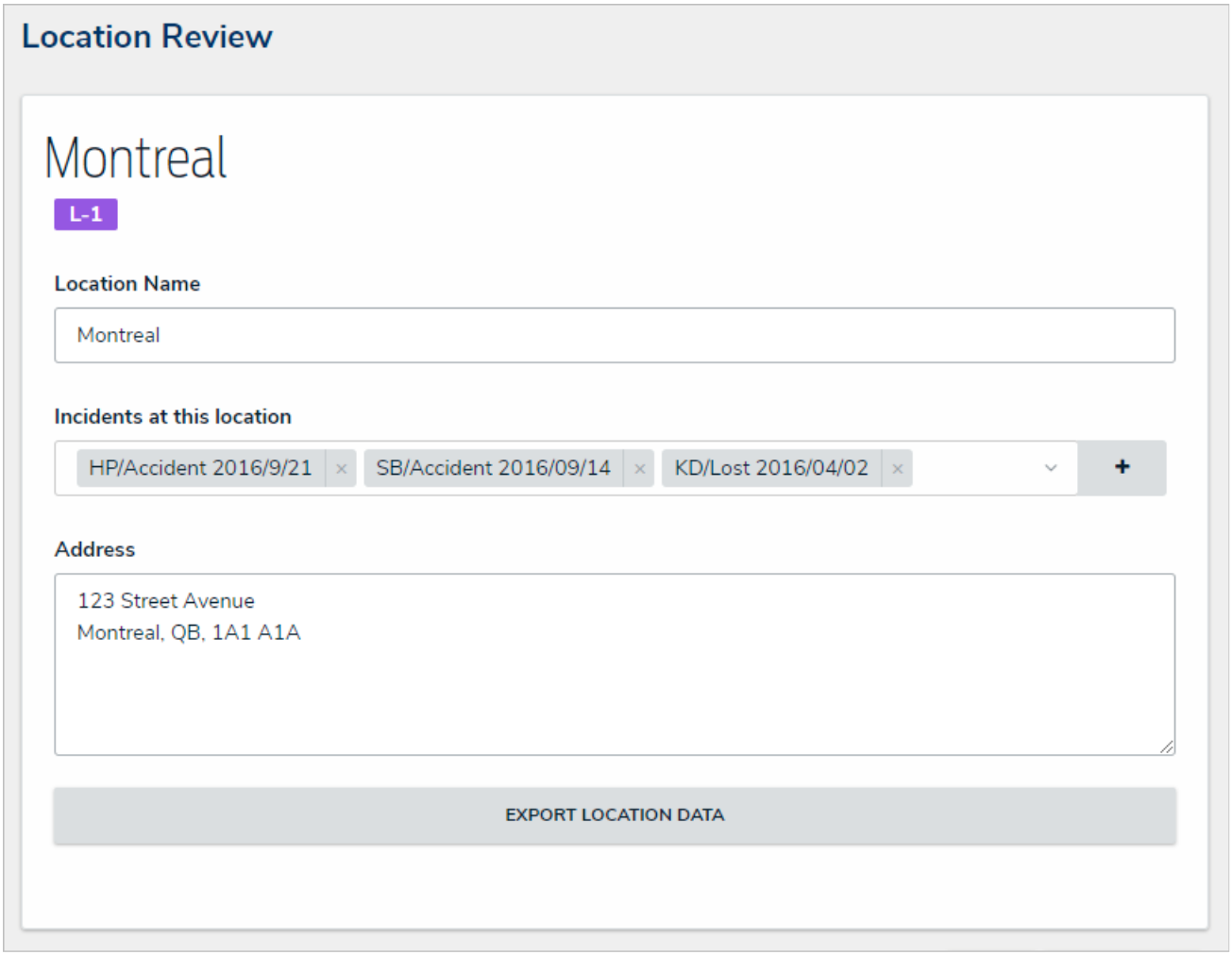
Activity View

To export object data through a **Data Export** view in an activity, open the activity from the top bar, click an object in the view to display the report page, then click **Export to Excel** to automatically download the report through your browser.



Form Action

To export object data using the **Export Data** form action, open the object, click the customized button on the configurable form to display the report page, then click **Export To Excel** to automatically download the report through your browser.

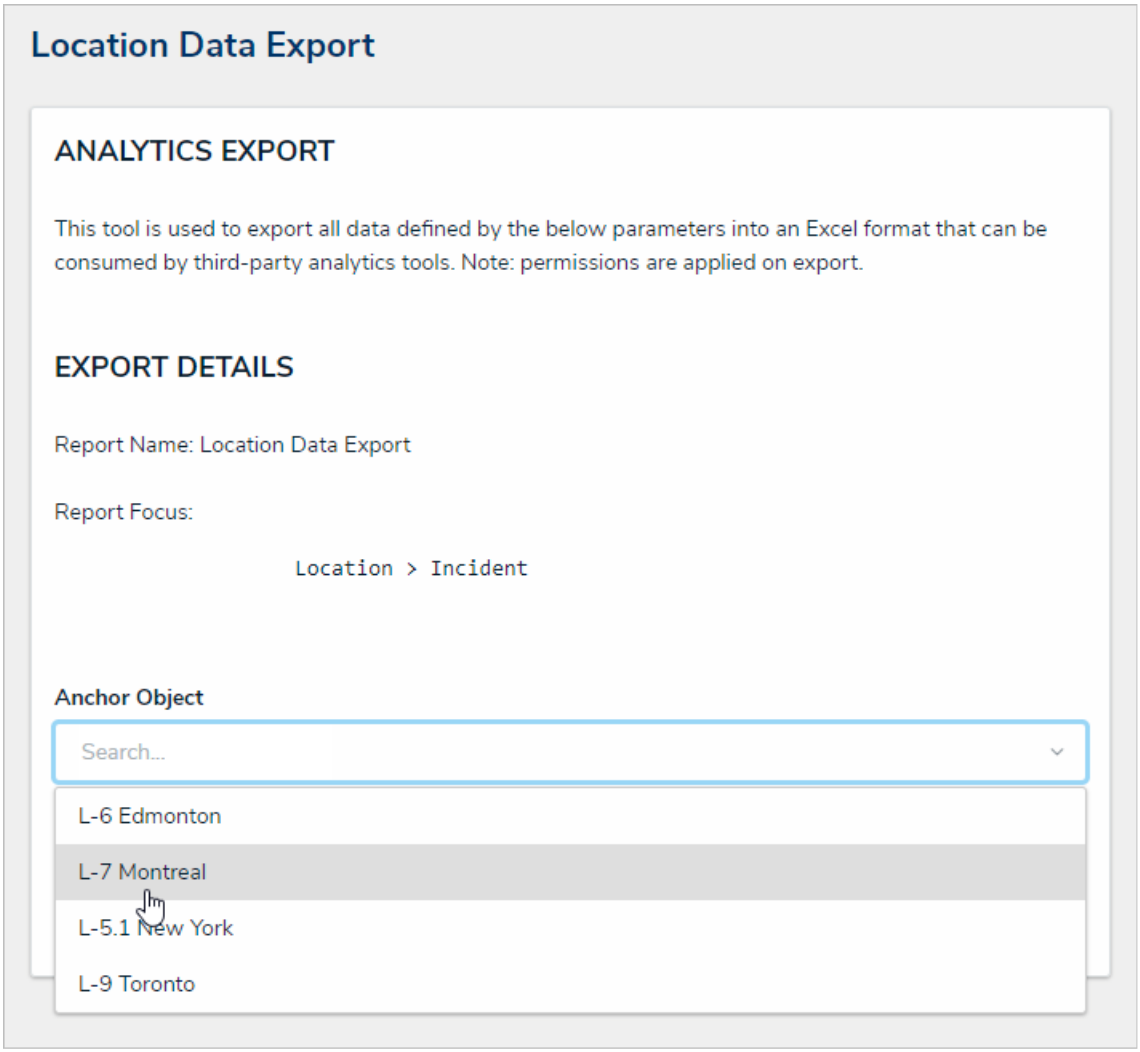


An object with the Export Data form action. In this case, clicking the Export Location Data button will display the export report page for the Montreal object.

Activity Action

To export object data through an action, open the activity from the nav bar, click the action button to display the report page, select an object from the **Anchor Object** dropdown menu, then click **Export to Excel** to automatically download the report through your browser. The objects that appear in the dropdown menu are determined by the report's data definition and your role's permissions.

A Export Data form action button in an activity.



Selecting an anchor object in an export data action in an activity.

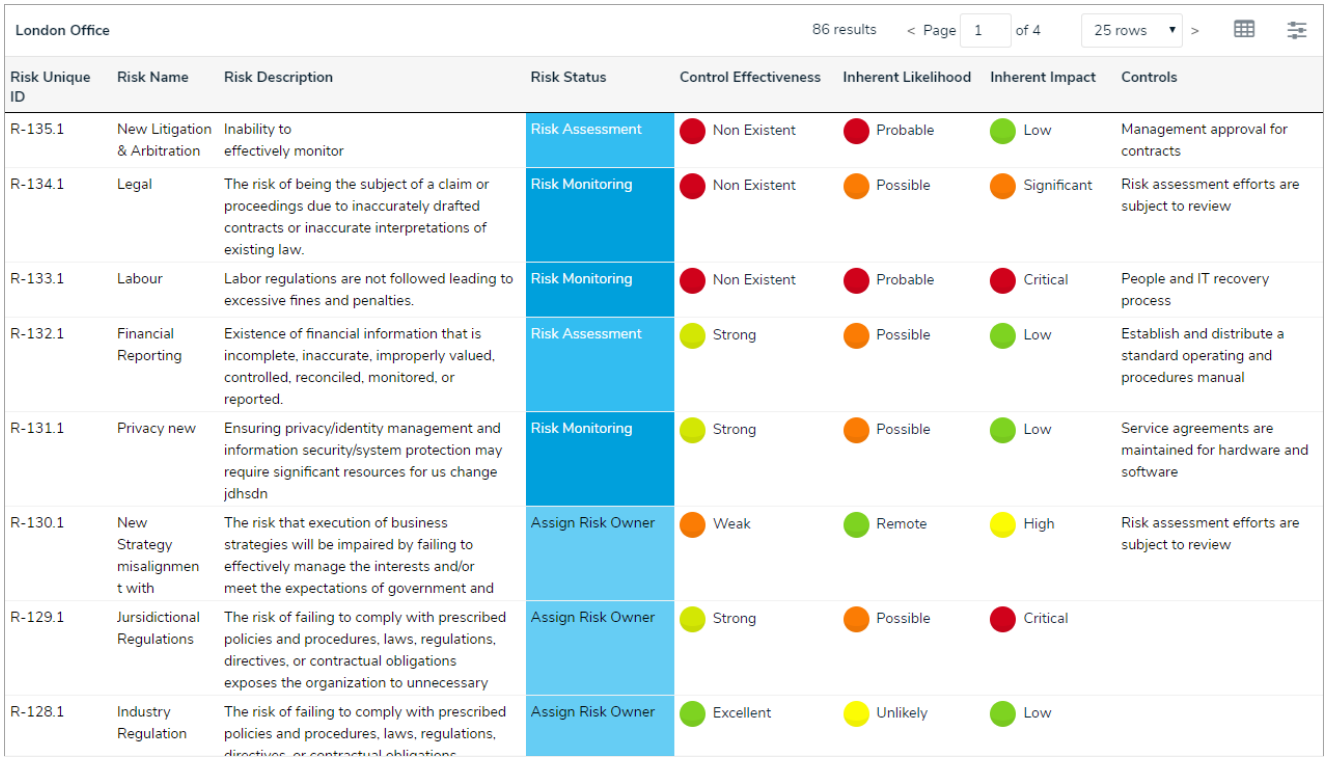
Data Grid Overview

A **data grid** is a data visualization that displays object data in a spreadsheet-style format. Users accessing a data grid through a view can sort, filter, and edit data, as well as show or hide columns, click through pages, and adjust column width or the number of rows displayed per page. For more information on accessing the grid as an end-user, see the View a Data Grid article.

The following data can be selected to appear in a grid:

- **Properties:** The objects' properties, including Name, Unique ID, Description, External Reference ID, Created By, Created On, Modified By, Modified On, and Assessment Dimensions.
- **Fields:** The values in the objects' text, numeric, date and time, and single and multi-select list fields. Depending on the user's workflow permissions, fields can be edited if they're not marked as read-only.
- **Relationships/References:** The names of relationship or reference objects.
- **Workflow State:** The current workflow state of the objects.
- **Roles:** Displays the users who have been added to an object via the role field on a form.
- **Assessment Type:** The name of related assessment object types as they're saved in the administrative settings.

You can also apply **parameters** that use workflow states, formula ranges, select list options, dates, or roles to filter what data is displayed on the grid. Parameters can be applied using any of the relationships saved to the grid's selected data definition.



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Risk Unique ID	Risk Name	Risk Description	Risk Status	Control Effectiveness	Inherent Likelihood	Inherent Impact	Controls
R-135.1	New Litigation & Arbitration	Inability to effectively monitor	Risk Assessment	Non Existent	Probable	Low	Management approval for contracts
R-134.1	Legal	The risk of being the subject of a claim or proceedings due to inaccurately drafted contracts or inaccurate interpretations of existing law.	Risk Monitoring	Non Existent	Possible	Significant	Risk assessment efforts are subject to review
R-133.1	Labour	Labor regulations are not followed leading to excessive fines and penalties.	Risk Monitoring	Non Existent	Probable	Critical	People and IT recovery process
R-132.1	Financial Reporting	Existence of financial information that is incomplete, inaccurate, improperly valued, controlled, reconciled, monitored, or reported.	Risk Assessment	Strong	Possible	Low	Establish and distribute a standard operating and procedures manual
R-131.1	Privacy new	Ensuring privacy/identity management and information security/system protection may require significant resources for us change jdhsdn	Risk Monitoring	Strong	Possible	Low	Service agreements are maintained for hardware and software
R-130.1	New Strategy misalignment with	The risk that execution of business strategies will be impaired by failing to effectively manage the interests and/or meet the expectations of government and	Assign Risk Owner	Weak	Remote	High	Risk assessment efforts are subject to review
R-129.1	Jursidictional Regulations	The risk of failing to comply with prescribed policies and procedures, laws, regulations, directives, or contractual obligations exposes the organization to unnecessary	Assign Risk Owner	Strong	Possible	Critical	
R-128.1	Industry Regulation	The risk of failing to comply with prescribed policies and procedures, laws, regulations,	Assign Risk Owner	Excellent	Unlikely	Low	

A data grid as it appears to end-users in a view.

Create a New Data Grid

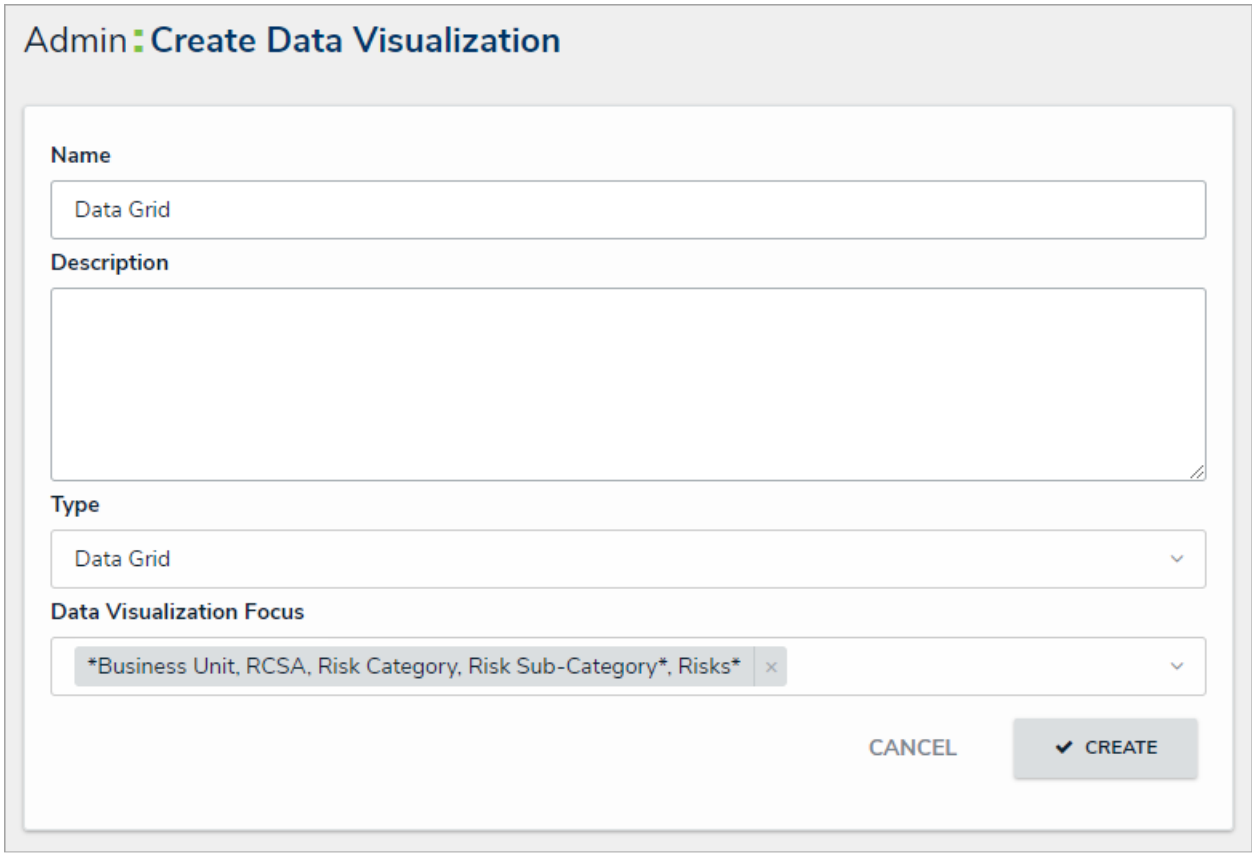
Note that the following features are not currently functional when configuring a data grid:

- The **Description** field on the **Create a Data Visualization** and **Edit Data Grid** pages;
- The **Show SUM totals for all numeric columns** checkbox in the **Columns** tab in the **Edit Data Grid** palette; and
- The **Configure Filters** option in the **Edit Data Grid** page.

You can create custom data grids for the currently logged in user (e.g. My Incidents or My Risks) by applying the **Current User** parameter to the data grid element. See step 24 below for more information.

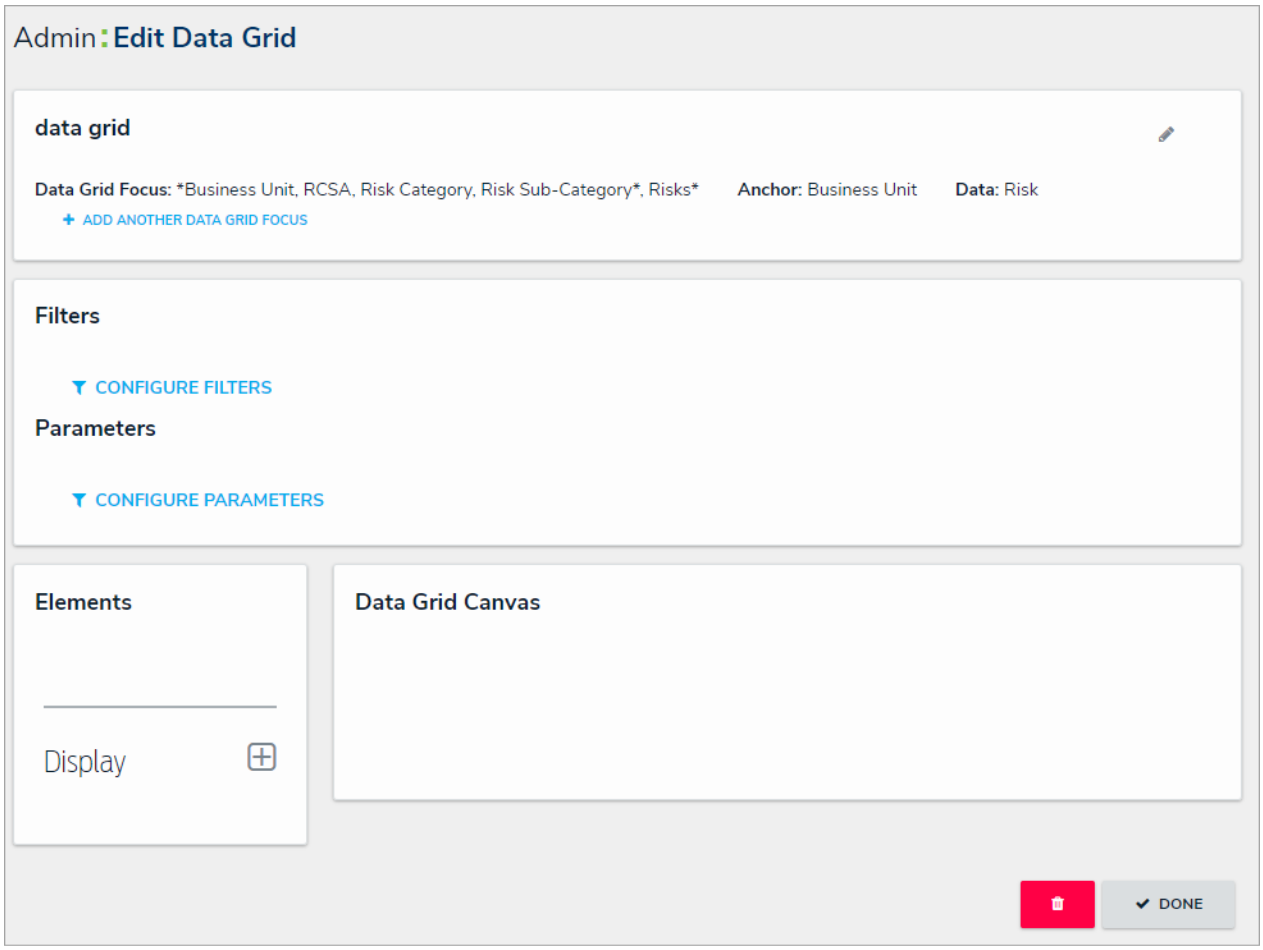
To create a data grid:

1. Ensure the data definition you wish to use for data grid has been created from the Data Definitions settings in **Administration**.
2. Click the icon in the top bar > **Data Visualizations** in the **Views** section.
3. Click **Create Data Visualizations**.
4. Enter the name for the data grid in the **Name** field.
5. Select **Data Grid** from the **Type** dropdown menu.
6. Select one or more focuses from the **Data Visualization Focus** dropdown menu.



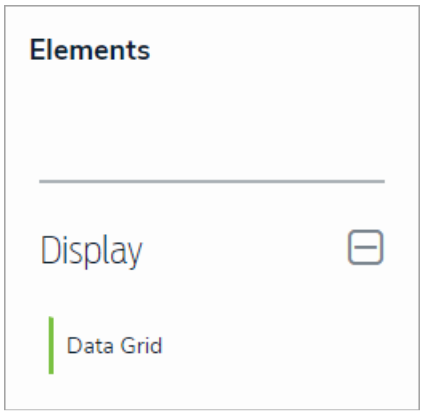
The Create Data Visualization page.

7. Click **Create** to display the **Edit Data Grid** page.



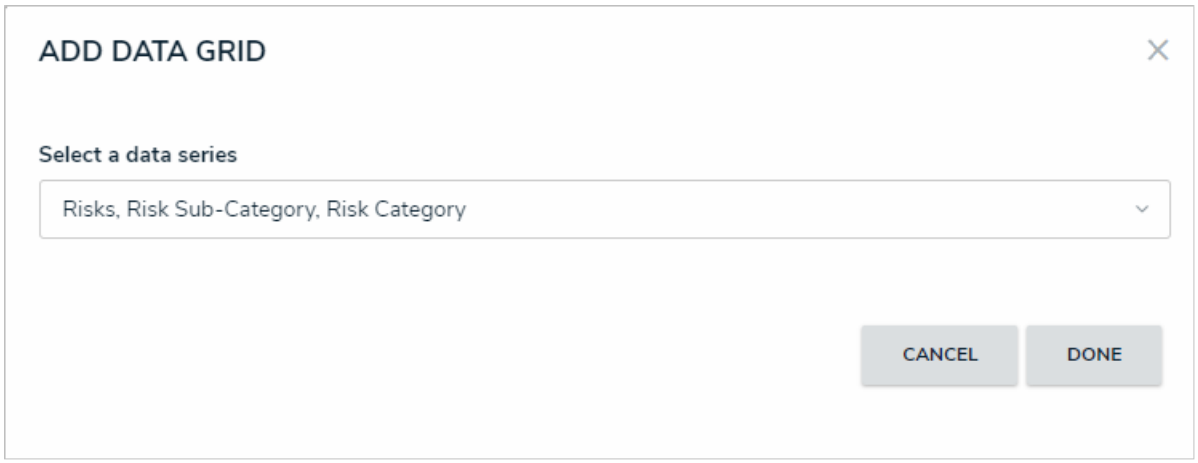
The Edit Data Grid page.

8. **Optional:** Click **Add Another Data Grid Focus** to include another report focus definition. Depending on the data path, selecting another focus will provide more data series options to choose from when adding a data grid.
9. In the **Elements** section, click the icon beside **Display**.



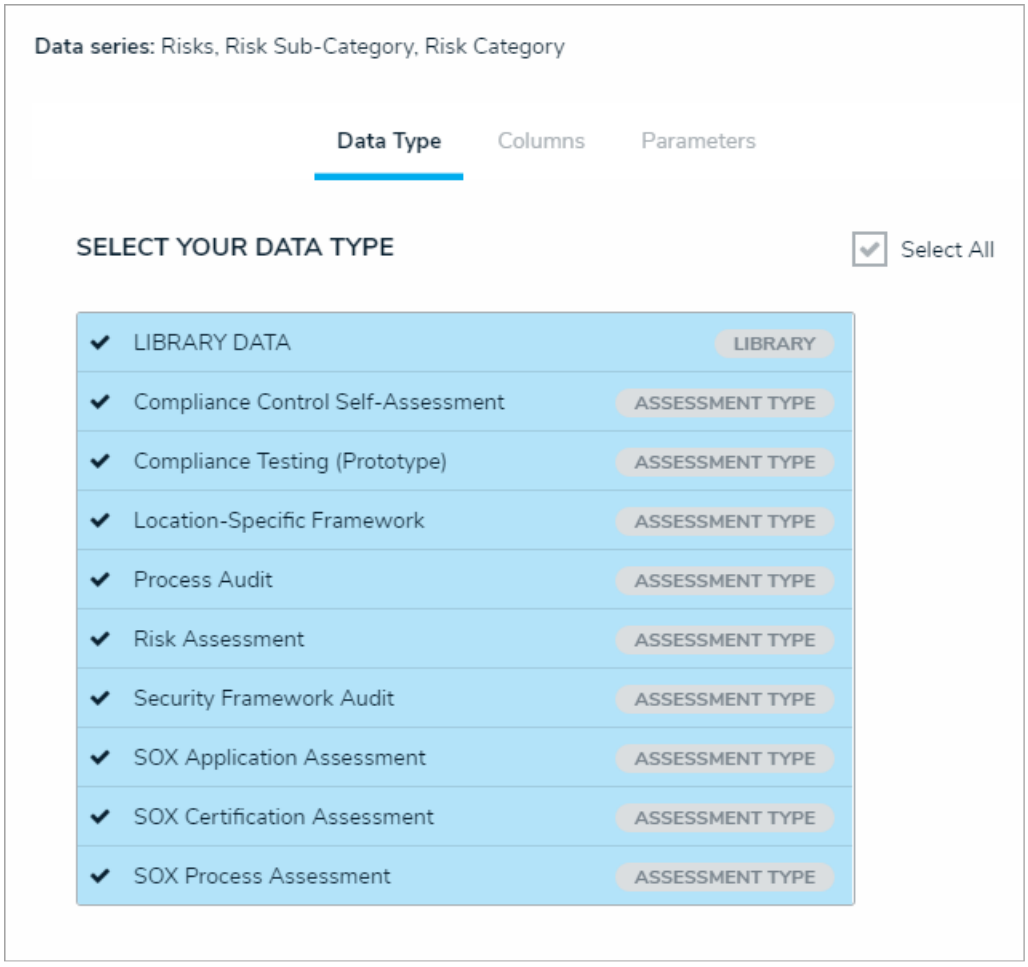
The Elements section.

10. Drag and drop **Data Grid** from the **Elements** section to the **Data Grid Canvas**.
11. Select a data series from the **Select a data series** dropdown menu, then click **Done**. The data definition selected here will determine the object data you can display in the grid.



Selecting a data series in the Add Data Grid window.

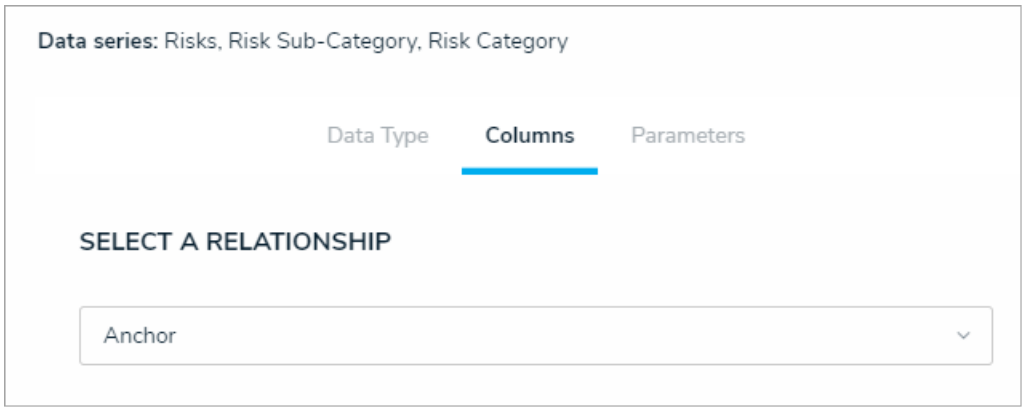
12. Choose the data types you'd like to display in the grid from the **Data Type** tab. Selecting **LIBRARY DATA** will include object type data, while selecting an **Assessment Type** will include the assessment name and workflow state. By default, all data types are selected. To make individual selections, deselect the **Select All** checkbox, then click the data type(s) you wish to include. Clicking a selected data type will deselect it.



The Data Type tab.

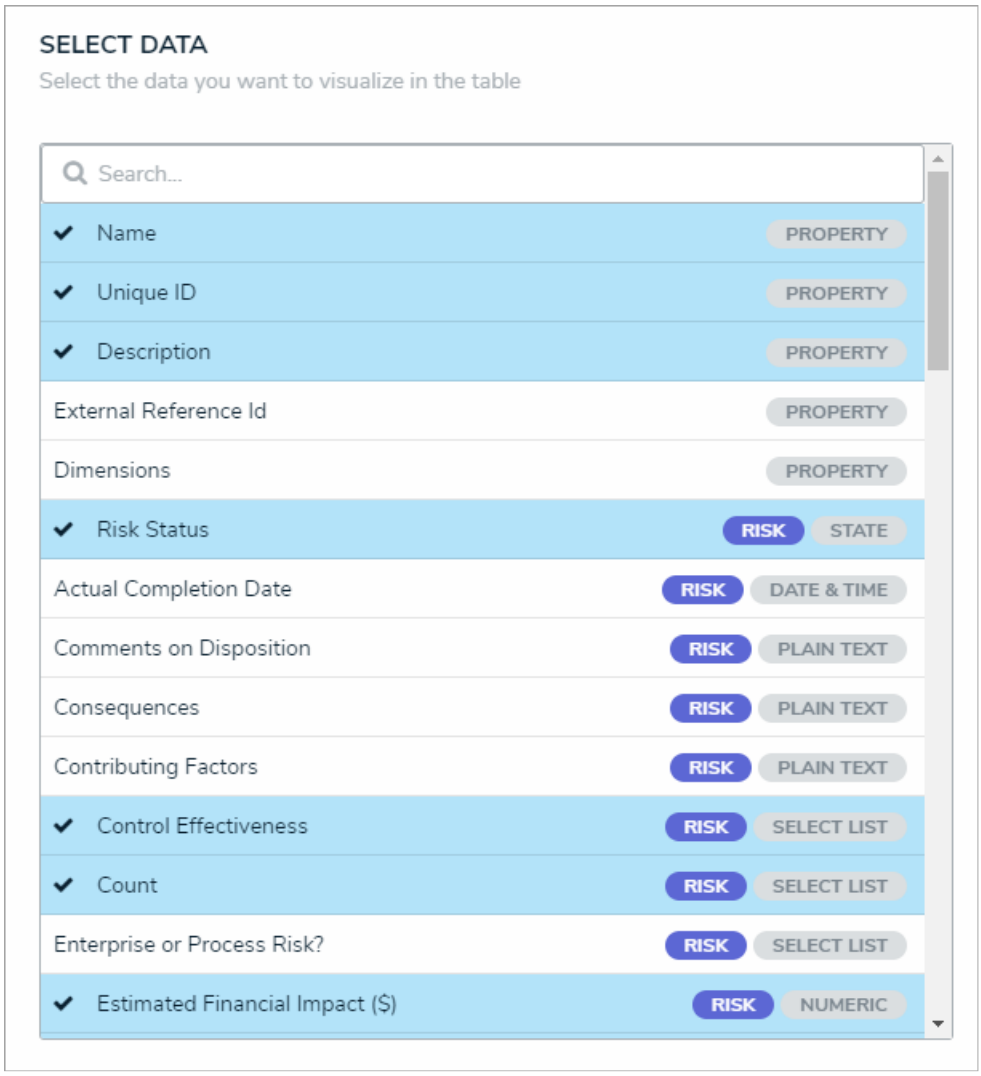
13. Click the **Columns** tab.

14. Choose either the anchor or an object type in the data path from the **Select a Relationship** dropdown menu. The options in this dropdown menu will vary depending on the data series selected in the previous steps.



Selecting which object types' data will appear in the grid.

15. Select the properties, workflow states, fields, formulas, relationships, and/or roles you want to display in the grid as columns from the **Select Data** section. Use the **Search** field to search for a particular data type, if needed. Clicking a selected data type will deselect it and remove it from the grid.



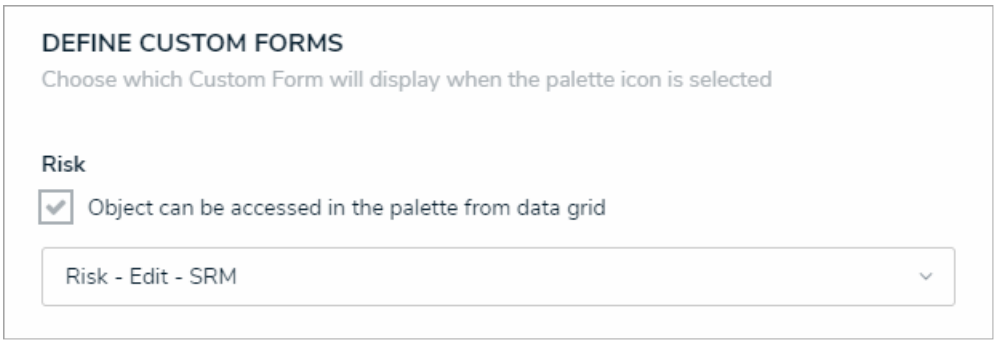
The Select Data section.

16. Continue selecting object types from the **Select a Relationship** dropdown menu to include more data by repeating steps 14 and 15 above.

17. **Optional:** To allow users to open an object in a palette while viewing the grid:

    a. Select the **Object can be accessed in the palette from data grid** checkbox in the **Define Custom Forms** section. Selecting this checkbox enables an icon that appears when end-users hover their cursor over the **Name** column in the grid. Clicking the icon displays the object in a palette.

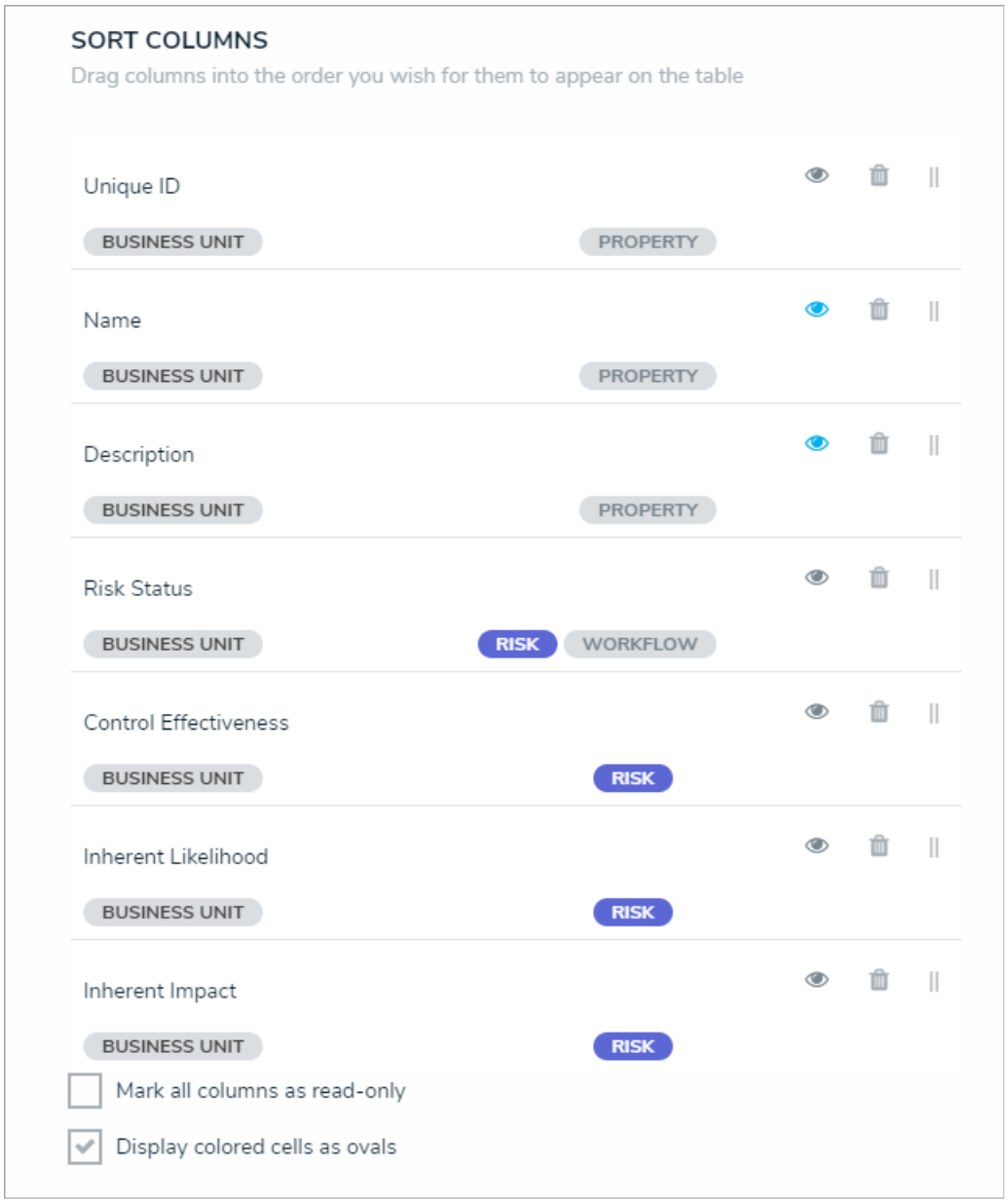
    b. Select a form from the dropdown menu to choose which form is displayed when the user clicks the palette icon. This dropdown will be hidden unless the checkbox from the step above is selected.



The Define Custom Forms section.

> Users will not be able to view objects in a palette if the **Name** property isn't displayed in the data grid. See step 15 above to ensure this property is selected.

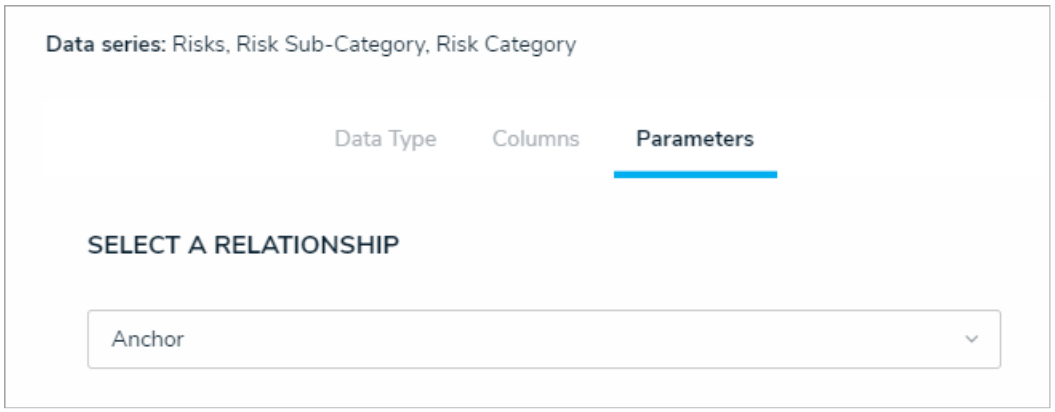
18. **Optional:** In the **Sort Columns** section, click the icon beside any data types to mark their columns as read-only and prevent users from editing their cells in the grid. To mark all columns as read-only, select the **Mark all columns as read-only** checkbox at the bottom of the section. To once again enable editing, click the icon beside individual columns or deselect the checkbox.



Th Sort Columns section.

> If a user accessing the grid does not have the required workflow permissions to edit an object, the data will appear to that user as read-only, even if all data types are left editable in the settings.

19. **Optional:** Click and drag the icon next to the data types to rearrange the order of the columns in the grid.
20. **Optional:** If needed, click the icon next to the data type to delete it from the grid.
21. **Optional:** Select the **Display colored cells as ovals** checkbox to show formula or select list cells text with colored circles. When this option is not selected, cells are displayed with text and a full background color, if any. End-users can enable or disable this option when viewing the data grid.
22. Scroll to the top of the **Edit Data Grid** palette, then click the **Parameters** tab.



The Parameters tab.

23. Choose a relationship from the **Select a Relationship** dropdown menu. The relationship selected here will determine which parameters (filters) you can apply to the grid to refine the data that's displayed. If needed, you can select a relationship that differs from the relationship selected in the **Columns** tab.

> You can add parameters from an object type in the data series even if that object type isn't configured to display any data in the grid.

24. Below **Define Parameters**, select one or more parameters to filter the data displayed in the grid. Parameter options include:
    - Workflow states;
    - Select list options;
    - Formula ranges (e.g. High, Medium, Low);
    - By Current User. When one or more roles are selected in this parameter, only users within those roles can view the data in the grid. This feature is useful to create customized data grids for specific users. The available roles are determined by the object types in the table's data series; or
    - By Date & Time Field or Created On/Modified On properties. Selecting a range in the **By [Date Field]** dropdown menu will filter the data relative to the value selected in the Date & Time field on the objects. Selecting a range in the **By Created On ([Object Type Name])** or **By Modified On ([Object Type Name])** dropdown menus will filter the data relative to the date the objects were created or modified. All date-related options filter data in UTC time. It's recommended a date parameter is used to refine large data sets for improved report performance. Options include:
        - **Today**: Show data from today's date only.
        - **Last [X] Days**: Show data within the last 30, 60, 90, or 180 days, relative to today's date.
        - **Custom**: Shows data within the dates selected in the **From** and **To** fields. The table will include objects up to the end of that date.
25. Repeat steps 23 and 24 above to add more parameters from additional object types.
26. To remove a select list, formula, or role parameter, click the **x** icon beside parameter. To delete a date parameter, click the field, then press the **Backspace** or **Delete** key on your keyboard.
27. Click **Done** to close the **Edit Data Grid** palette. If additional grids are required, a new report must be created by following the steps above.

Once a grid is successfully created and configured, it must be added to a view in an activity. See the Create a Data Grid View article for more information.

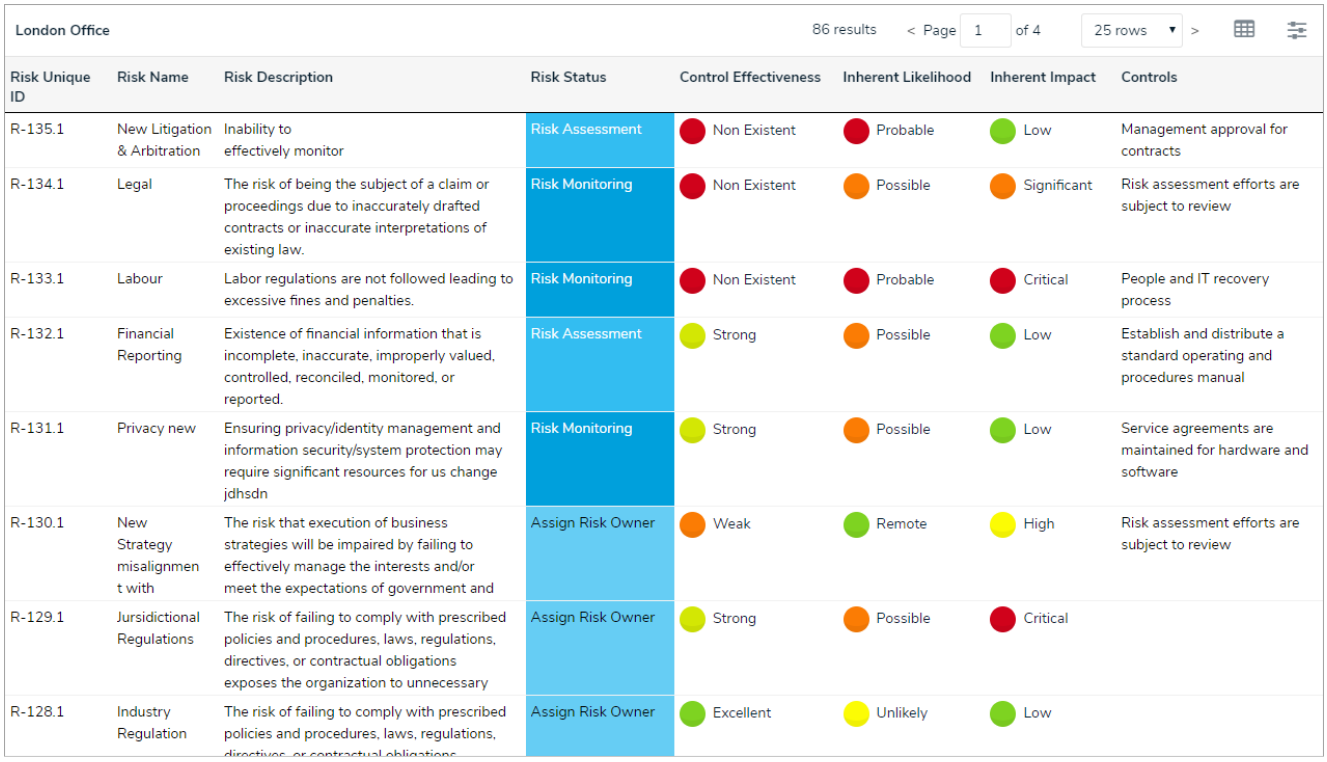
View a Data Grid

A data grid allows users to view, edit, and analyze object data in a spreadsheet-style format. Users with permission to view a data grid can interact with it by:

- Resizing, sorting, and showing or hiding columns;
- Editing an object's properties (**Name** and **Description**) or fields (**Text**, **Numeric**, **Date & Time**, and **Select List**) within individual cells (if **Edit** permissions have been enabled on your role and in the data grid settings);
- Viewing an object's details in a palette (if enabled);
- Filtering data by state, role, relationship, reference, or single select list;
- Wrapping or unwrapping cell contents; and
- Moving forward or back through the grid's pages or adjusting the number of rows displayed on a single page.

> Refreshing your browser or navigating away from a data grid will reset any custom display settings (show/hide columns, column width, sorting, etc.) to its default configurations.

This article provides information and instructions on accessing, viewing, and editing data in a data grid from a view. For information on creating a data grid, see the Create a New Data Grid article.



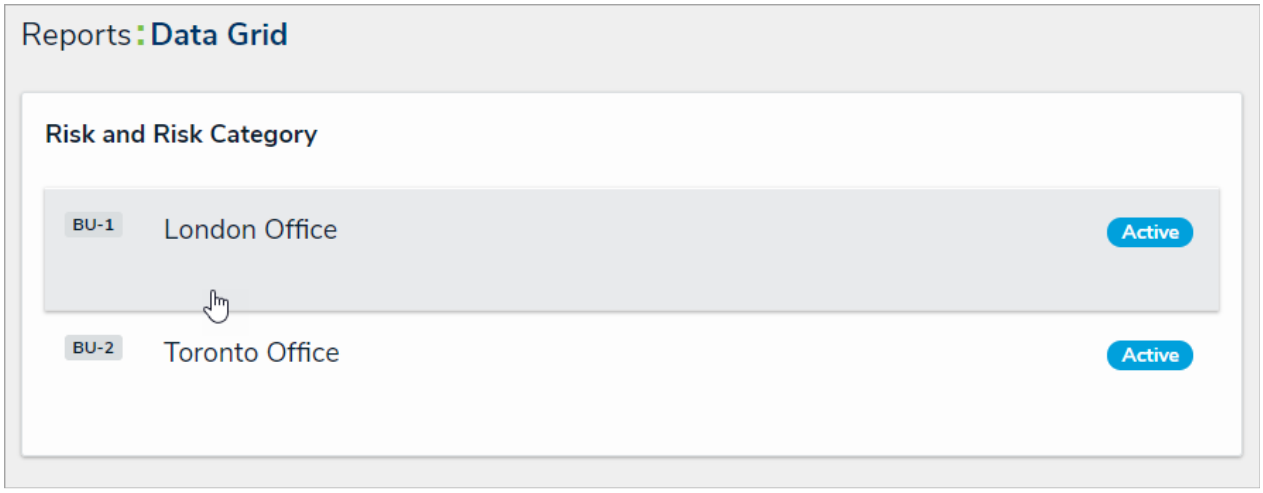
London Office — 86 results — < Page 1 of 4 — 25 rows >

Risk Unique ID	Risk Name	Risk Description	Risk Status	Control Effectiveness	Inherent Likelihood	Inherent Impact	Controls
R-135.1	New Litigation & Arbitration	Inability to effectively monitor	Risk Assessment	Non Existent	Probable	Low	Management approval for contracts
R-134.1	Legal	The risk of being the subject of a claim or proceedings due to inaccurately drafted contracts or inaccurate interpretations of existing law.	Risk Monitoring	Non Existent	Possible	Significant	Risk assessment efforts are subject to review
R-133.1	Labour	Labor regulations are not followed leading to excessive fines and penalties.	Risk Monitoring	Non Existent	Probable	Critical	People and IT recovery process
R-132.1	Financial Reporting	Existence of financial information that is incomplete, inaccurate, improperly valued, controlled, reconciled, monitored, or reported.	Risk Assessment	Strong	Possible	Low	Establish and distribute a standard operating and procedures manual
R-131.1	Privacy new	Ensuring privacy/identity management and information security/system protection may require significant resources for us change jdhsdn	Risk Monitoring	Strong	Possible	Low	Service agreements are maintained for hardware and software
R-130.1	New Strategy misalignmen t with	The risk that execution of business strategies will be impaired by failing to effectively manage the interests and/or meet the expectations of government and	Assign Risk Owner	Weak	Remote	High	Risk assessment efforts are subject to review
R-129.1	Jursidictional Regulations	The risk of failing to comply with prescribed policies and procedures, laws, regulations, directives, or contractual obligations exposes the organization to unnecessary	Assign Risk Owner	Strong	Possible	Critical	
R-128.1	Industry Regulation	The risk of failing to comply with prescribed policies and procedures, laws, regulations,	Assign Risk Owner	Excellent	Unlikely	Low	

A data grid as it appears to end-users in a view.

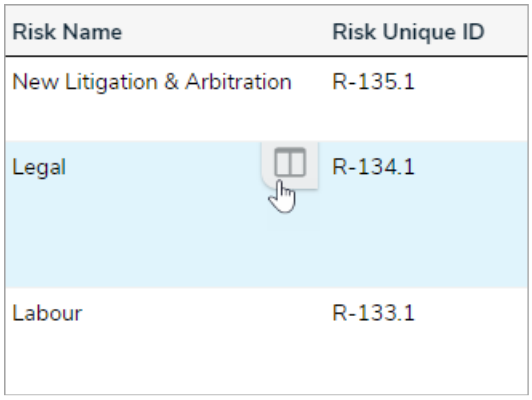
To view a data grid:

1. Navigate to the application and activity where the data grid is saved.
2. Click an anchor (root) object in the view to display the data grid.



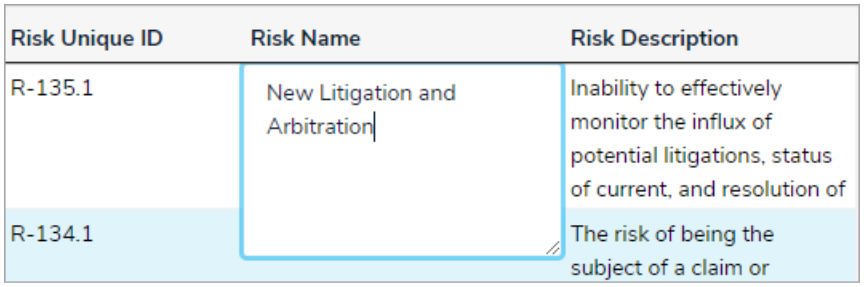
Clicking on an anchor object to view a data grid.

3. To open a grid object in a palette, hover your cursor over a cell in the **Name** column, then click the icon. This icon will only appear if the palette option was enabled by an administrator and if the **Name** column is displayed on the grid.



The palette icon in the Name column.

4. To edit property (**Name** or **Description**) or field data (**Plain Text**, **Numeric**, **Date & Time**, or **Select List**) in a column that **has not been marked as read-only**, click the cell, then type your changes or make a selection from the available options. Changes made to cells are applied to the associated object and are saved automatically.

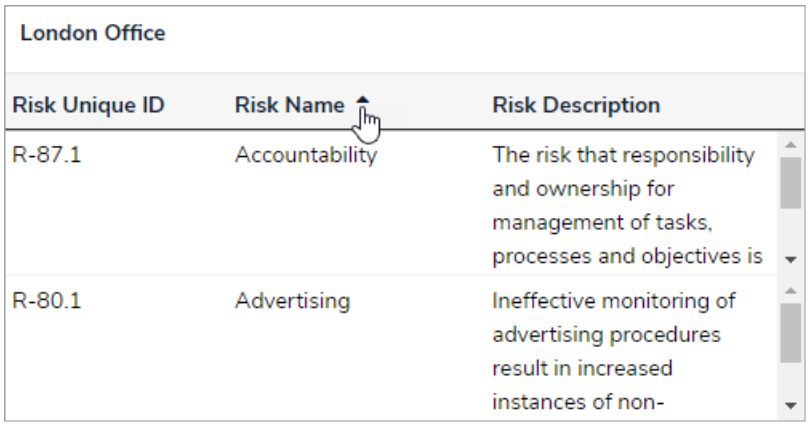


Clicking a cell to edit it. If the cell has been marked as read-only or your role does not have permission to edit the associated object, the cell cannot be edited.

5. To edit a text field with rich text formatting enabled, click the cell to open the RTF editor, type your changes, then click the icon to save. If you don't have permission to edit the RTF field, clicking it will display the fields' contents in focused mode. Click **x** to close the RTF editor or window and return to the data grid.

6. To adjust a column's width, hover your cursor over the top of the column to show the icon, then click and drag the column to resize it.

7. To sort the grid by column, click the column name at the top of the grid to sort the data alphabetically in ascending order. Click the column name again to sort in descending order. Clicking the column name a third time will remove any sorting.

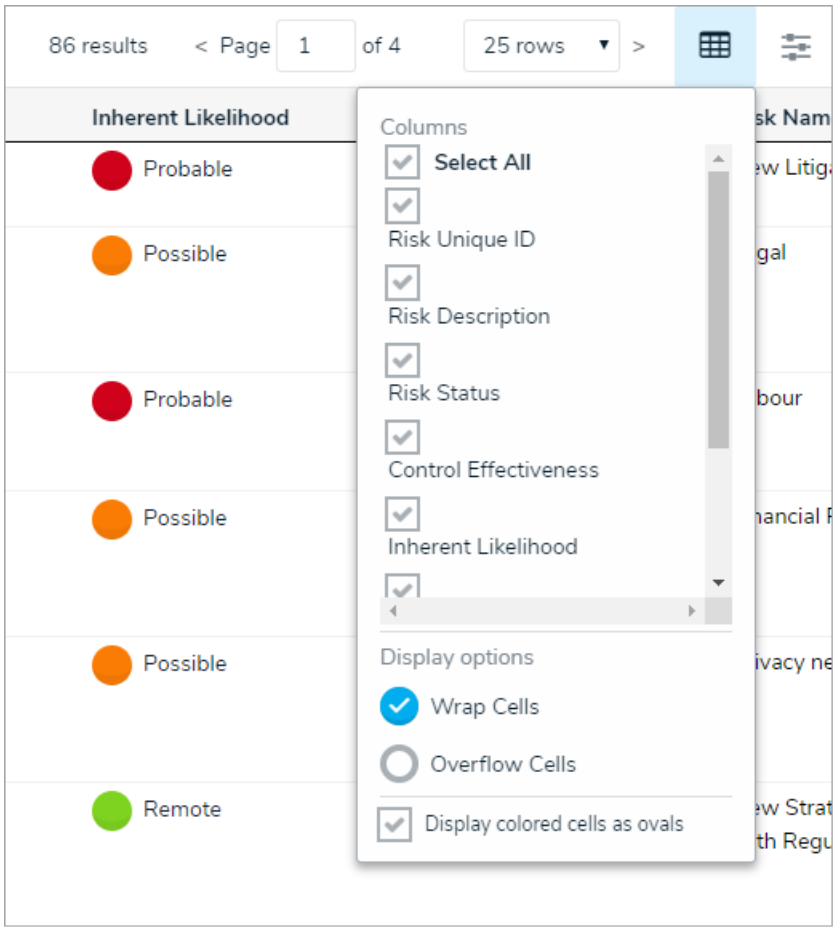


Sorting the columns in a grid.

