USER GUIDE

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Introduction

FortiSOAR™ is a centralized hub for all of your security operations. Our platform provides customizable mechanisms for prevention, detection, and response that work across tools in your environment. The integrations here are intended to provide a demonstration of how FortiSOAR™™ can enable your security operations from end-to-end.

Use the user guide to understand how to use FortiSOAR™, including using modules such as Alerts and Incidents, importing data, searching within FortiSOAR™, and creating your own custom dashboards and templates.

Logging on to FortiSOAR™

Your administrator will provide you access and credentials to log on to the FortiSOAR™ application.

Important: You must change the password when you first log on to FortiSOAR™, irrespective of the complexity of the password assigned to you, by clicking the **User Profile** icon ( ) and then selecting the **Change Password** option.

Upon accessing the FortiSOAR™ login screen, enter your login credentials.

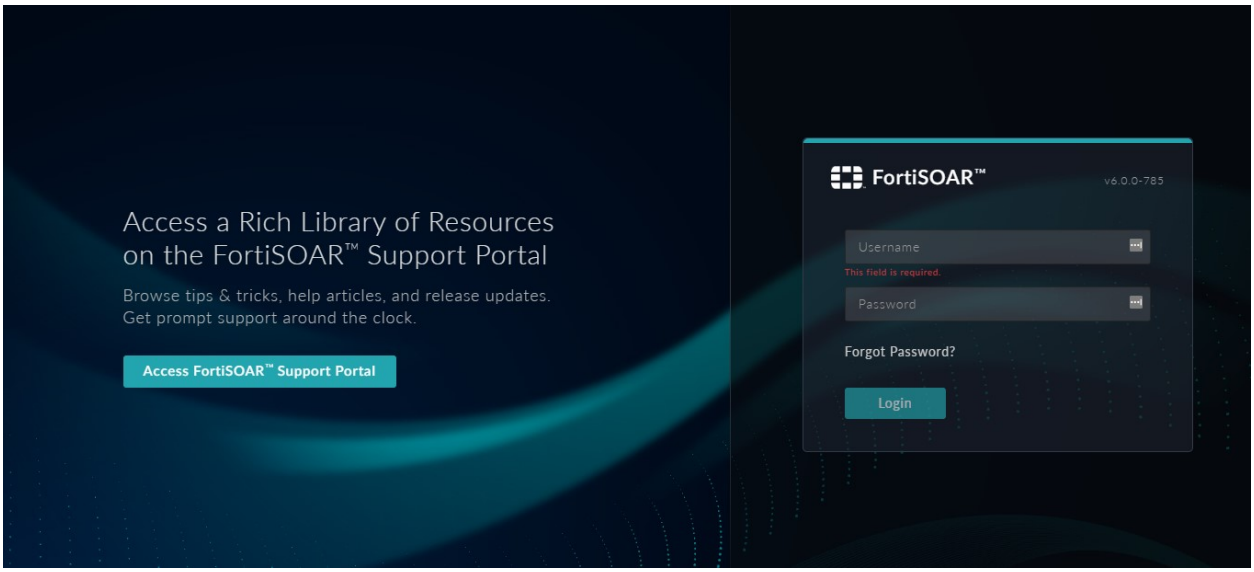


Figure 1. *FortiSOAR™ login*

If your organization uses SSO and your administrator has completed the configuration of SSO for FortiSOAR™, you can use Single Sign On (SSO) to log on to FortiSOAR™. Log on to FortiSOAR™ using SSO by clicking the **Use Single Sign On (SSO)** link that is present on the FortiSOAR™ login page.

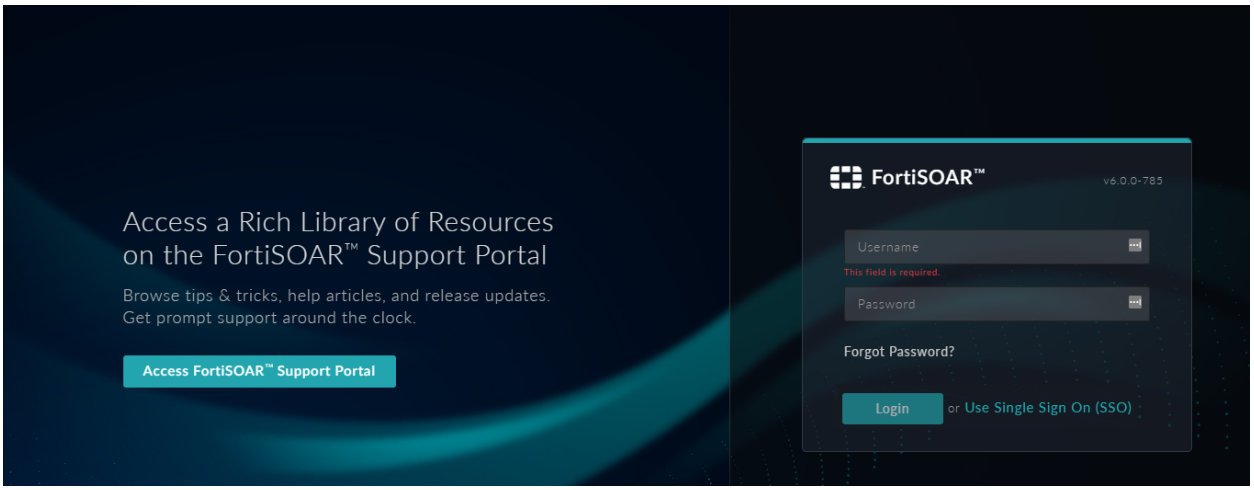


Figure 2. *FortiSOAR™ login with the SSO link*

Once you click the **Use Single Sign On (SSO)** link, you are redirected to a third-party identity login page, where you must enter your credentials and get yourself authenticated. Once you successfully log on to FortiSOAR™, your user profile automatically gets created. Your user profile is created based on the default values, such as your default team and role, configured by your administrator. You can update your profile by editing your user profile.

User Profile

All users of the system have a profile. Once you log on to FortiSOAR™, you can access your own profile and can update your information. To access your profile, click the **User Profile** icon ( ) on the top-right bar in FortiSOAR™.

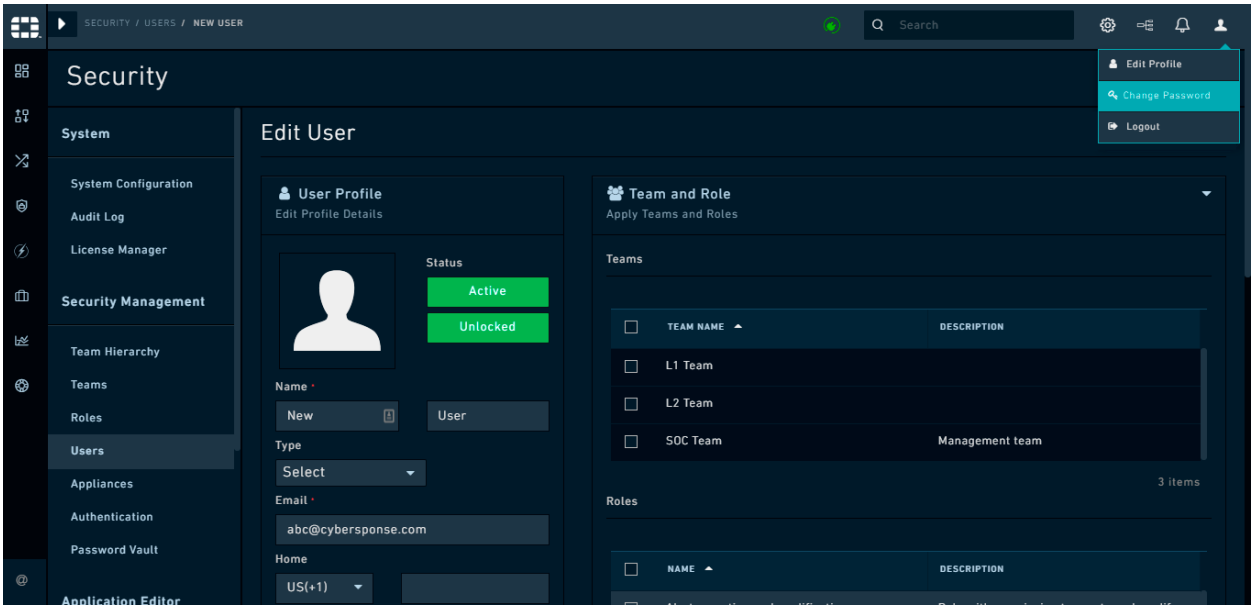


Figure 3. *User Profile Page*

You can view your name, email, username, password, phone numbers, teams and roles to which you are assigned. You can also view your own audit logs, which display a chronological list of all the actions that you have performed across all the modules of FortiSOAR™.

Note: The **Username** field is mandatory that cannot be edited once it is set.

You must change your password when you first log on to FortiSOAR™. You can change your password by clicking the **User Profile** icon and selecting the **Change Password** option. Clicking the **Change Password** option opens the `Change Password` dialog in which you enter your old password in the **Old Password** field, new password in the **New Password** field and re-enter the new password in the **Confirm Password** Field. Click **Submit** to change your password.

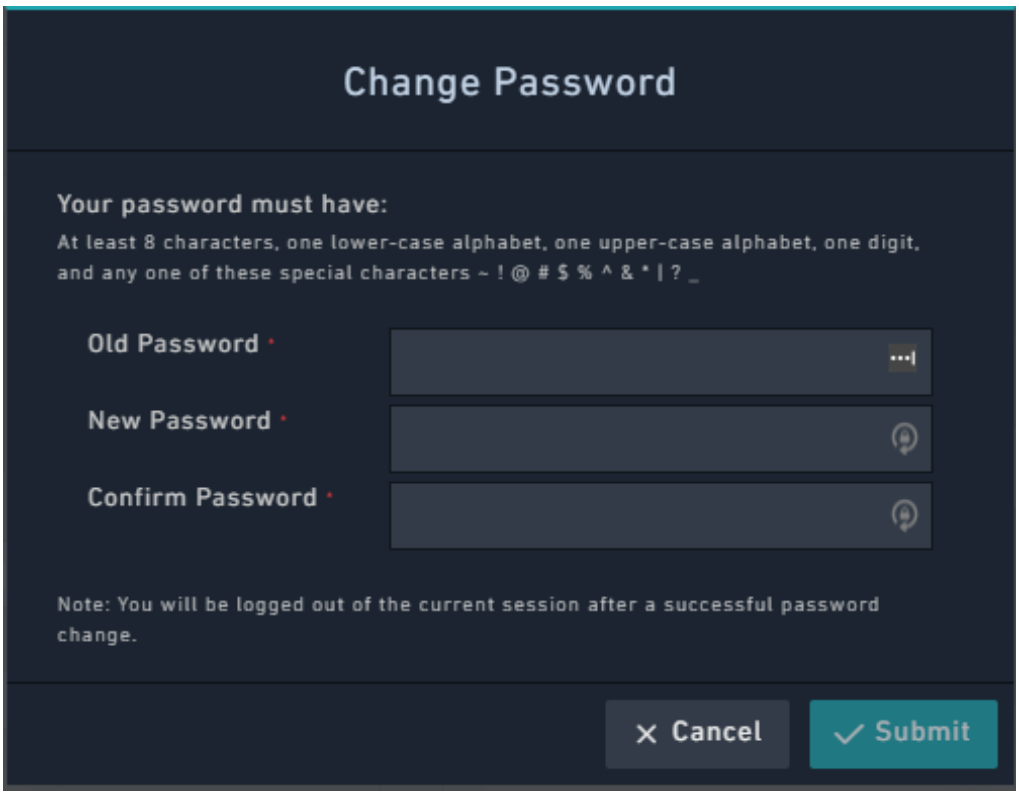


Figure 4. *Change Password Dialog*

Note: If you face issues with user preferences such as applying filters on the grid or column formatting within a grid, click the **More Options** icon ( ) and click on the **Reset Columns To Default** option.

Authentication

You can view your user type and username in the **Authentication** section. **Do not change this option.**

You can also reset your password by clicking the **Reset Password** button.

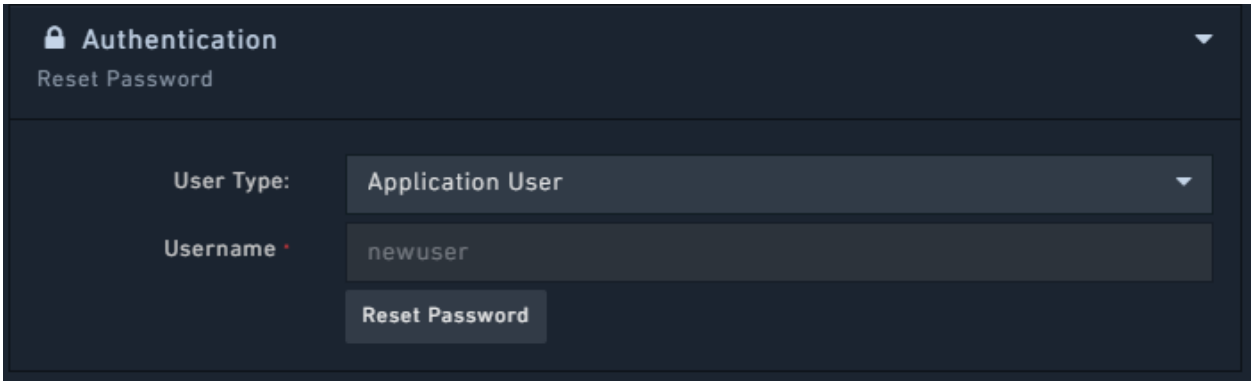


Figure 5. *User Profile - Authentication*

Clicking **Reset Password** opens the `Reset Password` dialog in which you enter the password that you want to set in the **New Password** field and re-enter the new password in the **Confirm Password** Field. Click **Submit** to change your password.

2-Factor

The **2-Factor** authentication menu displays the current user preference for the 2-factor method. Currently, FortiSOAR™ supports only TeleSign for 2-Factor authentication. **Do not change this option.**

Notifications

Currently, notification preferences are limited to email. In the future, in-app notifications and SMS notifications will enable additional notification mechanisms. **Do not change this option.**

Theme Settings

You can update your FortiSOAR™ theme using the **Theme Settings** menu on the `Edit User` page. There are currently three theme options, **Dark**, **Light**, and **Space**, with **Space** being the default. Click **Preview Theme** to see the Theme as it would look and save the profile to apply the theme.

History

Use the `History` menu to view your authentication history and your ten most recent authentication attempts and their outcome.

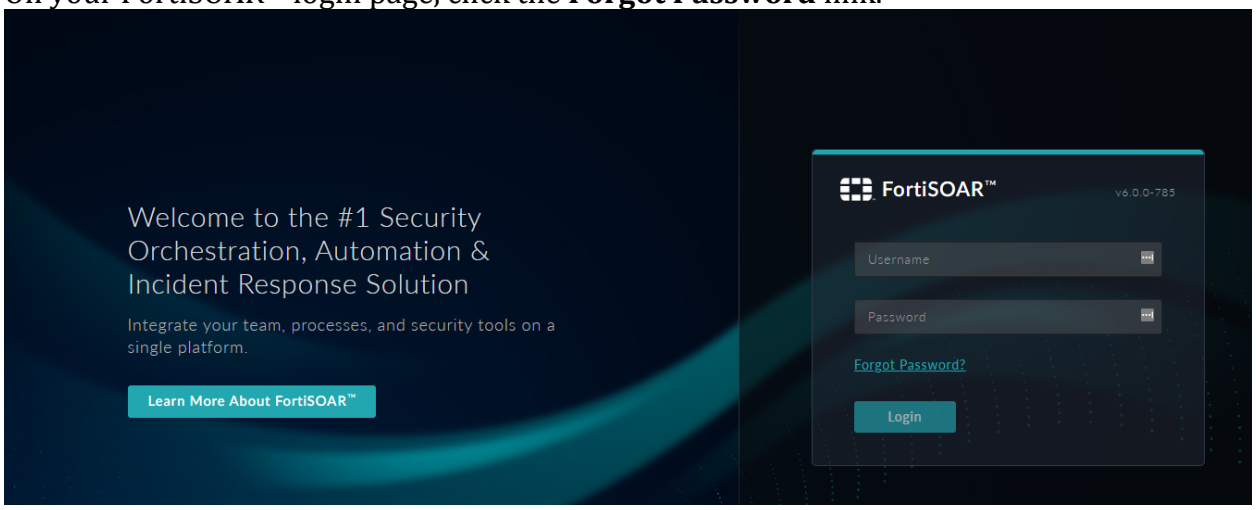
Audit Logs

Use the `User Specific Audit Logs` panel to view a chronological list of all the actions that you have performed across all the modules of FortiSOAR™. The audit log also displays users' login success or failures and logout events. The login event includes all three supported login types, which are DB Login, LDAP Login, and SSO Login.

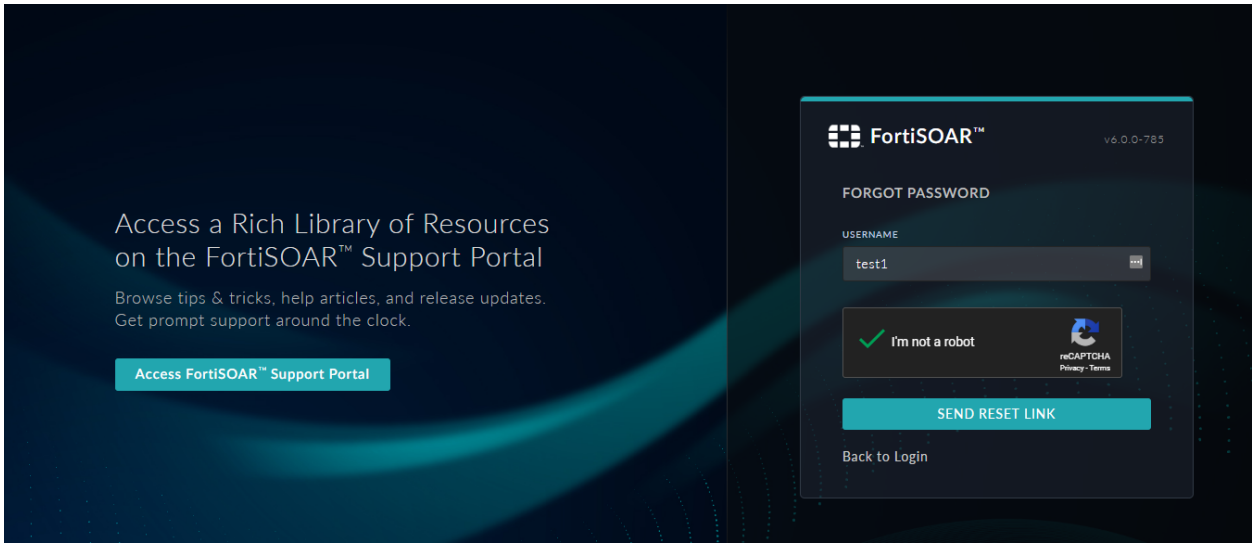
Regenerating your password

In case you forget your FortiSOAR™ password, use the following procedure to reset or regenerate your password:

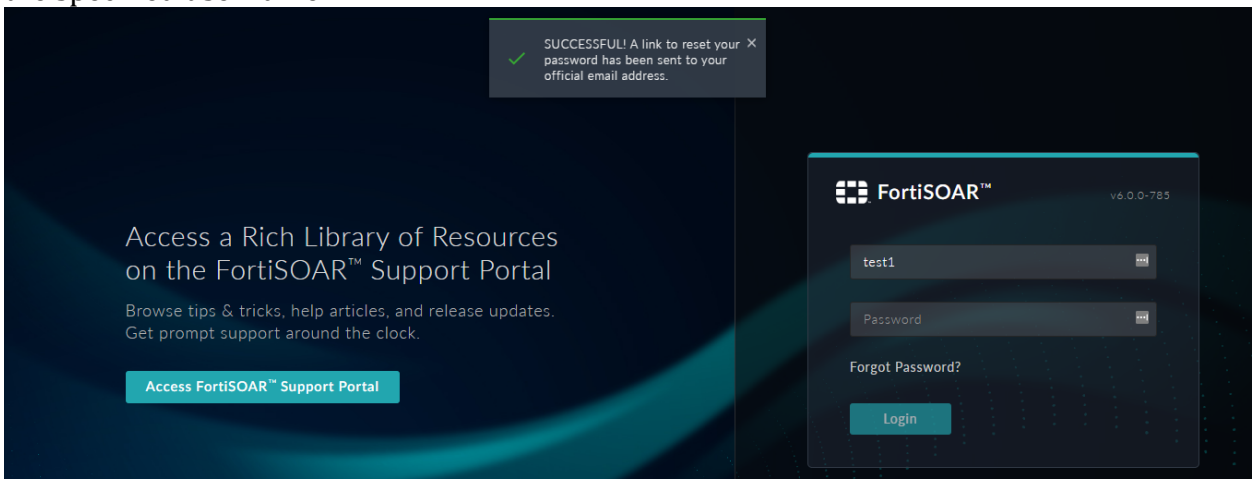
1. On your FortiSOAR™ login page, click the **Forgot Password** link.



2. On the `Forgot Password` screen, enter your username, validate the captcha, and then click **Send Reset Link**.



Once you click **Send Reset Link**, an email is sent to the email address associated with the specified username.



Feature Tour

Working in FortiSOAR™

The FortiSOAR™ interface is based around a common navigation bar on the left side of the application, a global search bar, and filtering within modules. All navigation is built on top of the authorization you are provided according to your RBAC permissions.

For instance, if you have Read privileges to the Incidents module, you will be able to view all Incidents that are within your Ownership Sphere.

Navigation

The navigation bar provides quick access to the Components and Modules you are authorized to view.

At the highest level, the navigation bar provides Components, which open when you click on the component to reveal a module menu with all accessible modules. For example, when you click on the Incident Response, its module menu reveals the Alerts, Incidents, Tasks, Indicators and Email modules. Module links go to the Module's record listing pages.

Searching

There are three methods of searching within FortiSOAR™.

Search Method	Description
Global Search	The Global Search bar at the top of the screen allows you to search for one or more keywords across all records within the system
Table Filter	The Table Filter method allows you to search the name field quickly, such as Incidents, within the context of an individual data column on the table
Column Filter	The Column Filter method within tables allows you to search specific records from a module, such as Incidents, within the context of an individual data column on the table

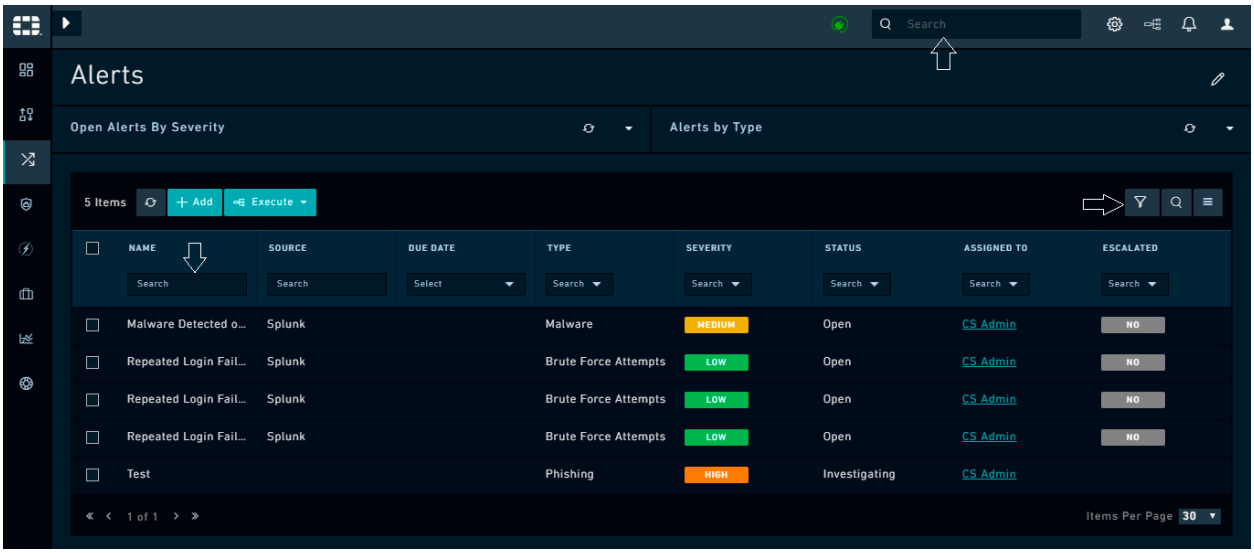


Figure 6. *Search Interface*

Global Search

The Global Search mechanism leverages an Elastic Search database to achieve rapid, efficient searches across the entirety of the record system. All the record data is stored in Elastic Search, including from file attachments, and made searchable.

The Global Search mechanism respects authorization from users to return search results, meaning users without Read permissions on a Module would not see results returned from that module even if they were found during the search.

Global Search result findings may be exported in the results table to CSV and then stored for future reference if desired.

Adding Records

Add records to a module using the **Add** button present on top of the grid that lists module records based on RBAC permissions.

Editing

Record editing within the record detail view can be accomplished via Inline editing, which allows for quick changes to fields and requires confirmation for all updates.

Additionally, in the detail view of every record is an Edit button on the top right in the breadcrumb bar. This gives you access to a bulk editing interface for all fields that are allowed within the authorization model of your user.

Modules & Models

One of the primary features of FortiSOAR™ is the ability to provide a clean interface with customized data models optimized for tracking day-to-day security data, such as Alerts.

FortiSOAR™ unifies the data streams to provide a centralized management interface for tracking. This means Incidents may spend their entire lifecycle rolled up inside of FortiSOAR™ and working across other related data being tracked, such as Tasks or Assets.

By providing a single place to view and organize security data, much of the overhead and manual effort of going to disparate security tools is significantly reduced. Users are enabled to focus on analyzing the data, not collecting the data.

Models within FortiSOAR™ are easily customizable according to the needs of an organization via API.

Many modules may be accessed through relationships but may not directly display in the interface navigation. Please see the detailed list of modules provided for more description.

Modules provide access to individual data models within the FortiSOAR™ database, such as Incidents.

All Module fields are editable and can be customized or extended as needed via API. Models are based on a standard JSON schema.

Note: We recommend you do not delete the core module fields that are included in your instance without consulting FortiSOAR™ Support. Deletion of core module fields may result in upgrade issues at a future date.

Not all modules will be exposed in the navigation. Some of them are only accessible within the context of other modules. You can modify the default navigation if you desire to add new modules at any time.

Some modules that are generally included by default in FortiSOAR™ are:

- **Alerts**: Alerts generally represent records that contain a notice of suspicious activity typically triggered in a SIEM.
- **Incidents**: Incidents generally represent records of actual breach of security.
- **Events**: Events generally represent records that contain machine-level information which triggered a specific alert.
- **Indicators**: Indicators generally represent records that contain simple identifiable information regarding a threat such as an IP or URL.

Note: Playbooks and Reporting do not have any associated Module definition.

Linking

Individual records are easily linked in the FortiSOAR™ interface to provide context and make it simple to track relationships. Linking may be contextual or operational.

Operational Links

For instance, an Incident may have multiple Tasks automatically generated based on the type of Incident. These Tasks stay linked to the Incident throughout the lifecycle and allow for an easy operational overview of where an Incident is beyond tracking just the Incident phase.

Contextual Links

In contextual situations, linking provides the ability to relate data records together and increase velocity during Preparation and Analysis activities.

For instance, Alerts link to Artifacts which then may be automatically linked to Assets. Artifacts within an Alert from your SIEM tool may contain information that helps identify and link Asset records making it simple for an Analyst to understand the potential scope of an Alert. FortiSOAR™ can find identifiable Asset information and then use that to search one or more Asset resources, such as a CMDB, local DNS, or DHCP records.

Linking is accomplished within the record detail view.

Automation

FortiSOAR™ provides a powerful Workflow Engine where machine-to-machine (M2M) automation, policy enforcement, data enrichment, and notifications, are all available within a simple drag-and-drop interface.

Security Playbooks may be digitized and automated via Workflows. A standard library of Playbooks may be added at the time of installation to provide a quick level of defaults that may then be customized to match the specific use cases of your environment.

Access Control

FortiSOAR™ utilizes a robust security model with Role Based Access Control (RBAC) as well as team ownership.

RBAC provides Create, Read, Update, and Delete (CRUD), permissions on individual models within the platform. Roles are created by granting CRUD privileges on models within the available models' list.

Teams provide for row-level ownership of records. Teams have an explicit hierarchy model to allow for complex relationships. The Teams you are a member of and their relationships combined define an Ownership Sphere. An Ownership Sphere is the full set of records on which you can exercise your permissions.

Live UI - Web Sockets

Live UI provides users with many benefits, such as immediate refreshing of records in case of an update by users or workflow (playbook or API), without the users having to refresh the views to see the updates manually.

When a user or workflow (playbook or API) updates any record that is being displayed in the following UI components:

- Grid and Relationship grid (view panel)
- Details View Panel
- Collaboration Panel: Comments or Attachments
- Approvals in notification panel

Then these changes are immediately reflected to other users who are active on that FortiSOAR™ instance.

If your FortiSOAR™ instance is connected to the web sockets server then a green connection icon is displayed at the top-middle of the FortiSOAR™ UI as shown in the following image:

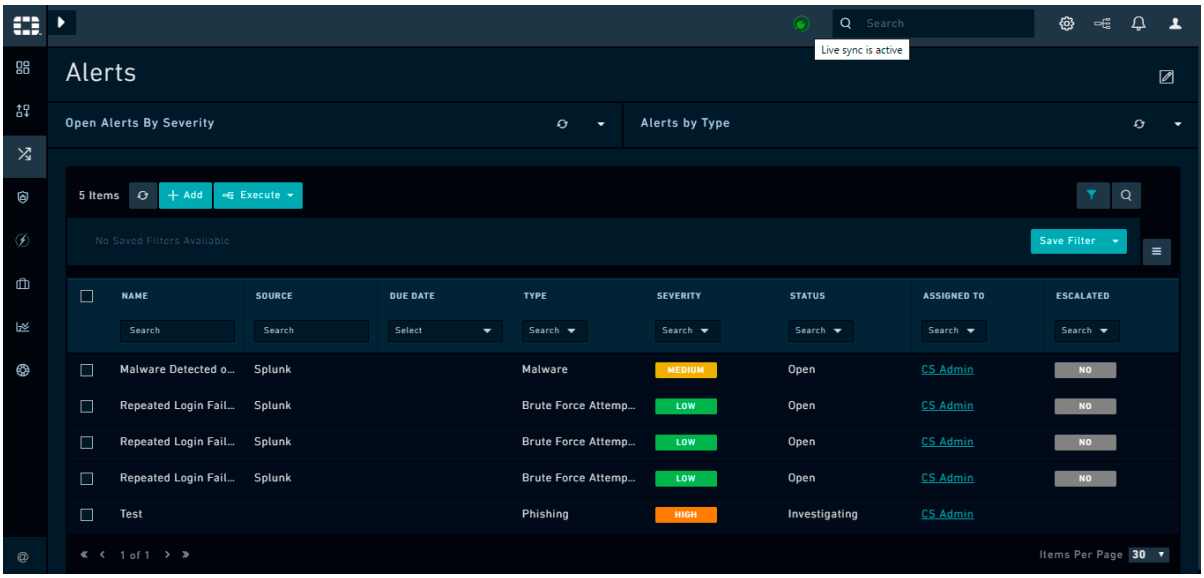


Figure 7. *LiveUI - Connection Established*

If your FortiSOAR™ instance cannot connect to the web sockets server, due to connectivity or any other issues, then a red connection icon and a message such as "Live Sync is not active…." is displayed at the top-middle of the FortiSOAR™ UI as shown in the following image:

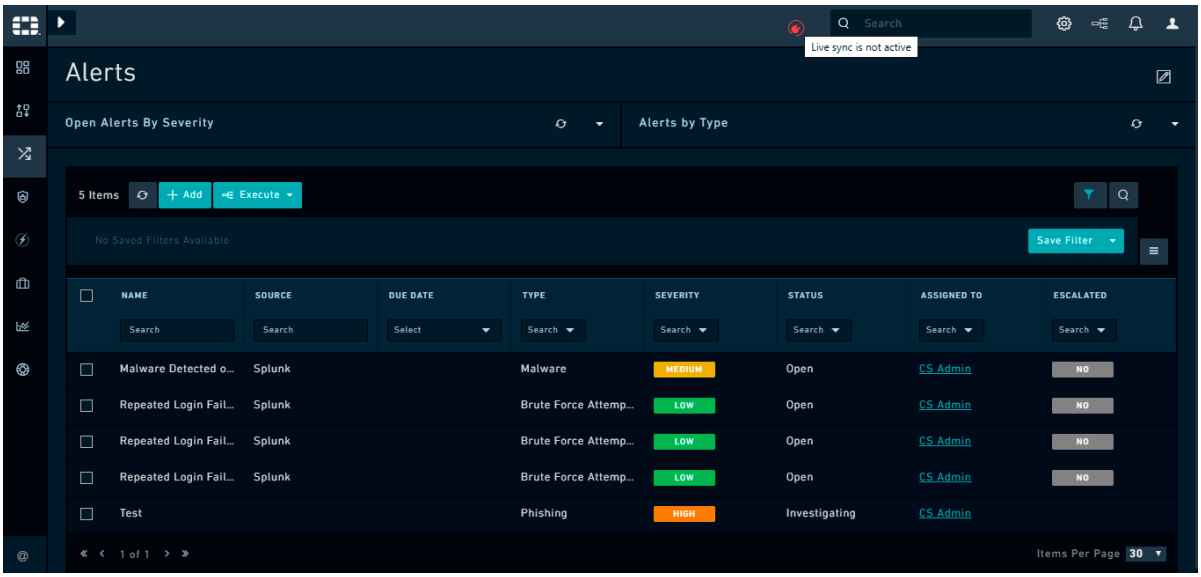


Figure 8. *LiveUI - Connection Lost*

In such a case FortiSOAR™ also displays a message to the users asking users to use manual refresh to update the views.

Searches and Filters

Overview

FortiSOAR™ provides you search at two levels:

Global Search: Searches for the keywords you have specified across all records in FortiSOAR™.

List Search: Searches for the keywords you have specified in all records in a specific module.

Search in FortiSOAR™ is based upon an included Elasticsearch database.

Filters: You can filter records belonging to a module and also save filters for future use.

Note: You cannot search or filter encrypted fields.

Global Search

Keyword Search

Global Search searches the titles, descriptions, or tags across all records in FortiSOAR™, including file attachments.

The **Search** bar at the top of the FortiSOAR™ interface allows for fast access to the Global Search feature. Entering any keyword in the **Search** bar and hitting `Enter` begins the search for the keyword.

Using **Global Search,** you can search for playbooks and rules based on tags, name, and description. You can add special characters and spaces in tags from version 6.4.0 onwards. However, the following special characters are not supported in tags: `'`, `,` , `"`, `#`, `?`, and `/`.

For example, if you have added `sample` as a tag to the playbook and you type `sample` in Global Search, the search results will contain the playbook with the `sample` tag. In the case of tags, search results will be displayed only in case of an exact match, without case sensitivity, for example, if you have added `phishing` as a tag and you search for `phish`, there will be no search results. However, if you search for `Phishing`, you will get a search result.

Important: If you want to search for tags in custom modules based on Tags, then you must ensure that you assign a minimum of Read permission to the custom module in a role(s) that has permissions on the Appliances module. This is required since custom modules

require to be given permission in the playbook appliance for the record to get indexed and be searchable.

Term Matching

The Global Search function accessible from the **Search** bar uses the full-text match query function within Elasticsearch. This passes the search string through the standard analyzer, stripping any extra characters to the root term. For instance, the term `phishing` would be searched the same way as the term `"PHISHING!"`, for text fields such as description or name as shown in the following image:

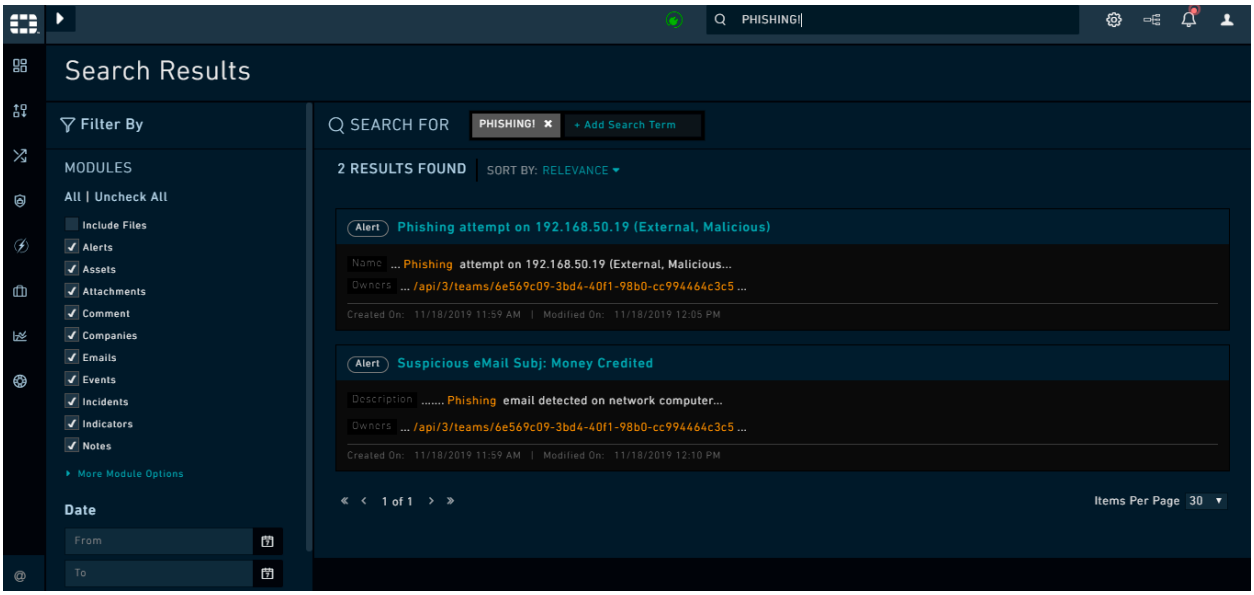


Figure 9. *Search for 'Phishing!'*

However, in the case of `tags` an exact match is required:

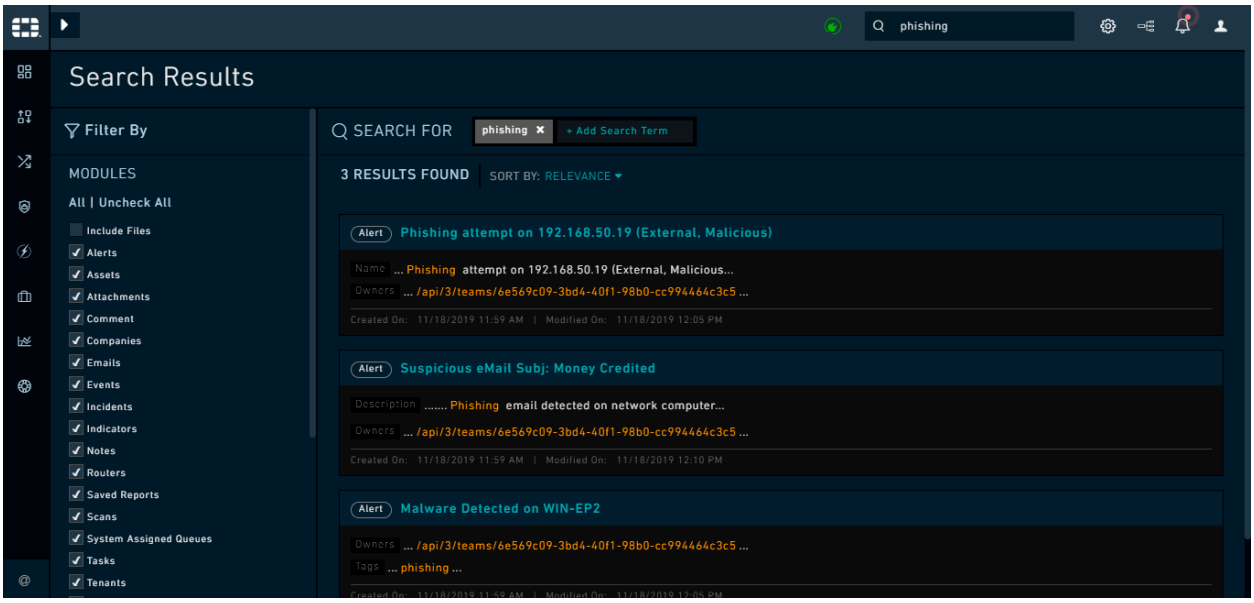


Figure 10. *Search for 'phishing'*

You can search for multiple terms using the search function by adding a term in the **Add Search Term** field. If multiple terms are entered, they are searched using the `AND` operation. FortiSOAR™ displays the results only when the results contain all the terms that you have entered.

Global Search also works for stop words such as dots, @, etc. For example, if you are searching for the text google.com, then the results are displayed for both `com` and `google`.

Search Results

Search results are returned as a listing with a summary of the record metadata that provides information such as, the record name, the record type (the model of the record, such as an Incident), the created date and the last modified date of the record, and a contextual preview of the search term or terms position within the resulting record text.

You can sort the search result by **Relevance**, which is based on the number of instances of the keyword within the record body. You can also sort the results by when the record was modified, the **Most Recently Modified** record or the **Least Recently Modified** record. Clicking on a search result displays the record details.

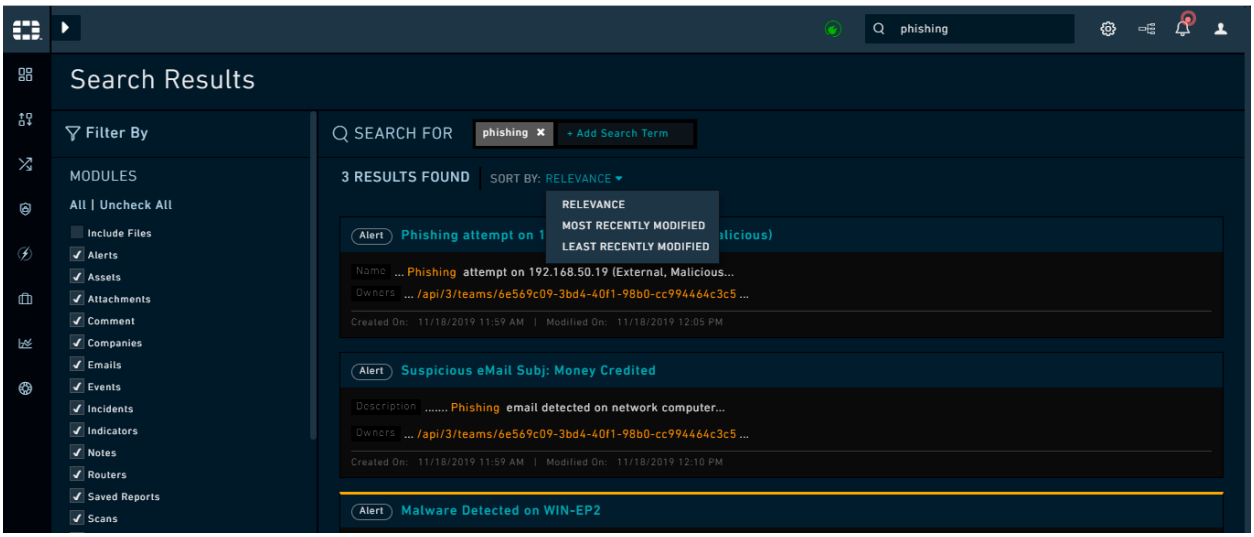


Figure 11. *Search Results by Relevance*

Filter By Pane

Use the **Filter By** pane to perform additional filtering of the results returned after a Global Search has been performed. When using the Filter bar, the term being searched on is applied directly to the already returned search results. This *does not* repeat the full-text match query from the Global Search function. This feature enables you to filter out a larger batch of returned results without repeating the search of the entire database.

For example, as shown in the previous image we had searched for the keyword `phishing` using Global Search, and the search result had returned 17 results. Now we can perform additional filtering on the search results by adding an additional keyword, `email`. The search records are filtered using the `AND` operator, and then the search result displays only one search result as shown in the following image:

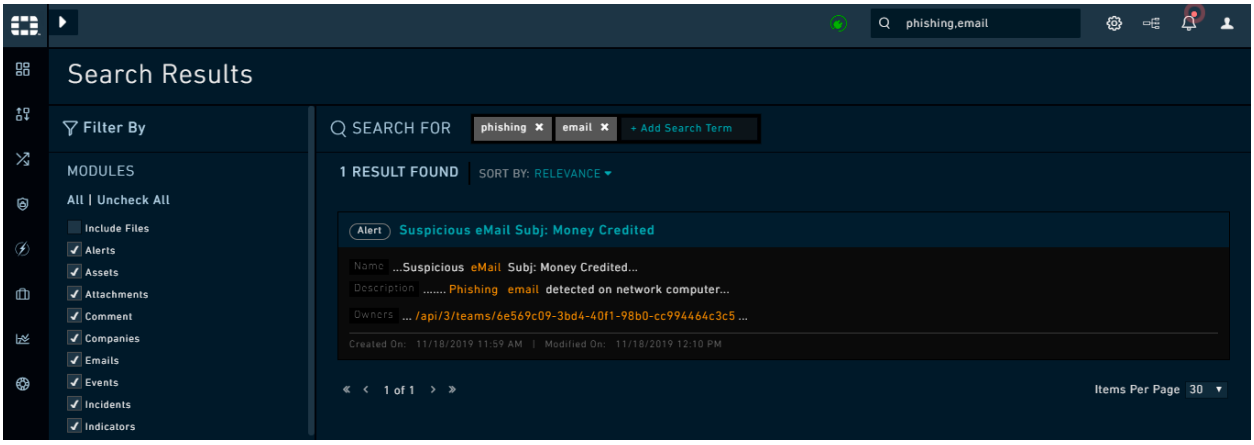


Figure 12. *Search using an 'And' operator for both words 'phishing' and 'email'*

The contextual preview of the term context from the original Global Search function is not updated with applied filters. The preview remains the same, but the records returned in the table are filtered according to the `AND` combination of terms as displayed above in the table.

Filtering Results

You can perform additional filtering in the `Filter By` pane on the search results based on the `Module` and `Date` of the records. All modules are filterable. The date search uses the `Created On date` field to filter the records based on the period you have specified. You can either specify the From and To dates, or select relative dates, such as Last 90 Days, Last 7 days, Today, etc. These additional filters refine the returned search results to the applied scope.

By default, all `File` record types are excluded from the search, but you can select the **Include Files** check box to enable this if you so desire. `Files` is an associated module that stores the raw binary information uploaded with an attachment.

Authorization

Global Search respects authorization permissions based on the context of the user who is performing the search. This means that records not owned by the user's teams, any child or sibling teams, or not within the user's role permissions scope, are not displayed within the results.

Searching Record Contents

All records, such as Incidents, Alerts, and Assets, are included in the Elasticsearch database in addition to Attachments. The record contents do not store field labels, Picklist values, or model information. This is so that the search results do not contain results based on the field label values or terms in the model information, which would lead to meaningless results. For instance, if you perform a Global Search for the keyword **Source**, the Global Search will not return any result even though in an Alert record, the term `Source`, represents a field label in the record. Similarly, `Brute Force Attempt` might be set as a picklist value of the `Type` field in an Alert record, but the Global Search will not return any matches for `Brute Force Attempt` even if records existed with that picklist value. However, you could search for the same using tags, if you have added tags to the record. For example, if you have added a tag BruteForceAttempt or BFA in the record, then you can search for that record using `BFA`.

FortiSOAR™ essentially searches the record content, i.e., text saved into the field values, such as the Name, or Description and also searches for tag values.

Searching File Attachments

When files are uploaded using the `Attachment` module, the contents of the files are passed through a conversion process to remove any formatting and preserve the record text.

Note: Any tags or special characters from the file format are removed during the insertion process using the standard analyzer. Only text terms are retained and searchable.

FortiSOAR™ attempts to parse all types of files, except for audio and video files.

File Metadata

While many file types can be uploaded, metadata is purposely excluded from the search database. This is to prevent excessive search noise resulting from verbose and many times meaningless metadata that may be a part of the file format itself.

Files with no metadata or searchable contents can still be stored. The name of the file and any other details that are associated with the file attachment are searchable. These names should be descriptive to ensure that the file can be found through keyword searches related to the file content.

List Search

Keyword Search

List Search searches for data or keywords across a module in FortiSOAR™. The search also includes file attachments if they are part of any record within that module.

For list search, use the **Search** bar at the top of the record list in a particular module in FortiSOAR™. Type any keyword in the **Search** bar and hit `Enter` to begin the search for the keyword.

Term Matching, Authorization, and Searching File Attachments in 'List Search' works the same way as in 'Global Search.'