8. To display a specific grid page, click the **<** or **>** icons to move forward or back, click the textbox and type the page number you wish to view, or click the arrows, then click away from the text box to reload the grid. To adjust the number of rows displayed, select an option from the row dropdown menu.

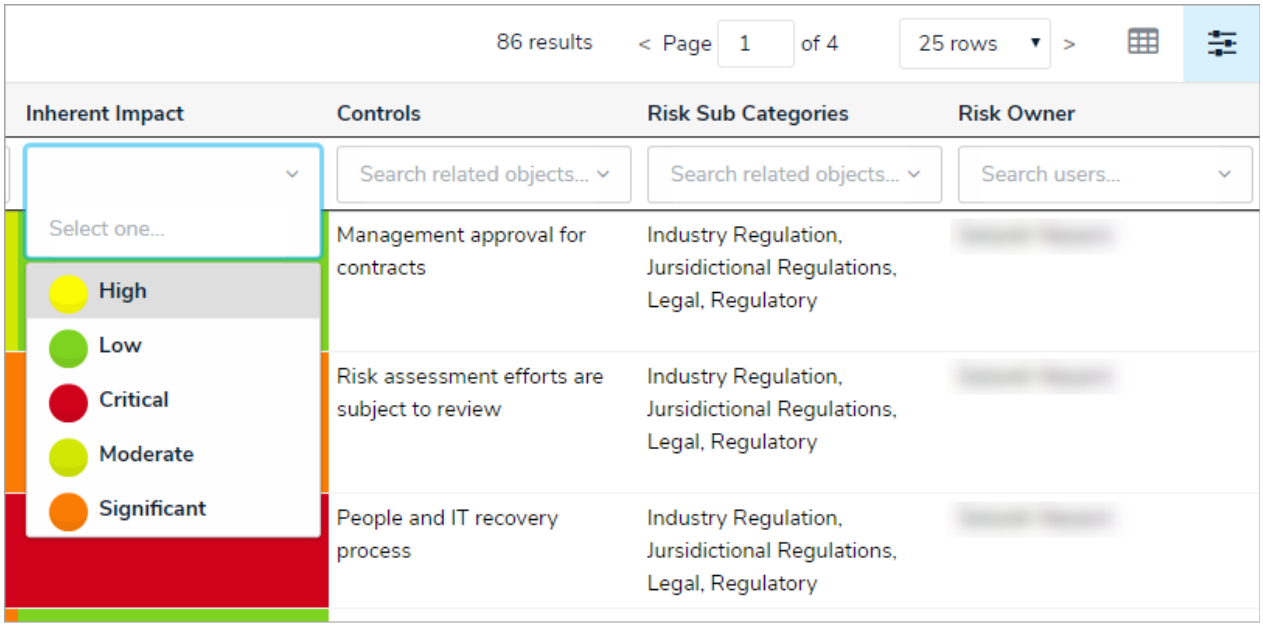
Changing the grid page.

9. To configure the grid's display, click the icon in the top-right corner of the page. To show or hide columns, select or deselect the column checkboxes. Select the **Wrap Cells** or **Overflow Cells** options to wrap or unwrap the data. Select the **Display colored cells as ovals** checkbox to show formula or select list cells as text with colored circles instead of a full background color. This option does not apply to workflow states.



The grid's display options.

10. To filter the data displayed in a column by single select list, date, workflow state, formula range, relationship/reference, or role, click the icon to the far right of the page to enable filters below the column headers, then begin typing keywords or select an option. Click the icon again to disable/reset any filters.

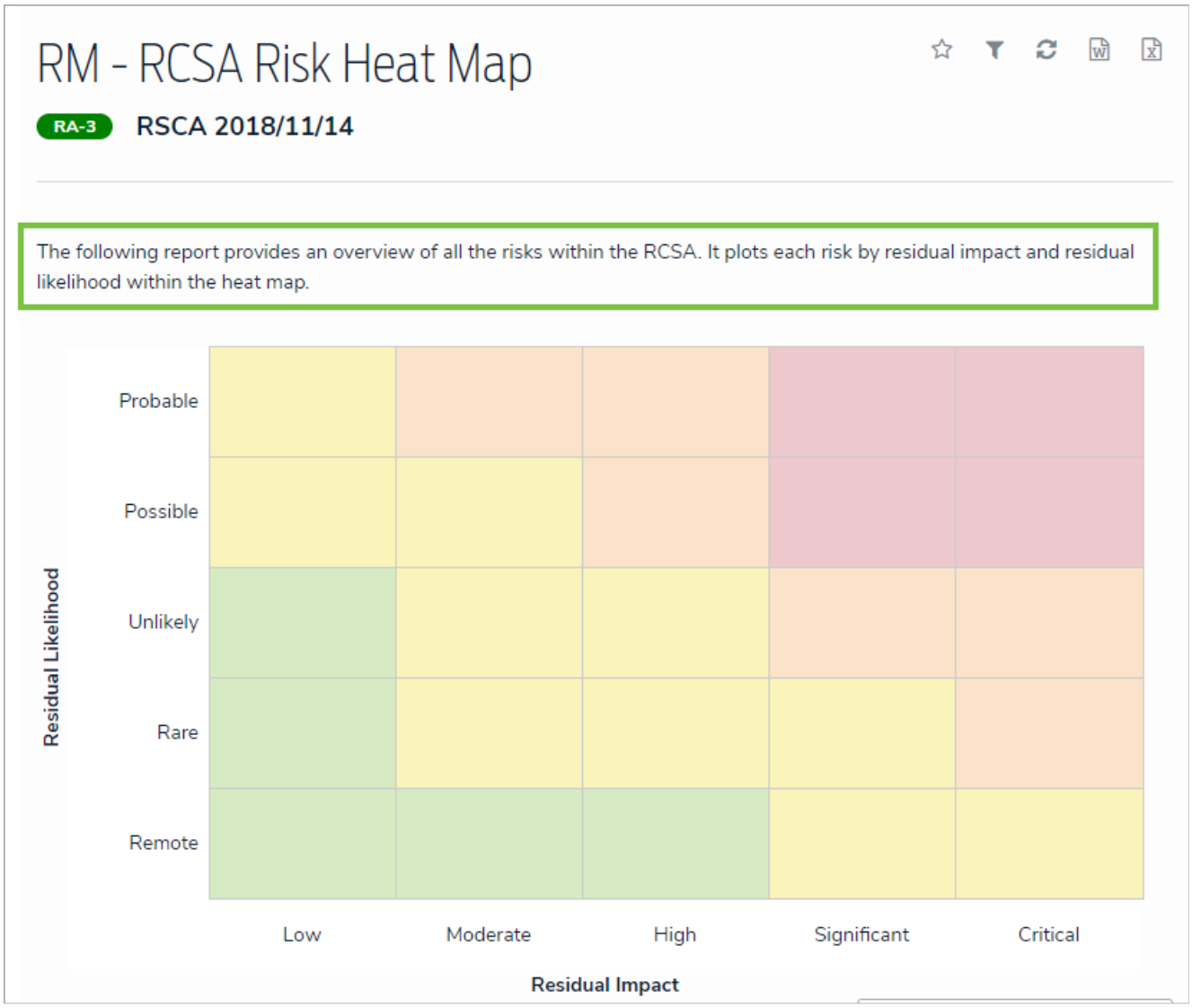


Filtering the data displayed in the grid.

11. To reset any custom display settings, including filters, column widths, hidden columns, page numbers, or rows, refresh your browser.

Add Free Form Text to a Data Visualization

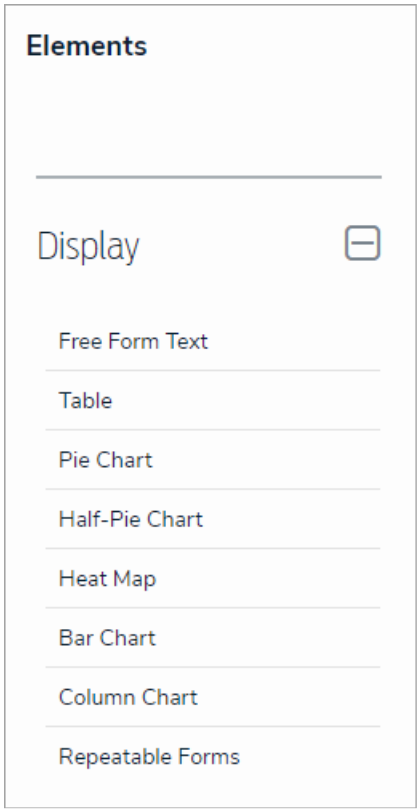
Free form text is a data visualization element that allows you to add additional text, with optional formatting, to a report canvas.



Free form text as it appears on a report to end users.

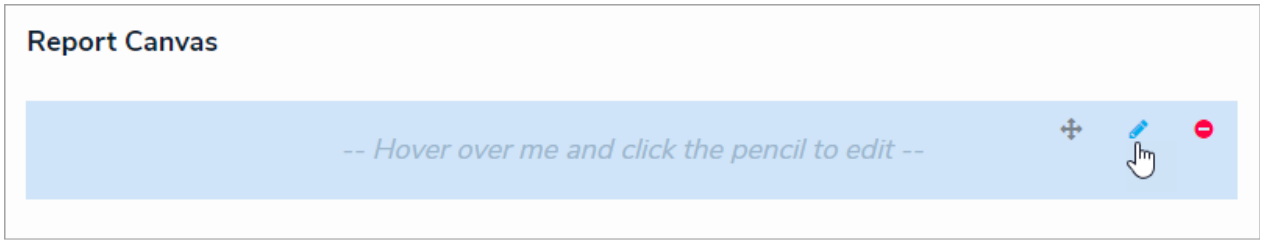
To add free form text to a report:

1. In the **Elements** section, click the icon beside **Display** to show the available elements.



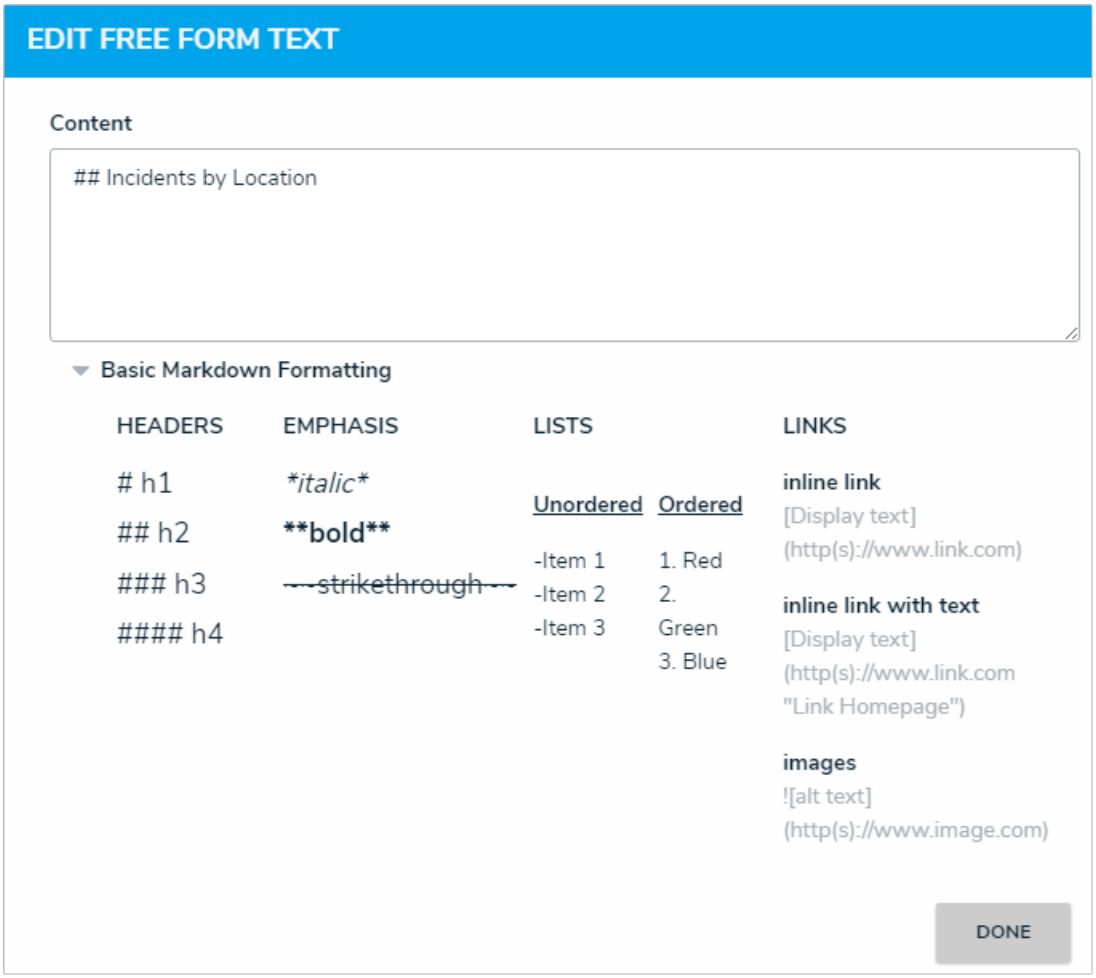
The Elements section.

2. Drag and drop **Free Form Text** from the **Elements** section to the **Report Canvas**.
3. Hover your cursor over the free form text element, then click the icon to open the **Edit Free Form Text** palette.



A new free form text element added to the canvas.

4. Enter the text in the **Content** field.
5. **Optional:** Apply Markdown formatting to the text. To view popular formatting styles, click the icon next to **Basic Markdown Formatting**.



Free form text styled with Markdown formatting.

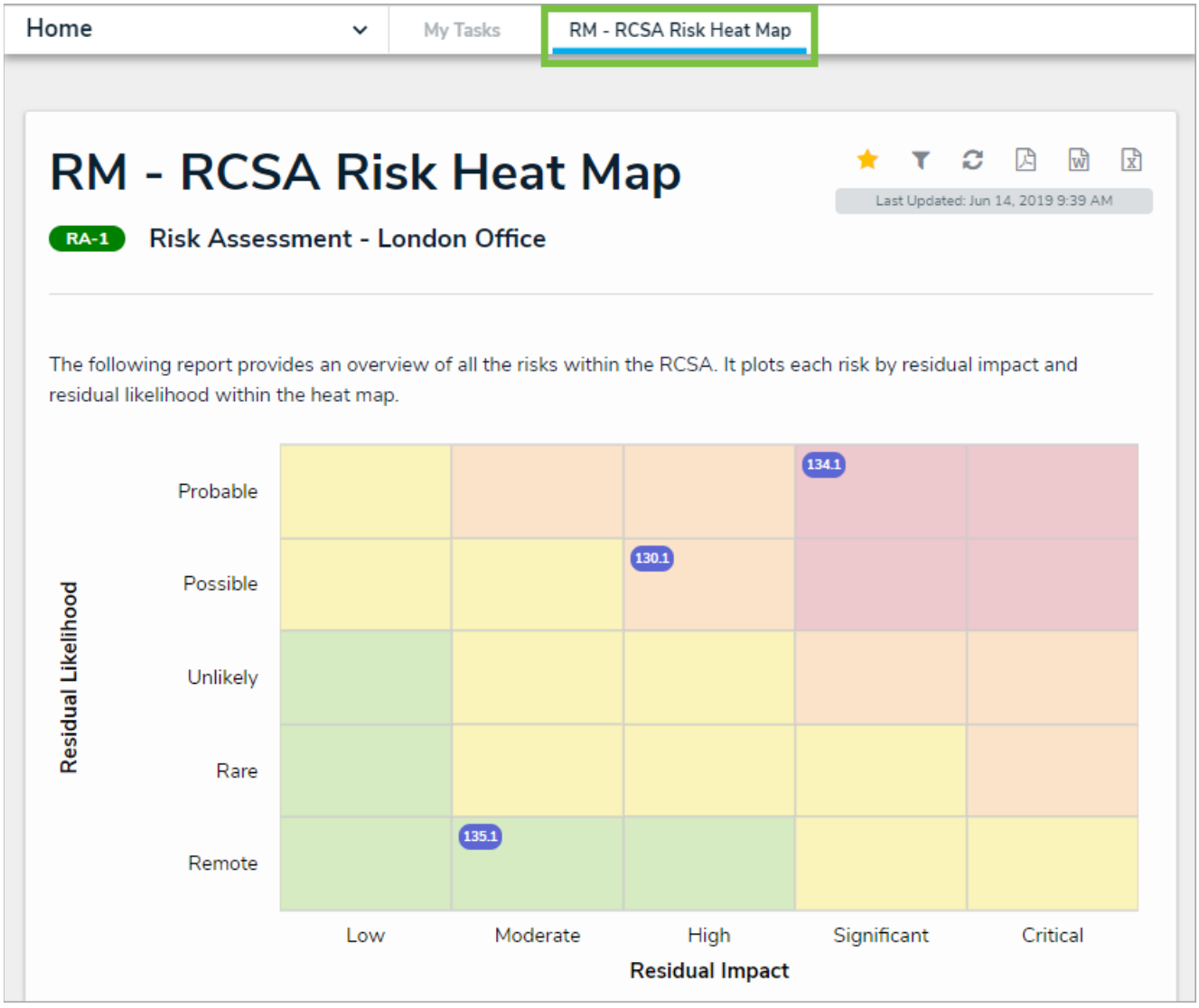
6. Click **Done** when finished.
7. Repeat the steps above to continue adding more free form text elements to the report as needed. Once multiple elements are on the **Report Canvas**, you can rearrange them by hovering your cursor over the element, then clicking the icon and dragging the element to a new location on the canvas. To delete an element, hover your cursor over it, then click the icon.

Starred Reports

When a report is starred, it appears as a tab in the nav bar beside My Tasks. These tabs are displayed when working in the **Home** area of your organization after:

- Logging in;
- Clicking the company logo in the top-left corner of any page; or
- Clicking **Home** from the nav bar dropdown menu.

The **My Tasks** tab is the default landing page when viewing the **Home** area of your organization, but a starred report can be marked as the landing page so that its tab is automatically opened when returning to **Home.**



Starred reports appear as tabs in your nav bar.

Important Notes

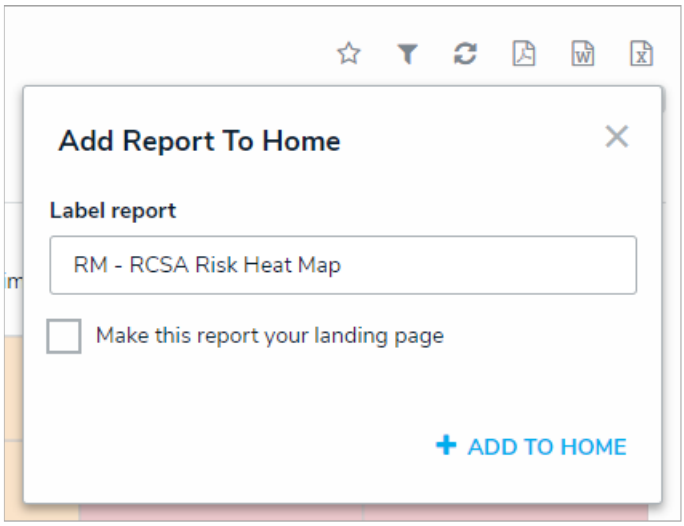
- Starred report data is not updated in real time. If the data changes while the report tab is open, click the refresh icon to show the latest data. See the Loading & Caching Report Data article for more information.
- Starred report functionality is not available on data grids or data analytics reports.

- It's recommended that repeatable form reports are not added to starred reports as doing so may cause performance issues, depending on the amount of data displayed in the report.

Instructions

To star a report:

1. Open the report you want to star.
2. Click the ☆ icon at the top-right corner of the report to open the **Add Report To Home** window.
3. If needed, enter a custom name for the tab in the **Label report** field. The report's name, as saved by the administrator who configured it, appears in this field by default.



The Add Report to Home window.

4. Select the **Make this report your landing page** if you want this report to replace the My Tasks tab or another starred report as the home page. To revert back the home page back to **My Tasks**, deselect the checkbox.
5. Click **Add To Home** to finish.
6. Repeat 1-6 above to continue adding more reports as needed. The tabs appear in the nav bar based on the order they were starred. Additional tabs that span beyond the view of the nav bar in your browser can be accessed by clicking the ••• icon.
7. To delete the tab from the nav bar, click the ★ icon, then click **Remove From Home**.

Personalized Data Visualizations

Both administrators and end users can create a more personalized experience in their organization using one or more of the following report or data grid features:

- **Role Filters:** End users can filter the data in a report by user group and/or specific users within a role that was previously selected by an administrator. This allows end users to focus on data that's relevant to them.
- **Date or Role Parameters:** Administrators can apply parameters at the report or data grid level to only show data from a specific date range or to users in a specific role.
- **Table/Repeatable Forms/Data Grid Parameters:** Administrators can apply date, role, field, formula, and state parameters to tables, repeatable forms, and data grids to control which data is displayed.
- **Starred Reports:** End users can star a report so that it appears as a tab in thenav bar when working in the **Home** area of their organization. Starred reports can also be flagged as the user's landing page so that it's displayed on login, after clicking the company logo in the top-left of the page, or selecting **Home** from the nav bar dropdown menu.

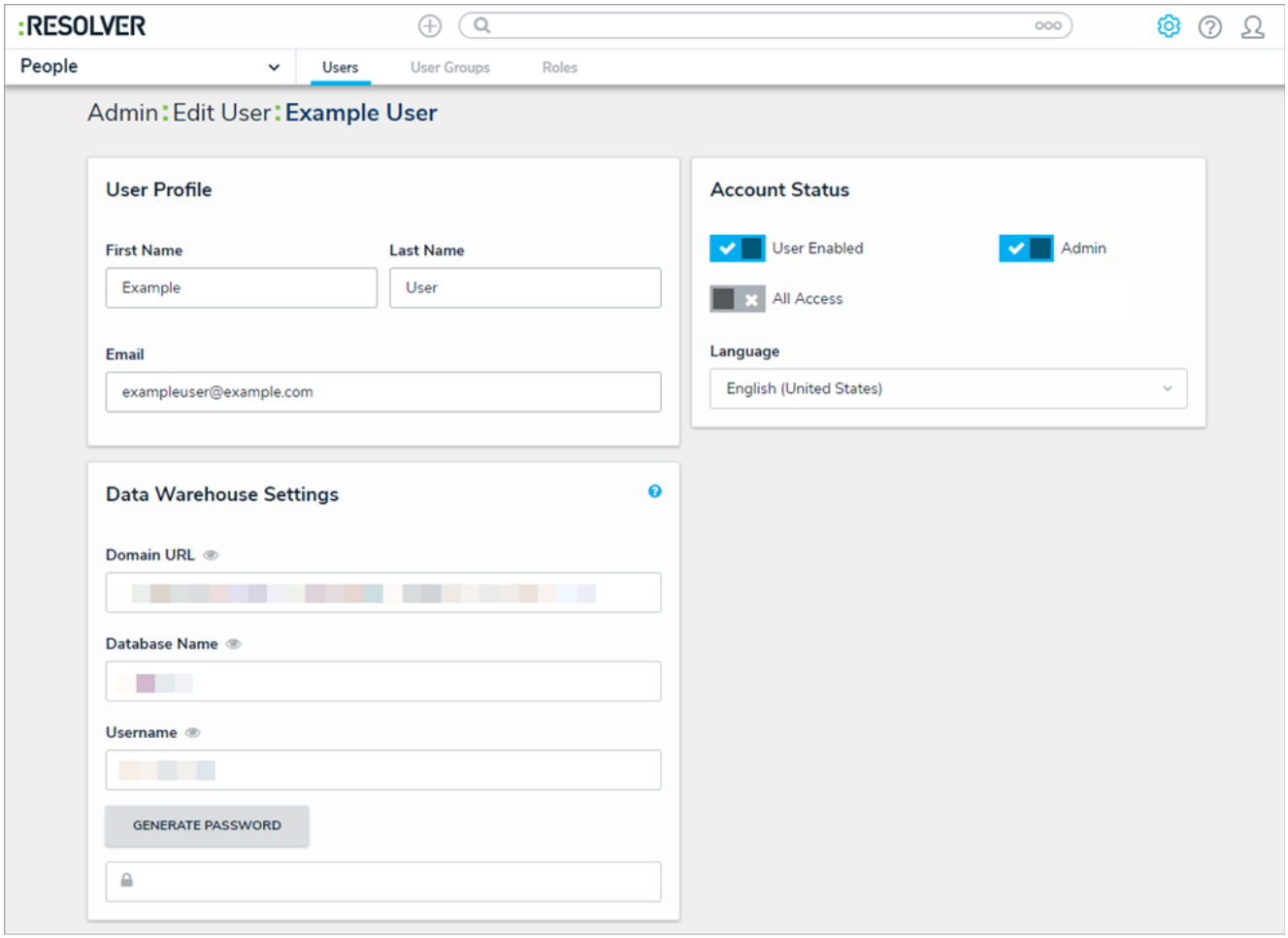
For information on these features, see the following articles:

- Add Filters to a Data Visualization
- Add Parameters to a Data Visualization
- Add a Table to a Report
- Add Repeatable Forms to a Report
- Data Grids
- Starred Reports

BI Connectivity via the Data Warehouse

BI Connectivity via the **Data Warehouse** is an optional paid feature. With the new warehouse in place, changes to objects (e.g., risks or incidents) are sent to the data warehouse, which stores a version of both current and historical data, making it possible to track trends and see changes over time through business intelligence tools.

Once purchased, data warehouse connection details are accessible from the **Edit User** page of the currently logged in administrator. Contact your Customer Success Manager should you wish to enable this feature.



The Edit User page showing the Data Warehouse Settings.

Important Notes

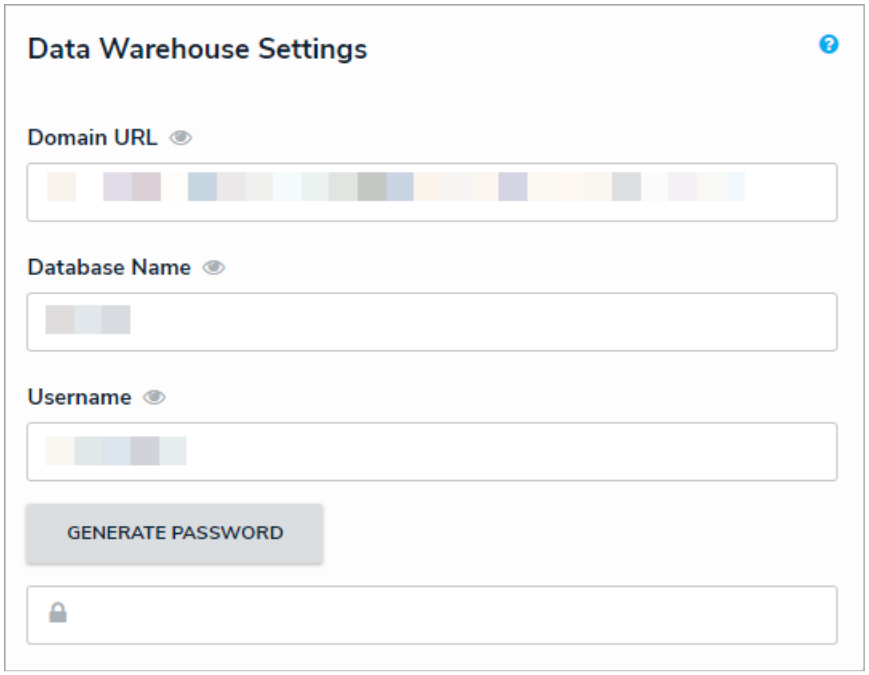
- Up to 200 fields, formula values, and roles per object type are stored in the warehouse. Data is updated every 2 to 5 minutes, depending on the data load.
- This feature does not:
    - Store attachments (image or file) or text formatting (Markdown or rich text);
    - Transfer role permissions. This means that any user with access to the BI tool will be able to view object data their role permissions would otherwise restrict; or
    - Automatically transfer field, formula, or object type name changes into the data warehouse. A manual update in the tool is required to reflect these changes, but note that amendments of this nature may negatively affect your BI reports.
- Following initial activation, it may take 30 minutes or more before the data warehouse is fully functional. Additionally, significant changes to your organization (e.g., a data import) can take 30 minutes or more to transfer successfully.
- If your organization was recently imported into Core, wait a minimum of 30 minutes before transferring data into the warehouse.

- Data warehouse passwords are not stored in Core. If you need to log into the BI tool, but you've misplaced the original password, another password must be generated.
- If the user account that generated the password entered into the BI tool is deleted, disabled, or loses its admin privileges, the current warehouse session will be terminated. To once again gain access, a new password must be generated from another admin account and entered into the tool.
- Some BI tools, such as Microsoft Power BI, may have additional requirements before a connection can be established. If a connection to the BI tool failed due to a certificate error, contact Resolver Support for assistance.

Instructions

To access the data warehouse settings:

1. Click the icon in the top bar > **Users** in the **People** section.
2. Click your name to view the **Edit User** page for your account.
3. Click **Generate Password** in the **Data Warehouse Settings** section.



The Data Warehouse Settings section.

> Newly activated data warehouses may take 30 minutes or more before they're fully functional. If a **warehouse unavailable** message is displayed when **Generate Password** is clicked, try again after 30 minutes has passed.

4. Copy and paste the values of the **Domain URL**, **Database Name**, **Username**, and password fields into your business intelligence tool to establish a connection. Depending on your BI tool, the **Domain URL** may be referred to as a **Server URL**, **Host URL**, or similar.

> If a connection to the BI tool failed, additional requirements (e.g., a new domain URL and/or file downloads) may need to be met before a connection can be established. Contact Resolver Support for assistance.

Connect Power BI to the Data Warehouse

This article provides instructions for connecting Microsoft's Power BI with your organization's data warehouse on a Windows 10 machine.

Prerequisites

Before following the steps below, ensure you have:

- Purchased and activated the data warehouse feature.
- Reviewed the **Important Notes** section of BI Connectivity via the Data Warehouse article.
- Administrator permission on your machine in order to install **Npgsql**.
- A Core user account with admin privileges enabled for the organization you wish to connect to Power BI.
- Contacted Resolver Support to obtain the Amazon certificate required to complete the steps in section 2 below.

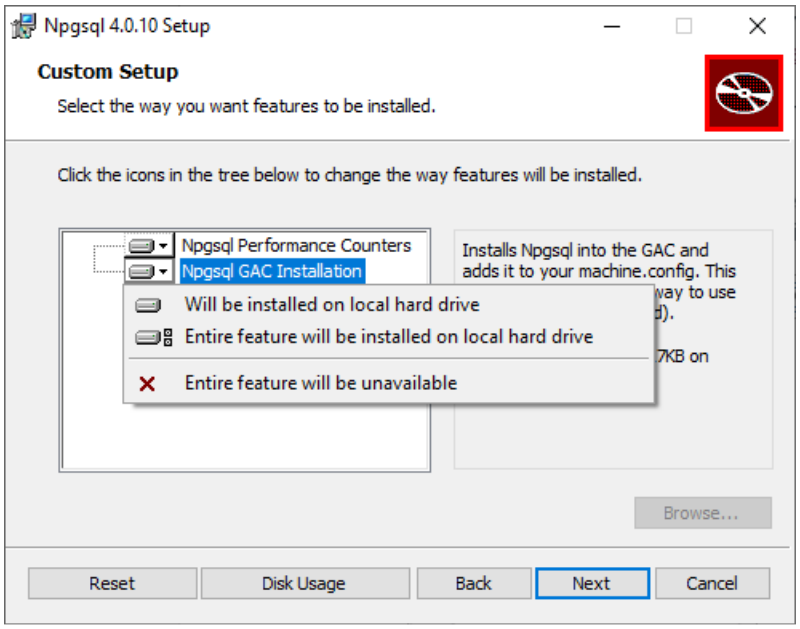
1. Install Npgsql

To install Npgsql:

1. Download the **Npgsql v. 4.0.10.msi** file from this site, then run the installer.

   > ⚠ Versions 4.1 or higher of **Npgsql** are not compatible with Power BI.

2. On the third screen of the installer, ensure the **Will be installed on local hard drive** option is selected for **Npgsql Performance Counters** and **Npgsql GAC Installation**.



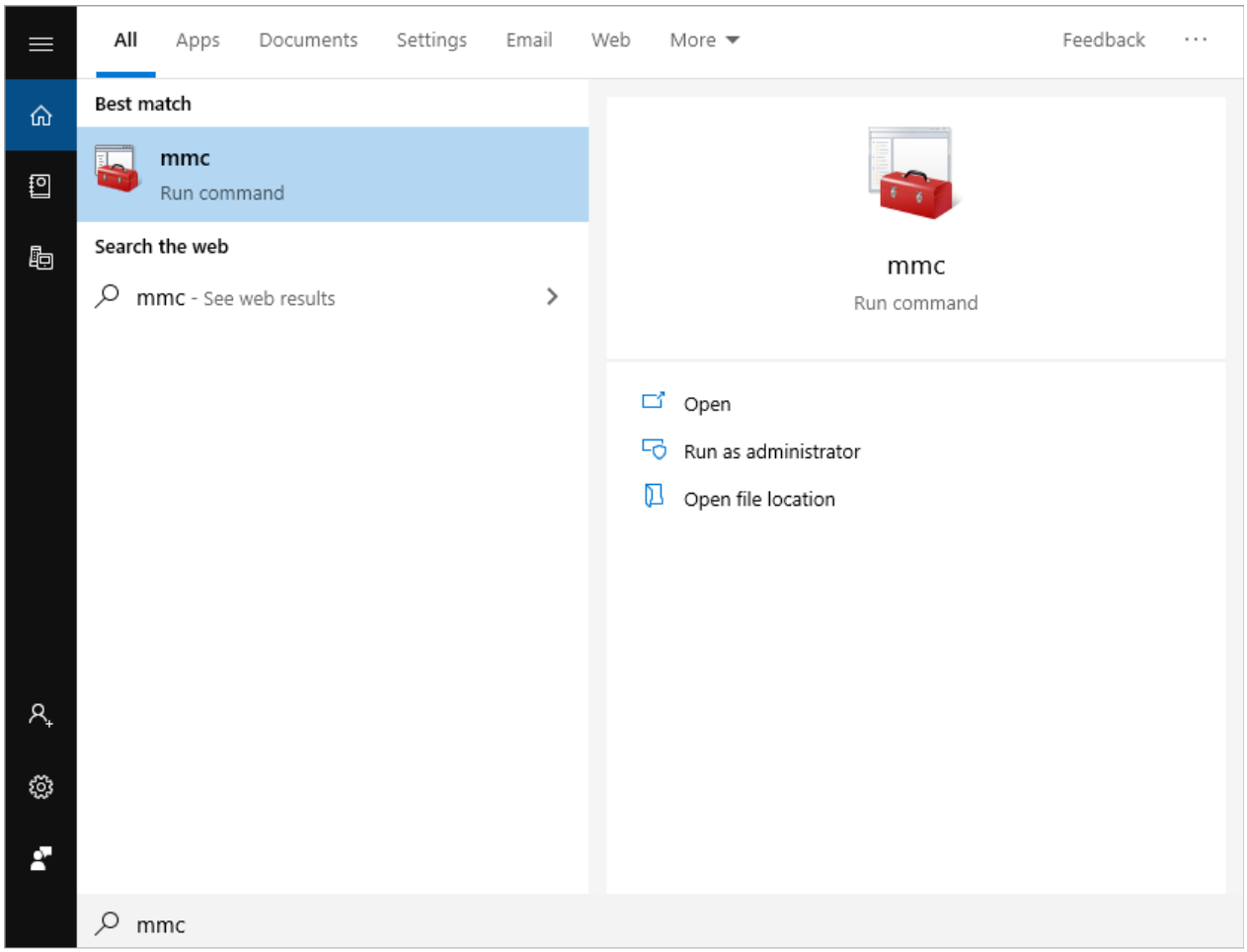
The Npgsql installation wizard.

3. Complete the installation and restart your computer, if required.

2. Import the Certificate

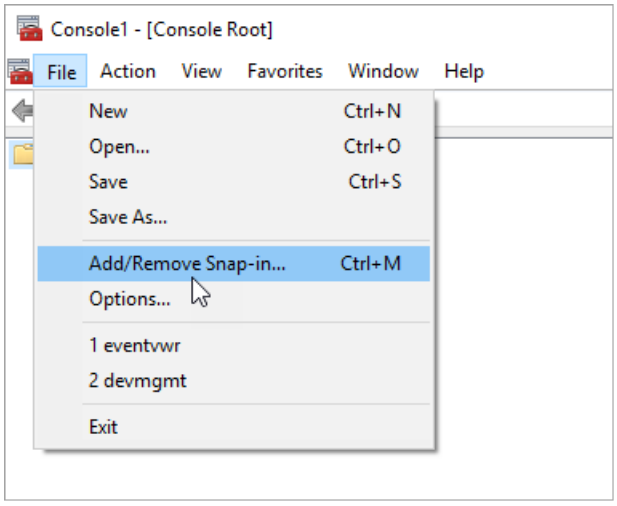
To import the Amazon certificate:

1. If you haven't already done so, contact Resolver Support to obtain the required Amazon certificate.
2. Enter **mmc** in the Windows search box, then click **Open** to open the Microsoft Management Console.



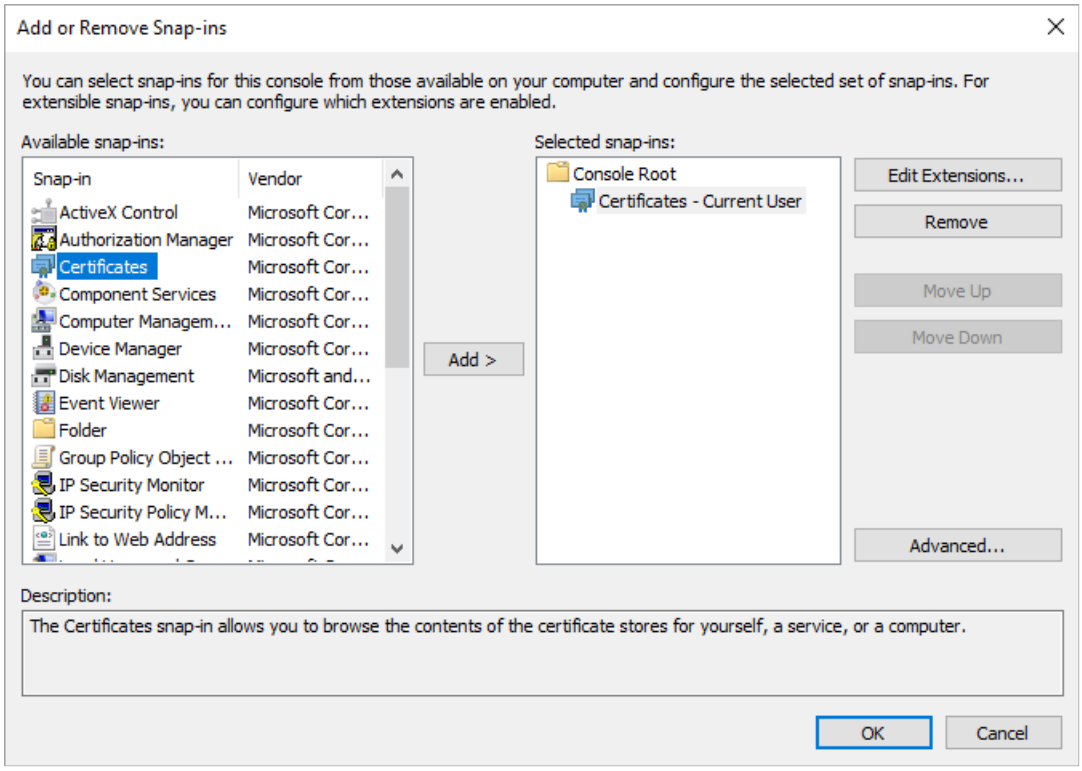
Microsoft Management Console in the search results.

3. Click **File > Add/Remove Snap-in...**



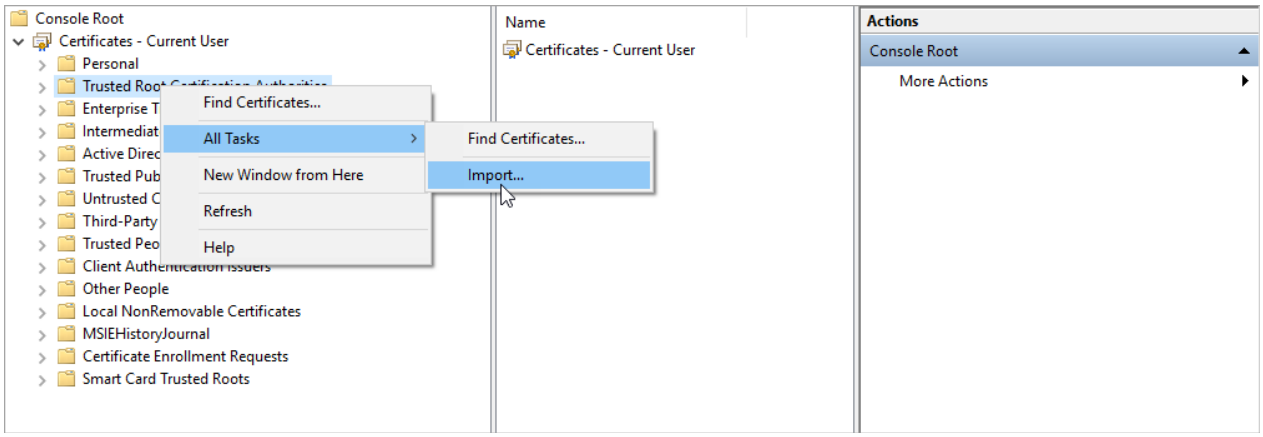
The Add/Remove Snap-in... option from the File menu.

4. Select **Certificates** from the **Available snap-ins** pane on the left, then click **Add** to move it to the **Selected snap-ins** pane on the right.



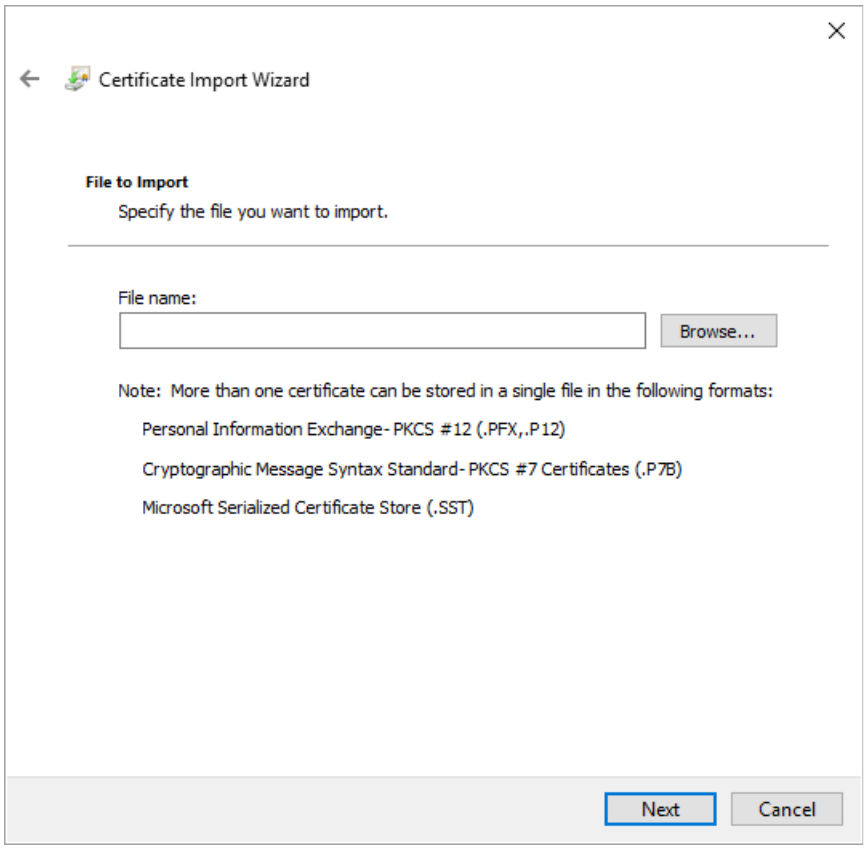
The Add or Remove Snap-ins window.

5. Click **OK** to close the window to return to the console.
6. Expand **Certificates - Current User** in the pane to the right.
7. Right-click **Trusted Root Certification Authorities**, then select **All Tasks > Import** to open the **Certificate Import Wizard** window.



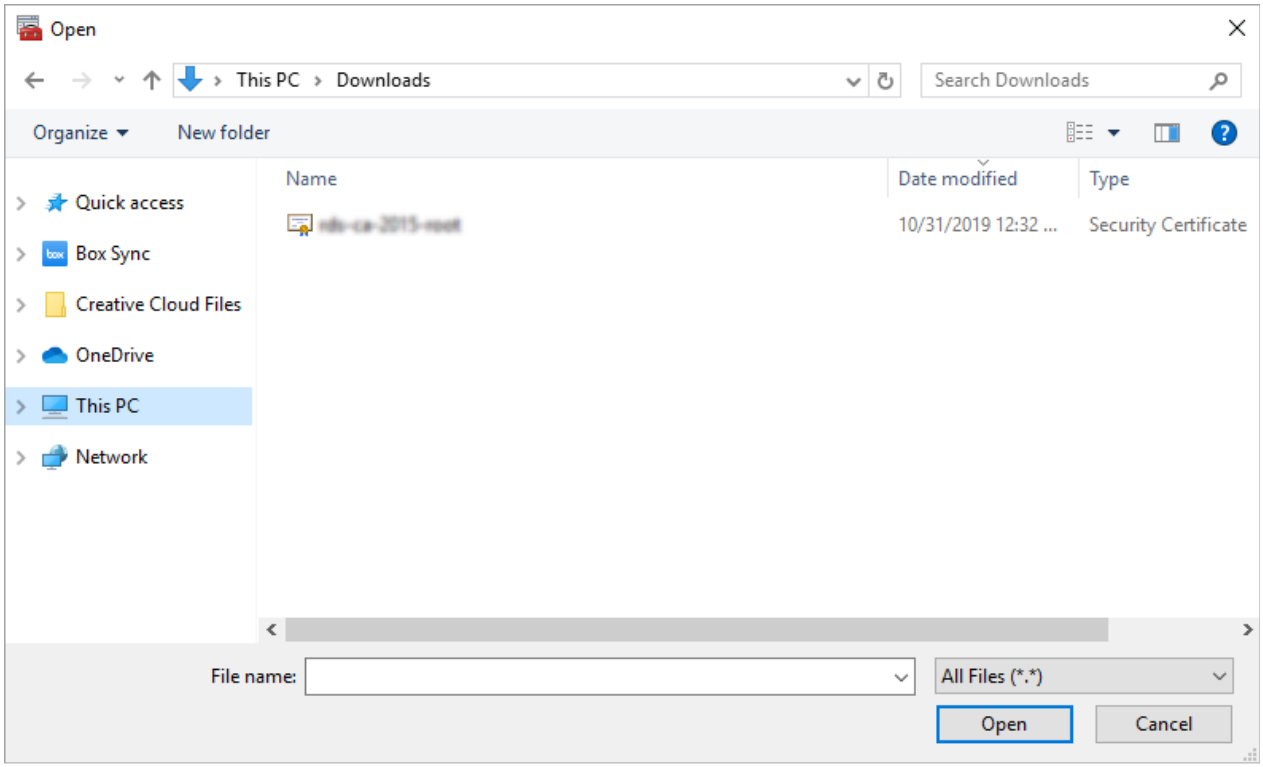
The Import option in the console.

8. From the second screen of the installer, click **Browse.**



The Certificate Import wizard.

9. Navigate to the saved location of the Amazon certificate, then click **Open**.



Selecting the certificate file after clicking Browse.

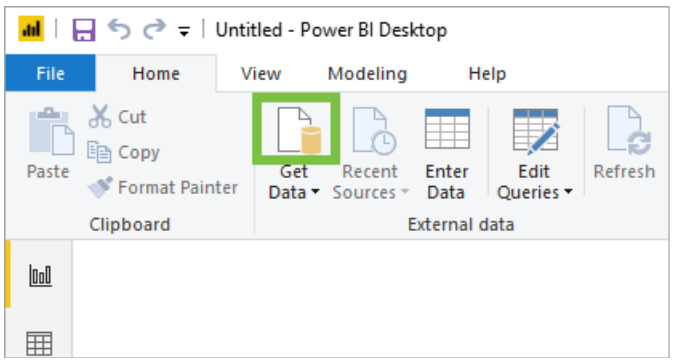
> If you can't see the certificate file after clicking **Browse**, select **All Files (*.*)** from the dropdown menu at the bottom-right of the window.

10. Complete the steps in the wizard, then close the console. It's not necessary to click **Save** when prompted.

3. Connect the Warehouse with Power BI

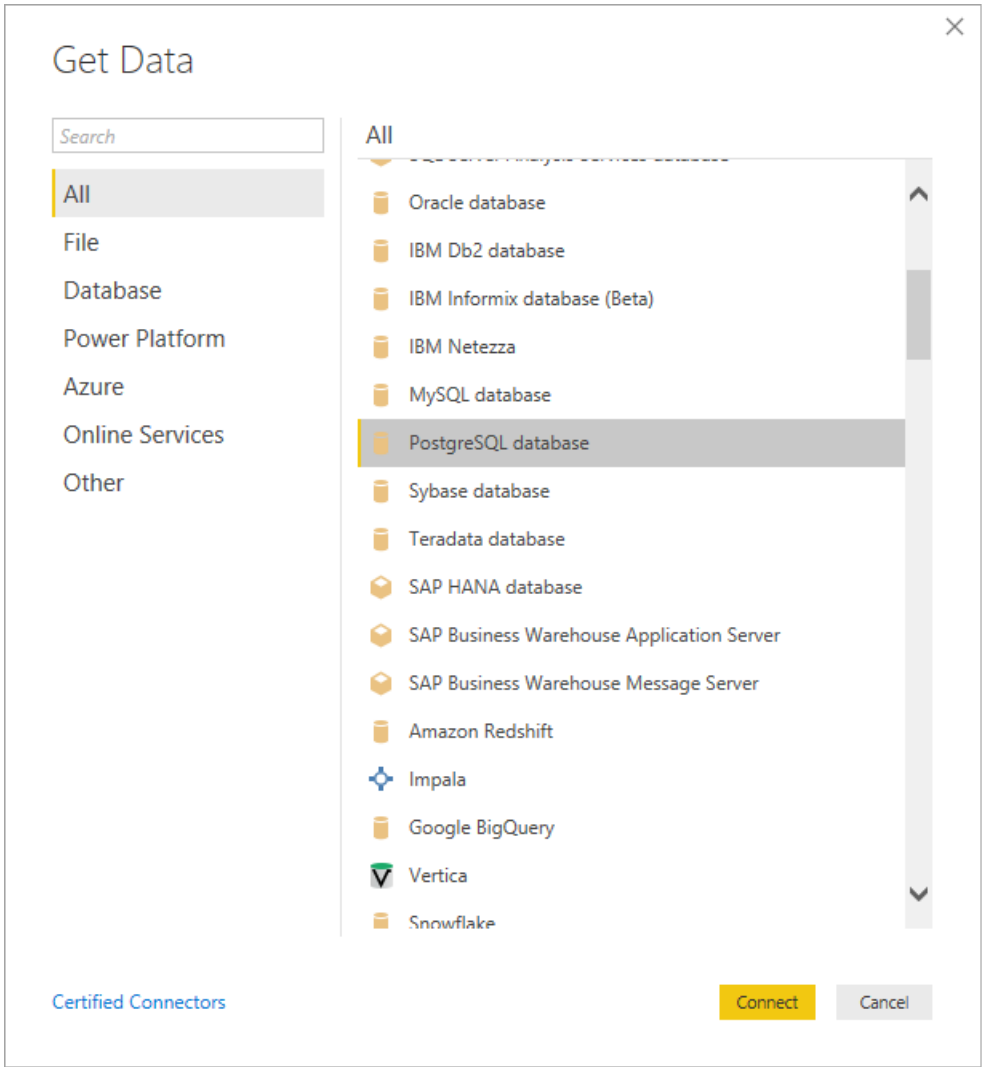
To establish a connection between the data warehouse and Power BI:

1. Open Power BI.
2. Click the **Get Data** icon.



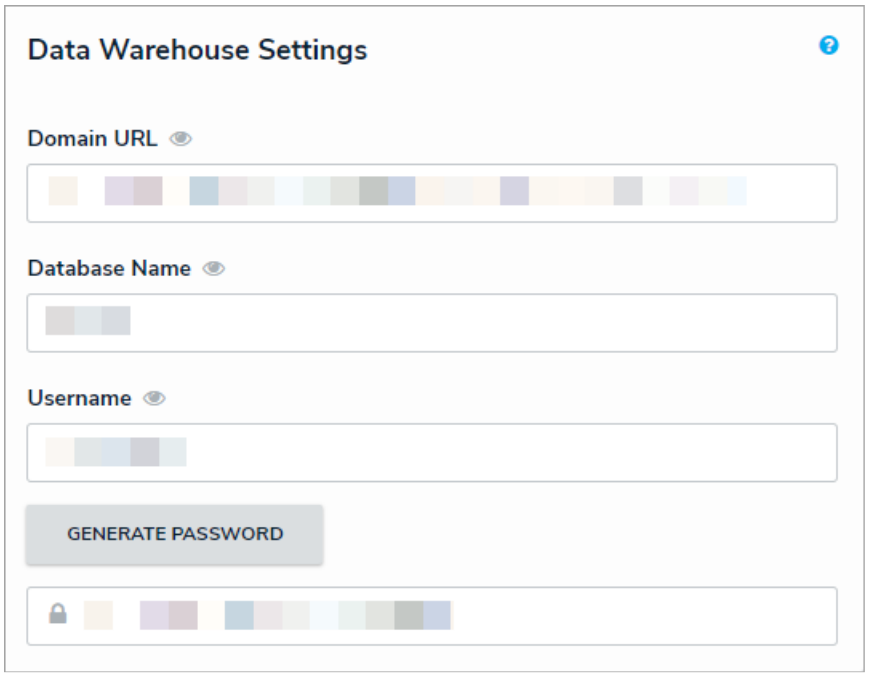
The Get Data icon in Power BI

3. Select **PostgreSQL database** in the pane to the right, then click **Connect**.



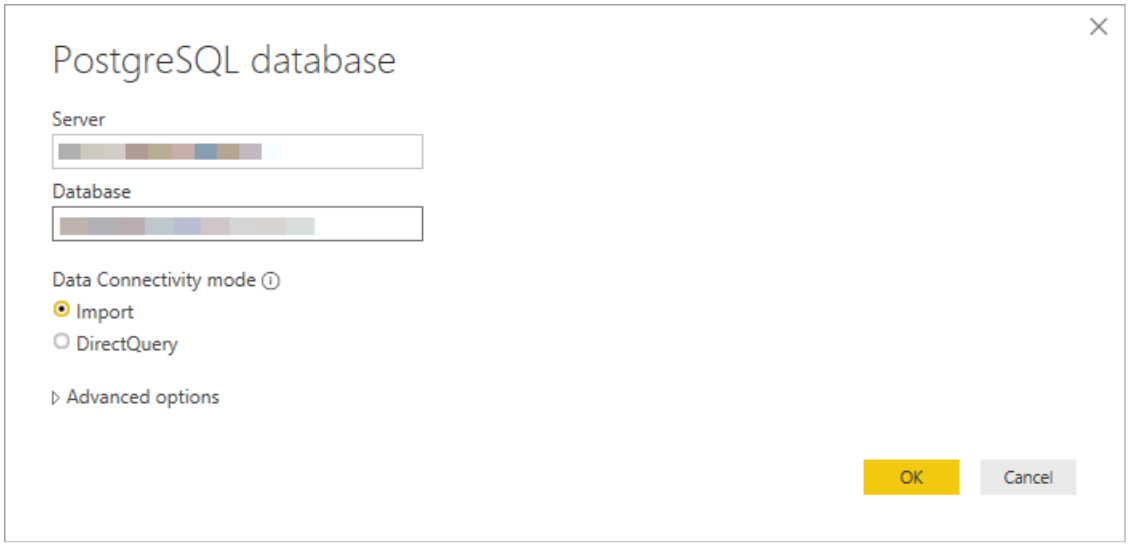
The Get Data window in Power BI.

4. Follow the instructions in the BI Connectivity via the Data Warehouse article to access the data warehouse details from your Core user account page.



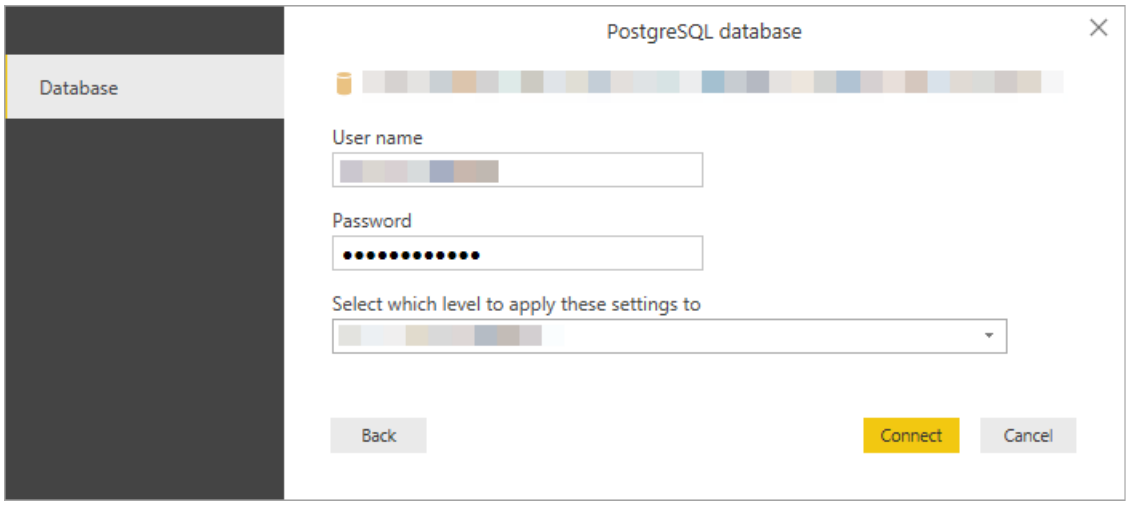
The Data Warehouse settings accessible from your Core admin user page.

5. Paste the **Domain URL** from your Core user page in the **Server** field.
6. Paste the **Database Name** from your Core user page in the **Database** field.



The Server and Database fields in Power BI.

7. Click **OK**.
8. Paste the username and password from your Core user page in the **User name** and **Password** fields.

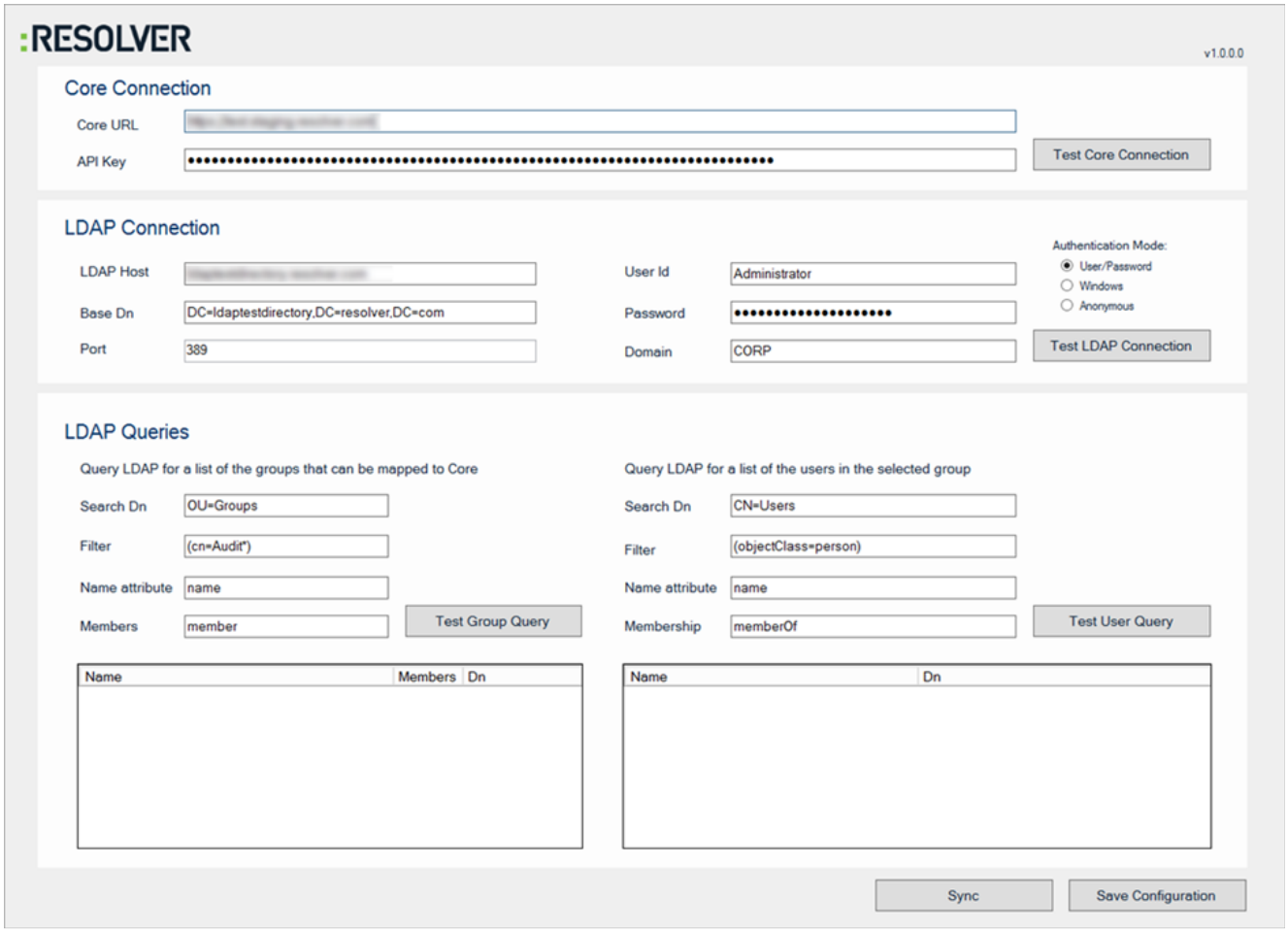


The User name and Password fields in Power BI.

9. Click **Connect** to complete the process.

LDAP Sync Tool

The Resolver Core LDAP Sync tool syncs user and group membership data from an LDAP directory into a single Core org at one time. Once the required information has been entered and saved, syncing can be done manually by clicking **Sync** or by creating a scheduled task via **Windows Task Scheduler** once the configurations are saved in the UI.



The Resolver Core LDAP Sync tool.

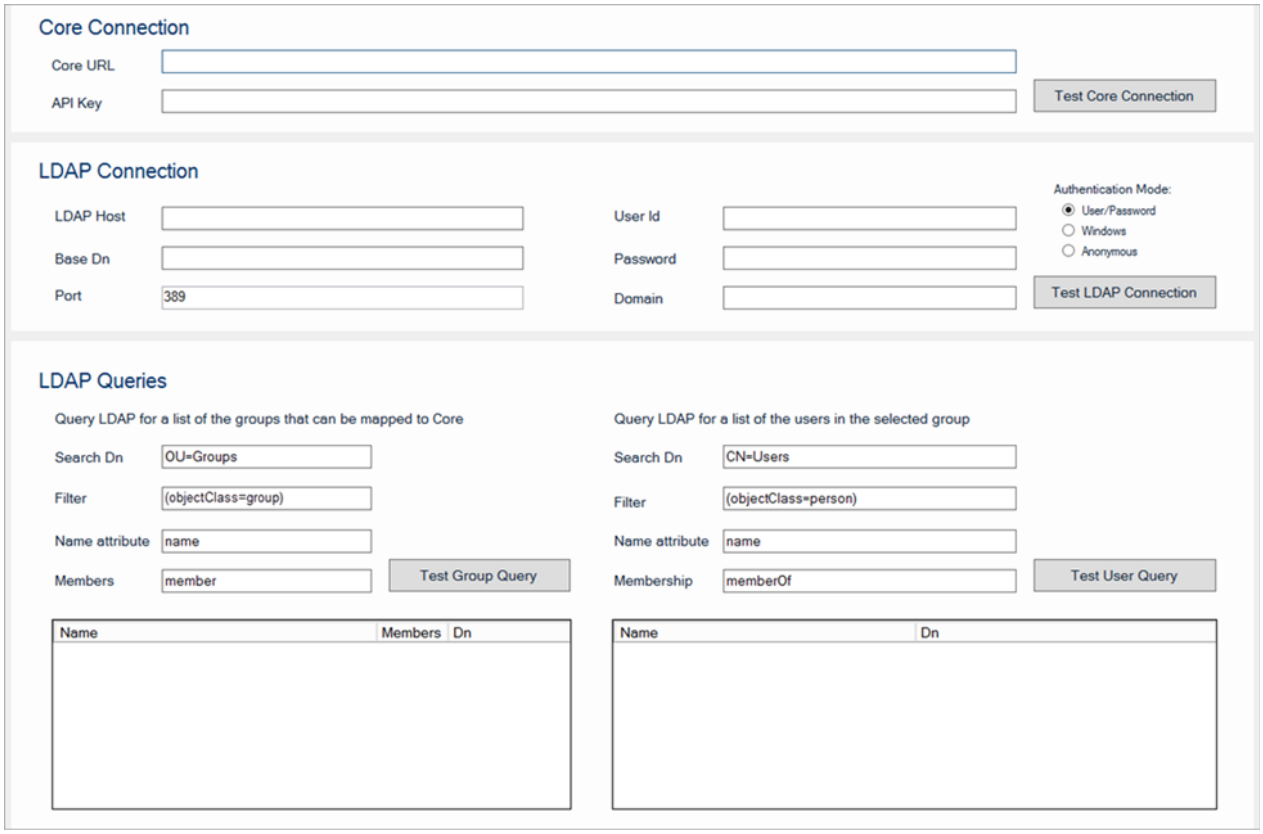
Important Notes & Requirements

- At this time, this tool should be run with the assistance of Resolver Support.
- .NET Framework 4.6.1 or later must be installed on the current machine.
- A Core admin or super admin must generate an API key for the desired org by following the instructions in the Creating an API Key article.
- Data can be synced into only one Core org at a time, based on the API key.
- The sync process creates users and adds or removes users from groups. The sync does not delete users and it does not create or delete user groups.
- Users are added or removed from groups provided the names of those groups match exactly. As such, the groups must be created in Core and LDAP prior to running the tool.
- A scheduled task can be created using the Command Line version of this tool, which will pull the configurations and parameters from the shared **ConnectionConfig.json** file. Note that the settings must first be saved to the UI version and the **ConnectionConfig.json** file must exist in the same directory as the UI and Command Line versions.
- This article does not provide instructions on configuring LDAP directories or obtaining connection information to input into the tool. For more information, contact your LDAP administrator or visit LDAP.com.

Instructions

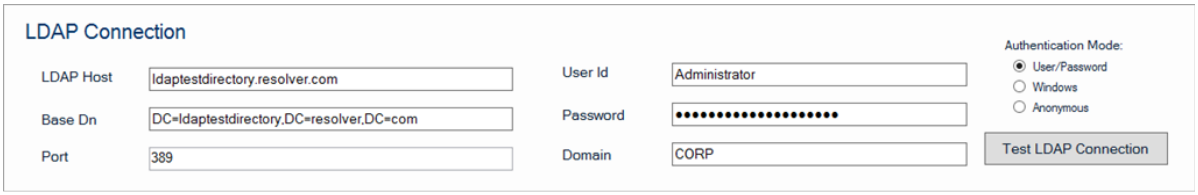
To run the LDAP Sync tool:

1. Generate an API key for the desired org. Only one org can be synced at a time.
2. Download and unzip the **LDAP_to_Core_User_Sync.zip** file.
3. From the extracted folder, double-click the **Resolver.Core.Mapping.UserImport.LDAP.UI.exe** file to launch the tool. Ensure the file selected contains **UI** in the file name.



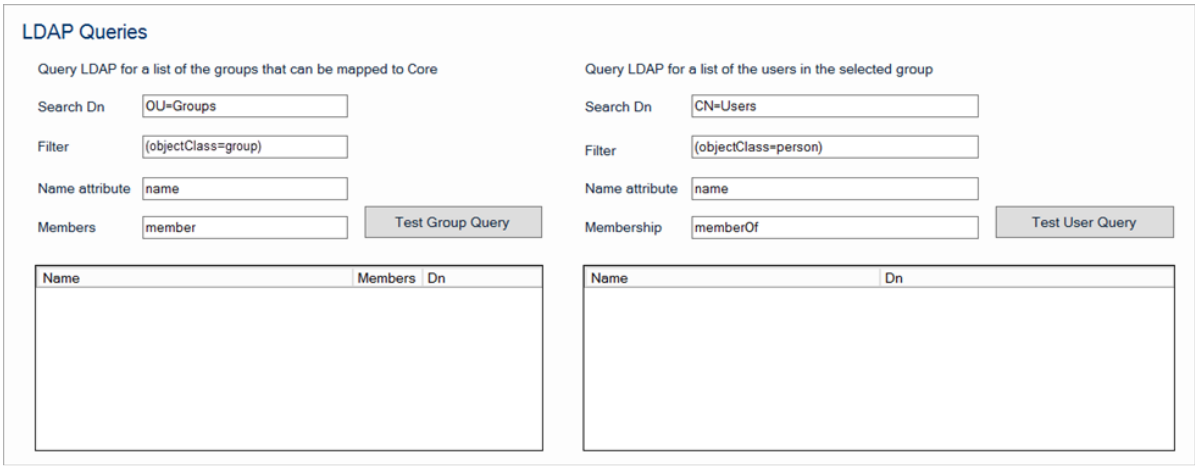
The Resolver Core LDAP Sync tool as it appears upon initial launch.

4. Enter the Core environment URL in the **Core URL** field (e.g., https://example.resolver.com). The URL must include the **https://** prefix.
5. Enter the org's API key in the **API Key** field.
6. Click **Test Core Connection** to confirm the connection is valid.
7. In the **LDAP Connection** section, enter the following information:
    a. **LDAP Host:** The DNS directory name of the LDAP server. This can be an IP address or fully qualified name (e.g., test.resolver.com).
    b. **Base Dn:** The base path suffixed to all LDAP queries. See the LDAP DNs and RDNs article on the LDAP.com website, or contact your LDAP administrator for more information.
    c. **Port:** The port number the LDAP server is listening on, which is **389** by default.



The LDAP Connection section.

8. Select one of the following **Authentication Mode** options:
    - **User/Password:** If this option is selected, enter the username and password of the currently logged in user in the **User Id** and **Password** fields. If required, enter the name of the server domain hosting the Core environment in the **Domain** field.
    - **Windows:** If this option is selected, enter the name of the server domain hosting the Core environment in the **Domain** field.
    - **Anonymous:** If this option is selected and the directory is configured to allow anonymous access, a username, password, and/or domain name is not required.
9. Click **Test LDAP Connection** to validate if the information entered in the LDAP the fields is correct.
10. In the **LDAP Queries** section, enter parameters into the following fields to define which users and/or groups will be synced into Core:
    - **Search Dn:** The path on the LDAP server that stores the details on the groups or users when combined with the **Base Dn** (in step 7 b. above). By default, these fields are populated with **OU=Groups** for group queries and **CN=Users** for user queries.
    - **Filter:** Limits the query to sub-directories that match the string. User filters are combined with selected group filters to further limit returned users to members of the selected group. By default, these fields are populated with **(objectClass=group)** for group queries and **(objectClass=person)** for user queries.
    - **Name:** The attribute name on the group or user LDAP object, which is usually **name**. For both group and user queries, these fields are auto-populated with **name**.
    - **Members/Membership**: An additional attribute filter based on user or group membership. By default, these fields are populated with **Member** for group queries and **memberOf** for user queries.



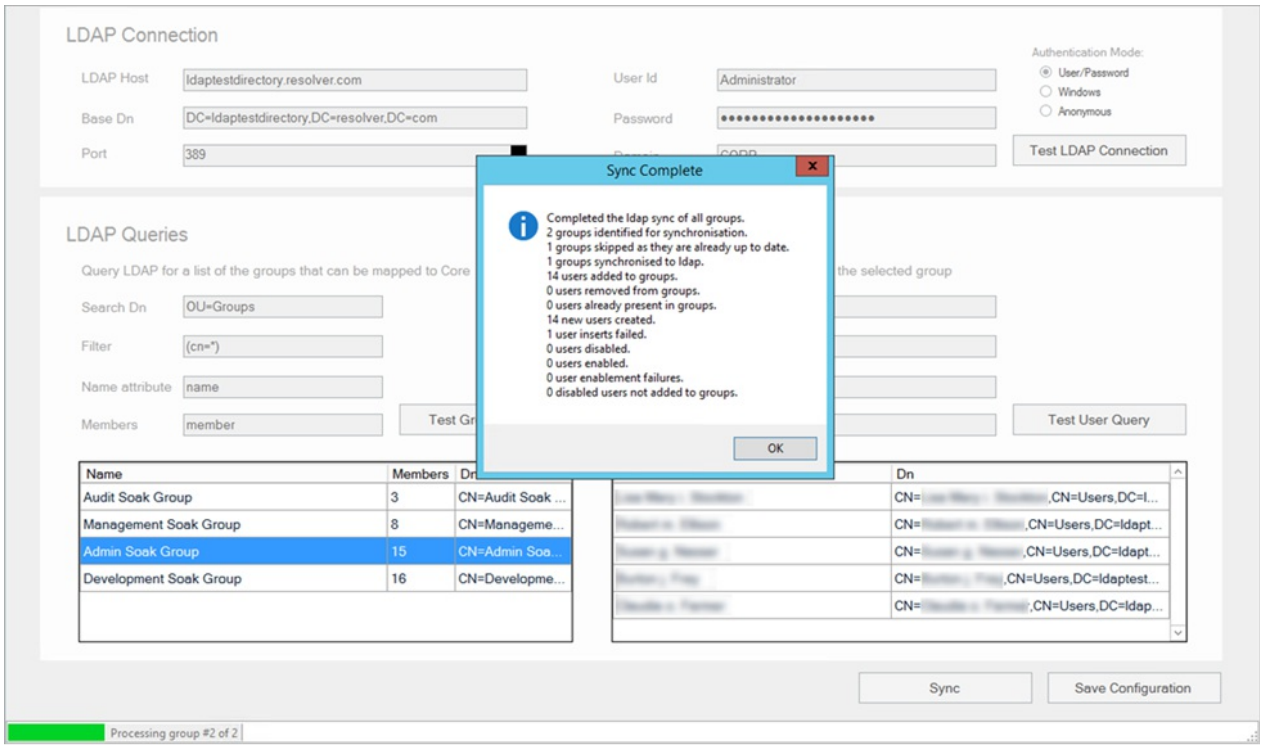
The LDAP Queries section, displaying the default values.

> See the Glossary of LDAP Terms, LDAP DNs and RDNs, and LDAP Filters articles on the LDAP.com website for more information on the values required in these fields.

11. Click **Test Group Query** to display the group results, then select a group. Note that user queries will not be displayed unless a group is selected.
12. Click **Test User Query** to display the results.

> Clicking **Test Group Query** or **Test User Query** displays read-only results and does not sync any data into Core.

13. Click **Save Configuration** to save the values entered in the fields, which will be displayed the next time the tool is run.
14. Click the **Sync** button to manually push the LDAP data into Core.



A successfully completed sync.

Scheduled Task

To create a scheduled task, use the **Resolver.Core.Mapping.UserImport.LDAP.exe** file, which is the Command Line version of the tool.

Note that the Command Line version pulls any parameters and configurations entered into the UI version from the shared **ConnectionConfig.json file.** As such, all settings must first be saved into the UI version by following the steps above, and the **ConnectionConfig.json** file must exist in the same directory as both versions. See the How to schedule a Task in Windows 10 with Create Basic Task Wizard for more information on creating a scheduled task.

Create a New User

Every person accessing your Core organization must have his or her own username and password to log in. User accounts are then added to User Groups and Roles, so that you can define which users can view, edit, create, and manage certain elements and objects.

The **Users** settings is also where you can:

- Impersonate other non-admin users;
- Enable or disable accounts, administrative rights, or the All Access settings;
- Select which language the user will see in the UI and application if they haven't selected a default language in their browser;
- Review the user groups and roles the user has been added to (once the account is created); and
- Access data warehouse information (if enabled for your organization).

All Access

Enabling the **All Access** settings in a user's profile grants the user access to all object types and their objects in the organization. This means that a user with these settings enabled can view all objects **without** an administrator adding the user to a role, adding one or more object types to the role, then configuring the workflow permissions.

Note that even if a user has been added to a role, any workflow permissions configured for the object types are overridden by the All Access settings. Additionally, should the user need access to an application and its activities, the user must be added to a role, which then must be added to an activity. If the user should be an administrator, you must enable the **Admin** settings in their user profile.

> Because **All Access** grants a user access to all objects types and their objects within an organization, it's recommended that you enable these settings only when necessary.

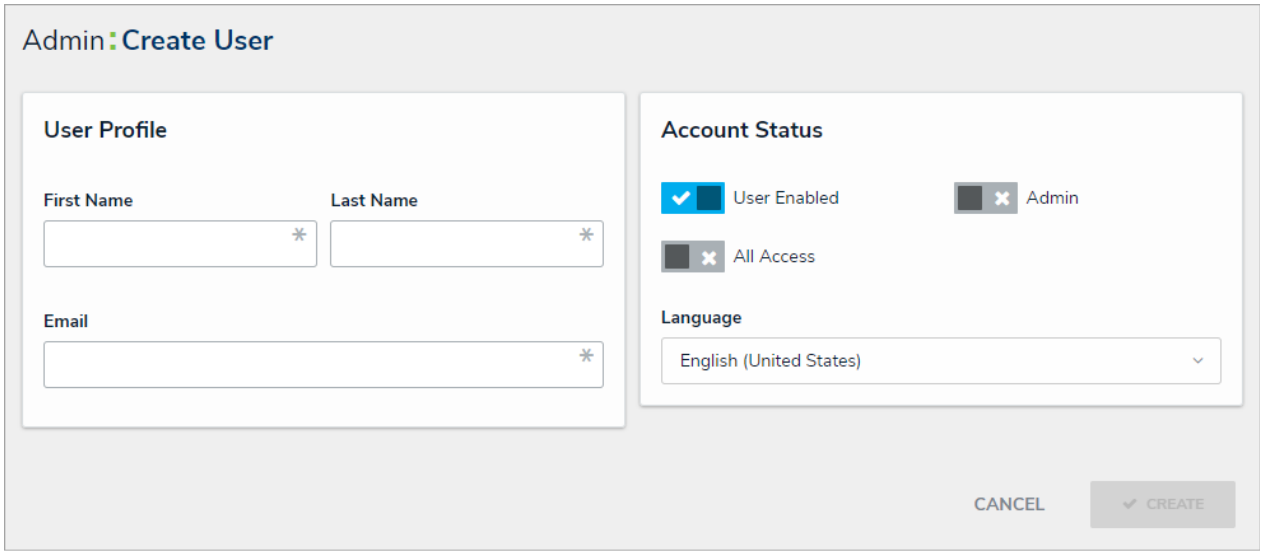
Data Warehouse

If enabled, the **Edit User** page for administrative users contains the **Data Warehouse Settings**. This section provides the information required to connect your data warehouse with business intelligence tools. See the Data Warehouse article for more information.

Instructions

To create a new user:

1. Click the icon in the top bar **> Users** in the **People** section.
2. Click **Create User** to show the **Create User** page.



The Create User page.

3. Enter the user's name in the **First Name** and **Last Name** fields.
4. Enter the user's email address in the **Email** field. This is the address that will receive the email with further instructions on creating apassword to sign into Core. This email address is also used to authenticate the user when he or she logs in and therefore must be unique.

> Because the user's email address is used to authenticate the user when he or she logs in, ensure the email address is correct before clicking **Create** as you will be unable to modify the address later.

5. **Optional:** Click the icon next to **User Enabled** to make this user account inactive. By default, the user account is active.
6. **Optional:** Click the icon next to **Admin** to make this user an administrator. By default, administrative rights are disabled.
7. **Optional:** Click the icon next to **All Access** to allow this user to access all the object types and their objects within the organization.

> **All Access** allows grants a user access to all object types and their objects within an organization. Therefore, it's recommended that you enable these settings only when necessary.

8. **Optional:** Select a pre-configured language from the **Language** dropdown menu to choose how the UI and applications will be translated for the user. Note that the default language selected in a user's browser will take precedence. See the Languages section for more information.
9. Click **Create**. The new user will receive an email at the email address entered in step 4 with instructions on creating a password and signing into Core.

Edit or Delete a User

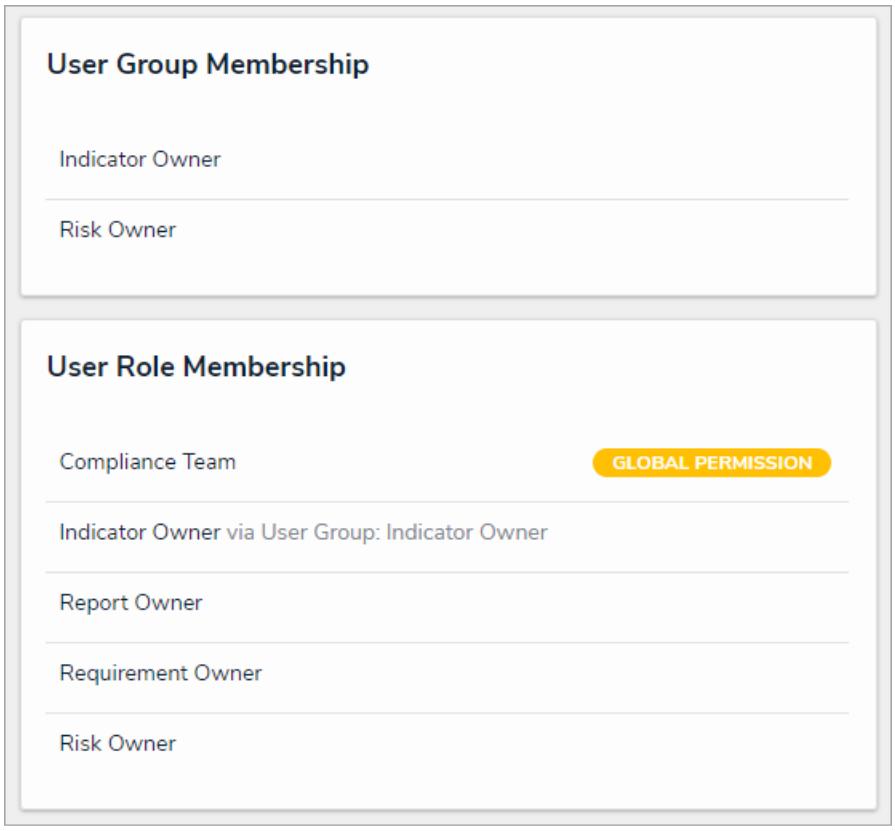
Important Notes

- Because a user's email address is used to authenticate the user when they log in, modifying the email address previously saved in the **Email** field will not change the address the user must enter to log into Core.
- **All Access** grants a user access to all object types and their objects within an organization. Therefore, it's recommended that you enable these settings only when necessary.
- It's generally recommended that user accounts are disabled rather than deleted. See the Important Notes About Deleting or Deactivating User Accounts article for more information.
- A new data warehouse password must be generated and entered into any business intelligence tools to re-establish connectivity if the admin account that generated the original password is deleted, disabled, or loses its admin privileges.

Instructions

To edit or delete an existing user:

1. Click the icon in the top bar > **Users** in the **People** section.
2. Enter a first and/or last name of the user in the text field to search for a user or click on an account to open the **Edit User** page.
3. Make changes to the **First Name** and **Last Name** fields as necessary.
4. Click the or icons next to **User Enabled**, **Admin**, and/or **All Access** to enable or disable the user account and/or administrative rights.
5. **Optional:** Select a pre-configured language from the **Language** dropdown menu to choose how the UI and applications will be translated for the user. Note that the default language selected in a user's browser will take precedence.
6. To review the user groups or roles the account has been added to, click a group or role in the **User Group Membership** or **User Role Membership** section, which will display the **Edit Role** or **Edit User Group** page.



The User Group Membership and User Role Membership sections.

7. To delete the user, click the icon, then click **Yes** to confirm.
8. Click **Done** when finished.

Impersonate Another User

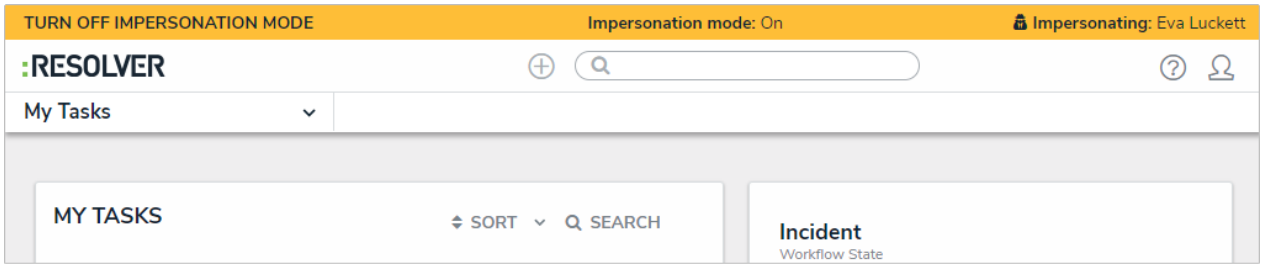
With the **Impersonation** feature, administrators can temporarily assume the account of a non-administrative user to work with objects according to that user's role and permissions. This feature is useful when administrators need to test the user's permission levels, or to complete a task for users who may otherwise be unable to do so themselves. Administrators cannot impersonate other administrators.

Impersonation Mode can also be used to identify and fix any standard form conflicts for users in multiple roles. See the Form Conflicts section for more information.

> Any changes made while impersonating another user are captured in the Audit Trail.

To impersonate another user:

1. Click the icon in the top bar > **Users** in the **People** section.
2. Click the **Impersonate** button next to the non-administrative user you wish to impersonate. While in Impersonation Mode, the name of user you're impersonating will appear in a yellow banner at the top of the page.



Active Impersonation Mode.

3. To deactivate Impersonation Mode, click **Turn Off Impersonation Mode** to the left of the banner.

Important Notes About Deleting or Deactivating User Accounts

If a user should no longer have access to your organization in Core, you have the option of disabling that user's account or deleting it; however, it's generally recommended that user accounts are disabled rather than deleted.

Deleting a user account prevents the user from logging into your organization and accessing any data, but it also removes that user from any objects they were assigned to via a role, which may affect your reporting. Disabling an account prevents the user from logging in and accessing data, but the user is not removed from any assigned objects, thus maintaining your records.

> A new data warehouse password must be generated and entered into any business intelligence tools to re-establish connectivity if the admin account that generated the original password is deleted, disabled, or loses its admin privileges.

Also note that deleting an account does **not** remove the user from your Core database. If you require that one or more users are removed from the database, contact Resolver Support for assistance.

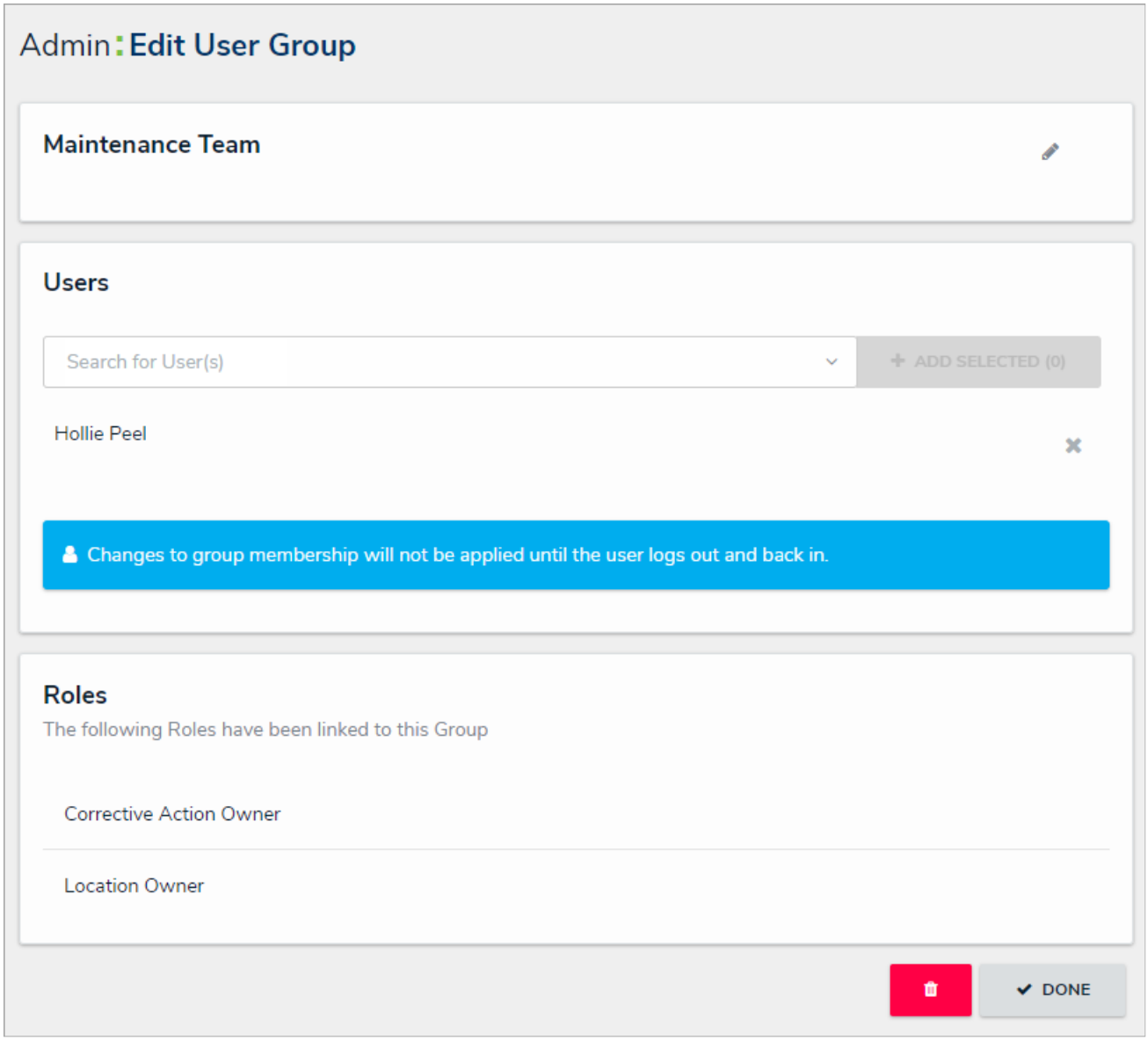
User Groups Overview

Through the **User Groups** feature, you can group certain users together to quickly add that group to a role, rather than adding each user individually. Once a user group has been created, you can add the user group to roles. If you add new users to a group that was previously added to a role, those users will automatically be added to the role.

Any roles a user group has been added to will appear as links in the **Roles** section of the **Edit User Group** page. You can also review which groups a user has been added to from the **User Group Membership** section on the **Edit User** page.

EXAMPLE

As with most organizations, your company is comprised of employees and managers. Both employees and managers create incidents, but only managers triage, review, and escalate objects. To keep your Core users organized, you create two user groups: Employees and Managers. When you create roles, you add the Employees and Managers user groups into the Incident Creator role and add only the Managers user group to the Incident Reviewer role.


Admin : Edit User Group
Maintenance Team
Users
Search for User(s)
ADD SELECTED (0)
Hollie Peel
Changes to group membership will not be applied until the user logs out and back in.
Roles
The following Roles have been linked to this Group
Corrective Action Owner
Location Owner
DONE

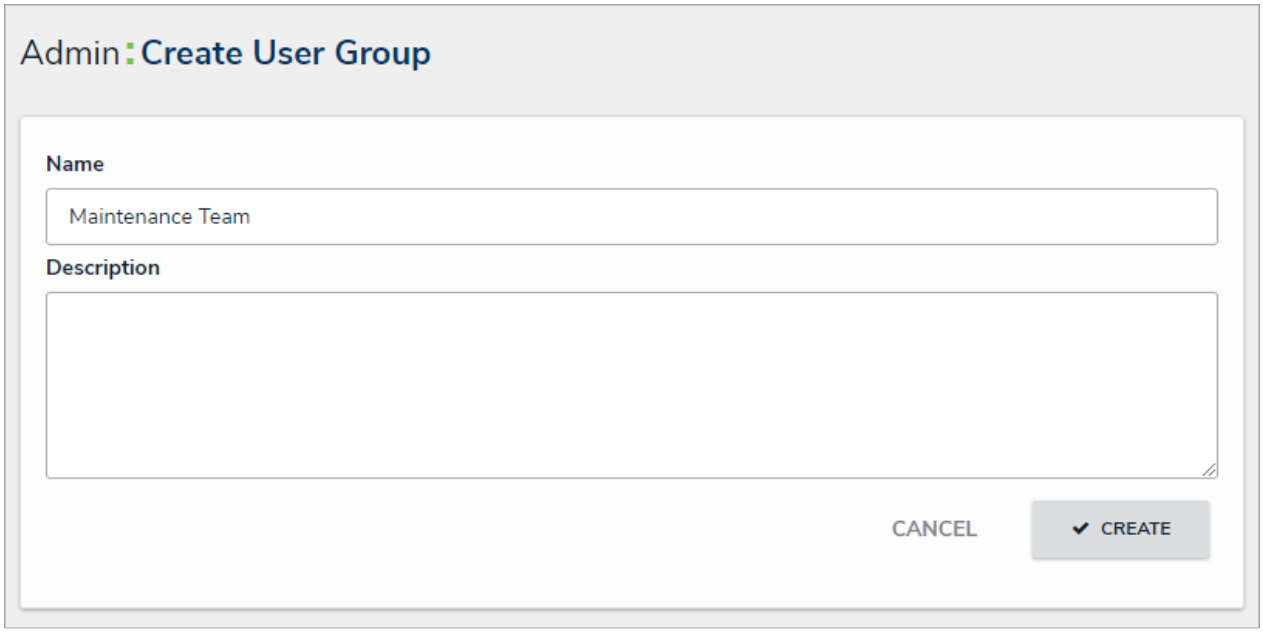
A user group.

Create a New User Group

If needed, you can review which groups an individual user has been added to from the **User Group Membership** section on the **Edit User** page.

To create a new user group:

1. Click the icon in the top bar > **Users** in the **People** section.
2. Enter the name for the user group in the **Name** field.
3. **Optional:** Enter a description of the user group. This description will appear below the user group's name when viewing it on the **Edit User Group** page.

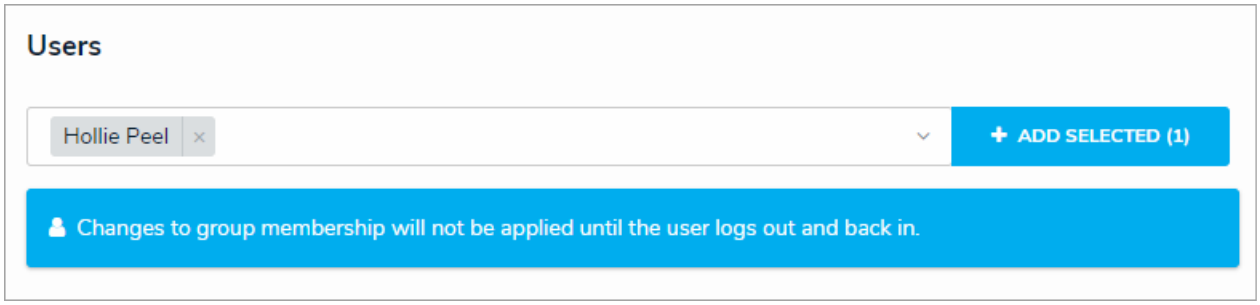


The Create User Group page.

4. Click **Create** to display the **Edit User Group** page.
5. In the field under **Users**, begin typing the name of the user you want to add to the group, then press **Enter** on your keyboard or click the user to select them. Continue adding more users as needed.

Searching for existing users to add to the user group.

6. Click **Add Selected**.



Users to be added to a user group. You must click Add Selected to save your changes.

Users who are logged in at the time they're added to a user group will need to log out then log back in before the changes are applied.

7. Click **Done** when finished.

Edit or Delete a User Group

To edit or delete a user group:

1. Click the icon in the top bar > **User Groups** in the **People** section.
2. Enter keywords in the **Search** field to search for the user group by name or click a group to select it.
3. To edit the user group name or description, click the icon next to the user group name.
4. To add more users to the group, enter the user's name in the field below **Users**, then click **Add Selected**.

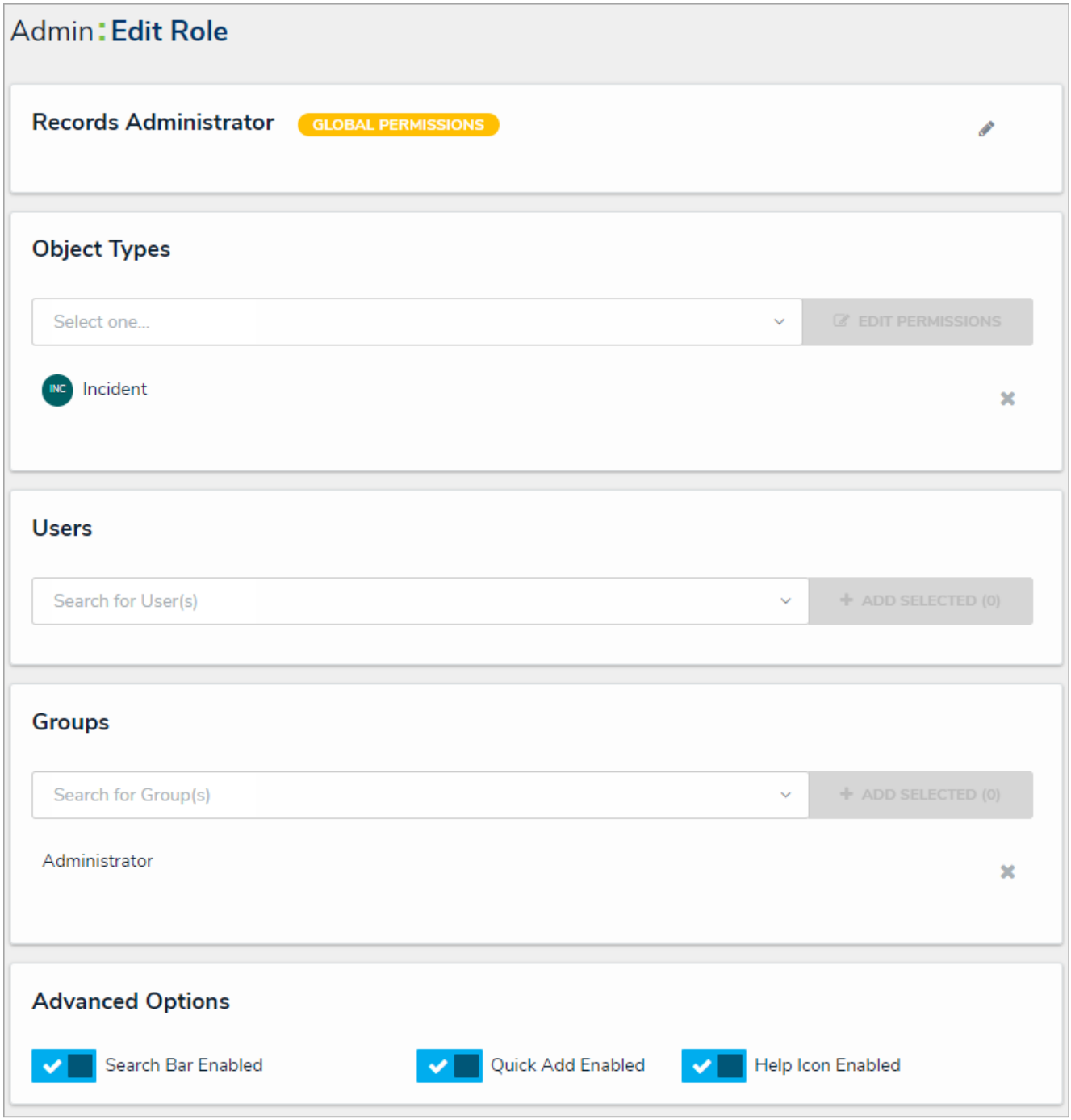
Users who are currently logged in at the time they're added to a user group will need to log out then log back in before the changes are applied.

5. To delete a user from the group, click the icon next to their name, then click **Yes** to confirm.
6. To delete the user group, click the icon, then **Yes** to confirm.
7. Click **Done** when finished

Roles Overview

Roles control the data that users can create, edit, delete, view, or manage in Core by adding individual users or user groups to a role, selecting the object type(s) those users can see, applying either **global** or **explicit** permissions, then configuring the workflow permissions for each object type added to the role. If needed, you can review which roles a user has been added to from the **User Role Membership** section on the **Edit User** page.

Roles determine a user's eligibility to access objects only. Removing a user from a role with explicit permissions after they've been granted direct access to an object does **not** automatically revoke their access to that object. Another user with the appropriate permissions must revoke access by removing the user from the role field on the object's form.



The Edit Role page.

Global Permissions

Global permissions grant users access to all the objects that belong to the object type(s) added to that role, however, you can control what rights they have (**Create**, **Read**, **Edit**, etc.) and which configurable form is displayed in their tasks and Quick Add, based on the current state of the object.

Explicit Permissions

Explicit permissions grant users access to specific objects that belong to the object types added to the role. Before a user can see those objects, the role must be added as a component on the object type and configurable form, then the user must be selected in the role field on the form, which grants them

direct access to that object. You can control what rights those users have (**Create**, **Read**, **Edit**, etc.) and which configurable form is displayed in their tasks and Quick Add, based on the current state of the object. You may also need to configure inferred permissions for roles with explicit permissions enabled.

If a user with explicit permissions on an object type can't see one or more objects, ensure that user has been granted access to the object(s) via the **Role** element on a form. See the Roles on Forms section for more information. Note that only users with **Manage** permissions can grant other users access to existing objects. See Workflow Permissions for more information.

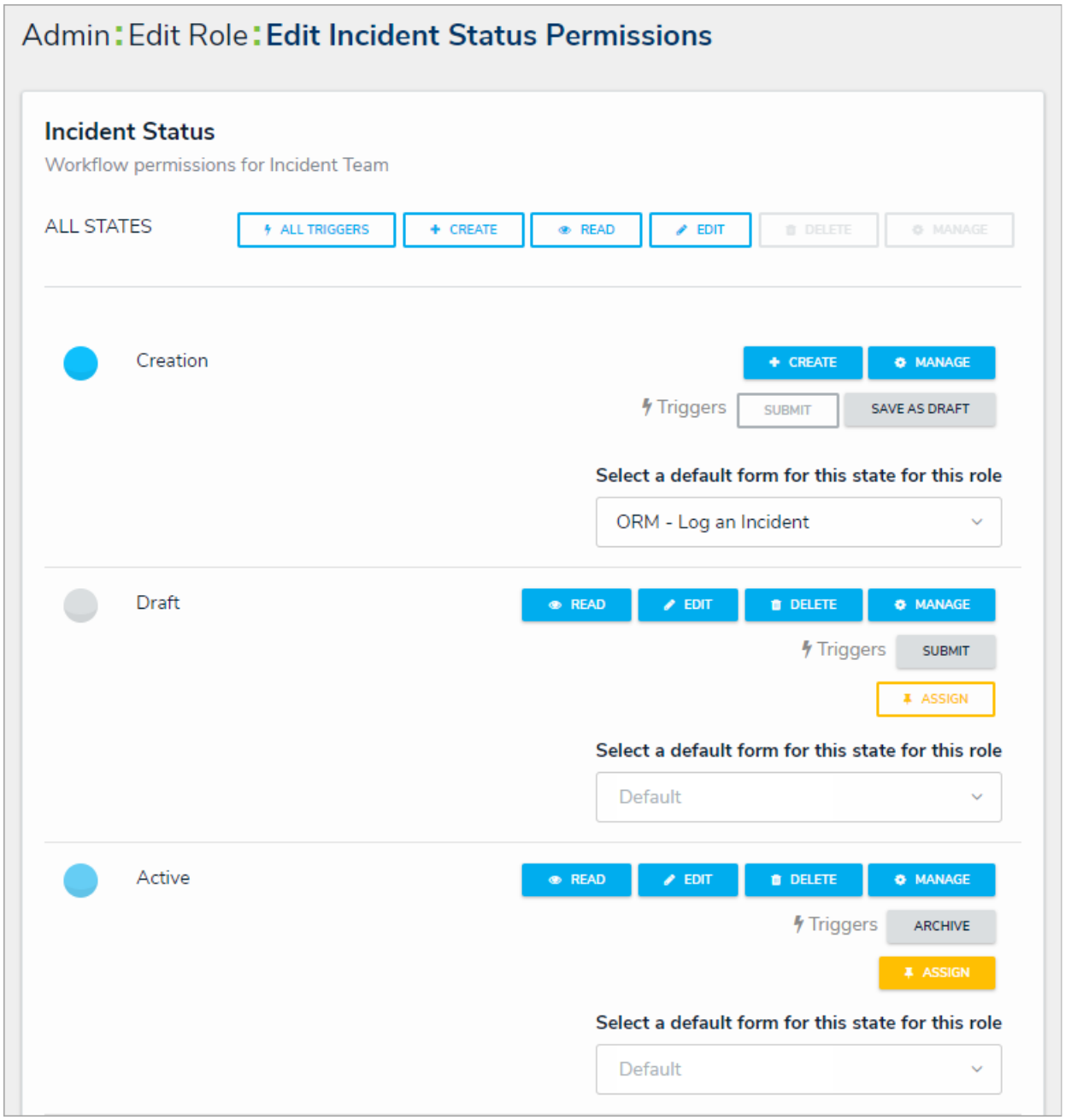
Example

EXAMPLE

Kevin Darden is a manager at your organization, so his role, Incident Reviewer, has been given global permissions so he can read, edit, and manage all Incident objects throughout the workflow. Hollie Peel is a non-managerial employee who may have to create Incident objects, but doesn't need to view or edit existing objects, except under special circumstances, so she's put in the Incident Creator role which has Create and Read permissions only, as well as the Incident Reviser role, with Read and Edit rights. With the Incident Reviser role added to a configurable form, Kevin can add her to an existing object to grant her permission to add or revise information, however, she won't have permission to access other existing objects until a user from the Incident Reviewer role adds her to the role field on those objects.

Workflow Permissions

Every object type added to a role requires workflow permission configurations, which allow you to create an additional layer of security on an object for both global and explicit permissions. Through these configurations, you can control the data a user can see and the actions a user can take on an object.



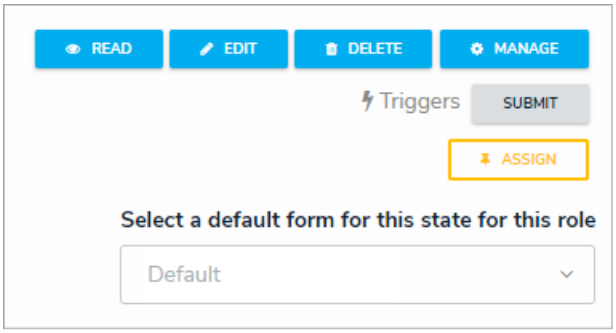
Workflow permissions on an object type.

With the exception of **All States**, the following permissions can be applied to each individual state added to an object type:

- **All States:** Clicking **All Triggers**, **Create**, **Read**, and **Edit** in this section will automatically enable these rights for all states in the workflow. When **All Triggers** is selected, users can view and click all triggers on a form to transition an object to its next state. The triggers that are visible to the user depend on whether the object is in the state associated with the trigger.
- **Create:** Users can create a new object. This permission applies only to the Creation state of the object type. When granting a user this permission, you must also enable one or more triggers for this state.
- **Read:** Users can view the object when it's in the selected state. You cannot select **Edit**, **Delete**, or **Manage** permissions unless **Read** has been

selected.

- **Edit:** Users can edit existing objects in the selected state.
- **Delete:** Users can delete existing objects in the selected state.
- **Manage:** Users can add other users with explicit permissions on the object type to a role field on a configurable form to give them access to the object while it's in the selected state. Note that the user added to the role field on the form will not see the object until it's in a state they have permission to view. **Manage** is applicable to explicit permissions only
- **Triggers:** Users can see and click the selected trigger on a form to transition an object to its next workflow state. The trigger will be visible only when the object is in the state associated with the trigger.
- **Assign**: Once the object is in the selected state, users who have been granted permission to view the object through a role with explicit permissions will see it in their task list on the My Tasks page.
- **Select a default form this state for this role** The form users will see when using the Search feature, Quick Add to create an object, viewing an assessment table on a form, or opening an object via the relationship graph:
    - If you **do not** choose a form from this dropdown menu, the object type's default form will be displayed.
    - If you select **Default Form** from this dropdown menu, the user will see the form selected by an administrator elsewhere in Core.
    - If you select a configurable form from this dropdown menu, the selected form will be displayed.



The "Select a default form for this state for this role" dropdown menu in the workflow permissions.

> Forms selected in an action, view, data visualization, or relationship table will override any selections made in the **Select a default form this state for this role** field.

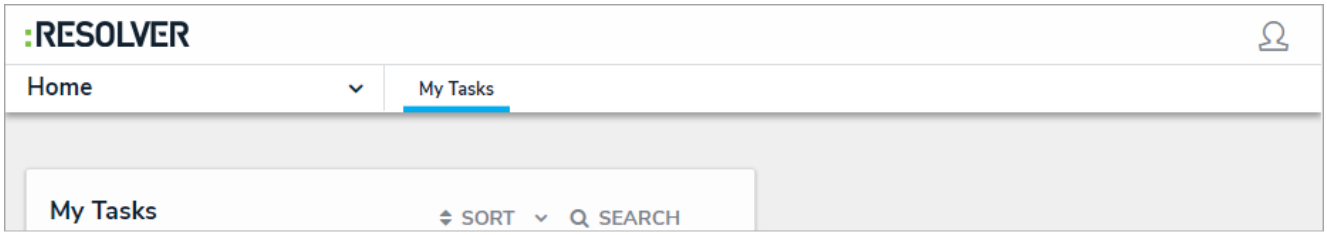
Workflow permissions can be configured on new roles by adding an object type to a role, then clicking **Edit Permissions**. For existing roles, open the **Edit Role** page, then click on a previously added object type to edit the permissions.

Advanced Options on Roles

The **Advanced Options** on the **Edit Roles** page lets administrators disable the Search, Quick Add, Help, and/or Archived Search functions for specific roles. The ability to search, add objects on the fly, or view the help documentation is enabled by default, but when disabled, these functions are hidden from the top bar for users within the role.

When the archived search is enabled, it allows users to include archived objects when using the**Search** function in the top bar. Roles created prior to Version 3.0 have this option enabled by default, but roles created after 3.0 have this option disabled by default.

These options are useful if you need to restrict users from accessing or creating objects outside of an activity, to prevent users from navigating to a site (such as the Resolver Knowledge Base) that's outside of the Core application, or for data management.



The top bar as it's displayed to users in roles with the Search, Quick Add, and Help functions disabled.

If a user is in multiple roles and the permissions are in conflict, the role with the higher level of permissions will take precedence.

These options can be accessed from the **Edit Role** page. See the Create a New Role article for more information on configuring roles.