Search Results

Search results are returned in a tabular format as shown in the following image:

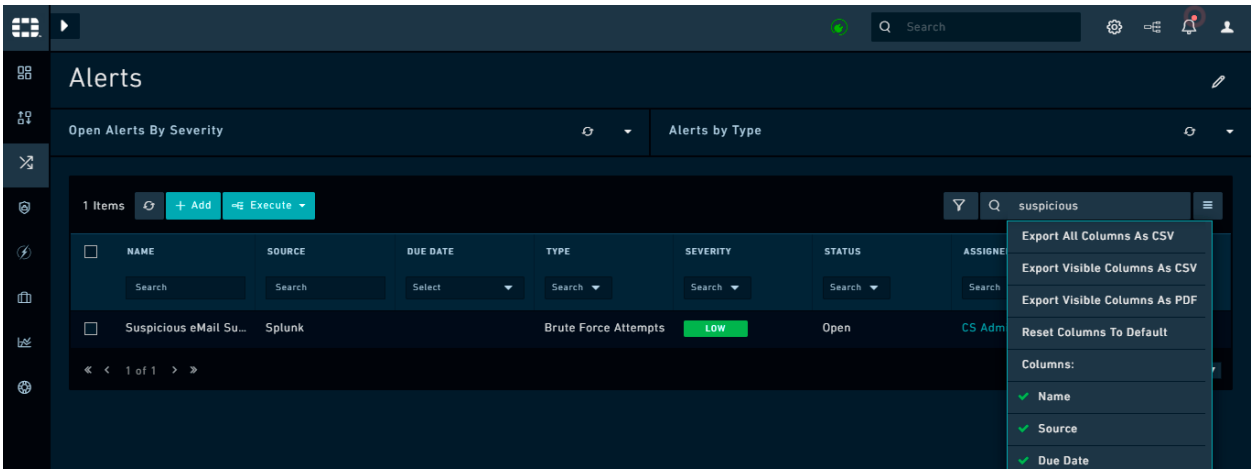


Figure 13. *List Search Example - Search for 'Incidents that contain business'*

The above image displays the results of a search performed in the `Alerts` module, with the keywords **suspicious**. The search results are displayed in a tabular form, and you can use the **Menu** button to specify the visible columns in the table by selecting or deselecting the columns from the **Columns** list. You can also choose to export the table results to a `.csv` or a `.pdf` file. You can download the search result and store the results for future reference, potentially even as an attachment within FortiSOAR™ to a particular record.

FortiSOAR™ Search Errors

FortiSOAR™ might display an `Internal Server Error` or any of the following errors when you are performing a search operation in FortiSOAR™:

- `Search indexing is in progress. Partial results are returned.`
- `Search indexing has stopped. You must manually rerun indexing (see product documentation for instructions) or raise support ticket for the same.`
- `We are sorry, but the server encountered an error while handling your search request. Please contact your administrator for assistance.`

For troubleshooting any errors with FortiSOAR™ Search, please contact your administrator.

Filtering Records

You can filter records on the listing view by typing the filter term, tag, or selecting the option based on which you want to filter records in the first row of the record listing.

Users can quickly and easily switch between saved filters since filters are directly exposed on the grid making it easy for you to select and apply available saved filters without having to edit the filters by opening the filter editing mode. In the filter editing mode, you can easily view and modify the filter definitions of a saved filter, without having to save that

particular filter (you can save the modified filter if you want). You can also easily clear all or a particular filter applied on the grid.

Filtering example

The following example explains how to filter alert records based on Severity, i.e., it only displays records whose Severity is set to Critical. In this example, you are setting a filter criterion from the UI, i.e., selecting a column (field) based on which you are filtering records.

Open the **Incidents Response** > **Alerts** and from the `Severity` column select **Critical** and click **Apply**.

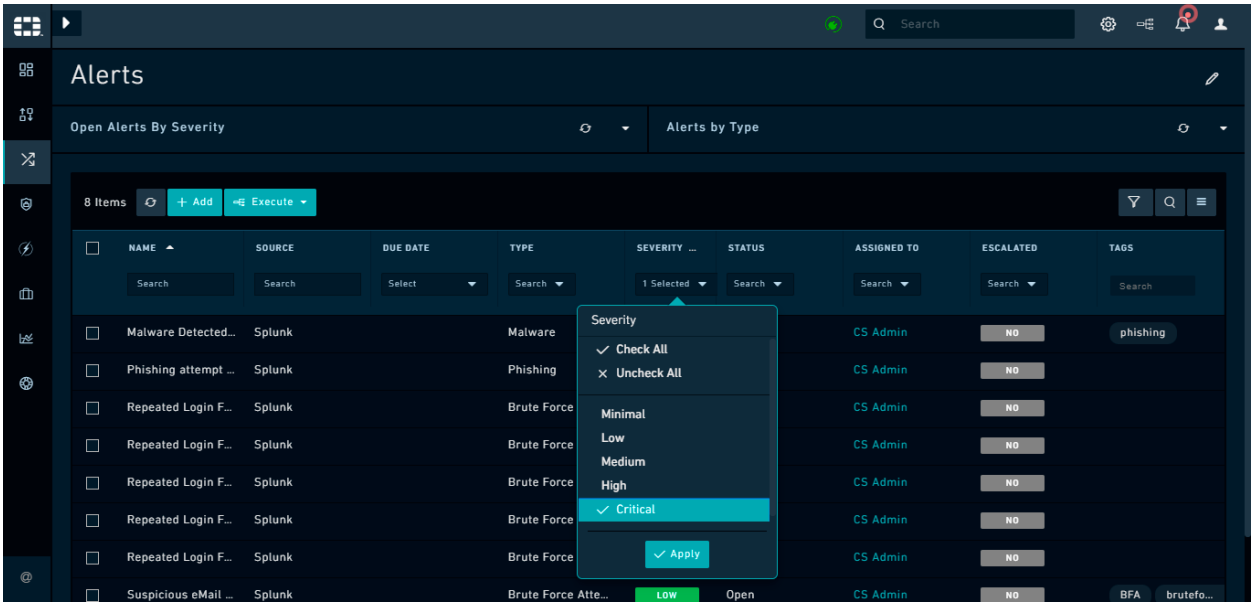


Figure 14. *Filtering Records based on Severity set as 'Critical'*

Once you click **Critical** as shown in the above image and click **Apply**, a filter is set on the `Severity` column, and the value of the filter is set to **Critical**. Therefore, based on the set filter criterion, only records whose `Severity is Critical` are displayed in the list of records as shown in the following image:

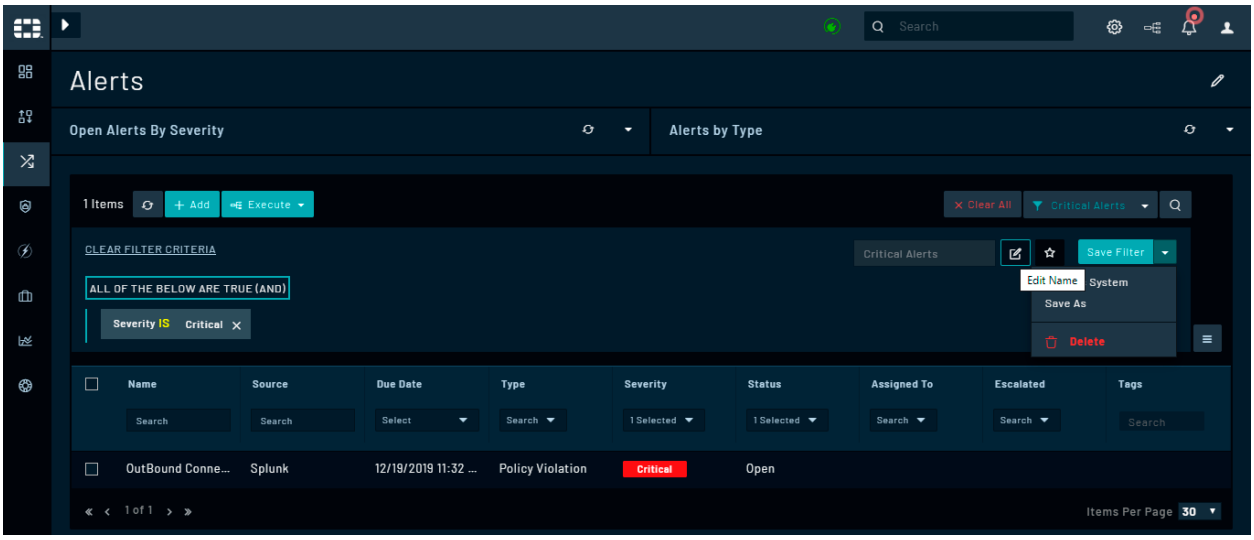


Figure 15. *Records with Severity set as critical*

To clear all the filters applied on the grid or records, click the **Clear All** link.

You can also edit an existing filter by selecting that filter from the **Filters** drop-down list, and then again clicking the filter, which will open the filter editing mode using which you can edit filters.

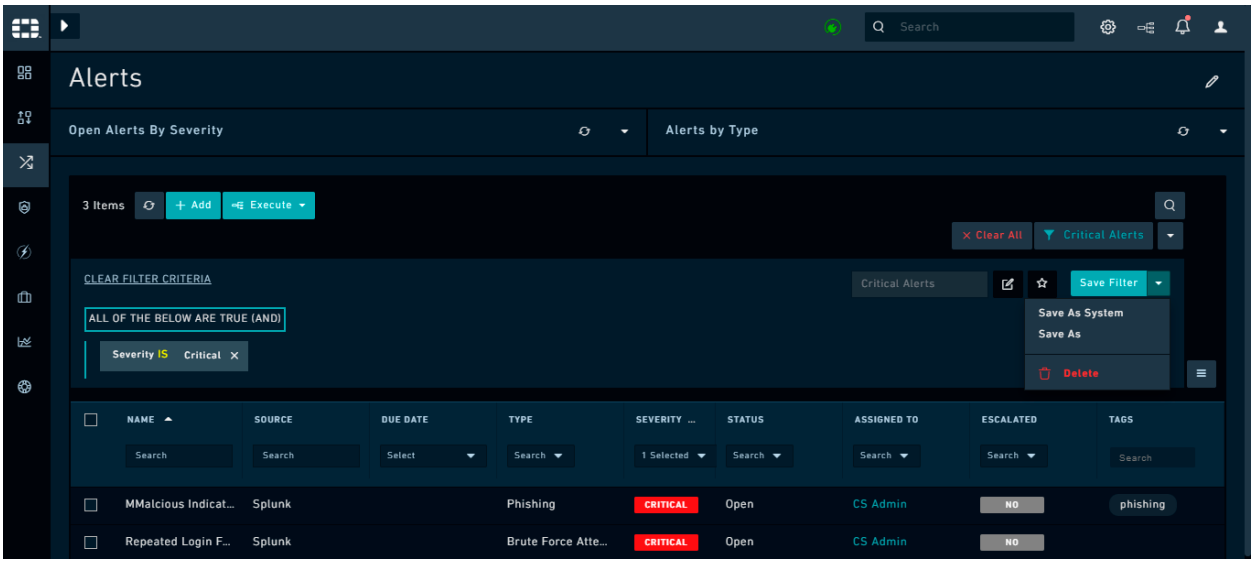


Figure 16. *Filter Settings pane*

In the filter editing mode, you can perform the following operations:

- Save a filter, for future use, by clicking the **Save Filter** button. When you click **Save Filter** button, the `Save New Filter` dialog is displayed, type the name of the filter in the **Name** field and click **Save**. For example, type the filter name as **Critical Alerts** and click **Save**. If you are an administrator, then you can also save a filter as a *System Filter* by

clicking **Save Filter** > **Save As System**. System Filters are displayed to all users of the system.

- Edit the name of an existing filter by clicking the **Edit Name** icon
- Mark an existing filter as a default filter by clicking the **Set Default Filter** (**star**) icon.
- Delete an existing filter by clicking the **Save Filter** drop down list and select the **Delete** option.
- To remove a particular filter criterion that has been applied on the grid, click the **Clear Filter Criteria** link.

Click the **Filters** icon to view a list of all existing filters that have been defined for the grid or record, as shown in the following image:

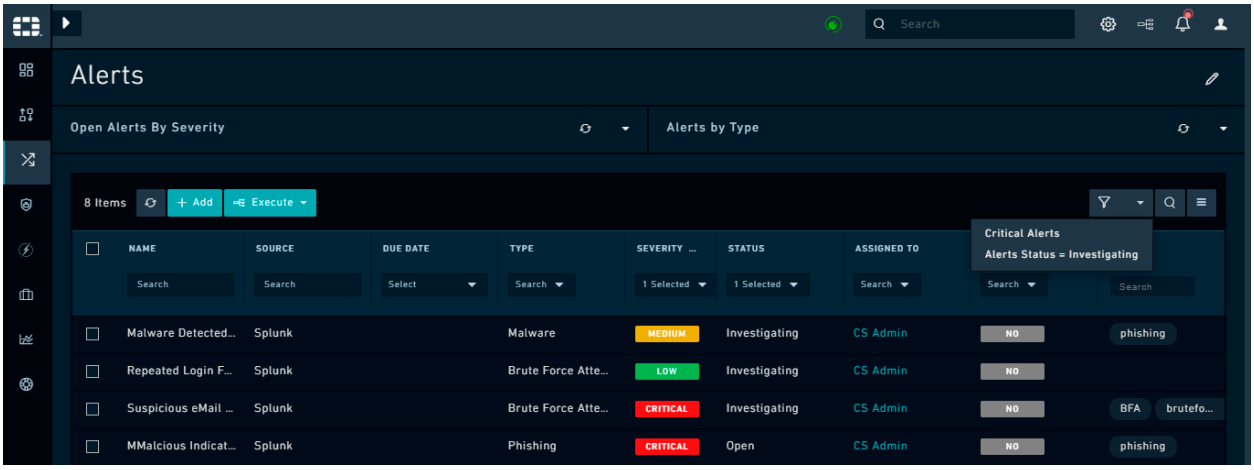


Figure 17. *Viewing defined filters*

Using this filtering option, you can filter records using only the **AND** condition, for example, you can filter records, whose **Type is Phishing** AND **Status is Investigating**. When you apply this filter, in our example, only one record is displayed, as shown in the following image:

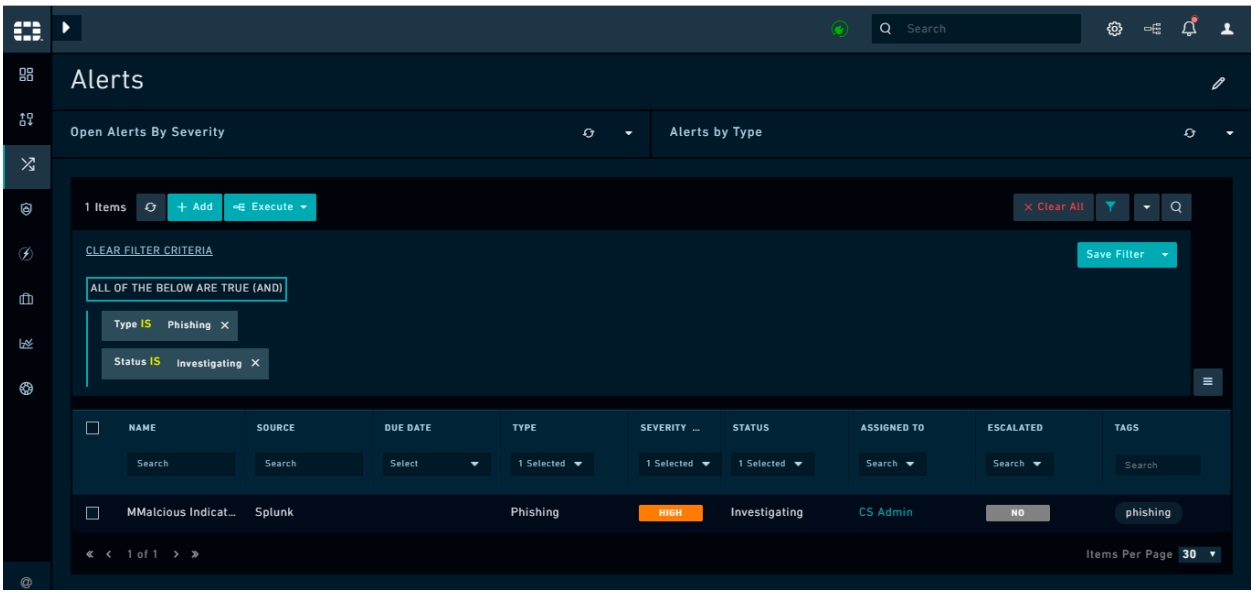


Figure 18. *Records whose Type is Phishing AND Status is Investigating*

Note: You cannot use the **OR** condition to filter records using this method.

You can also filter records using a complex set of conditions when you define the grid for the listing view. The Grid Widget contains the **Nested Filters** component that allows you to filter group conditions at varying levels and use **AND** and **OR** logical operators. See the *Dashboards, Templates, and Widgets* topic for information on the Grid widget and the Nested Filters component.

Note: The filter condition defined on the listing view will override the filter condition defined in the grid widget.

FortiSOAR™ has enhanced the filter operator for date fields to include a number of pre-defined options such as Last Year, Last 7 days, Next 24 hours, etc., making it easier for you to filter records for a relative time range of your choice. You can also now specify static custom date ranges for filters. For information on what defines a time range in filter, see the **Nested Filters** section in the *Dashboards, Templates, and Widgets* chapter of the "User Guide."

For example, if you want to filter alerts that were assigned in the last 24 hours and whose severity is High, do the following:

Click **High** in the **Severity** column and then in the **Search** box in the **Assigned Date** column and select **Last 24 Hours**:

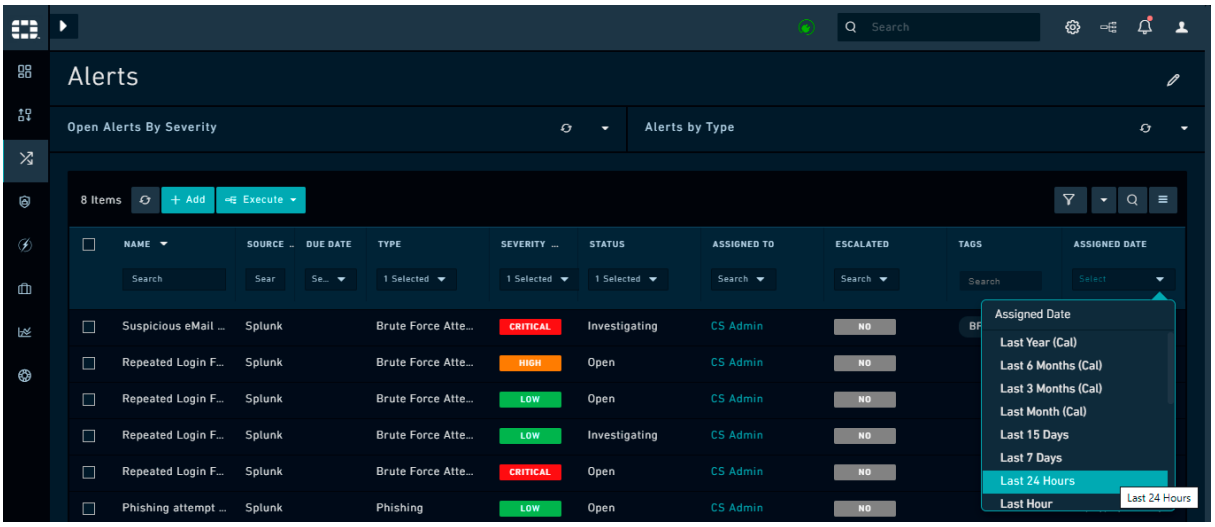


Figure 19. *Filtering Records by Assigned Date*

Filtered alerts will be displayed as shown in the following image:

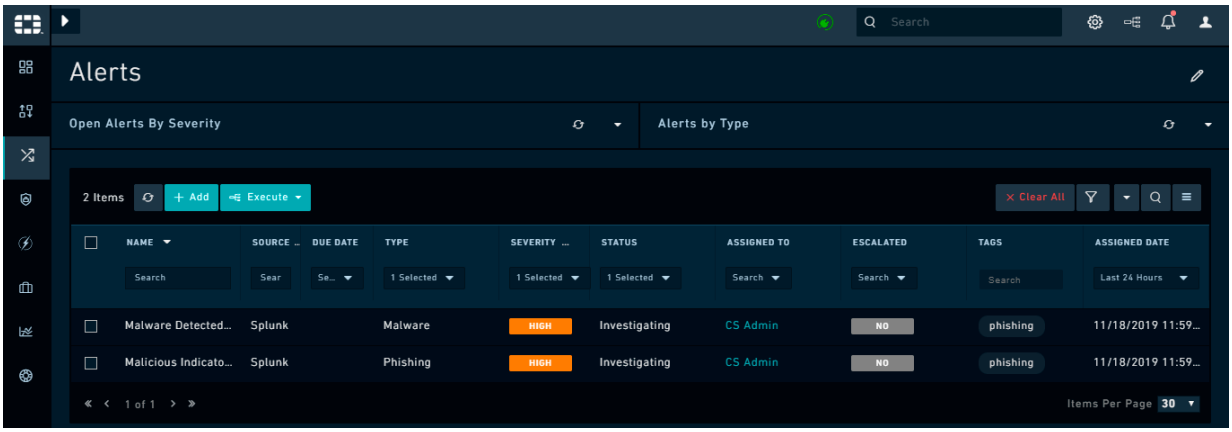


Figure 20. *Filtering Records by Assigned Date and Severity*

Select the **Custom** option to filter records according to custom static date ranges. For example, select **Custom** and in the `Define Custom Date Range` dialog, from the **From** date field select the date and time from the Calendar, from when you want to filter records, for example, `10/01/2019 02:00 PM`, and in the **To** field select the date and time till when you want to filter records, for example, `11/18/2019 09:00 AM`:

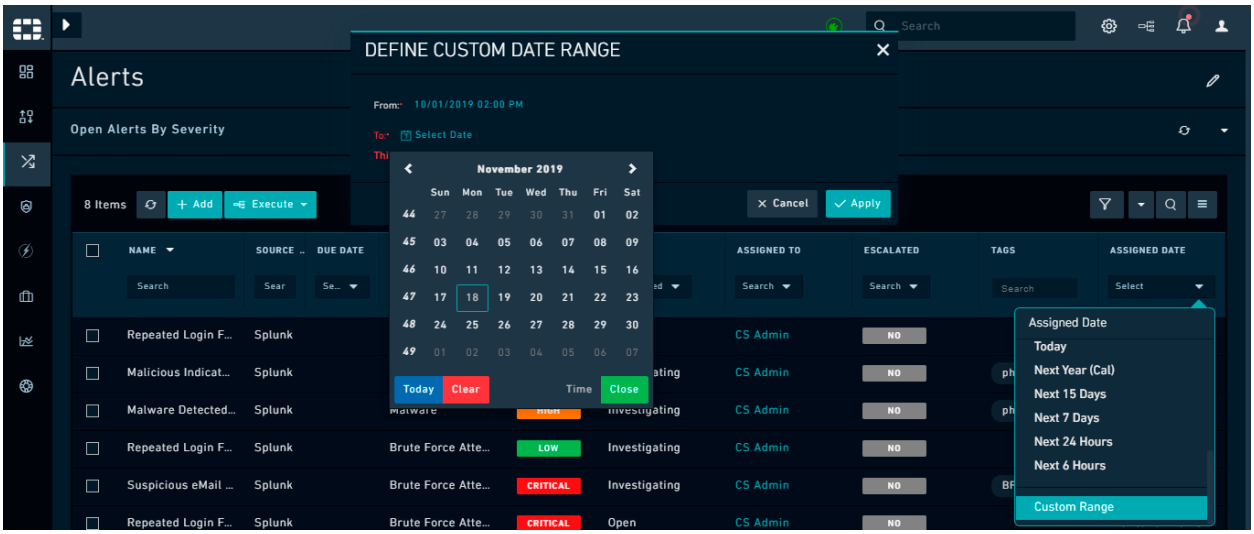


Figure 21. *Define Custom Date Range Dialog*

Dashboards, Templates, and Widgets

Dashboards

A Dashboard is default landing and home page after a user logs into FortiSOAR™.

Important: By default, FortiSOAR™ includes the **System Dashboard**, which is displayed on all users when they log into FortiSOAR™ for the first time. Only users who have a minimum of `Read` and `Update` permission on the `Dashboard` module and `Read` permission on the `Security` and `Application` modules can modify the System Dashboard.

From version 6.4.0 onwards, the performance of dashboards and reports has improved since now only the required content is loaded and lazy loading of the content is enabled.

Templates

The FortiSOAR™ interface is rendered using Templates, which can be modified as needed to suit your specific purposes better. Currently, Templates are system-wide, meaning everyone will see the same Template on every interface, e.g., your Incidents screen would be the same as all others. The system interface is composed of View Templates, which are JSON definitions of the interface structure composed of widgets.

Widgets

Widgets render information for the visual display inside View Template. Widget types vary such that specific widgets only correspond to certain view types. For example, the detail view has some exclusive widgets, such as Visual Correlation, Comments, Timeline, etc.

Note: The `People`, `System Assigned Queues`, and `Approval` modules are not part of dashboard widgets since these are system modules and used for administration purposes.

Using Dashboards

Dashboards are the users' default home page. Users use the dashboard and at one glance see what are the critical tasks that they need to work on to be effective.

When an administrator modifies dashboards, those modifications apply to the system and users. Administrators assign dashboards to users based on their roles. If a non-admin user modifies the dashboard, then changes are applicable only to that user. However, both types of user can see the `Edit Dashboard` option.

For Users

You can go to your Dashboard (Home) page and use it to determine “What’s important to me right now?” To effectively accomplish answering this question, you must scope your Home page to match up to your operational goals. For example, if you are a user who works on alerts, then you can customize your Dashboard to display alerts that are Critical and High. Using the dashboard, you can then immediately prioritize your work based on the critical and high alerts.

For Administrators

Administrators create dashboards that are applicable throughout the application and are assigned to users based on their roles. Presented here are some options of how administrators can leverage the Dashboard with a specific widget set and increase effectiveness across their organization.

Operation focus

For organizations where Task management is a key focus of using the FortiSOAR™ platform, tailor the Dashboard to display the user’s work.

For example, you can create a dashboard that displays alerts that are Critical and High and then assign them to users who have a role of handling alerts. Users can prioritize their work looking at their Dashboard, which is displaying the Critical and High alerts.

Analytics focus

For organizations where analytics is a key focus of using the FortiSOAR™ platform, tailor the Dashboard to display trends.

For example, you can create a dashboard that displays the number and type of alerts that are created daily, weekly, or monthly and then assign them to users who have a role of an analyst. Analysts can view and analyze the dashboard and come up with solutions. If for example, the dashboard displays an increase in the number of instances of alerts of type Malware over the period of three months, analysts analyze the dashboard and come up with mitigation solutions.

Strategic focus

For organizations where strategizing is a key focus of using the FortiSOAR™ platform, tailor the Dashboard to display key performance indicators.

For example, you can create a dashboard that displays the number of incidents in the open state, per region, and severity for six months and then assign them to users who have a role

of an executive. Executives can then view and analyze the dashboard and come up with solutions on how to optimize operational efficiency. If for example, the dashboard displays a consistent increase in the number of open incidents over the period of six months, executives can analyze the dashboard, understand the cause of this trend, such as is it because of inefficiencies or need for automation, or both and come up with informed solutions.

Process of creating or editing dashboards

To add or edit an existing dashboard, click the **Actions** icon (), which appears at the top-right corner of a page, and click **New Dashboard** or **Edit Dashboard**.

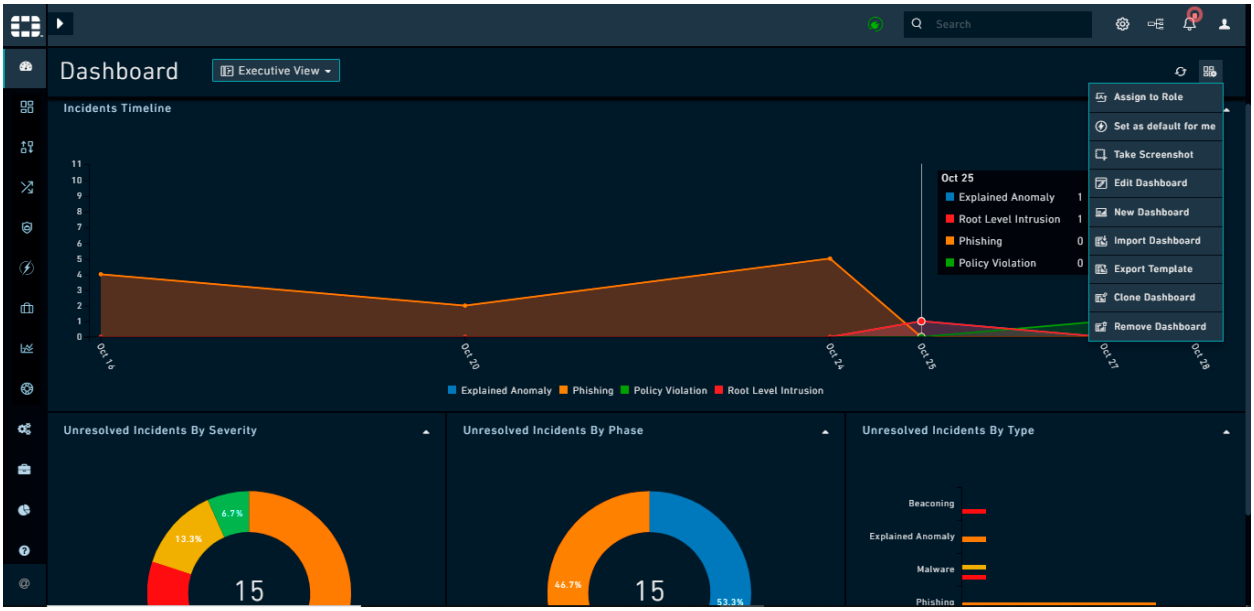


Figure 22. *Adding or Editing dashboards*

Templates are JSON definitions of the interface structure composed of widgets. Widgets are configurable interface elements that are used to represent data, such as charts or lists visually.

Note: If you have changed a dashboard that an administrator has assigned to you, then you will not be able to view the administrator changes to that dashboard. To view the administrator changes to the report, click **Actions** > **Reset to Original State**.

For information on using templates, see the Using Templates section and for information on widgets, see the Using Template Widgets section.

Permissions required for modifying dashboards

Note: Only when an administrator modifies dashboards, those modifications are applicable across the system and applicable to users, based on their roles.

To view dashboards, you must be assigned a role that has `Read` permissions on the `Application` and `Dashboard` modules, and the dashboard must be assigned to your role.

If you are assigned a role that *does not* have any permissions on the `Dashboard` module, your landing page will appear as shown in the following image:

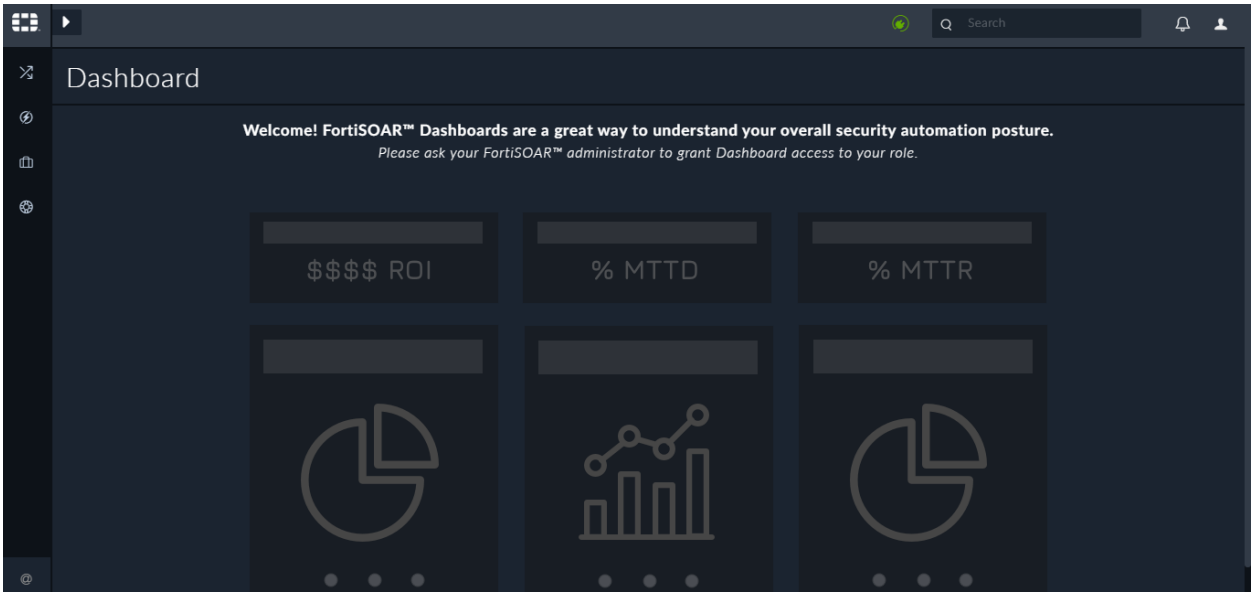


Figure 23. *Dashboard view for user with no access to the Dashboards module*

To create and update dashboards, you must be assigned a role that has `Read`, `Create`, and `Update` permissions on the `Dashboard` module and `Read` permissions on the `Application` module. Additionally, if you also want to delete dashboards and configurations, you must be assigned a role that has `Read`, `Create`, `Update`, and `Delete` permissions on the `Dashboard` module and `Read` permissions on the `Application` module.

For users who should only be able to customize their own dashboards, and whose changes will not be visible to any other user, a role with `Read`, `Update` and `Create` permission on the `Dashboard` module and `Read` permission on the `Application` module is sufficient. If such a user (a non-admin user) changes the dashboard, then a copy of the original dashboard is created and those changes are visible to only that particular user and not to other users.

For users who should be able to customize dashboards, and whose changes should be visible to all users who have access to that dashboard, a role that has `Read` and `Update` permissions on the `Dashboard` module and `Read` permissions on the `Application` and `Security` modules must be assigned. If you have these permissions, then the changes are

made in the original dashboard and these changes are visible to all the users who have access to the dashboard.

In addition to the appropriate permissions as mentioned above, users also require to have appropriate rights on the module for which they want to create or edit dashboards. Since if users do not have `Module Read` permissions on the module that they want to consume in the dashboard, then they will not be able to view the details of that module in the dashboard. For example, if you have `Module Read` permissions on the **Alerts** module but not on the **Incidents** module, then you can update dashboards that consume Alerts as their data source. However, if you try to update a dashboard that consumes Incidents as the data source, FortiSOAR™ displays a message such as `You do not have necessary permissions for Incidents`.

Users: Working with dashboards

Administrators assign dashboards to you based on your roles, so that you can have access to multiple dashboards. You can customize your home page choosing a default dashboard from the dashboards assigned to you.

You can also add, edit, clone, import, export, and remove dashboards that are assigned to you.

Important: You can create personalized dashboards based on your roles. Customizations that you make to your dashboards are visible and applicable only to you. Administrators must update the dashboard for the changes to apply to all users. Updates, including removal, and additions that administrators make to the dashboards apply to all users.

Customizing your Home page

Administrators assign dashboards to you based on your roles, so that you can have access to multiple dashboards. When you log on to FortiSOAR™ to for the first time, by default your home page is set to the **System Dashboard**. You can customize your home page by selecting the default dashboard from the dashboards assigned to you, as follows:

1. Log on to FortiSOAR™.
2. On the `Dashboard` bar, the dashboards assigned to you are listed as a drop-down in the top bar.
   View all the dashboards assigned to you.
3. Open the dashboard you want to set as your default by selecting the same from the drop-down list present in the `Dashboard` bar, and then clicking the **Actions** icon ( ) and selecting **Set as default for me**.
   When you log on to FortiSOAR™ the next time, your home page is set as the selected dashboard.

Customizing your dashboards

To add or edit your dashboards:

1. Log on to FortiSOAR™.
2. On the `Dashboard` bar, to add a new dashboard click the **Actions** icon and select the **New Dashboard** option. To edit an existing dashboard, click the **Actions** icon and select **Edit Dashboard**.
3. In the **Template Title** field, enter the template title.
4. Click **Add Row** and structure the row by defining the number and layout of columns from the options displayed in **Define a new structure**.
5. Click **Add Widget** and from the **Choose Widget** dialog box, select the appropriate widget.
   For information on widgets, see the Using Template Widgets section.
   The `Choose Widget` dialog includes the categorization of different types of widgets that you can use to build dashboards or reports. For example, the **Tabs** widget is categorized as a `Structure` widget, and the **Richtext Content** widget is categorized as a `Custom Content` widget.
6. In the `Edit <name of widget>` dialog, configure the widget properties, and click **Save**.
7. Click **Apply Changes**.
   To revert the changes, you have made to the template, click **Revert Changes**.

Using dashboards

To clone a dashboard:

1. Log on to FortiSOAR™.
2. On the `Dashboard` bar, click the **Actions** icon and select **Clone Template**.
3. Update the template title.
   By default, the template title appears as **cloned: name of the original template**.
4. Update the template and widgets as required.
5. Click **Apply Changes**.

To take a screenshot of a dashboard:

1. Log on to FortiSOAR™.
2. On the `Dashboard` bar, click the **Actions** icon and select **Take Screenshot**.
   FortiSOAR™ downloads the dashboard snapshot in the `.pdf` format.
   Note: You can download a dashboard that contains more than one page in the PDF format, i.e., the downloaded dashboard PDF can consist of multiple pages. However, note that dashboard pages are split into multiple pages based on the height of the dashboard. Therefore, you must arrange your widgets, especially widgets in the *Chart* category, in the dashboard in such a way that widgets are not placed between two pages, else the data of that widget will get split into two parts.

To import a dashboard template:

Use the Export and Import Dashboard Template feature to share dashboards across users. If you see a dashboard that a colleague has created that you feel would be useful to you as well, then instead of you having to recreate the dashboard, your colleague can export the dashboard, and you can import it and start using the same.

Note: You can only import a valid JSON template. The template that you import is only applicable to your dashboard. Administrators must import, update, and assign dashboards for the changes to apply to all users.

1. Log on to FortiSOAR™.
2. On the `Dashboard` bar, click the **Actions** icon and select **Import Dashboard**.
3. In the `Import Dashboard Template` dialog box, drag-and-drop the JSON template file, or click to browse to the JSON template file.
4. Click **Import**.
   If the file is in the appropriate JSON format, FortiSOAR™ displays `Template Imported successfully!`

To export a dashboard template:

Note: Dashboard templates get exported in the JSON template.

1. Log on to FortiSOAR™.
2. On the `Dashboard` bar, click the **Actions** icon and select **Export Template**.
   FortiSOAR™ downloads the template on your machine in the JSON format.

To remove a dashboard:

Note: You can only remove dashboards that you have added. You cannot remove the System Dashboard or any dashboard that is created by the administrator.

1. Log on to FortiSOAR™.
2. Open the dashboard you want to remove by selecting the same from the drop-down list present in the `Dashboard` bar, and then clicking the **Actions** icon and selecting **Remove Dashboard**.
3. On the **Confirm** dialog, select **OK**.

Administrators: Working with dashboards

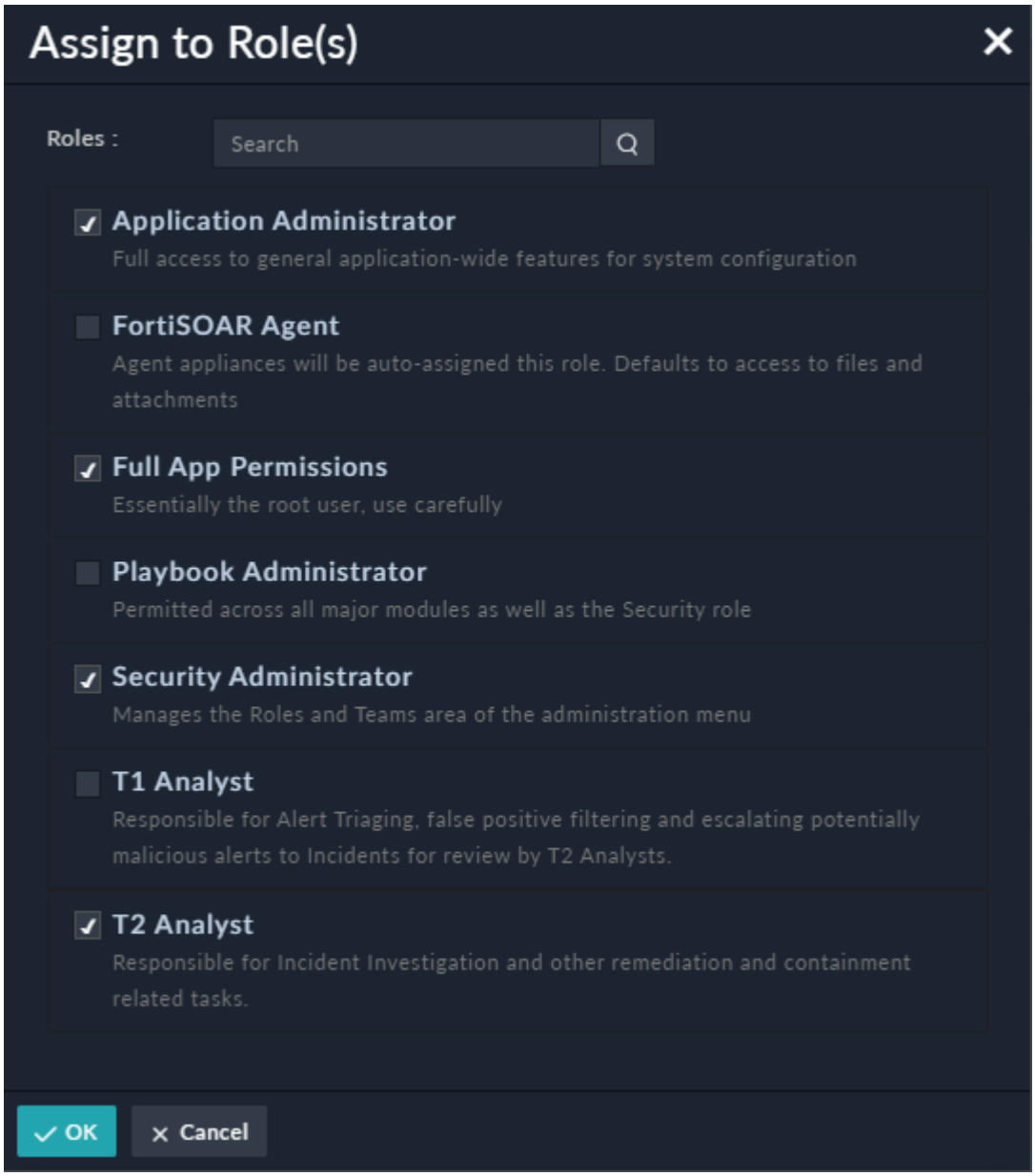
Administrators can perform all the tasks users can perform, which include customizing home pages and dashboards. Administrators also create and edit system-wide dashboards and assign dashboards to roles. To create system-wide dashboards, click the **Actions** icon and then select **New Dashboard** option, and then add the template name and widgets that you want in the dashboard. After you have completed creating a template, you must remember to assign the dashboard to the appropriate roles.

Important: Updates, including removal, and additions that you make to dashboards apply to all users.

Assigning dashboards to roles

Important: You must have a minimum of "Read" permission on the Security module, apart from other appropriate privileges to perform this task.

1. Log on to FortiSOAR™.
2. On the `Dashboard` bar, select the dashboard that you want to assign to a role.
3. Click the **Actions** icon and select **Assign to Role** OR
   Click the **Actions** icon and select **Edit Dashboard** and then click the **Assign To Roles** or ***Number of Roles*** **Assigned** link.
   This displays the Assign to Role (s) dialog in which you can select the role(s) to whom you which to assign the dashboard.
4. In the **Assign to Role(s)** dialog box, select the role to which you want to assign the dashboard.



You can also search for a role in the **Search** text box.

5. Click **OK**.
   Users having the role specified will be able to see the dashboard(s) associated with that role the next time they log on to FortiSOAR™.

Input Variables in Dashboards and Reports

You can define variables that you want to use in widgets as filters to consume inputs and create a dashboard or a report dynamically. Using input variables, you can filter data in a dashboard or report to display a particular set of data without having to define the same criteria in each widget in the dashboard. Once you configure the variable as a filter in

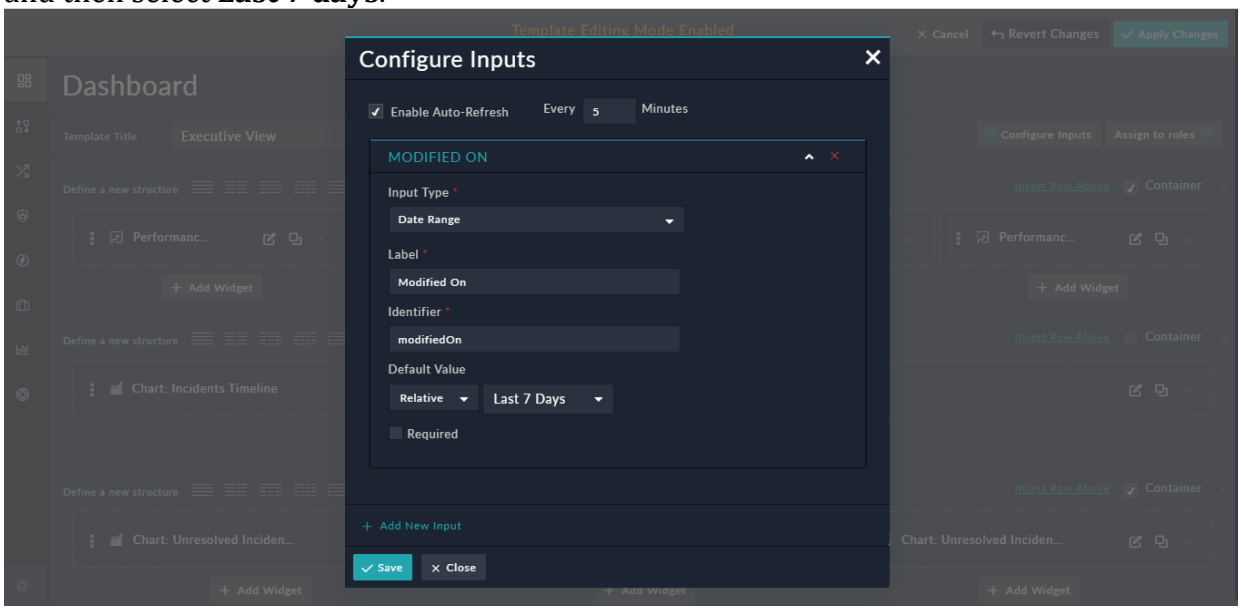
widgets, the dashboard is displayed according to the filter value you have specified. You can now specify inputs for dashboards or reports, based on which dashboard or reports are updated dynamically to display the dashboard or report according to the updated input values.

Defining Input Variables

This procedure demonstrates how to define an input variable for a dashboard or report to display only those records that were modified in the last 7 days.

1. Log on to FortiSOAR™.
2. On the `Dashboard` bar, click the **Actions** icon and select **Edit Dashboard**.
3. On the `Template Editing Mode Enabled` page, click **Configure Inputs**.
4. In the `Configure Inputs` dialog, configure the input variable according to your requirements:
    a. (Optional) Select the **Enable Auto-Refresh** option to automatically refresh your dashboards or reports after the set time interval.
    By default, the time interval is set at 10 minutes. You can modify the time interval according to your requirements.
    b. Click **Add New Input**.
    c. From the **Input Type** drop-down list, select the type of field that is going to be applied as the input variable. You can choose from the following options: Text, Number, Date, Date Range, Picklist, or Lookup.
    For our example, select **Date Range**.
    d. In the **Label** field, type the name that describes this variable.
    For our example, type `Modified On`.
    The **Identifier** field, gets automatically populated with the identifier based on the "Label" you have specified. In case of our example, the Identifier field is populated with the modifiedOn variable. The value that is present in the Identifier field is the key by which this variable will be identified.
    e. (Optional) In the `Default Value` section, choose the value based on which the dashboard will be displayed, by default. The date ranges are relative, i.e, relative to the current date. You can choose between a **Relative** date range or a **Custom** relative date range.
    If you choose **Relative**, then you get a list of pre-defined relative date ranges such as Last 24 Hours, Last 30 Mins, etc. If you choose **Custom**, then you can specify a custom date/time range, such as **Last 2 Hours**. For more information, see Support for Custom Time Ranges in Filters. For our example, select **Relative**

and then select **Last 7 days**.



f. (Optional) To make the input field mandatory, click the **Required** checkbox. If you select the Required checkbox, then the report or dashboard will not be displayed unless the user provides the input.