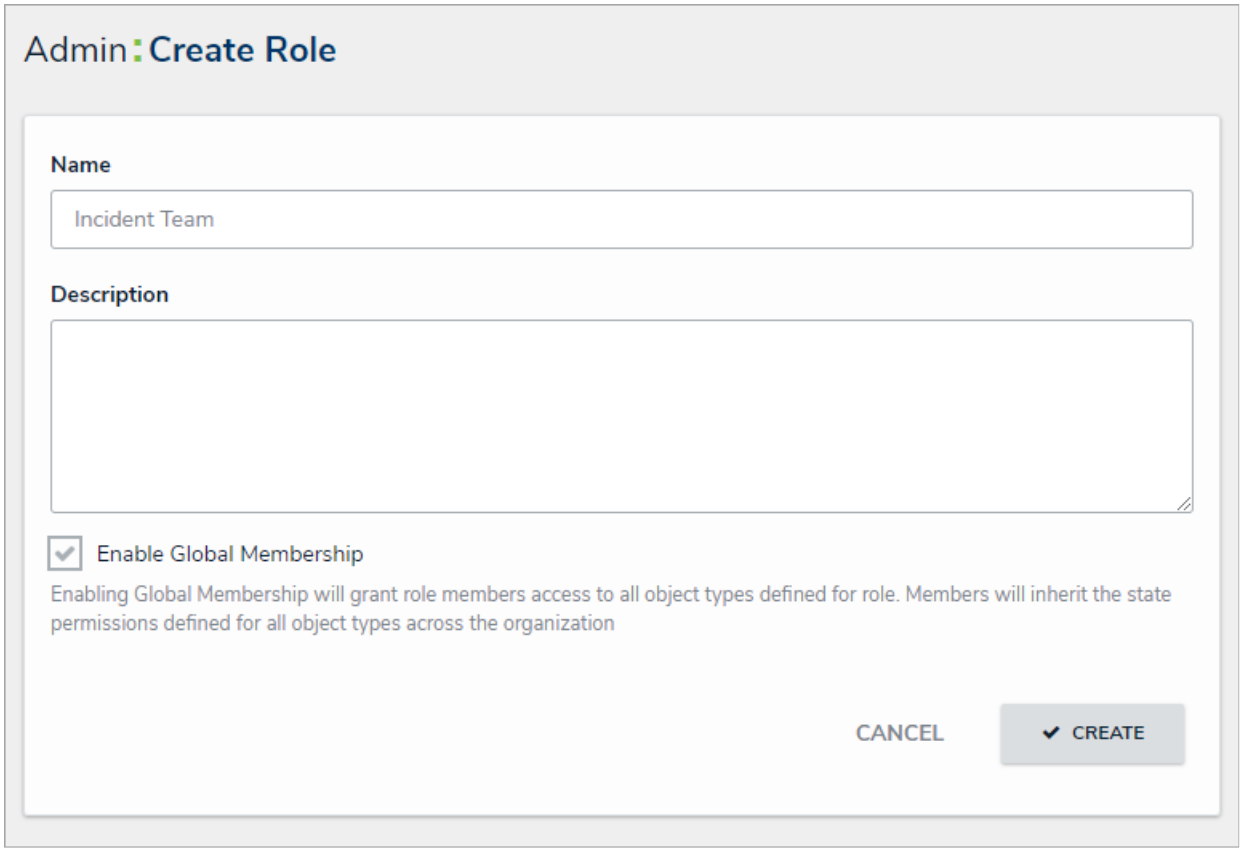
Create a New Role

If a user is in multiple roles and the permissions are in conflict, the role with the higher level of permissions will take precedence. If needed, you can review which roles an individual user has been added to from the **User Role Membership** section on the **Edit User** page.

To create a new role:

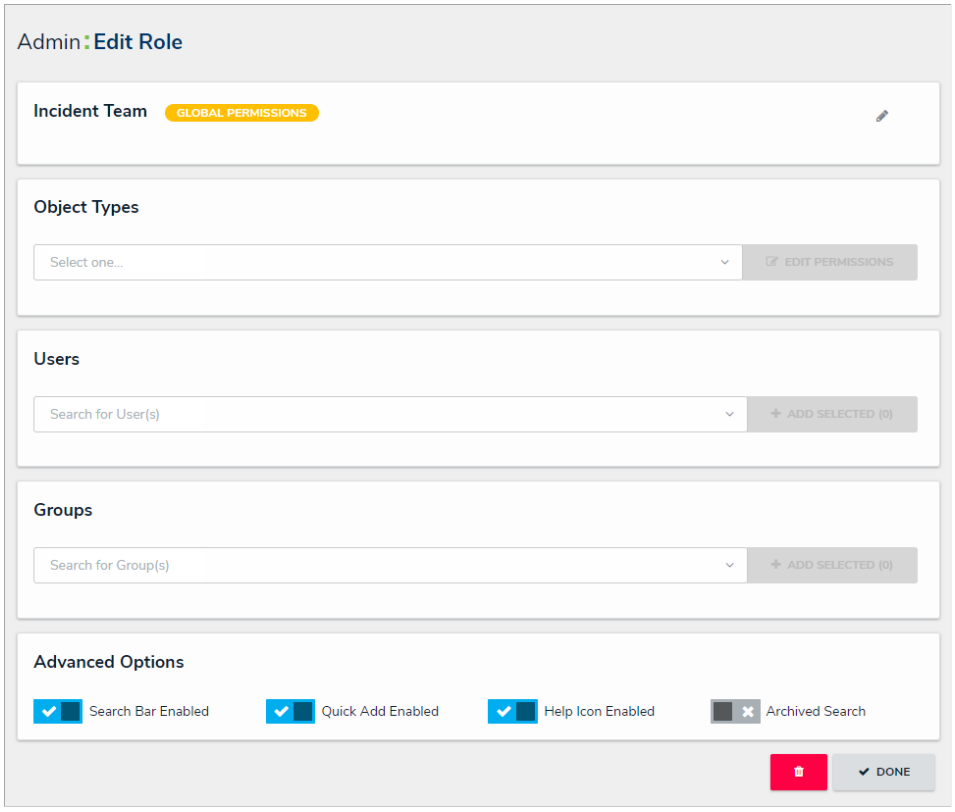
1. Click the icon in the top bar > **Roles** in the **People** section.
2. Click **Create Role** to display the **Create Role** page.
3. Enter the name for the role in the **Name** field.
4. **Optional:** Enter a description of the role in the **Description** field. This description will appear below the role's name when editing it.
5. **Optional:** Select the **Enable Global Membership** checkbox if you wish to grant this role global permissions.

Once a role is created, you cannot enable or disable global membership (permissions) from the **Edit Roles** page. To enable or disable global permissions on an existing role, you must delete then recreate the role.



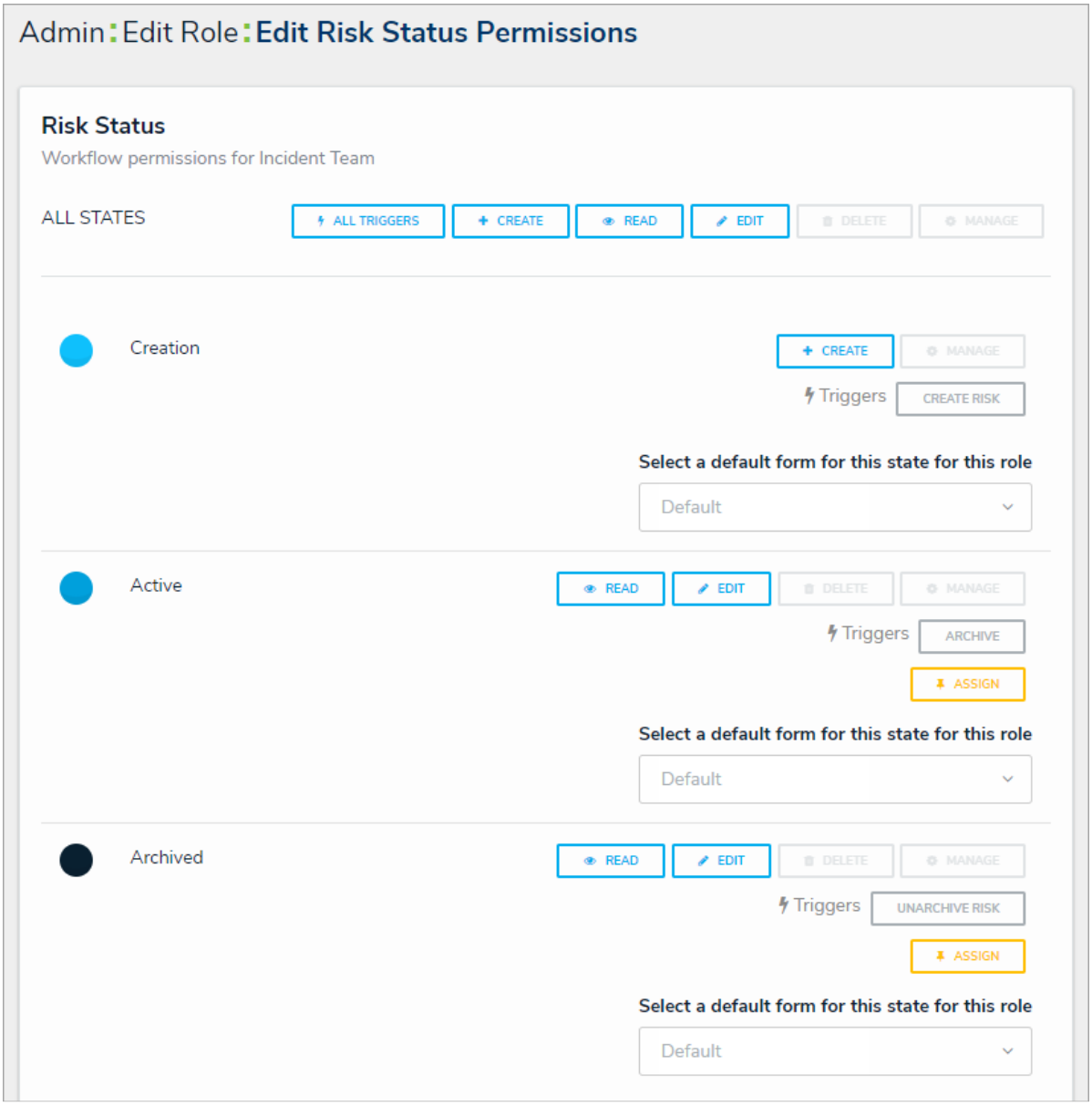
The Create Role page.

6. Click **Create** to show the **Edit Role** page.



The Edit Role page.

7. In the field under **Object Types**, type the name of the object type you want to add, then press **Enter** on your keyboard or select it from the dropdown menu.
8. Click **Edit Permissions**. An object type will not be saved to a role until you've configured its workflow permissions.
9. Select the workflow permissions the user will have per each state:
    - **All States:** Clicking **All Triggers**, **Create**, **Read**, and **Edit** in this section will automatically enable these permissions for all states in the workflow.
    - **All Triggers:** Users can view and click all triggers on a form. The triggers that are visible to user depend on whether the object is in the state associated with the trigger. You can also select each individual trigger to grant access.
    - **Create:** Users can create a new object. This permission applies only to the Creation state of the object type.
    - **Read:** Users can view the object when it's in the selected state. You cannot select the **Edit**, **Delete**, or **Manage** permissions unless **Read** has been selected.
    - **Edit:** Users can edit existing objects in the selected state.
    - **Delete:** Users can delete existing objects in the selected state.
    - **Manage:** Users can add users from other roles to give them access to the object while it's in the selected state. Note that the added user will not see the object until it's in a state they have permission to view. **Manage** is applicable to explicit permissions only.
    - **Assign**: Once the object is in the selected state, users who have been granted permission to view the object through a role will see it in their task list on the My Tasks page. **Assign** is applicable to explicit permissions only.



Workflow permissions.

10. From the **Select a default form for this state for this role** dropdown menu, choose the form users will see when using Search, Quick Add, an assessment table, or relationship graph:
    - If you **do not** choose a form from this dropdown menu, the object type's default form (the unconfigured list of components added to an object type) will be displayed.
    - If you select **Default Form** from this dropdown menu, the user will see the form selected by an administrator.
    - If you select a configurable form from this dropdown menu, the selected form will be displayed.

    > Forms selected to display on an action, view, data visualization, or relationship table will override any selections made in the **Select a default form for this state for this role** field.

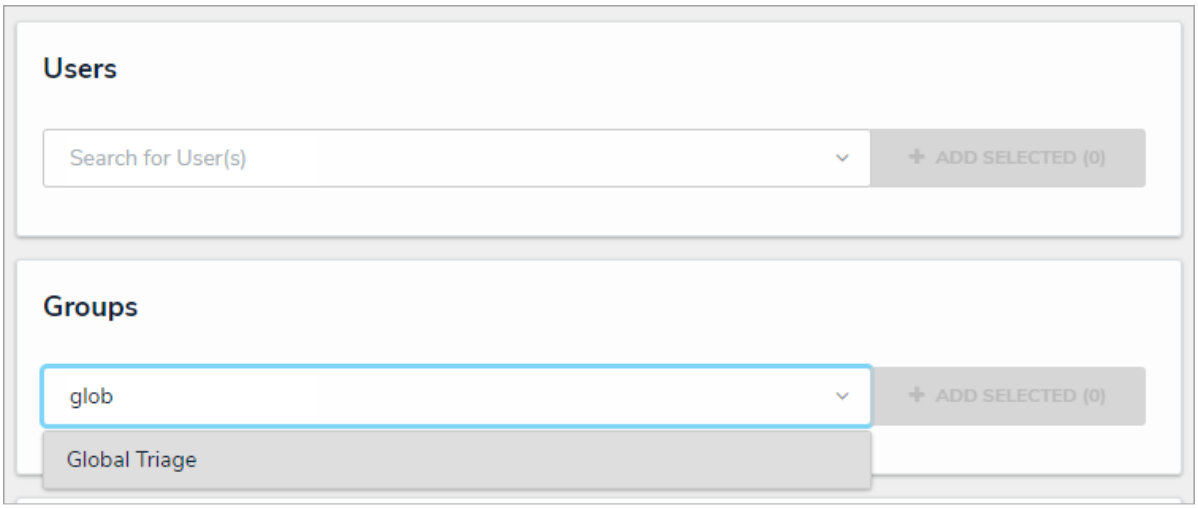
11. Click **Done** to return to the **Edit Roles** page.
12. Repeat steps 7-11 to continue adding object types as needed.
13. To add individual users to the role:

a. In the field under **Users**, begin typing the name of the user you want to add to the role in, then press **Enter** on your keyboard or click to select the user.

b. Repeat step a. as needed to continue adding more users, then click **Add Selected**.

14. To add a user group to the role:

a. In the field under **Groups**, begin typing the name of the group you want to add to the role, then press **Enter** on your keyboard or click to select the group.

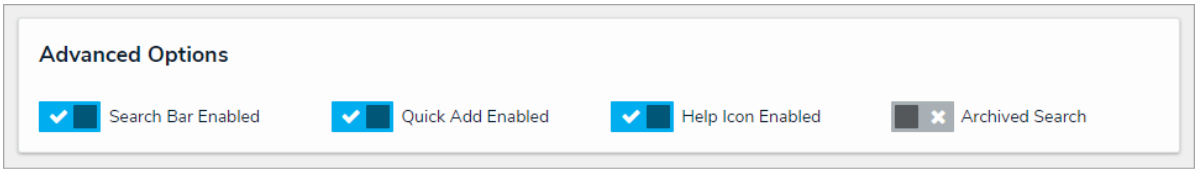


The Users and Groups sections.

b. Repeat step a. as needed to continue adding more user groups, then click **Add Selected**.

15. **Optional:** In the Advanced Options section, click the or icons to enable or disable the following options for users within the role:

- **Search Bar Enabled:** Shows or hides the Search field from the top bar.
- **Quick Add Enabled:** Shows or hides the Quick Add feature from the top bar.
- **Help Icon Enabled:** Shows or hides the link to the Resolver Knowledge Base from the top bar.
- **Archived Search:** Shows or hides the option to include archived data in the search results when using the **Search** function.



The Advanced Options section.

16. Click **Done** when finished.

Edit or Delete a Role

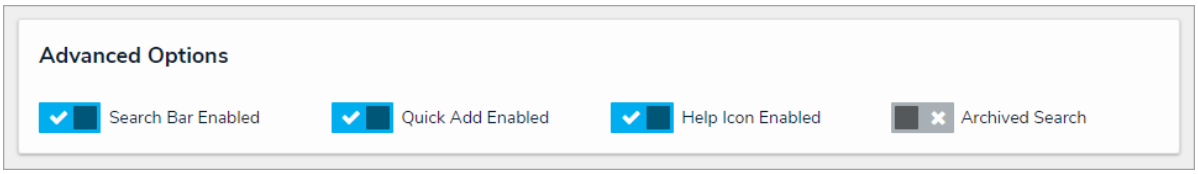
If a user is in multiple roles and the permissions are in conflict, the role with the higher level of permissions will take precedence.

To edit or delete a role:

1. Click the icon in the top bar > **Roles** in the **People** section.
2. Enter the name of the role in the text field to search for it or click the role you want to edit.
3. To add more object types to the role, select the object types from the dropdown menu in the **Object Types** section, then edit the permissions.
4. To edit an existing object type's permissions, click the object type under **Object Types**, make your changes as needed, then click **Done** to return to the **Edit Role** page.
5. To add more users or groups to the role, select them from the dropdown menus under **Users** and **Groups**.
6. To delete an object type, user, or user group from the role, click the icon next to the object type, user, or user group you want to delete, then click **Yes** to confirm.

   Roles determine a user's eligibility to access objects only. Removing a user from a role with explicit permissions after they've been granted direct access to an object does **not** automatically revoke their access to that object. Another user with the appropriate permissions must revoke access by removing the user from the role field on the object's form.

7. **Optional:** In the Advanced Options section, click the or icons to enable or disable the following options for users within the role:
   - **Search Bar Enabled:** Shows or hides the Search field from the top bar.
   - **Quick Add Enabled:** Shows or hides the Quick Add feature from the top bar.
   - **Help Icon Enabled:** Shows or hides the link to the Resolver Knowledge Base from the top bar.
   - **Archived Search:** Shows or hides the option to include archived data in the search results when using the **Search** function.



The Advanced Options section.

8. To delete the role, click the icon, then click **Yes** to confirm.

Org Manager Overview

The **Org Manager** tool gives you the option of creating duplicate organizations in Core. This feature is useful for organizations with multiple companies or for those who want to segment their data by region or department by duplicating the configurations of the existing organization, including user accounts. The Org Manager does **not** duplicate data.

Organizations are duplicated by first exporting an existing organization's data into a JSON file, then importing that file into the Org Manager of a blank organization.

Important Notes About Org Manager

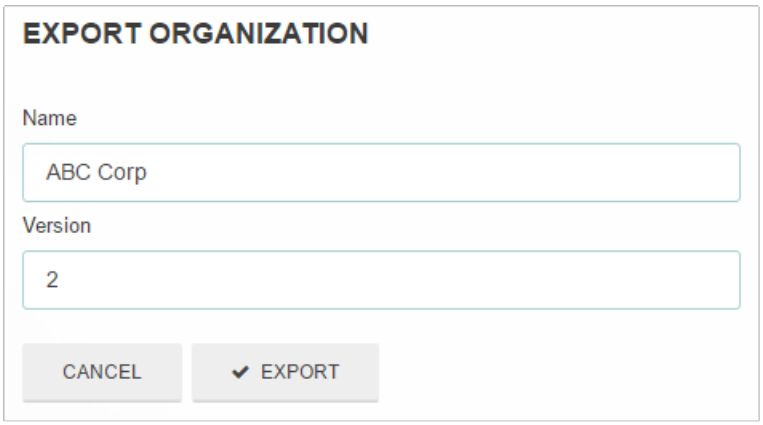
Org Manager is typically used as an internal tool for Resolver to create duplicate organizations on behalf of Core customers. Under certain circumstances, Resolver may allow your IT department to complete the process. Please contact us should you require duplicate organizations.

Export an Organization

As importing an organization requires a JSON file from an existing organization, you must first complete the export process to create and save the file then import it into a blank organization.

To export an organization:

1. Click the icon in the top bar **> Org Manager** in the **Application Management** section.
2. Click **Export Organization**.
3. Enter the name of the organization you're exporting in the **Name** field, then enter a version in the **Version** field. The values entered in these fields will determine the name of the JSON file (e.g. ABC Corp 2.json).



The Export Organization section of Org Manager.

4. Click **Export**. The file will be saved in your **Downloads** folder.

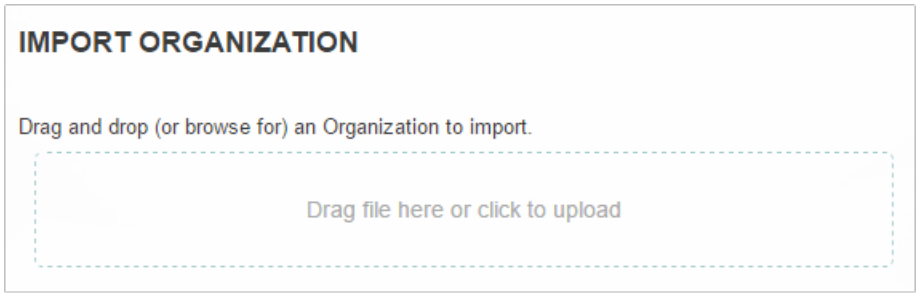
Import an Organization

Before import, a .JSON file must be exported from the existing organization. Once this .JSON file is imported, all configurations and user accounts from the exported organization will be recreated in the new organization.

If a user already exists in another organization within the same environment, the user accounts will be merged, using the email address and password of the existing user. If the imported user is new to the environment, a new account will be created and the user will receive an email with details on accessing the organization and creating a new password.

To import an organization:

1. Contact Resolver Support to request a new blank organization in your environment.
2. Log in as an administrator.
3. Click the icon in the top bar **> Org Manager** in the **Application Management** section.
4. Click **Import Organization.**



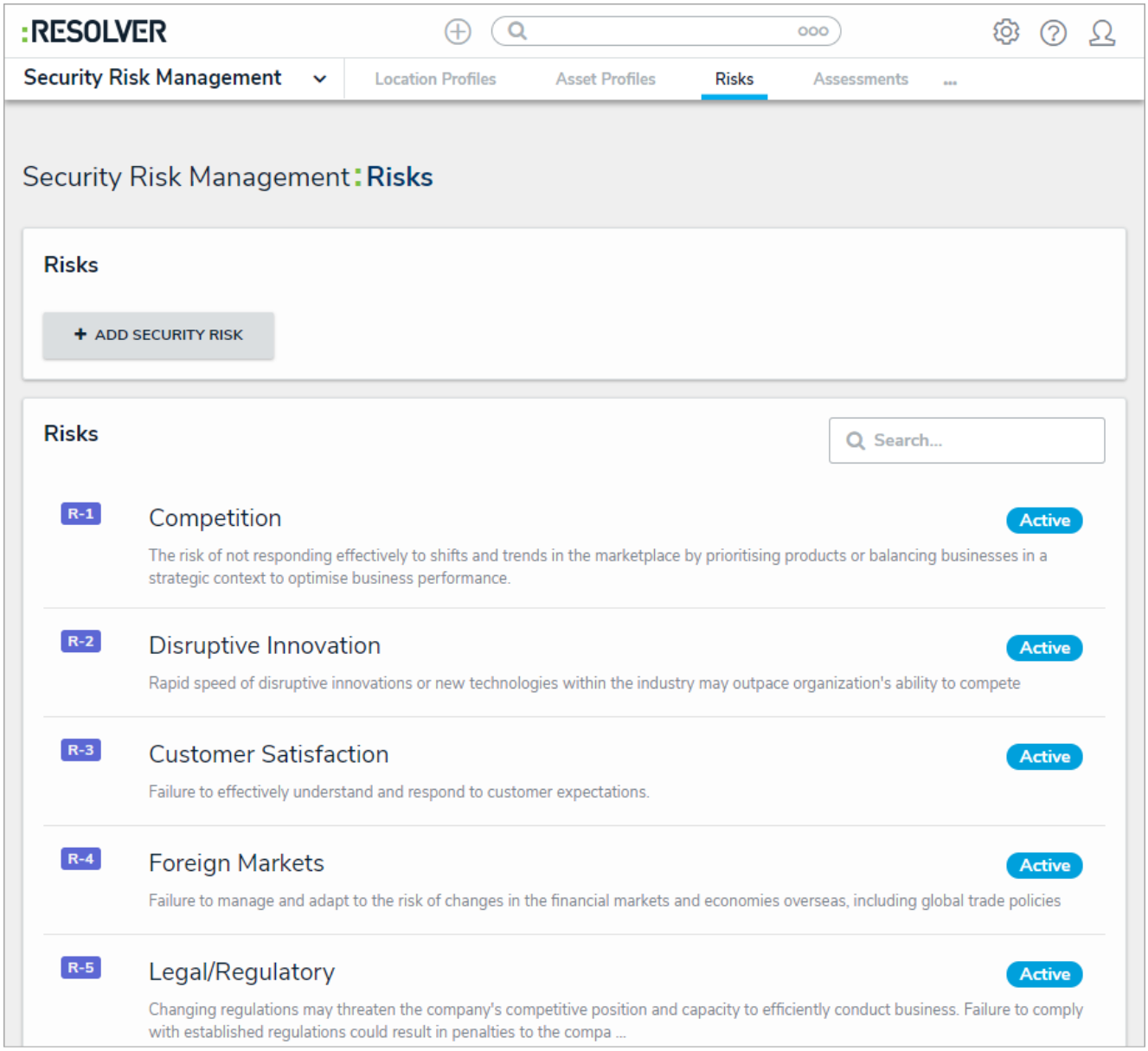
The Import Organization section of Org Manager.

5. Drag and drop the .JSON file to the upload area or click the area to locate and open the file, which will automatically start the upload. If upload was unsuccessful, a confirmation message will be displayed.

If you're unable to complete the upload due to any errors, contact Resolver Support.

Applications Overview

Applications are created when object type groups, fields, configurable forms, and roles come together. An application controls and directs the movement of data to end users and allows them to complete tasks and view information via activities, which then determines what kind of data a user will create, edit, and view through actions, views, and roles.



An application with an activity, action, and view.

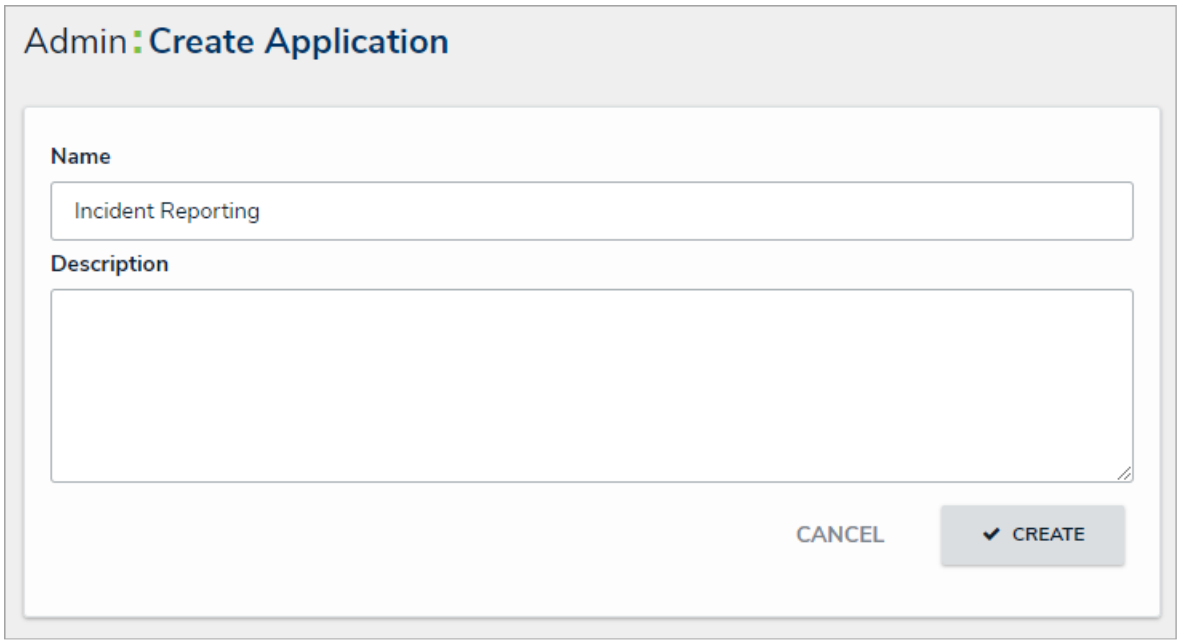
Both end users and administrators will not be able to see an application in the nav bar until a role they belong to has been granted permission to access an activity through the activity's settings.

Because applications rely on other key components of Core, such as object types and roles, you can't create an application until these other components exist. See the About Applications section to review the recommended process for creating these components.

Create an Application & Activity

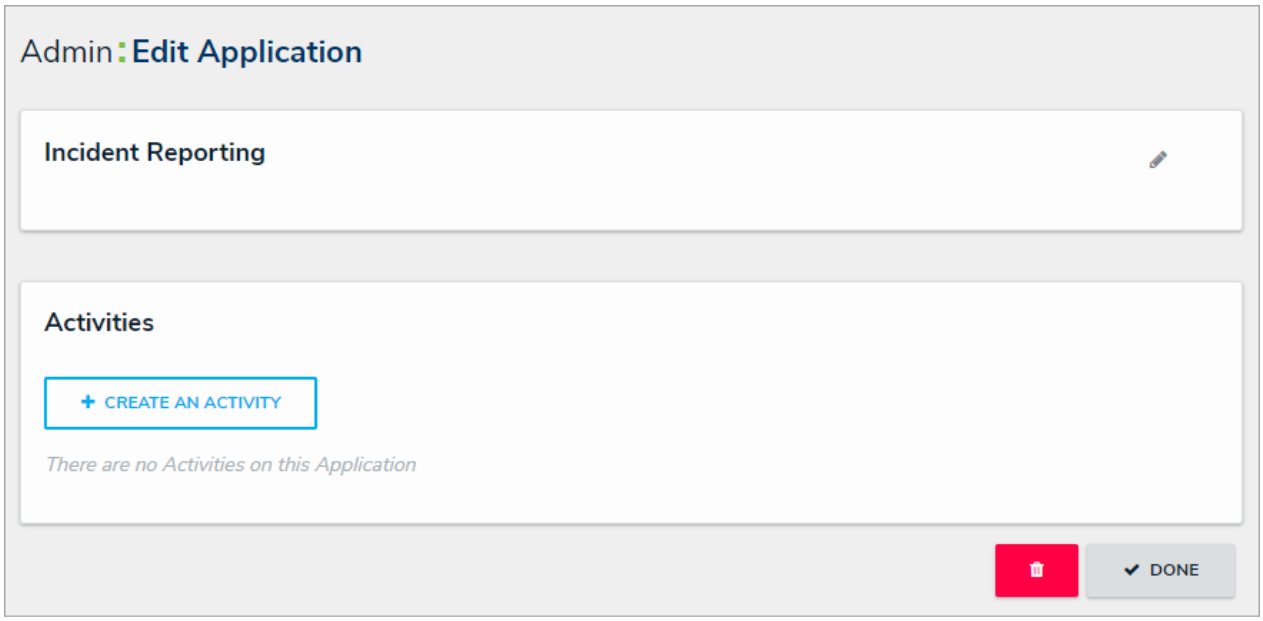
To create an application and activity:

1. Click the icon in the top bar > **Applications** in the **Application Management** section.
2. Click **Create Application** to display the **Create Application** page.
3. Enter the application name in **Name** field.
4. **Optional**: Enter a description of the application in the **Description** field. This description will appear on the **Applications** page and on the **Edit Application** page in **Administration**.



The Create Application page.

5. Click **Create** to show the **Edit Application** page.

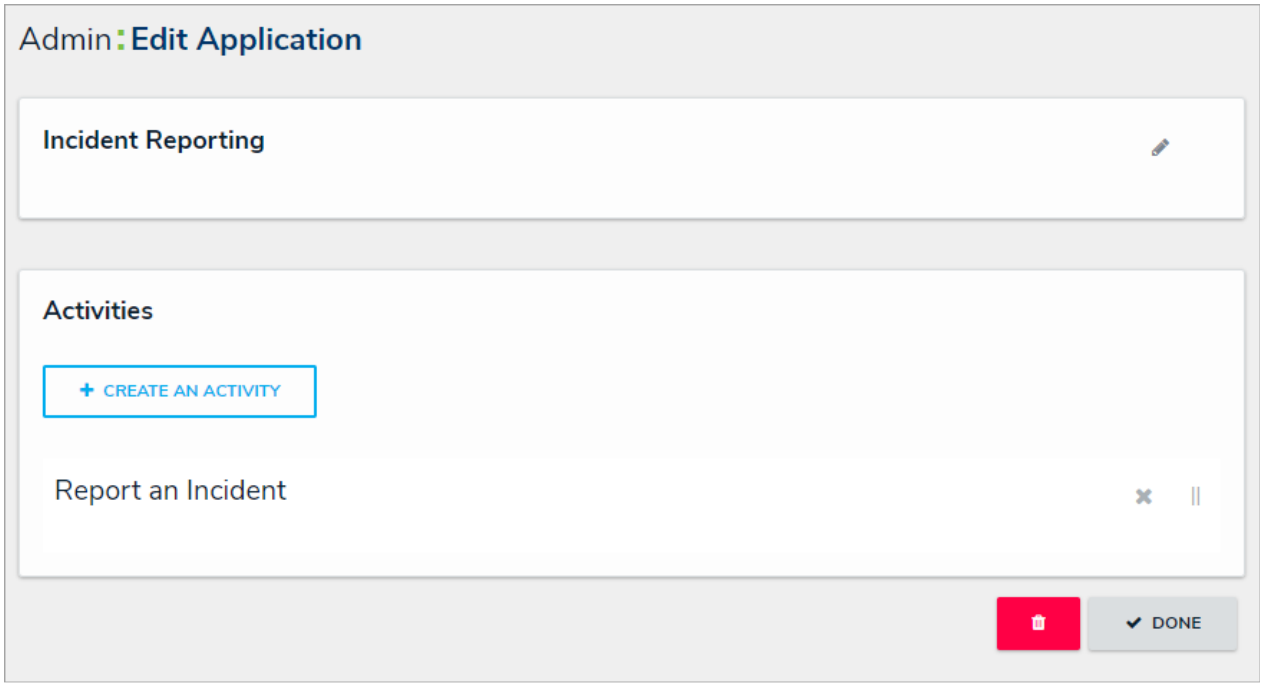


The Edit Application page.

6. Click **Create an Activity**.
7. Enter a name for the activity in the **Name** field.
8. **Optional:** Enter a description or brief instructions to users in the **Description** field which will appear when editing an activity and viewing the Activity settings. If necessary, you can apply additional styling to the text using Markdown formatting. Click **Basic Markdown Formatting** to show popular styles.

Creating a new activity.

9. Click **Create** to display the **Edit Activity** page, where you can create actions and views and add roles.

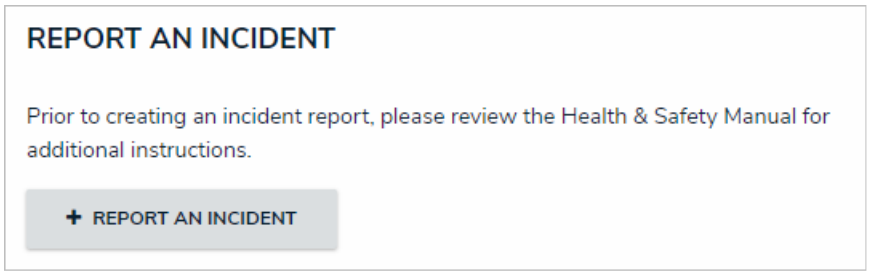


The Edit Application page with a new activity.

Add an Action to an Activity

An action is where a user can create objects or assessment objects or export data from within an activity. An action is displayed in its own section with a button that, when clicked, will display a selected form for users to enter and save data into an object.

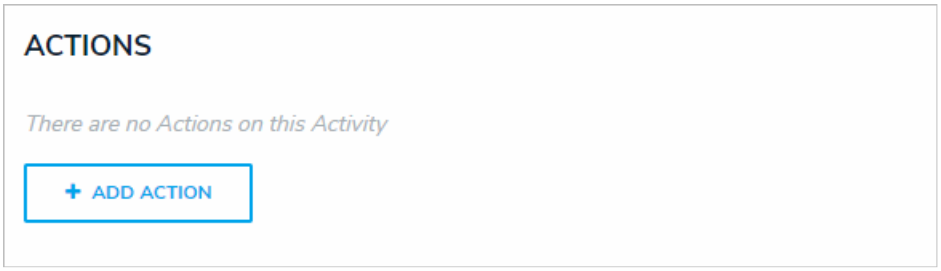
Actions are saved to activities within an application. See the Create an Application & Activity section for more information.



A create object type action as it appears to end users in an activity.

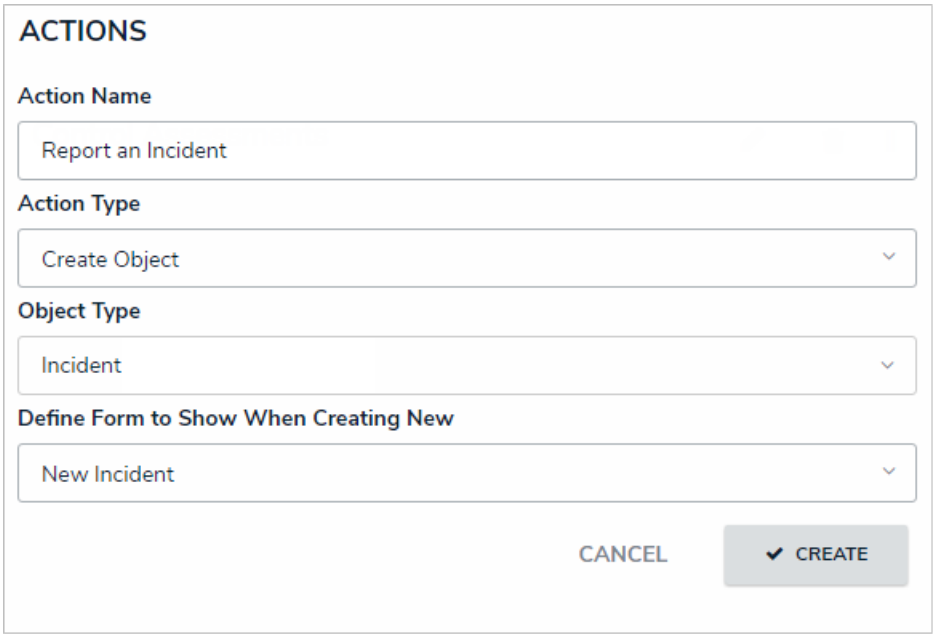
To create an action:

1. If needed, open the activity you wish to add the action to by clicking the icon in the top bar > **Applications** in the **Application Management** section, then clicking the application and activity to show the **Edit Activity** page.
2. Click the **Add Action** in the **Actions** section.



The Actions section on the Edit Activity page.

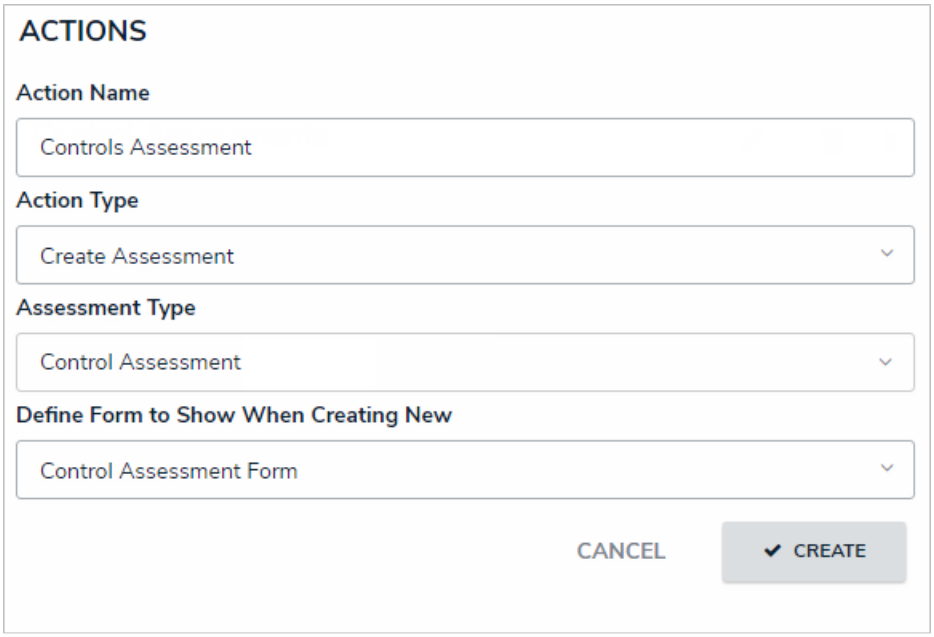
3. Enter the name of the action in the **Action Name** field, which will appear as a clickable button when the user views the activity.
4. To create an object type action:
    a. Select **Create Object** from the **Action Type** dropdown menu.
    b. Select the object type the user will input data into from the **Object Type** dropdown menu.
    c. Select either the default form or a configurable form to display when the user opens the action from the **Define Form to Show When Creating New** dropdown menu.



A new object type action.

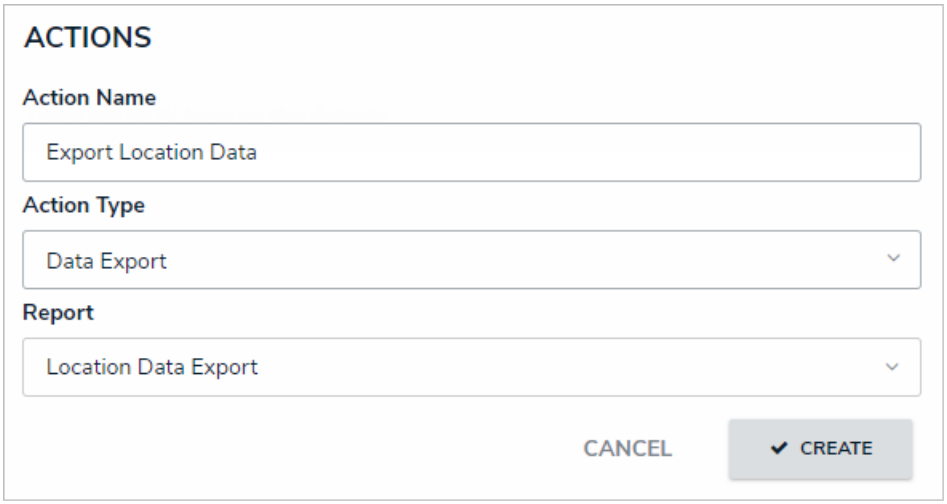
5. To create an assessment action:
    a. Select **Create Assessment** from the **Action Type** dropdown menu.
    b. Select the assessment the user will create objects for from the **Assessment Type** dropdown menu.
    c. Select a configurable form to display for the action from the **Define Form to Show When Creating New** dropdown menu.

> You must select a configurable form that includes the Assessment Context element in the **Define Form to Show When Creating New** dropdown menu. You cannot select the assessment's default form as it will not display the required focus or dimensions fields.



A new assessment action.

6. To create a data export action:
    a. Select **Data Export** from the **Action Type** dropdown menu.
    b. Select an export report from the **Report** dropdown menu.



A new data export action.

7. Click **Create**.
8. Follow steps 2-7 above to continue creating more actions as needed.
9. To modify the order of the actions in the activity, click and drag the icon beside an action.
10. To edit the action's name or form, click the icon.
11. To delete the action, click the icon, then **Yes** to confirm.

Views Overview

Activities can have one or more of the following views types:

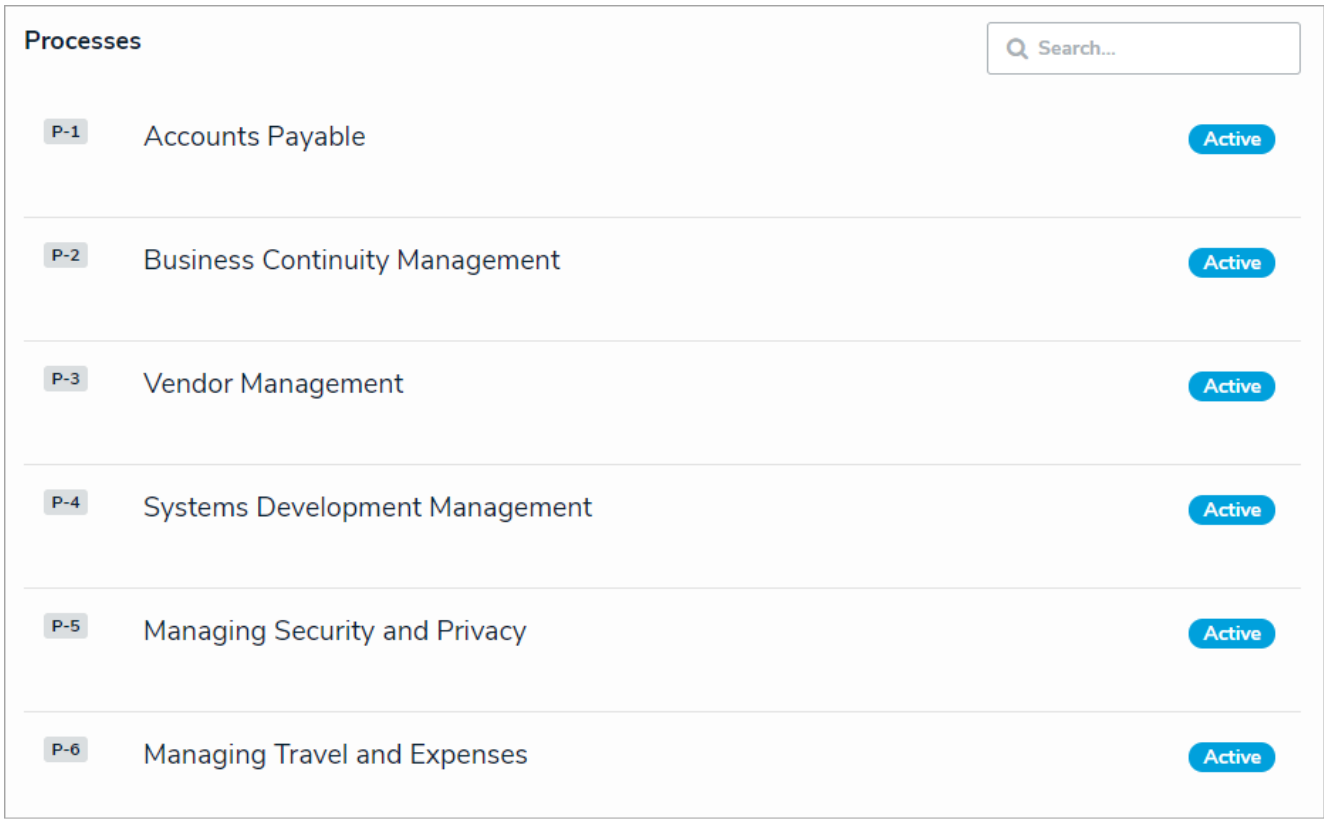
- **Form:** A list of objects or assessment objects. Admins can specify which objects and forms are displayed based on the object type and workflow state.
- **Report:** Report-type data visualizations that display object data through elements.
- **Data Export:** A data analytics export report that allows users to export object data into a spreadsheet.
- **Data Grid:** Displays object data in spreadsheet-style grid.

All view types allow administrators to filter which objects are displayed based on one or more workflow states. Because views are displayed in activities, you must first create an application and activity before a view can be saved. See the Create an Application & Activity section for more information.

For information on creating views, see the following articles:

- Create a Form View
- Create a Report View
- Create a Data Export View
- Create a Data Grid View

> Any forms selected when creating a view will override any form selections made in the workflow permissions on a role.

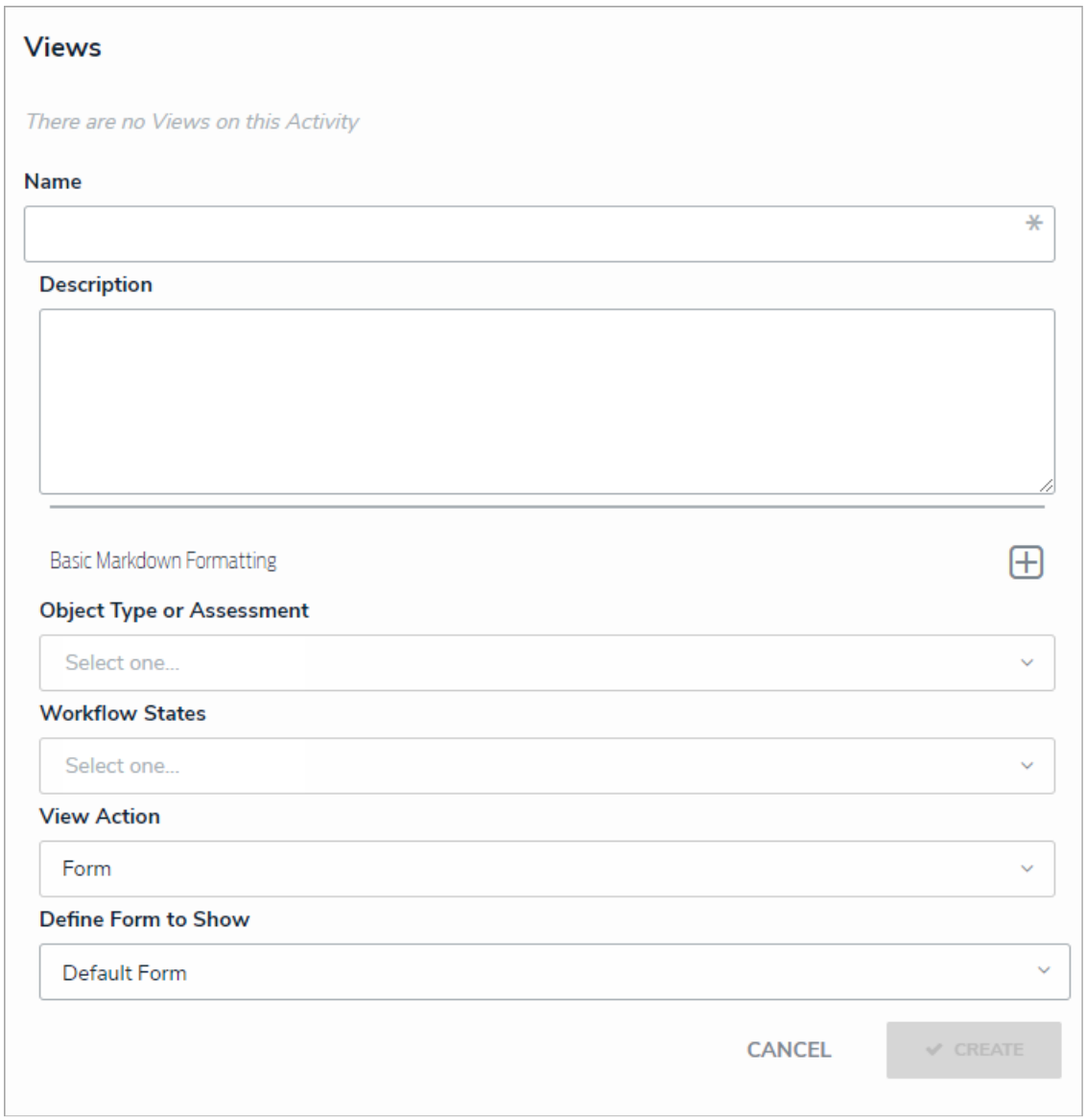


A form view as it's displayed to end users.

Create a Form View

To create a form view:

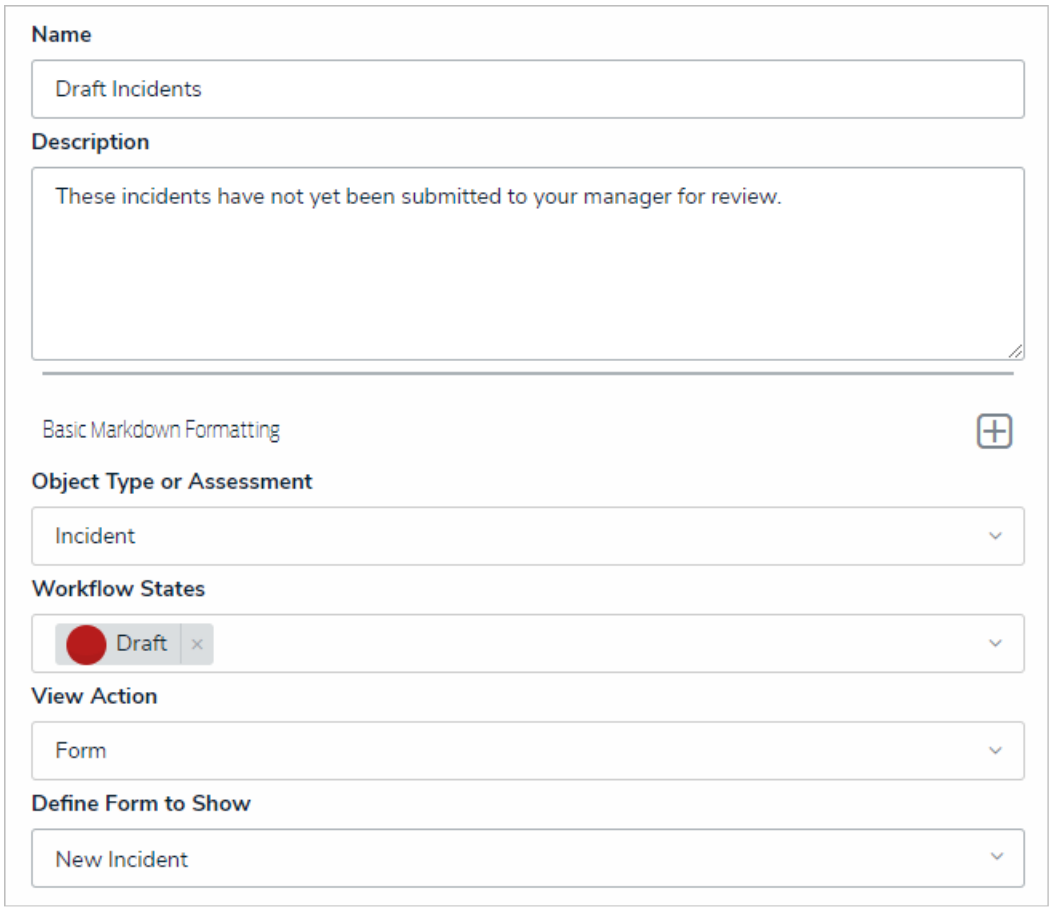
1. If needed, open the activity you wish to add the view to by clicking the icon in the top bar > **Applications** in the **Application Management** section, then clicking the application and activity to show the **Edit Activity** page.
2. Click the **Add View** in the **Views** section.



A new view.

3. Enter the name of the view in the **Name** field, which will appear as a header below the view.
4. **Optional:** Enter a description in the **Description** field, which will appear when a user has opened the view. If necessary, apply Markdown formatting to the text. To view popular formatting styles, click the icon beside **Basic Markdown Formatting**.
5. Select an object type or assessment from the **Object Type or Assessment** dropdown menu to specify which objects will be available in the view.
6. Select one or more assessment or object type states from the **Workflow States** dropdown menu to specify which objects or instances will be displayed, based on their current states.
7. Select **Form** from the **View Action** dropdown menu.

8. Select either the default form or a configurable form from the **Define Form to Show** dropdown menu. This will be the form that's displayed when the user clicks on an object in the view



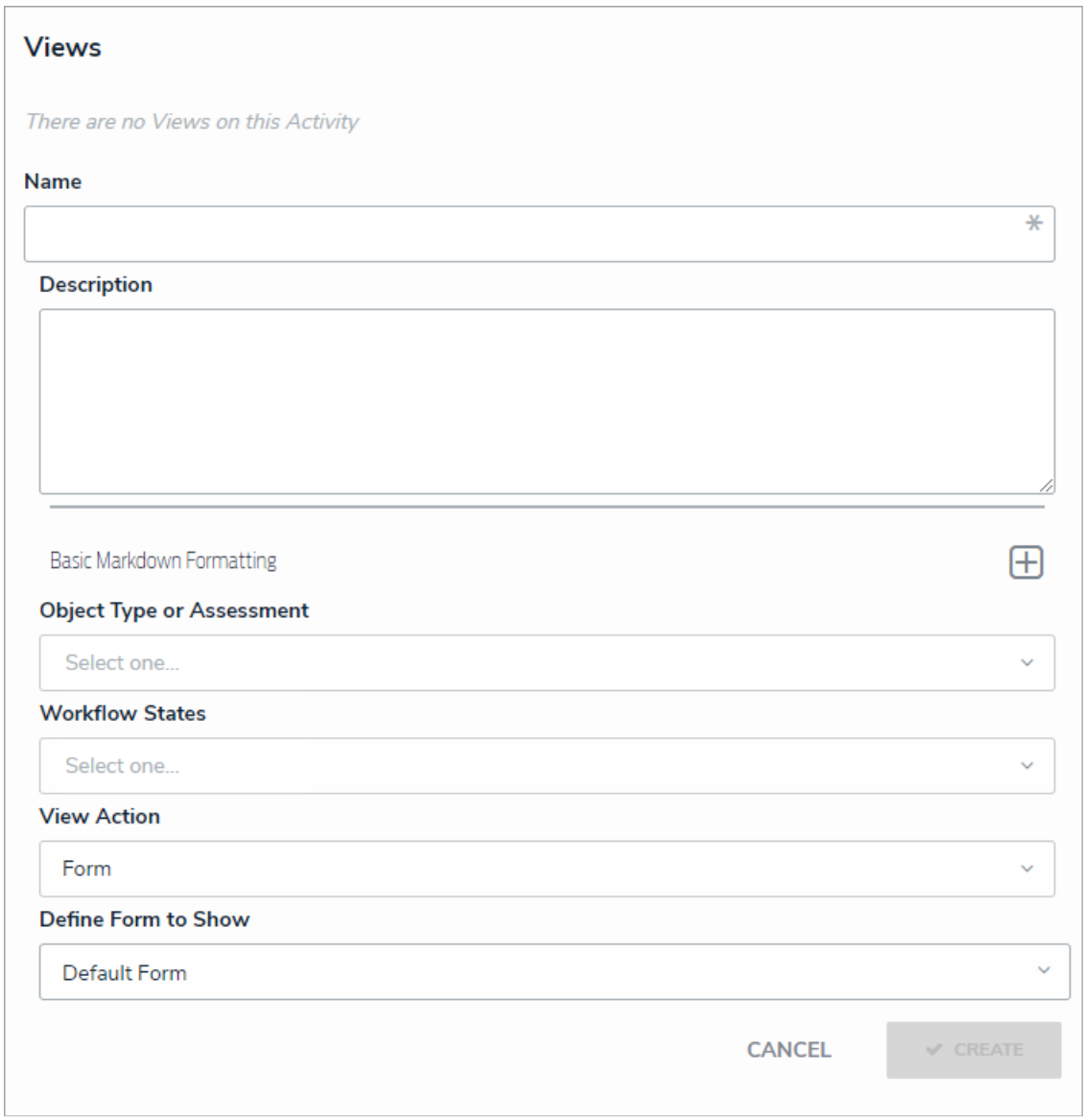
A new form view.

9. Select either **Show view title when empty** or **Hide view title when empty** from the **Display Options** dropdown menu to show or hide the view's title from the activity when it has no data to display.
10. Click **Create**.
11. Follow steps 2-10 above to continue creating more views as needed.
12. To reorder how the views appear in the activity and left navigation menu, click and drag the icon beside a view.
13. To edit the view's name, description, view action, or form, click the icon.
14. To delete the view, click the icon, then **Yes** to confirm.

Create a Report View

To create a report view:

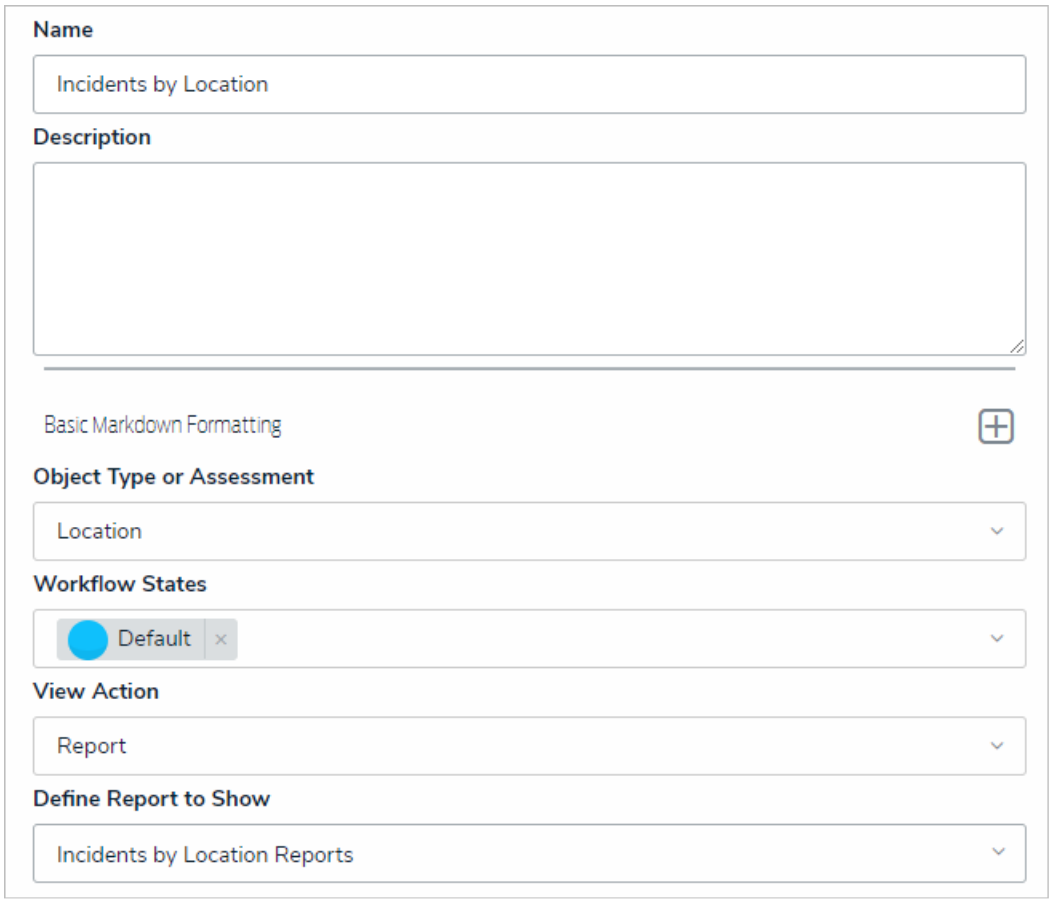
1. If needed, open the activity you wish to add the view to by clicking the icon in the top bar > **Applications** in the **Application Management** section, then clicking the application and activity to show the **Edit Activity** page.
2. Click the **Add View** in the **Views** section.



A new view.

3. Enter the name of the view in the **Name** field, which will appear as a header below the view.
4. **Optional:** Enter a description in the **Description** field, which will appear when a user has opened the view. If necessary, apply Markdown formatting to the text. To view popular formatting styles, click the icon beside **Basic Markdown Formatting**.
5. Select an object type or assessment from the **Object Type or Assessment** dropdown menu to specify which objects will be available in the view.
6. Select one or more assessment or object type states from the **Workflow States** dropdown menu to specify which objects or instances will be displayed, based on their current states.
7. Select **Report** from the **View Action** dropdown menu.

8. Select a previously created report from the **Define Report to Show** dropdown menu.



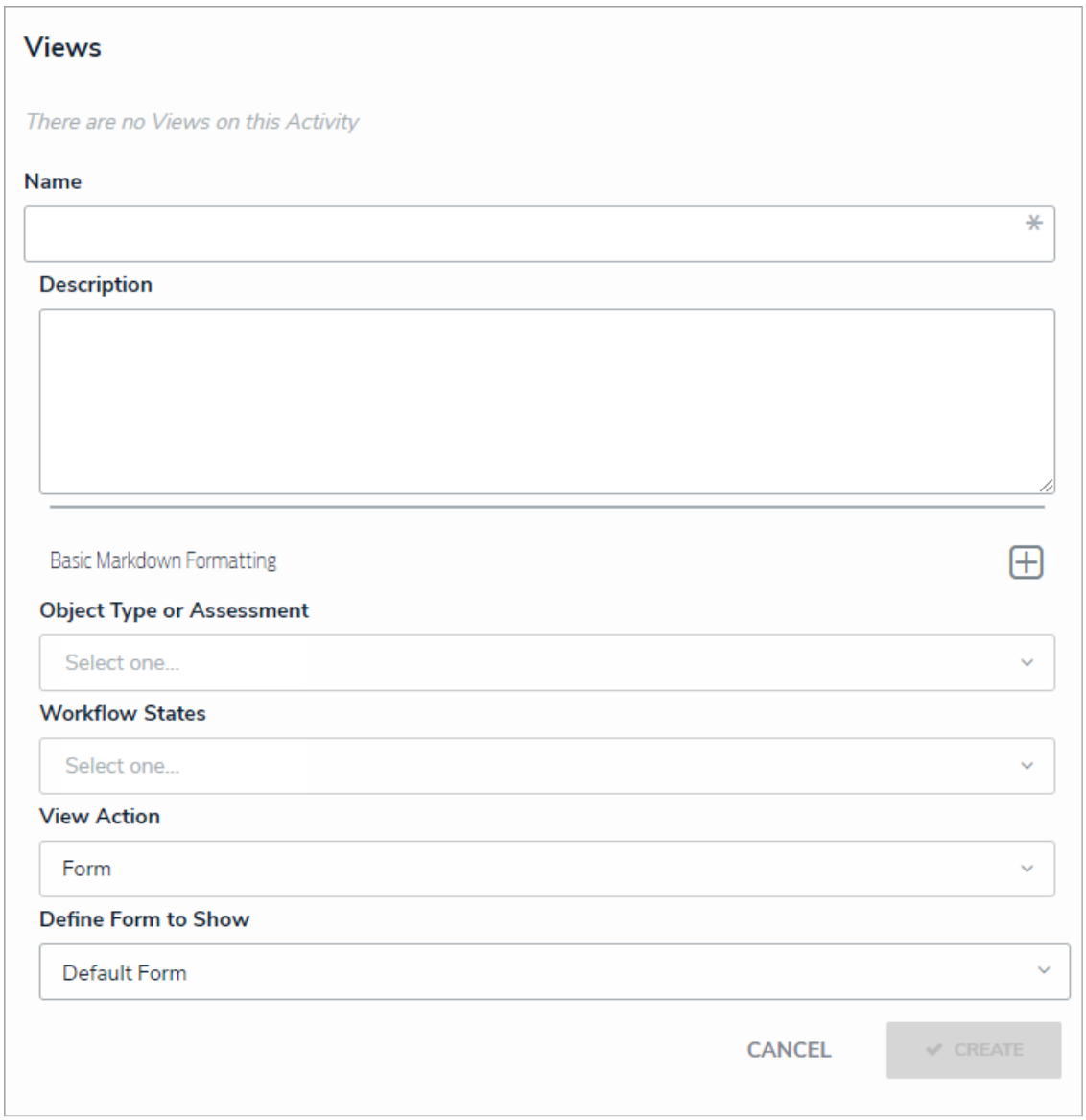
A new report view.

9. Select either **Show view title when empty** or **Hide view title when empty** from the **Display Options** dropdown menu to show or hide the view's title from the activity when it has no data to display.
10. Click **Create**.
11. Follow steps 2-10 above to continue creating more views as needed.
12. To reorder how the views appear in the activity and left navigation menu, click and drag the icon beside a view.
13. To edit the view's name, description, view action, or form, click the icon.
14. To delete the view, click the icon, then **Yes** to confirm.

Create a Data Export View

To create a data export view:

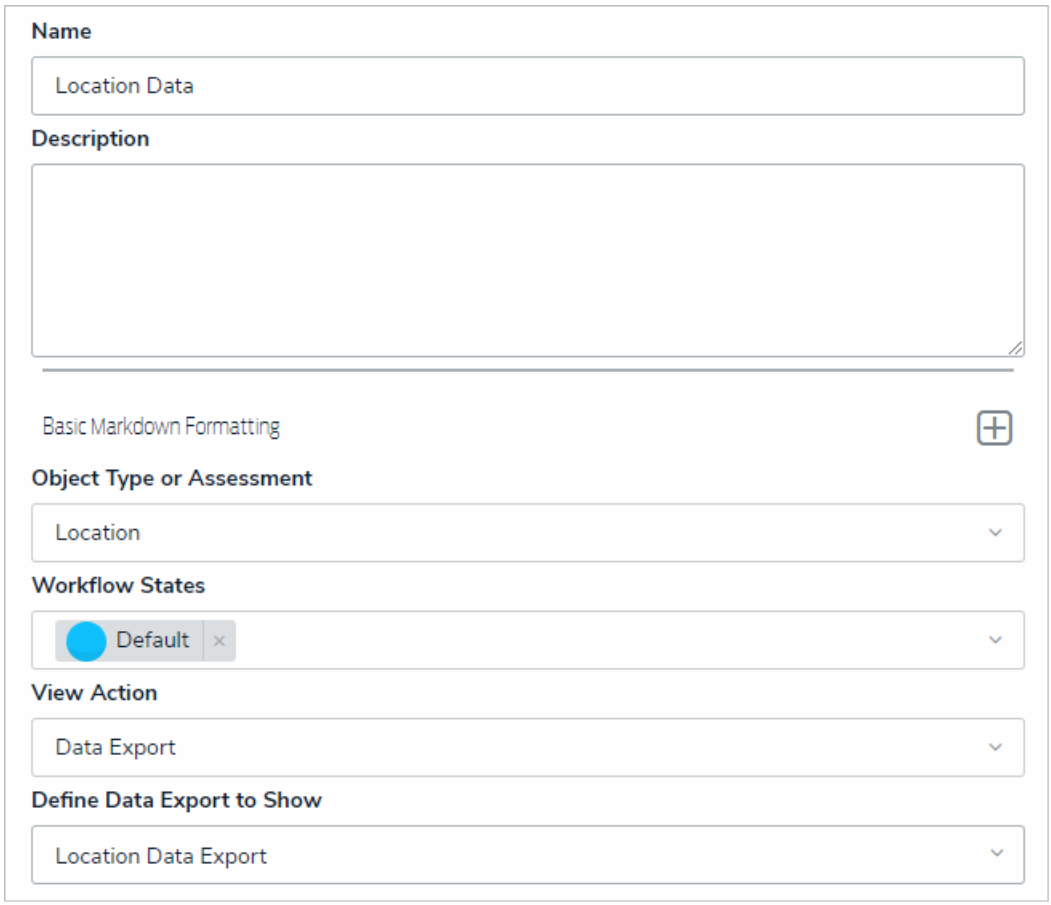
1. If needed, open the activity you wish to add the view to by clicking the icon in the top bar > **Applications** in the **Application Management** section, then clicking the application and activity to show the **Edit Activity** page.
2. Click the **Add View** in the **Views** section.



A new view.

3. Enter the name of the view in the **Name** field, which will appear as a header below the view.
4. **Optional:** Enter a description in the **Description** field, which will appear when a user has opened the view. If necessary, apply Markdown formatting to the text. To view popular formatting styles, click the icon beside **Basic Markdown Formatting**.
5. Select an object type or assessment from the **Object Type or Assessment** dropdown menu to specify which objects will be available in the view.
6. Select one or more assessment or object type states from the **Workflow States** dropdown menu to specify which objects or instances will be displayed, based on their current states.
7. Select **Data Export** from the **View Action** dropdown menu.

8. Select a previously created data analytics report from the **Define Data Export to Show** dropdown menu.



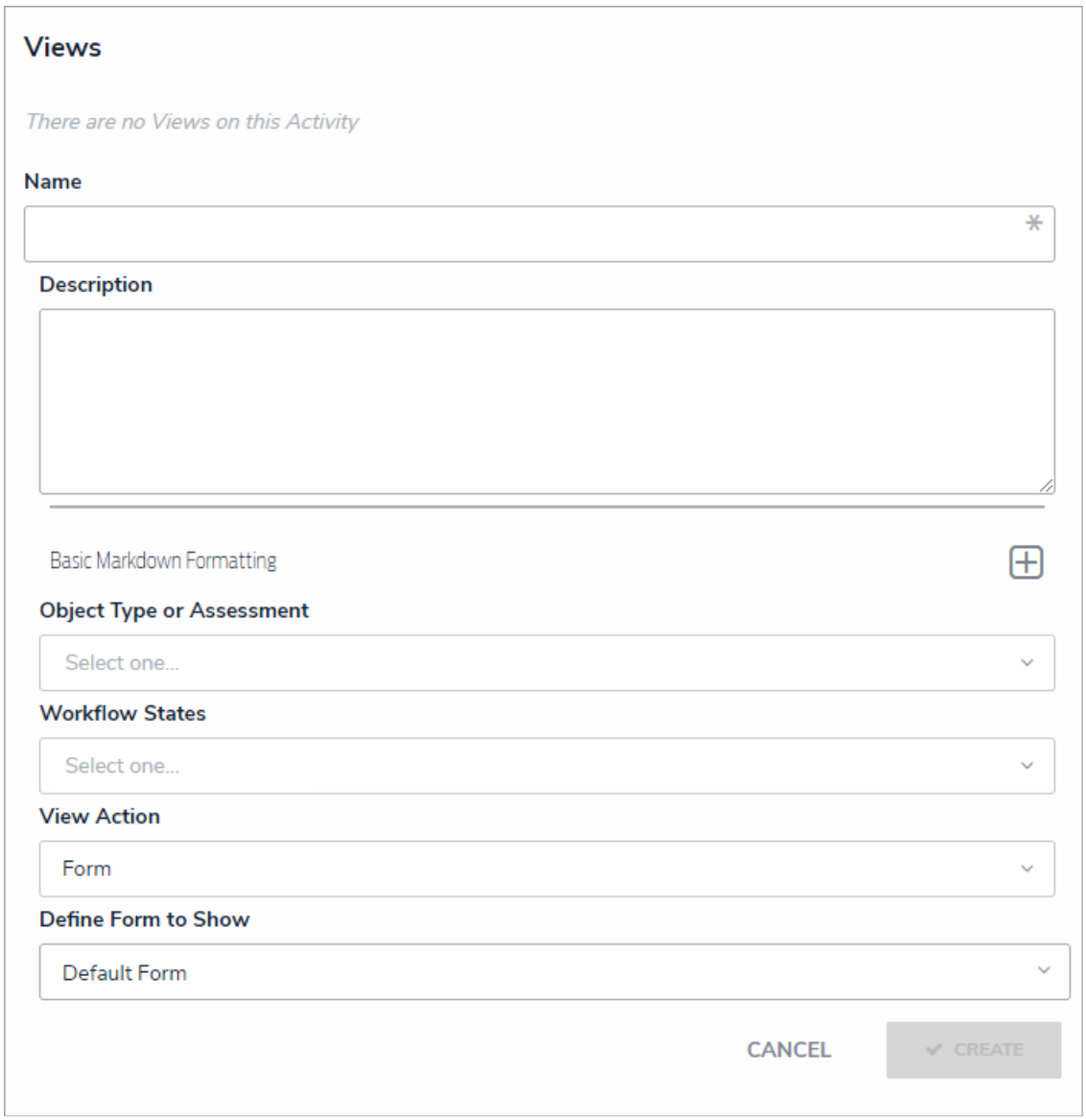
A new data export view.

9. Select either **Show view title when empty** or **Hide view title when empty** from the **Display Options** dropdown menu to show or hide the view's title from the activity when it has no data to display.
10. Click **Create**.
11. Follow steps 2-10 above to continue creating more views as needed.
12. To reorder how the views appear in the activity and left navigation menu, click and drag the icon beside a view.
13. To edit the view's name, description, view action, or form, click the icon.
14. To delete the view, click the icon, then **Yes** to confirm.

Create a Data Grid View

To create a data grid view:

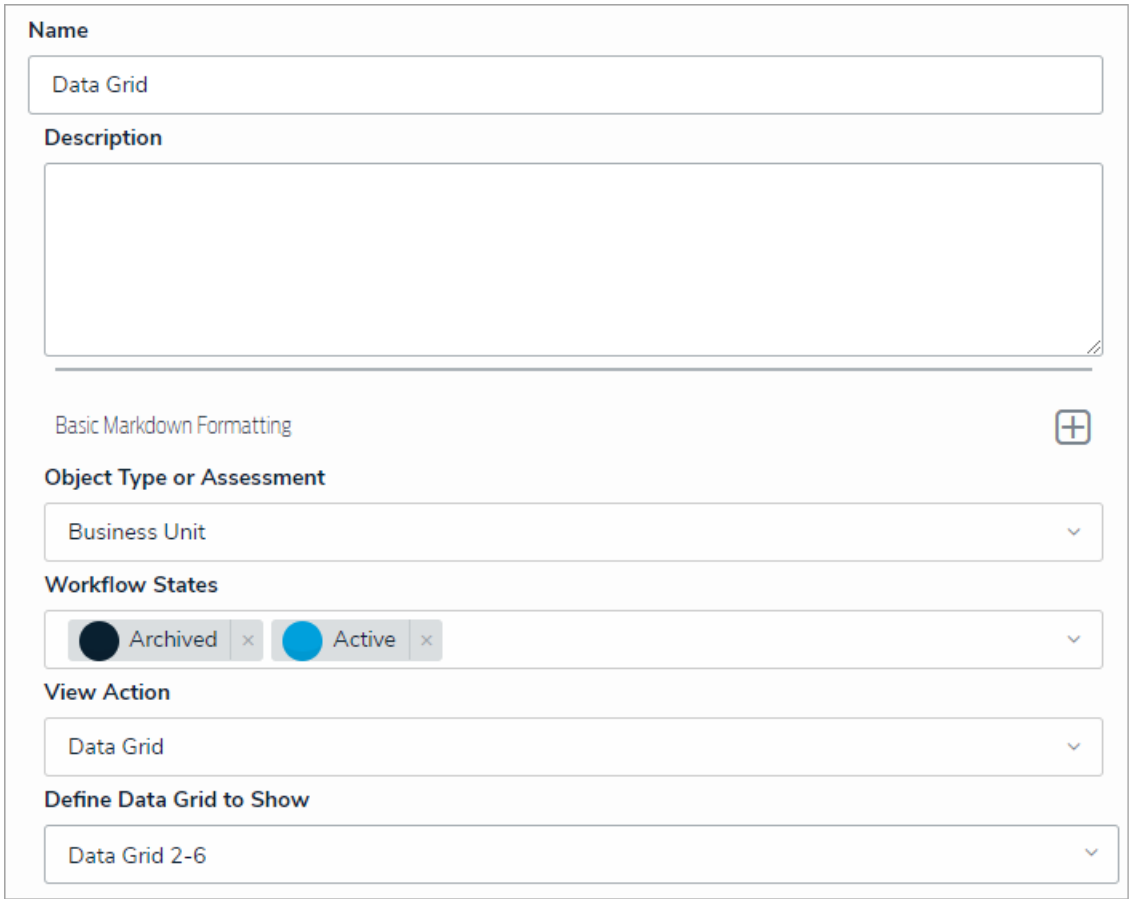
1. If needed, open the activity you wish to add the view to by clicking the icon in the top bar > **Applications** in the **Application Management** section, then clicking the application and activity to show the **Edit Activity** page.
2. Click the **Add View** in the **Views** section.



A new view.

3. Enter the name of the view in the **Name** field, which will appear as a header below the view.
4. **Optional:** Enter a description in the **Description** field, which will appear when a user has opened the view. If necessary, apply Markdown formatting to the text. To view popular formatting styles, click the icon beside **Basic Markdown Formatting**.
5. Select an object type or assessment from the **Object Type or Assessment** dropdown menu to specify which objects will be available in the view.
6. Select one or more assessment or object type states from the **Workflow States** dropdown menu to specify which objects or instances will be displayed, based on their current states.
7. Select **Data Grid** from the **View Action** dropdown menu.

8. Select a previously created data grid from the **Define Data Grid** to show dropdown menu.



A new data grid view.

9. Select either **Show view title when empty** or **Hide view title when empty** from the **Display Options** dropdown menu to show or hide the view's title from the activity when it has no data to display.
10. Click **Create**.
11. Follow steps 2-10 above to continue creating more views as needed.
12. To reorder how the views appear in the activity and left navigation menu, click and drag the icon beside a view.
13. To edit the view's name, description, view action, or form, click the icon.
14. To delete the view, click the icon, then **Yes** to confirm.

Add Roles to an Activity

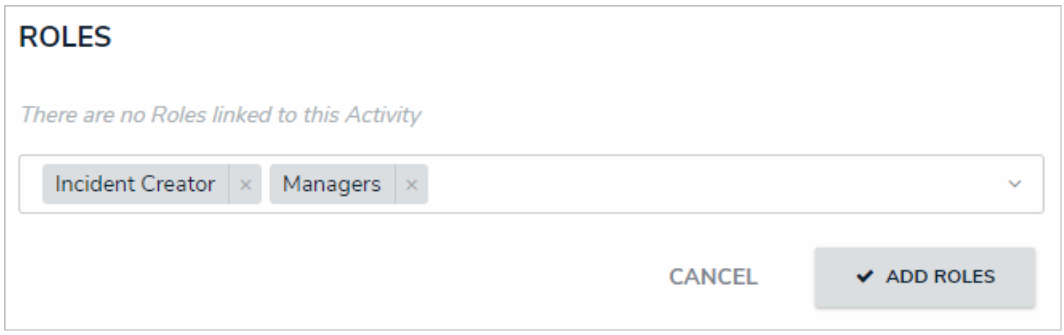
All users, including administrators and those with All Access settings enabled, will not be able to see an application in the left navigation menu until they've been added to one or more activities through a role. Note that adding a role to one activity with an application will not grant access to all its activities. Roles must be added to each activity individually in order to grant access.

Roles are saved to activities within an application. See the Create an Application & Activity section for more information on creating applications and activities.

If you've recently added your role to an activity, you will need to log out then log back in before the application and/or activity will be displayed in the left navigation menu.

To add roles to an activity:

1. If needed, open the activity you wish to add the role to by clicking the icon in the top bar > **Applications** in the **Application Management** section, then clicking the application and activity to show the **Edit Activity** page.
2. Click **Add Roles** in the **Roles** section.
3. Select one or more roles from the dropdown menu.



Roles selected, but not yet added to an activity.

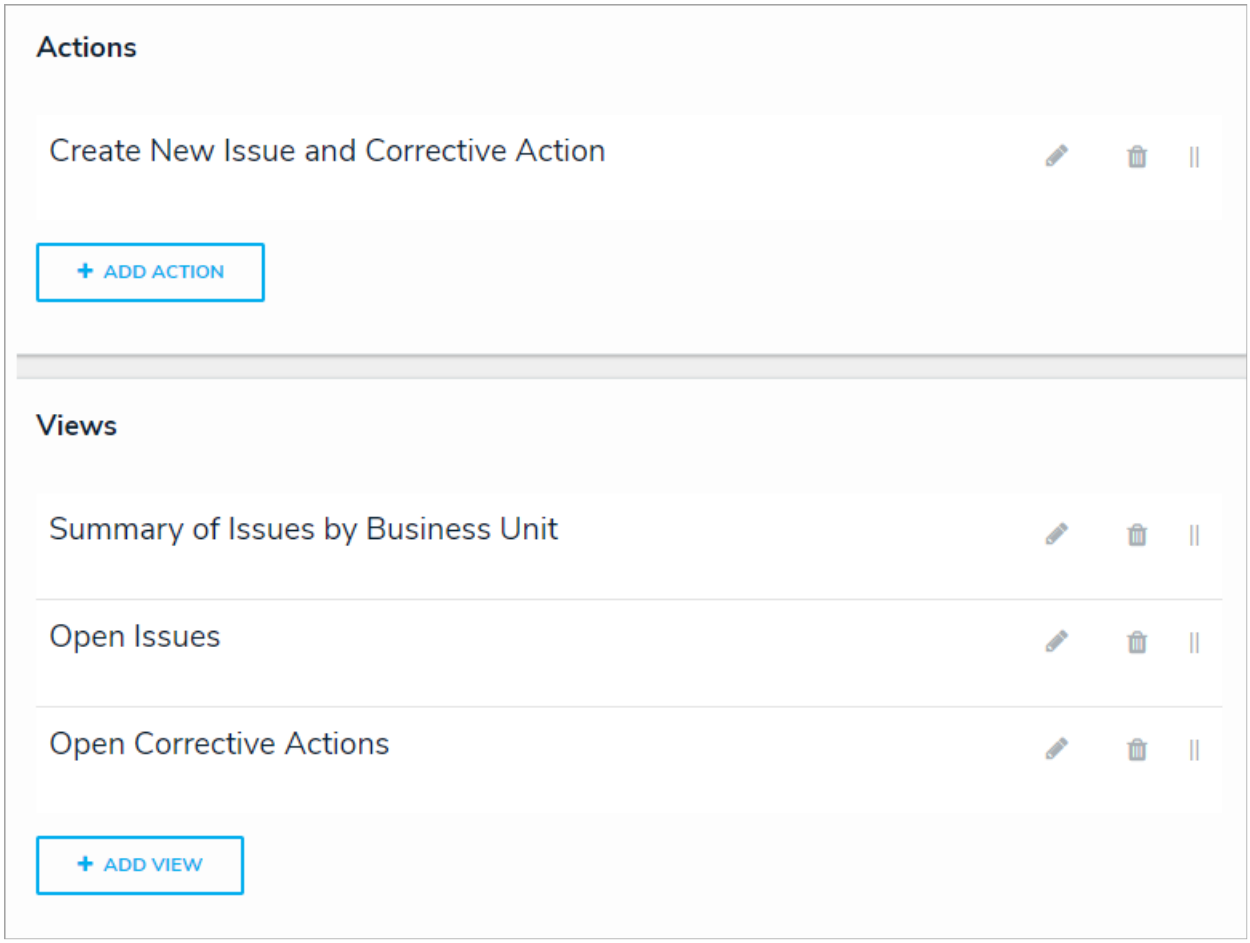
4. Click **Add Roles**.

To remove a role from the activity, click the trash can icon next to the role, then click Yes to confirm.

Edit or Delete an Action, View or Role

To edit or delete an action or view:

1. Click the icon in the top bar > **Applications** in the **Application Management** section.
2. Click an application to display the **Edit Application** page.
3. Scroll down to view the **Activities** section.
4. Click an activity to show the **Edit Activity** page.



The Edit Activity page with actions and views.

5. To edit the details of an action or view, click the icon next to the action or view.

> Once saved, you **cannot** select a new object type for an action or a view without deleting then recreating that action or view.

6. To delete an action, view, or role from the activity, click the icon next to that action, view, or role, then click **Yes** to confirm.
7. Click **Done** when finished.

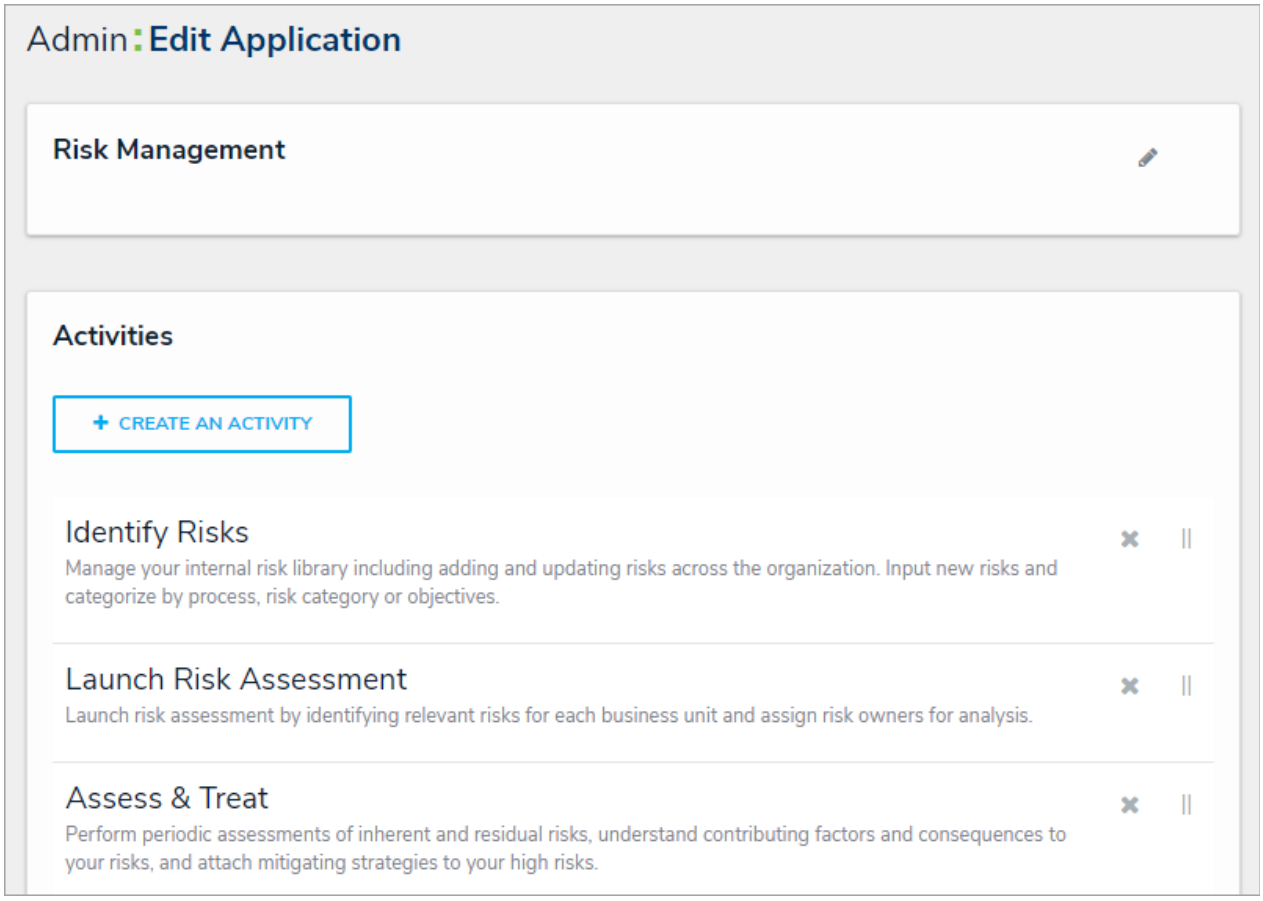
Edit or Delete an Application

To edit or delete an application:

1. Click the icon in the top bar > **Applications** in the **Application Management** section.

> You can rearrange the order of existing applications on the **Applications** page by clicking the icon next to an application then dragging and dropping the application to new a location on the page.

2. Click an existing application to display the **Edit Application** page.



The Edit Application page.

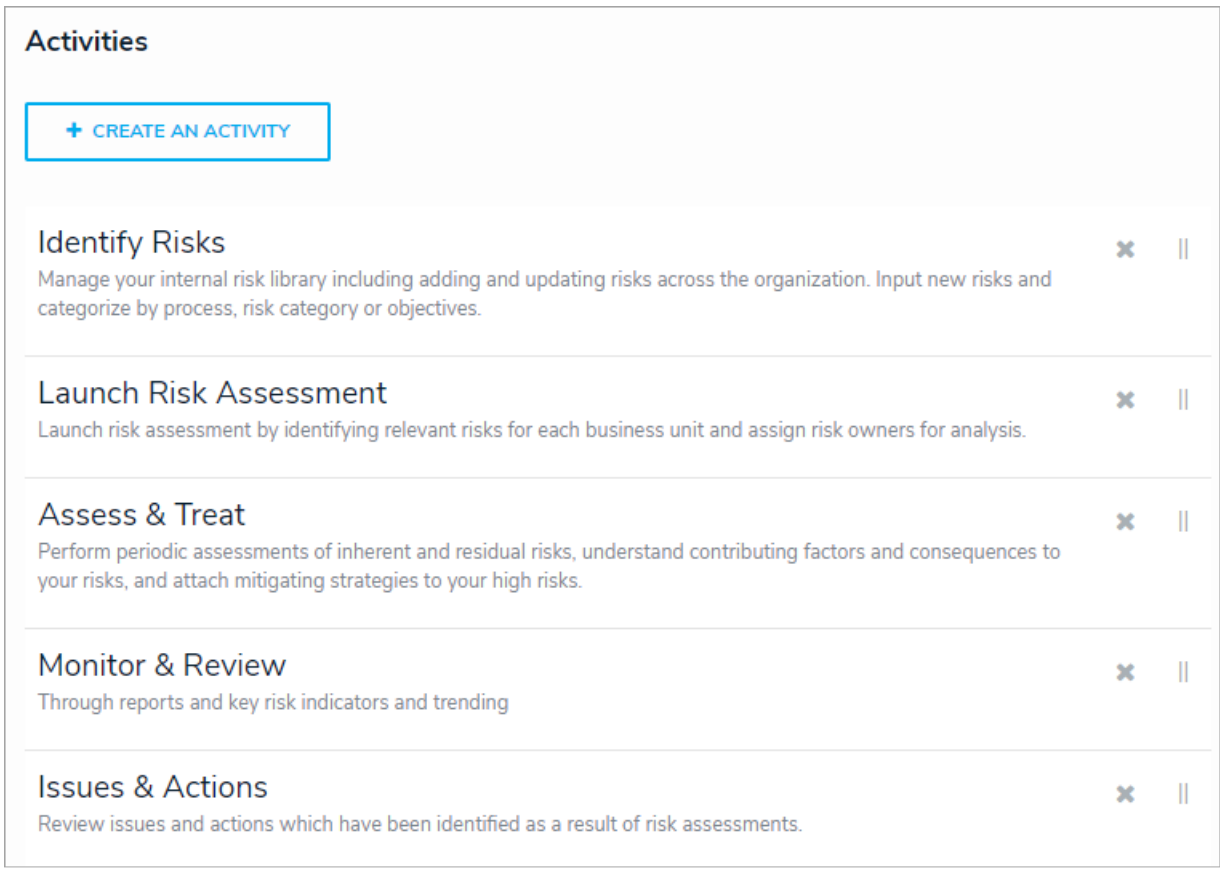
3. To edit the name or description of the application, click the icon next to the application's name at the top of the page.
4. To delete the application, click the icon, then click **Yes** to confirm.

> Deleting an application will delete all activities associated with it.

Edit or Delete an Activity

To edit or delete an activity:

1. Click the icon in the top bar > **Applications** in the **Application Management** section.
2. Click an application to display the **Edit Application** page.
3. Scroll down to view the **Activities** section.



The Activities section of the Edit Application page.

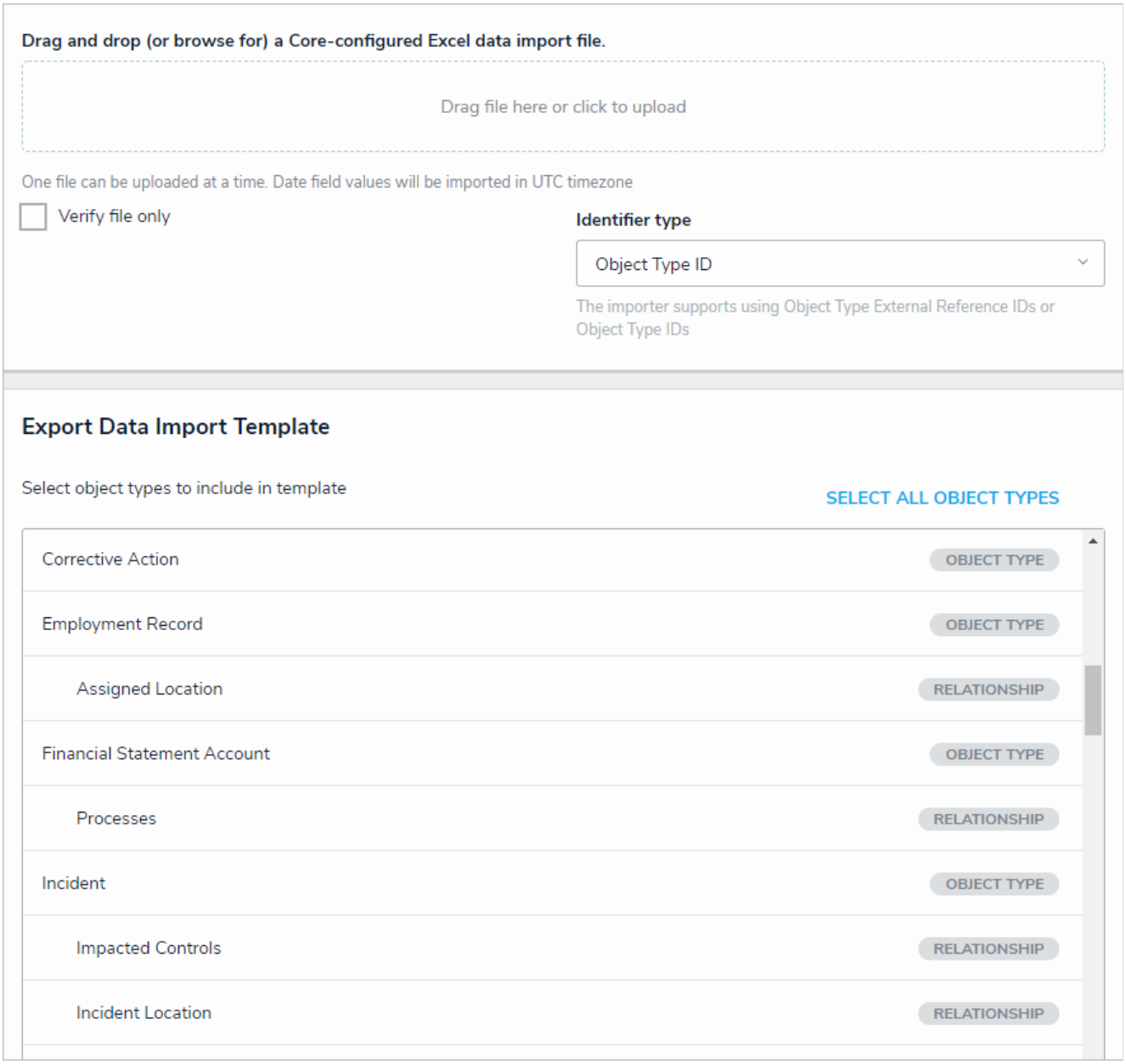
4. To rearrange the order of the activities as they appear in the left navigation menu, click the icon next to an activity then drag it to a new location on the page.
5. To edit the name or description of the activity:
    a. Click an activity from the **Edit Application** page to show the **Edit Activity** page.
    b. Click the icon next to the activity at the top of the page.
    c. Click **Done** to return to the **Edit Application** page.
6. To delete an activity, click the icon next to the activity, then click **Yes** to confirm.

> Deleting an activity will delete all the actions or views associated with it.

7. Click **Done** when finished.

Data Import Overview

Using the **Data Import** feature, you can create or update objects and map relationships between two objects by entering data into a template generated from the settings, then uploading that template into Core. This feature allows you to add or edit data in an object's field values, roles, and states, but **this feature cannot create new object types, fields, or relationships and does not support** assessment **data.**



The Data Import page.

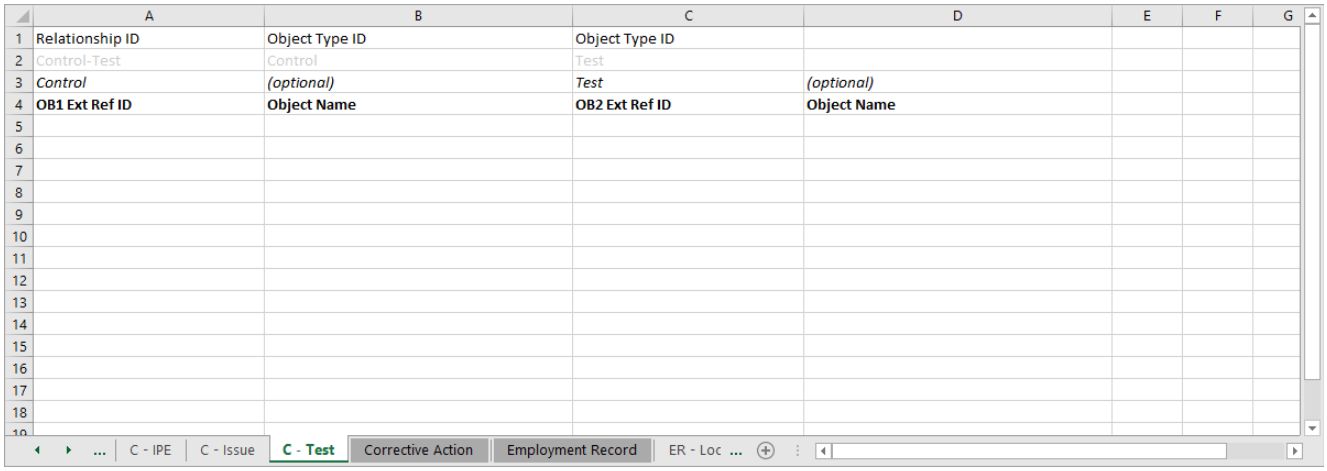
It's recommended that only users with advanced knowledge of Core and its configurations import data.

Data Import allows templates with up to 15 MB of data to be uploaded. If the file is zipped, up to 500 MB can be imported at a time.

Create an Import Template

To complete a data import, you must first generate an **import template.** This template is a spreadsheet generated through the Data Import settings and contains separate worksheet tabs for each object type and relationship added to the template, along with columns for each supported component. Administrators then enter data in the appropriate tabs and upload the spreadsheet back into Core.

> Columns for the Location property are not automatically generated in the template. To successfully import location data, these columns must be added manually. See the Import Location Data article for more information.

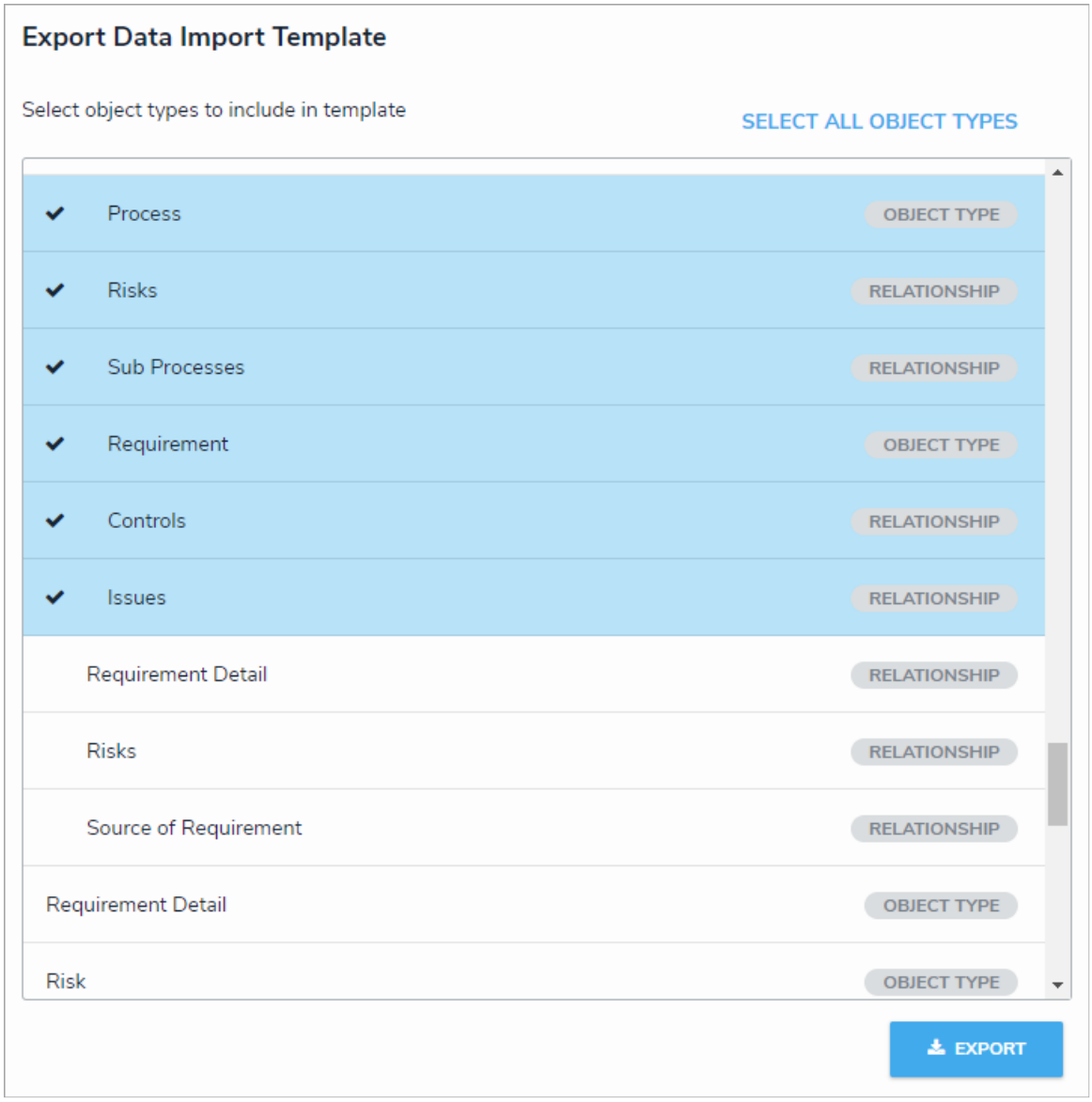


	A	B	C	D	E	F	G
1	Relationship ID	Object Type ID	Object Type ID				
2	Control-Test	Control	Test				
3	*Control*	*(optional)*	*Test*	*(optional)*			
4	**OB1 Ext Ref ID**	**Object Name**	**OB2 Ext Ref ID**	**Object Name**			
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							

A relationship worksheet in the template.

To generate an import template:

1. Click the icon in the top bar > **Data Import** in the **Tools** section.
2. Scroll down to the **Export Data Import Template** section. This section displays all the object types and relationships in your organization. Relationships are displayed immediately below their related object type.
3. Click to select the object types and relationships you wish to add to the template or click **Select All Object Types** to add all object types and relationships. To remove an object type or relationship from the template, click it again to deselect it.
4. Click **Export** to begin downloading the template. If you selected a large number of object types and relationships, there may be a delay before the download begins.



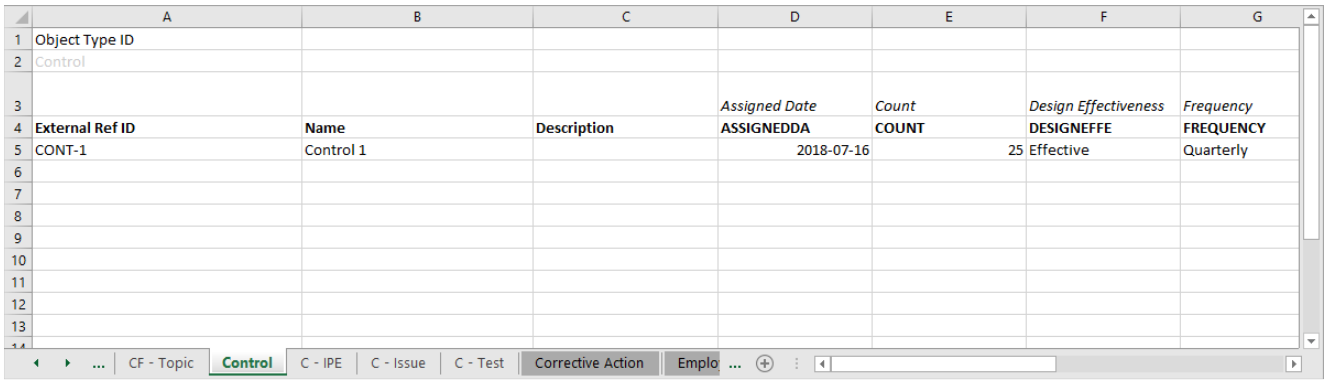
Clicking Export will start the template download. The Export button will be grayed out if no object types or relationships are selected.

5. Once downloaded, click the file at the bottom of your browser to open it. By default, the file's title is your organization's name and the date the template was generated.
6. Enter the data you wish to import. You can create new objects or edit existing objects on an object type worksheet or map two objects together on a relationship worksheet.
7. Upload the spreadsheet to complete the import.

Enter New Object Data on the Import Template

This section outlines how to create new objects using the **Data Import** feature. For information on updating objects, see Update Existing Object Data on the Import Spreadsheet.

> If you're importing geolocation data, you must manually create columns on the import template and follow certain requirements. See the Import Geolocation Data article for more information.



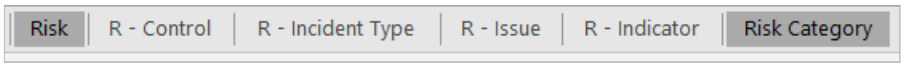
	A	B	C	D	E	F	G
1	Object Type ID						
2	Control						
3				*Assigned Date*	*Count*	*Design Effectiveness*	*Frequency*
4	**External Ref ID**	**Name**	**Description**	**ASSIGNEDDA**	**COUNT**	**DESIGNEFFE**	**FREQUENCY**
5	CONT-1	Control 1		2018-07-16	25	Effective	Quarterly
6							
7							
8							
9							
10							
11							
12							
13							

... | CF - Topic | **Control** | C - IPE | C - Issue | C - Test | Corrective Action | Emplo ...

An import template.

To import new object data:

1. Open the data import template. See the Create an Import Template article for instructions on generating this spreadsheet.
2. Click an object type tab, which are highlighted, to open its worksheet (e.g. Risk). Tabs are generated in alphabetical order, with relationship tabs labelled with the monogram of the object type they're saved on and their object type group (e.g. R - Control). See Enter Relationship Data on the Import Spreadsheet for instructions on mapping relationship objects. Tabs are generated in alphabetical order.



Tabs on an import template spreadsheet. Object type tabs are highlighted (e.g. Risk and Risk Category) and the relationship tabs are labelled by their associated object type's monogram and object type group.

> Modifying any of the auto-generated headers in rows 1-4 of the spreadsheet will cause an error when the template is uploaded. However, if you're importing geolocation data, columns for this property must be created manually and follow certain requirements. See the Import Geolocation Data article for more information.

3. On row 5, column A of the spreadsheet, below **External Ref ID**, enter a name or code to identify the object in the system. The reference ID may be whatever you choose; however, each ID must:
    - Be unique from all other external reference IDs;
    - Have 300 characters or fewer; and
    - Not contain the colon (:) character.

	A
1	Object Type ID
2	Control
3	
4	**External Ref ID**
5	CONT-1
6	

The External Ref ID column, below the Object Type ID.

4. On row 5, column B of the spreadsheet, below **Name**, enter the name of the object.

B	C
Name	**Description**
Control 1	

The Name and Description columns. An object description is optional.

5. **Optional:** On row 5, column C, below **Description**, enter a description of the object.
6. To import data into a field linked to the object type, enter data below the field's column. Field columns begin at column D and are labelled in row 3 with the field's name and in row 4 as the field's **Unique Name**. If the field is:
   - Text: Enter the data as needed. If RTF is enabled, you may apply basic HTML formatting, if required. See the Rich Text Formatting article for more information.
   - Numeric: Enter numbers only.
   - Date & Time: Enter a date and/or time. Core will automatically modify the field entry to show the date and/or time based on the format selected in the field's settings. Date and time data is imported in the UTC time zone, as such, it may be necessary to include a time when importing a date (e.g. 12:00 pm) to avoid the date being recorded one day in advance due to a time difference.
   - Select List: Enter an option from the select list. Select list options are not case-sensitive when importing data; however, all other characters entered into the spreadsheet must match the option exactly.
   - Multi-Select List: Enter one or more of the options from the select list, separated by commas, with no spaces (e.g. high,medium,low). Select list options are not case-sensitive when importing data, however, all other characters entered into the spreadsheet must match the option(s) exactly.
   - Attachment: See the Import File Attachments article for information and instructions.

D	E	F	G
Assigned Date	*Automated Control*	*Count*	*Design Effectiveness*
ASSIGNEDDA	**AUTOMATEDC**	**COUNT**	**DESIGNEFFE**
January 18, 2018		5	Effective

Entering data to import into the object's fields.

7. To assign users from a specific role to the object:
   a. Locate a role column in the spreadsheet. Role columns appear after field columns and are labelled in row 3 as **Assignable Role** and in row 4 as the role's name.
   b. Enter the user's email address as it's saved in their profile in a cell below the desired column. If you're assigning multiple users, separate the users' email addresses by commas (e.g. user1@example.com,user2@example.com).

> There may be a delay in completing imports that include role assignments, depending on the complexity of the role's permissions and/or the number of roles being assigned.

c. Continue assigning users to additional roles, if any.

N	O	P	Q
Assignable Role	*Assignable Role*		
Owner	**Reviewer**		
user1@example.com	user1@example.com,user2@example.com		

Role columns in the template.

8. To assign a workflow state to the object:

   a. Locate a workflow column in the spreadsheet. Workflow columns appear after any role columns and are labelled in row 3 as **Library Workflow** and in row 4 as the workflow's name.

   b. Enter the state's name as it's saved in the workflow (e.g. In Progress) below the workflow column.

P
Library Workflow
Control Status
In Progress

A workflow column in the template.

> Workflow transitions and actions are not activated on imported objects.

9. Repeat the steps above to continue adding data, as needed. If you do not wish to add data to an additional field, role, or workflow, leave the cells below the respective columns blank. To import data on a different object type, select the appropriate worksheet.
10. Save your changes.
11. Upload the spreadsheet to complete the import.

Enter Relationship Data on the Import Template

To import relationships from one object to another, you must know both objects' **external reference IDs**. If you're importing relationships into objects that are being imported on the same spreadsheet, you can collect the reference IDs from the **External Ref ID** column from the object's worksheet.

If the relationship data is being imported into existing objects (rather than a new object being imported on the same spreadsheet), you can retrieve the external reference IDs from a previous spreadsheet used to import the objects, from a spreadsheet generated by the Audit Trail feature, or by adding the **External Reference ID** data type to a report table.

EXAMPLE

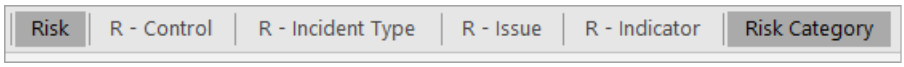
The Person object type has a Last Known Location relationship saved to it, which pulls data from the Location object type. To import data into this relationship, you enter a Person object into the spreadsheet first (e.g. PERS-1/Melvin Jacks), which is the object that will display in the relationship, then enter the Location object (PLAC-1/City Shopping Mall), which is the object that the relationship will draw its data from. This will show that Melvin Jacks' last known location was the City Shopping Mall.

	A	B	C	D
1	Relationship ID	Object Type ID	Object Type ID	
2	Person-Location	Person	Location	
3	*Person*	*(optional)*	*Location*	*(optional)*
4	**OB1 Ext Ref ID**	**Object Name**	**OB2 Ext Ref ID**	**Object Name**
5	PERS-1	Melvin Jacks	LOC-1	City Shopping Mall
6				
7				

Data entered into a relationship worksheet on the template.

To enter relationship data on the spreadsheet:

1. Open the data import template. See the Create an Import Template article for instructions on generating this spreadsheet.
2. Click relationship tab to open its worksheet. Tabs are generated in alphabetical order, with relationship tabs labelled with the monogram of the object type they're saved on and their object type group (e.g. R - Control). Object type tabs are highlighted. For information on entering object data, see the Enter New Object Data on the Import Spreadsheet article.



Tabs on an import template spreadsheet. Object type tabs are highlighted (e.g. Risk and Risk Category) and the relationship tabs are labelled by their associated object type's monogram and object type group.

Modifying any of the headers in rows 1-4 of the spreadsheet will cause an error when the template is uploaded.