5. (Optional) To define more input variables, click the **Add New Input** button.
6. Click **Save** to save the variable(s).

The **Date** input type enables you to ask a user for a date based on which they want to filter the dashboard or report, using the **Select Date** link in the `Default Value` section. An example of using the **Date** input type would be to define the From Date, i.e., the date from when the user wants to view the report:

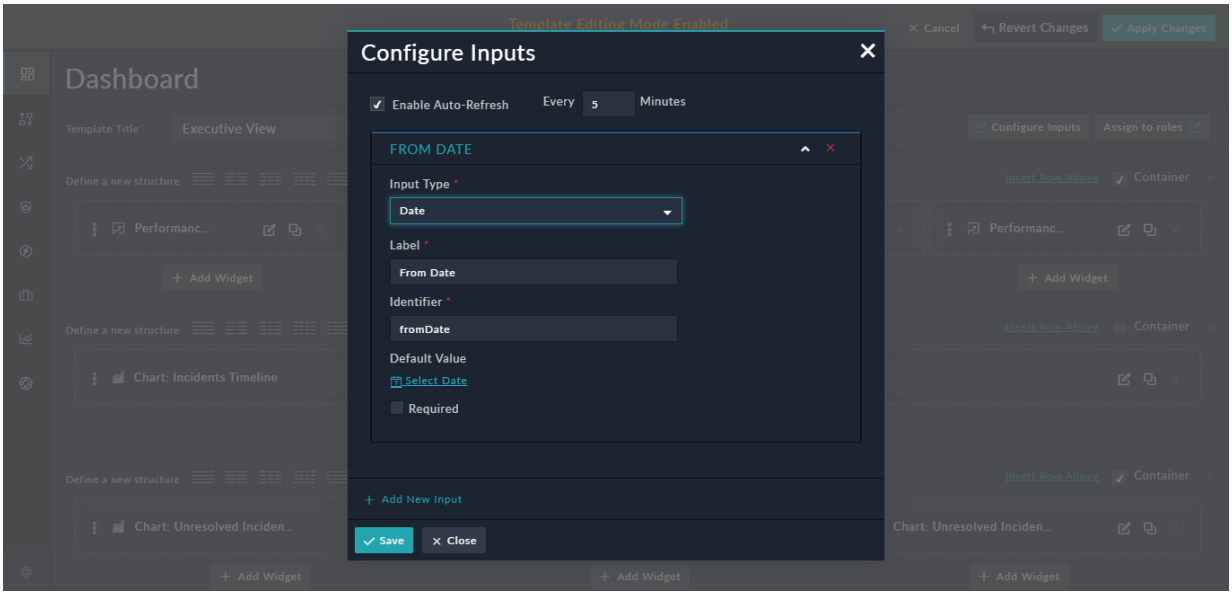


Figure 24. *Configure Inputs with Date input type*

The **Picklist** input enables you to ask a user to select a value of an existing picklist based on which they can filter the dashboard or report. You can set a default value to filter the dashboard or report, for example, as shown in the following image, **Phishing** is selected in the **Default Value** field. This means that the report or dashboard, by default, will be filtered to display only those alerts that are of type *Phishing*.

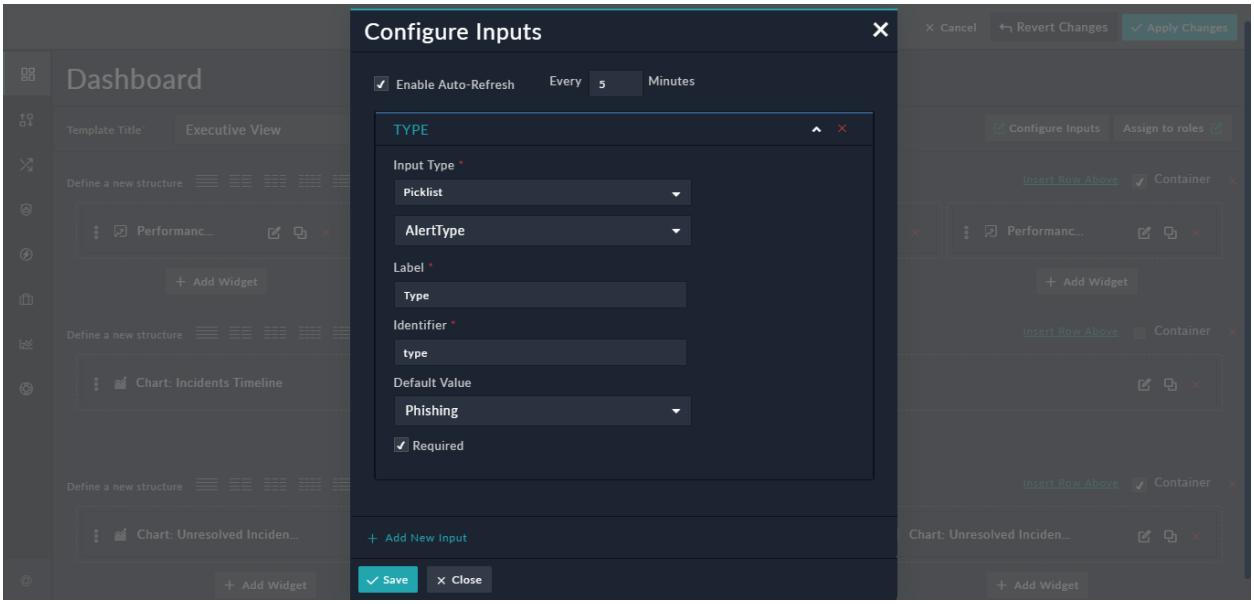


Figure 25. *Configure Inputs with Picklist input type*

The defined input variables can be seen on the Dashboard by clicking the **Input** button. However, to use the input variables for filtering the Dashboard, you must also configure them in the appropriate widgets, as specified in the following *Configuring Input Variables* section. Users can click Input on the dashboard or report and choose any other alert type for which they want to see the dashboard or report:

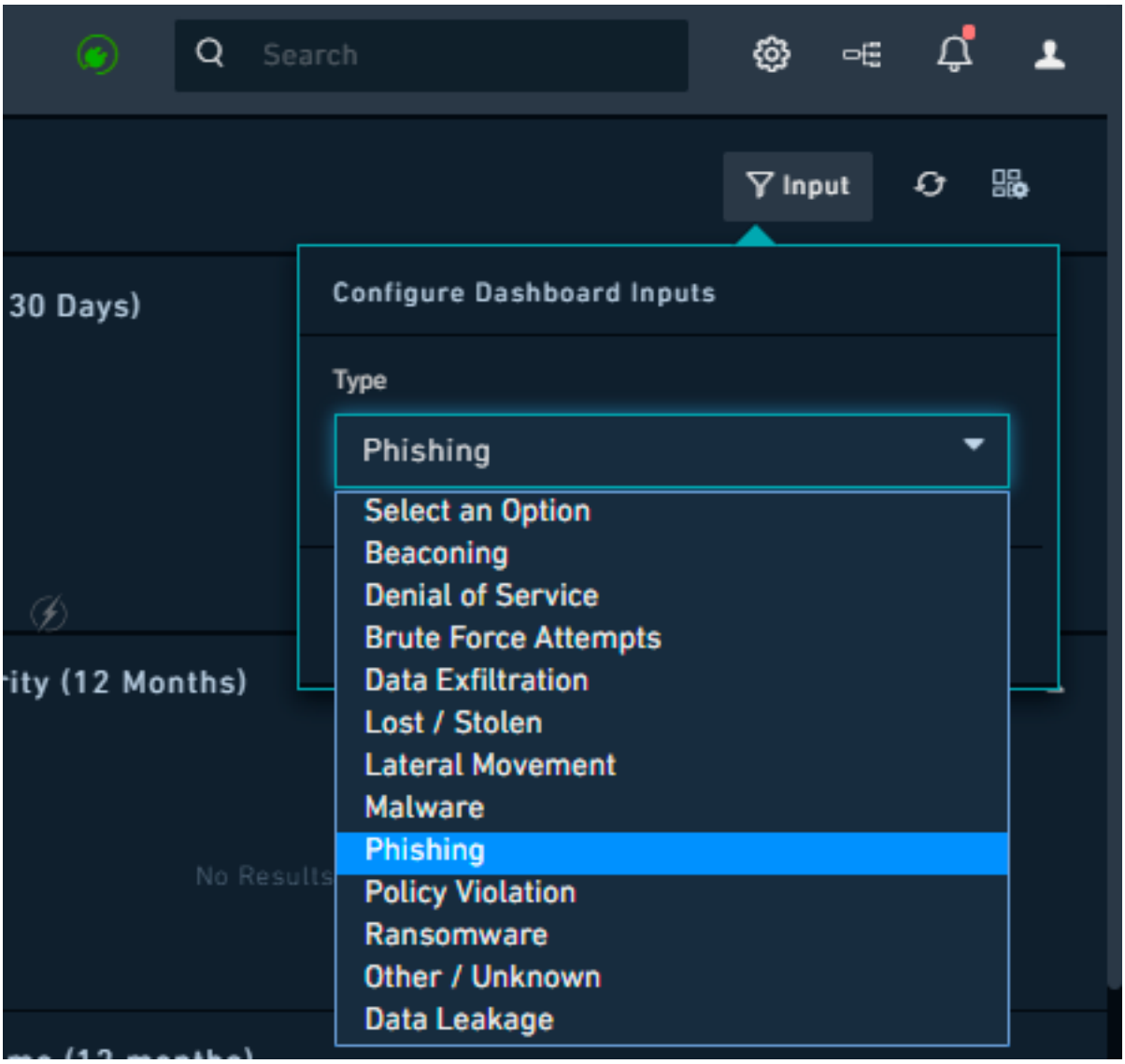


Figure 26. *Selecting the type of alert from Inputs drop-down on the Dashboard page*

From version 6.4.0 support for "Lookup" option as an input type is added. The **Lookup** input enables you to ask a user to select a value of an existing lookup based on which they can filter the dashboard or report. For example, filtering an "Incident Summary Report" based on the user to whom that incident was assigned. You can also set a default value to filter the dashboard or report, for example, as shown in the following image, **CS Admin** is selected in the **Default Value** field. This means that the report or dashboard, by default, will be filtered to display the summary of the incident that has been assigned to "CS Admin".

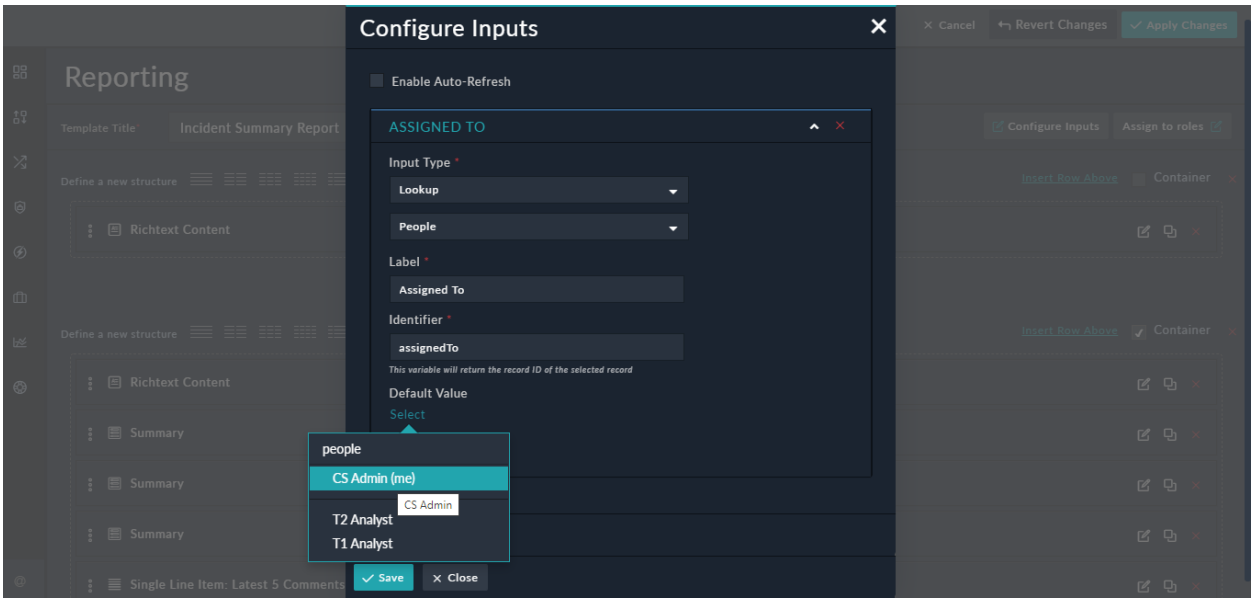


Figure 27. *Configure Inputs with Lookup input type*

The defined input variables can be seen on the Report by clicking the **Input** button. However, to use the input variables for filtering the Dashboard, you must also configure them in the appropriate widgets, as specified in the following *Configuring Input Variables* section. Users can click **Input** on the dashboard or report and choose any user for who they want to see the dashboard or report:

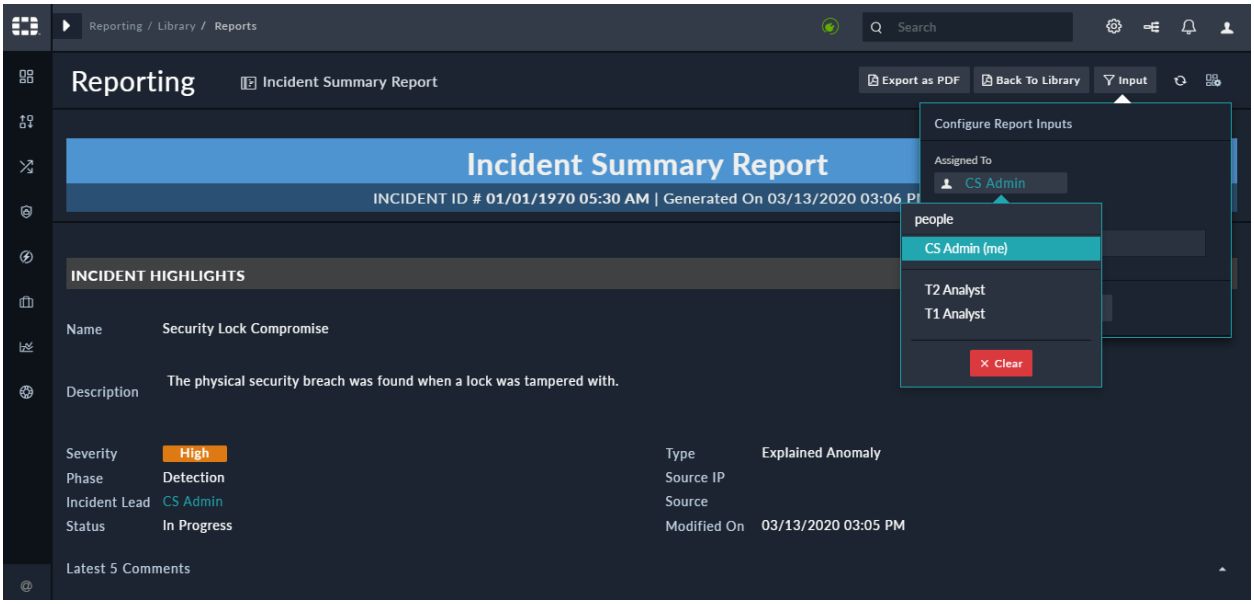
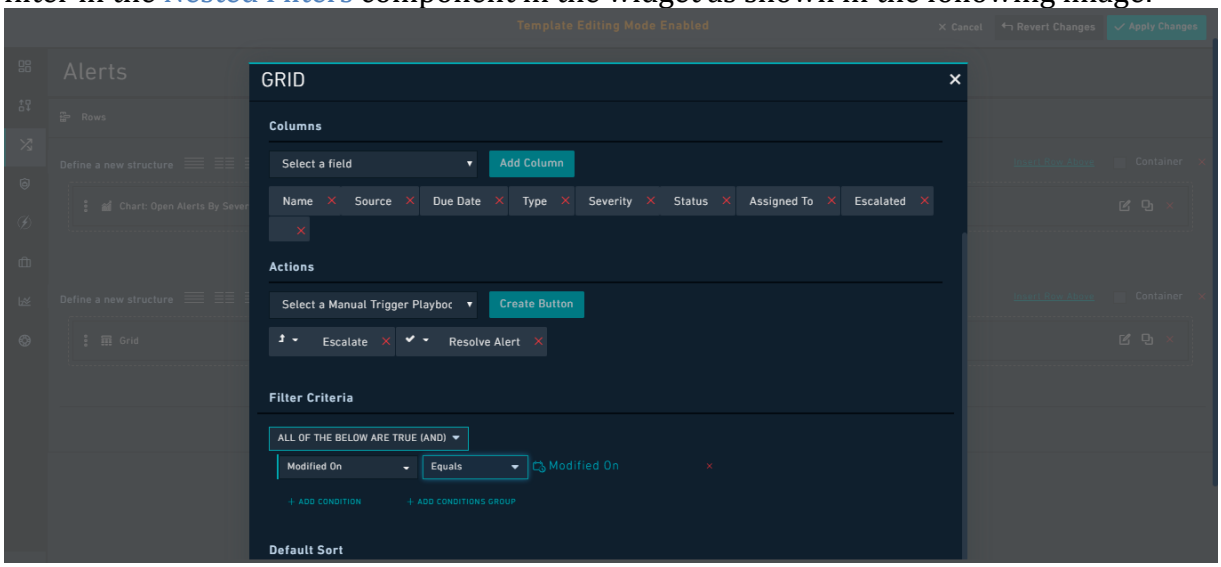


Figure 28. *Selecting the user to whom the incident is assigned from Inputs drop-down on the Reports page*

Configuring Input Variables

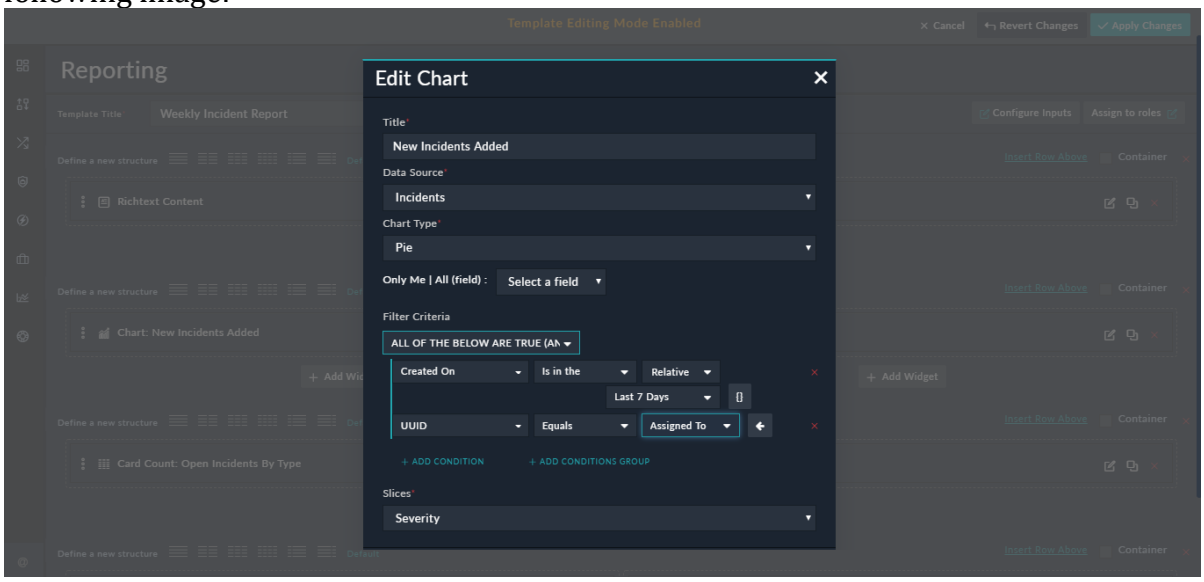
Once you complete defining the input variables, you must configure them in the widgets that require to consume the input variables that you have defined.

1. Log on to FortiSOAR™.
2. On the `Dashboard` bar, click the **Actions** icon and select **Edit Dashboard**.
3. Open the widget that is required to consume this input variable.
   For example, in a **Grid** widget, that displays Alert records, you can add the **Modified On** filter in the Nested Filters component in the widget as shown in the following image:



Important: "Lookup" Fields must be bound using UUID. For example, in case of the "Incident Summary Report", where you want to see the summary of the incident which is assigned to a particular user, you would add the filter such as `UUID Equals Assigned To`. For example, in a Chart widget, that displays newly added Incident records, you can add the `Assigned To` filter the Nested Filters component in the widget as shown in the

following image:



4. Click **Save**.

Using Input Variables

Once input variables are defined for a dashboard, then you can dynamically specify inputs to the dashboard, which will then display the dashboard according to the updated input values that the user has specified. Use the **Inputs** button on the `Dashboard` page to change the inputs to the dashboard and update the dashboard dynamically.

For example, if you want the Grid widget in our dashboard to display only those records that were modified in the last 15 days, instead of the last 7 days, then you click the **Input** button and in the `Configure Dashboard Inputs` dialog, in the **Modified By** field select **Last 15 days** and click **Apply**. This will dynamically update the Grid in the dashboard to include records that were modified in the last 15 days.

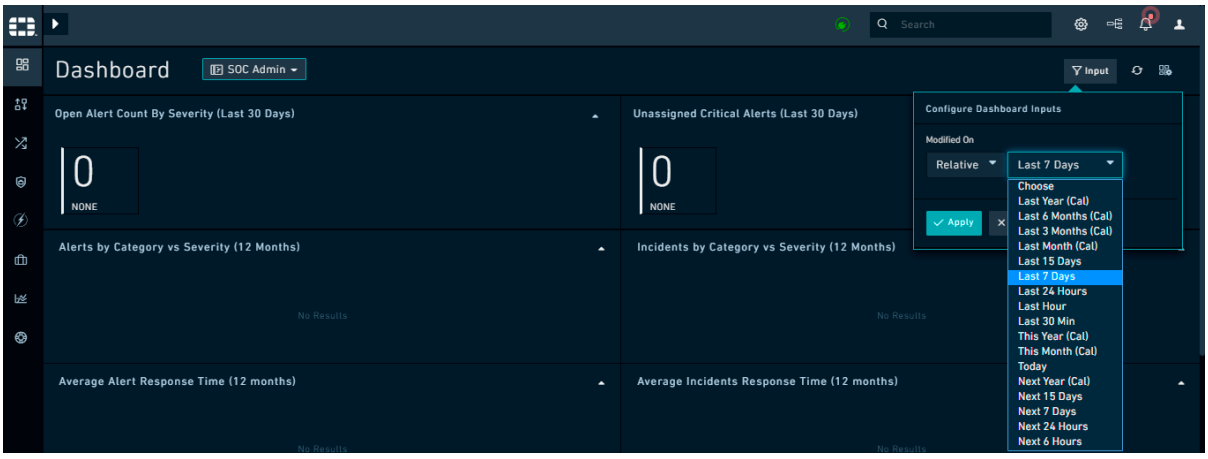
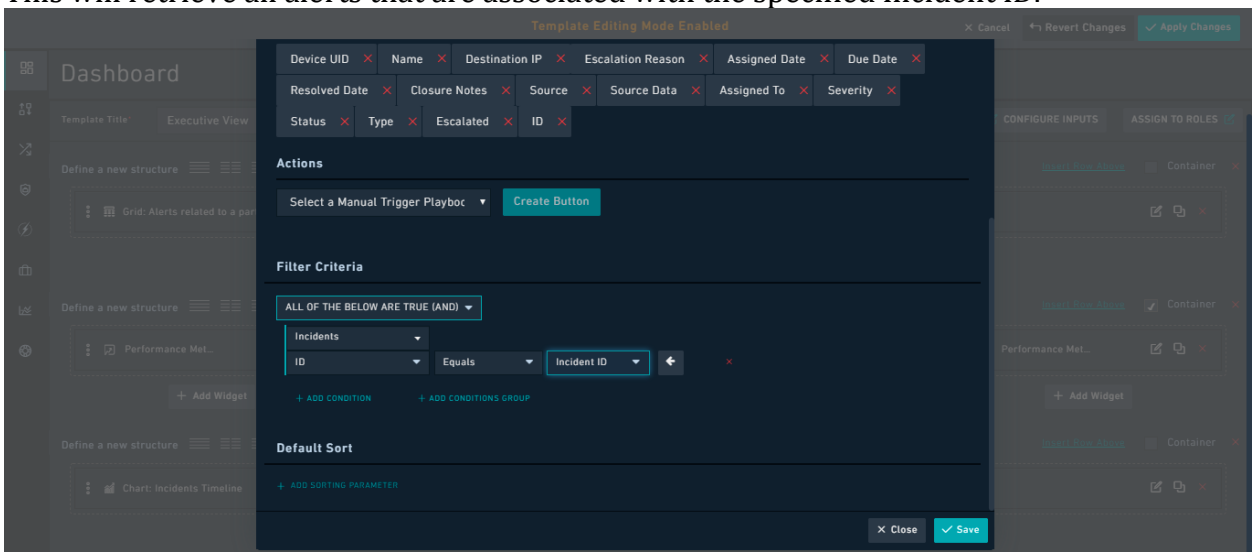


Figure 29. *Configure Dashboard Inputs*

Related Records Filter in Widgets

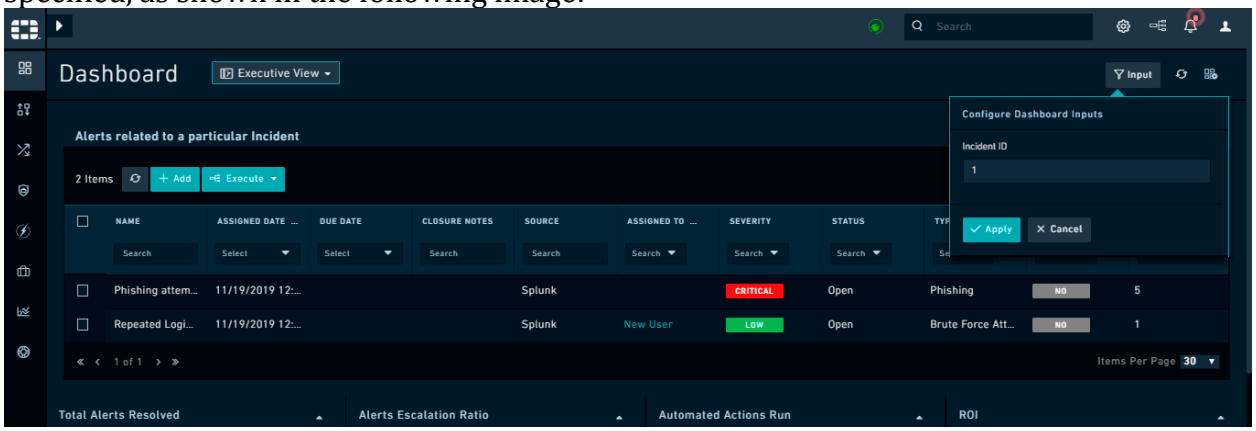
The Nested Filters component is enhanced to have the ability to display fields with many-to-many relationships. Earlier, only primitive types and one-to-many relationship fields were displayed in the Nested Filters component. For example, if you require to display alerts associated with a specified incident, which you will specify using the Filters option on the Reports or Dashboard page, to be displayed in a Grid, then do the following:

1. Add a `Grid` widget with the Data Source set as **Alerts** and select the columns to be displayed in the grid.
2. Create an Input Variable called `IncidentID` with the following properties:
    a. Input Type: Number
    b. Label: Incident ID
    c. Identifier: IncidentID
3. Configure the grid to display alerts associated with a specific Incident record as follows:
    a. In the `Filter Criteria` section, select the **Incidents** module (available under `Related Modules` section).
    b. Add the criterion as `ID Equals Incident ID` as a filter and click **Save**.
    This will retrieve all alerts that are associated with the specified Incident ID.



4. Click the **Input** button on the `Dashboard` page and in the `Configure Dashboard Inputs` dialog in the Incident ID field enter the Incident ID based on which you want to filter the grid, for example, `1`, and click **Apply**.
    In the Grid, you will see all the alerts that are related to the Incident ID that you have

specified, as shown in the following image:



Using Templates

Use the Template Editor to design the way you view FortiSOAR™, such that you can change the location, visibility, and visualization method being used across the application. The system interface is composed of View Templates, which are JSON definitions of the interface structure composed of widgets. Widgets are configurable interface elements that are used to represent data, such as charts or lists visually. For information on widgets, see the Using Template Widgets section.

Editing Templates

Important: Administrators should read the Permissions required for modifying dashboards section, as it explains what roles you must assign to users to edit dashboards.

In FortiSOAR™ templates can be edited at three levels:

- Dashboard level: Determines the display of dashboards.
- Module Listing level: Determines the display of the modules in the "List" view.
- Module Detail level: Determines the display of the individual records within a module, i.e., determines how the record is displayed in the "Detail" view.

Template Editing Mode

If you have the appropriate permissions as specified in the Permissions required for modifying dashboards section, you can edit templates by clicking the **Actions** icon and selecting the `Edit Dashboard` option. Clicking `Edit Dashboard` opens the Template Editor so that you can modify the interface. Use the Template Editor on any Dashboard or Module screen.

You know that you have entered the Template Editing mode when `Template Editing Mode Enabled` is displayed on the top of the screen.

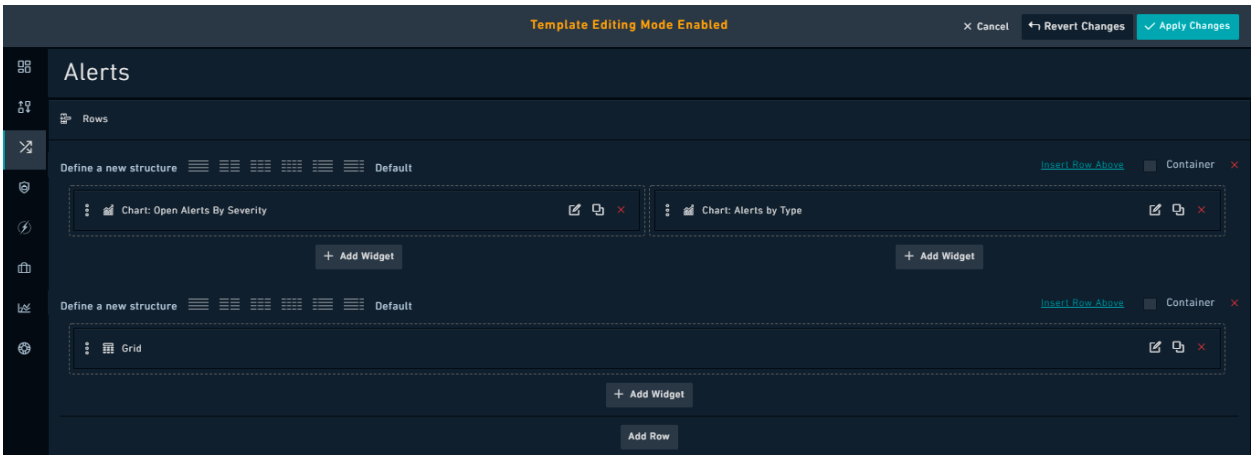


Figure 30. *Template Editing mode*

If you make a mistake during the Template Editing session, you can either `Cancel` to exit the mode and discard the changes or `Revert Changes` to stay in the Template Editing Mode but discard any changes since the last `Apply`.

Template Types

Dashboard

The Dashboard is the default home page for a user. Administrators can assign multiple dashboards to you, based on your role. By default, an administrator sets **System Dashboard** as your home page. You can customize your home page, as well as all the dashboards assigned to you. Refer to the Dashboards section for more information dashboards.

Important: Customizations that you make to your dashboards are visible and applicable only for you. Administrators must update the dashboard for the changes to apply to all users.

Modules

The remaining Templates are stored on a per Module basis. There are three types of Templates per Module:

- List
- Detail
- Form

Widget types vary such that specific widgets only correspond to certain view types. Detail views have some exclusive widgets, such as Comments.

List Views

The List view is the first view that you see when you click on any Module in the main navigation, for example, Incidents. The List view, by default, has a grid widget that displays all the records matching the filter applied to the grid.

Note: Filters are applied per user and can also be modified at a global level for any grid on a Module. Also, you cannot apply Filters to encrypted fields.

List views can have associated charts, lists, or other widgets contained on their pages. See the Using Template Widgets section for more information on configuring each widget.

When you create a new Module, using the Application Editor, the default List view is applied, which is a single grid displaying all records for the Module.

Form Views

The Form view is the displayed interface for an individual record in a form view. This view is generally used when you want to add a record manually or if you want to edit a complete record.

From version 6.4.0 onwards you can assign a style to "Forms" to make them wider or narrower as per your requirements as shown in the following image:

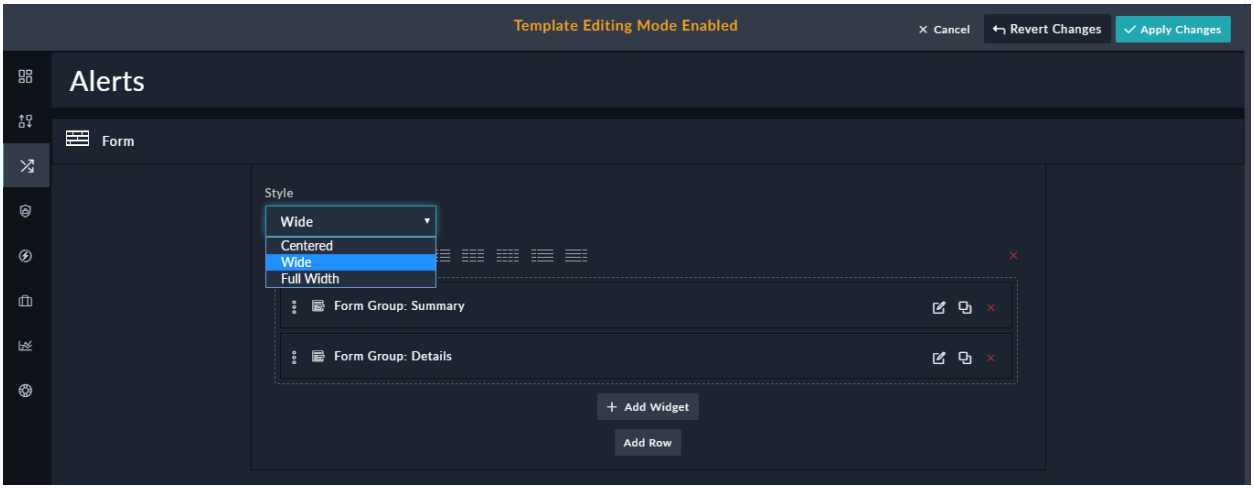


Figure 31. *Forms - Style option*

You can choose between the following styles:

- **Centered**: Using "Centered" makes the add/edit record forms centered on the page. The fields, in this case, appear in a narrow-centered column.

- **Wide**: Using "Wide" increases the width of the fields within the add/edit record forms when compared to the width of the fields using the "Centered" style.
- **Full Width**: Using "Full Width" increases the width of the fields within the add/edit record forms to cover the complete page.

Editable Form Group widget: Forms display editable forms for an individual record, in its detail view, in a module. The form view defines what information users require to add while creating a record. You can modify the form view of each module independently of other modules.

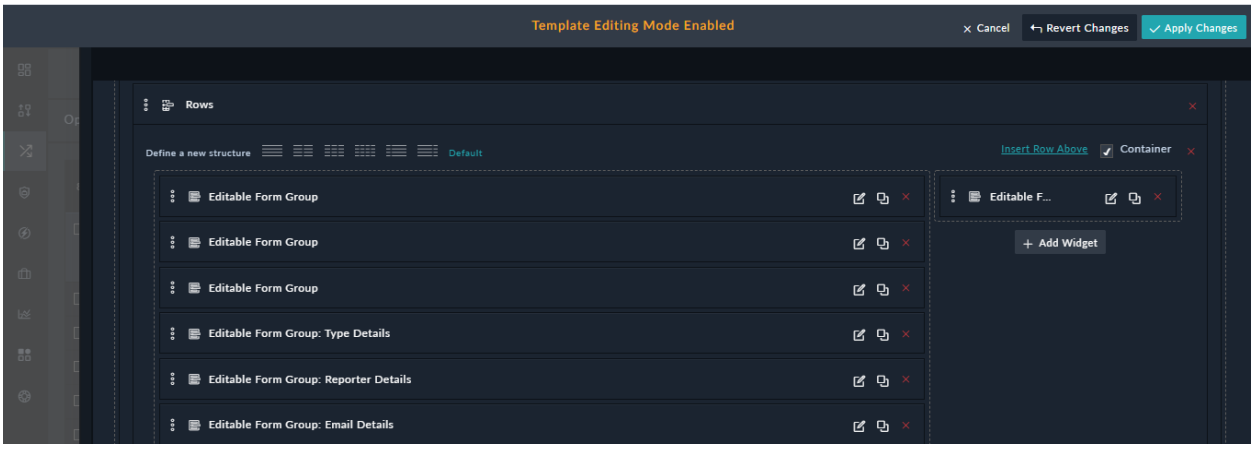


Figure 32. *Form View Template Editing*

The following image illustrates how the Editable Form Group widget is displayed in the detail view of the Alerts module:

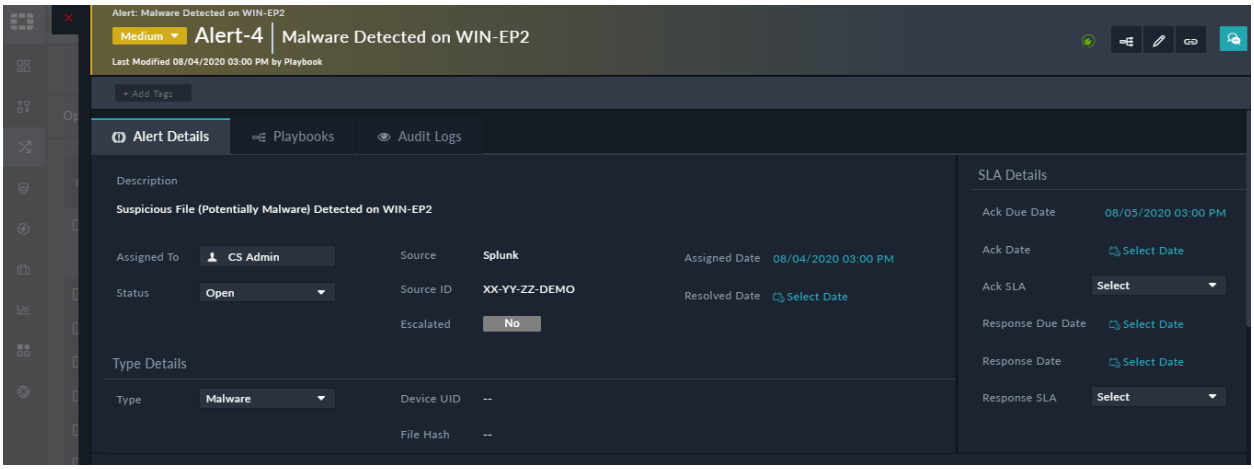


Figure 33. *Editable Form Groups widget in the Alerts Module*

If you have a text field that has its sub-type set to "Rich Text (Markdown)" such as the "Description" field, you can choose how you want to render that field from the following options: Markdown (default), iFrame, or iFrame (Sandbox):

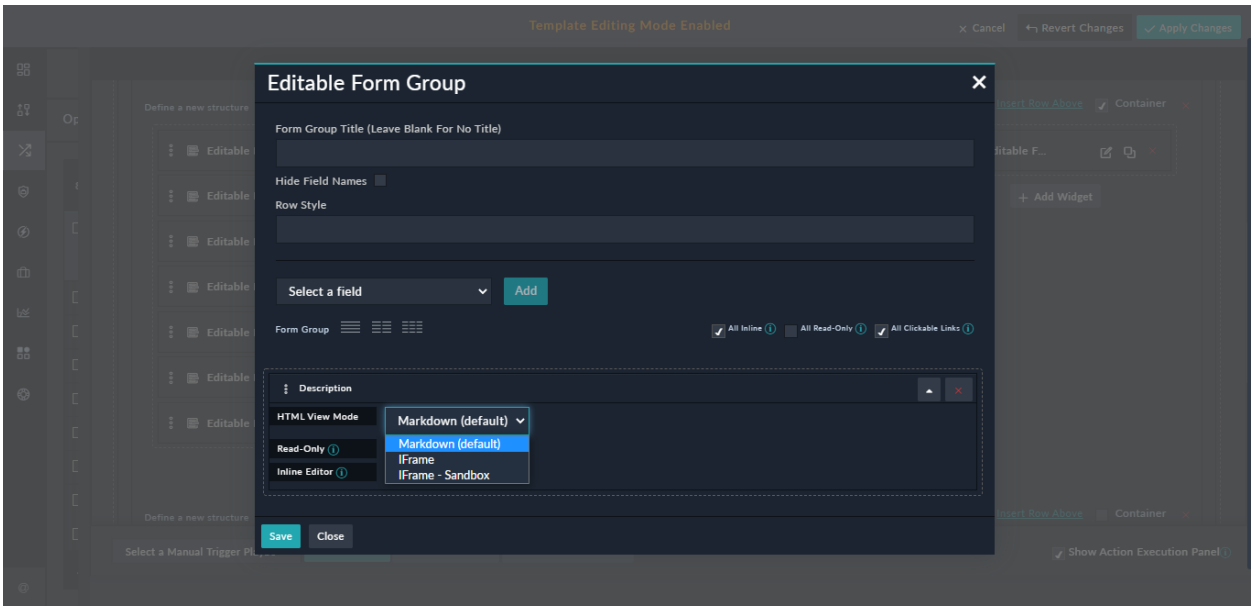


Figure 34. *Editable Form Group - Rich Text (Markdown) field*

Form Group widget: Use this widget to insert a group of form fields as part of a form. You can use this widget to create a form that users can use to fill in the details for a record.

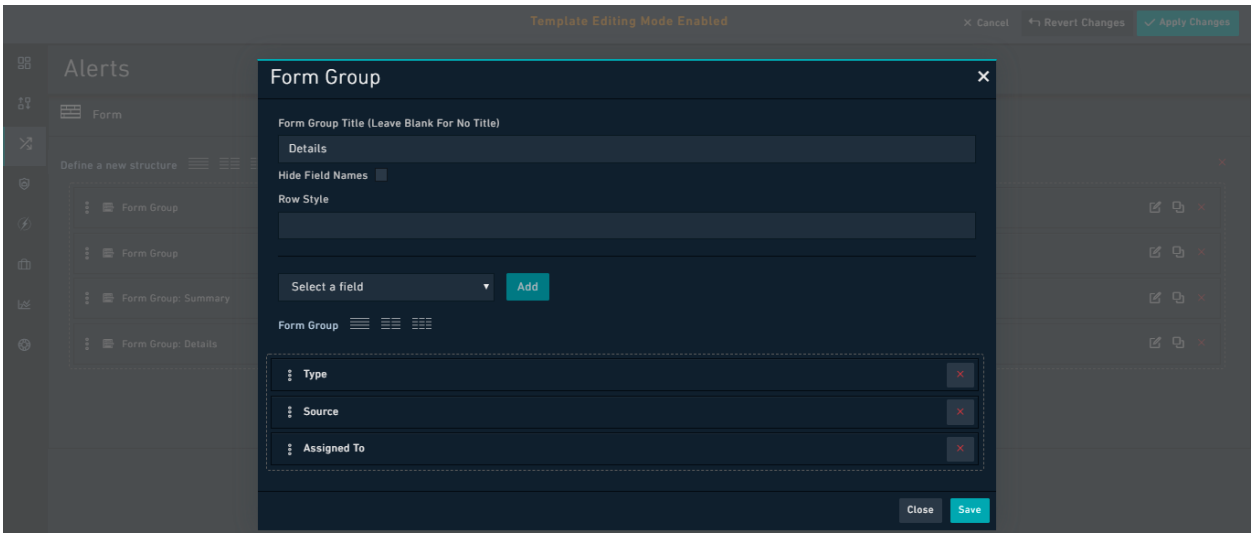


Figure 35. *Form Group Widget*

The following image illustrates how the Form Group widget is displayed in the Form view of the Alerts module:

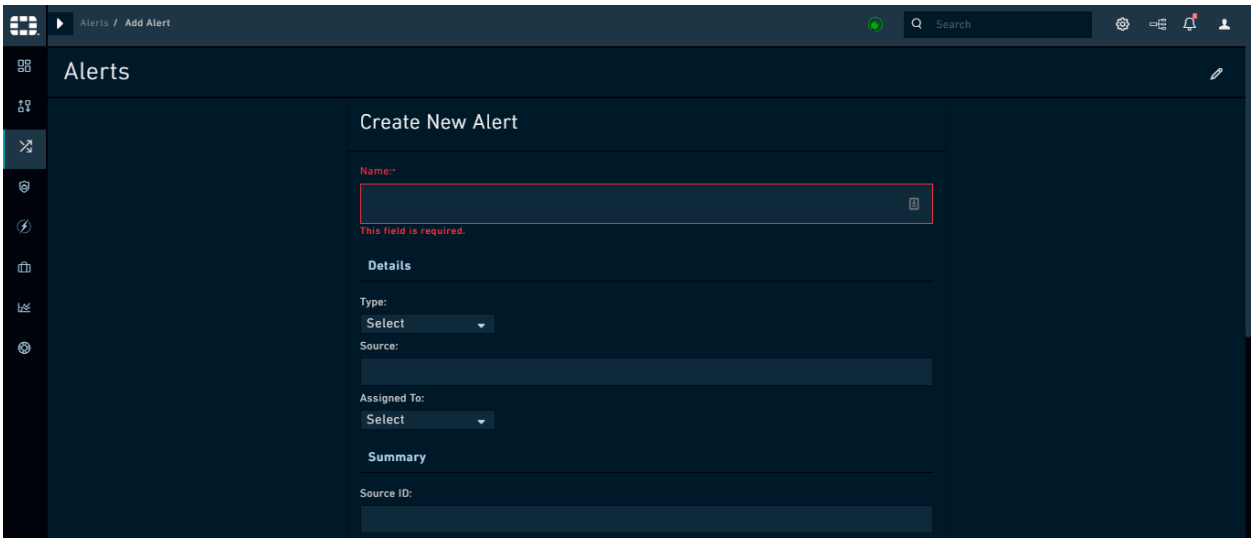


Figure 36. *Form Groups widget in the Alerts Module*

Detail Views

The Detail view is the displayed interface for an individual record in a module. When you click an individual record, FortiSOAR™ displays the detail view of that record.

You can modify the detail view of each module independently of other modules.

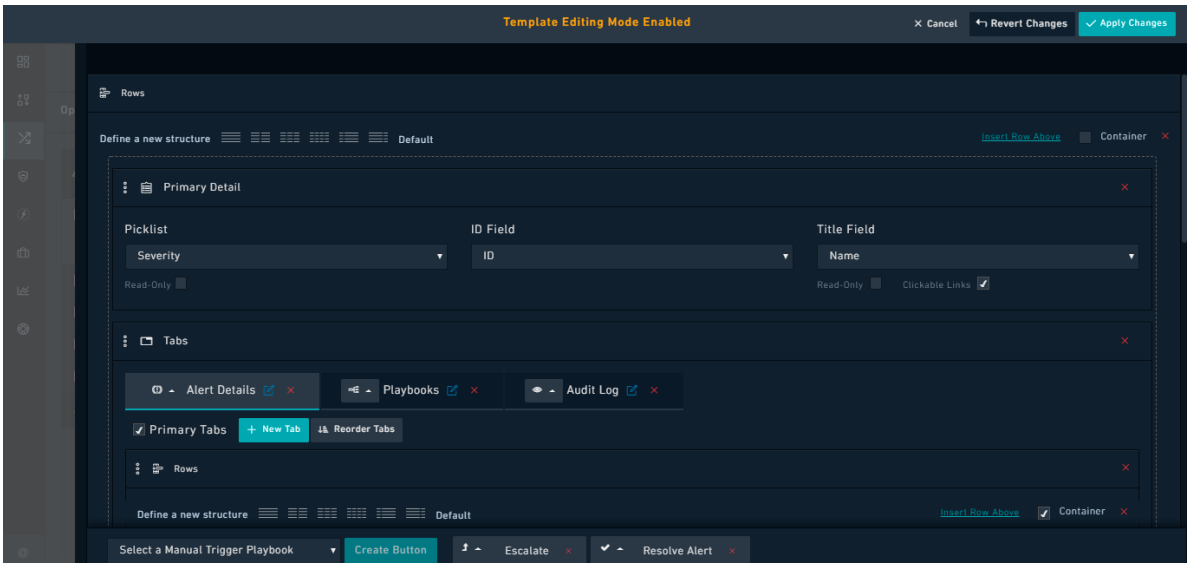


Figure 37. *Detail View Template Editing*

Using Template Widgets

Use widgets to render information for the visual display inside View Template. The View Template contains embedded configuration information about the widget and configures the widget location relative to the screen.

Note: The `People`, `System Assigned Queues`, and `Approval` modules are not part of dashboard widgets since these are system modules and used for administration purposes.

Widgets have been categorized as per its usage, as shown in the following image:

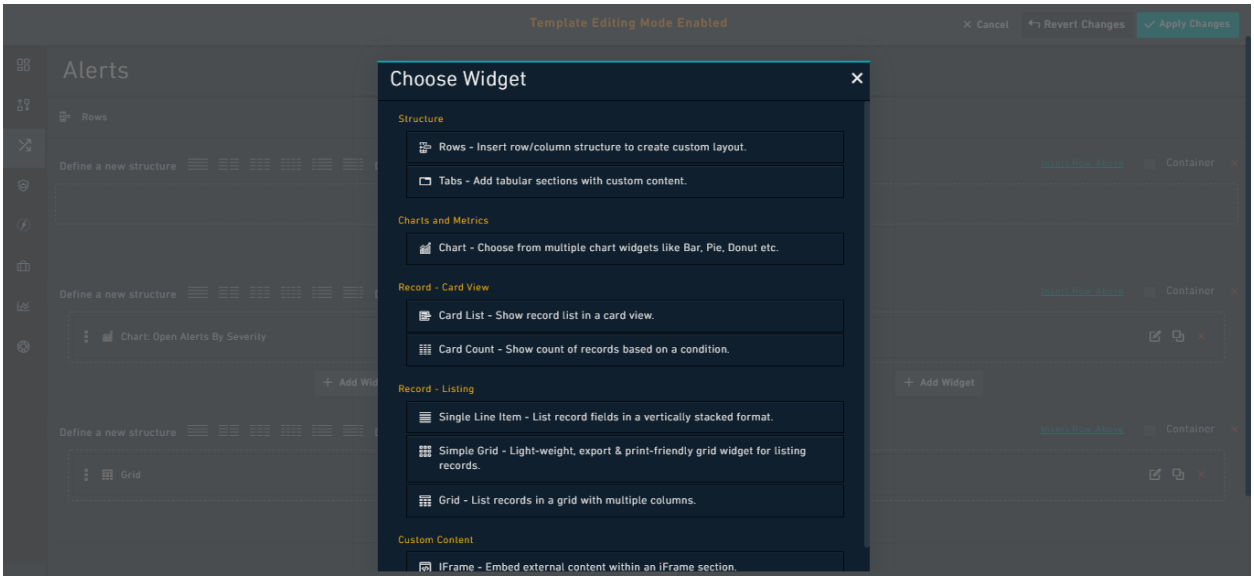


Figure 38. *Choose Widget Dialog*

For example, Rows and Tabs are categorized as structure widgets, and Single Line Item, Simple Grid, and Grids are listed as Record - Listing widgets.

Widget types vary such that specific widgets only correspond to certain view types.

Some widgets are common to all types of view such as:

- Rows
- Tabs
- Simple Grid
- Grid
- Richtext Content

Some widgets are common to more than one type of view such as, the following widgets are common to Dashboard and Grid views:

- Chart

- Card List
- Card Count
- Single Line Item
- iFrame

Some widgets are common to more than one type of view, such as, the following widgets are common to Dashboard and Detail views:

- Summary

Dashboard views have some exclusive widgets, such as:

- Relationship count
- System Monitoring
- Connector Health
- Performance Metrics

Detail views have some exclusive widgets, such as:

- Editable Form
- Editable Form Group
- Uncategorized fields
- Primary Detail
- Record Type
- Relationships
- Relationship Single Line Card
- Comments
- Visual Correlations
- File Upload
- Timeline
- Executed Playbooks

In the List and Detail views, you can create buttons for commonly used actions by selecting a manual trigger playbook from the **Select a Manual Trigger Playbook** list and click **Create Button**. For details on how to create buttons in the List view, see the Grid section. In a similar way, you can also add action buttons, such as, **Escalate** and **Resolve**, in the

footer section of the detail view of a record as shown in the following image:

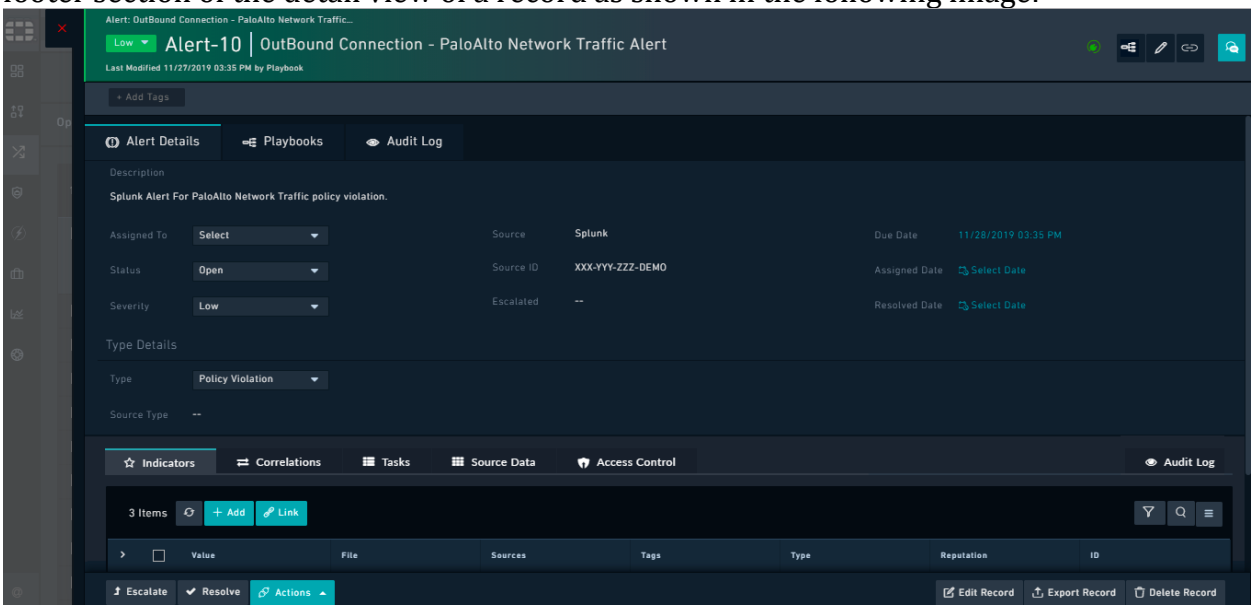


Figure 39. *Detail View Template - Allow Action Executions*

In the above image, you can also see the **Actions** button, using which users can directly execute connector actions on the record. You can stop the users from directly executing connector actions by clearing the **Show Action Execution Panel** checkbox (this is checked by default) in the detail view template:

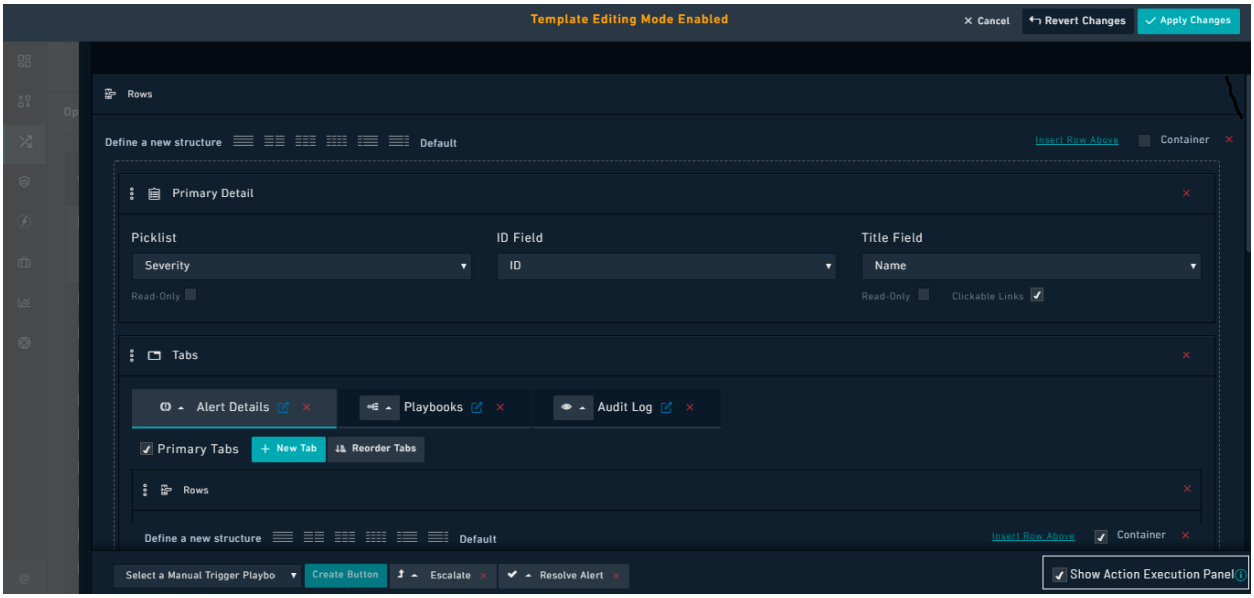


Figure 40. *Detail View Template - Allow Action Executions*

Clearing the **Show Action Execution Panel** checkbox will remove the Actions button from the detail view of the record.

You can perform the following actions while working with Widgets, such as Editable Form Groups, Charts, or Grids:

- Edit Widgets: Click the **Edit Widget** icon to change the fields within the widget or to change the properties of the widget.
- Clone Widgets: Click the **Clone Widget** icon in the row of the widget you want to clone to clone the all the fields and properties of that widget.
- Remove Widget: Click the **Remove Widget** icon to remove the widget.

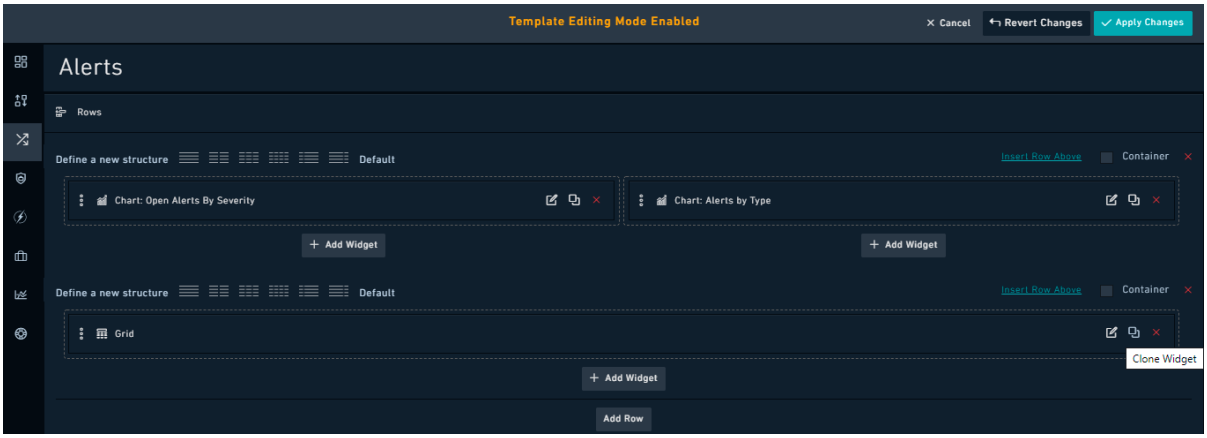


Figure 41. *Editing Widgets*

You can use some common components, such as filter and sort options, and also control the behavior and display of fields across widgets, to create templates and dashboards suit your requirements. For more information, see Common components within Widgets and Display Elements.

Structure

Rows

Rows are the foundation widget for organizing a View Template. Rows are the highest-level widget, meaning all View Templates start with a Row. You can nest subsequent Row widgets within the following rows.

Figure 42. *Row Widget*

Row Layout

Row widgets have six different column layout and width options, with a three-column structure being the default option. You can use any of these options to determine the layout of the row for subsequent widgets, even other rows.

Note: Responsive behavior is built into row layout based on the bootstrap foundation. We recommend viewing the rendered View Template layout across different resolutions after completing to view the behavior corresponds to a desirable method of handling lower resolutions.

Following are some examples of row layouts:

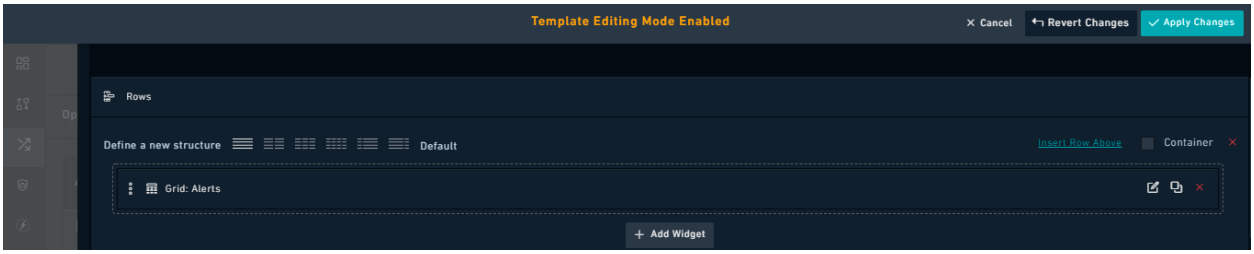


Figure 43. *Row Segregation Options - single column*

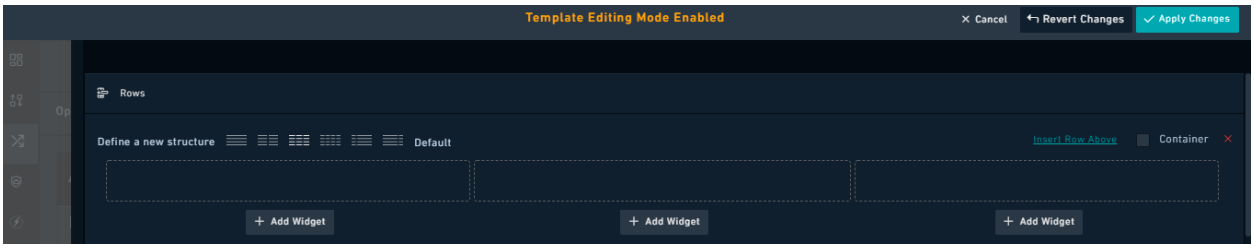


Figure 44. *Row Segregation Options - Three column*

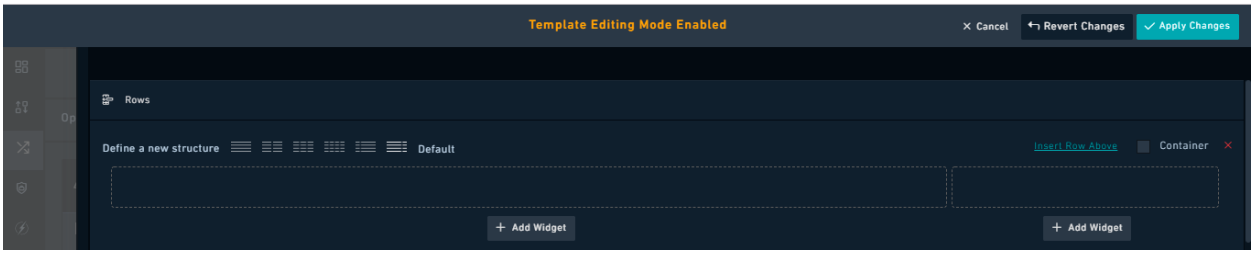


Figure 45. *Row Segregation Options - 2 columns*

Tabs

Tabs allow for placement of multiple widgets, including Rows. Using tabs helps you organize and categorize dashboards and present different types of information on a single page.

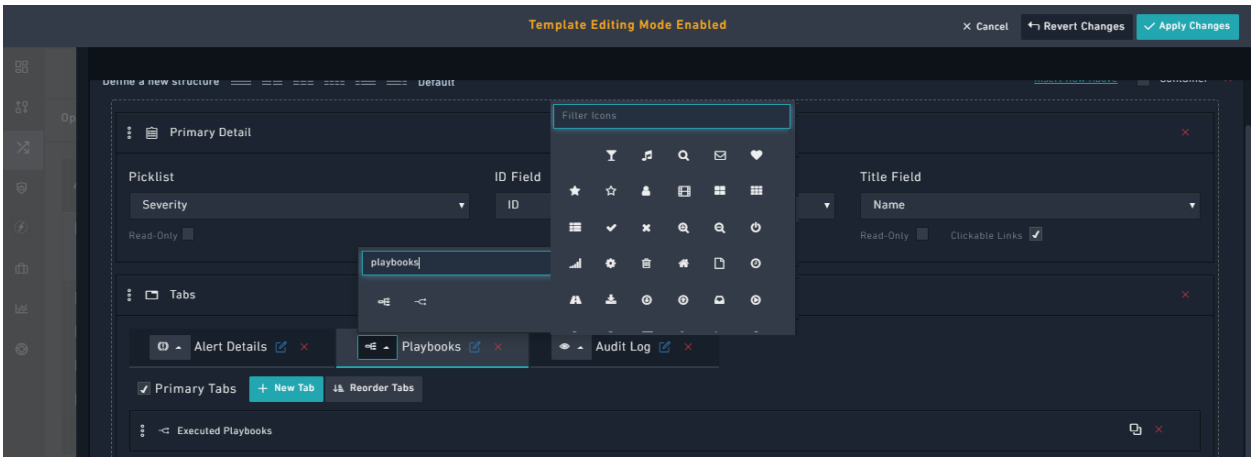


Figure 46. *Tab Widget*

You can also add icons to your tab titles and also filter icons based on icon names as shown in the above image.

The following images illustrate how the Tab and Grid widgets are displayed on the module page:

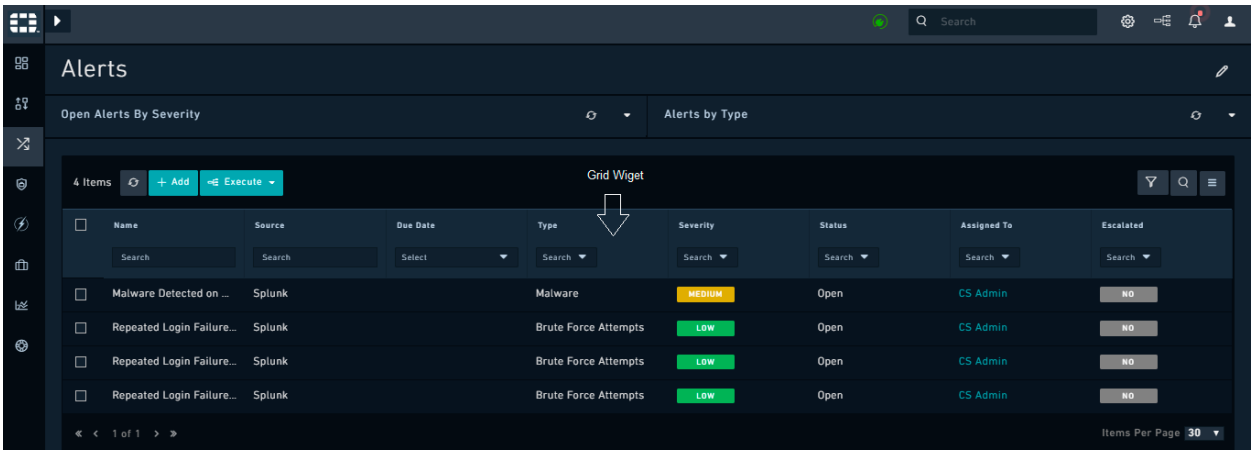


Figure 47. *Grid widgets output in Dashboard*

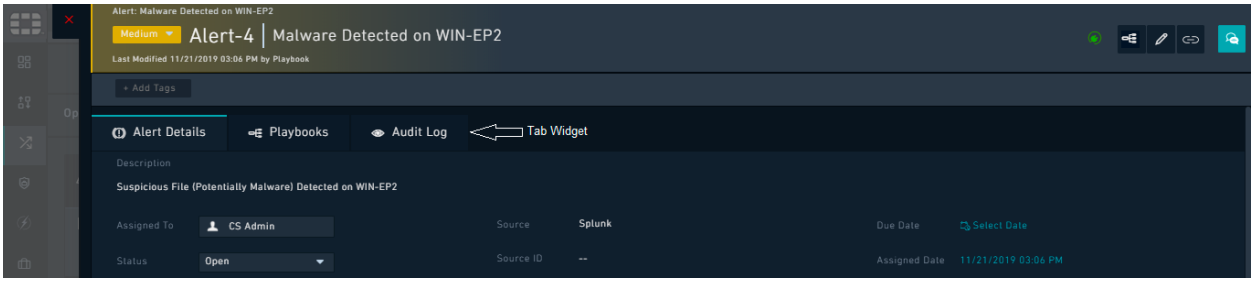


Figure 48. *Tab output in Dashboard*

Chart

You can represent data using different types of charts, which are Pie, Donut, Average Area, Bar, Timeseries, and Line charts. Each of these types of charts has separate data requirements.

From version 6.4.3 onwards, you can choose to either always display the chart or to display the chart only if there is at least one record present in the selected module. This option to show/hide charts is present in the all types of chart widgets in the `Section Show/Hide` section, select the **Always Show** option (default) to always display the chart or select the **Hide widget if its output has no records** option to display the chart only if there is at least one record present in the selected module.

A **Donut** chart is a unique type of pie chart with an area of the center cut out. A **Line** chart displays quantitative values over a continuous interval or period. Use a line chart to show trends and analyze how the data has changed over time.

A bar chart or bar graph is a chart or graph that presents categorical data with rectangular bars with heights or lengths proportional to the values that they represent. The bars can be plotted **Vertically** or **Horizontally**. The **Bar** chart widget also allows you to choose all types of fields such as `lookup`, or `text`, for both **Categories** and **Values** Axis, enabling you to be able to display data such as displaying resolved incidents per analyst.

Charts leverage picklist values for discrete representations of color. If you have defined colors for the picklist values, then those values are used. Otherwise, the system automatically colors the values with a standard color palette to preserve visual continuity.

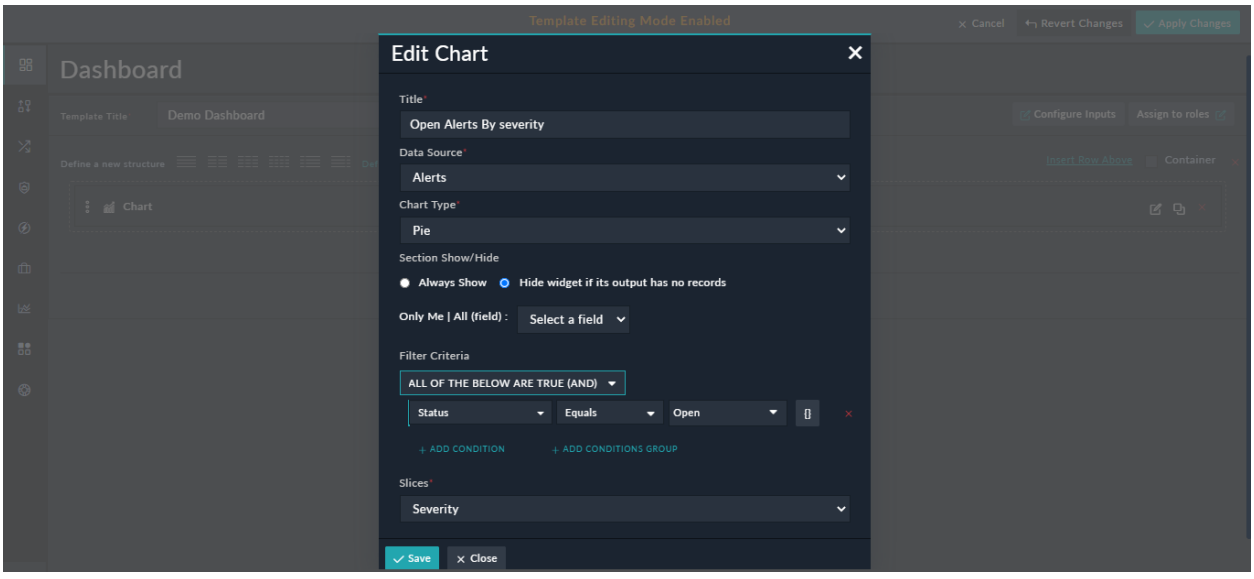


Figure 49. *Chart Widget*

You can click on each section of the chart, for example, slices in a pie chart, and open the corresponding records in the grid view.

A Donut chart is a unique type of pie chart with an area of the center cut out. You can use the center of the Donut chart to display information inside the same, making the Donut chart more space efficient. In the case of FortiSOAR™, the center area of the Donut chart displays the total number of filtered records present in the selected module or the total number of records present in the selected module (if no filter is applied). For example, if you want to display Alert records whose severity is not critical in a Donut chart, then the center of the donut chart will display the total number of alert records, which are of High, Medium, Low, or Minimal criticality, and the slices of the Donut chart will display the percentages or actual number of the alert records based on severity. If there are a total of 6 alert records, out of which 1 is critical, 2 are high, 2 are medium, and 1 is low, then the center of the donut chart will display 5 alerts, and the slices with discrete colors for severity will display percentages, e.g., 20% in orange for High alerts, 40% in yellow for Medium alerts, and 40% in green for Low alerts. From version 6.4.3 onwards, you can also choose to display actual count of records instead of the percentages, by clicking the **Show Actual Number** checkbox in the `Edit Chart` dialog.

You can also choose to apply a filter that allows you to toggle between a view that displays only records that are assigned to you or assigned to a particular role, such as **Assigned To**, by selecting the option in **Only Me | All (field)** drop-down list. The Charts widget includes the Nested Filters component to filter the charts records using a complex set of conditions. See the Nested Filters section for more information.

The following image illustrates how the Donut widget will be displayed, both with numbers and with percentages, in the dashboard or specific page, after you have selected **Assigned To** in the **Only Me | All (field)** drop-down list:

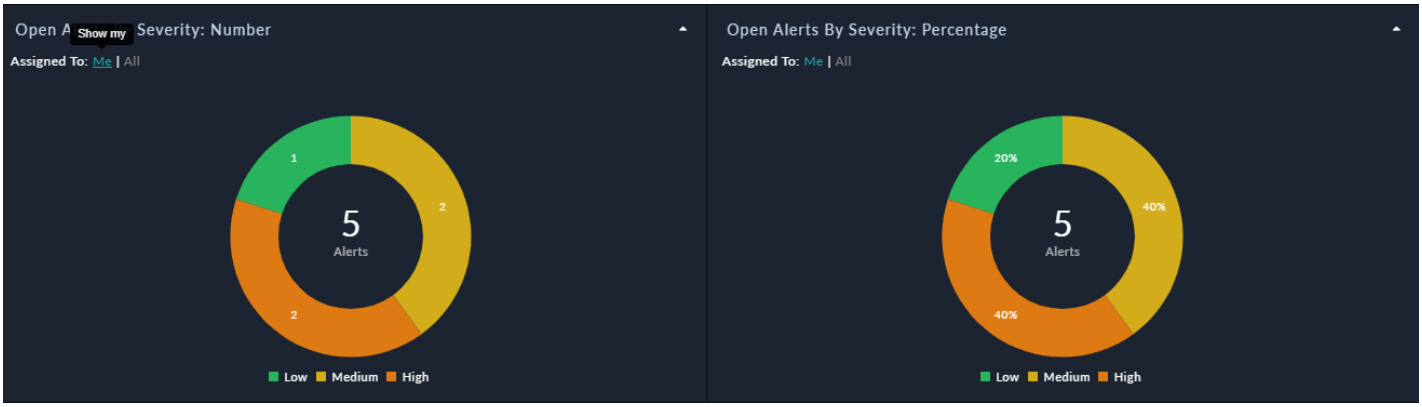


Figure 50. *Chart widget output in Dashboard*

Relationship Count

The Relationship Count chart is a type of bar chart that displays the count of related data records. For example, this widget can display how many indicators are related to alerts.

To configure a Relationship Count widget that will display indicators related to alerts do the following: Edit the Dashboard and select the **Relationship Count** widget. Add the title of the chart and select the **Chart Type** as **Bar**. Then, select Alerts as the data source in the `Primary Data Source Configurations` section. You can also specify a label that will be displayed on the Y axis against the primary data source, in the **Custom Label** field. For our example, type `Alert Names`. You can apply the **Only Me | All (field)** filter and the Nested Filters component to the Relationship Count widget. In the **X-Axis (Categories)** field, choose the field that you want to display on the axis of the bar chart, for example **Name**. Then select the related data source as **Indicators** in the `Related Data Source Configurations` section. You can also specify a label that will be displayed on the X axis against the related data source, in the **Custom Label** field. For our example, type `Related Indicators`. You can define filters for each data source, for example you can filter indicators based on the type of the indicator.

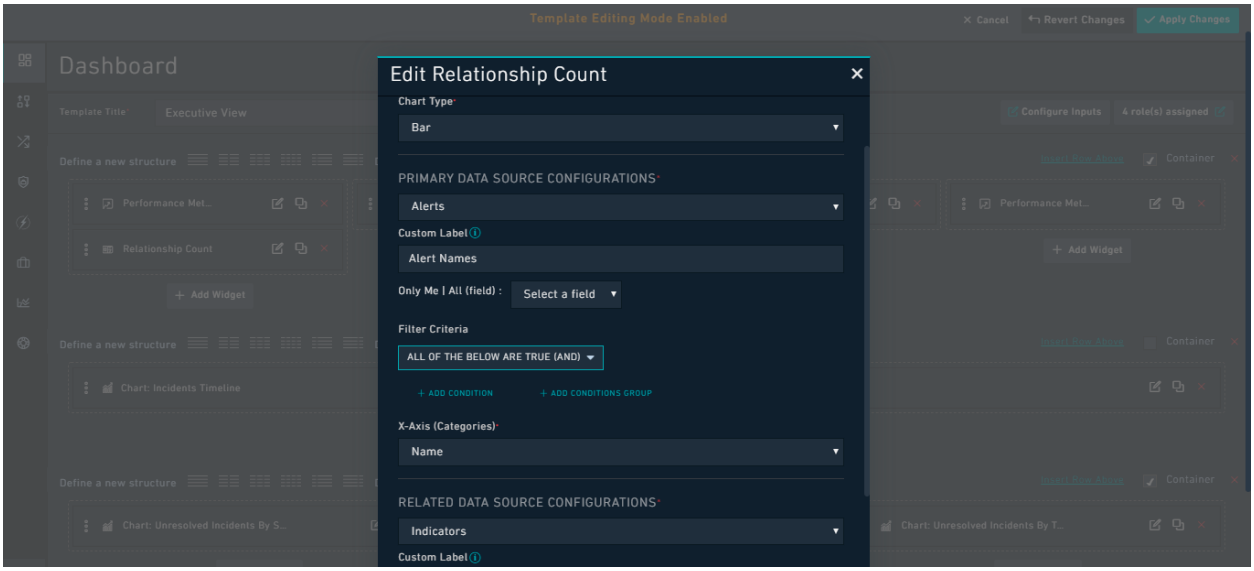


Figure 51. *Relationship Count Widget*

The following image displays the relationship count that displays the indicators related to alerts:

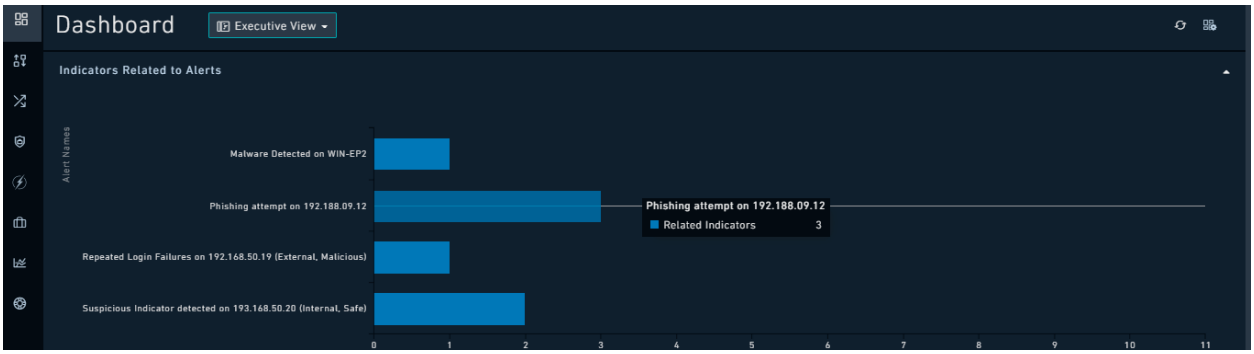


Figure 52. *Relationship Count Widget displaying indicators related to alerts*

Performance Metrics

Use the Performance Metrics widget to measure efficiencies that security operations gain by using automated workflows and playbooks present in FortiSOAR™. The Performance widget is present in the **Dashboard** and **Reports** templates.

The following types of metrics are available in the Performance Metrics widget:

- **ROI**: Displays the return on investment that you gain by using FortiSOAR™ automation for a specified time period.
- **Playbook Action Count**: Displays the number of playbook steps executed for a specified time period.
- **Time To X**: Displays the Mean, Maximum, or Minimum Time To Restore (MTTR) or the Mean, Maximum, or Minimum Time To Detect (MTTD) taken for a particular activity. For example, you can find out the Mean Time to Resolution (MTTR) which is the difference between incident creation and incident resolution or MTTD which is incident discovery and incident creation.
- **Aggregate Functions**: Displays the minimum, maximum, mean, median, or sum of record fields (integer or float), for a single record or two records.
- **Ratio**: Displays the relationship between two values. For example, the ratio between the number of alerts escalated to incidents versus the total number of alerts created for a specified time period.
- **Total Count**: Displays the number of records of a specific type on which a specific action is performed for a specified number of days. For example, display the number of escalated alerts for a specified time period.

ROI

Use the ROI widget to display the return on investment or time saved by using FortiSOAR™ automation, based on the parameters you specify. You need to specify the following parameters:

Title: Title of the ROI widget. For example, `ROI for checking IP reputation`.

Show ROI Measured As: Choose between **Dollar Savings** or **Time Savings**. If you choose **Dollar Savings**, then you have to specify the additional parameter of **$ Value Of Each Hour Of Analyst**: Average cost in dollars that your organization bears for an analyst per hour. For example, `50`. The remaining parameters are the same for both methods of ROI measurements.

Avg. Time For Each Manual Action: Average time, in minutes, that it takes for an analyst to execute one security investigation action. For example, to check the reputation of IP address in an online tool, such as VirusTotal. For example, `8` minutes.

Include All Playbook Executions: Select this checkbox to determine whether you want to include both the failed and successful playbook executions (this is the default). Clear this checkbox to include only successful playbook executions. This is common parameter across Performance Widgets.

Exclude Configuration Actions: Excludes playbook steps that are used for configuration and which do not add any business value, such as the trigger steps (start), the set variable step, and the steps that are waiting for a decision or approval (this is the default). Clear this checkbox to include all playbook steps. This is a common parameter across Performance Widgets.

Time Range: Specify the time, in days, for which you want to see the ROI. For example, `15` days.

Show Percentage Change: Select this checkbox to show the percentage difference in ROI value between the current ROI value and the previous ROI value for same time span (this is the default). For example, if you have chosen 4 days as the time range, then this will show the percentage difference between the ROI value for the last 4 days compared (example from the 1st to the 4th of June) with the ROI value for the 4 days before this time span (example 28th to 31st May). Clear this checkbox if you do not want to see the percentage change. This is a common parameter across Performance Widgets.

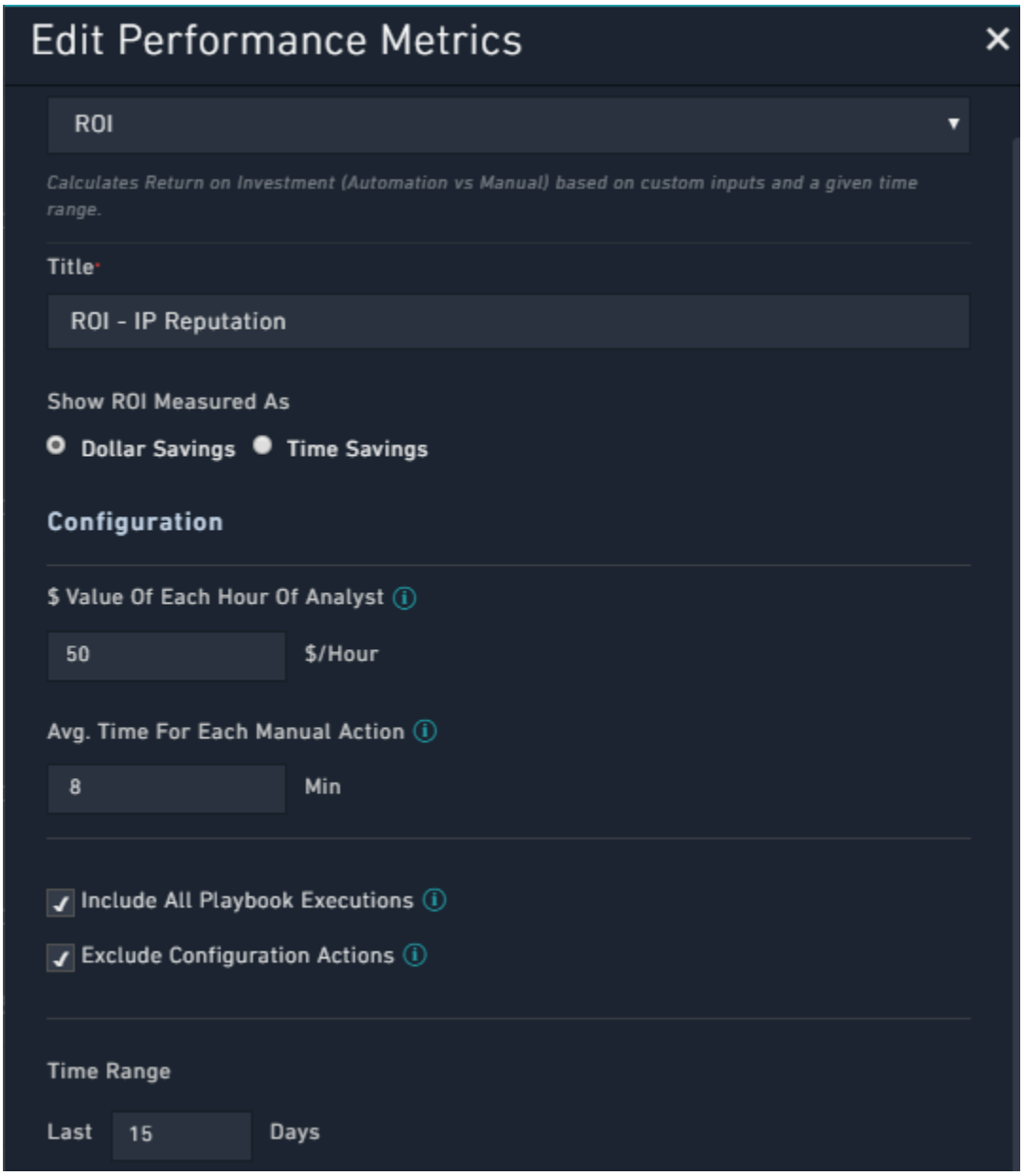


Figure 53. *Example of ROI Widget with Dollar Savings method of ROI measurement selected*

The following image illustrates how the ROI widget is displayed on the `Dashboard` page, if you have chosen the Dollar Savings method of ROI measurement:

Figure 54. *Example of ROI Widget output that displays the dollars saved*

Playbook Action Count

Use the Playbook Action Count widget to display the number of playbook steps executed for a specified time period. You need to specify the following parameters, apart from the common parameters of Include All Playbook Execution, Exclude Configuration Actions and Show Percentage Change:

Title: Title of the Playbook Action Count widget. For example, `Automated Actions Run`.

Time Range: Specify the time, in days, for which you want to see the number of playbook steps executed. For example, `5` days.

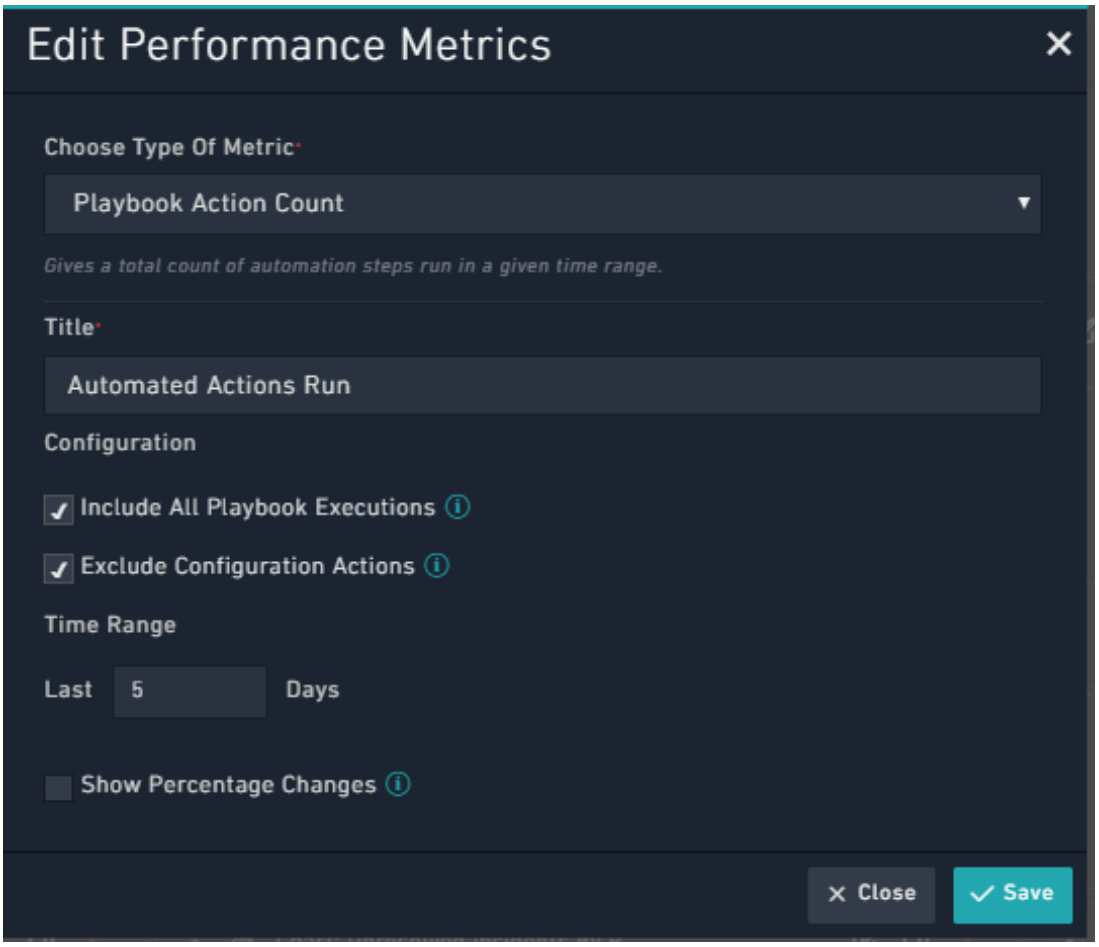


Figure 55. *Example of Playbook Action Count Widget*

The following image illustrates how the Playbook Action Count widget is displayed on the `Dashboard` page:

Figure 56. *Example of Playbook Action Count Widget Output*

Time To X

Use the Time To X widget to display the MTTR or MTTD for a particular activity. You need to specify the following parameters, apart from the common parameter of Show Percentage Change:

Title: Title of the Time to X widget. For example, `Time to Resolve Incidents - Mean`.
In this case, as an example, we are calculating the Time to X between the Resolved Date and the Discovered Date for Incidents, and we have considered the following types of Time to X, i.e., Mean, Maximum, and Minimum.

Data Source: The module on whose data you want to calculate the MTTR or MTTD. For example, **Incidents**.

Operation: Select whether you want to calculate the Mean, Median, Maximum, Minimum, or Sum of MTTR or MTTD time. For example, choose **Mean**.
For its configuration, specify **Resolved Date - Discovered Date**.

Filters: (Optional) Specify the filter condition, if you want to apply a filter to the records in the module you have specified.

Time Range: Specify the time, in days, and the field based on which you want to calculate the time. For example, `4` days.