3. On row 5, column A, under **OB1 Ext Ref ID**, enter the external reference ID of the object that has the relationship saved to it.
4. On row 5, column C, under **OB2 Ext Ref ID**, enter the external reference ID of the object the relationship will pull data from.

Object Name in columns B and D is for your reference only.

5. Repeat the steps above to continue adding more relationship data to the spreadsheet, as needed. To import data into a different relationship, select the appropriate worksheet.

	A	B	C	D
1	Relationship ID	Object Type ID	Object Type ID	
2	Company-BusinessUnit	Company	BusinessUnit	
3	*Company*	*(optional)*	*Business Unit*	*(optional)*
4	**OB1 Ext Ref ID**	**Object Name**	**OB2 Ext Ref ID**	**Object Name**
5	COMP-1	ABC Corp.	BU-1	Asia
6				

Mapping a Company object to a Business Unit object.

6. Save your changes.
7. Upload the spreadsheet to complete the import.

Enter Updated Object Data on the Import Template

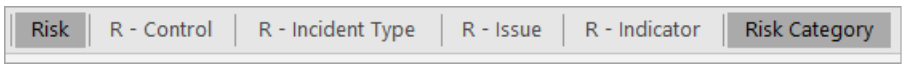
You can update existing object data through **Data Import** a by adding field values, assigning users to roles, or moving an object to a specific workflow state. Updating object data requires the object's **external reference ID**, which you can obtain from a previous import template, via the Audit Trail feature, or by adding the **External Reference ID** data type to a report table.

> If you're importing data into the Location property, you must manually create columns on the import template and follow certain requirements. See the Import Location Data article for more information.

> Blank values in the spreadsheet are ignored when uploaded into Core. Therefore, you cannot delete existing property, field, role, or workflow data by entering a blank value in the spreadsheet.

To enter updated object data in the import template:

1. Open the data import template. See the Create an Import Template article for instructions on generating this spreadsheet.
2. Click an object type tab, which are highlighted, to select its worksheet (e.g. Risk). Relationship tabs are labelled with the monogram of the object type they're saved on and their object type group (e.g. R - Control). Tabs are generated in alphabetical order. See Enter Relationship Data on the Import Spreadsheet for instructions on mapping relationship objects.



Tabs on an import template spreadsheet. Object type tabs are highlighted (e.g. Risk and Risk Category) and the relationship tabs are labelled by their associated object type's monogram and object type group.

> Modifying any of the auto-generated headers in rows 1-4 of the spreadsheet will cause an error when the template is uploaded. However, if you're importing data into the Location property, columns for this property must be created manually and follow certain requirements. See the Import Location Data article for more information.

3. On row 5, column a, below **External Ref ID**, enter the object's external reference ID.

> You can retrieve the object's external reference ID from a previous import spreadsheet used to import the object, through a spreadsheet generated by the Audit Trail feature, or by adding the **External Reference ID** data type to a report table.

4. Enter the data you want to import under the appropriate column. If data field, role, or workflow data already exists on the object, this data will be overwritten by the imported data. See the Enter New Object Data article for more information on entering field, role, or workflow data in the spreadsheet.
5. Save your changes.
6. Upload the spreadsheet.

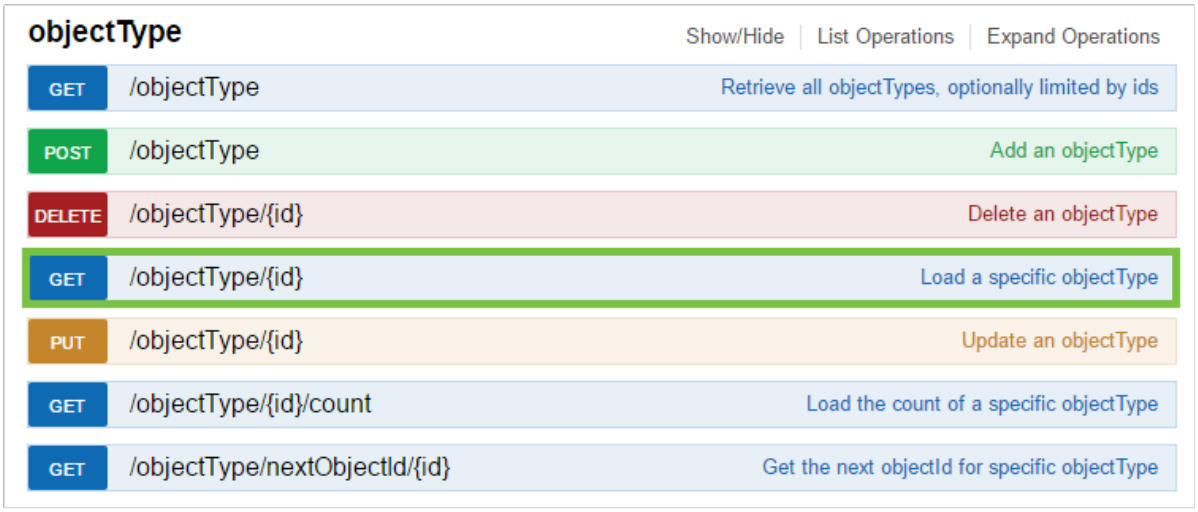
Import Using External Reference IDs

If needed, you can import object and relationship data using an object type's External Reference Object Type ID or a relationship's External Reference Relationship Type ID (instead of the Object Type ID or Relationship ID). This feature is useful when importing objects into multiple organizations that were recently imported through Org Manager as the object type and relationships retain their external reference IDs and already exist in the imported org, allowing you to use the same import spreadsheet for more than one duplicate organization.

> When importing data, you may use only the object type and relationship OR external reference IDs in each spreadsheet.

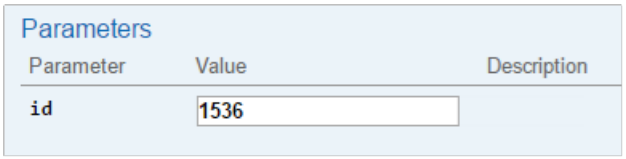
To import data using object type/relationship type External Reference IDs:

1. Obtain the object type ID for the object type or the object type where the relationship is saved. See steps 1-3 in the Enter New Object Data section for information on obtaining the object type ID.
2. Click the icon in the top bar > **Swagger Docs** in the **Tools** section.
3. Click **ObjectType** to display the **Object Service API** page.
4. To obtain the External Reference Object Type ID for an object type:
    a. From the **Object Service API** page, click **GET** next to **/objectType/{id}**.



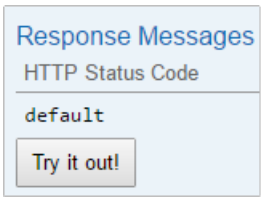
The objectType section of the Object Service API page.

    b. In the **id** field, under **Parameters**, enter the object type ID.



The id field in the Parameters section.

    c. Click **Try it out!** in the **Response Messages** section.

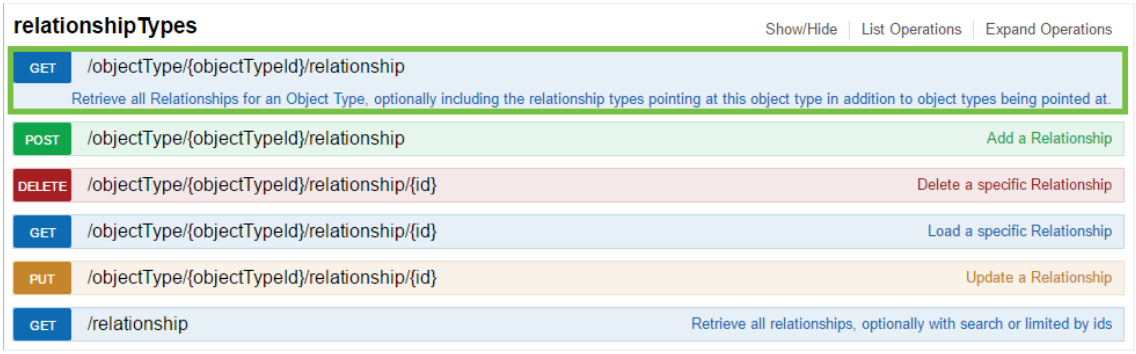


The Try it out! button in the Response Messages section.

d. Scroll down to the **Response Body** section to retrieve the object type's External Reference Object Type ID, which is the value displayed beside **externalRefID.**

The object type's external reference ID in the Response Body section.

5. To obtain the External Reference Relationship Type ID for a relationship:
   a. From the **Object Service API** page, click **relationshipTypes**.
   b. Click **GET** next to **/objectType/{objectTypeID}/relationship**.

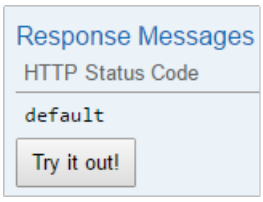


The relationshipTypes section of the Object Service API page.

c. In the **objectTypeId** field, under **Parameters**, enter the object type ID for the object type where the relationship is saved.

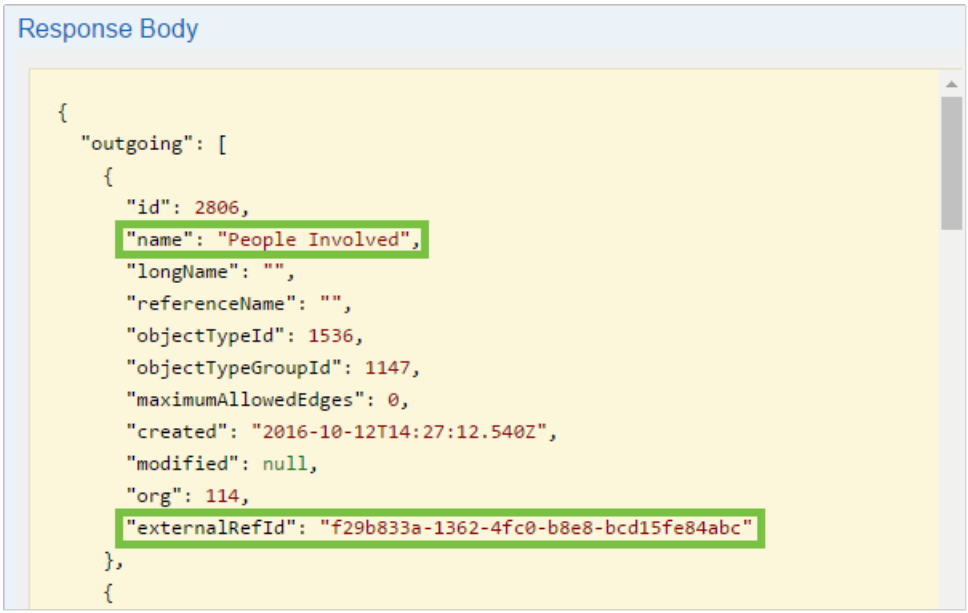
The objectTypeId field in the Parameters section.

d. Click **Try it out!** in the **Response Messages** section.



The Try it out! button in the Response Messages section.

e. Scroll down to the **Response Body** section, which displays all relationships saved to the object type selected. You can identify each relationship by the entries next to **"name"** and **"longName"** (if a long name was specified) in Response Body. The value displayed beside **externalRefID** is the **External Reference Relationship Type ID**.



The Response Body section which displays all the relationships saved to the selected object type.

6. If importing objects, on an object type worksheet in the data import spreadsheet, enter the External Reference Object Type ID below **Object Type ID** on row 2, column A. If importing relationships, enter the External Reference Relationship Type ID below **Relationship ID** on row 2, column A on a relationship worksheet.

	A	B
1	*Object Type ID*	
2	*70388ab9-7beb-46c2-912d-4625ce4e119e*	
3		
4	**External Ref ID**	**Name**
5	PER-7	Phyllis Meyer
6	PER-8	Johnny Kelly
7	PER-9	Jonathan Evans

Entering the External Reference Object Type ID below the Object Type ID cell in the data import spreadsheet.

> ⚠ Using the : symbol in an External Reference ID to create new objects is not recommended.

7. Continue entering object or relationship data as needed.
8. Upload the spreadsheet.

Import File Attachments

Administrators can upload files and web links to **Attachment** fields on objects through the Data Import tool, by entering the web link information and file paths into the import spreadsheet, compressing the spreadsheet and files into a zip file, then uploading the zip file through the tool.

Important Notes & Requirements

- JSON files and importing files into Image Attachment fields is not currently supported for data import.
- Any existing files in the attachment fields are appended and not overwritten by imported files.
- The data import spreadsheet must be in the root (top level) of the zip file. Additional spreadsheets can be uploaded by adding them to a folder (directory) in the zip file, then referencing the file path in the spreadsheet.
- Except in the case of spreadsheets (see the bullet point above), it's not required that imported files are added to an additional folder (directory) in the zip file; however, doing so is generally recommended.
- Paths and file names must **not** contain any commas.
- Multiple files and/or web links can be imported into the same field by separating their the path/links with commas in the spreadsheet.
- See the Attachments article for a list of file type restrictions and additional requirements.

Instructions

To import attachment files:

1. Review the **Important Notes & Requirements** section above, together with the Attachments article for a list of requirements and restrictions.
2. Create an import template.
3. Enter the expected path and file name for any imported files in the appropriate attachment field column in the spreadsheet (e.g., **Folder/filename.jpg**).

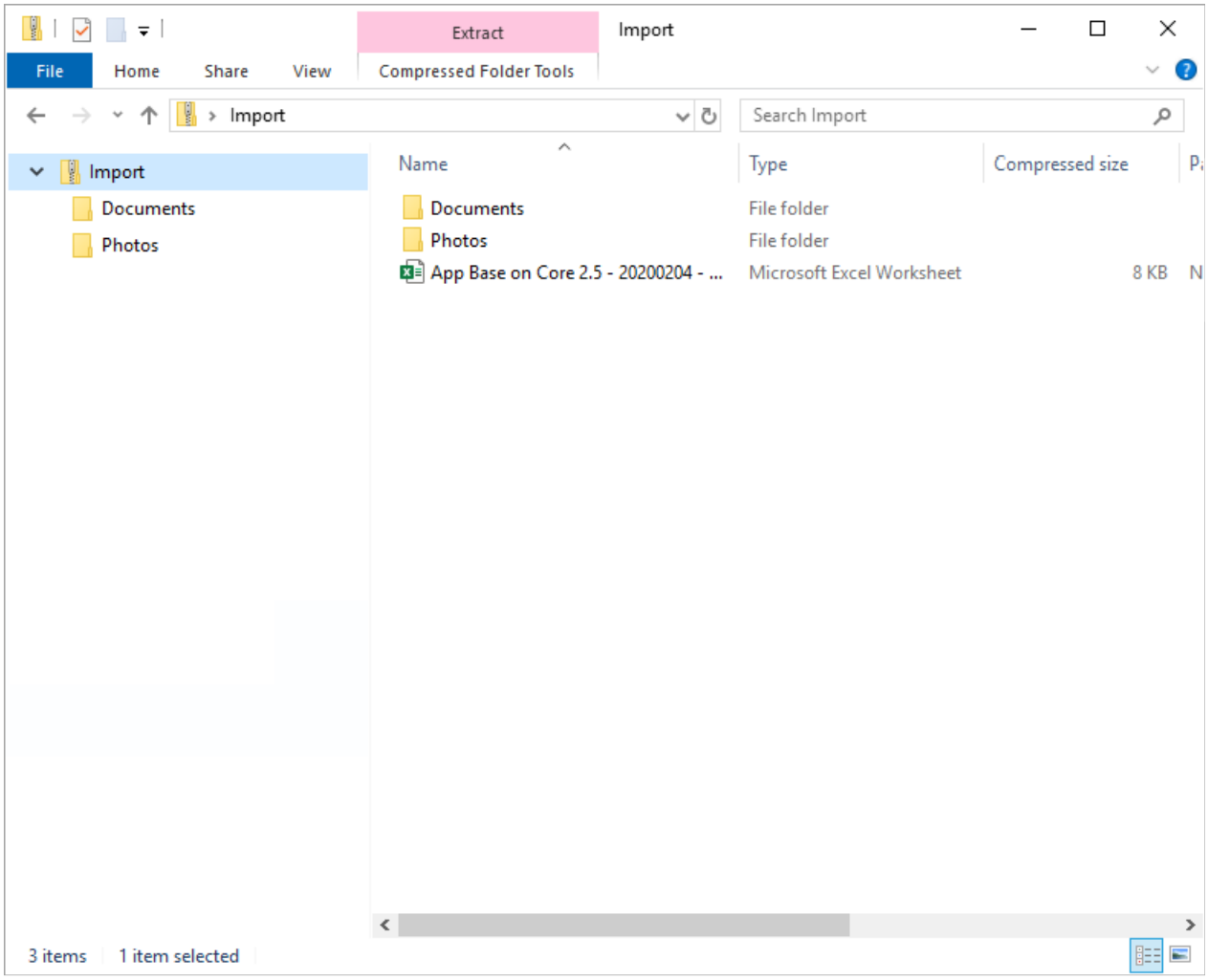
   > File paths must be recorded in the spreadsheet using forward slashes (/).

4. Enter any web links in the attachment field's column, noting the following:
   - The accepted format for web links is **[Display text](URL)**
   - Nested parentheses are supported. For example: **[Wikipedia](https://en.wikipedia.org/wiki/US_(disambiguation))**
   - Any commas within the brackets (display text) are accepted. For example: **[Display text, display text](URL)**
   - Special characters (brackets and commas) can be escaped by adding a\ before the special character.
5. Continue adding files and web links as required, separating multiple files and/or web links in the same attachment field with commas (e.g., **[Display text](URL),Folder/filename.jpg**).

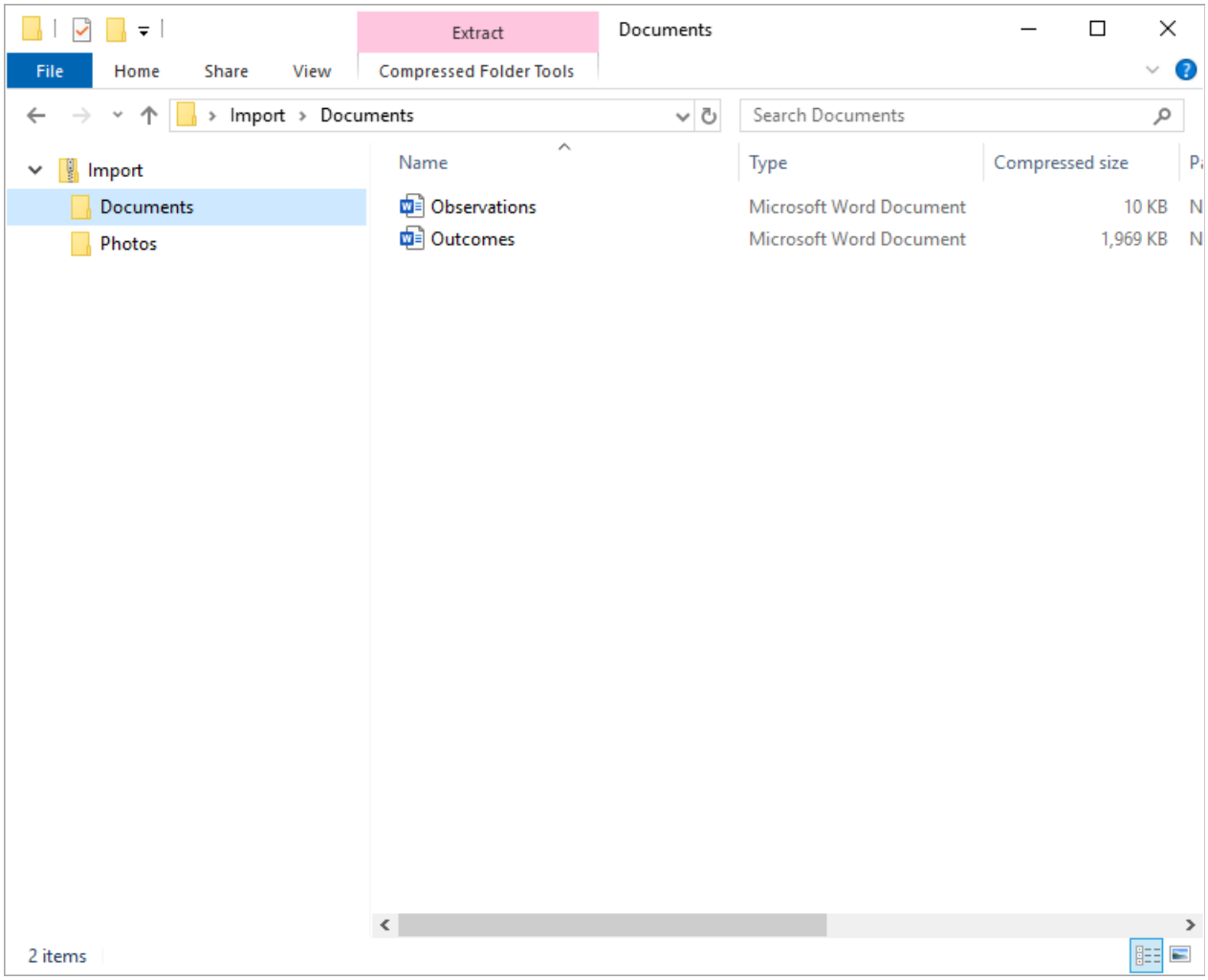
	Z	AA	AB	AC
1				
2				
3	*Follow Up Required*	*Observation Attachments*	*Other Attachments*	*Investigation Start Date*
4	**INCIDENTFO**	**INTAKEATTA**	**OTHERATT**	**INVESTIGAT~2**
5		Photos/image.jpg,Documents/Observations.docx	[Resolver](www.resolver.com)	
6				
7				
8				
9				
10				
11				
12				
13				
14				

Incident

6. Save your changes.
7. Create a zip file that contains the import spreadsheet, together with the files to be imported, ensuring the file structure matches the paths entered in step 3 above. See the Zip and unzip files article on the Microsoft Support site for more information on creating compressed files.



The root directory of a compressed folder. The import spreadsheet must be saved at the root level.



A sub-directory in the compressed file.

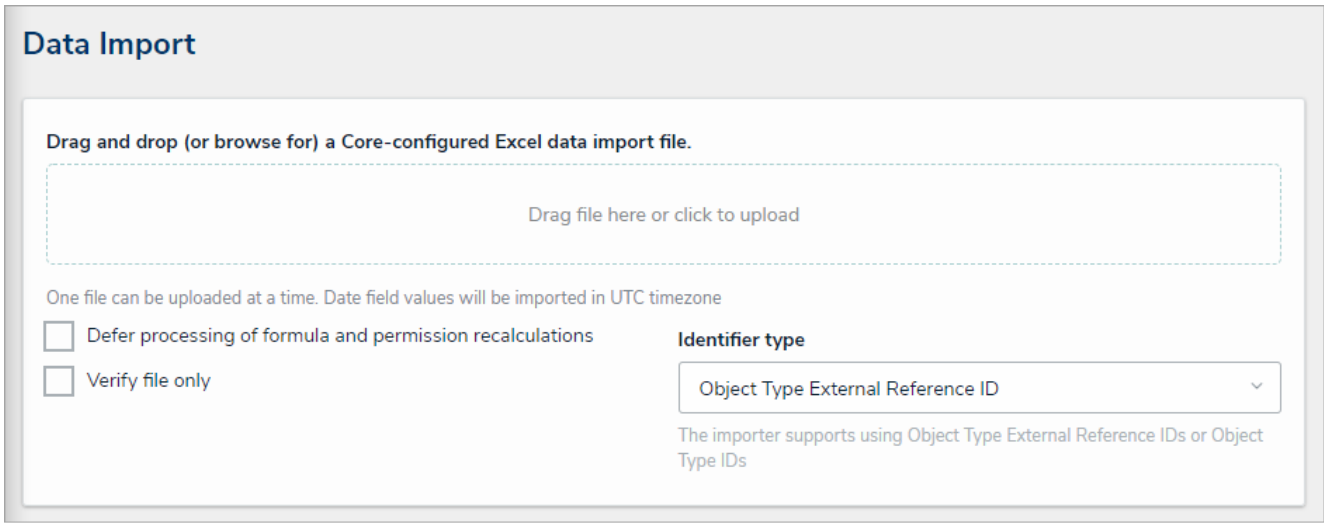
> The data import spreadsheet must be the only spreadsheet file in the Archive Root Directory (top level) of the zip file. If you're importing spreadsheets into the fields, add those spreadsheets to a folder (directory), then create the zip file, ensuring the correct paths are referenced in the import spreadsheet.

8. Log into Core as an administrator.
9. Click the icon in the top bar > **Data Import** in the **Tools** section.
10. From the **Identifier type** dropdown menu, select either **Object Type External Reference ID** (if you've entered the External Reference Object Type IDs and/or the External Reference Relationship Type IDs on the spreadsheet) or **Object ID** (if you've entered the object type IDs and/or relationship IDs on the spreadsheet).
11. Drag and drop the zip file to the upload area or click the area to locate and open the file to complete the import process.

Upload the Import Template

Before completing the import, you must ensure the import template has been generated and the object and relationship data has been entered correctly on the appropriate worksheet. See the following articles for more information:

- Create an Import Template
- Enter New Object Data on the Import Template
- Enter Relationship Data on the Import Template
- Enter Updated Object Data on the Import Template



The file upload section of the Data Import page.

Important Notes

- Data Import accepts files with up to 15MB of data.
- When importing data, you may use only the object type and relationship IDs **OR** external reference IDs in each spreadsheet.
- Depending on the complexity of the relationships and formulas, it's generally recommended that the **Defer processing of formula and permission recalculations** option is selected for imports that include more than 50,000 objects. Contact Resolver Support for assistance should you wish to complete an import with this option selected.

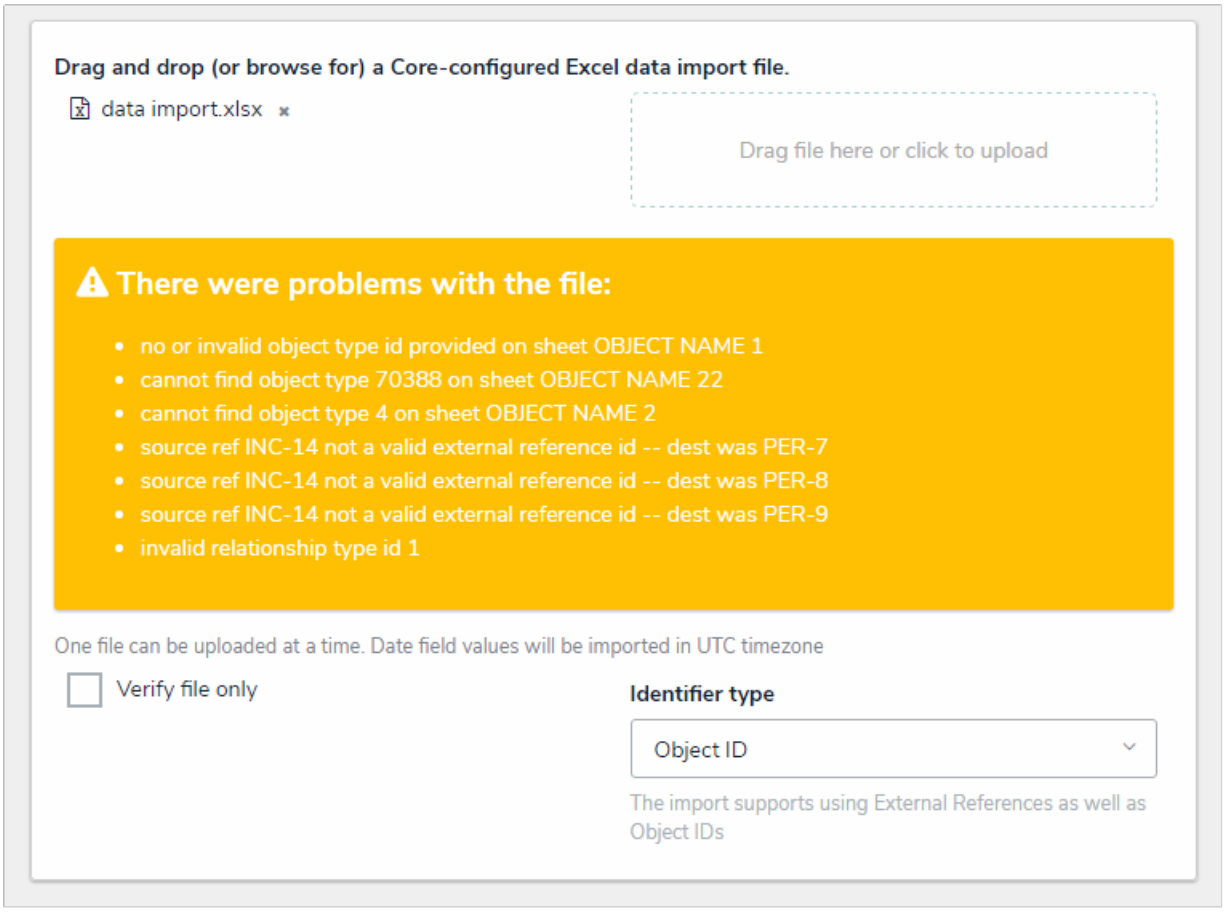
Instructions

To upload the template into Core:

1. Click the icon in the top bar > **Data Import** in the **Tools** section.
2. From the **Identifier type** dropdown menu, select either **Object Type External Reference ID** (if you've entered the External Reference Object Type IDs and/or the External Reference Relationship Type IDs on the spreadsheet) or **Object ID** (if you've entered the object type IDs and/or relationship IDs on the spreadsheet).
3. **Optional:** Select the **Defer processing of formula and permission calculations** to postpone formula and permission recalculations when the file is uploaded.

> Depending on the complexity of the relationships and formulas, it's generally recommended that deferrals are enabled for imports that include more than 50,000 objects. Contact Resolver Support for assistance should you wish to complete an import with this option selected.

4. **Optional:** Select the **Verify file only** checkbox before uploading the file to check the data has been entered correctly. If this option is selected, deselect the checkbox then re-upload the file (provided the information is valid) once you're ready to complete the import.
5. Drag and drop the file to the upload area or click the area to locate and open the file for upload.
6. If needed, correct any errors on the spreadsheet, save your changes, then re-upload the file.

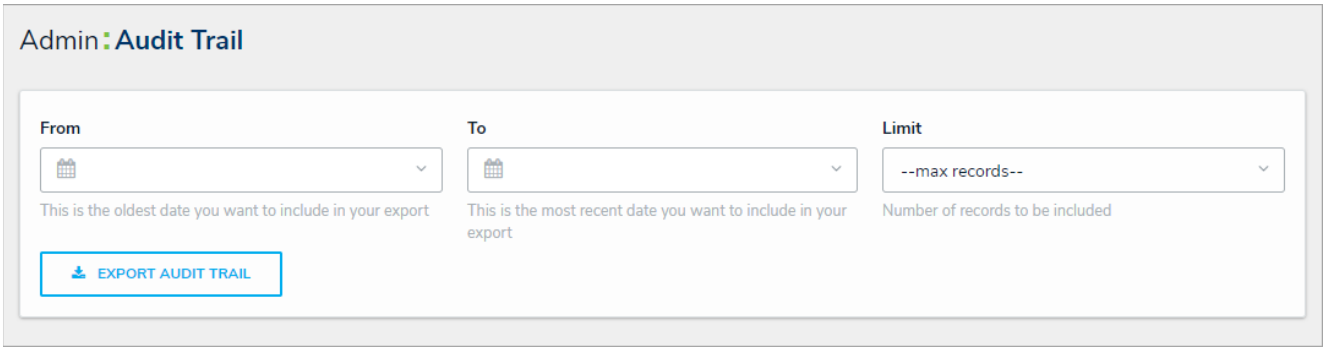


An uploaded spreadsheet with errors. Errors in the spreadsheet will prevent successful import whether or not you've selected the Verify file only checkbox.

When an import is successful, a confirmation message is displayed. If you're importing a large amount of data or data that includes role assignments, the import process may not complete immediately, depending on the amount of data, the complexity of the role's permissions, and/or the number of roles being assigned. In this case, a message will be displayed when the import is in progress and when it's completed.

Data Audit Trail Overview

The **Data Audit Trail** feature creates an Excel spreadsheet that you can download that lists all the changes made to objects within a selected time frame. For instructions on exporting an audit trail, see the Export the Data Audit Trail article. For more information on the audit trail that tracks user-related events and changes, see the User Audit Trail section.

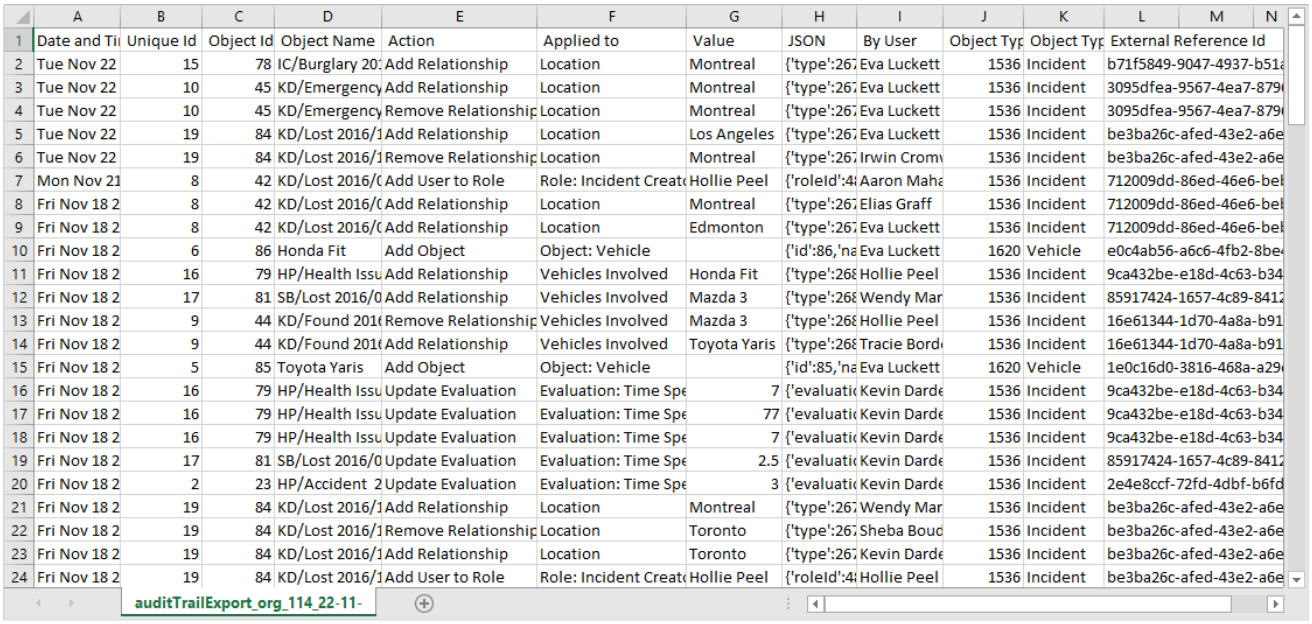


The Data Audit Trail.

Columns

The exported file displays information under the following columns:

- **Date and Time**: When the object was modified.
- **Unique ID**: The ID automatically assigned to the object by Core to identify it throughout the organization.
- **Object ID:** The ID automatically assigned by the user to the object.
- **Object Name:** The object's **Name** property.
- **Action:** The type of change that was made on the object (e.g., Update Object, Add Object, Remove Relationship, etc.). If **Evaluation** appears in this column, it indicates there was a change to a field value.
- **Applied to:** The element (property, field, formula, relationship, etc.) to which the changes were made. If **Evaluation** appears in this column, it indicates there was a change to a field value.
- **Value:** The actual data entered into the element.
- **JSON:** This information may be used for additional data analysis. Contact Resolver for more information.
- **By User:** The user who made the changes. If the user was being impersonated by an administrator at the time changes were made, this field will show "[User Name] impersonated by [Administrator Name].
- **Object Type ID:** The ID automatically assigned to the object type.
- **External Reference ID:** A reference ID automatically assigned to the object. This ID can be used to import data using the Data Import feature.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Date and Ti	Unique Id	Object Id	Object Name	Action	Applied to	Value	JSON	By User	Object Typ	Object Typ	External Reference Id		
2	Tue Nov 22	15	78	IC/Burglary 20	Add Relationship	Location	Montreal	{'type':267	Eva Luckett	1536	Incident	b71f5849-9047-4937-b51		
3	Tue Nov 22	10	45	KD/Emergency	Add Relationship	Location	Montreal	{'type':267	Eva Luckett	1536	Incident	3095dfea-9567-4ea7-879		
4	Tue Nov 22	10	45	KD/Emergency	Remove Relationship	Location	Montreal	{'type':267	Eva Luckett	1536	Incident	3095dfea-9567-4ea7-879		
5	Tue Nov 22	19	84	KD/Lost 2016/1	Add Relationship	Location	Los Angeles	{'type':267	Eva Luckett	1536	Incident	be3ba26c-afed-43e2-a6e		
6	Tue Nov 22	19	84	KD/Lost 2016/1	Remove Relationship	Location	Montreal	{'type':267	Irwin Crom	1536	Incident	be3ba26c-afed-43e2-a6e		
7	Mon Nov 21	8	42	KD/Lost 2016/(	Add User to Role	Role: Incident Creat	Hollie Peel	{'roleId':4	Aaron Maha	1536	Incident	712009dd-86ed-46e6-be		
8	Fri Nov 18 2	8	42	KD/Lost 2016/(	Add Relationship	Location	Montreal	{'type':267	Elias Graff	1536	Incident	712009dd-86ed-46e6-be		
9	Fri Nov 18 2	8	42	KD/Lost 2016/(	Add Relationship	Location	Edmonton	{'type':267	Eva Luckett	1536	Incident	712009dd-86ed-46e6-be		
10	Fri Nov 18 2	6	86	Honda Fit	Add Object	Object: Vehicle		{'id':86,'na	Eva Luckett	1620	Vehicle	e0c4ab56-a6c6-4fb2-8be		
11	Fri Nov 18 2	16	79	HP/Health Issu	Add Relationship	Vehicles Involved	Honda Fit	{'type':268	Hollie Peel	1536	Incident	9ca432be-e18d-4c63-b34		
12	Fri Nov 18 2	17	81	SB/Lost 2016/0	Add Relationship	Vehicles Involved	Mazda 3	{'type':268	Wendy Mar	1536	Incident	85917424-1657-4c89-841		
13	Fri Nov 18 2	9	44	KD/Found 201(	Remove Relationship	Vehicles Involved	Mazda 3	{'type':268	Hollie Peel	1536	Incident	16e61344-1d70-4a8a-b91		
14	Fri Nov 18 2	9	44	KD/Found 201(	Add Relationship	Vehicles Involved	Toyota Yaris	{'type':268	Tracie Bord	1536	Incident	16e61344-1d70-4a8a-b91		
15	Fri Nov 18 2	5	85	Toyota Yaris	Add Object	Object: Vehicle		{'id':85,'na	Eva Luckett	1620	Vehicle	1e0c16d0-3816-468a-a29		
16	Fri Nov 18 2	16	79	HP/Health Issu	Update Evaluation	Evaluation: Time Spe	7	{'evaluati	Kevin Darde	1536	Incident	9ca432be-e18d-4c63-b34		
17	Fri Nov 18 2	16	79	HP/Health Issu	Update Evaluation	Evaluation: Time Spe	77	{'evaluati	Kevin Darde	1536	Incident	9ca432be-e18d-4c63-b34		
18	Fri Nov 18 2	16	79	HP/Health Issu	Update Evaluation	Evaluation: Time Spe	7	{'evaluati	Kevin Darde	1536	Incident	9ca432be-e18d-4c63-b34		
19	Fri Nov 18 2	17	81	SB/Lost 2016/0	Update Evaluation	Evaluation: Time Spe	2.5	{'evaluati	Kevin Darde	1536	Incident	85917424-1657-4c89-841		
20	Fri Nov 18 2	2	23	HP/Accident 2	Update Evaluation	Evaluation: Time Spe	3	{'evaluati	Kevin Darde	1536	Incident	2e4e8ccf-72fd-4dbf-b6fd		
21	Fri Nov 18 2	19	84	KD/Lost 2016/1	Add Relationship	Location	Montreal	{'type':267	Wendy Mar	1536	Incident	be3ba26c-afed-43e2-a6e		
22	Fri Nov 18 2	19	84	KD/Lost 2016/1	Remove Relationship	Location	Toronto	{'type':267	Sheba Boud	1536	Incident	be3ba26c-afed-43e2-a6e		
23	Fri Nov 18 2	19	84	KD/Lost 2016/1	Add Relationship	Location	Toronto	{'type':267	Kevin Darde	1536	Incident	be3ba26c-afed-43e2-a6e		
24	Fri Nov 18 2	19	84	KD/Lost 2016/1	Add User to Role	Role: Incident Creat	Hollie Peel	{'roleId':4	Hollie Peel	1536	Incident	be3ba26c-afed-43e2-a6e		

auditTrailExport_org_114_22-11-

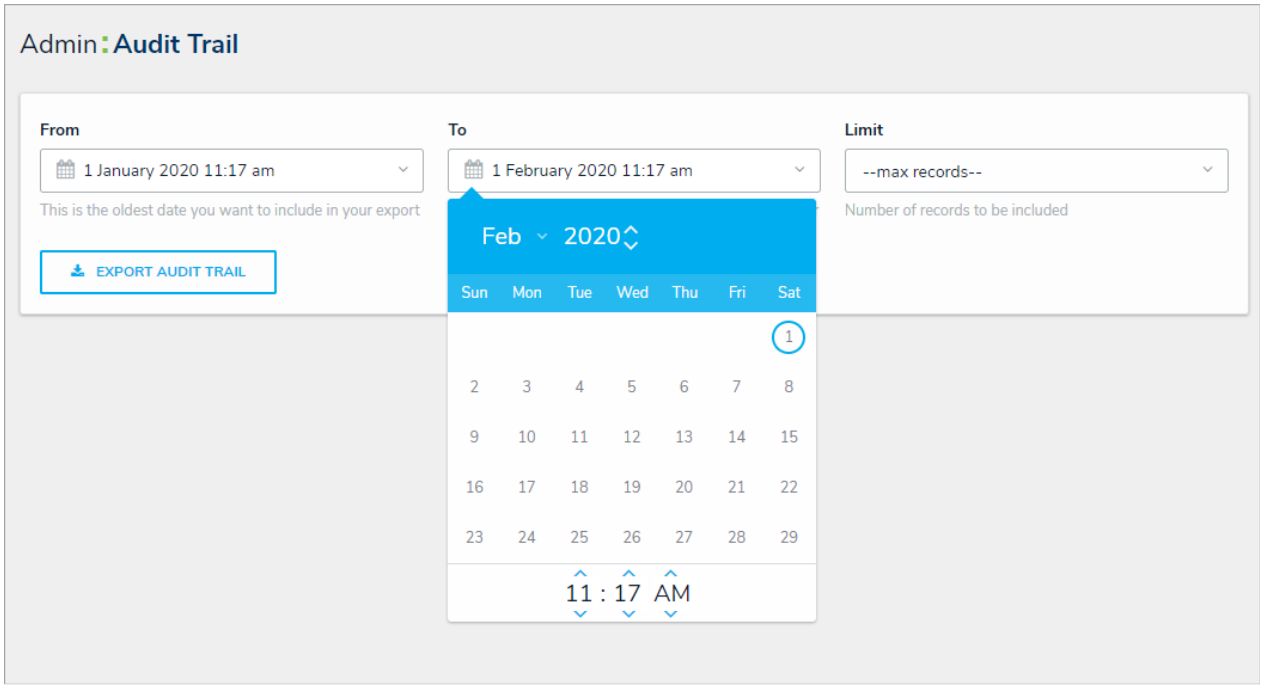
The spreadsheet generated from the Audit Trail feature.

Export the Data Audit Trail

For information on viewing and exporting the **User Audit Trail**, see the User Audit Trail section.

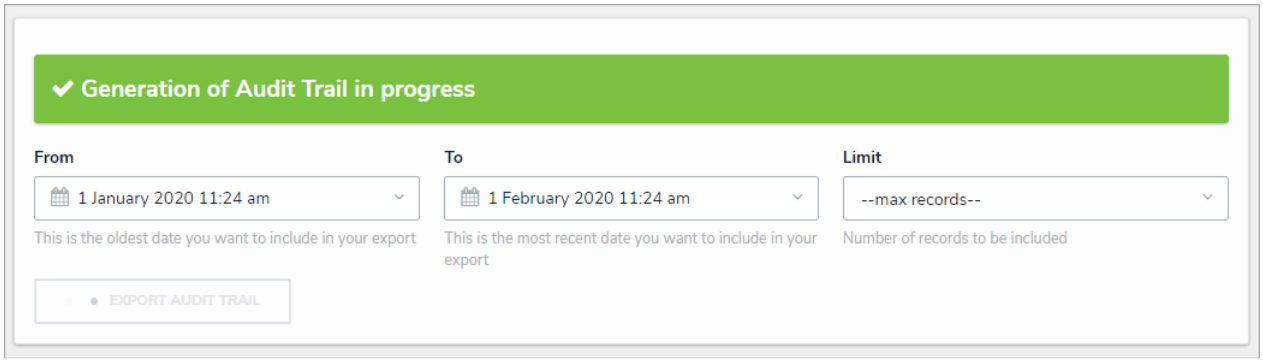
To export a Data Audit Trail spreadsheet:

1. Click the icon in the top bar > **Data Audit Trail** in the **Tools** section.
2. Select a start date, end date, and time range from the **From** and **To** fields.



The Data Management Audit Trail page.

3. **Optional:** Select the maximum number of records you want returned in the spreadsheet. Leaving this field with its default value of **--max records--** will return up to 1 million records.
4. Click **Export Audit Trail** to begin generating the spreadsheet. Once successfully generated, your browser will automatically begin the file download.

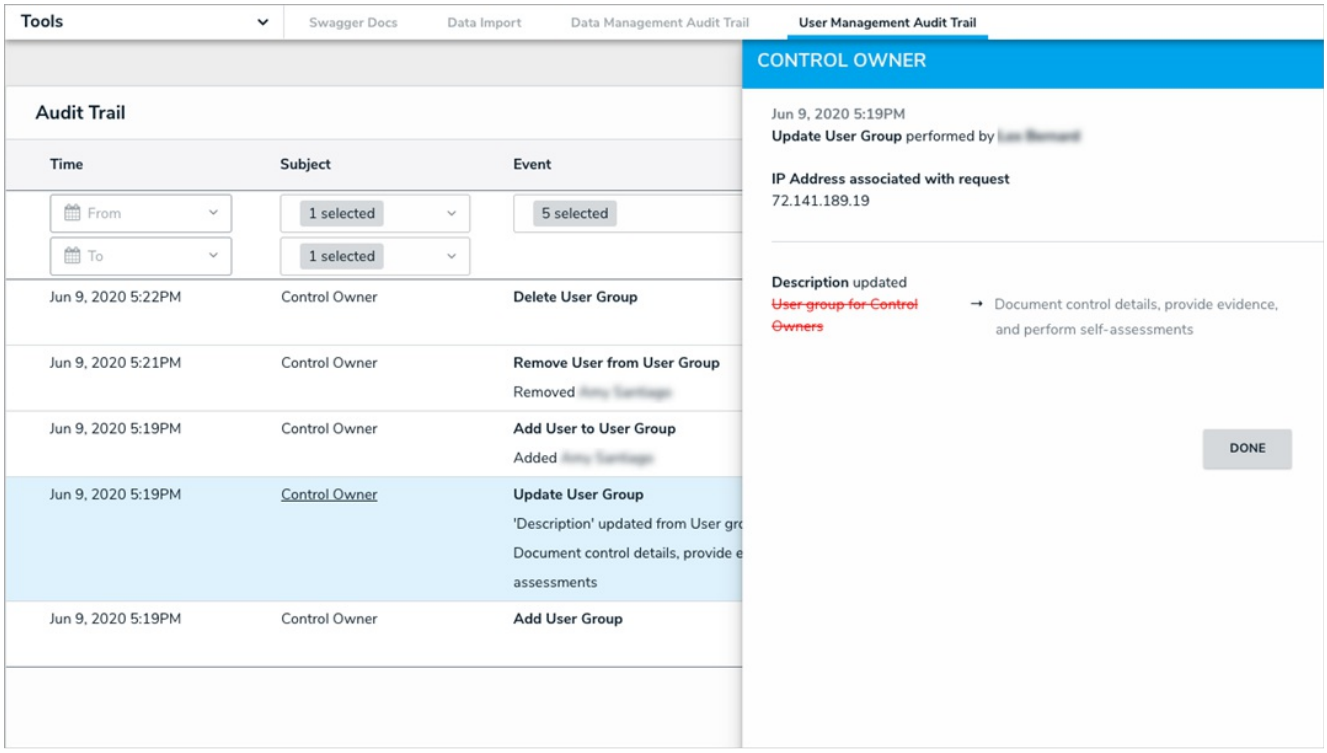


Generating an audit trail spreadsheet.

5. Click the file at the bottom of your browser to open it.

User Audit Trail Overview

The **User Audit Trail** tracks changes and helps administrators identify patterns with users, user groups, roles, and anonymous logins. Admins can apply filters, view additional data in a palette, as well as export the data into a CSV file. For details on the data captured in this audit trail, as well as a list of available filters, see the User Audit Trail Events & Filters article. See the View & Export the User Audit Trail article for instructions on using this feature.



The User Audit Trail

Important Notes

- User Audit Trail data is available from version 3.1 onwards or your go-live date, whichever is later.
- Due to processing time, recent events will appear in the audit trail after a few minutes. There will also be a brief delay before a deleted subject is removed from the **Subject** filter.
- If the subject is a member of multiple orgs and an event affects all those orgs (e.g., a change to a username or email address), the event will be recorded in each of those orgs. If the event was triggered by an admin outside of the current org, **External Org User** be displayed in the the **Performed By** column.
- Anonymous logins aren't assigned an **External Reference ID**. As such, this information is not displayed in the palette for anonymous login events.
- If multiple attributes are changed in a single event, the event description will appear on the table as**Multiple Attributes Updated**. The previous and updated values are displayed in full in the palette.
- The User Audit Trail only captures events that pertain to user management. Changes to workflow permissions are logged when they relate to user groups and roles, but deleting, creating, or otherwise modifying a workflow is not.
- If a subject or entity is deleted before the event can be processed by Core, it will appear in the User Audit Trail as**Unknown [Subject Type/Entity Type] with id [id number]**. For example, if a form on an anonymous login is updated and the form is deleted shortly afterwards, it would appear on the table as **Unknown Form with id 536**.
- Cascading events are not captured by the User Audit Trail. For example, if a role is deleted, it's implied that all users, user groups, and object types previously added to the role are removed once the role is deleted, so these events are not logged.
- Options are displayed in the **Subject**, **Event**, and **Performed By** filter dropdown menus at random. This is expected to improved in an upcoming release.
- Admins can export data from any time range; however, the API will only return the most recent 50,000 results. If this limit is reached for a

particular time frame, the remaining data can be obtained by making another API request using the date from the last event row in the CSV file as the new **dateEnd** value. See the View & Export the User Audit Trail article for details.

User Audit Trail Events & Filters

This article provides an overview of the data captured and displayed in the User Audit Trail, along with brief descriptions of the available filters. For a list of important notes, see the User Audit Trail Overview article. For instructions on viewing or exporting the audit trail, see the View & Export the User Audit Trail article.

Columns

The User Audit Trail displays data under the following columns:

- **Time**: The date and time the event occurred, displayed in your current time zone. Note that exported User Audit Trails display the date and time in GMT.
- **Subject:** The name of the user, user group, role, or anonymous login that was changed during the event.
- **Event:** The action or change that was made to the subject. See the **Events** section below for more details.
- **Performed By**: The administrator who triggered the event. If the subject is a member of multiple organizations and the events affect all those orgs (e.g., change to the username or email address), the event will be recorded for each of those orgs. If the event was triggered outside of the current org, **External Org User** be displayed in this column.

Events

The following is a summary of the events captured by the audit trail based on the subject type and action. Only header information (e.g., **Update User Group**) is displayed when multiple attributes are changed, but clicking on data from any column on the audit trail will open a palette with more details on the event.

Users

- **Add User**: A user is added to the org.
- **Update User:** One or more user attributes have been changed (e.g., **Admin** or **All Access** permissions enabled or disabled or the user is marked as inactive).
- **Impersonate User:** A user is impersonated by an administrator.
- **Regenerate Data Warehouse Password:** A data warehouse password is generated from the user's profile page.
- **Remove User:** A user is deleted from the org.
- **Create API Key:** An API key is created for a specific user.
- **Delete API Key:** An API key is deleted for a specific user.

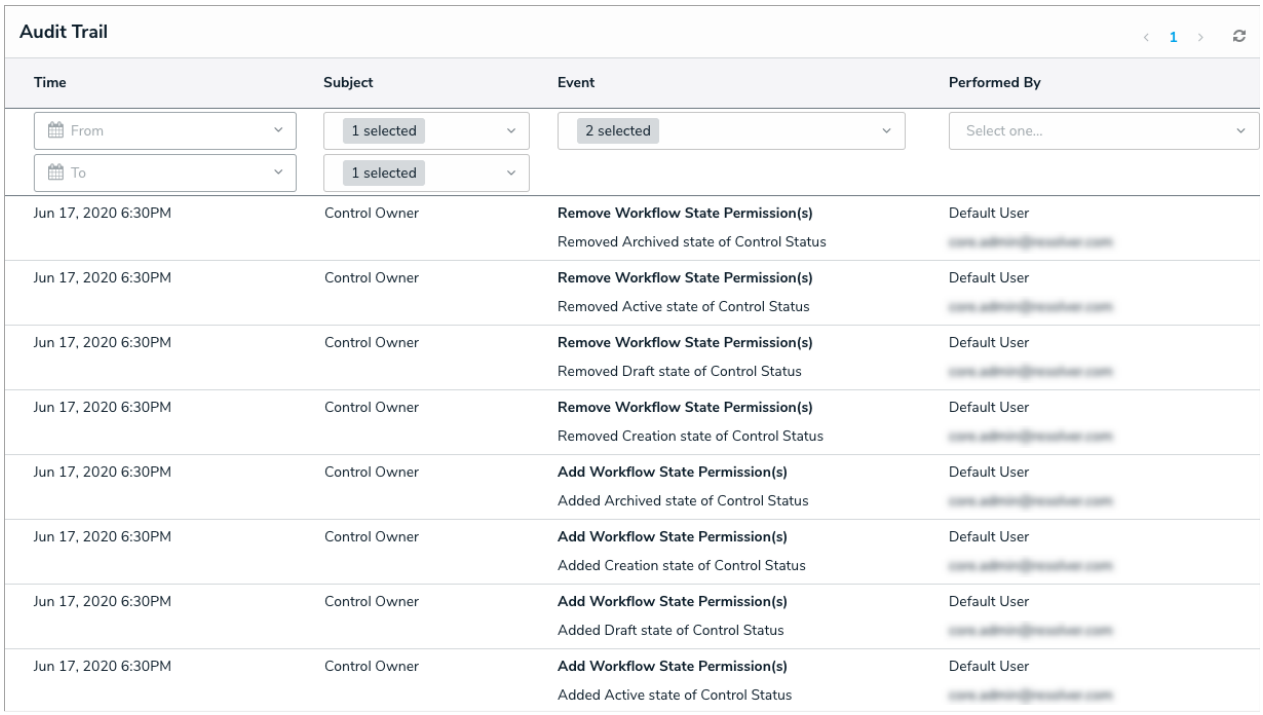
User Groups

- **Add User Group:** A user group is added to the org.
- **Update User Group:** One or more user group attributes have been modified.
- **Remove User from User Group:** A user is removed from the user group.
- **Delete User Group:** A user group is deleted from the org.

Roles

- **Add Role:** A role is added to the org.
- **Update Role:** One or more role attributes are updated.
- **Add User to Role:** A user is added to a role.
- **Remove User from Role:** A user is removed from the role.
- **Add User Group to Role:** A user group is added to the role.

- **Remove User Group from Role:** A user group is removed from a role.
- **Add Workflow State Permission(s):** An object type is added to the role. This event type is logged for each state in the object type's workflow, capturing any default form selection and permissions that were added to each state.
- **Remove Workflow State Permission(s):** An object type is removed from a role. This event type is logged for each state in the object type's workflow.
- **Update Workflow State Permission(s):** A workflow state of an object type on a role is updated. This includes any permissions or default form selections for that state that were added or removed.
- **Add Workflow State Trigger:** A trigger is enabled on a state for an object type added to a role.
- **Remove Workflow State Trigger:** A trigger is disabled on a state for an object type added to a role.
- **Delete Role:** A role is deleted from the org.



The User Audit Trail showing Workflow State Permission events.

Logins

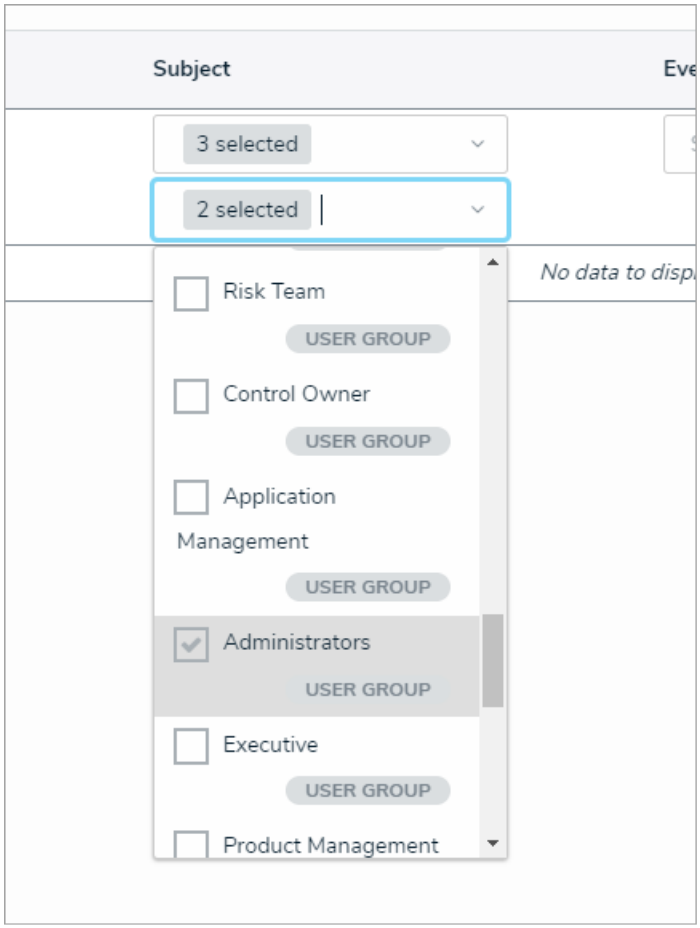
- **Add Anonymous Login:** An anonymous login is added to the org.
- **Update Anonymous Login:** One or more anonymous login attributes are updated (e.g., hash regeneration or form changes).
- **Regenerate Anonymous Login URL:** An anonymous login URL is regenerated.
- **Delete Anonymous Login:** An anonymous login is deleted from the org.
- **Successful Login:** A user successfully logs into the org.
- **Unsuccessful Login:** A user unsuccessfully tried to log into the org.
- **Anonymous Login:** A login to the org occurred using an anonymous login URL.
- **Logout:** A user logged out of the org.

- **User Locked Out:** A user is locked out of the environment after too many incorrect password attempts.
- **Change Password:** A user changes their password or sets a new password after activating their account.

Filters

The data displayed in the audit trail can be narrowed down by applying one or more of the following filters:

- **Time:** Filters the data based on a **To** and/or **From** date range.
- **Subject:** Filters data based on the subject type, including **User**, **User Group**, **Role**, and **Anonymous Login**. Selecting one of these types will then allow you to select specific users, groups, roles, or anonymous logins from an additional dropdown menu. This filter includes active, disabled, and deleted subjects.



The Subject filter.

- **Event:** Filters data based on the event.
- **Performed By:** Filters data based on the administrator who triggered the event. Only active admin users added to the current org appear in this filter.

View & Export the User Audit Trail

When exporting audit trail data, any time range can be specified; however, the API will only return the most recent 50,000 results. If this limit is reached for a particular time frame, the remainder of the data can be obtained by making another API request. See step 15 in the **Export the User Audit Trail** section below for more details.

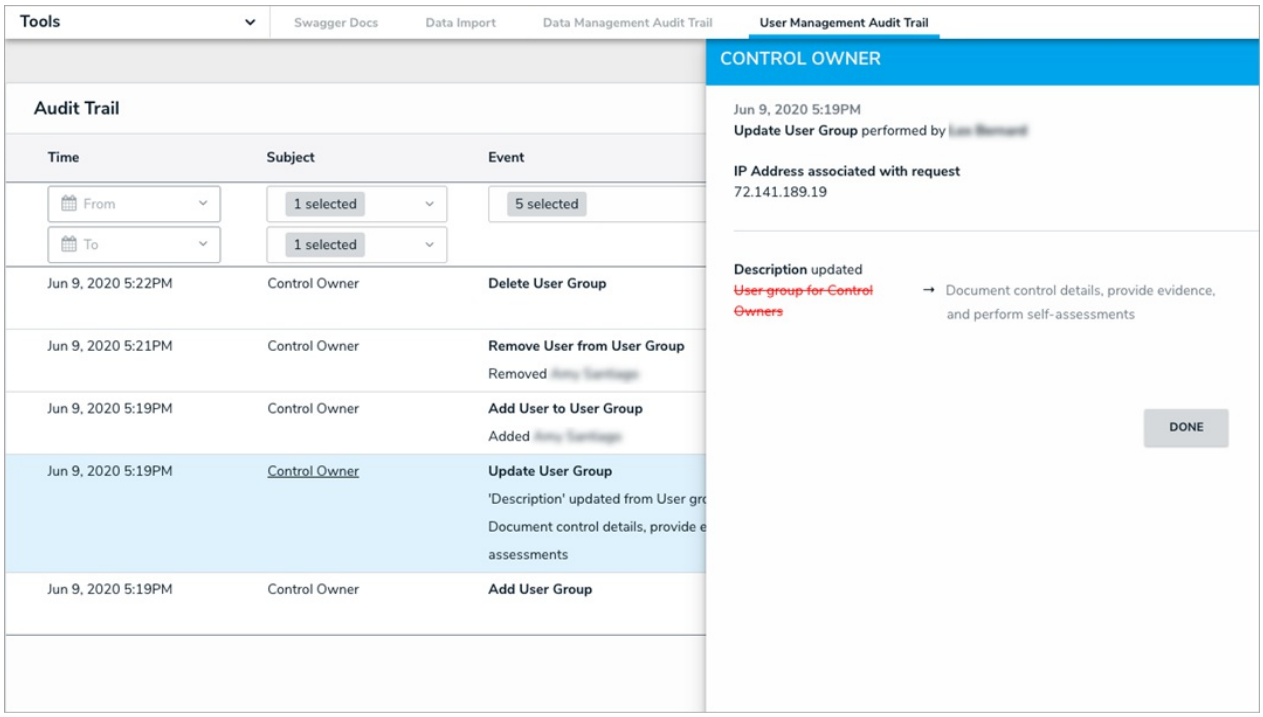
For details on the events captured in the audit trail, see the User Audit Trail Events & Filters article.

> Recent events will appear in the audit trail after a few minutes of processing time.

View the User Audit Trail

To view the User Audit Trail:

1. Review the list of important notes in the User Audit Trail Overview article.
2. Click the icon in the top bar > **User Audit Trail** in the **Tools** section.
3. If required, apply one or more filters to narrow down the data.
4. **Optional:** Click the numbers or < > icons at the top-right to scroll through additional pages.
5. Click the icon at the top-right to refresh the data.
6. Click an event to display additional details in a palette.

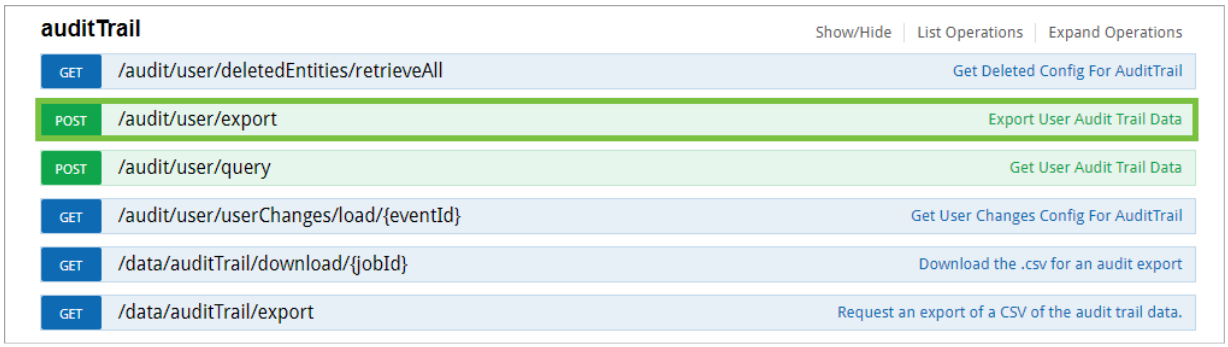


The User Audit Trail

Export the User Audit Trail

To export the User Audit Trail:

1. Review the list of important notes in the User Audit Trail Overview article.
2. Click the icon in the top bar > **Swagger Docs** in the **Tools** section.
3. Click **auditTrail** to open the Swagger interface.
4. Click **POST /audit/user/export (Export User Audit Trail Data)** to expand it.

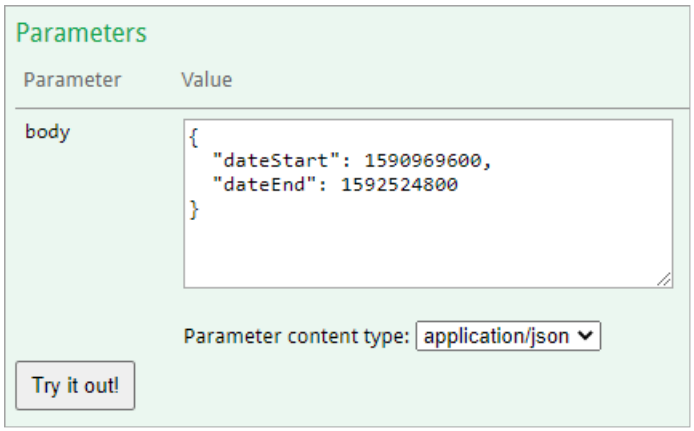


The POST /audit/user/export endpoint.

5. Click the **Example Value** textbox in the **Parameters** section to populate the **body** textbox.

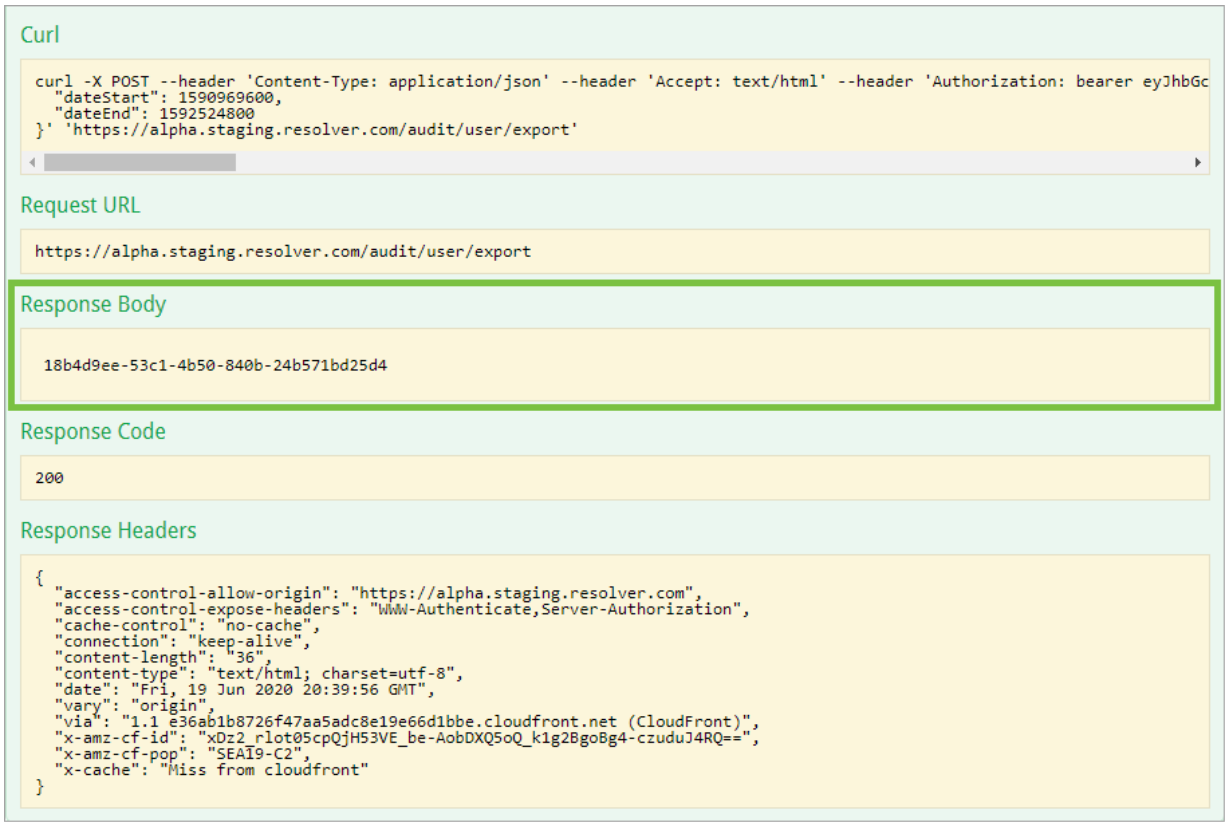
The expanded POST /audit/user/export endpoint.

6. Delete the **0** beside the **dateStart** attribute in the **body** textbox, then enter a start date for the audit trail data using Unix timestamp format. Repeat the process to enter an end date for the **dateEnd** attribute.



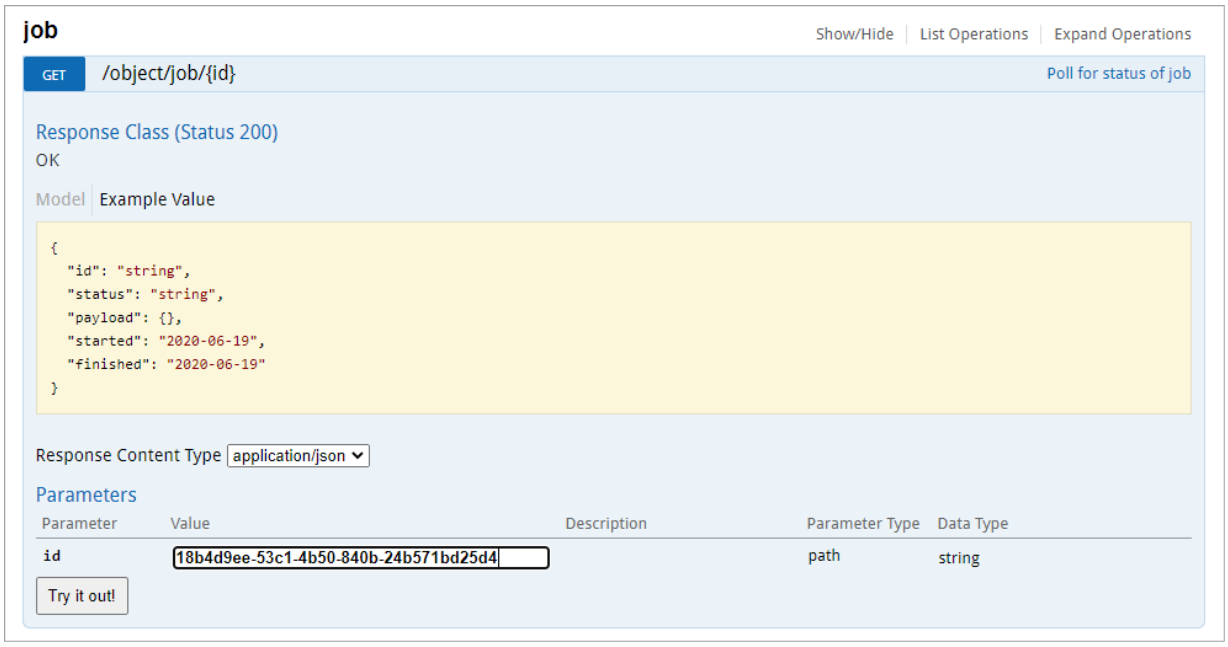
The body textbox.

7. Click **Try it out!**
8. Copy the string from the **Response Body** section to your clipboard. This is the job ID.



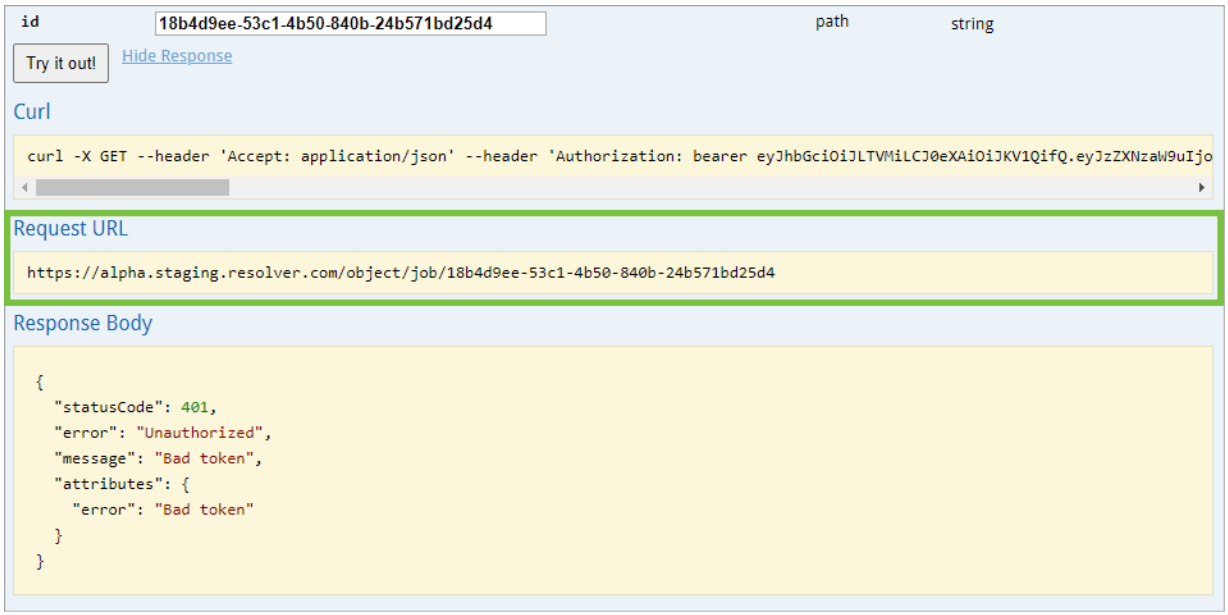
The Response Body section.

9. Scroll down and click **job** to expand it.
10. Click **GET /object/job/{id} (Poll for status of job)** to expand it.
11. Paste the job ID collected from step 8 above into the**id** field.



The expanded GET /object/job/{id} endpoint.

12. Click **Try it out!**
13. Copy the URL in the **Request URL** section to your clipboard.



The Response URL section.

14. Open a new tab in your browser and paste the URL in the address bar to begin downloading the CSV file. Up to 50k records are returned per file.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Date and Time	Subject Id	Subject Type	Subject	Action Id	Event Id	Event	Prev Value	Current Valu	Performed B	Subject External Reference Id		
2	Mon Jun 15 2020 23:47:51 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	9fc5d620-af6	146-63f0ee2	Remove Wo	[{"name":"P	{}		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
3	Mon Jun 15 2020 23:47:51 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	9fc5d620-af6	146-4b88bc3	Remove Wo	[{"name":"P	{}		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
4	Mon Jun 15 2020 23:47:51 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	9fc5d620-af6	146-37ced8e	Remove Wo	[{"name":"P	{}		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
5	Mon Jun 15 2020 23:47:51 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	9fc5d620-af6	146-aaf15fa	Remove Wo	[{"name":"P	{}		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
6	Mon Jun 15 2020 23:45:53 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	599e3de0-af	146-353ec6b	Remove Wo	[{"name":"R	{}		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
7	Mon Jun 15 2020 23:44:39 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	2d8ef1e0-af	146-7e2102	Update Wor	[{"name":"P	{"name":"P		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
8	Mon Jun 15 2020 23:44:39 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	2d8ef1e0-af	146-f946d95	Add Workflo	{}	[{"name":"R		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
9	Mon Jun 15 2020 23:44:39 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	2d8ef1e0-af	146-47e165c	Update Wor	[{"name":"P	[{"name":"P		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
10	Mon Jun 15 2020 23:41:24 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	b918cc00-af	146-2b279ef	Add Workflo	{}	[{"name":"P		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
11	Mon Jun 15 2020 23:41:24 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	b918cc00-af	146-e6b5458	Add Workflo	{}	[{"name":"R		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
12	Mon Jun 15 2020 23:41:24 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	b918cc00-af	146-55168cc	Add Workflo	{}	[{"name":"R		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
13	Mon Jun 15 2020 23:41:24 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	b918cc00-af	146-8fd9672	Add Workflo	{}	[{"name":"P		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
14	Mon Jun 15 2020 23:41:24 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	b918cc00-af	146-78d30e6	Add Workflo	{}	[{"name":"P		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
15	Mon Jun 15 2020 23:41:24 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	b918cc00-af	146-84e136c	Add Workflo	{}	[{"name":"P		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
16	Mon Jun 15 2020 23:39:57 GMT+0000 (Coordinated Universal Time)	11004	Role	{"name":"Co	85428880-af	146-650494(	Add Role	{}	[{"name":"R		{"id":1040,"c	109c6e00-d248-40c7-9d0e-95df0d7c7249	
17	Mon Jun 15 2020 23:39:29 GMT+0000 (Coordinated Universal Time)	1040	User	{"name":"Le	74a04350-af	146-afd6aa0	Successful Lo	{}	{}		{"id":1040,"c	d7e875f7-58f8-4a2e-909b-733dfda490d8	
18	Mon Jun 15 2020 23:39:20 GMT+0000 (Coordinated Universal Time)	1	User	{"name":"De	6f6bdd90-af	146-b2ccfdd	Logout	{}	{}		{"id":1,"origi	c4ca4238a0b923820dcc509a6f75849b	
19	Mon Jun 15 2020 23:39:06 GMT+0000 (Coordinated Universal Time)	1	User	{"name":"De	674e1380-af	146-84da6bc	Successful Lo	{}	{}		{"id":1,"origi	c4ca4238a0b923820dcc509a6f75849b	
20	Wed Jun 10 2020 22:55:23 GMT+0000 (Coordinated Universal Time)	1040	User	{"name":"Le	77b188d0-ab	146-a2a5444	Logout	{}	{}		{"id":1040,"c	d7e875f7-58f8-4a2e-909b-733dfda490d8	
21	Wed Jun 10 2020 22:36:50 GMT+0000 (Coordinated Universal Time)	1040	User	{"name":"Le	e04012c0-ab	146-dfc5c82	Successful Lo	{}	{}		{"id":1040,"c	d7e875f7-58f8-4a2e-909b-733dfda490d8	
22	Wed Jun 10 2020 22:36:46 GMT+0000 (Coordinated Universal Time)	1040	User	{"name":"Le	dda43230-ab	146-70b42b5	Unsuccessfu	{}	{}		{"id":1040,"c	d7e875f7-58f8-4a2e-909b-733dfda490d8	
23	Wed Jun 10 2020 22:14:41 GMT+0000 (Coordinated Universal Time)	1040	User	{"name":"Le	c8383750-ab	146-f5aa44f	Logout	{}	{}		{"id":1040,"c	d7e875f7-58f8-4a2e-909b-733dfda490d8	
24	Wed Jun 10 2020 21:58:19 GMT+0000 (Coordinated Universal Time)	11001	Role	{"name":"Co	7e631250-ab	146-8004f0f	Add Workflo	{}	[{"name":"P		{"id":1040,"c	23c91978-ec2b-4871-b73c-5faa5f395651	
25	Wed Jun 10 2020 21:58:19 GMT+0000 (Coordinated Universal Time)	11001	Role	{"name":"Co	7e631250-ab	146-7e94df9	Add Workflo	{}	[{"name":"P		{"id":1040,"c	23c91978-ec2b-4871-b73c-5faa5f395651	
26	Wed Jun 10 2020 21:58:19 GMT+0000 (Coordinated Universal Time)	11001	Role	{"name":"Co	7e631250-ab	146-8bd75ce	Add Workflo	{}	[{"name":"P		{"id":1040,"c	23c91978-ec2b-4871-b73c-5faa5f395651	
27	Wed Jun 10 2020 21:58:19 GMT+0000 (Coordinated Universal Time)	11001	Role	{"name":"Co	7e631250-ab	146-5ddbbf3	Add Workflo	{}	[{"name":"P		{"id":1040,"c	23c91978-ec2b-4871-b73c-5faa5f395651	
28	Wed Jun 10 2020 21:52:09 GMT+0000 (Coordinated Universal Time)	1040	User	{"name":"Le	a1fb9440-ab	146-20bef6f	Successful Lo	{}	{}		{"id":1040,"c	d7e875f7-58f8-4a2e-909b-733dfda490d8	
29	Wed Jun 10 2020 21:51:58 GMT+0000 (Coordinated Universal Time)	1040	User	{"name":"Le	9b9a9560-ab	146-da3f837	Logout	{}	{}		{"id":1040,"c	d7e875f7-58f8-4a2e-909b-733dfda490d8	
30	Wed Jun 10 2020 21:49:46 GMT+0000 (Coordinated Universal Time)	1040	User	{"name":"Le	4cb1ee30-ab	146-df5940f	Successful Lo	{}	{}		{"id":1040,"c	d7e875f7-58f8-4a2e-909b-733dfda490d8	
31	Wed Jun 10 2020 21:49:18 GMT+0000 (Coordinated Universal Time)	1040	User	{"name":"Le	3c74ac60-ab	146-867837	Logout	{}	{}		{"id":1040,"c	d7e875f7-58f8-4a2e-909b-733dfda490d8	
32	Wed Jun 10 2020 21:49:11 GMT+0000 (Coordinated Universal Time)	11001	Role	{"name":"Co	37f788b0-ab	146-0170a3	Remove Wo	[{"name":"P	{}		{"id":1040,"c	23c91978-ec2b-4871-b73c-5faa5f395651	
33	Wed Jun 10 2020 21:49:11 GMT+0000 (Coordinated Universal Time)	11001	Role	{"name":"Co	37f788b0-ab	146-bcd8379	Remove Wo	[{"name":"P	{}		{"id":1040,"c	23c91978-ec2b-4871-b73c-5faa5f395651	
34	Wed Jun 10 2020 21:49:11 GMT+0000 (Coordinated Universal Time)	11001	Role	{"name":"Co	37f788b0-ab	146-f9769a8	Remove Wo	[{"name":"P	{}		{"id":1040,"c	23c91978-ec2b-4871-b73c-5faa5f395651	
35	Wed Jun 10 2020 21:49:11 GMT+0000 (Coordinated Universal Time)	11001	Role	{"name":"Co	37f788b0-ab	146-053295c	Remove Wo	[{"name":"P	{}		{"id":1040,"c	23c91978-ec2b-4871-b73c-5faa5f395651	
36	Wed Jun 10 2020 21:45:04 GMT+0000 (Coordinated Universal Time)	11001	Role	{"name":"Co	a4882800-ab	146-1952e4(	Add Workflo	{}	[{"name":"R		{"id":1040,"c	23c91978-ec2b-4871-b73c-5faa5f395651	

Exported User Audit Trail Data

15. To export more than 50k records within the selected time frame:

    a. Review the last row of the CSV file to confirm it contains a maximum of 50k rows, which likely means additional data can be retrieved.

    b. Convert the date in the **Date and Time** column for the last row to Unix timestamp format.

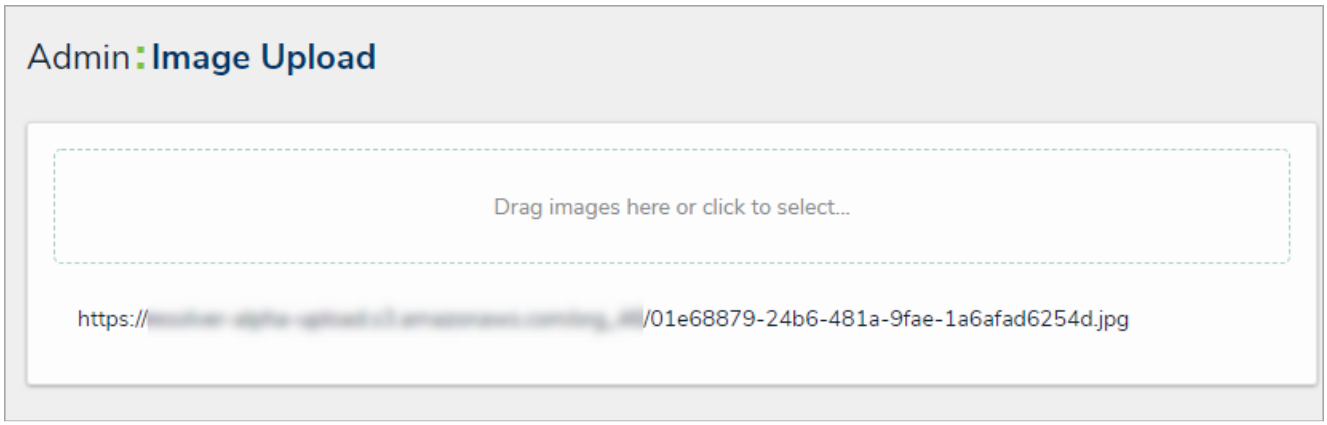
    c. Follow the steps above to make a new API request using the Unix timestamp from step b. as the new**dateEnd** value but keeping the **dateStart** the same.

    d. Continue the process until fewer than 50k rows are retrieved. Note that because multiple events can occur at the same time, some rows may share the same **Date and Time** value. This means that if the oldest event (last row on the CSV file) occurred on the same date as other events in the next batch of data, all these events will be repeated in the next generated CSV file.

Image Upload & Custom Logos

The **Image Upload** feature allows administrators to upload a photo and generate a URL that can then be used as a custom logo or embedded in configurable forms using Markdown formatting.

To use this feature, navigate to **Admin > Tools > Image Upload**, then click to select an image to upload or drag and drop it to the upload area. Once the file is successfully uploaded, click the URL to copy it to your clipboard.



The Image Upload tool. Once a file is uploaded, you can copy the URL to your clipboard by clicking it.

If you navigate away from this page or misplace the URL, a new link must be generated by once again uploading the image.

Custom Logo Requirements

For a logo image to be compatible, it must be approximately:

- 15:4 ratio;
- 210 x 56px at 72 DPI;
- PNG (recommended) or JPEG format.

Should you wish to embed a custom logo, contact Resolver Support with the URL after uploading the file in the **Image Upload** tool.

Languages Overview

Through the **Languages** feature, you can customize the text in Core's user interface and applications, fields, object types, etc. to display a language of your choosing. This is done by downloading an Excel spreadsheet that contains a list of the user interface text in the default language, adding the applicable translations for that text, then uploading the spreadsheet back into Core. When a user logs in with a default language on their browser that matches a configured translation, Core will automatically match to the browser's default language. If a user's browser is displaying a language that is not configured, Core will display the default language in the user's Core profile.

Important Notes

- Translations are not pre-loaded or automatic. They must be manually entered into the spreadsheet.
- When a user logs in with a default language (e.g. Canadian French) on their browser that matches a configured translation, the Core UI will display in the browser's default language.
- If a user's browser displays an unconfigured language, the UI will display the default language in the user's Core profile.
- If the user's browser is set to a unconfigured language and the user has made no changes to the language preferences in their profile, the default language of US English will display.
- You can select a pre-configured language in a user's profile to choose how the UI and applications will be translated. Note that the default language selected in a user's browser will take precedence.
- If your version of Core contains multiple organizations, translations must be configured for each org.
- Once a new language has been added to Core, it's not possible to delete it; however, you may edit the translations.
- Editing the default language through this feature is not currently supported.

Supported Languages

Core currently supports the following languages when using the admin settings to translate the user interface text:

- Albanian
- Basque
- Basque (Spain)
- Belarusian
- Belarusian (Belarus)
- Bosnian (Bosnia and Herzegovina)
- Catalan
- Catalan (Spain)
- Chinese (Simplified)
- Chinese (Traditional)
- Croatian
- Croatian (Bosnia and Herzegovina)
- Croatian (Croatia)
- Czech
- Czech (Czech Republic)
- Danish
- Danish (Denmark)
- Dutch
- Dutch (Belgium)
- Dutch (Netherlands)
- English
- English (Australia)

- English (Belize)
- English (Canada)
- English (Caribbean)
- English (Ireland)
- English (Jamaica)
- English (New Zealand)
- English (Republic of the Philippines)
- English (South Africa)
- English (Trinidad and Tobago)
- English (United Kingdom)
- English (United States)
- English (Zimbabwe)
- Esperanto
- Estonian
- Estonian (Estonia)
- Faroese
- Faroese (Faroe Islands)
- Finnish
- Finnish (Finland)
- French
- French (Belgium)
- French (Canada)
- French (France)
- French (Luxembourg)
- French (Principality of Monaco)
- French (Switzerland)
- Galician
- Galician (Spain)
- German
- German (Austria)
- German (Germany)
- German (Liechtenstein)
- German (Luxembourg)
- German (Switzerland)
- Hebrew (right-to-left text direction enabled)
- Hungarian
- Hungarian (Hungary)
- Italian
- Italian (Italy)
- Italian (Switzerland)
- Japanese
- Kazakh

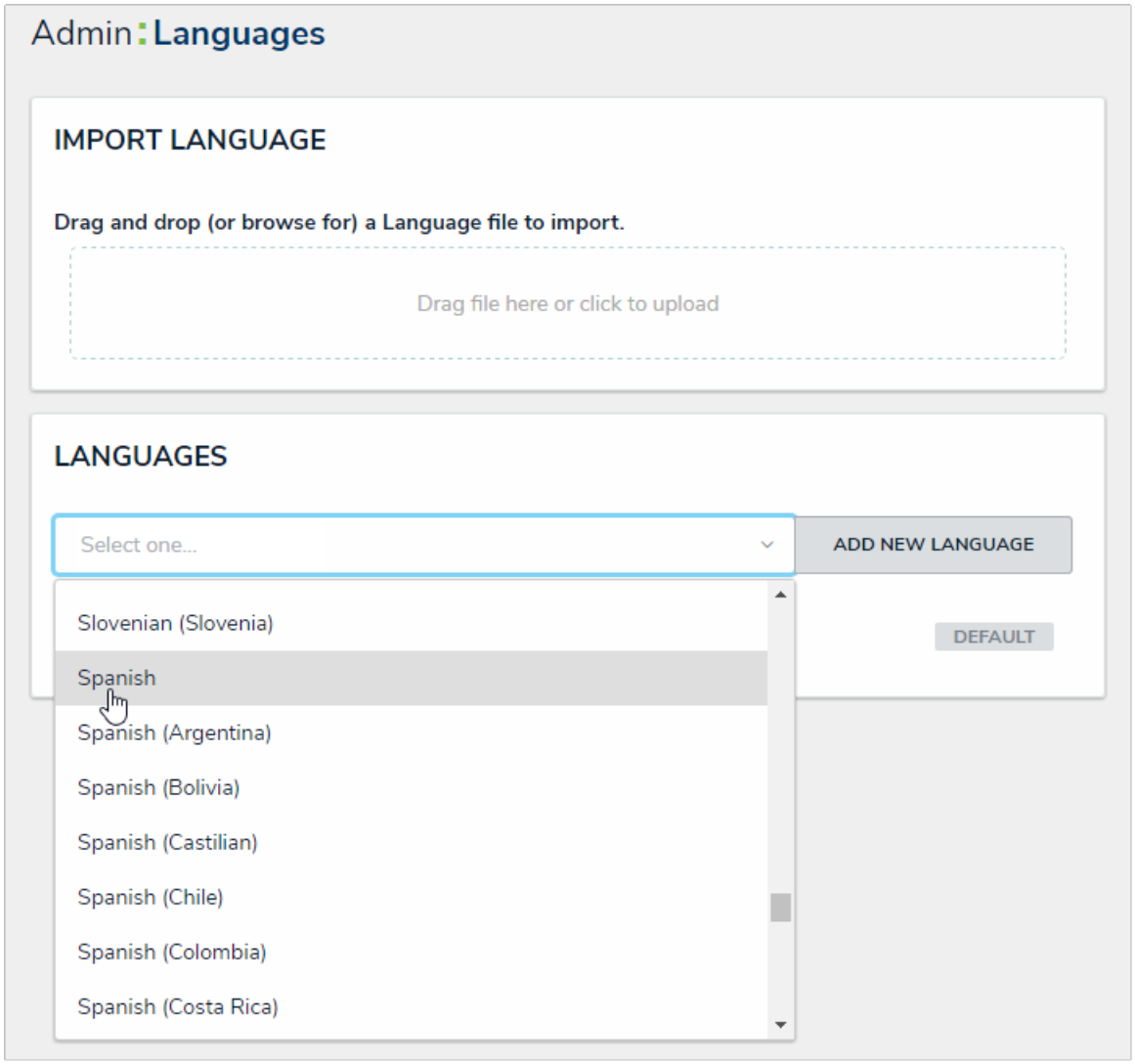
- Korean
- Latvian
- Latvian (Latvia)
- Lithuanian
- Lithuanian (Lithuania)
- Maltese
- Maltese (Malta)
- Maori
- Maori (New Zealand)
- Norwegian (Bokm?l)
- Norwegian (Bokm?l) (Norway)
- Norwegian (Nynorsk) (Norway)
- Polish
- Polish (Poland)
- Portuguese
- Portuguese (Brazil)
- Portuguese (Portugal)
- Quechua
- Quechua (Bolivia)
- Quechua (Ecuador)
- Quechua (Peru)
- Romanian
- Romanian (Romania)
- Russian
- Serbian (Latin) (Bosnia and Herzegovina)
- Serbian (Latin) (Serbia and Montenegro)
- Slovak
- Slovak (Slovakia)
- Slovenian
- Slovenian (Slovenia)
- Spanish
- Spanish (Argentina)
- Spanish (Bolivia)
- Spanish (Castilian)
- Spanish (Chile)
- Spanish (Colombia)
- Spanish (Costa Rica)
- Spanish (Dominican Republic)
- Spanish (Ecuador)
- Spanish (El Salvador)
- Spanish (Guatemala)
- Spanish (Honduras)

- Spanish (Mexico)
- Spanish (Nicaragua)
- Spanish (Panama)
- Spanish (Paraguay)
- Spanish (Peru)
- Spanish (Puerto Rico)
- Spanish (Spain)
- Spanish (Uruguay)
- Spanish (Venezuela)
- Swedish
- Swedish (Finland)
- Swedish (Sweden)
- Tagalog
- Tagalog (Philippines)
- Turkish
- Turkish (Turkey)
- Welsh
- Welsh (United Kingdom)
- Xhosa
- Xhosa (South Africa)
- Zulu
- Zulu (South Africa)

Add a New Language

To add a new language into Core:

1. Click the icon in the top bar > **Languages** in the **Tools** section.
2. Select a language from the dropdown menu in the **Languages** section. See the Languages Overview article for a complete list of supported languages.



Selecting a language from the dropdown menu.

3. Click **Add New Language**.
4. **Optional:** Click the icon next to the language to edit its name.

A newly added language appearing in the Languages section.

5. Click the icon next the language to download the Excel spreadsheet.
6. Once successfully downloaded, open the spreadsheet. The **Platform** tab at the bottom of the spreadsheet contains the text for the default user interface, while the **Applications** tab contains text for custom applications, fields, applications, etc. The **US English (en-US) DEFAULT** column in both worksheets (column E), displays the default text for each Core component.

	A	B	C	D	E	F
1	**View**	**Component**	**Section**	**Key**	**US English (en-US) DEFAULT**	**Spanish (es)**
2						
3	**toast**	objectupdatefailed	title	platform:toast:objectupdatefailed:title	Object was not saved successfully	
4						
5	**app**	role	placeholder	platform:app:role:placeholder	Select roles ...	
6		addroles		platform:app:addroles	Add Roles	
7						
8	**confirmationbutton**	title		platform:confirmationbutton:title	Please Confirm	
9		message		platform:confirmationbutton:message	Are you really sure that you want to do this?	
10						
11	**session**	expiryHeader		platform:session:expiryHeader	Session Expiry Notice	
12		expiryMessage		platform:session:expiryMessage	Your session will expire in {time}. Please refresh to continue working.	
13		refreshSession		platform:session:refreshSession	Refresh Session	
14						
15	**rolepicker**	label		platform:rolepicker:label	Role	
16		placeholder		platform:rolepicker:placeholder	Search for Roles	
17						
18	**table**	searchtable		platform:table:searchtable	Search Table...	

Platform | Applications

The languages spreadsheet.

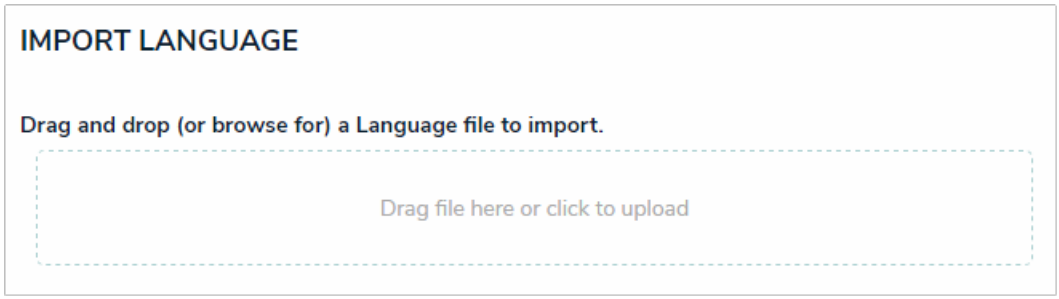
7. Using the text in the **US English (en-US) DEFAULT** column (column E) as a reference, enter the applicable translations in column F (titled after the language selected in steps 2-4). Enter the translations on the **Platforms** and/or **Applications** worksheet(s) as needed.

E	F	
US English (en-US) DEFAULT	**Spanish (es)**	
Object was not saved successfully	El objeto no se guardó correctamente	
Select roles ...	Seleccionar roles ...	
Add Roles	Añadir roles	
Please Confirm	Por favor confirmar	
Are you really sure that you want to do this?	¿Estás realmente seguro de que quieres hacer esto?	

Translations entered into the spreadsheet. Column E displays the text for the current labels in CORE and the corresponding translations are added to Column F.

The spreadsheet will not successfully upload if you remove any data from the **Key** (column D) section of the **Applications** worksheet or if data is entered in the empty rows that are used to separate each section on either worksheet.

8. Save the file at a location that's easily accessible.
9. Return to the **Languages** page in Core, then drag and drop or click the upload area in the **Import Languages** section to upload the spreadsheet.



The Import Language section where the spreadsheet with the translations is uploaded into CORE.

Email Templates Overview

When the Messaging action has been created on a workflow transition, an email is sent to users within one or more selected roles once an object has transitioned to the next specified state. The contents of the email are based on the template selected when the action was created.

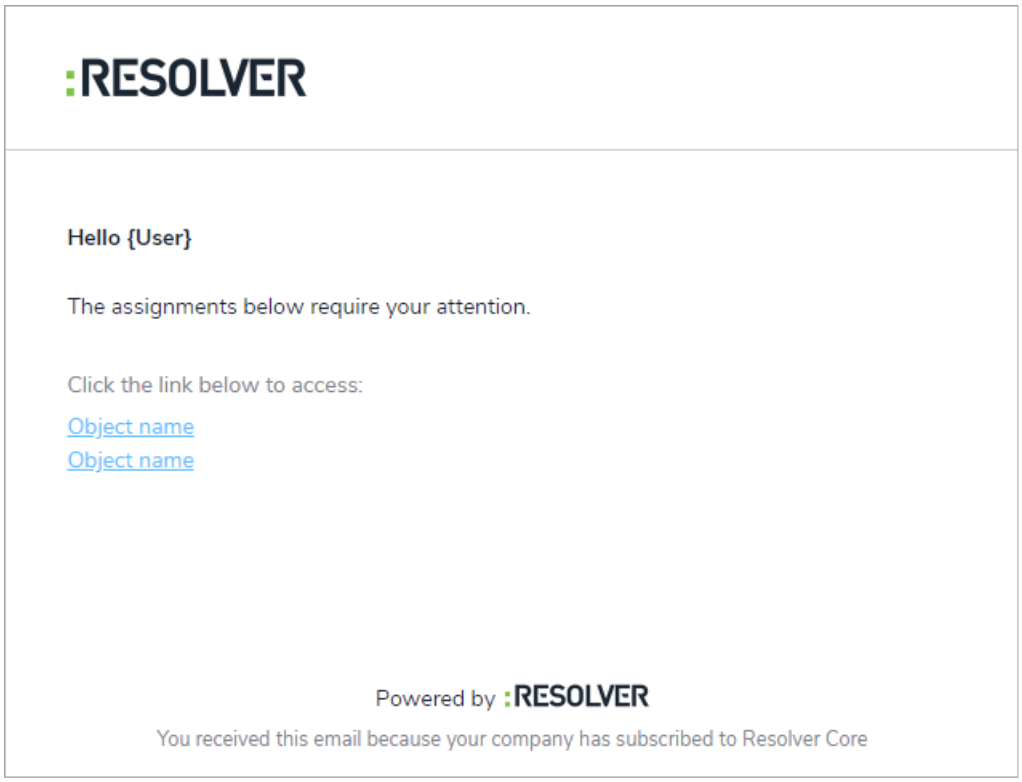
By default, each organization has the following templates:

- **Standard:** Advises users that there are one or more objects that require attention.
- **Assigned** Advises users that one or more objects have been assigned to them.

Through the **Email Templates** settings, administrators can create new templates or edit the default templates by applying the following customizations:

- Creating a new subject line and custom message in the body of the email;
- Inserting variables (fields or properties) in the subject and body to provide more information about the object(s);
- Applying Markdown formatting to any custom messages in the body of the email; and
- Replacing the Resolver logo with your company's logo.

Note that because the default templates (**Standard** or **Assigned**) can be edited, these templates' names and contents may vary.

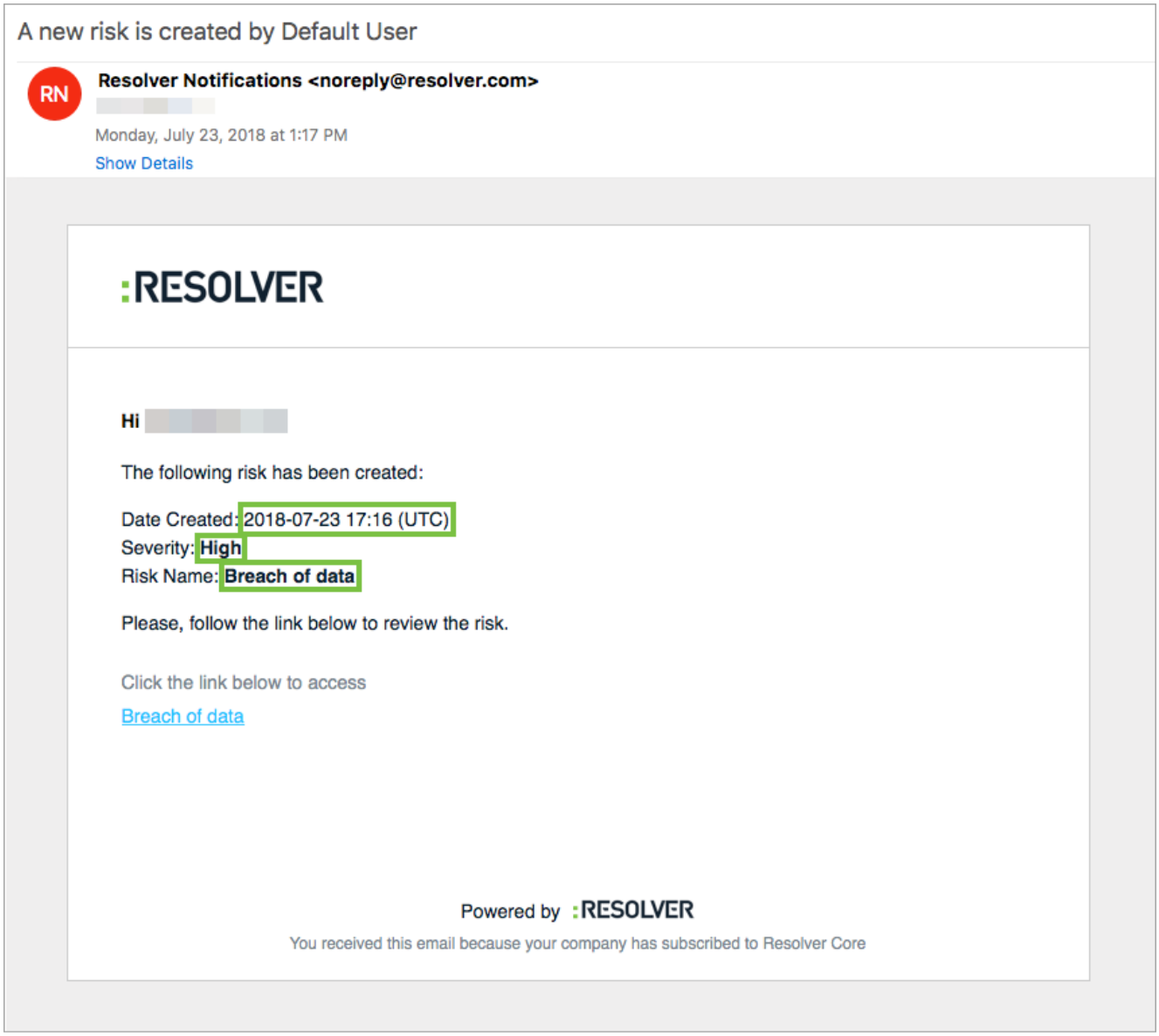


A preview of the Assignment email template.

Email Template Variables

Email templates allow administrators to determine what information is sent to users when a Messaging workflow action is triggered. When creating or editing these templates, you can embed **variables**, which represent the data from an object's fields and/or properties.

Fields and properties from all the object types in your organization can be added to an email template (both custom and default), but the information in those fields or properties are populated based on the object that triggered the email. For example, Risk 15 is an object with a high priority. When the email is triggered, the Name property is populated as Risk 15 and the Priority Field as High. When the low-priority object, Risk 20, triggers an email, the Name property is populated as Risk 20, and the Priority field as Low.



An email with variables as it appears to an end user. The highlighted text are populated email variables.

Supported Fields & Properties

The following fields and properties can be embedded in a template:

- All field types **except** Attachments and Image Attachments.
- Fields that do not contain any special characters. Only fields with alphanumeric characters (including spaces) are accepted.

- The following properties:
    - **Name**
    - **Description**
    - **Unique ID**
    - **Created By**
    - **Created On**
    - **Modified By**
    - **Modified On**

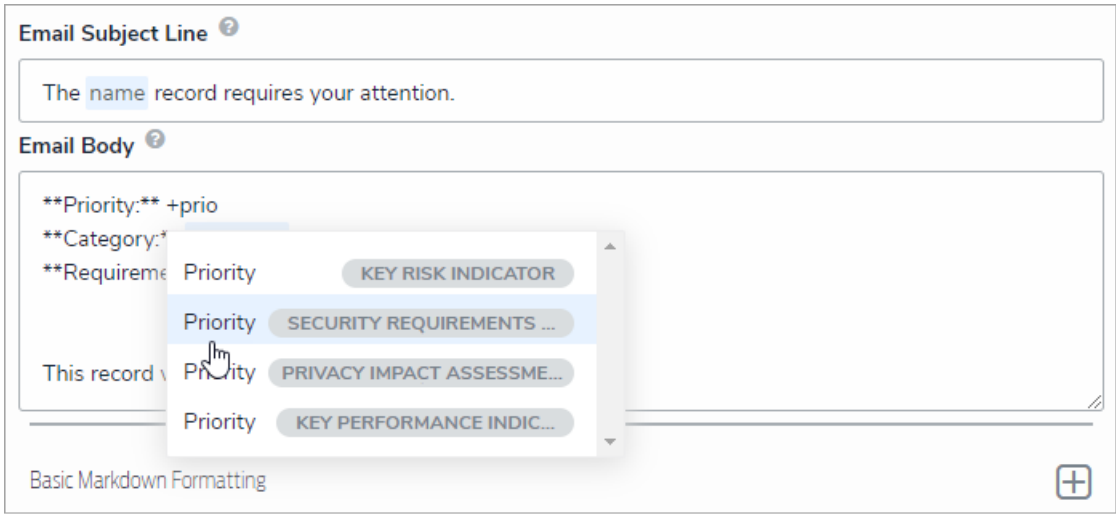
If a field is not linked to the same object type as the **Messaging** action or it is unlinked or deleted after it was embedded in the template, it will appear as **{Field Not Found}** in preview on the settings page and as **Not Specified** in any emails sent out to users. If a property or field doesn't contain a value, it will appear as **Not Specified** in the email.

Embedding Variables

To add a variable to a template, type **+** in the **Email Subject Line** or **Email Body** field, start typing the name of the field or property you wish to add, then click to add it to the template. If needed, you can also scroll through the list of available variables, then click one to add it to the template. The object type the field is linked to will appear to the right of the field's name in the search results. If a field is linked to more than one object type, it will appear in the search results once for each object type.

Note that only the value of the field or property is displayed in the template. The field or property name (e.g. Priority, Category, or Requirements) is not populated automatically. If you wish to include a title or any other information about the variable, it must be typed manually.

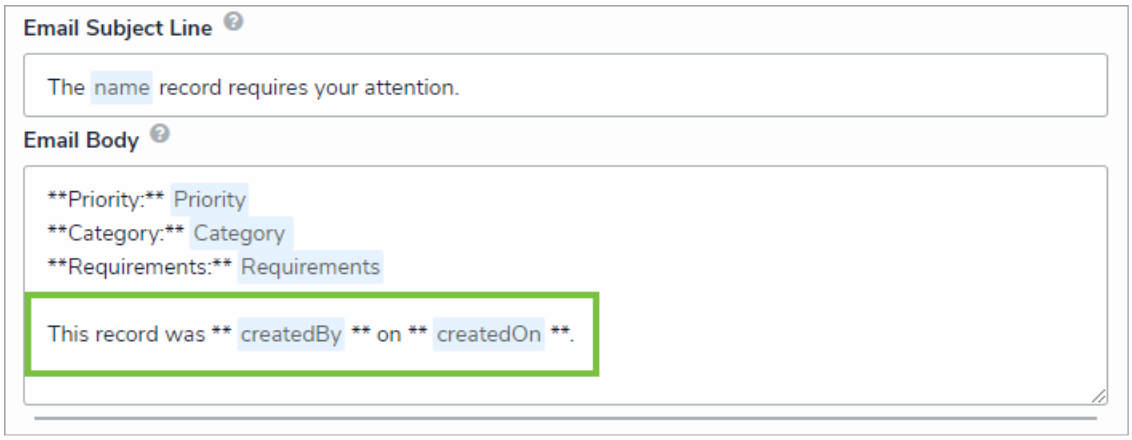
To delete a variable, use the **Backspace** key on your keyboard.



Embedding a variable in an email template. Fields that are linked to more than one object type appear in the search results multiple times.

Markdown Formatting

You can apply Markdown formatting to variables in the body of the email; however, any emphasis formatting (i.e. italic, bold, or strikethrough) requires that the variable is enclosed in spaces (e.g. * Text *).



Variables with Markdown formatting. Note the spaces around each variable that has emphasis formatting applied.

Create a New Custom Email Template

To create a new email template:

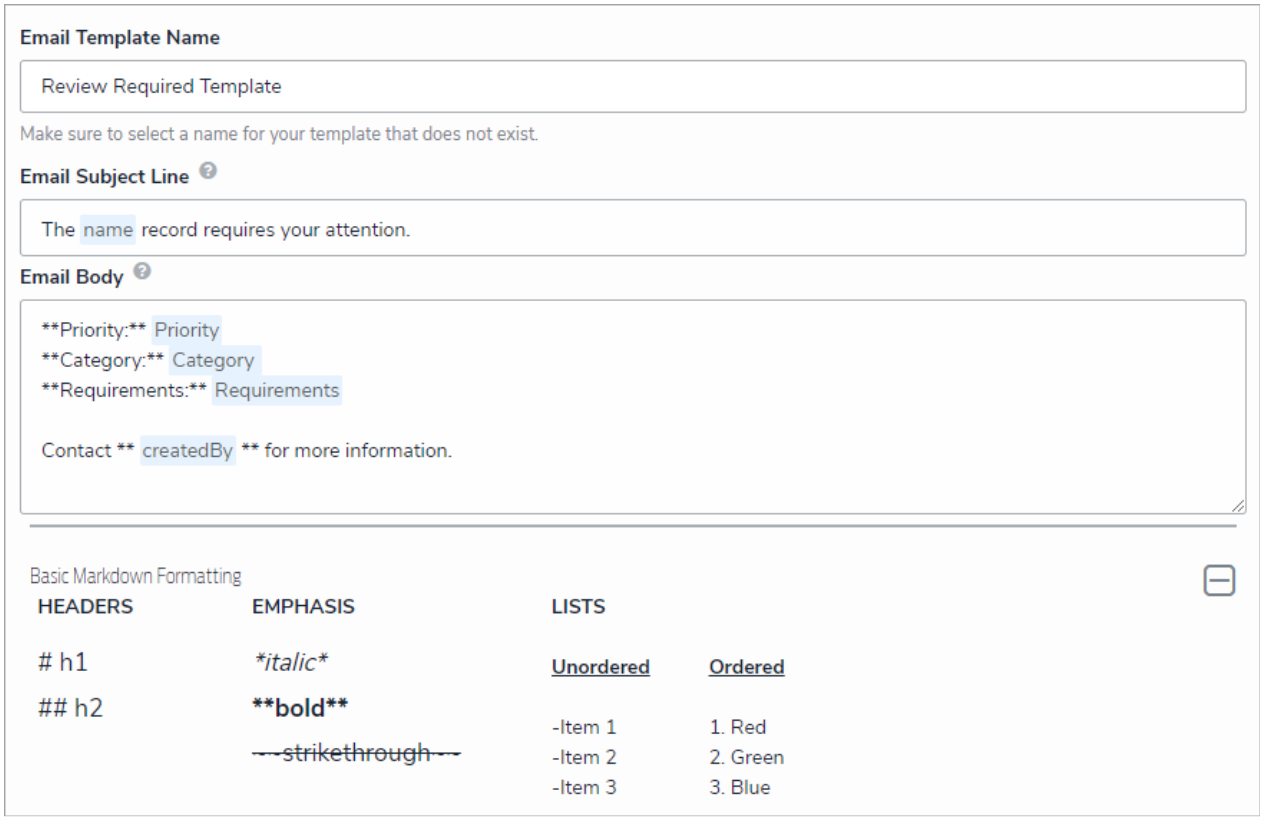
1. Click the icon in the top bar > **Email Templates** in the **Other** section.
2. Click **Create Email Template** to display the **Create an Email Template** page. Note that all organizations have two default templates that will appear on this page. See Edit the Default (Standard or Assigned) Templates for more information.