Following is an example of the Time To X Mean Template configuration:

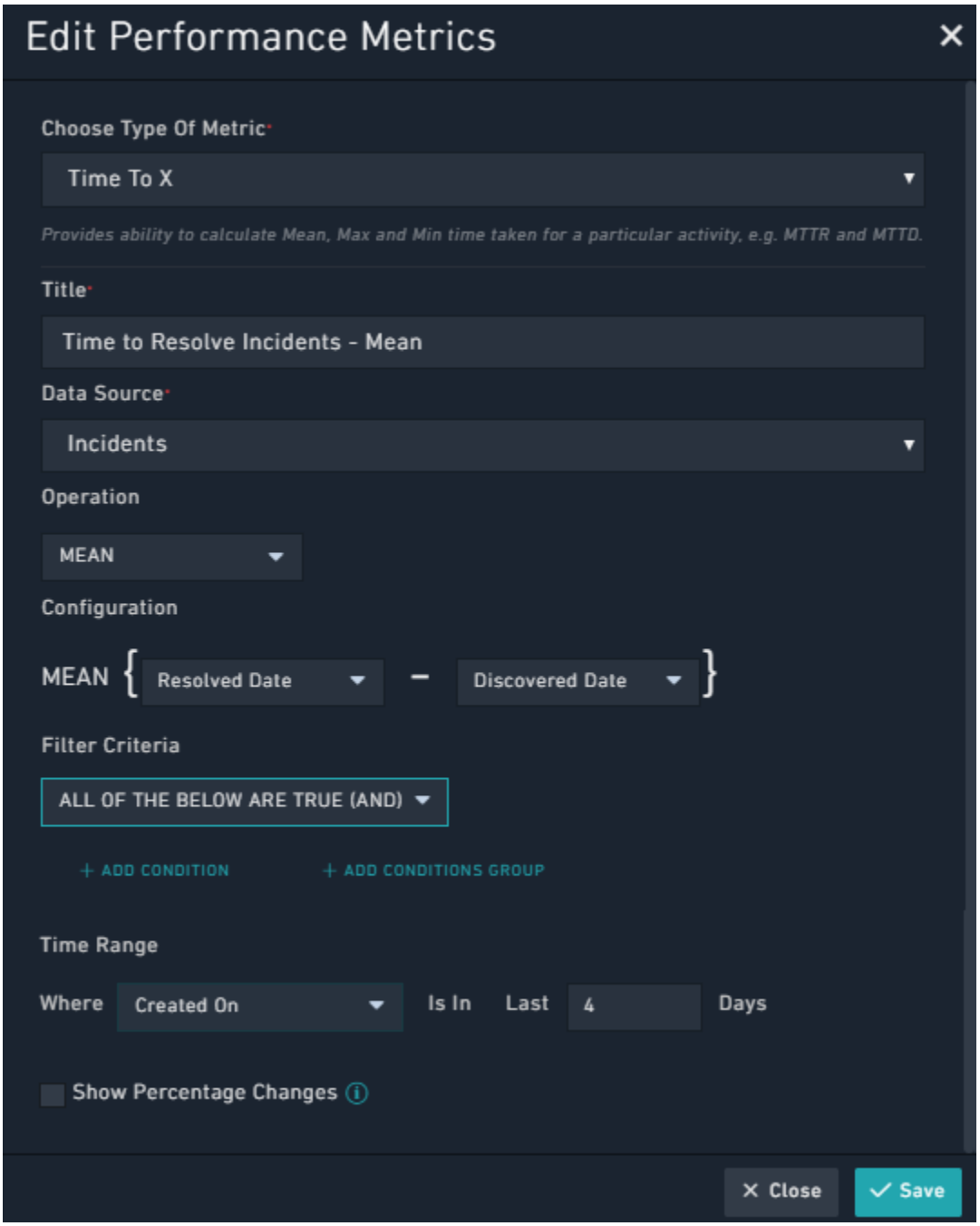


Figure 57. *Example of Time To X - Mean Widget*

The following image illustrates how the Time To X widget - Mean is displayed on the `Dashboard` page:

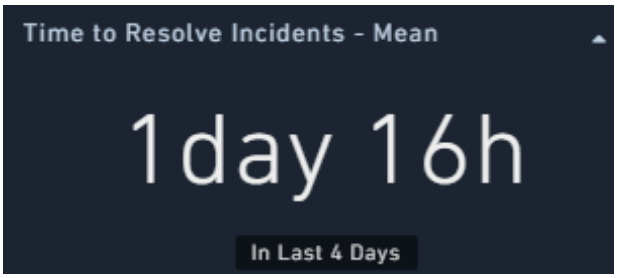


Figure 58. *Example of Time To X Widget Mean Output*

Following is an example of the Time To X Max Template configuration:

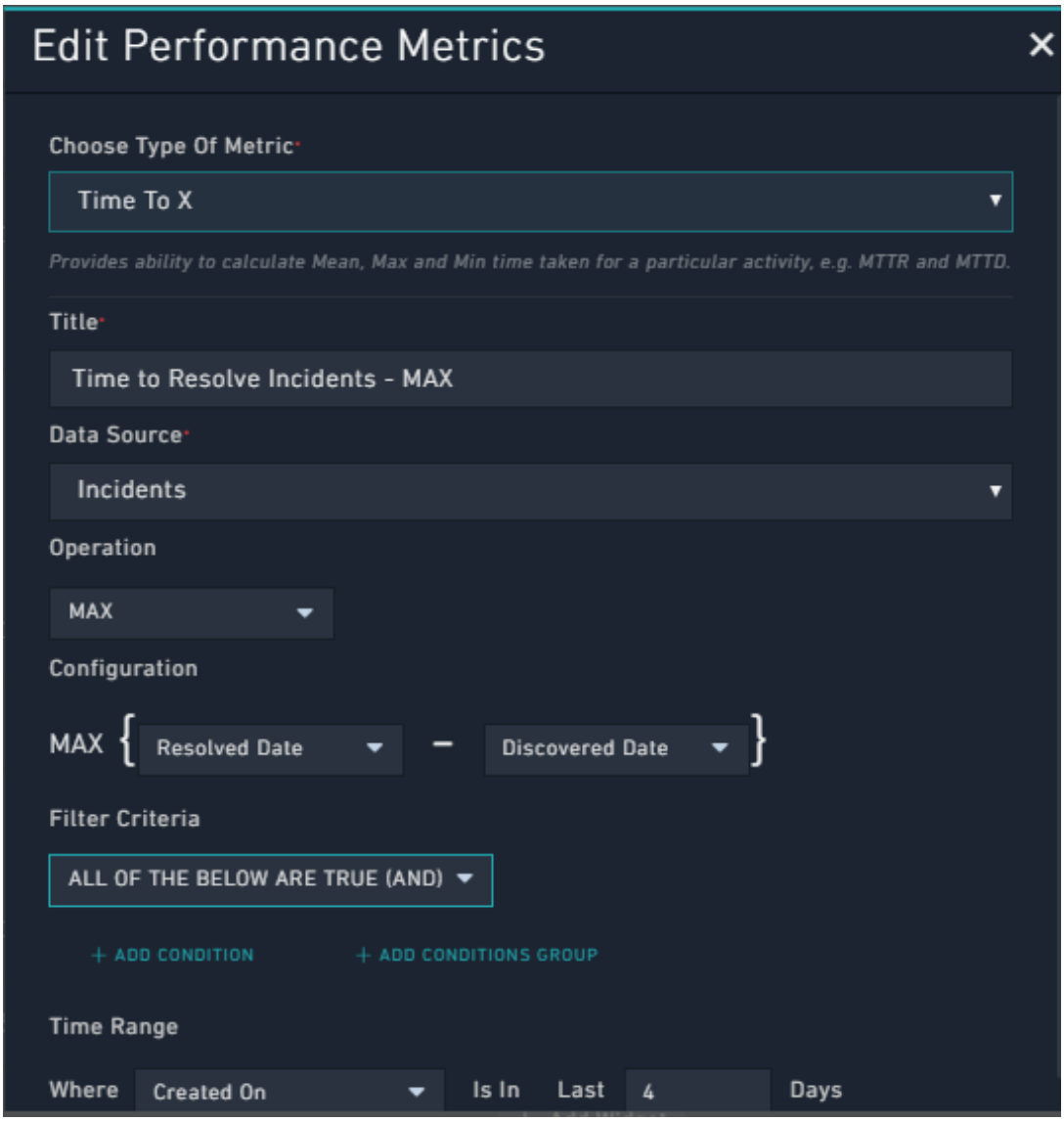


Figure 59. *Example of Time To X - Max Widget*

The following image illustrates how the Time To X widget - Max is displayed on the `Dashboard` page:

Figure 60. *Example of Time To X Widget Max Output*

Following is an example of the Time To X Min Template configuration:

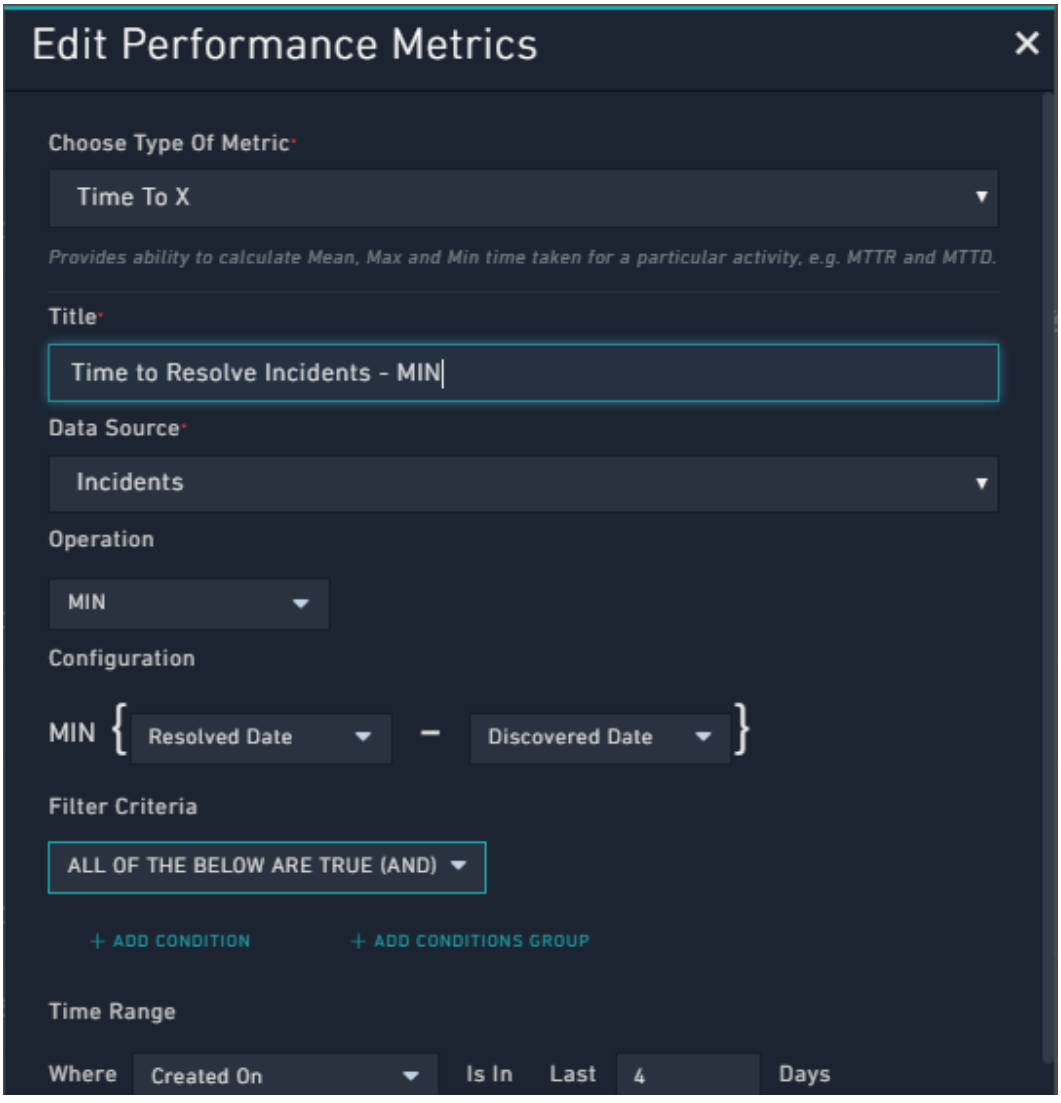


Figure 61. *Example of Time To X - Max Widget*

The following image illustrates how the Time To X widget - Min is displayed on the `Dashboard` page:

Figure 62. *Example of Time To X Widget Max Output*

Following is an example of the Time To X Sum Template configuration that displays the total time taken to assign incidents from the time they are created:

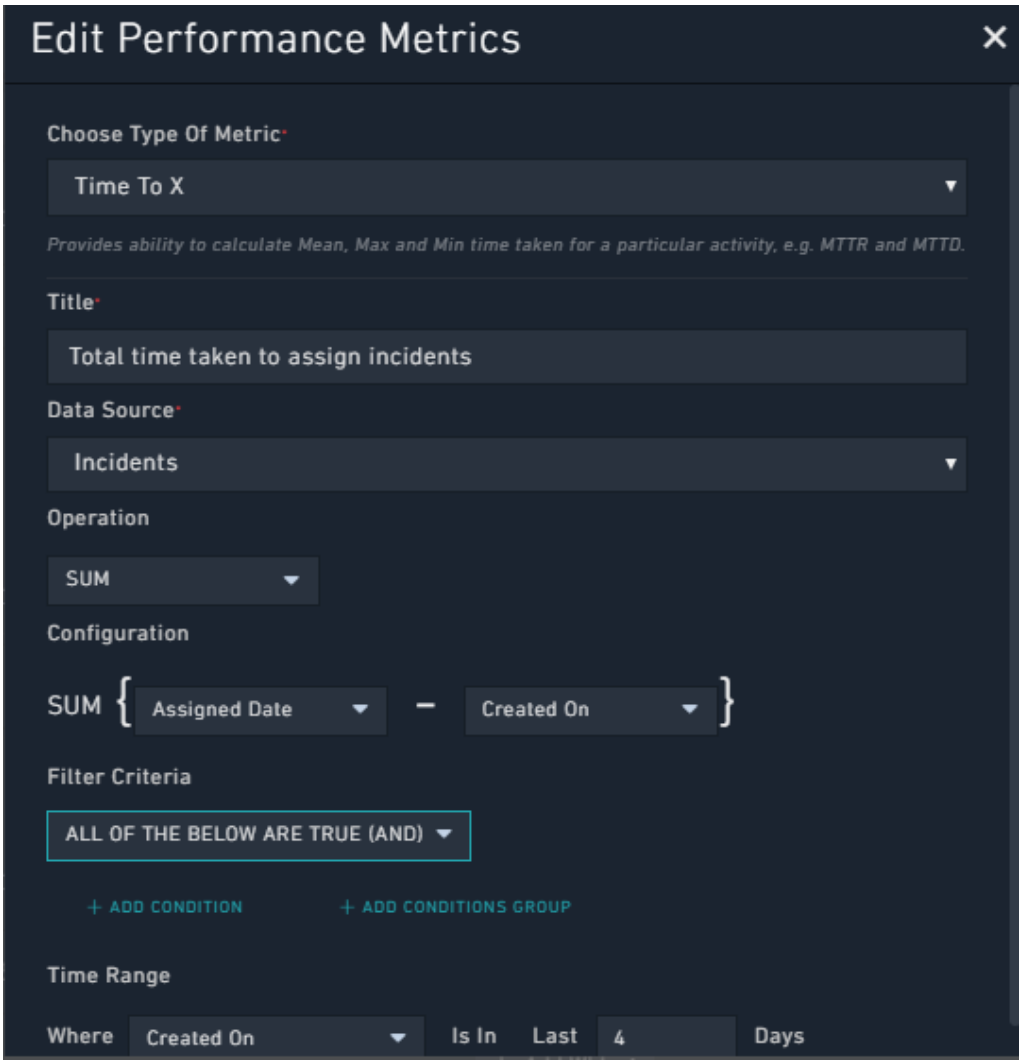


Figure 63. *Example of Time To X - Sum Widget*

The following image illustrates how the Time To X - Sum widget will appear on the `Dashboards` page. This widget displays the total time taken to assign incidents from the time they are created:

Figure 64. *Example of the Time to X widget that displays the total time taken to assign incidents*

Following image is an example of the Time To X Median Template configuration that displays the median time to resolve alerts, i.e., the median time between the time the alerts are created, and the time alerts are resolved:

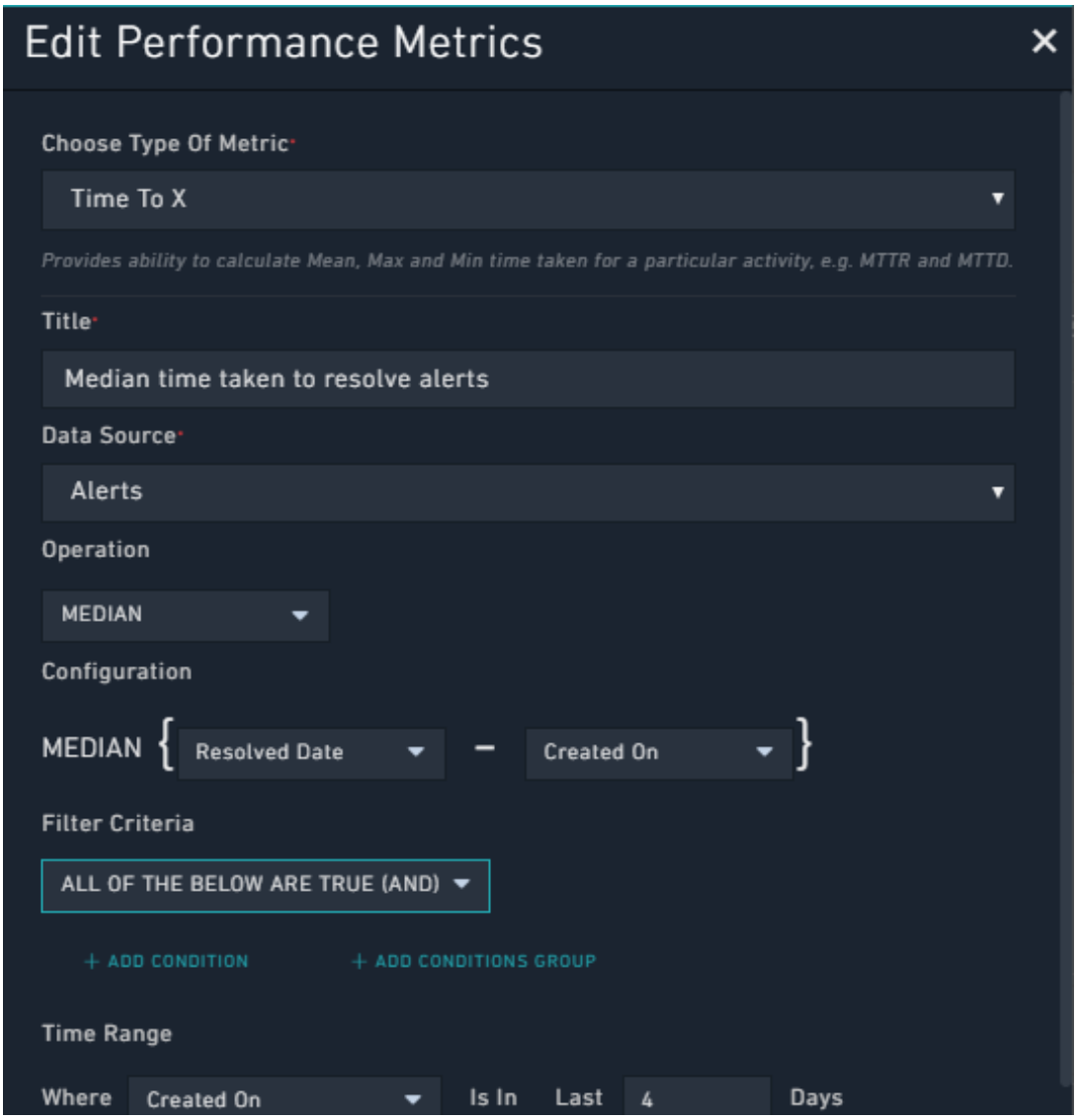


Figure 65. *Example of Time To X - Media Widget*

The following image illustrates how the Time To X - Median widget will appear on the `Dashboards` page. This widget displays the median time between the time incidents are discovered and the time incidents are resolved:

Figure 66. *Example of the Time to X widget that displays the median time to resolve alerts*

The "Time To X" widget also supports the following:

- Displaying MTTR values as a Bar Chart, both horizontal and vertical. Earlier this widget could only be displayed using the “Card View”.
- Displaying categories within the MTTR view. For example, displaying the time to resolve alerts of different levels of severity by a specific user.

Following is an example of how to create a MTTR dashboard using a Bar Chart that displays the mean time taken for a particular user to resolve alerts of varying severity.

Title: Title of the Time to X widget. For example, `Mean time to resolve alerts by user and severity`.

Data Source: The module on whose data you want to calculate the MTTR. For example, **Alerts**.

Layout: Choose the layout of the widget. You can choose between Card View or Bar Chart. For our example, choose **Bar Chart**.
If you choose Bar Chart, then in the Chart Type choose between Horizontal or Vertical. For our example, choose **Horizontal**.

X-Axis Grouping - 1st Level: Select the field based on which you want to group the records to be displayed in the dashboard. This will form the primary filter for displaying the dashboard. For our example, we require to display the mean time taken by a specific user, for example, `csadmin`, to resolve alerts of varing severity levels. Therefore, for the primary filter, select **Assigned To**.

X-Axis Grouping - 2nd Level: Select the field based on which you want to further group the records to be displayed in the dashboard. This will form the second filter for displaying the dashboard. For our example, select **Severity**.
We choose Assigned to and Severity as the primary and secondary filter respectively since we want the MTTR dashboard to display the time taken for resolving alerts grouped the user and severity.

Operation: Select whether you want to calculate the Mean, Median, Maximum, Minimum, or Sum of MTTR or MTTD time. For our example, choose **Mean**.
For its configuration, specify **Resolved Date - Assigned Date**.

Filters: (Optional) Specify the filter condition, if you want to apply a filter to the records in the module you have specified.
In this you can specify the filter `Assigned To Equals CS Admin`, since we want to display how much time the `csadmin` user takes to resolve alerts of varying severity levels.

Time Range: Specify the time, in days, and the field based on which you want to calculate the time. For example, `Resolved Date is in the 6 Days`.

Following image is an example of the MTTR Dashboard configuration that displays the mean time to resolve different types of alerts, i.e., the mean time between the time the alerts are assigned, and the time alerts are resolved:

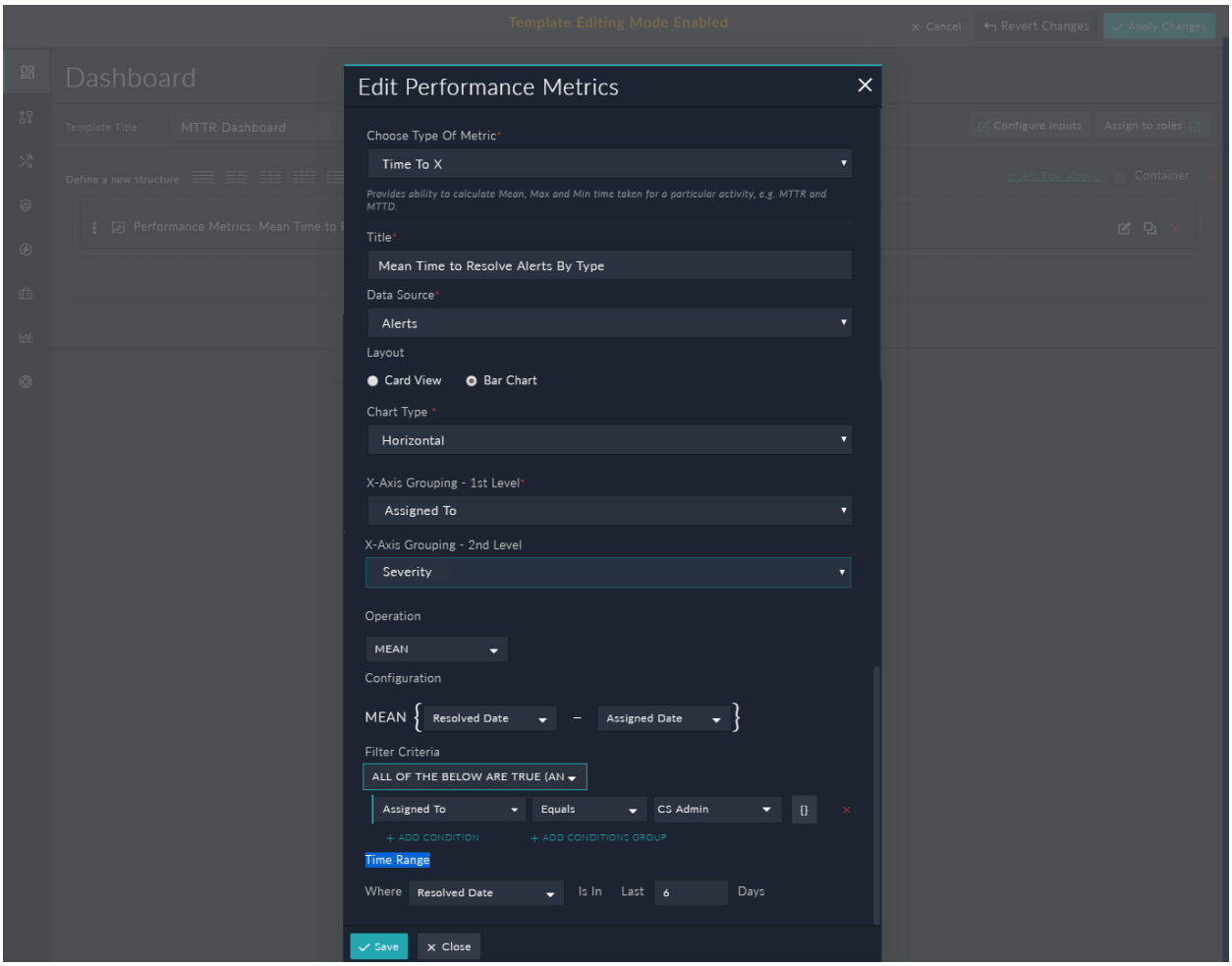


Figure 67. *Example of configuration of the Time To X widget grouped by resolved date and type*

The following image illustrates how the MTTR Dashboard that displays a bar chart showing the mean time to resolve alerts by type on the `Dashboard` page:

Figure 68. *MTTR Dashboard displaying mean time taken to resolve alerts by type*

Aggregate Functions

Use the Aggregate Functions widget to calculate and display the minimum, maximum, median, mean, or sum of record fields (integer/decimal), for a single record or for two records. You need to specify the following parameters, apart from the common parameter of **Show Percentage Change**:

Title: Title of the Aggregate Functions widget. For example, `Average time in mins to contain incidents`.

Data Source: The module on whose data you want to calculate the minimum, maximum, average, or sum of integer or float fields. For our example, select **Incidents**.

Operation: Select the operation, which is **MEAN** that you want to perform on the fields and for this operation and then select **Single Record Field**.

Configuration: In the configuration section, select the field on which you want to perform the operation. The fields must be of type `Integer` or `Decimal`. For our example, select **Containment Time (minutes)**.
Note: It is recommended that when you create an Integer field, you should set its default value as “zero” in the module editor. Since if any column specified in the configuration has NULL values, then the Aggregate Functions might not show the correct value in the dashboards.

Filters: (Optional) Specify the filter condition, if you want to apply a filter to the records in the module you have specified.

Time Range: Specify the time, in days, and the field based on which you want to calculate the time. For our example, we want to see results of incidents created in the last 4 days.

The following image is an example of the Aggregate Functions widget that has configured according to the above specifications:

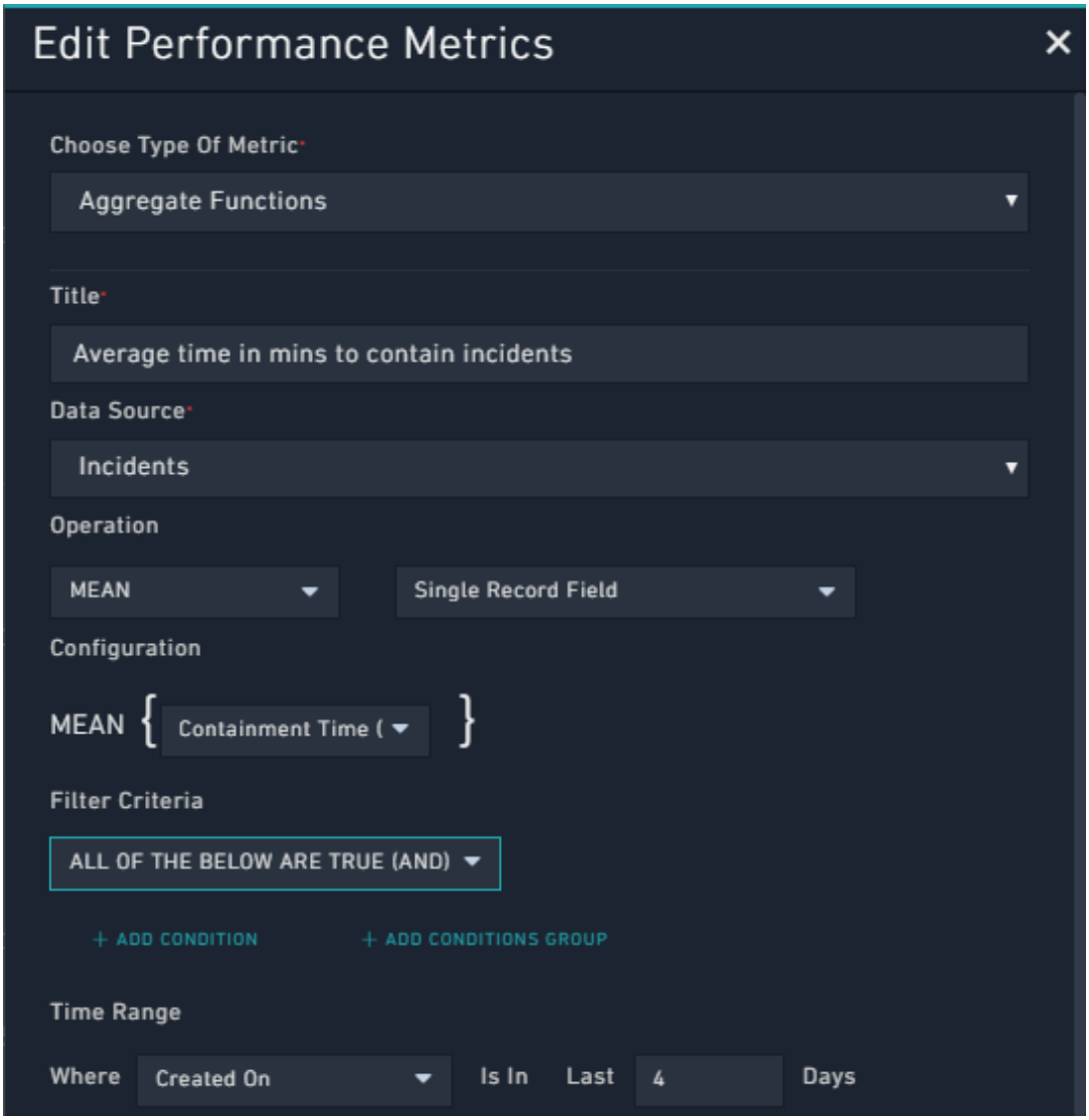


Figure 69. *Example of Aggregate Functions - Mean Option*

The following image illustrates how the Aggregate Functions widget will appear on the `Dashboards` page. This widget displays the average time, in minutes that it takes to contain incidents, in the last 5 days:

Figure 70. *Example of the Aggregate Functions widget that displays the mean time to contain an incident*

Similarly, you can find out maximum, minimum, median, and sum for integer or decimal fields.

You can also perform an operation that works on two fields and get their maximum, minimum, mean, median, or sum of the difference or aggregation of these fields.

For example, the average difference between the containment time and the recovery time for incidents. The following image is an example of the Aggregate Functions widget configured for this example:

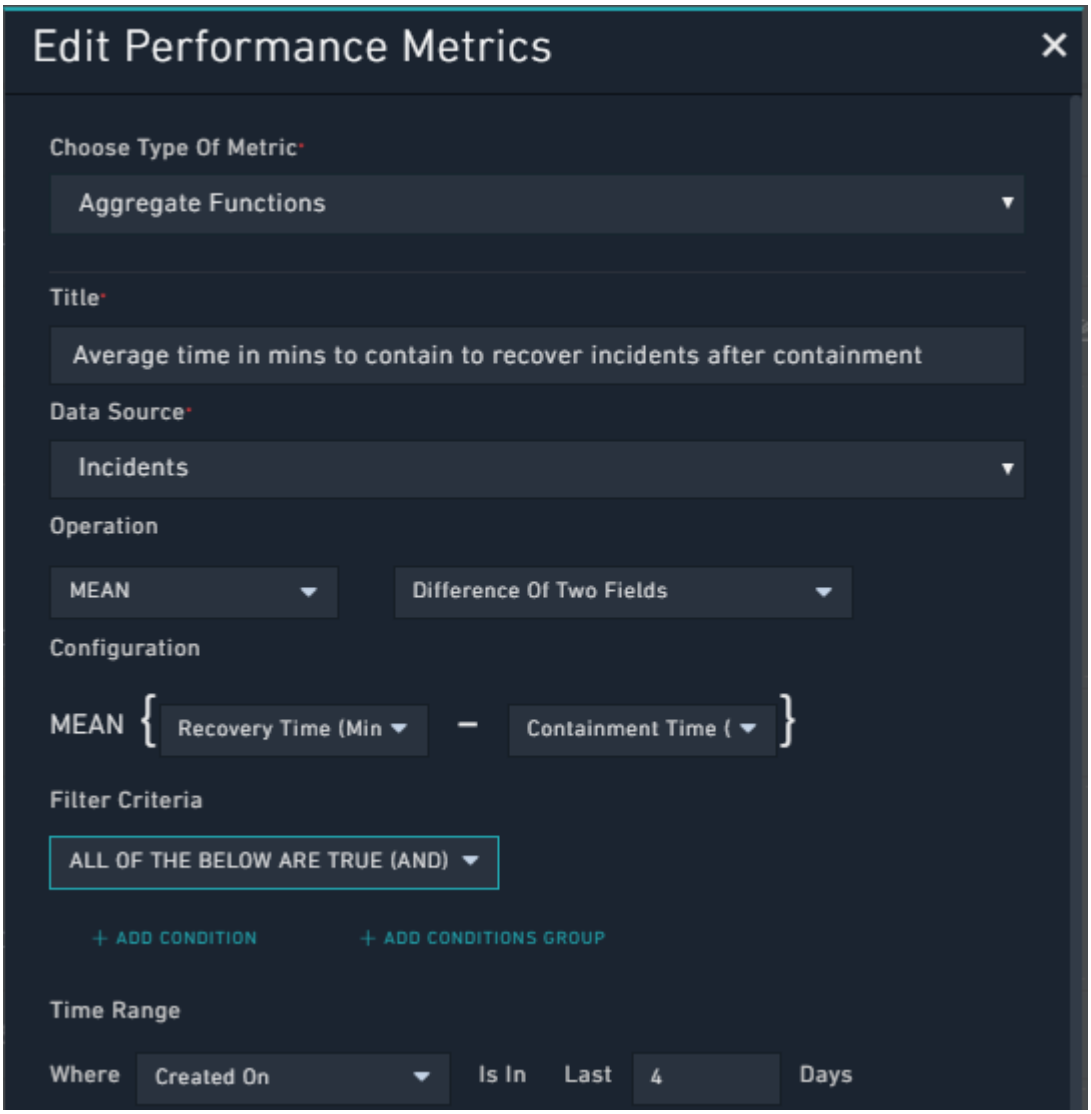


Figure 71. *Example of Aggregate Functions for two fields - Mean Option*

The following image illustrates how the Aggregate Functions widget will appear on the `Dashboards` page. This widget displays the average time, in minutes, to recover after containing incidents, in the last 5 days:

Figure 72. *Example of the Aggregate Functions widget that displays the mean time to recover after containment*

Ratio

Use the Ratio widget to display the relationship between two values. You need to specify the following parameters:

Title: Title of the Ratio widget. For example, `Created Alerts v/s Escalated Alerts`.

Data Source: The module on whose data you want to calculate the ratio. In the case of the Ratio widget, you must specify two data sources since you require to compare two values. For our example, select **Alerts** as both the data sources.

Filters: (Optional) Specify the filter condition, if you want to apply a filter to the records in the module you have specified. For our example, in one option you do not require to apply any filter since we are comparing all the alerts created and in the other option specify a filter such as `Escalated Equals Yes`.

Time Range: Specify the time, in days, and the field based on which you want to calculate the time. For example, `3` days.

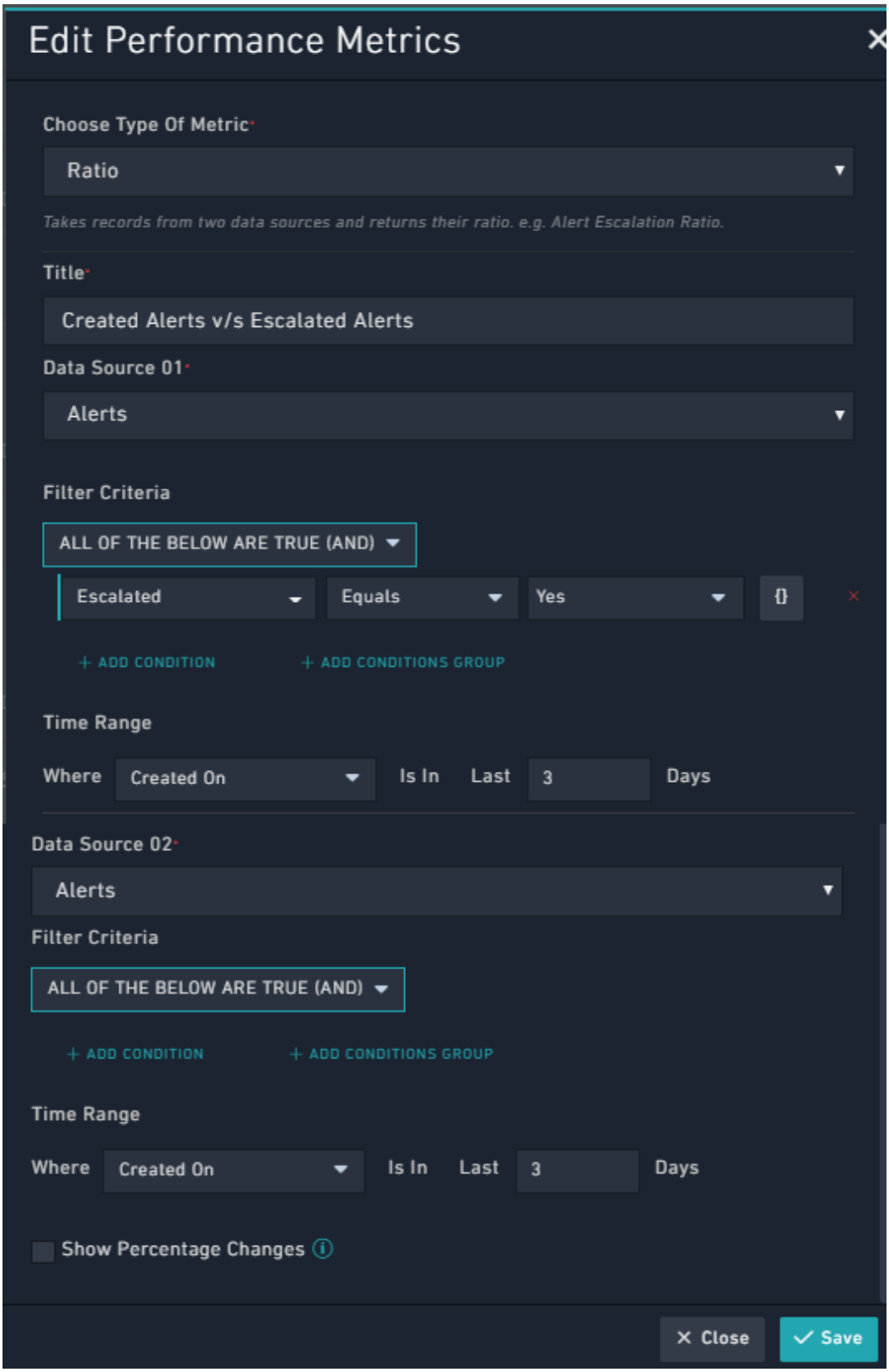


Figure 73. *Example of Ratio Widget*

The following image illustrates how the Ratio widget is displayed on the `Dashboard` page:

Figure 74. *Example of Ratio Widget Output*

Total Count

Use the Total Count widget to display the number of records of a specific type on which a specific action is performed for a specified number of days. You need to specify the following parameters, apart from the common parameter of Show Percentage Change:

Title: Title of the Total Count widget. For example, `Alerts Resolved`.

Data Source: The module on whose data you want to calculate the total count. For example, **Alerts**.

Filters: (Optional) Specify the filter condition, if you want to apply a filter to the records in the module you have specified. For example, since we want to get the total count of escalated alerts, specify a filter such as `Status Equals Closed`.

Time Range: Specify the time, in days, and the field based on which you want to calculate the time. For example, `2` days.

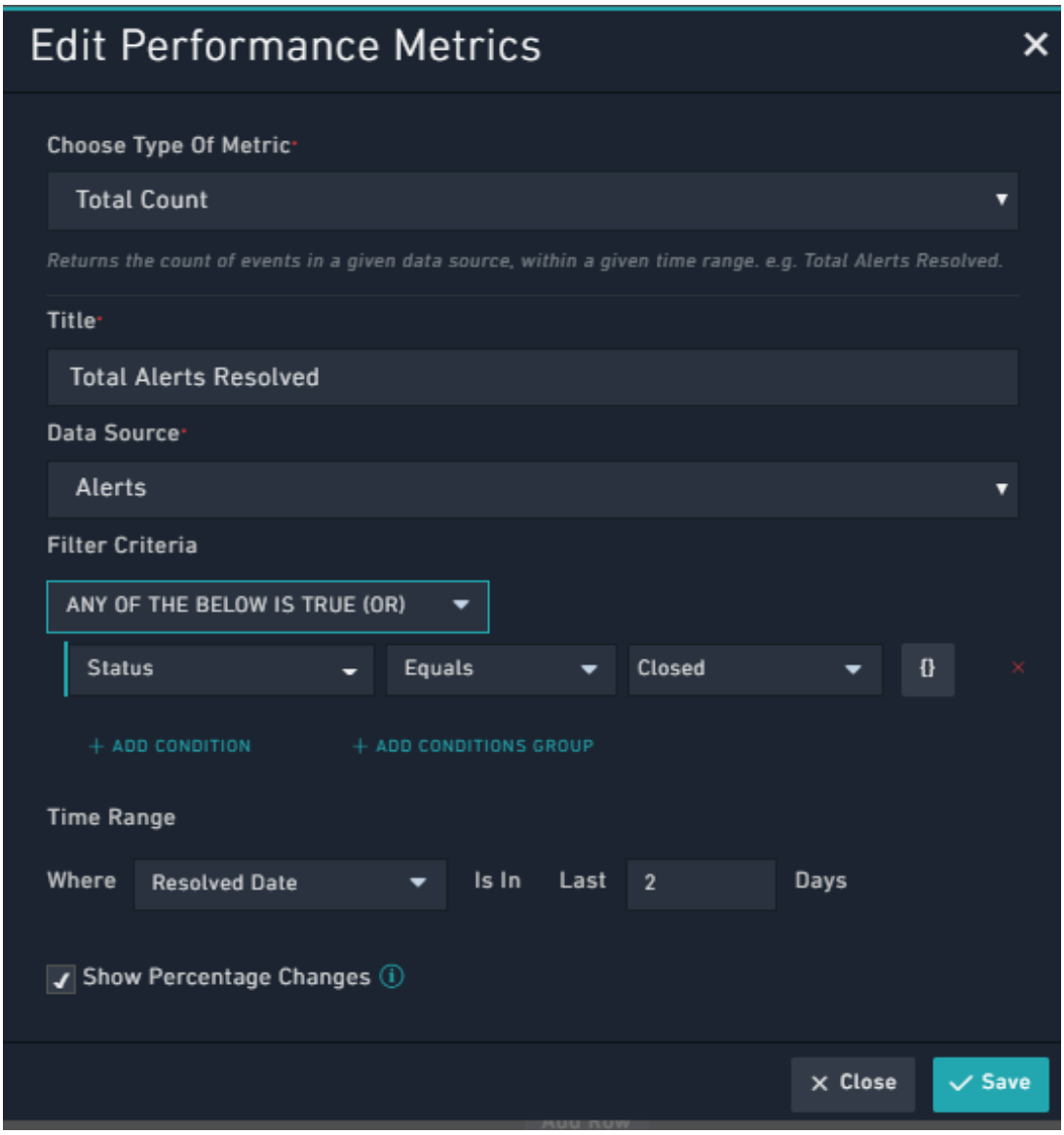


Figure 75. *Example of Total Count Widget*

The following image illustrates how the Total Count widget is displayed on the `Dashboard` page:

Figure 76. *Example of Total Count Widget Output*

System Monitoring

Use the "System Health Status" Dashboard that is included by default in FortiSOAR™ to monitor various FortiSOAR™ system resources such as CPU, Disk Space and memory utilization, and the statuses of various FortiSOAR™ services. The advantage of having the System Health Status Dashboard is that now you do not require to log into the FortiSOAR™ server to check the various usage levels and you can also define various thresholds for each system resource and if these thresholds are breached then you can take some corrective actions.

From version 6.4.3 onwards, you should set up system monitoring for FortiSOAR™, both in case of a single node system and High Availability (HA) clusters on the `System Configuration` page. To know more about the setting up thresholds and enabling notifications, to effectively monitor various FortiSOAR™ system resources, see the *System Configuration* chapter in the "Administration Guide."

For versions prior to 6.4.3, you should set up thresholds, schedules, and notifications for the System Monitoring playbook that is included by default with FortiSOAR™ to effectively monitor various FortiSOAR™ system resources. To know more about setting up thresholds, notifications, and schedules, see the System Monitoring: Setting up thresholds, schedules, and notifications article present in the Fortinet Knowledge Base.

The following types of system monitoring are available in the System Monitoring widget:

- **CPU Usage**: Displays the percentage (%) of overall CPU utilization.
- **Virtual Memory Usage**: Displays the percentage (%) of overall Virtual Memory utilization.
- **Swap Memory Usage**: Displays the percentage (%) of overall Swap Memory utilization.
- **Disk Space Usage**: Displays the percentage (%) of disk space consumption for different partitions.
- **Service Status**: Displays the status for all FortiSOAR™ services.

Following is an image of a sample System Health Status Dashboard:

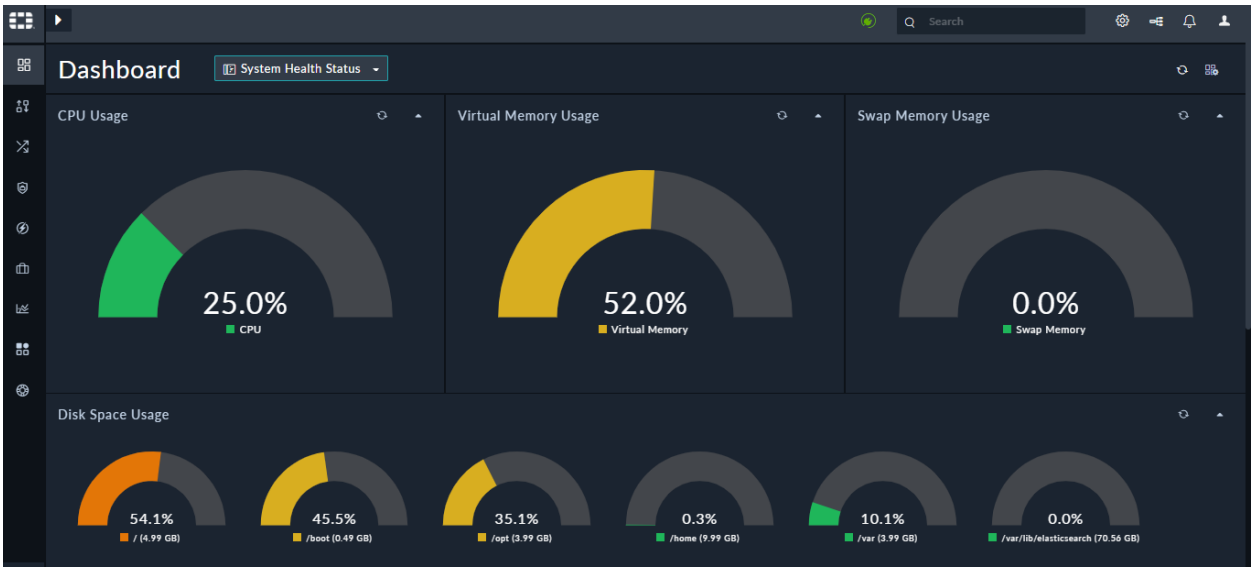


Figure 77. *System Health Status Dashboard*

Utilization widgets

Use the Utilization widgets to display the utilization of various FortiSOAR™ system resources. Utilization widgets are: CPU Utilization, Disk Space Utilization, and Memory Utilization. These widgets can be configured in a similar manner and are used to display the utilization of various FortiSOAR™ system resources.

Title: Title of the Utilization widget. For example, if you are selecting the CPU Utilization widget, you can name this widget as `CPU usage`.

Choose Type of System Monitoring: For utilization, you can choose from, CPU Utilization, Disk Space Utilization, or Memory Utilization.

Threshold Percentage: Specify the percentage after which you want to take some corrective action. On the dashboard, the widgets will visually indicate when the threshold is reached or exceeded, in the red color. Similarly, it will display various colors, green, yellow, amber according to threshold value.

Following is a sample image of a configured a CPU Utilization widget:

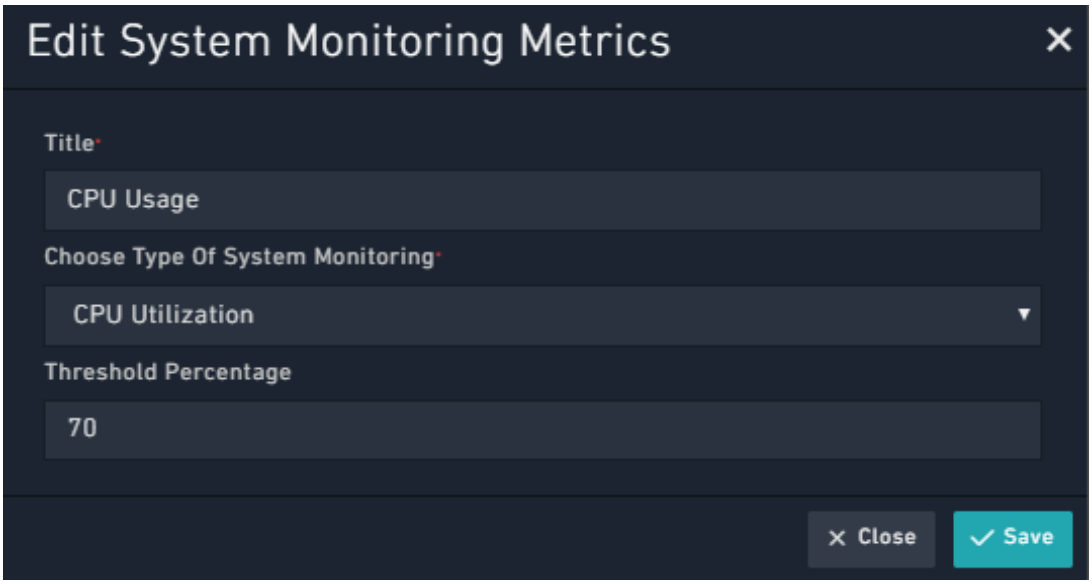


Figure 78. *CPU Usage Widget*

Service Status widget

This widget displays the status for all FortiSOAR™ services. Services that are available are displayed with a green circle. If any service is down, then that service will be displayed with a red warning symbol, as is the case with the `postgresql-12` service in the above image. From version 6.4.1 onwards, `cyops-integrations-agent` service is also monitored. The `cyops-integrations-agent service` supports running actions on remote agents.

Title: Title of the Service Status widget. For example, `Services status`.

Choose Type of System Monitoring: Select **Service Status**.

Connector Health

Use this widget to track the health of all the configurations of all your configured connectors. Some system connectors such as BPMN, Report Engine, Utilities, etc. do not require any configuration, therefore this widget does not display the health of these connectors. You can edit only the **Title** of this connector.

Figure 79. *Connector Health*

The following image illustrates how the Connector Health widget is displayed on the dashboard page:

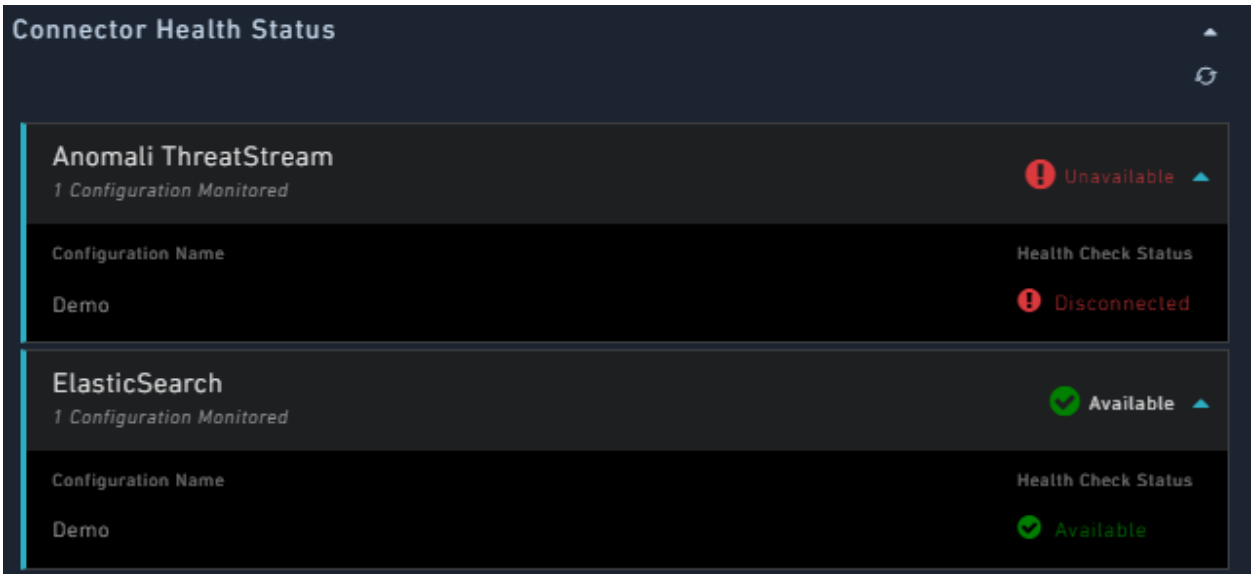


Figure 80. *Connector Health widget output in Dashboard*

Each connector configuration row will display the number of configurations that are being monitored, for example, in the image above, all the connectors have *1 Configuration Monitored*.

If any of the configurations of a connector is unavailable, then the widget will display "Unavailable" in the red color and the Health Check will be Unavailable. For example, in the above image the configuration of the Anomali ThreatStream connector is unavailable. To view the details of the configuration being unavailable, click the down arrow on the connector row, to display the Health Check Status of that configuration. You will see that the Health Check Status of this configuration is "Disconnected". You can hover on the warning icon to know the reason for the configuration being disconnected.

If all the configurations of the connector are available, then the widget will display "All Available" in green color and the Health Check will be "Available". If any configuration is

unavailable, then the widget will display “1 Unavailable” in the red color and when you click the down arrow the Health Check Status will display “Available” for the configurations that are available, and display “Disconnected” for the configuration that is unavailable.

If any connector is deactivated, then it will appear as “Deactivated” in red color and the Health Check will display as “Deactivated”.

Record - Card View

Card Lists

Cards are like Single Line widgets, but they are in the form of card list in which you have up to four fields in a row. Using the **Card left border Color Based On** drop-down list, you can also choose a color to emphasize fields, such as **Type**, **Severity**, or **Status**. The **Only Me | All (field)** filter and the Nested Filters component apply to Card Lists widget.

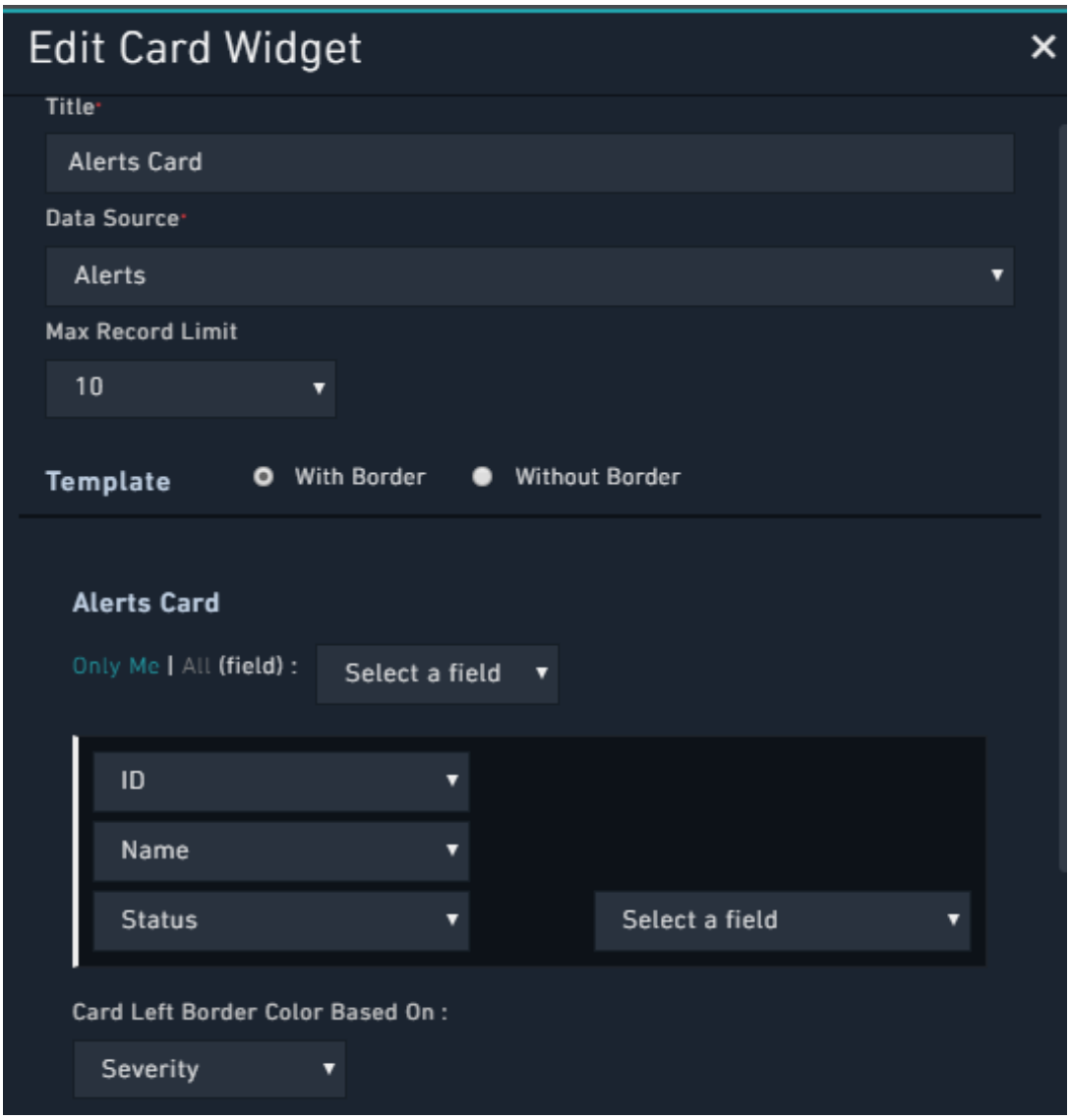


Figure 81. *Card Widget*

The following image illustrates how the Card List widget is displayed on the module page:

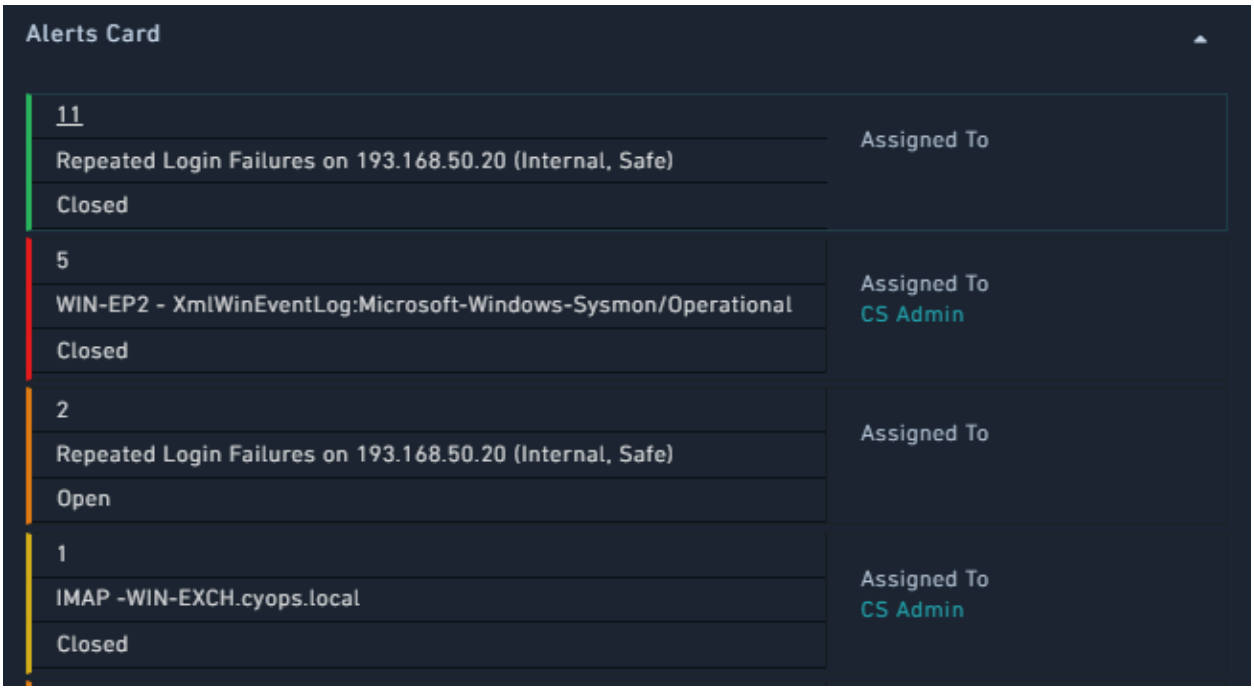


Figure 82. *Card List widget output in Alerts*

Card Count

Card Count widgets are simpler forms of the card widget showing a single number representing the total sum of a field on a data model. For example, using the **Group By** field, in the Card Count widget you can get the total count of records assigned to with specific levels of severity. The **Only Me | All (field)** filter and the Nested Filters components are applicable to Card Count widget.

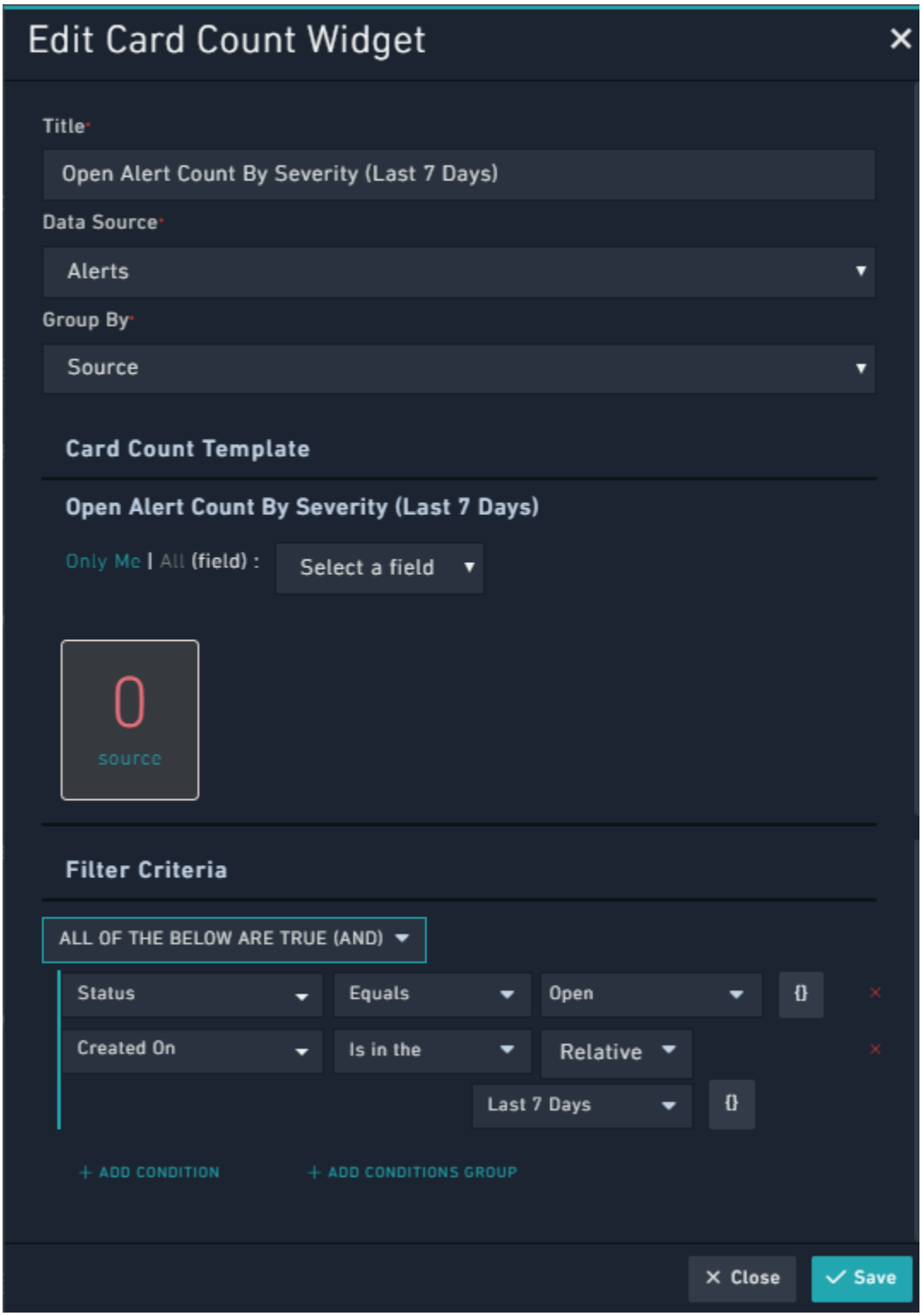


Figure 83. *Card Count Widget Configuration*

The following image illustrates how the Card Count widget is displayed on the module page:

Figure 84. *Card Count widget output in Dashboard*

Record - Listing

Single Line Item

The Single Line widget displays records in a single column. You can use this widget to display records, such as tasks, that are assigned to you and get the complete detail of the tasks in one view. The **Only Me | All (field)** filter and the Nested Filters component apply to the Single Line Items widget.

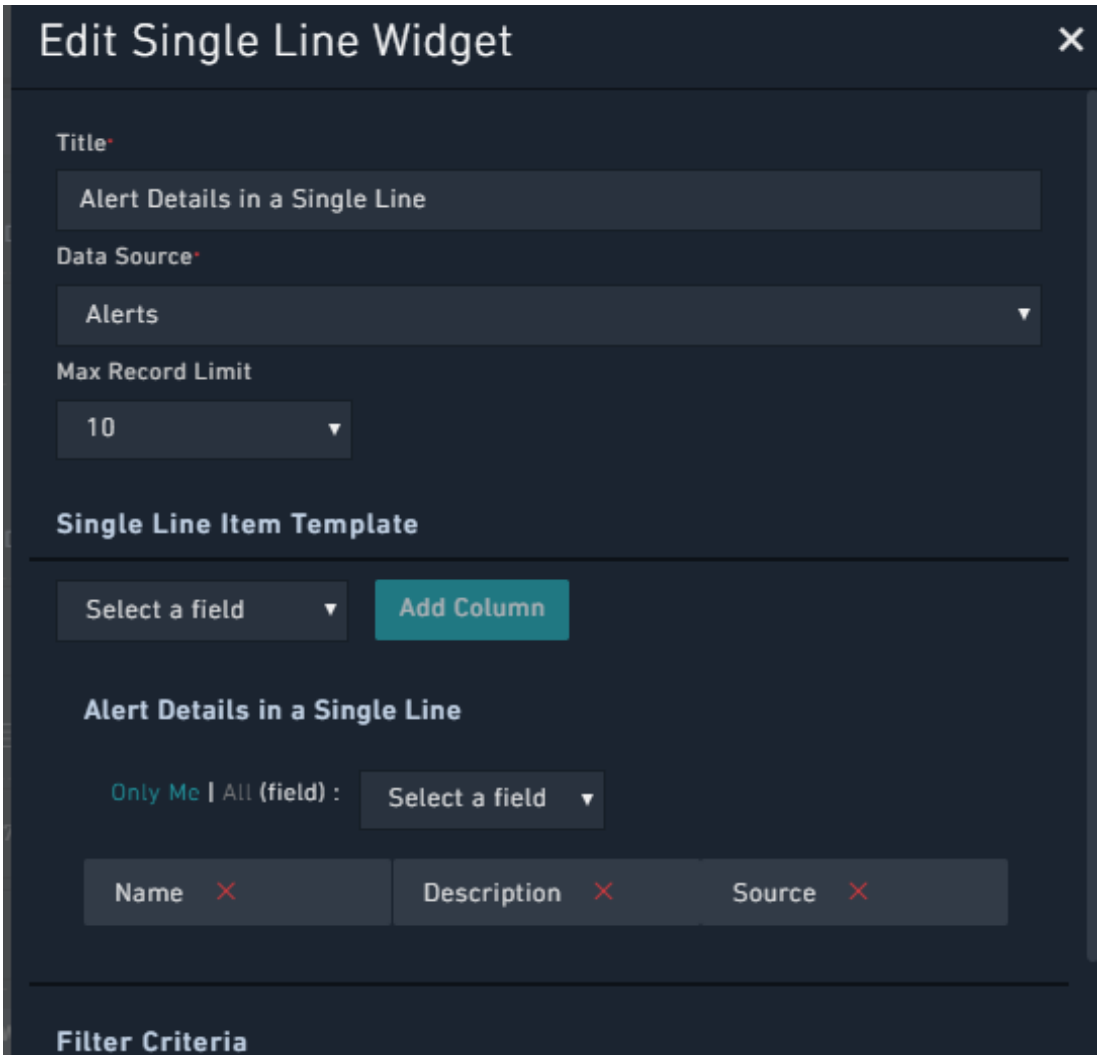


Figure 85. *List Widget*

The following image illustrates how the Single Line Item widget is displayed on the module page:

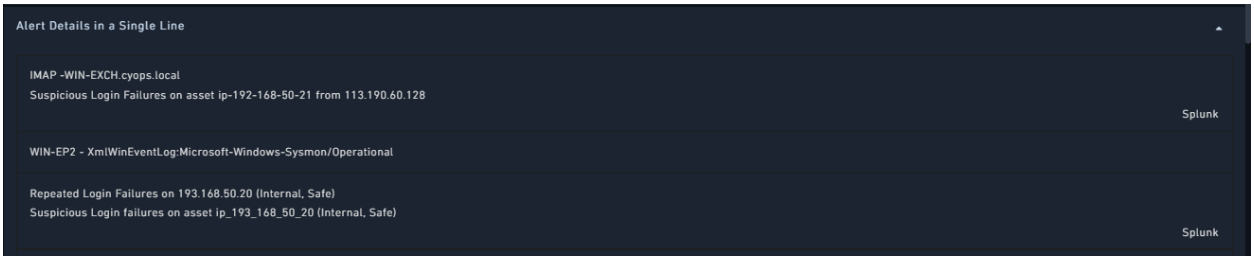


Figure 86. *Single Line widget output in Dashboard*

Simple Grid

Use the **Simple Grid** widget to render data in a tabular form in dashboards and reports or wherever you want to render data in the grid format. The Simple Grid widget does not provide any option to search or sort columns or apply filters to records in the List View of the module (as available in the Module List View using the Grid widget). The Simple Grid is a pure display-only grid that gets sorted as per the template specification.

When you are adding or editing the Simple Grid widget in Dashboards or Reports, you must specify the title of the simple grid and the Data Source which will determine the record type that the simple grid will contain. For example, if you select the **Data Source** as **Alerts**, then the widget displays only those records whose type is "Alerts."

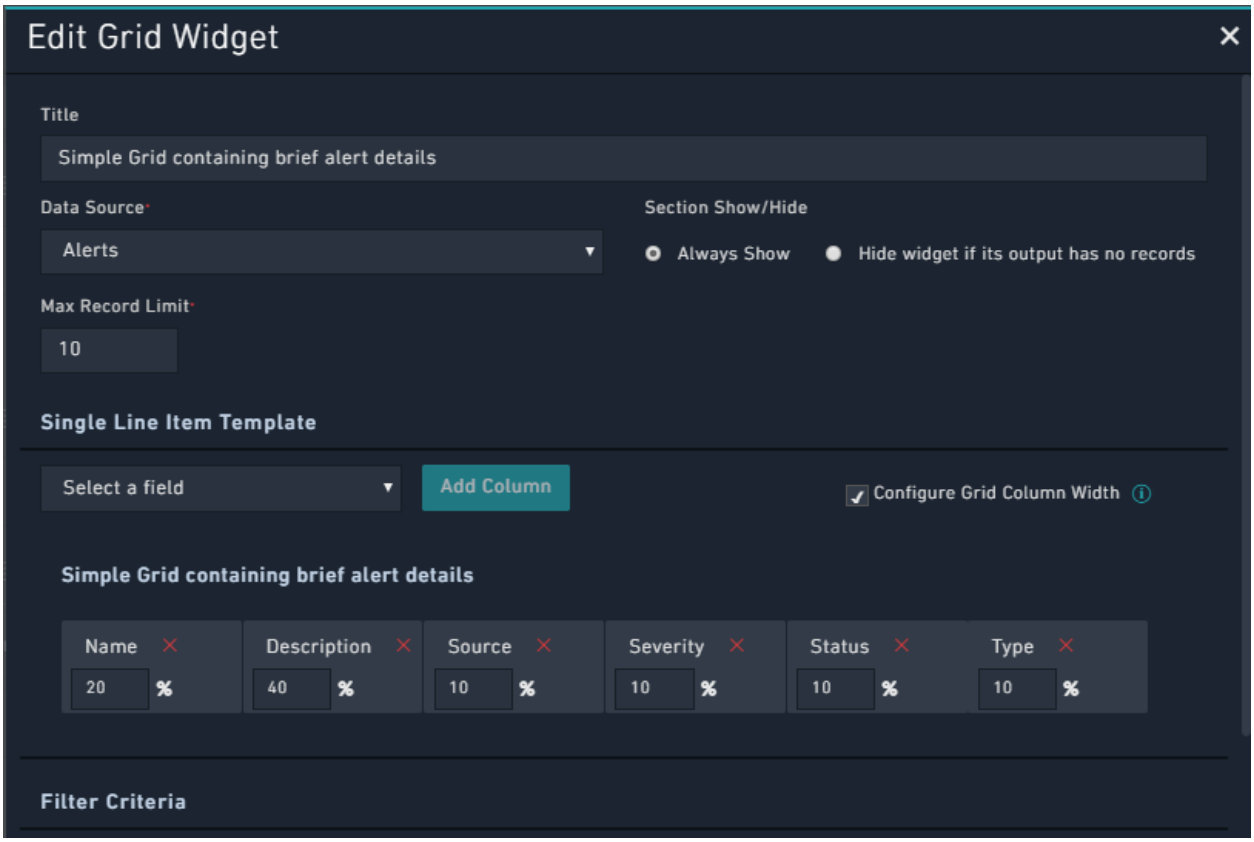


Figure 87. *Simple Grid Widget*

In the `Section Show/Hide` section, you can choose to either always display this widget, the **Always Show** option (default), or you can choose to display this widget only if there is at least one record present in the selected module, the **Hide widget if its output has no records** option.

In the **Maximum Record Limit** field specify the maximum number of records that should be displayed in the widget. You can specify any number between 1 to 200. By default, it is set to 10.

In the `Columns` section, select the columns that will be displayed as part of the grid in the `List` view of the module. To add the field as a column, select the field to be part of the grid from the **Select a Field** list and then click **Add Column**. If you want to define the width of the columns in the grid, then select the **Configure Grid Column Width** check box, and this will display a text box in the columns which you have added in which you can specify the width of the columns in the **percentage (%)** format. You can also change the position of how the columns will be displayed in the grid by dragging and dropping the field, add filters to the grid and sort the grid based on a sorting parameter you specify.

From version 6.4.3 onwards, the Simple Grid widget displays the complete text instead of "..." for fields that could contain longer content such as "Description". This enhancement ensures that reports do not contain truncated field content and instead contain the complete content for all fields.

For more information on adding filters and sorting records, see Common components within Widgets.

The following image illustrates how the Simple Grid widget is displayed when used in a dashboard or specific page:

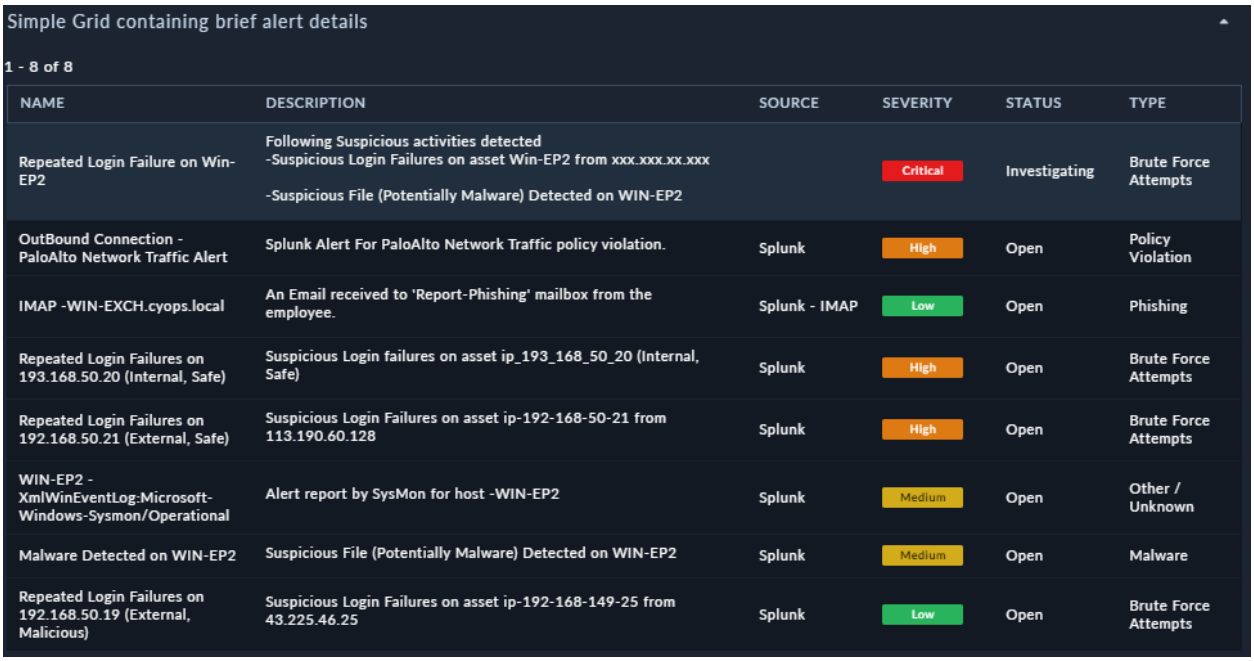


Figure 88. *Simple Grid widget output on the Module page*

As you can see in the above image, using the Simple Grid you cannot perform any operations, like sorting columns or filtering records, it is only used to display data in the grid format.

Grid

Grids are tables, with rows representing record instances and columns representing fields. A grid holds records belonging to a single record type based “Data Source” that you have specified. For example, if you select the **Data Source** as **Alerts**, then the widget displays only those records whose type is “Alerts.”

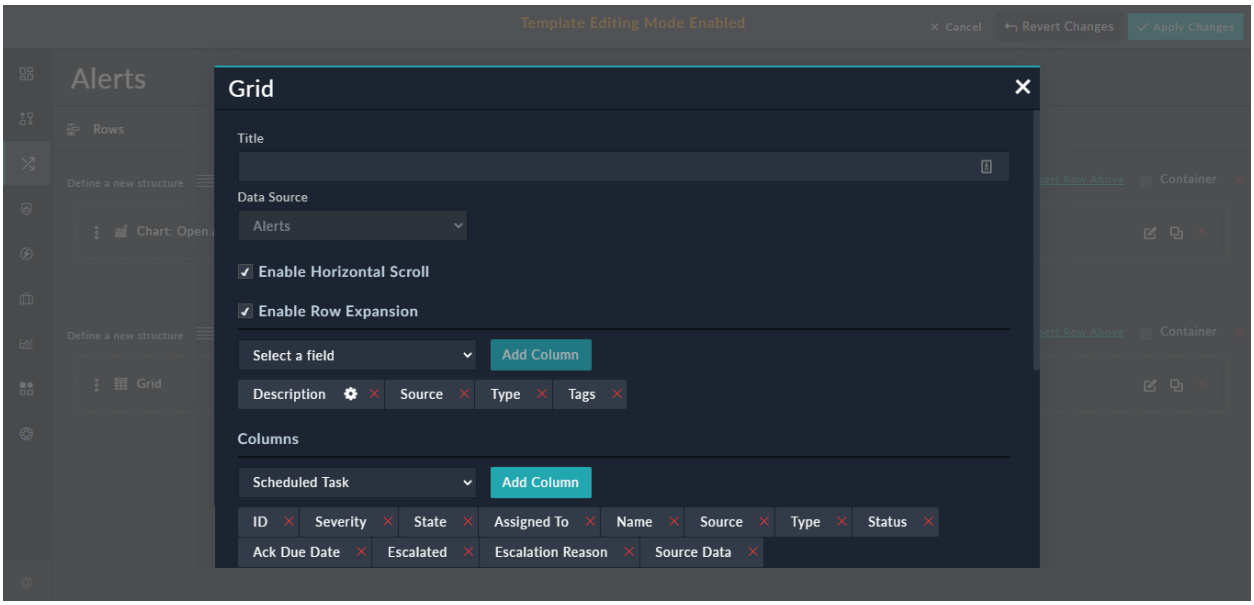


Figure 89. *Grid Widget*

Note: It is recommended that you should use the Simple Grid widget and *not use* the Grid widget to create Reports.

If you want to allow horizontal scrolling in grid views, which provides better usability in scenarios where the data grids that have a large number of columns, then select the **Enable Horizontal Scrolling** checkbox. If after enabling the horizontal scroll, you decide that you do not want a horizontal scroll, i.e., you clear the **Enable Horizontal Scrolling** checkbox, then all the columns of the grid will go back to having equal width.

If you want to display an overview of record in the grid view itself instead of the user having to open the record in the detail view, then select the **Enable Row Expansion** checkbox. From the **Select a field** list, select the fields that will be displayed as part of the record overview when the user clicks the expand icon (**>**) in the record row. From version 6.4.3 onwards, you can choose how to render a text field that has its subtype set to "Rich Text", either Rich Text (Markdown), which is the default or Rich Text (HTML). For example, in the following image, the you can choose how you want to render the "Description" field, from the following options: **Markdown (default)**, **iFrame**, or **iFrame (Sandbox)** by clicking its **Settings** ( ) icon:

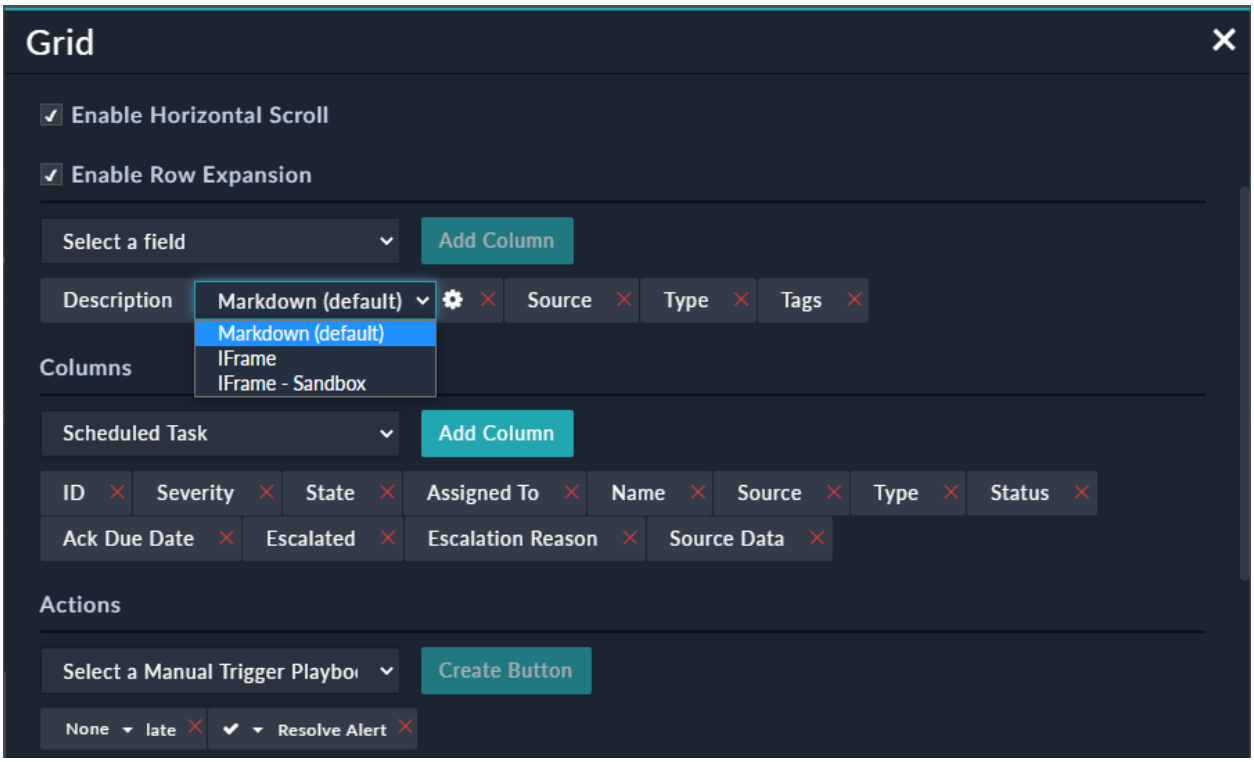


Figure 90. *Settings for a Rich Text type field*

Similarly, if you have a text field that has its subtype set to "Rich Text (HTML)", you can choose how you want to render that field from the following options: HTML (default), iFrame, or iFrame (Sandbox), and if you have a text field that has its subtype set to "Text Area", you can choose to display it in the JSON format.

The following image illustrates how a record with its row expanded is displayed in the Grid view:

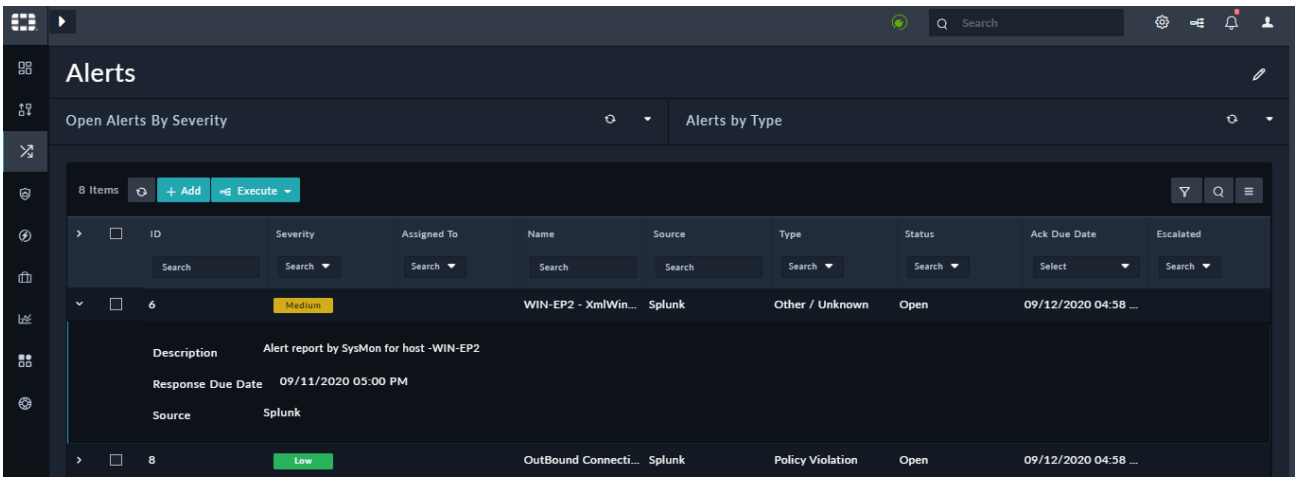


Figure 91. *Settings for a Rich Text type field*

In the Grid widget in Reports and Dashboards, you will find an additional **Limit** field, in which you can specify the number of records that will be displayed on a single page for that module. By default, this is set to `30`.

In the `Columns` section, select the columns that will be displayed as part of the grid in the `List` view of the module. To add the field as a column, select the field to be part of the grid from the **Select a Field** list and then click **Add Column**. You can add tags, which are very useful in locating records, to records by choosing the **Tags** field. You can add special characters and spaces in tags from version 6.4.0 onwards. However, the following special characters are not supported in tags: `'`, `,` , `"`, `#`, `?`, and `/`. Once you add the **Tags** column, you can add and search for tags while adding or editing records. You can also change the position of how the columns will be displayed in the grid by dragging and dropping the field to the appropriate place on the grid as shown in the following image:

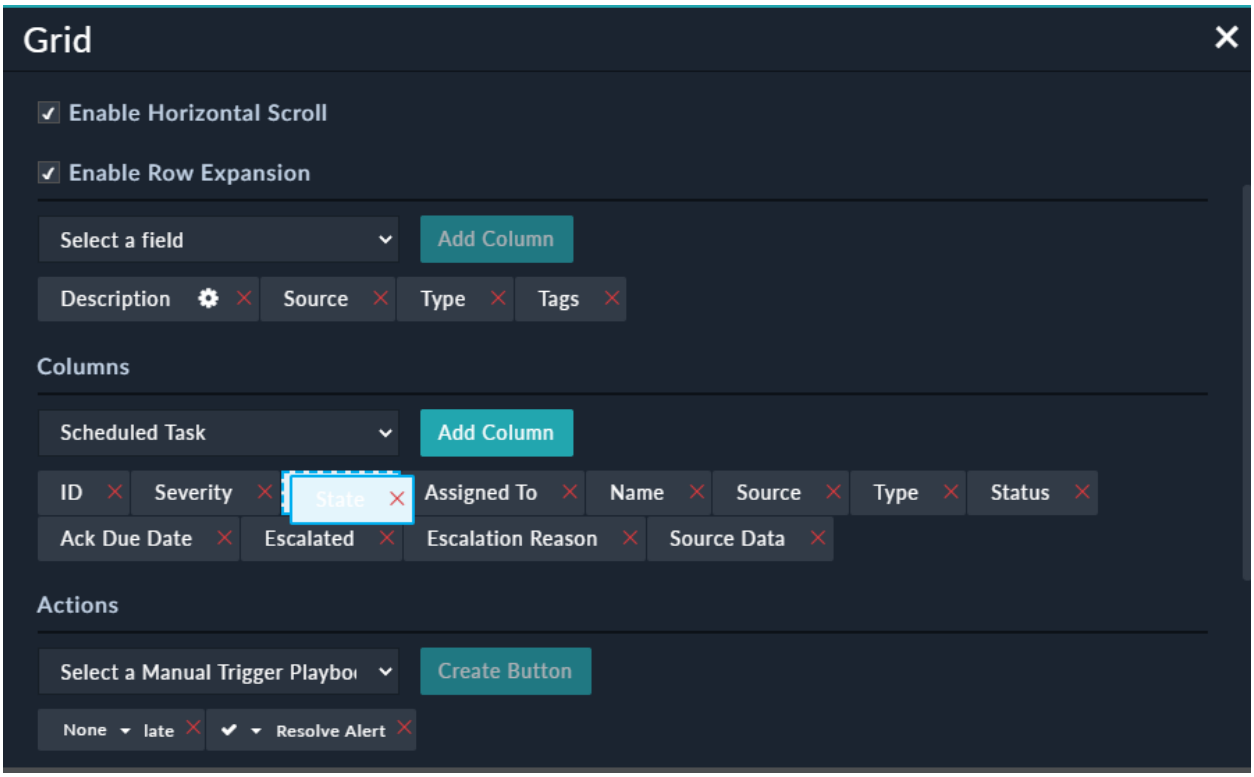


Figure 92. *Arranging Columns in a grid*

In the `Actions` section, you can create buttons for commonly used actions by selecting a manual trigger playbook from the **Select a Manual Trigger Playbook** list and click **Create Button**. You can search and select an icon that that will be displayed on the action button from the **Filter Icons** list. If you do not want an icon to be displayed, select **None**. The names that are displayed in the **Select a Manual Trigger Playbook** drop-down list, and therefore the name of the manual trigger button, are the names that you have specified in the **Trigger Label Button** field in the playbook.

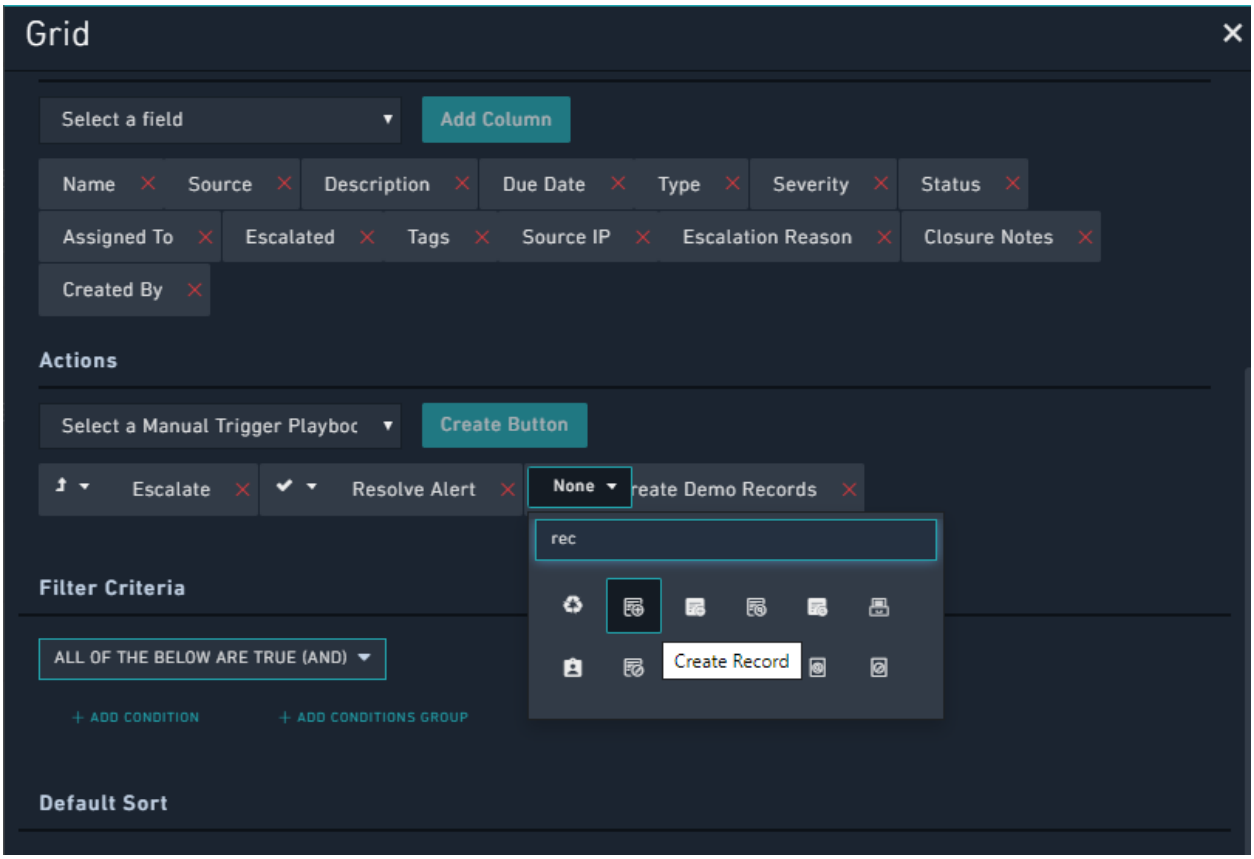


Figure 93. *Actions- Filter Icon list*

You can also define filters for records in the Grid widget itself. The Grid Widget includes the Nested Filters component that you can use to filter records in the list view using a complex set of conditions, including the **OR** condition. See the Nested Filters section for more information.

The following image includes a specific filter criterion for filtering records that have `Severity Equal to Critical` **OR** `Status Equal to Investigating`:

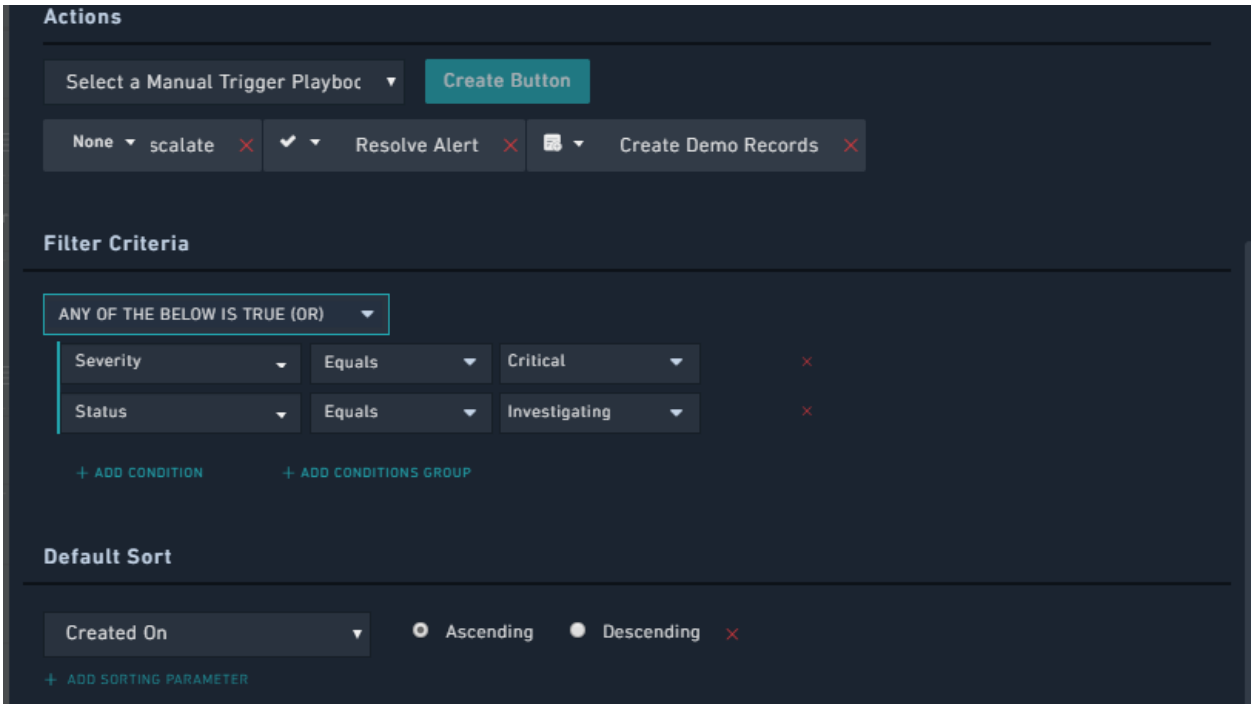


Figure 94. *Grid Widget - Filtering*

You can also use Default Sort to specify fields based on which the records in the module will be sorted by default.

Once you have made all the changes to the Grid widget, click **Save** and **Apply Changes** to view the updates made to the `List View` in the module.

The following image displays the List view of the module, with a record being expanded, in which the `Severity Equal to Critical` **OR** `Status Equal to Investigating` filter has been applied:

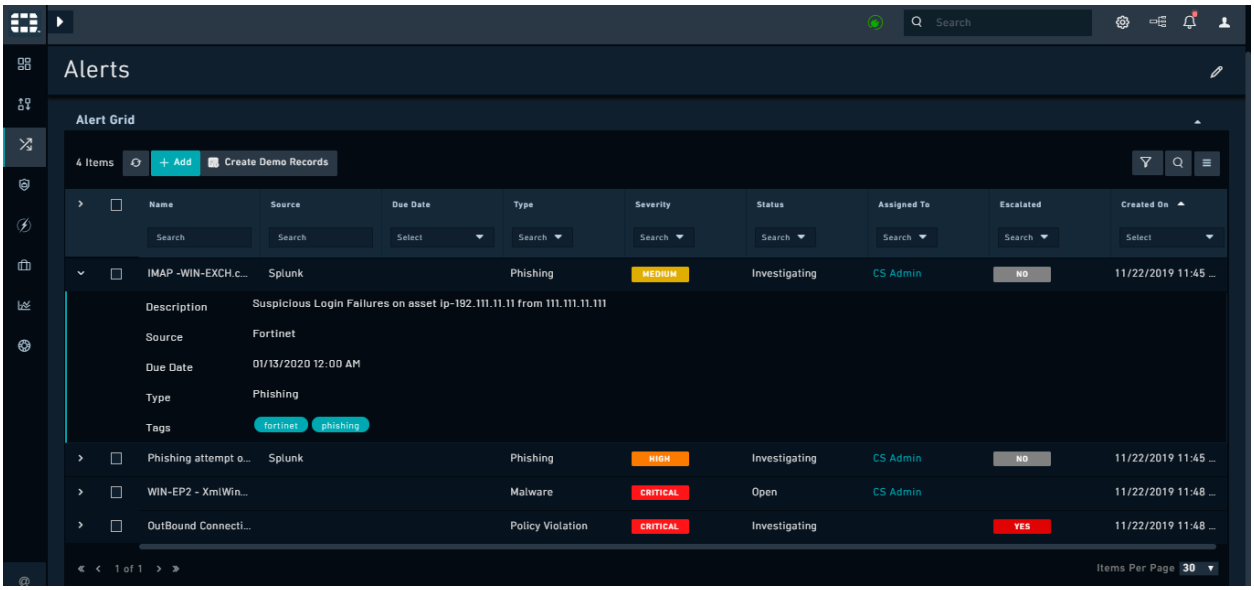


Figure 95. *Records with Severity Equal to Critical OR Status Equal to Investigating filter applied*

Summary

Use the summary widget to display multiple editable fields that you can display in the record detail header, with an aim to summarize the record quickly.