*The **Email Templates** settings page.*

3. Enter a name for the template in the **Email Template Name** field, ensuring the name has not already been assigned to another template.
4. Enter a subject line in the **Email Subject Line** field. This line must be a minimum of 5 characters, which may include both letters and numbers. To automatically populate the name of your Resolver Core organization in this field using a variable, alone or with additional text, enter **{orgName}**. The **{orgName}** variable is case-sensitive.
5. Enter a custom message in the **Email Body** field. This message will appear above the links to the relevant objects and requires a minimum of 10 alphanumeric characters.
6. **Optional:** To embed a field or property variable, type **+** in the **Email Subject Line** or **Email Body** field, begin typing a field or property name to narrow down the search results, then click the variable to add it to the template. See the Email Template Variables article for more information on adding email variables, including which fields and properties are supported.

Variables in an email template.

7. **Optional:** Apply styling to a custom message or variable(s) in the **Email Body** field. To view basic styles, click the icon in the **Basic Markdown Formatting** section. For more information applying formatting, see Popular Markdown Styles.



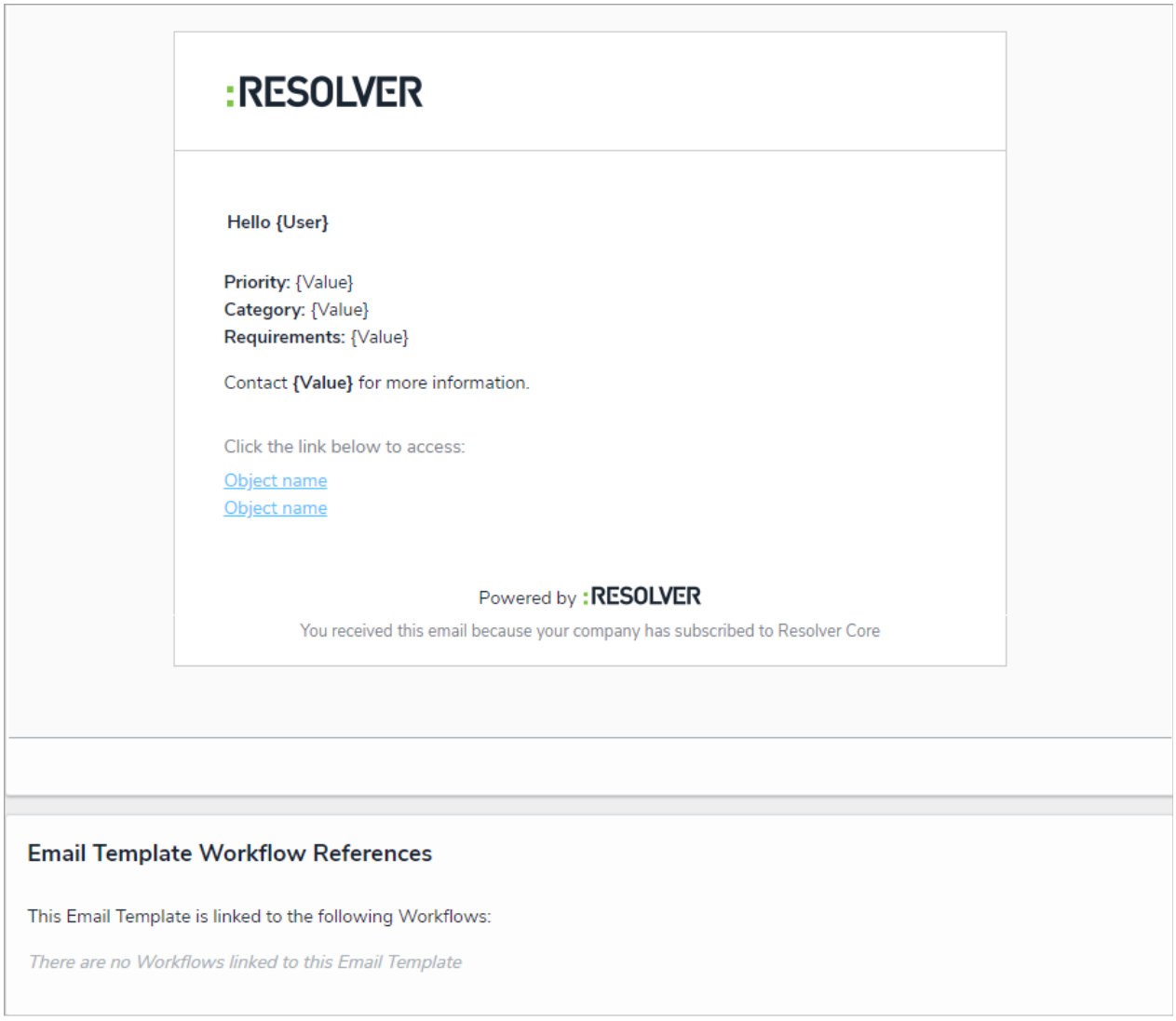
A new email template with Markdown formatting and variables.

To apply emphasis formatting (i.e. italic, bold, or strikethrough) to a variable, it must be enclosed in spaces (e.g. * Text *).

8. **Optional:** To display your company's logo in the top-left corner of the template, type or paste the public URL of the image in the **Logo** field. When inserting a custom logo in an email template, note that:
    - The logo must be saved in JPEG, JPG, or PNG format.
    - The image URL must end in .jpeg, .jpg, or .png. If a URL that does not end in one of these file extensions, the **Logo** field will display an error.
    - The ideal dimensions of the logo are 210 x 56px. If the image is larger or smaller, it will be reduced or enlarged in the template..

The Logo field. If the URL does not end in a .jpg, .jpeg, or .png, an error will be displayed.

9. Click **Create** to save your changes and view the **Edit Email Template** page, where you can view a preview of the template, make changes to any of the fields, and view a list of workflows associated with the template in the **Email Template Workflow References** section.
10. If the email template is being used in a workflow, the object type's monogram, name, and workflow name will appear in this section as a link (e.g. [**Object Type Name] - Workflow [Workflow Name]**. Clicking these links will display the related **Edit Workflow** page.



The Edit Email Template page displaying a preview of the email and associated workflows, if any.

Edit the Default (Standard or Assigned) Email Templates

By default, every organization has two email templates:

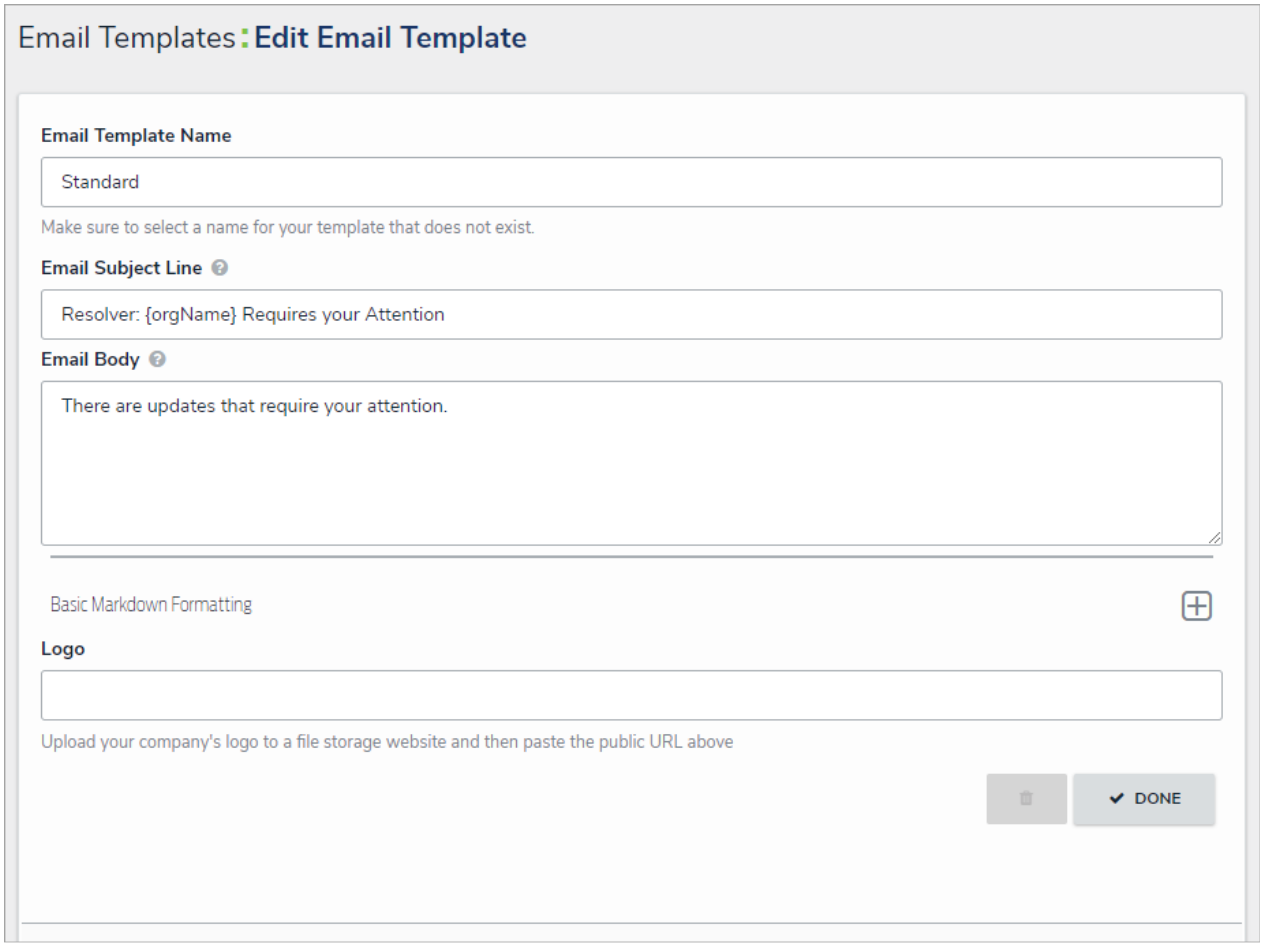
- **Standard:** Advises users that there are one or more objects that require attention.
- **Assigned:** Advises users that one or more objects have been assigned to them.

These templates cannot be deleted, however, all fields in the templates can be edited, including the template name.

> Because each field in a template can be edited, the default templates in your organization may have been renamed.

To edit a default template:

1. Click the icon in the top bar > **Email Templates** in the **Other** section.
2. Click the default template you want to edit (**Standard** or **Assigned**) to open the **Edit Email Template Page**.



The Edit Email Template page.

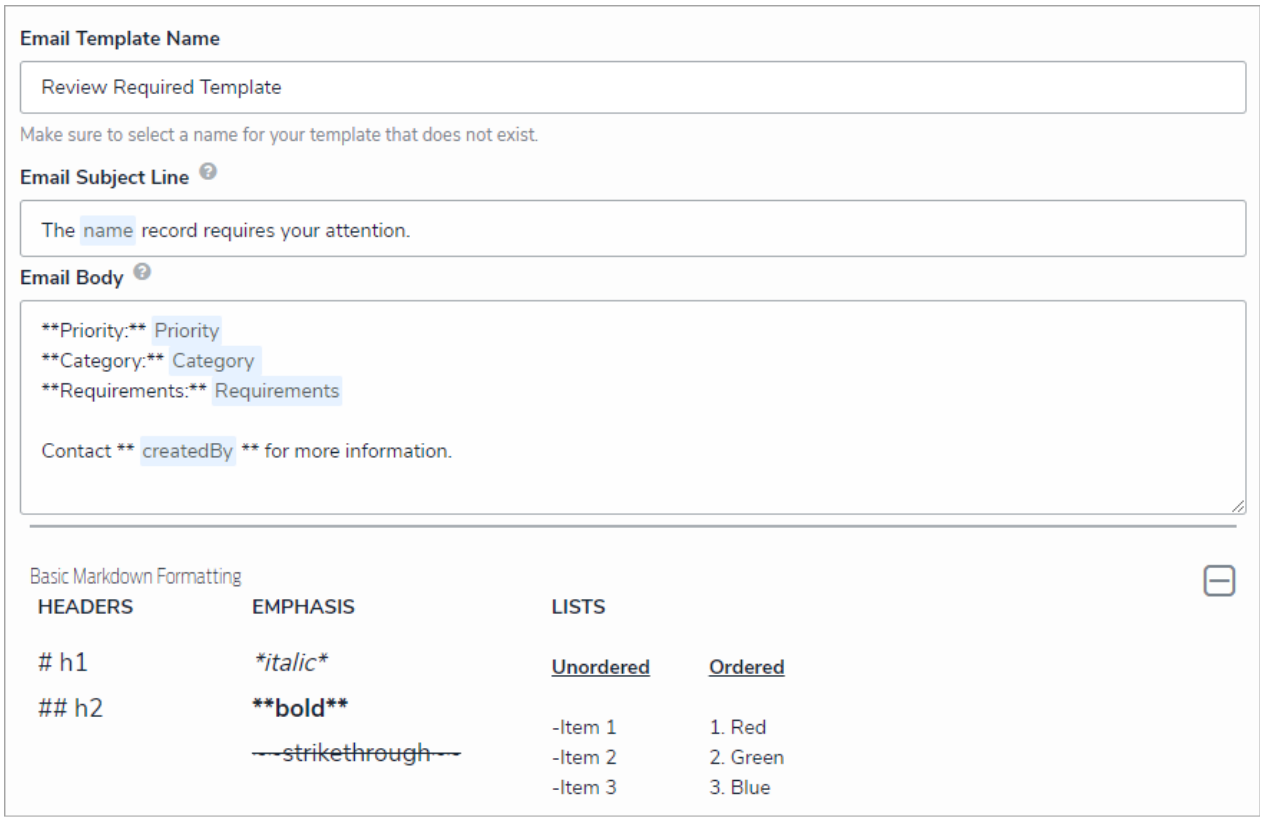
3. Enter a new or revised name for the template in the **Email Template Name** field, ensuring the name has not already been assigned to another template.
4. Enter a new or revised subject line in the **Email Subject Line** field. This line must be a minimum of 5 characters, which may include both letters and numbers. To automatically populate the name of your Resolver Core organization in this field using a variable, alone or with additional text, enter **{orgName}**. This variable is case-sensitive.

5. Enter a new or revised message in the **Email Body** field. This message will appear above the links to the relevant objects and requires a minimum of 10 alphanumeric characters.

6. **Optional:** To embed a field or property variable, type **+** in the **Email Subject Line** or **Email Body** field, begin typing a field or property name to narrow down the search results, then click the variable to add it to the template. See the Email Template Variables article for more information on adding email variables, including which fields and properties are supported.

Variables in an email template.

7. **Optional:** Apply styling to a custom message or variable(s) in the **Email Body** field. To view basic styles, click the icon in the **Basic Markdown Formatting** section. For more information on applying formatting, see Popular Markdown Styles.



A new email template with Markdown formatting and variables.

To apply emphasis formatting (i.e. italic, bold, or strikethrough) to a variable, it must be enclosed in spaces (e.g. * Text *).

8. **Optional:** To display your company's logo in the top-left corner of the template, type or paste the public URL of the image in the **Logo** field. When inserting a custom logo in an email template, note that:
    - The logo must be saved in JPEG, JPG, or PNG format.
    - The image URL must end in .jpeg, .jpg, or .png. If a URL that does not end in one of these file extensions, the **Logo** field will display an error.
    - The ideal dimensions of the logo are 210 x 56px. If the image is larger or smaller, it will be reduced or enlarged in the template.

The Logo field. If the URL does not end in a .jpg, .jpeg, or .png, an error will be displayed.

9. If the email template is being used in a workflow, the object type's monogram, name, and workflow name will appear in this section as a link (e.g. [**Object Type Name] - Workflow [Workflow Name]**. Clicking these links will display the related **Edit Workflow** page.

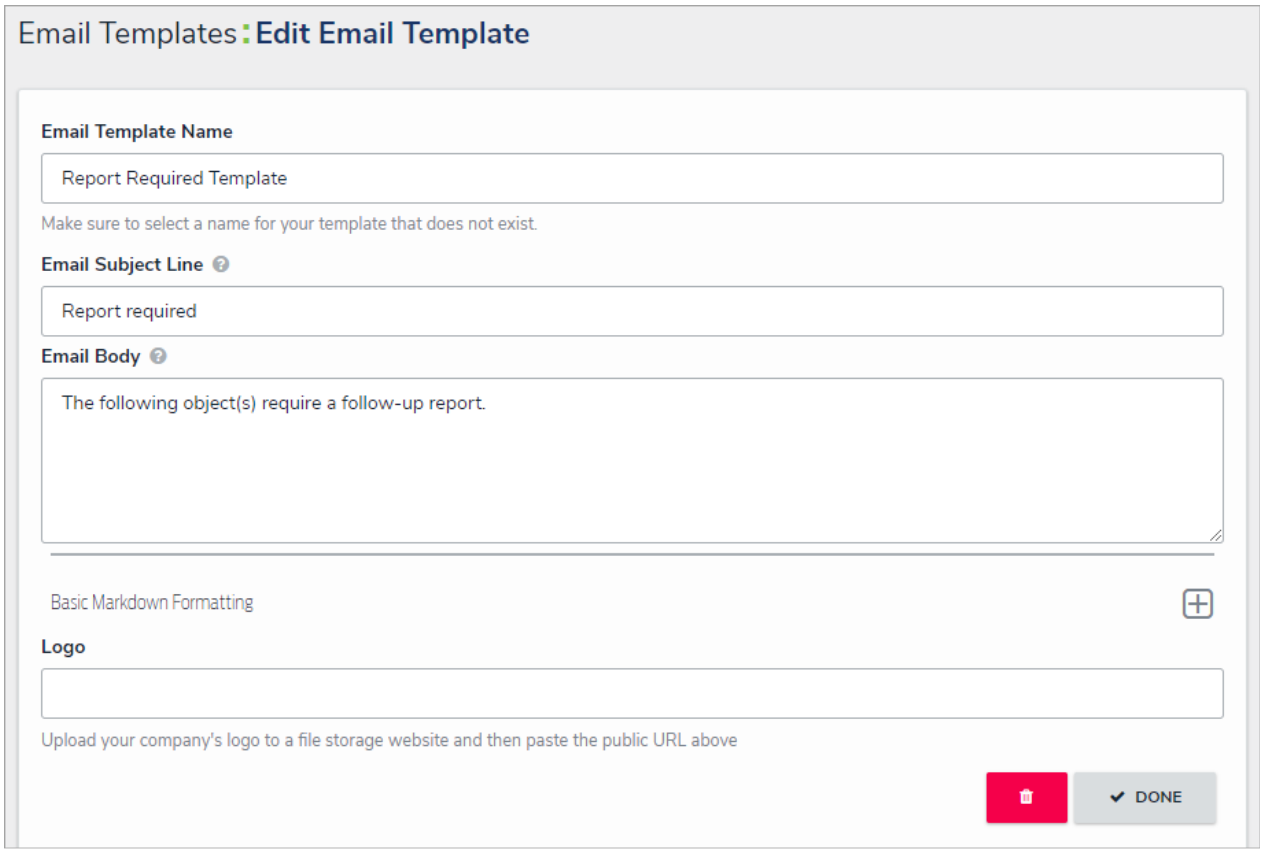
Default templates cannot be deleted.

Edit or Delete a Custom Email Template

A custom email template is any template that is **not** a default template (**Standard** or **Assigned**). Both custom and default templates can be edited, but only custom templates can be deleted, provided they are not currently selected in a Messaging action in a workflow.

To edit or delete a custom email template:

1. Click the icon in the top bar > **Email Templates** in the **Other** section.
2. Click the template you want to edit to open the **Edit Email Template Page**.



The Edit Email Template page for a custom template. For default templates, the trash can (delete) icon is grayed out.

3. Enter a new or revised name for the template in the **Email Template Name** field, ensuring the name has not already been assigned to another template.
4. Enter a new or revised subject line in the **Email Subject Line** field. This line must be a minimum of 5 characters, which may include both letters and numbers. To automatically populate the name of your Resolver Core organization in this field using a variable, alone or with additional text, enter **{orgName}**. This variable is case-sensitive.
5. Enter a new or revised message in the **Email Body** field. This message will appear above the links to the relevant objects and requires a minimum of 10 alphanumeric characters.
6. **Optional:** To embed a field or property variable, type **+** in the **Email Subject Line** or **Email Body** field, begin typing a field or property name to narrow down the search results, then click the variable to add it to the template. See the Email Template Variables article for more information on adding email variables, including which fields and properties are supported.
7. **Optional:** Apply styling to the custom message or variable(s) in the **Email Body** field. To view basic styles, click the icon in the **Basic Markdown Formatting** section. For more information on Markdown, on applying styles, see Popular Markdown Styles.

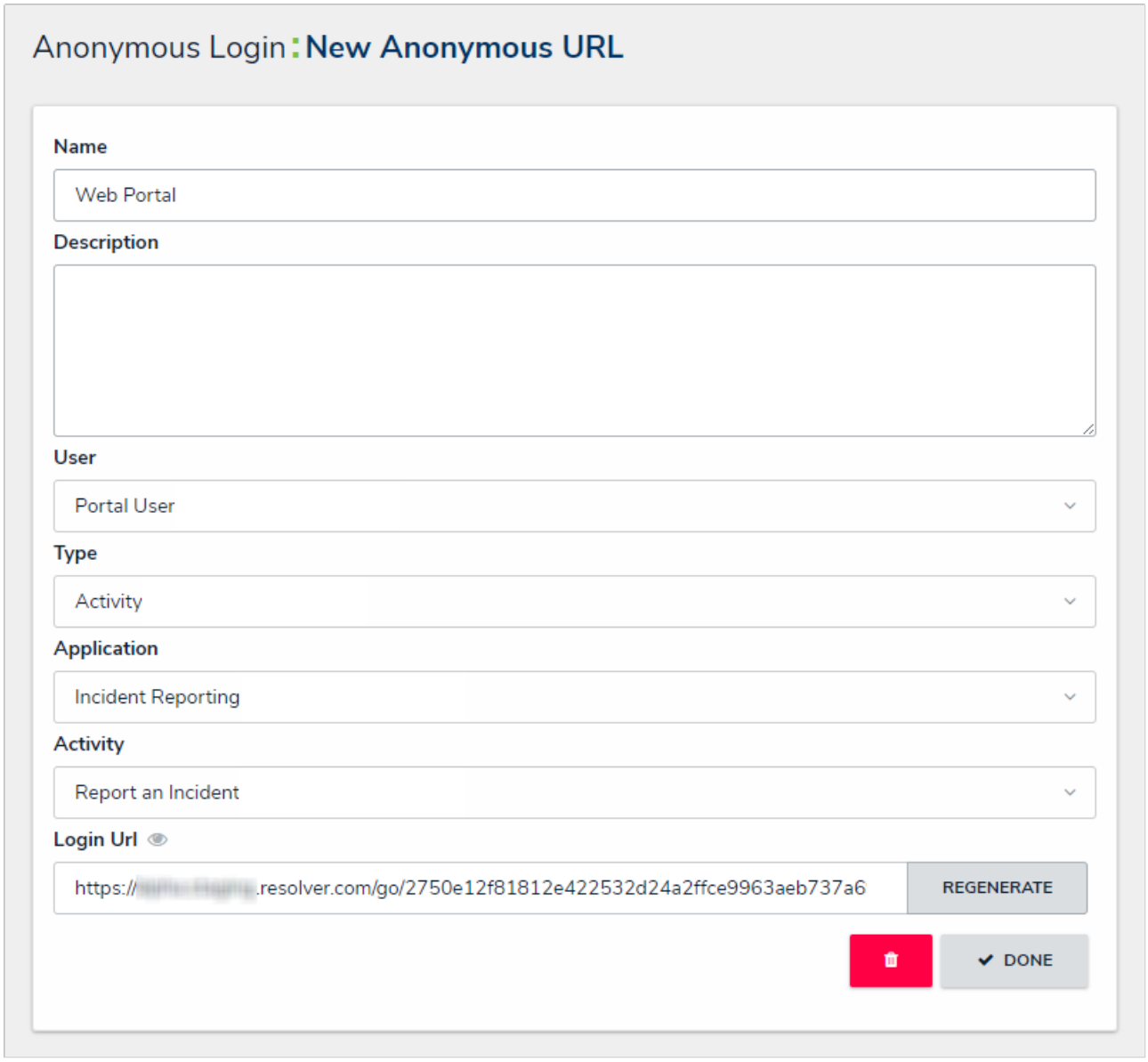
To apply emphasis formatting (i.e. italic, bold, or strikethrough) to a variable, it must be enclosed in spaces (e.g. * Text *).

8. **Optional:** To display your company's logo in the top-left corner of the template, type or paste the URL where the image is uploaded in the **Logo** field. When inserting a custom logo in an email template, note that:
    - The logo must be saved in JPEG, JPG, or PNG format.
    - The image URL must end in .jpeg, .jpg, or .png. If a URL that does not end in one of these file extensions, the **Logo** field will display an error.
    - The ideal dimensions of the logo are 210 x 56px. If the image is larger or smaller, it will be reduced or enlarged in the template.
9. To delete the template, click the icon, then **Yes** to confirm. If this icon is grayed out, the template is either a default template or is currently selected in a workflow action.
10. To review view a list of workflows the template is currently associated with, see the **Email Template Workflow Reference** section at the bottom of the page. If the email template is being used in a workflow, the object type's monogram, name, and workflow name will appear in this section as a link (e.g. **[Object Type Name] - Workflow [Workflow Name]**. Clicking these links will display the related **Edit Workflow** page.

Anonymous Login Overview

The **Anonymous Login** feature allows administrators to use a single account to grant multiple users limited access to Core. This is done by generating a URL that will display only the form/activity selected in the settings, without requiring login credentials. This feature is useful for organizations that occasionally require non-employees or ground-level employees to access Core and/or anonymously create or edit data.

Because all changes made while using Anonymous Login is captured in the Audit Trail, before creating an anonymous login URL, administrators must first create a non-administrative user account and assign that account to a role that will have access to the object type(s) and activity (if applicable) that have been selected in the anonymous login settings.



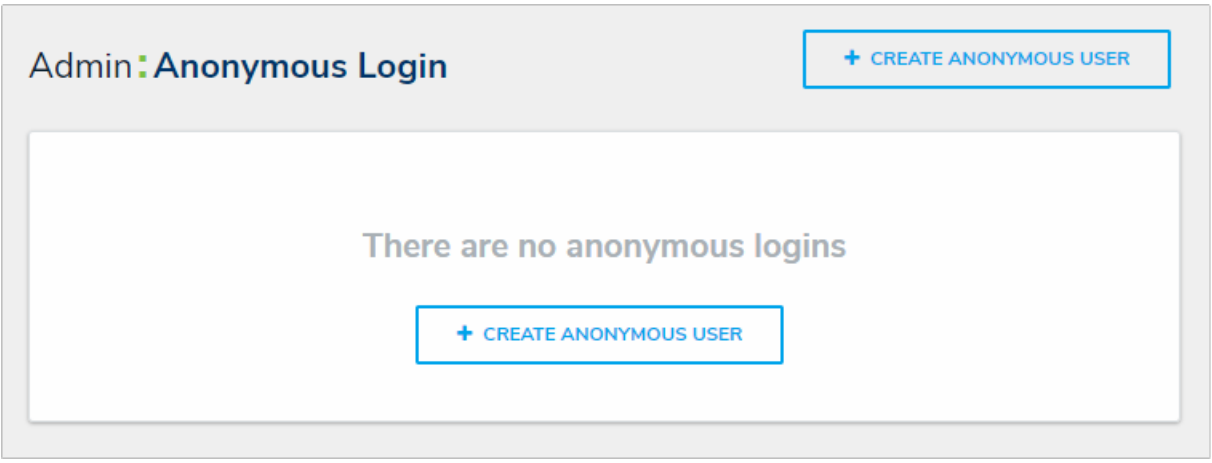
The Anonymous Login feature.

By creating an anonymous login URL, you are accepting the Terms of Service on behalf of the users who will be accessing the link.

Create an Anonymous Login

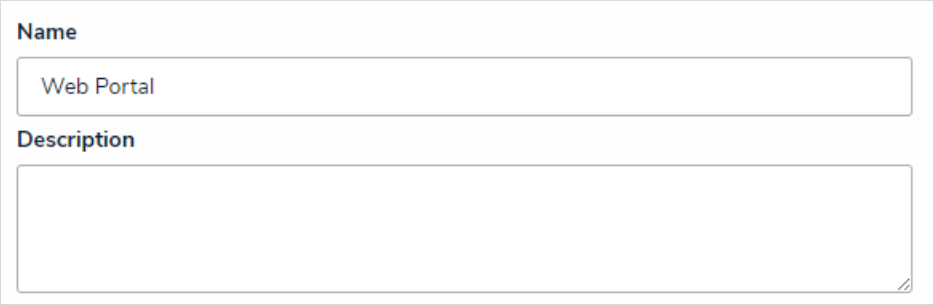
To create an anonymous user and login URL:

1. Create a non-administrative user account for the login, then assign it to a role with access to the appropriate object type(s) and activity.
2. Click the icon in the top bar > **Anonymous Login** in the **Other** section.
3. Click **Create Anonymous User**.



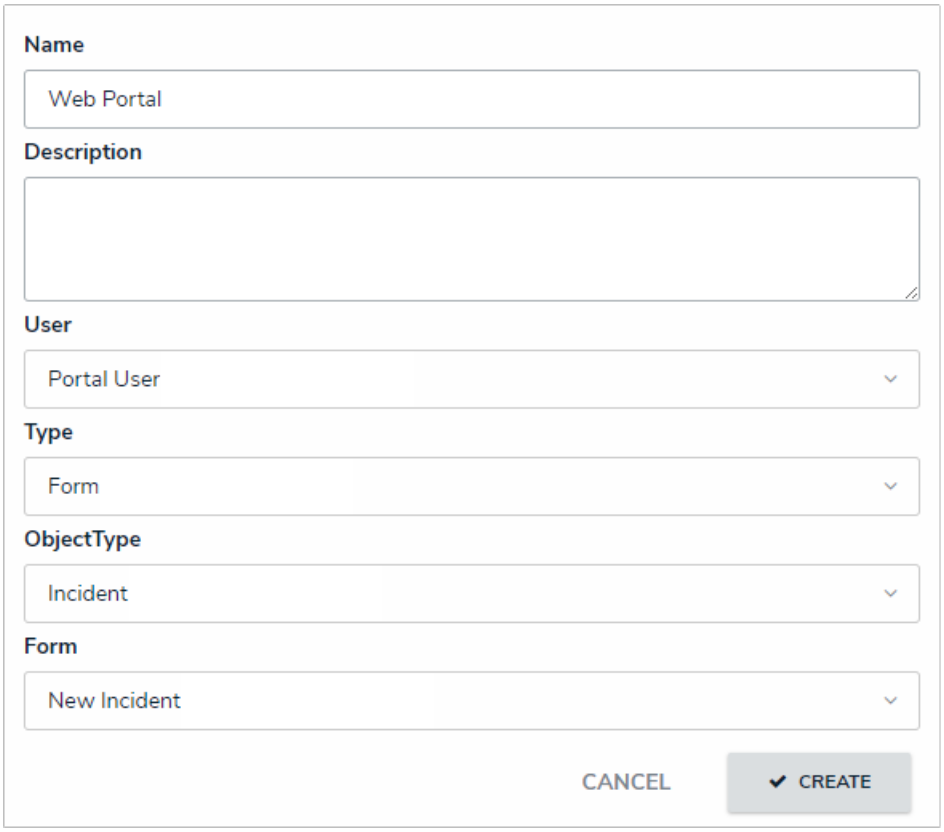
The Anonymous Login page.

4. Enter a name for the login in the **Name** field.



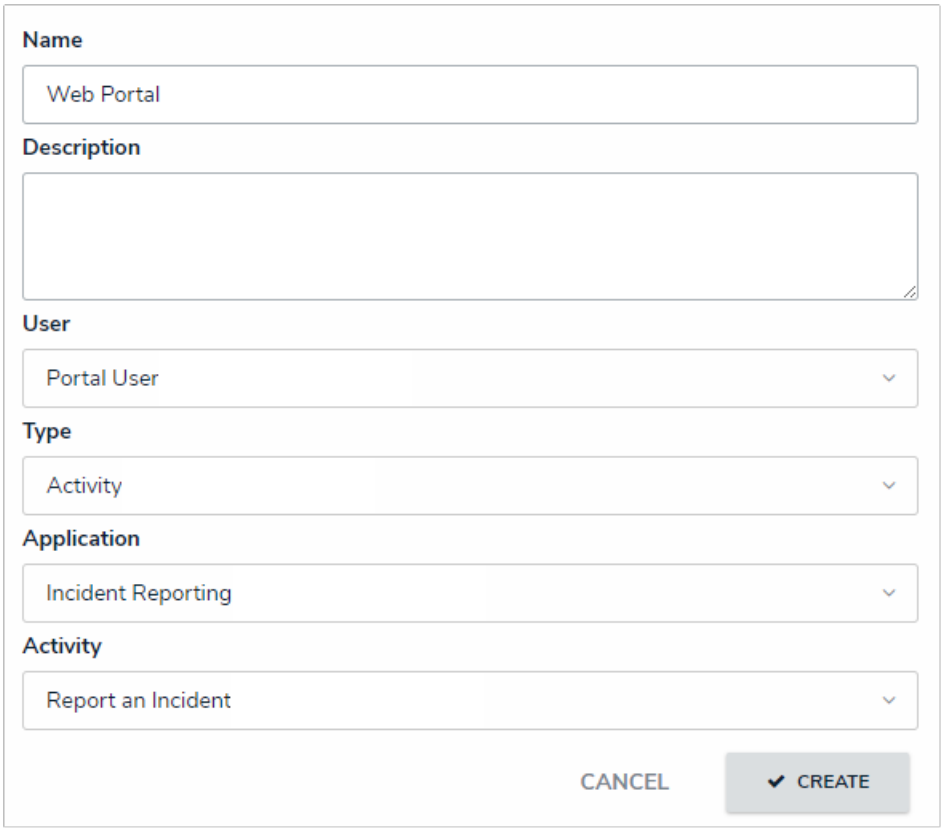
The Name and Description fields of a new anonymous login.

5. **Optional:** Enter a description of the login in the **Description** field. This description will appear below the login's name on the **Anonymous Login** page.
6. Select the non-administrative account created in step 1 from the **User** dropdown menu.
7. Select either **Form** (to display a configurable form only) or **Activity** (to display the actions and views within an activity) from the **Type** dropdown menu:
    - If you selected **Form:**
        a. Select an object type from the **Object Type** dropdown menu.
        b. Select a configurable form from the **Form** dropdown menu.



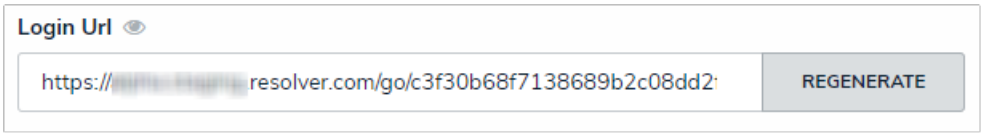
A new Form anonymous login.

- If you selected **Activity:**
    a. Select an application from the **Application** dropdown menu.
    b. Select an activity from the **Activity** dropdown menu.



A new Activity anonymous login.

8. Click **Create** to save your changes and generate the anonymous login link in the **Login Url** field.



The Login URL displaying the anonymous login URL. This field is read only, but you can copy the link to your clipboard.

9. To share the link, select the it in the **Login Url** field, then copy it to your clipboard to paste into an email, document, etc.
10. If the URL needs to be regenerated for security reasons, click **Regenerate** to create a new link.

With the exception of the **Name** and **Description** fields, editing an existing anonymous login will require a new **Login Url** link to be generated.

Edit or Delete an Anonymous Login

To edit or delete an anonymous login:

1. Click the icon in the top bar > **Anonymous Login** in the **Other** section.
2. Click the anonymous login you wish to edit.
3. Make changes to the fields as required.
4. If necessary, click **Regenerate** to create a new link.

>
> With the exception of the **Name** and **Description** fields, editing an existing anonymous login will require that a new **Login Url** link is generated.

5. To delete the anonymous login, click , then **Yes** to confirm.
6. Click **Done** when finished.

Markdown Formatting Overview

Markdown formatting is used to apply simple styling to text. Administrators can apply Markdown to the following items:

- Fields (Long Name);
- Standard configurable forms (Free Form Text);
- Reports (Free Form Text);
- Email Templates;
- Activities (Description); and
- Views (Description)

See the Supported Markdown Styles article for more information on applying these styles.

Supported Markdown Styles

STYLE	*DESCRIPTION*	*NOTES*	*EXAMPLE*
#	Creates an H1 header style.	Must include a space between the hashtag and text (e.g. # Example). To terminate the header formatting, insert a new line in the text by pressing Enter on your keyboard.	**Example**
##	Creates an H2 header style.	Must include a space between the hashtags and text (e.g. ## Example). To terminate the header formatting, insert a new line in the text by pressing Enter on your keyboard.	**Example**
###	Creates an H3 header style.	Must include a space between the hashtags and text (e.g. ### Example). To terminate the header formatting, insert a new line in the text by pressing Enter on your keyboard.	**Example**
####	Creates an H4 header style.	Must include a space between the hashtags and text (e.g. #### Example). To terminate the header formatting, insert a new line in the text by pressing Enter on your keyboard.	**Example**
* *	Italicizes the text.	There can be no spaces between the asterisks and text (e.g. *Example*).	*Example*
** **	Bolds the text.	There can be no spaces between the asterisks and text (e.g. **Example**).	**Example**
~~ ~~	Strikes through the text.	There can be no spaces between the tildes and text (e.g. ~~Example~~).	~~Example~~
- - -	Creates an unordered list.	There can be no spaces between the dash and the list items (e.g: -Example 1 -Example 2 -Example 3). You may continue the unordered list past three items, if needed.	• Example 1 • Example 2 • Example 3
		Spaces between the numbers and text are permitted (e.g:	1. Example

STYLE	*DESCRIPTION*	*NOTES*	*EXAMPLE*
1. 2. 3.	Creates an ordered list.	1. Example 1 2. Example 2 3. Example 3). You may continue the ordered list past three items, if needed.	2. Example 3. Example
[Text](http://www.url.com)	Creates an inline link with text.	The “http://” or https:// prefix must be included (e.g. [Example Text]http://www.example.com)).	Example Text
[Text](http://www.url.com “alt text”)	Creates an inline link with text and alt text.	The “http://” or https:// prefix must be included (e.g. [Example Text](http://www.example.com “Example Alt Text”)).	Example Text
![alt text] (http://www.imageurl.com)	Inserts an inline image with alt text.	Alt text and the “http://” or “https://” prefix must be included (e.g. ![Resolver Logo](http://www.resolver.com/logo.png)). The image will appear in its original size. See the Image Upload & Custom Logos article for information on creating image file URLs.	

Printing Overview

You can print a form or report directly from your browser by pressing Ctrl + P (Windows) or Cmd + P (Mac).

To include additional graphics, such as the color of a unique ID or current workflow state, follow the instructions below:

For Chrome:

1. Click Ctrl + P (Windows) or Cmd + P (Mac) to open Chrome's printer settings.
2. Click **More Settings**.
3. Select the **Background graphics** checkbox.

For Internet Explorer/Edge:

1. If you're using Edge, click the icon in the top-right corner of the browser, then click **Open with Internet Explorer**.
2. From Internet Explorer, click Ctrl + P (Windows) or Cmd + P (Mac) to open the printer settings.
3. Click the icon.
4. Hover your cursor over **Print**, then click **Page Setup**.
5. Select the **Print Background Colors and Images** checkbox.
6. Click **OK**.

See the Print from Chrome article from the Google Support Site or the Print webpages using Internet Explorer article on the Microsoft Support site for more information.

If you're printing a table with multiple pages, each page of the report will need to be printed individually.

If a form or report is not printing in color, check your printer's settings.

Version 2.6 Orientation Video

This video covers some of the new features available in the 2.6 release. For a full list of features and bug fixes, check out the Version 2.6 Release Notes.

Version 2.4 Feature Overview Video

This video covers some of the new features available in the 2.4 release. For a full list of features and bug fixes, check out the Version 2.4 Release Notes.

Version 2.7 Orientation Video

This video covers some of the new features available in the 2.7 release. For a full list of features and bug fixes, check out the Version 2.7 Release Notes.

Pull Data Values Workflow Action

The Pull Data Values workflow action will copy field and relationship data from one related object into another object once it has transitioned into the next step.

The below video will demonstrate how to add this action.

Repeatable Forms

Repeatable forms display object data as it was entered into a form. This allows users to share non-editable, printer-friendly versions of completed forms or form in read-only mode with other users.

Repeatable form elements display the selected form in its entirety which means multiple repeatable forms may take longer to load. For optimal loading time and performance, it's recommended that no more than 100 objects are displayed via one or more repeatable forms in a single report.

The below video will demonstrate how to add a repeatable form to a report.

Email Templates Orientation Video

The video below will provide a quick introduction to the **Email Templates** settings. For more detailed information, see the following articles:

- Email Templates Overview
- Create a New Custom Email Template
- Edit or Delete a Custom Email Template
- Edit the Default (Standard or Assigned) Templates

Your browser does not support HTML5 video.

View a Data Grid

Data grids allow end users to view, edit and analyze object data in a spreadsheet-style format.

Users with permission to view a data grid can:

- Resize, sort and show/hide columns;
- Edit an object's properties or fields within individual cells;
- Filter data by state, role, relationship, reference or single select list;
- Wrap/unwrap cell contents; and
- Move forward or back through the grid's pages as well as adjust the number of rows displayed per page.

The below video will demonstrate how you can engage with the data.

Create A Data Grid

This short video will cover all the steps required to create a basic data grid as well as how to:

- Sort columns;
- Mark column as read only; and
- Delete a data type from a grid.

Menu Toggles

Administrators can now toggle on or off the following menu items for a role:

- The Quick Add
- Search
- Help

The below video will demonstrate how to toggle these menu items.

Create an Assessment

Assessments are powerful tools which allow users to collect, review and assess data by evaluating business activity data such as audits, investigations, and control assessments in either a continuous state or from a particular point in time. In addition assessments also allow for the data to be assessed on different dimensions.

This video will demonstrate the steps for creating an assessment.

Navigation Forms

A navigation form is configurable form type that uses a data definitions to provide visual context for users working with objects or assessments to make it easier to understand how each object relates to one another while providing easy access to those objects without leaving the current form.

This video will demonstrate the steps for creating a basic navigation form.

Scope & Launch Function

Scoping and launching are tools allow end users to refine what is being assessed by selecting specific objects and creating an assessment based on what has been chosen.

This video will demonstrate the steps for creating a scope and launch form.

About Pendo Analytics

Resolver is always working to improve our products and user experience. To do just that, we employ a powerful analytics and user-engagement tool called Pendo, which helps us understand product usage, develop new features, and boost adoption of our Core products.

Using Pendo's variety of tools, such as in-app walkthroughs, tutorials, and guides, we collaborate with our customers to collect usage data and feedback which is then leveraged internally for customer engagement analysis and product improvements. These analytics can also be helpful to our customers by showing how their end-users interact with the software and identifying ways to increase efficiency.

This article provides some examples of how Resolver uses Pendo, potential use cases for our customers, and answers to some commonly asked questions. If you have additional questions, or you'd like to learn more about how Pendo might help you, contact your Customer Success Manager or submit a support ticket.

Collected Data

The data we collect through Pendo is focused on user behavior and non-specific analytics, including:

- User tunnels and paths.
- Time spent on a page and the site.
- Days active and date last visited.
- Browsers and language settings.
- Page hits and events.
- Feature usage and usage trends.
- Activity trends to align with release outages.

By default, the only PII (personally identifying information) passed to Pendo is a user's email address, but customers have the option of excluding this information from the collected data.

IMPORTANT NOTE: Excluding email addresses from the collected data means that Pendo only receives anonymous user IDs. However, excluding emails prevents Resolver from providing customers with information on how their users are interacting with the software, along with feedback to admins on ways to boost usage and adoption. Most customers consider this information valuable as it helps improve their users' experience and engagement of Core. See the **Customer Usage Examples** section below for more details.

Security

Pendo takes security and data protection seriously. In addition to undergoing annual third-party penetration testing, it's SOC 2-compliant and observes GDPR standards.

No customer data hosted by Core is ever shared to Pendo. Only general analytics data, as noted above in the **Collected Data** section, is shared. For more information on how customer data is protected, see the Data Privacy & Security article on the Pendo website or contact your Resolver representative.

Resolver Usage Examples

- **General analytics:** User behavior, statistics, and trends are collected and shared with various teams to understand how the software is used.
- **User communications:** Quick and easy communication of release-related information (e.g., release dates, outages, and release notes), optional announcements, in-app training on new features, and customer feedback collection via administrator focused NPS surveys.
- **Product and UX enhancements:** Analytics data is reviewed by the Product team to help identify and implement improvements, develop new features, and boost product adoption by:
    - Promoting new features and upgrades through announcements and banners.
    - Enabling trials for prospective customers.
    - Educating new, existing, and trial users on features, enhancements, and upgrades through in-app guides, tutorials, and tooltips.

Customer Usage Examples

- **User base analysis:** Gain new insight on how the software is used in your organization with valuable stats, such as a comparison of the time spent completing tasks before and after the software implementation. This can be used in a quantitative analysis of time and cost to be positioned internally as clear evidence of ROI.

- **Positive user adoption:** Identify and remedy gaps in the configuration based on user behavior.
- **Education:** Save time and money and avoid repetitive training sessions by offering customer-branded in-app guides, training, and walkthroughs.
- **Corporate policy acceptance:** Enforce and report on user acceptance of internal policies and data privacy disclaimers on initial login.

FAQs

Q: Is any PII information sent to Pendo?

A: By default, only users' email addresses are sent to Pendo.

Q: Why are email addresses sent?

A: Customers can choose not to send this information, but when it is collected, it's used to help us gather NPS feedback. This data is also required for customers who want to use Pendo to collect quantitative data for a user base analysis (see the **Customer Usage Examples** section for more information).

Q: Is there any way to disable sending email addresses?

A: Yes, but this can only be done before any users are added to your organization. Once users are added, it's not possible to block this information from being sent.

Q: Where is the data stored?

A: Data collected by Pendo is stored in Google's Cloud Platform in the United States.

Q: Is the data hosted by Pendo encrypted?

A: Yes. All data is encrypted during transfers and at rest.

Q: Where do I go if I have more questions?

A: Be sure to check out Pendo's Data Privacy & Security article for more detailed information on how data is collected, transferred, and stored. If that doesn't answer your question, contact your Customer Success Manager, Account Executive or submit a ticket through our Resolver Support site.

AWS Deployment Architecture

Core's deployment architecture is illustrated in the below diagram. Click here for a full-sized view.

Core's AWS deployment architecture.

Glossary of Terms

TERM	*DEFINITION*
Action	Actions are saved to activities and appear to users as a button that, when clicked, will display a selected form so users enter and save data in an object.
Action (Transition)	Actions on a transition allow administrators to add an automated process to an object as it moves through its workflow states.
Activity	Saved to an application, activities determine the data an end user will create, edit, and view through any actions or roles saved to that activity.
All Access	A user account settings, All Access grants users access to all object types and their objects within the organization. This means a user with these settings enabled will be able to view all objects and their data without an administrator adding the user to a role, adding one or more object types to the role, then configuring the workflow permissions.
Anchor	An object type used to create data definitions, which allow you to select which relationships and references a data visualization or assessment will be drawn from.
Anonymous Login	A tool that uses a single user account to generate a link to grant multiple users limited access to Core. Users with the link don't need to provide login credentials, but may only view the form/activity selected in the settings.
Application	A composite of all the key elements within Core (object types, object type groups, fields, forms, roles, etc.) that directs the flow of data to end users. Applications hold activities where users complete tasks (actions) and view information (views).
Assessment	Allows users to collect, review, and assess data by evaluating business activity (e.g. audit, investigation, control assessment, etc.) continuously or from a particular point in time, from different dimensions. Assessments have functionality similar to object types and can have components, workflows, objects, and can be added to applications, reports, and object type groups, etc.
Bar and Column Charts	A type of report that can be shown as bars or columns and displays data from numeric fields, select lists, formulas, relationships, and workflow states.
Component	A field, relationship, reference, formula, or role that can be saved to an object type that can then be added to a configurable form.

TERM	DEFINITION
Condition	A set of requirements that must be met before an object is moved to a state and an action is performed. Conditions are evaluated on triggers in an object type's workflow.
Configurable Forms	A feature that allows you to create custom forms for users to complete as they work through actions and views within an activity. You can create headers, include instructions, add relationships, references, formulas, and roles (components), as well as add fields that can be marked as required or read-only. You can select specific configurable forms to display depending on the current state of the object.
Creation state	An auto-created state on every workflow that cannot be deleted, but its name, description, color, triggers, and transitions can be edited. An object cannot be saved until it has successfully transitioned from the Creation state to another state in the workflow.
Data Definition	Used to select which relationships and references a data visualization or assessment will draw its data from. The relationships and references you can choose from depend on the anchor or assessment's focus object type.
Data Grid	A data visualization that displays object data in a spreadsheet-style format. Users accessing a data grid through a view can sort, filter, and edit data, as well as show or hide columns, click through pages, and adjust column width or the number of rows displayed per page.
Data Import	A feature that allows you to create new objects and enter relationship data in bulk by entering data on a spreadsheet, then uploading that spreadsheet into CORE. Data Import does not create new object types or relationships, but it can update existing objects' data.
Data Path	Part of a data definition, the data path displays all the relationships and references saved to the selected anchor or focus object type, so you choose which object types data is drawn from.
Data Visualization	Displays data from a selected anchor (object type) in reports (charts, heat maps, or tables), export reports, or data grids.
Default form	An auto-created form that displays all the components added to an object type (except roles). Default forms cannot be edited, but you can control the components a user sees through configurable forms.
Default state	An auto-created state on every workflow that can be edited or deleted as needed, however, if this state is deleted, you must ensure the Creation state which is also auto-created, has another state to transition to as failure to do so will prevent an object from being saved.

TERM	DEFINITION
Dimension	The category of data that appears on an assessment. Dimensions can be custom (similar to a select list) or based upon any relationships or references saved to the focus object type.
End users	The non-administrative users who work with CORE and its applications after the applications have been created and configured.
Explicit permissions	Permissions on a role that grants users access to specific objects based on the object types added to the role. Before a user can see any objects, the role must be added as a component on the object type and configurable form, then the user must be selected in the role field that appears on the form. Users with explicit permissions may also be granted inferred permissions so they can view objects related through relationships or references. You may also need to configure inferred permissions for roles with explicit permissions enabled.
Field	A component added to an object type and configurable form where a user can input data. Fields can include plain text, numeric, date and time formats, as well as select lists (dropdown menus), and attachments.
Formula	A component that compiles data from numeric and variable values to generate conclusions, such as Incident Severity, Estimated Damage, or Likelihood the Incident Will Recur by displaying data on objects as a number, label (e.g. Low, Medium, High), or both a number and labels, all with optional colors. Variable data is created from numeric data from fields added directly to an object type or from fields on an object type added through a relationship or reference.
Focus	The object type selected to create an assessment. Focus object types are then used to create data definitions, which allow you to select which relationships and references the assessment data will be drawn from.
Global permissions	Permissions on a role that grants users access to all the records (objects) for the object type(s) added to that role. Users with global permissions do not need to be added to an object to view it nor do they need to be granted inferred permissions, but what they can do with the objects (create, read, edit, etc.) is determined by their role's workflow permissions for each state.
Inferred permissions	Additional permissions on a role that allows administrators to select which additional objects, connected through relationships or references, a user has access to without directly granting permission through the role field on a form. This ensures users within a particular role with explicit permissions are indirectly given the appropriate access to the information they need when interacting with related objects.
	An object that contains the same data as an existing object referenced on an assessment. Instances are saved to the assessment and contain the same data as

TERM	DEFINITION
Instance	the original object, but are assigned unique IDs that are .1 number higher than the original. Any additional instances on the same objects are assigned IDs that continue incrementally (e.g. .2, .3, .4, etc.). You can also identify instances in a view because they display the dimensions from the assessment below their names.
Heat Map	A report type that uses colors and X and Y axes to show where object data falls on a scale. Heat maps are most commonly used when analyzing an organization's risks, the likelihood the risks will occur, and the impact on the organization should they occur.
Monogram	One to three letters, with or without a color, that represent and help you quickly identify object types throughout the system.
Object	A record saved to an object type (the record category). For example, Incident is the object type, while Accident, which outlines the details of an on-site incident, is the object.
Object type	The category of the data collected (e.g. Incident, Employee Record, Witnesses, Vehicles, etc.). Once a record is saved to an object type, it becomes an object. Object types can be configured to control who can access them, what fields are visible and completed on forms, and the process through which the data is collected.
Object type group	One or more object types assembled into a group for the purposes of creating a relationship. When creating a relationship, you must select an object type group, which determines which object types the data is drawn from when completing the relationship field or table on a form.
Org Manager	A feature through which you can duplicate the configurations and user accounts (but not the data) of an existing organization into a new organization. This is done by exporting the configurations from the existing organization into a .JSON file, then uploading the file to a blank organization through Org Manager.
Pie chart	A type of report. Pie charts can be shown as a full pie chart or half-pie chart and display data from numeric fields, select lists, formulas, relationships, and workflow states.
References	A component that indicates that multiple objects are connected through a relationship. For example, if you created a relationship called "Incident Report Writer" on the Incident object type using a group with the Employee Record object type saved to it, you can add a reference to an Employee Record configurable form to show any incidents an employee may have created. References are automatically created with relationships.

TERM	*DEFINITION*
Relationships	A component that connects two or more object types together when object types are added to an object type group and that group is selected when creating a relationship. For example, to track which employees are creating Incident objects, you would add the Employee Record object type to a group called “Employees,” then create a relationship on Incident using the Employees group, naming the relationship “Incident Report Writer.” Users creating new Incident objects will now be able to select or create an Employee object in the “Incident Report Writer” field to indicate who created the report.
Repeatable Forms	Displays object data as it was entered into a form. This allows users to view and share non-editable, printer-friendly versions of completed forms or forms in read-only mode with other users. Note that if a user does not have permission to see an object, the form will not be displayed on the report.
Reports	Displays data from a selected anchor (object type) in pie charts, bar charts, tables, repeatable forms, or heat maps. You can also add free form text to reports.
Roles	A feature that controls the data a user can create, edit, delete, view, or manage on object types. When users are added to a role, they’re bound by the permissions configured on the role, which include global, explicit, or inferred permissions.
States	The various stages of the data collection process (e.g. Create, Triage, Review, Investigate, Close) that are saved to a workflow. You can create multiple states, but you must have at least two states on an object type to successfully save new objects.
Table	A type of report that displays data in columns based on your selection in the report settings. Users can click on any of the data in the report to display a form selected by administrator. Table data can be exported to a Word or Excel file from a view.
Transition	A workflow element that defines the state an object will move to once a trigger has been clicked on a form. For example, if a user clicks the Create trigger, the transition saved to that triggers determines that the object will move to the Triage state. You can also add actions to transitions that can send emails to users within selected roles or automatically add the currently logged in user within a selected role to object so that they may access it once it has transitioned.
Trigger	The event in a workflow that prompts an action and the movement of an object from one state to another. Triggers are either timed to automatically prompt an action each night or appear as clickable buttons on a form that, once clicked, moves the object to another state and performs an action based on the transition saved to the trigger. For example, clicking Create on a new Incident will move the object from the Creation state to Triage. The state an object moves to is determined by the transition saved to the trigger.

TERM	*DEFINITION*
User Groups	A collection of CORE users saved to a group (e.g. Employees or Managers) for the purposes of quickly adding those users to roles.
Value	Data entered or selected in a field. For example, Name is the field, but the data entered in that field, John Doe, is the value.
View	Displays data visualizations and/or list of objects a user can review or edit as needed. You can specify which objects, reports, or forms are displayed based on the object type and workflow state. Views are saved to activities.
Workflow	Settings that allow administrators to control the flow of data as well as define what data is displayed, where it's displayed, and to whom it's displayed through applications, activities, search results, data visualizations, and assignments. Workflows are comprised of states, triggers, transitions, conditions, and actions. Each object type must have a workflow.

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