When you are adding or editing the Summary widget in Dashboards and Reports, you must specify the Data Source for which you want to add the summary, and then select and add fields that you want to include as part of the summary, as shown in the following image:

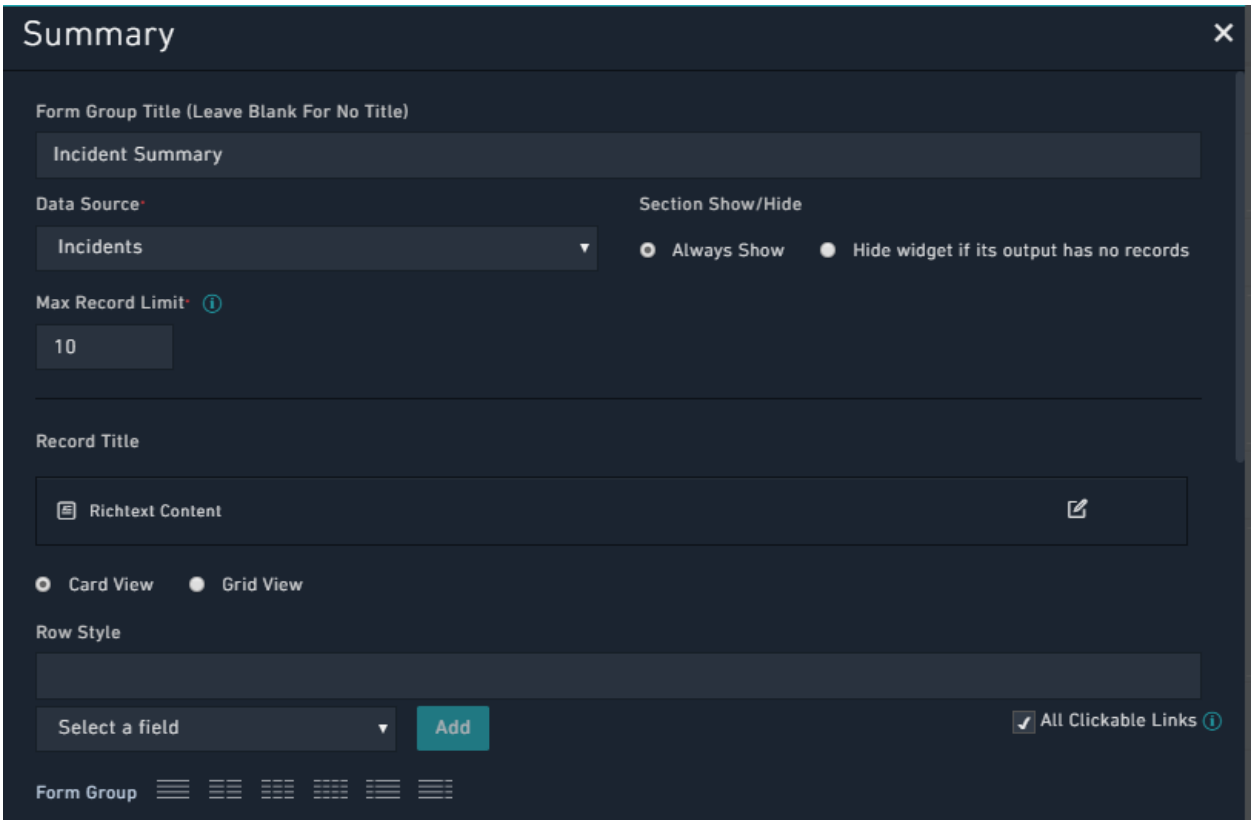


Figure 96. *Summary widget: Dashboard*

In the `Section Show/Hide` section, you can choose to either always display this widget in the dashboard or report, the **Always Show** option (default), or you can choose to display this widget only if there is at least one record present in the selected module, the **Hide widget if its output has no records** option.

In the **Max Record Limit** drop-down list, you can also specify the maximum number of records you want to see in the summary widget, by default, it is set to 10. The `Record Title` section contains the `Richtext Content` widget, using which you can define a stylized title for each looping section within the Summary widget. See the Richtext Content section for more information.

You can choose whether you want to view the Summary in the **Card View** or the **Grid View**.

From the **Select a Field** drop-down list, select the fields that you want to be part of the Summary and click **Add**.

In the `Related Records` section, you can add the widgets of the linked records belonging to the selected record, i.e., you can add related widgets that you require within the Summary widget. For example, if you want to display an incident summary along with all its linked alerts, in a single Dashboard or Report, you can use the Summary widget and in the Related Widgets section, you can add a chart widget that displays linked alerts:

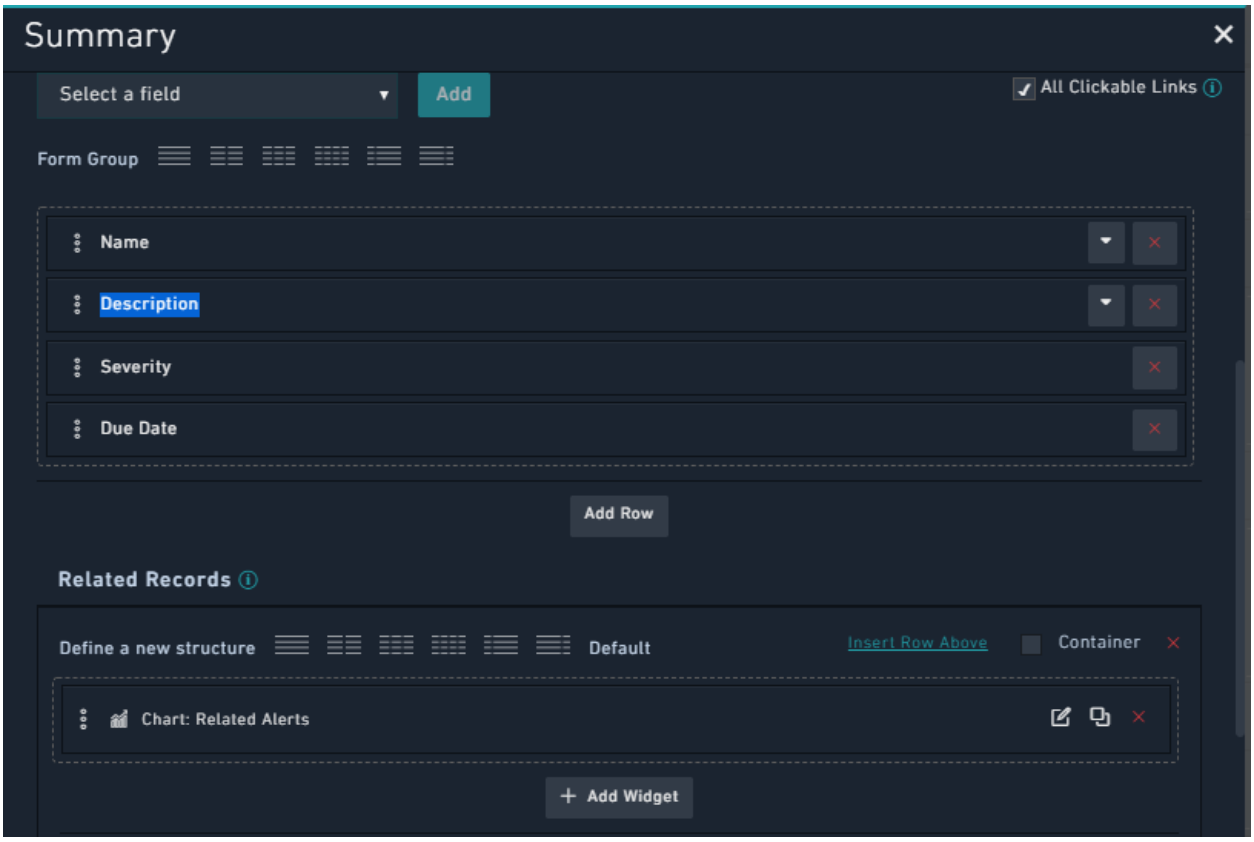


Figure 97. *Summary Widget with Related Widgets section*

The following image illustrates how the Summary widget that you have defined above will appear in a Dashboard or a report:

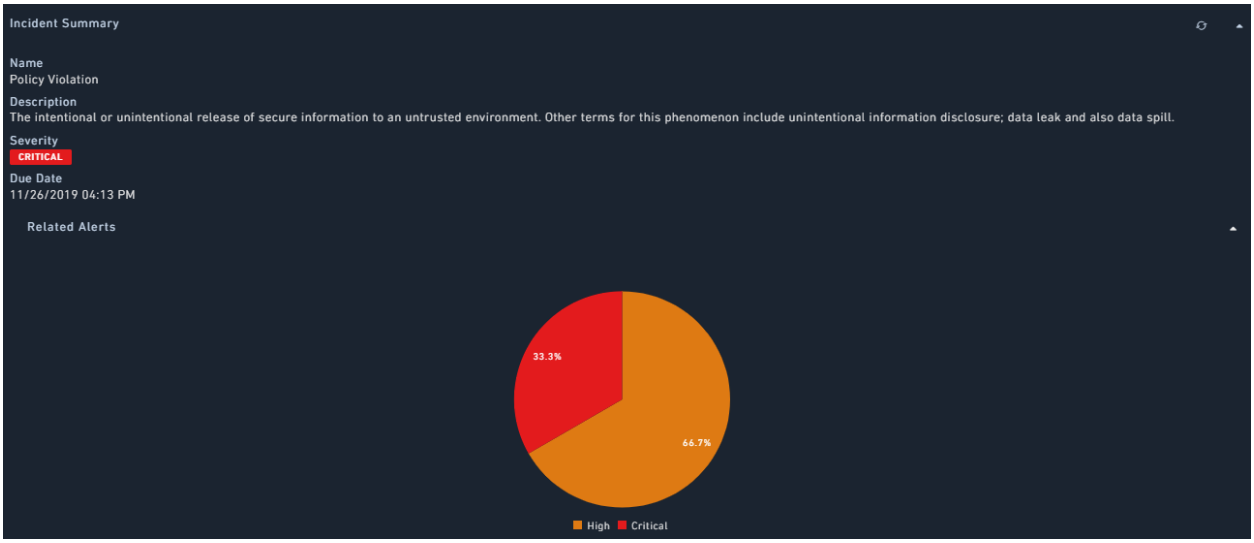


Figure 98. *Summary widget output with related widgets on a report*

In case of the ***Detail*** view, since you are already in a module, you do not need to specify the module. All you need to do is select and add fields that you want to include as part of the summary, as shown in the following image:

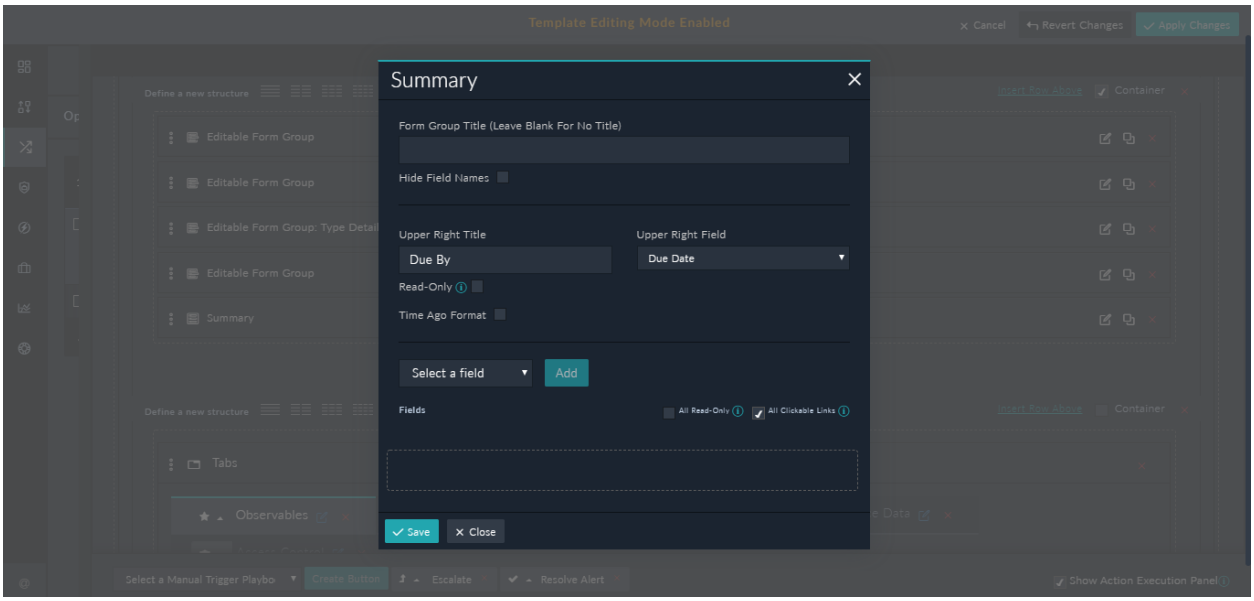


Figure 99. *Summary widget*

The following image illustrates how the Summary widget is displayed in the Detail View of a record:

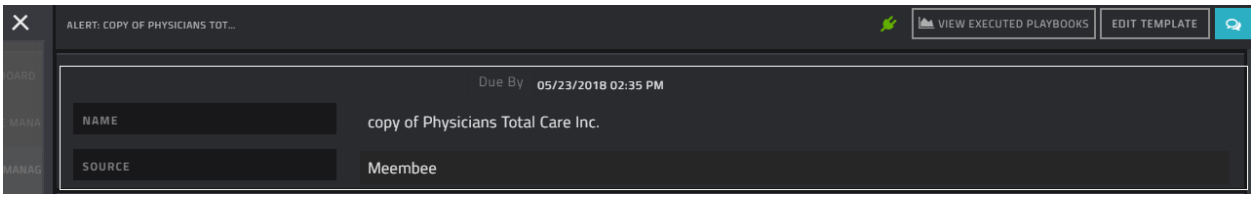


Figure 100. *Summary widget output on the Detail View of record*

Record Fields

Editable Form and Editable Form Group

Form Group widgets display records as part of an editable form. There are the following types of form widgets:

Editable Form widget: Use this widget to insert a form that contains all the editable fields for the Alerts module. You cannot choose fields in this widget and all the editable fields of the current module are included.

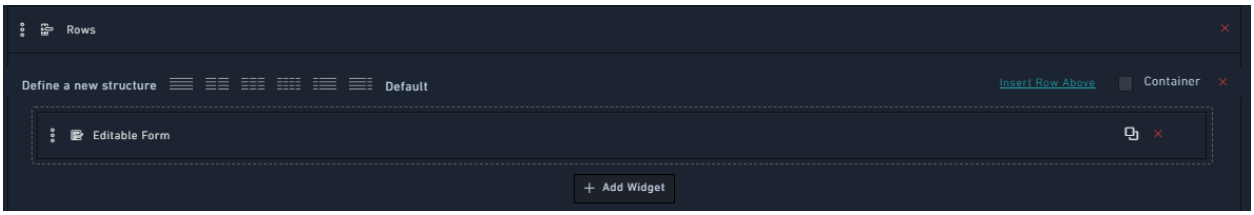


Figure 101. *Editable Form Widget*

The following image illustrates how the Editable Form widget is displayed in the Detail View of a record:

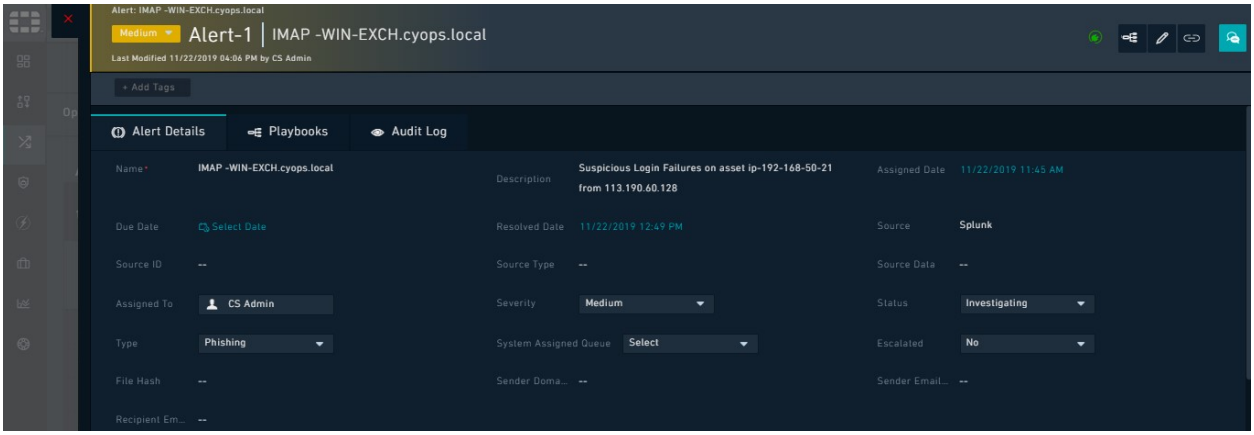


Figure 102. *Output of the Editable Form widget*

Editable Form Group widget: Use this widget to insert a group of standalone form fields. You can use this widget to create a form that users can use to fill in the details for a record:

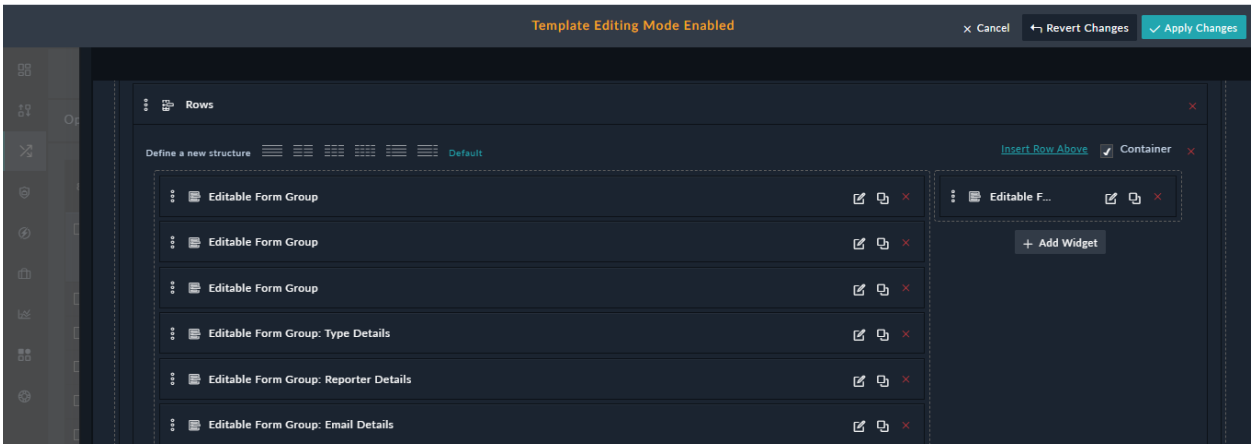


Figure 103. *Editable Form Group Widget*

The following image illustrates how the Editable Form Group widget is displayed in the Detail View of a record:

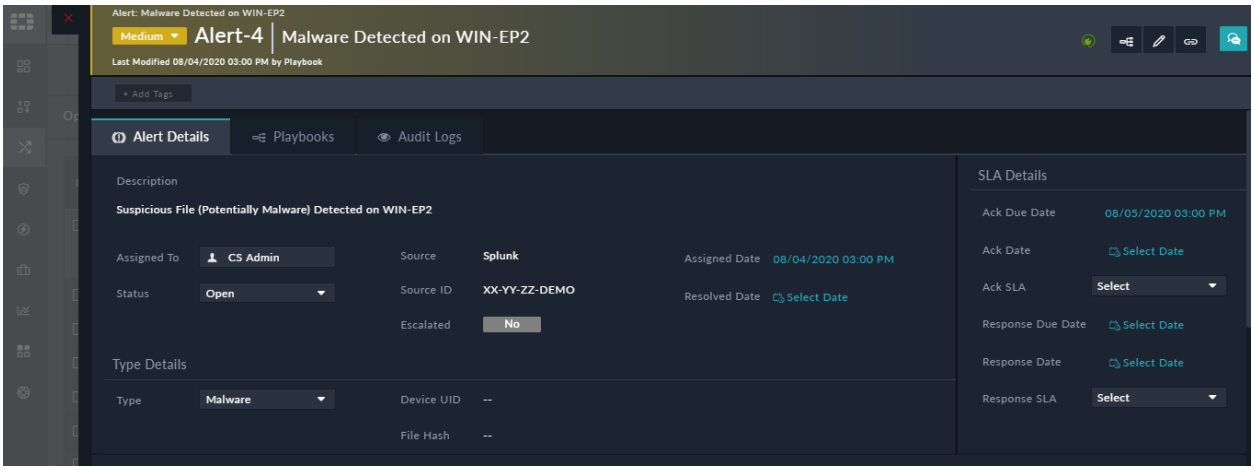


Figure 104. *Output of the Editable Form Group widget*

If you have a text field that has its subtype set to "Rich Text (Markdown)" such as the "Description" field, you can choose how you want to render that field from the following options: **Markdown (default)**, **iFrame**, or **iFrame (Sandbox)**:

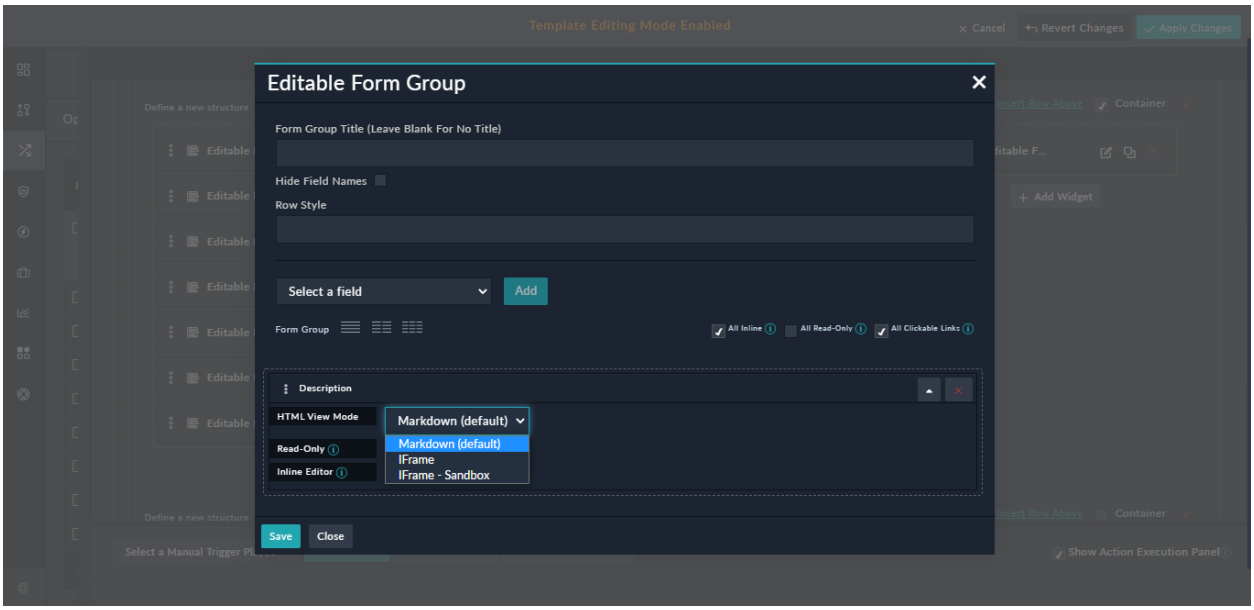


Figure 105. *Editable Form Group - Rich Text (Markdown) field options*

Similarly, if you have a text field that has its sub-type set to "Rich Text (HTML)", you can choose how you want to render that field from the following options: HTML (default), iFrame, or iFrame (Sandbox), and if you have a text field that has its subtype set to "Text Area", you can choose to display it in the JSON format (See Displaying "Text Area" fields in the JSON format).

Uncategorized Fields

Use the Uncategorized Fields widget to display fields that have been newly added or the ones that have not been explicitly added to the module layout or view template. This widget evaluates missing fields by comparing the fields in the module mmd with existing fields added in the view panel (module layout) of that module. Similarly, whenever you add any new fields to a module, those also will be displayed in this widget and you can choose to display those fields in the view panel.

For example, if you select the Incident Module and add the Uncategorized Fields widget, you will see the fields that are present in the module but not added in the view panel, which are Source Data, Impact Assessments, System Assigned Queue, Created By, and Tags. The missing fields are shown in the `Excluded Fields` section. To choose the fields that you want to display in the view panel, click the red cross in the row of those fields. These fields will move to the `Included Fields` section and will be shown in the view panel. For example, if you do not want to include the Source Data, Tags, and Created By fields in the view panel, then click the red cross in that row in the `Excluded Fields` section, which will then move these fields into the `Included Fields` section, as shown in the following image:

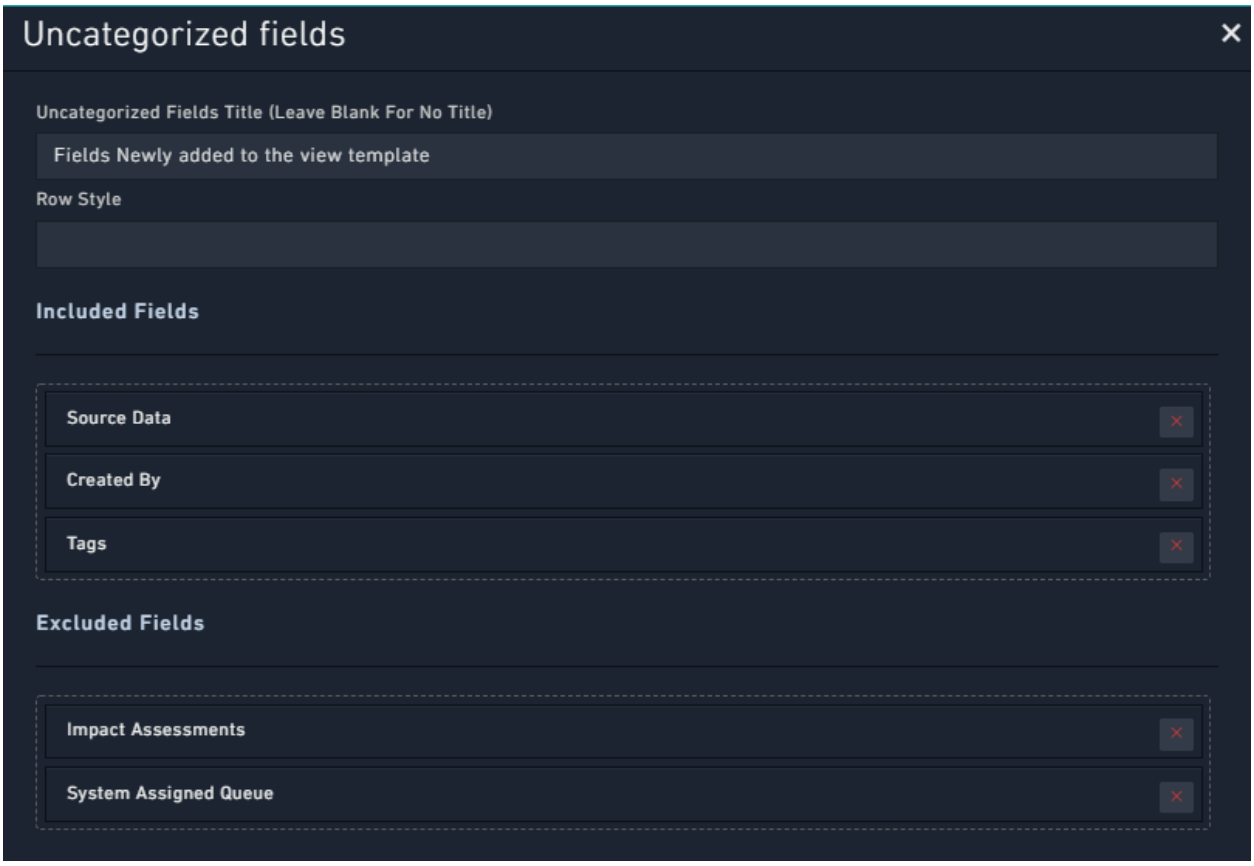


Figure 106. *Uncategorized Fields Widget*

The following image illustrates how the Uncategorized Fields widget is displayed in the Detail View of a record:

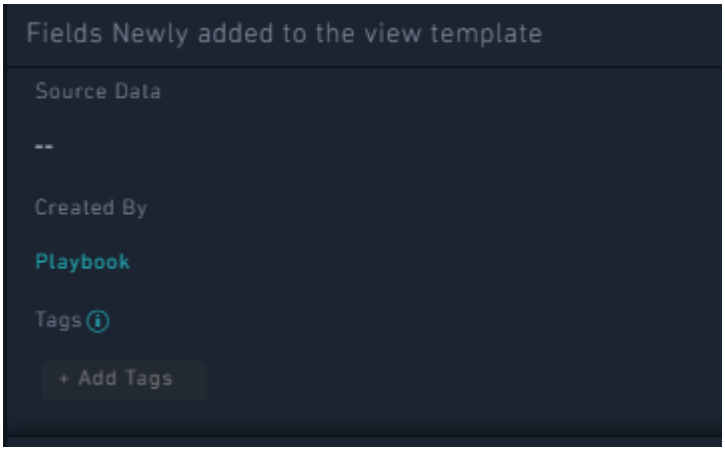


Figure 107. *Uncategorized Fields widget output in the view panel*

Summary

Use the summary widget to display multiple editable fields that you can display in the record detail header, with an aim to summarize the record quickly. For more information, see the Summary section above.

Header Widgets

Primary Detail

Use the Primary Detail widget to add a Header row that is a top-most field to display a record title. You can choose whether this field would be editable or not. If you do not want the Header row items to be editable, then click the **Read-Only** checkbox for the **Picklist** and **Title Field** fields. If you want any URLs in the Header row to be clickable, then click the **Clickable Links** checkbox.

You can choose the ID field that will be displayed in the Primary Details row in the Detail View of a record. The ID field that you can choose is limited to integer fields or text fields. For example, you can choose **Source** as the ID Field to be displayed in the Detail View of a record. By default, the system ID is selected in the ID Field drop-down list.

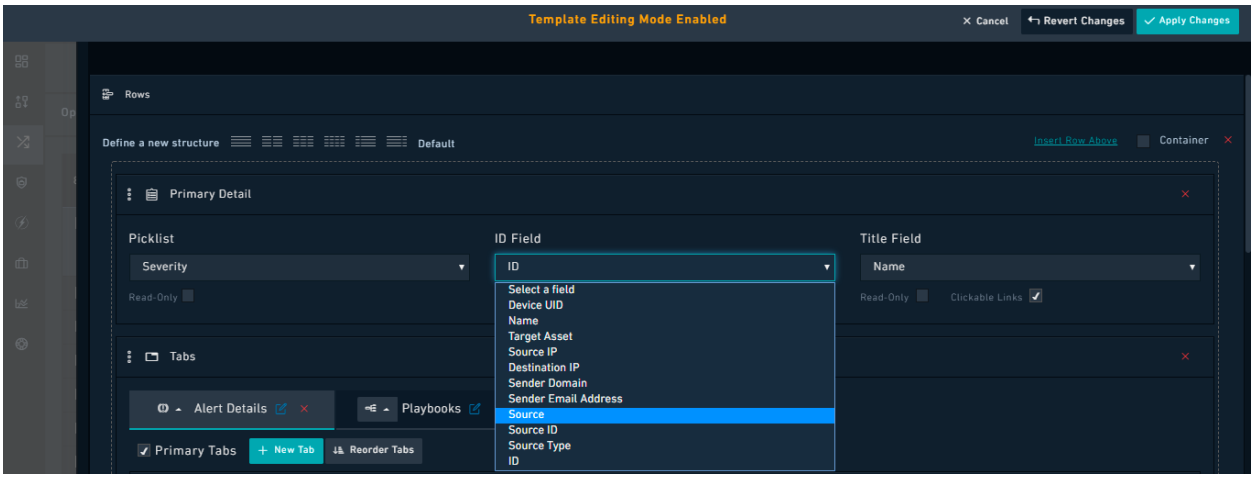


Figure 108. *Primary Detail Widget*

This widget adds a row that has a large font-size and no field label. You will also see **+ Add Tags** field in this row using which you can add tags to the record making it easier for searching and filtering records.

The following image illustrates how the Primary Detail widget is displayed in the Detail View of a record if you have selected **Source** as the ID Field:

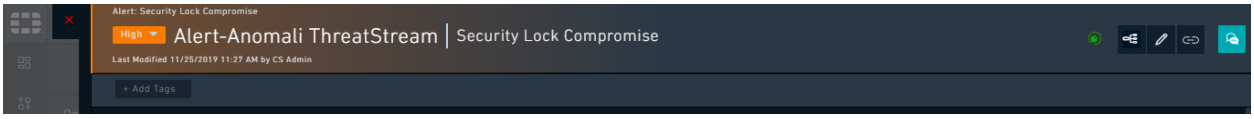


Figure 109. *Primary Detail widget output in Dashboard: Source ID field*

The following image illustrates how the Primary Detail widget is displayed in the Detail View of a record if **ID** is retained as the ID Field:

Figure 110. *Primary Detail widget output in Dashboard*

Record Type

Use the Record Type to add a stylized field in the top left of the record to display the fields such as severity, status, type, etc of the record.

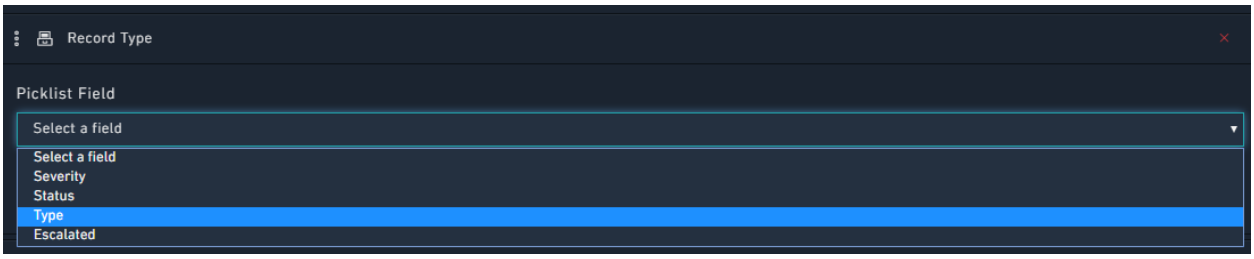


Figure 111. *Record Type Widget*

The following image illustrates how the Record type widget is displayed in the Detail View of a record, when **Type** is selected to be displayed:

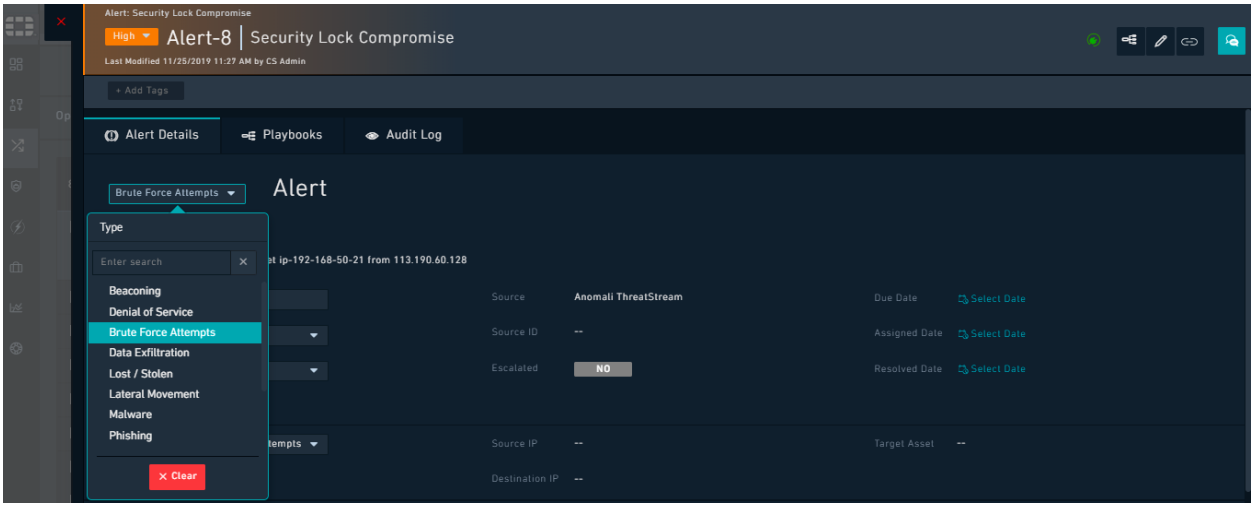


Figure 112. *Record Type widget output on the Module page*

Related Record Listing

Relationships

The Relationships widget displays relationships between the current module and other modules. For example, if the current alert row has a corresponding incident, then that incident is displayed as a row, using this widget.

You can choose the modules that you want to include in the **Related Records** tab of the current module. To add a module to display in the **Relationships** tab of the current module, from the `Select a module` drop-down list, select the module that you want to include and click **Add to View**.

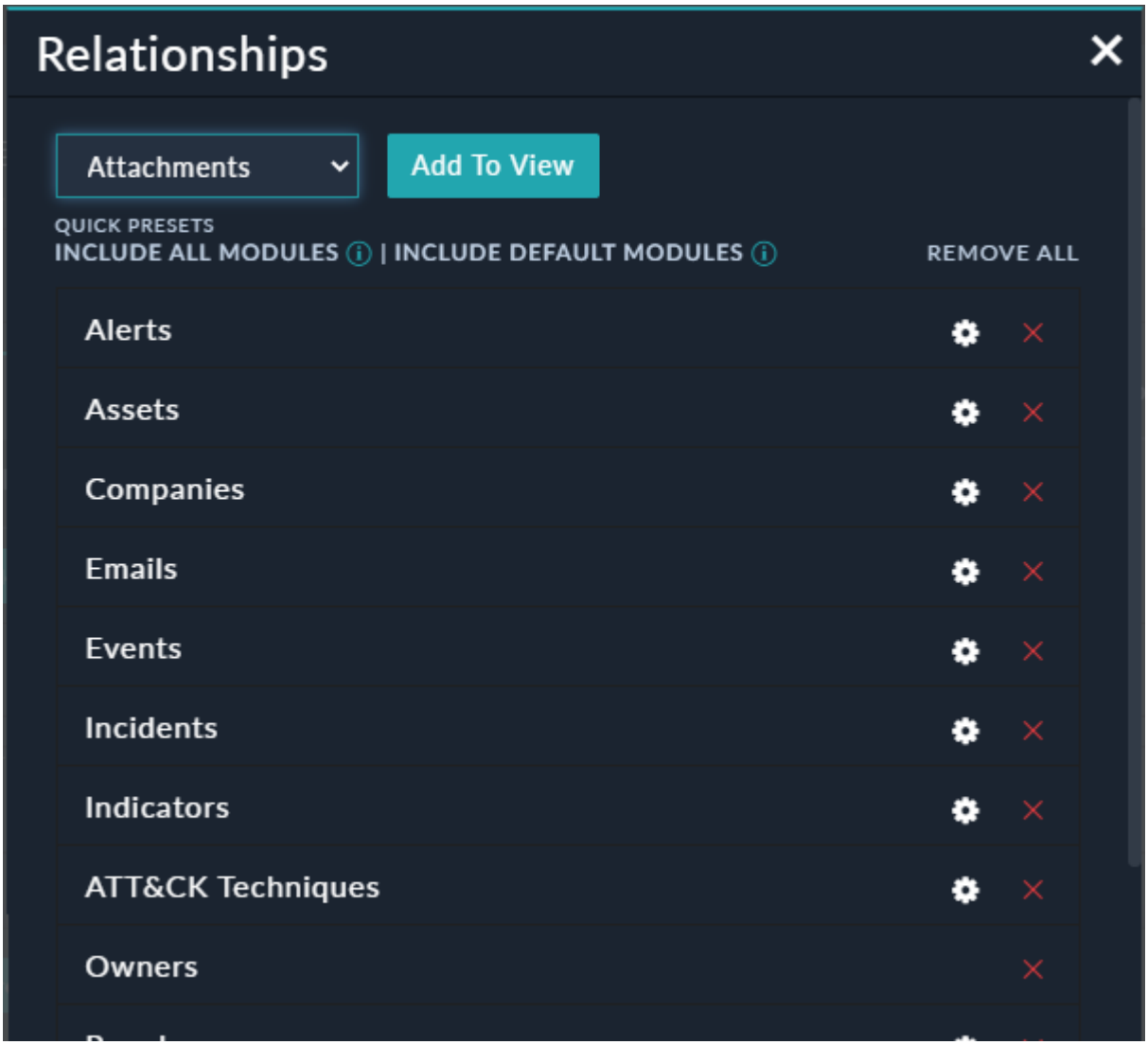


Figure 113. *Relationships Widget*

You can also use the options present in the `Quick Presets` section to quickly add modules to display in the **Relationships** tab of the current module. Click **Include All Modules** to include all the modules to the **Relationships** tab of the current module, or click **Include Default Modules** to add all modules, except Notes, Comments, and Attachments to the **Relationships** tab of the current module. Comments and attachments are excluded since they have their own separate widgets. Click **Remove All** to remove all the modules from the Relationships widget.

The following image illustrates how the Relationships widget is displayed in the Detail View of a record:

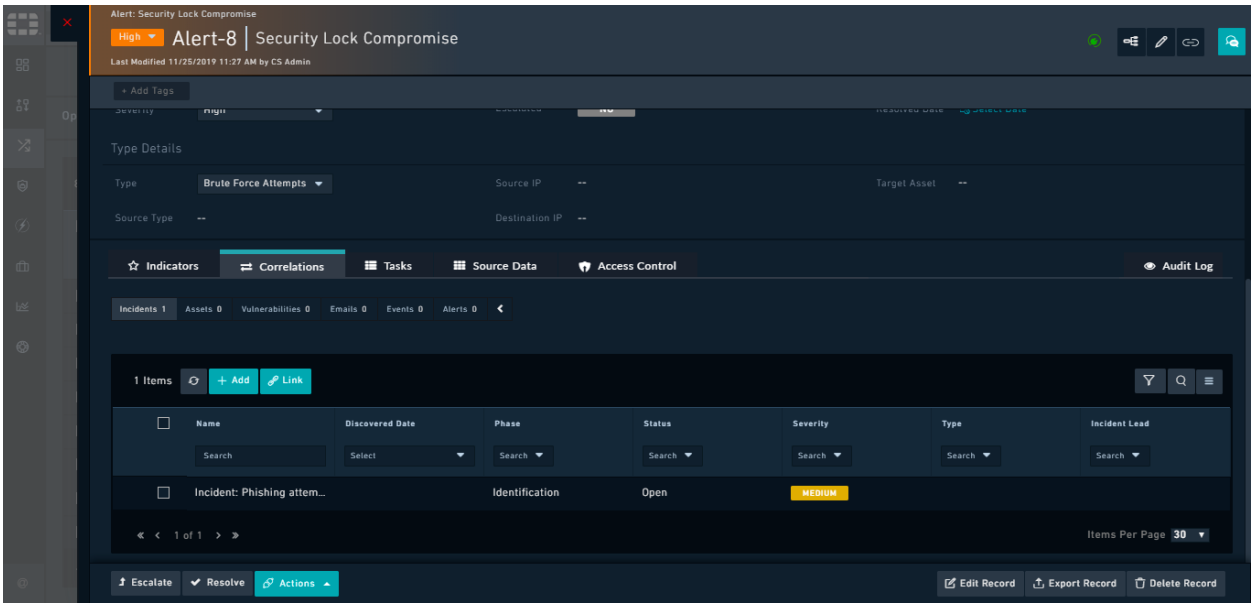


Figure 114. *Relationships Widget Output*

You can view details of related records in the grid view of the relationship widget itself, instead of having to open the related record in a new window to view its details. To enable this feature, open the detail view of a record (an alert record for example) and click the **Edit Template** icon. Go to the area (and tab, if applicable) where you have added the Relationships widget and click **Edit Widget**:

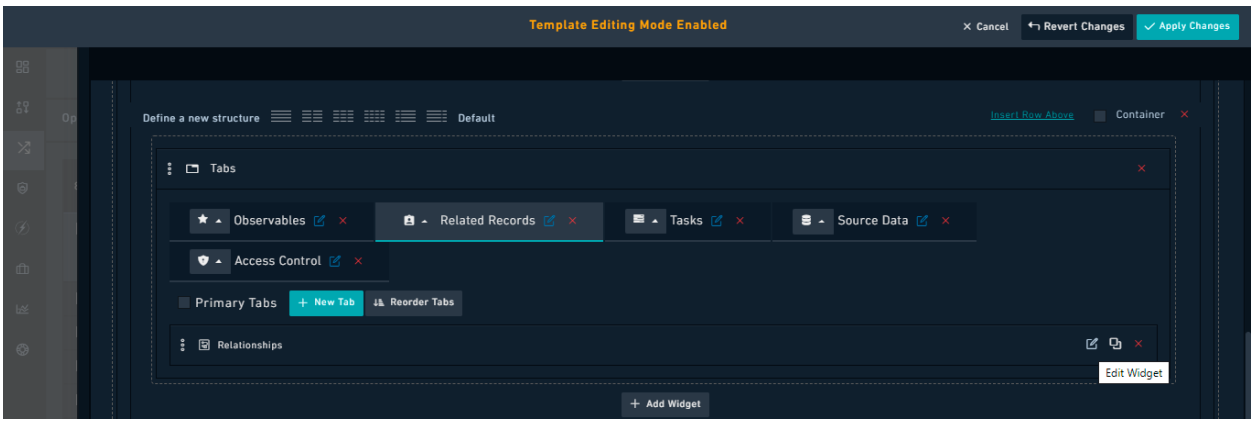


Figure 115. *Relationships Widget - Edit Widget*

In the above image, we have clicked the **Related Records** tab and clicked **Edit Widget**, which displays the **Relationships** dialog. Select the module that you want to add to the relationship widget and click **Add to view** or click the **Settings** icon to edit the existing related module. For example, click the **Settings** ( ) icon in the **Incidents** row to display the **Enable Row Expansion** and the **Enable Horizontal Scroll** options:

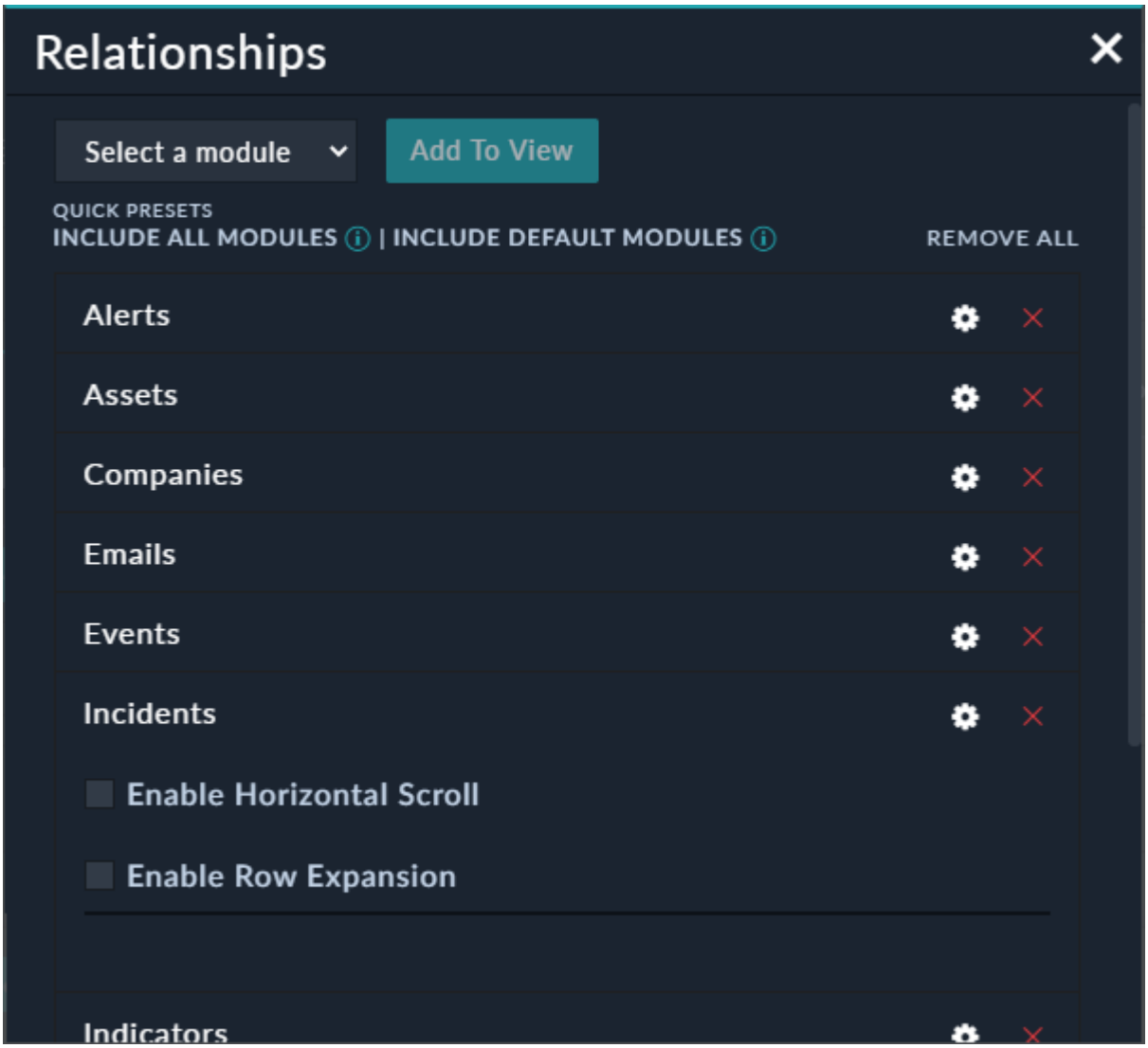


Figure 116. *Edit Widget - Settings*

Select the **Enable Row Expansion** checkbox and from the **Select a field** list, select the fields that will be displayed as part of the record overview when the user clicks the expand icon (**>**) in the record row. From version 6.4.3 onwards, you can choose how to render a text field that has its subtype set to "Rich Text", either Rich Text (Markdown), which is the default, or Rich Text (HTML). For example, in the following image, the you can choose how you want to render the "Description" field, from the following options: **Markdown (default)**, **iFrame**, or **iFrame (Sandbox)** by clicking its **Settings** ( ) icon:

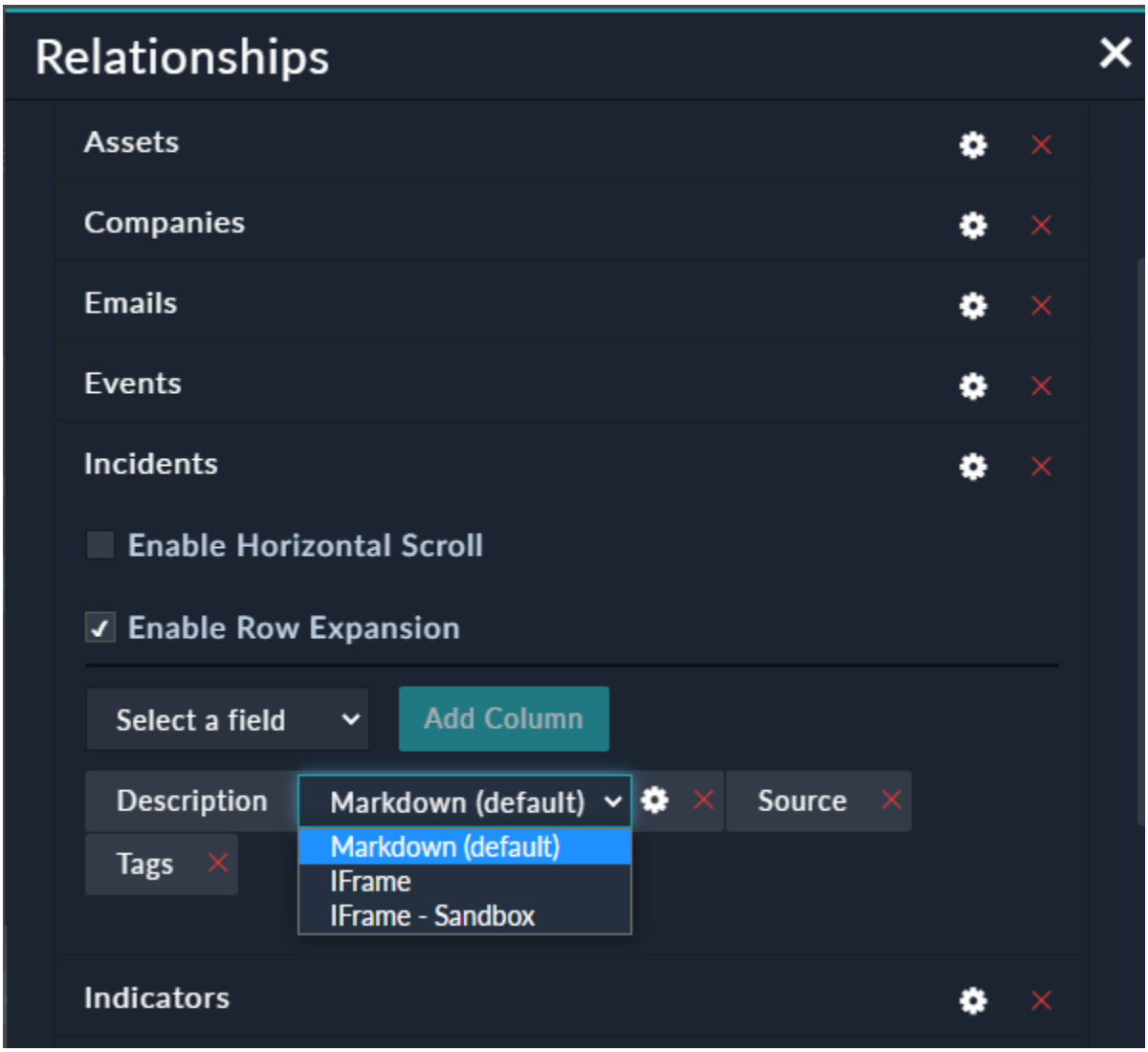


Figure 117. *Settings - Add Fields*

Similarly, if you have a text field that has its subtype set to "Rich Text (HTML)", you can choose how you want to render that field from the following options: HTML (default), iFrame, or iFrame (Sandbox), and if you have a text field that has its subtype set to "Text Area", you can choose to display it in the JSON format. Once you are done with your changes, click **Save**.

The following image illustrates how the Relationships widget is displayed in the Indicator tab in the Detail View of a record:

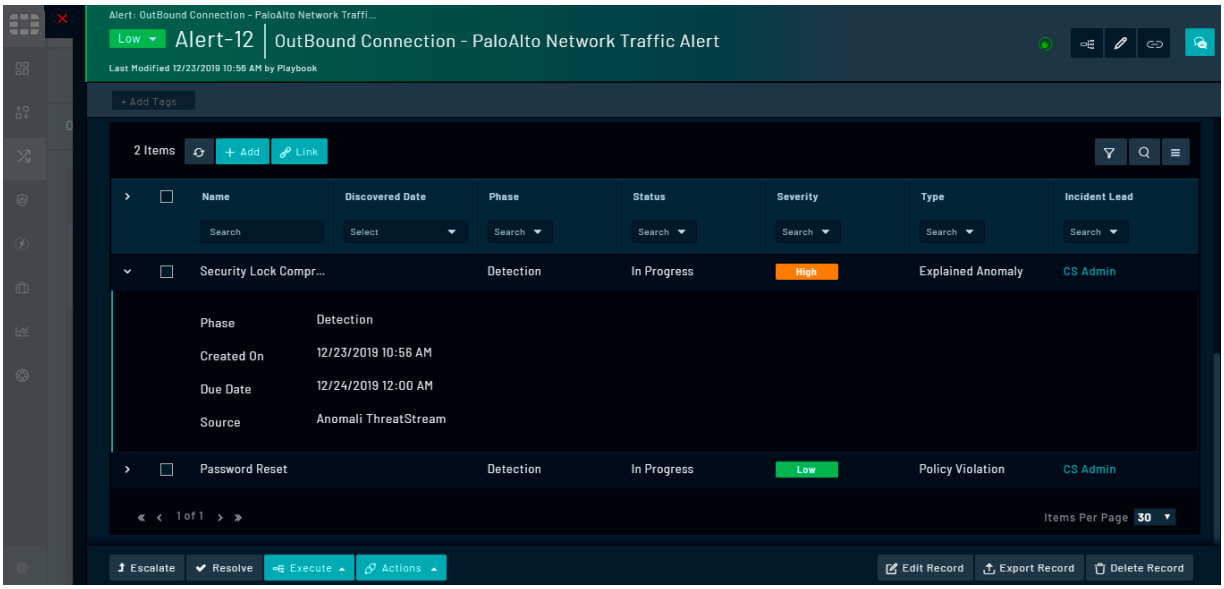


Figure 118. *Relationships Widget Output in Relationships tab*

Select the **Enable Horizontal Scrolling** checkbox to allow grids to scroll horizontally in case the grids have a large number of columns.

Relationships Single Line Card

The Relationships Single Line Card widget like the Relationship widget displays relationships between the current module and other modules. However, it displays the related records in a single row and column. You can define the fields that you would like to see for the related record in a single view. For example, if the current alert row has a corresponding incident, then that incident is displayed in a single row and column, using this widget.

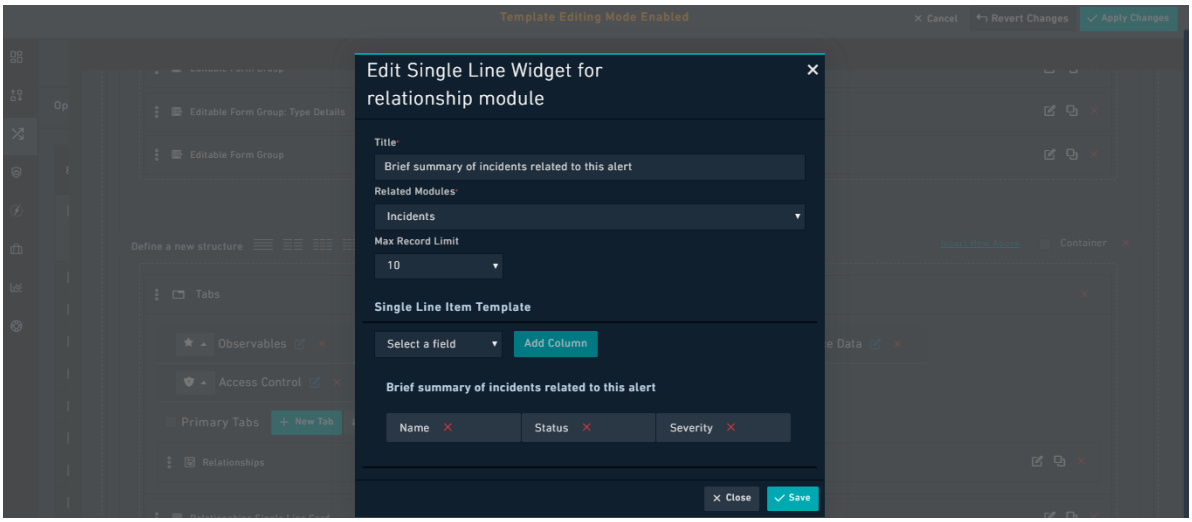


Figure 119. *Relationships Single Line Card Widget*

The following image illustrates how the Relationships Single Line Card widget is displayed in the Detail View of a record when you have defined that only the **Name**, **Status** and **Severity** fields for the related module, Incidents in our example, should be displayed:

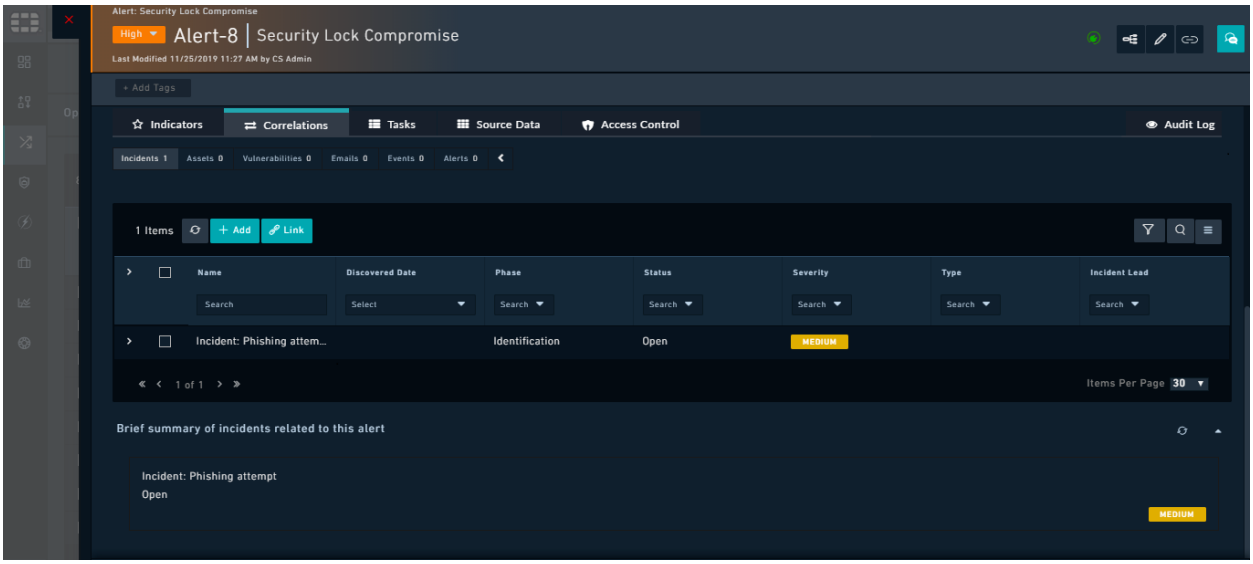


Figure 120. *Relationships Single Line Card Widget Output*

Utility Widgets

Comments

Comments are a unique record type that can be associated with any other record and displayed within the record detail interface. You can place the Comments widget anywhere within a record and comments are added in a rich text format, using formatting styles. You can also embed hyperlinks and media within comments.

Tip: Clicking the **Compact** option hides the rich text controls.

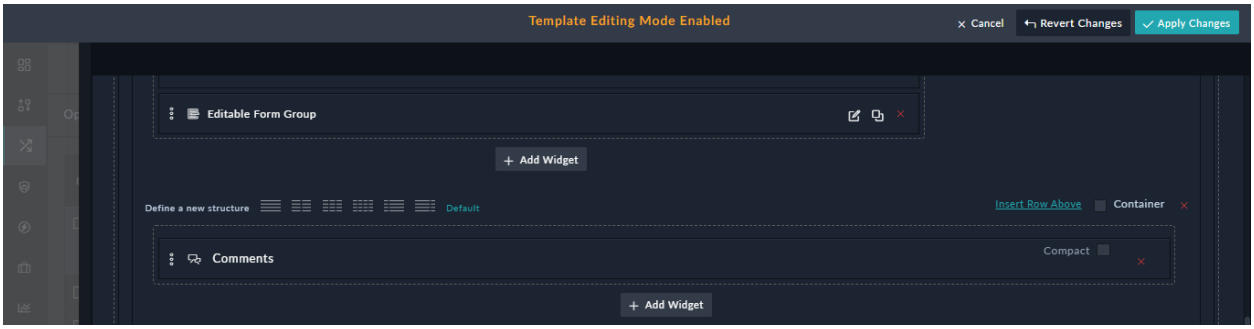


Figure 121. *Comments Widget*

The widget displays the chronological history of all comments on that record. Comments, whether they are added using the comments widget or the collaboration panel, are automatically displayed in the Timeline (Audit Log) of any record.

From version 6.4.3 onwards, you can edit the **Contents** field in the "Comments" module, and choose how this field should be rendered, either Rich Text (Markdown), which is the default or as Rich Text (HTML). The following image illustrates how the Comments widget is displayed in the Detail View of a record, when the "Content" field is set as Rich Text (HTML):

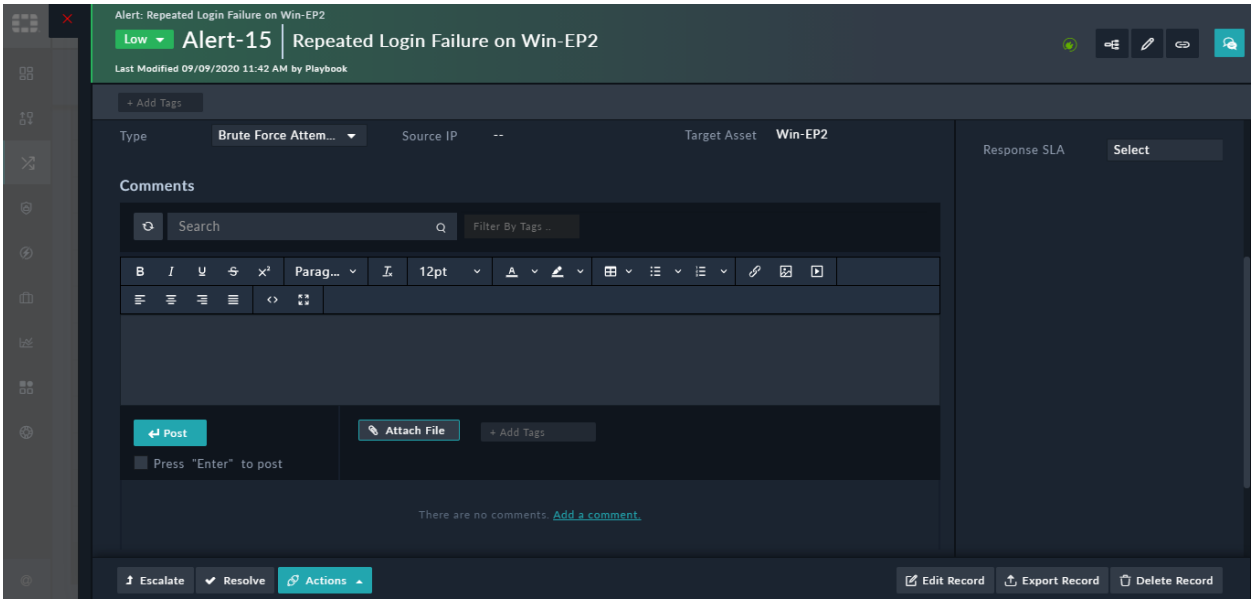


Figure 122. *Comments Widget with the "HTML" editor in the detail view page*

The following image illustrates how the Comments widget is displayed in the Detail View of a record, when the "Content" field is retained as Rich Text (Markdown):

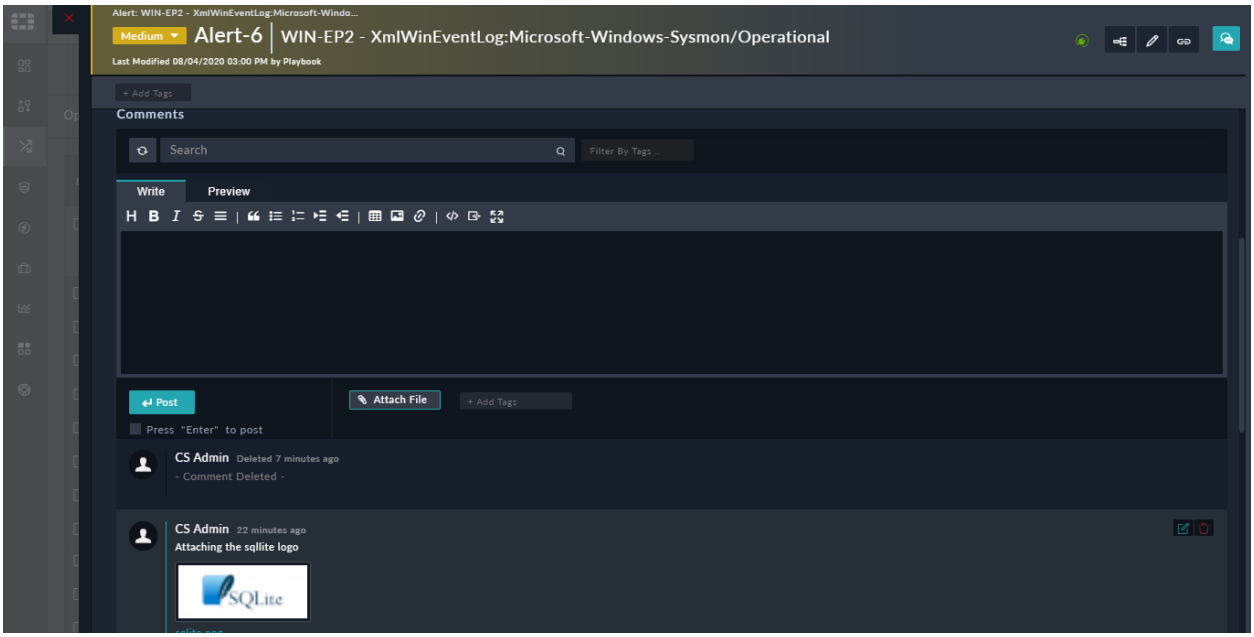


Figure 123. *Comments Widget with the "Markdown" editor in the detail view page*

You can format, add links, and inline images to your comment using the "Styling" toolbar. You can add files or images by dragging-and-dropping files or images (these are added as inline images) onto the comments panel, or by clicking the **Attachments** button. You can attach a maximum of five files to a single comment. Both Inline images and images that are attached get appropriately resized within comments. To view the images as per its original size so that it becomes possible to read the contents of the images, click the attachment name to see the enlarged image. In case of inline images, clicking the image name downloads the original image.

Click the **Inline code** or **codeBlock** buttons to add code to the comment. You can preview the comment by clicking on the **Preview** tab and click the **Full Screen** icon to make the workspace cover the complete screen.

To add tags associated with this comment, add the tag in the **+ Add Tags** field. You can search for comments in the search using the **Search** textbox and also filter comments using tags. You can delete or modify your comments based on the settings assigned by your administrator.

Tip: If the user clicks the **Press Enter to post** option, then comments get posted immediately after the user presses `Enter`. In this case, if the user wants to add a new line, the user must use "Shift + Enter."

Visual Correlation

Use the Visual Correlation widget to visually display the nodes related to a particular record, i.e., to view the visual relationship in a graph format.

If you are adding Visual Correlation as a tab, then click **New Tab** and enter the name of the tab, for example, Visual Correlation, select an icon associated with this tab, and then click the green check mark. Click **Add Widget** in this tab and then select **Visual Correlation** in the `Choose Widget` dialog to add the visual correlation widget in the detail view of the record. You can edit this widget to add a title to the Visual Correlation graph, by clicking the **Edit** icon in the widget's row, and enter the title in the **Visual Correlation Widget Title** field, for example, `Alerts: Correlated Records`. From version 6.4.0 onwards, you can define the levels at which various nodes will be displayed in the "Tree" view of the graph. You can change the levels by dragging and dropping the nodes at the level you want to display the nodes in the "Tree" view of the graph. Click **Save** to save the changes to the Visual Correlations widget.

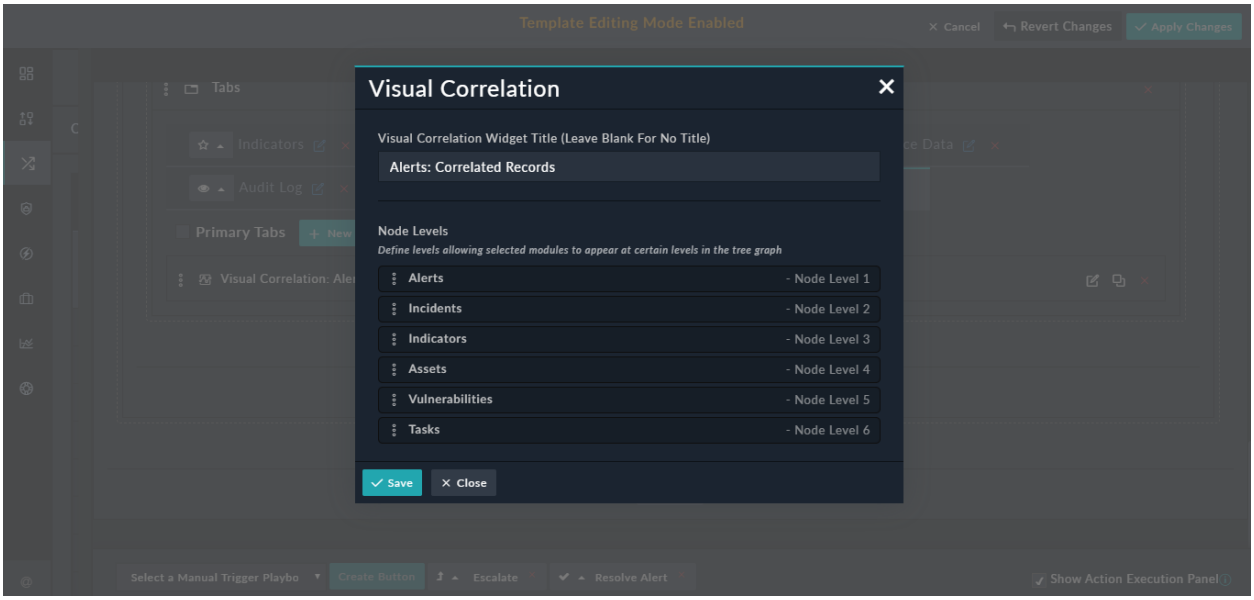


Figure 124. *Visual Correlation widget*

As shown in the above image, we have set Alerts as Node Level 1, Incidents as Node Level 2 and so on.

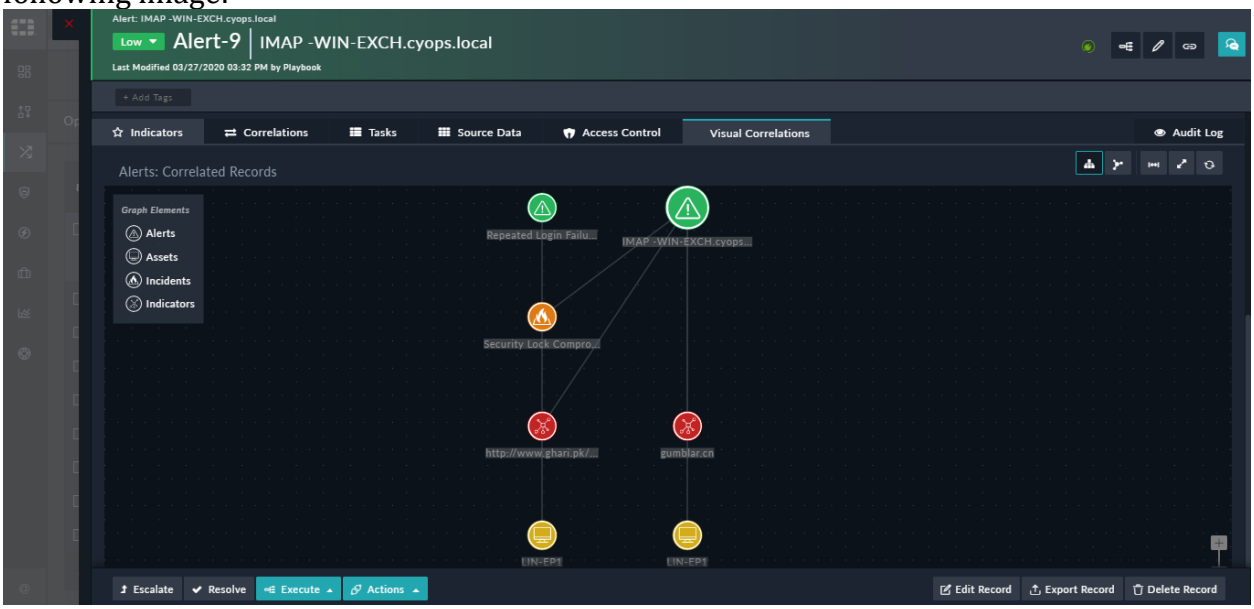
Your administrator must configure settings for the correlations for this widget to be displayed in the detail view of the record. For more information, see the *Application Editor* chapter in the "Administration Guide."

If the correlations settings are done, then you can see the Visual Correlation widget in the detail view of an "Alert" record as shown in the images in the following list.

The Correlations Graph also includes the following:

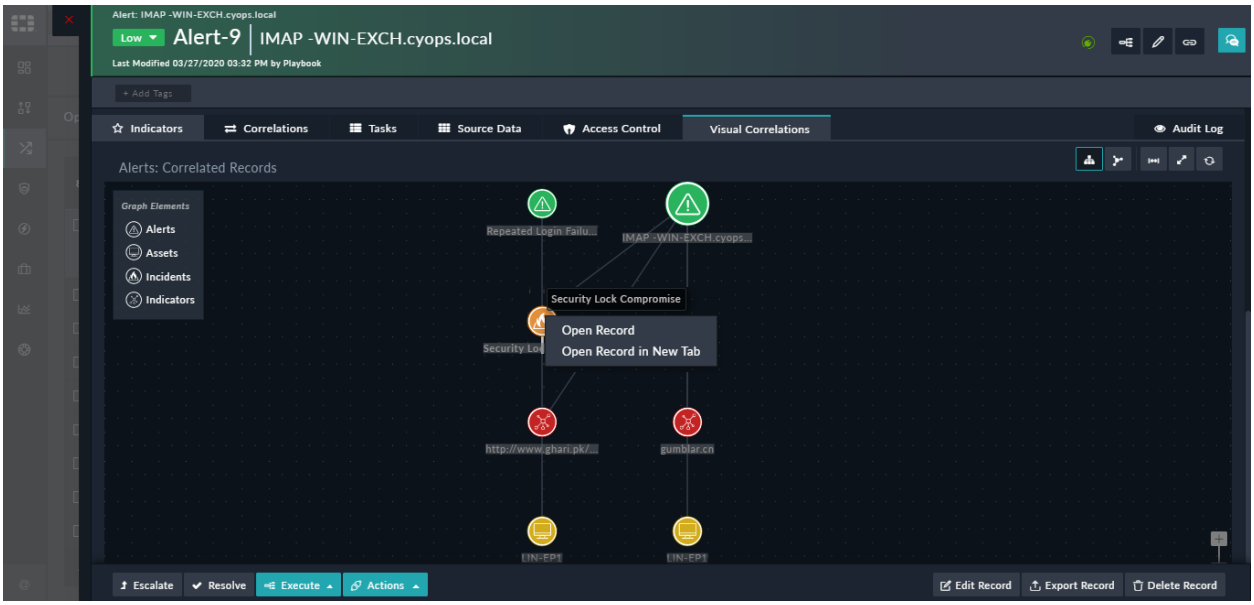
- A legend that describes the node types of the related records to left of the Correlations Graph.
- The ability to fit the graph on the screen by clicking the **Fit in View** button and other usability enhancements such as zoom and pan tools.

- The ability to toggle between the **Tree** view and the **Hub and Spoke** view. The "Tree" view, which is the default view displays the nodes in a hierarchical manner. The hierarchy in which the nodes are displayed is defined when you add the Visual Correlation widget.
  In our case we have defined "Alerts" as Node Level 1, "Incidents" as Node Level 2, "Tasks" as Node Level 3, "Indicators" as Node Level 4, and so on, as shown in the following image:



The "Hub and Spoke" mode displays the nodes in a circular network graph format, as shown in the following image

- A "context menu" to the related nodes that contains options to open the related record as shown in the following image:



You can choose to open the record in the current tab itself by clicking the **Open Record** option in the context menu or you can open the record in the new tab by clicking the **Open Record in New Tab** option. This is especially useful in cases you want to perform certain actions on the related record, such as blocking an indicator without losing the context of the record. The main node does not have the context menu since the main record is already open.

You can view the Visual Correlations graph in the full-screen by clicking the **Full-screen Mode** button. To exit the full screen, press `ESC`.

File Upload

Use the File Upload widget to provide users with an area to attach file records. You can upload files to this area by either dragging and dropping files or by clicking and browsing to a file.

Note: All files uploaded are referenced in Attachments using the File API.

In the **File Upload** widget, you can specify the module in which you want the files to be saved in the **Attachments Module** field. By default, this is set as Attachments, i.e., when you upload files, using the File Upload widget, the files become part of the Attachments record. Retain the values of the File Field and Name Field as default:

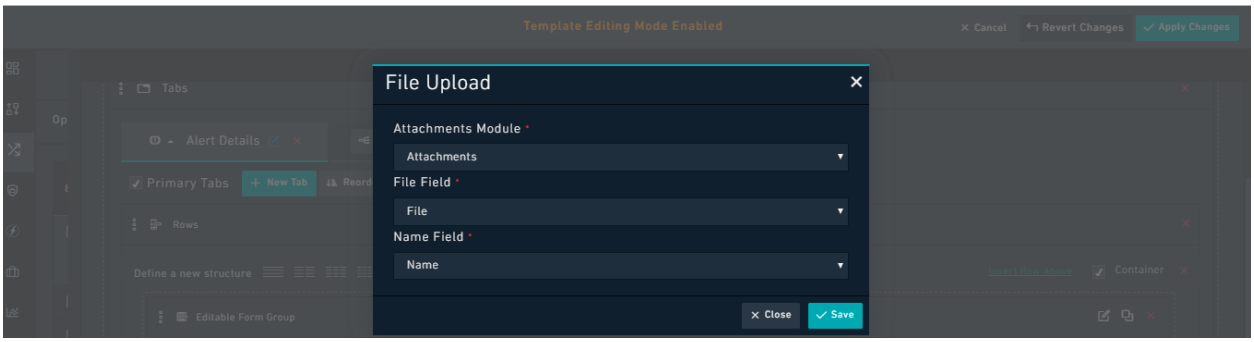


Figure 125. *File Upload Widget*

The following image illustrates how the File Upload widget is displayed in the Detail View of a record:

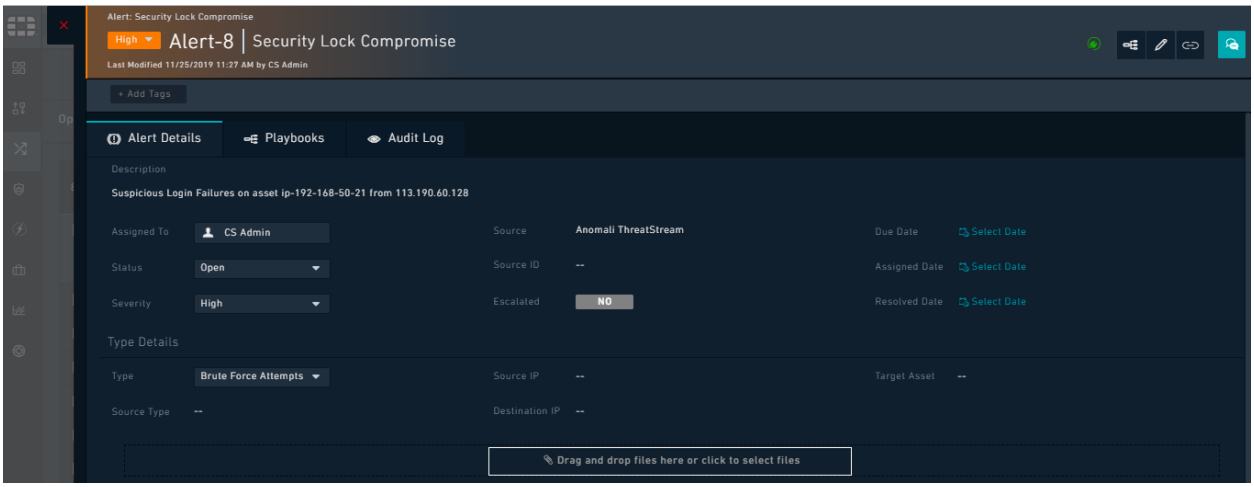


Figure 126. *File Upload widget output in Dashboard*

Note: You can also edit the template of the add/edit form for any module and add the **File Upload** widget to that form. This is useful when you want to create a record with attachments without having to create a many-to-many relationship between the record and the attachments.

Timeline

The Timeline widget inserts a historical timeline for the current record. The Timeline widget is added by default for records created in modules which are installed when you deploy FortiSOAR™. If a user creates a new module and publishes that in FortiSOAR™, then the Timeline widget is not present. Users must edit the record template for the newly created module and add this widget so that the timeline for records is available. You cannot edit the Timeline widget.

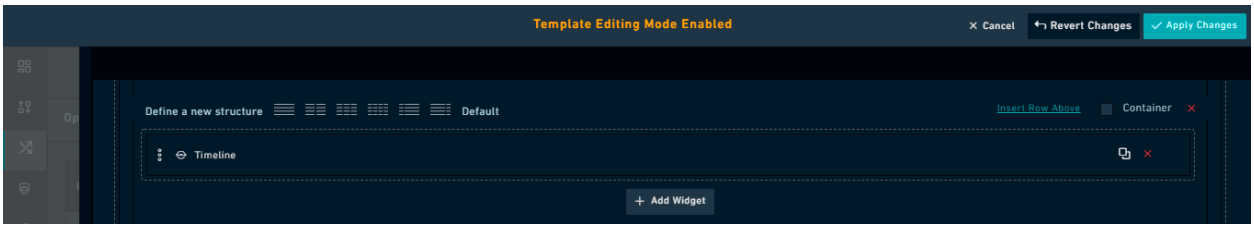


Figure 127. *Timeline Widget*

The Timeline widget appears in the **Audit Log** tab for records created in modules which are installed when you deploy FortiSOAR™. The following image illustrates how the Timeline widget is displayed in the Detail View of a record:

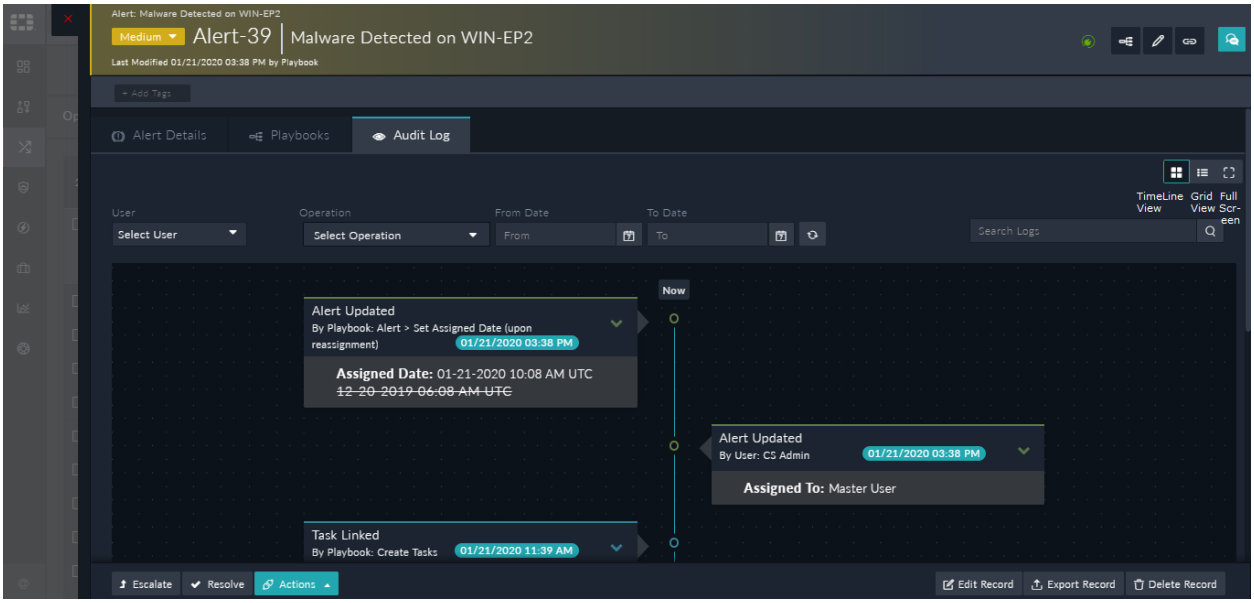


Figure 128. *Timeline Widget output on the Detail View page*

Note: If you link a record that contains Unicode or non-English characters, then in the Timeline widget, you will not see that event (the link event), or you will not be able to see the details of that event. If you link a record with only English characters, the Timeline widget displays correctly.

You can toggle between the timeline view, grid view, and full-screen view of the of the audit log tab. To move to a full screen view of the audit log, click the **Full-screen Mode** icon, which opens the audit log in the full screen as shown in the following image:

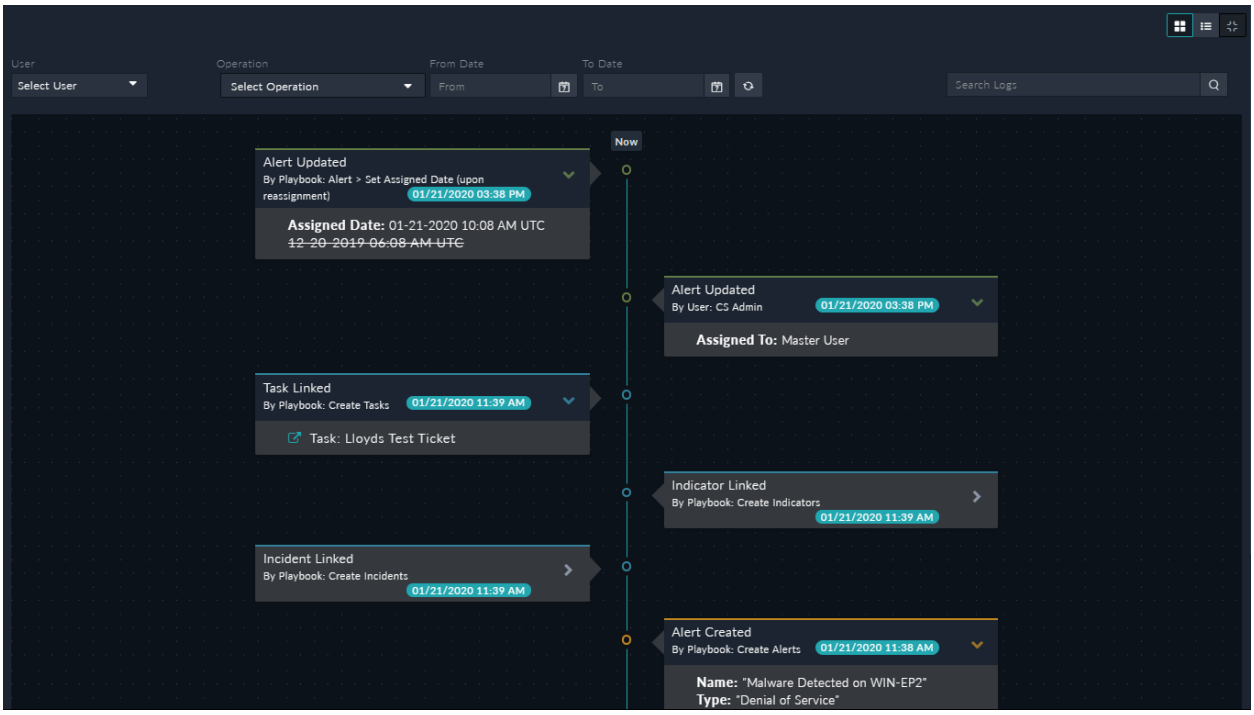


Figure 129. *Audit log in full screen*

You can click the side arrows to view details of the event as shown in the above image. To exit the full screen, press ESC, or click the **Exit full-screen mode** button.

Executed Playbooks

Use the Executed Playbooks widget to view the executed playbook logs associated with the current record or entity. The Executed Playbooks widget is added by default for records created in modules which are installed when you deploy FortiSOAR™. If a user creates a new module and publishes that in FortiSOAR™, then the Executed Playbooks widget is not present. Users must edit the record template for the newly created module and add this widget if they want to view the executed playbooks logs associated with the current entity. You cannot edit the Executed Playbooks widget.

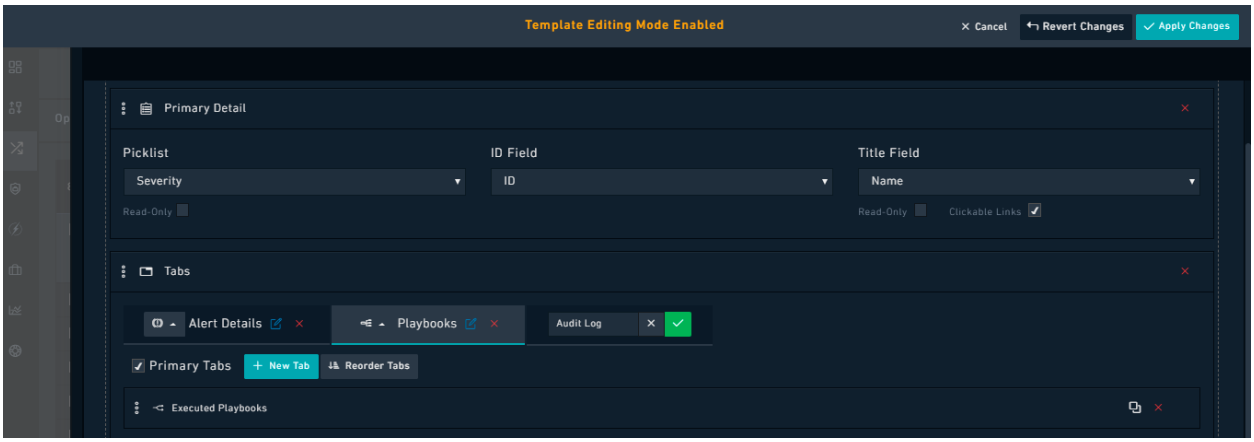


Figure 130. *Executed Playbooks widget*

The Executed Playbooks widget appears in the **Playbooks** tab for records created in modules which are installed when you deploy FortiSOAR™. The following image illustrates how the Executed Playbooks widget is displayed in the Detail View of a record:

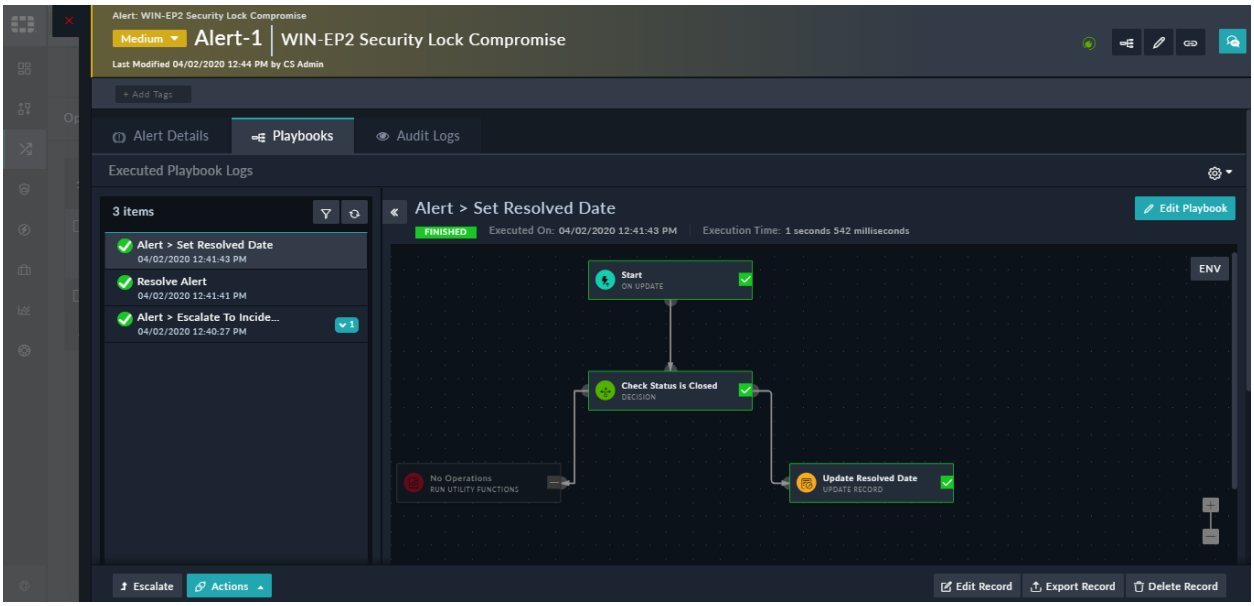


Figure 131. *Executed Playbooks widget output in Detail View*

Recommendation Settings

You can add the Recommendation Settings widget in the detail view of a record to display similar records and predict values of fields. You can turn this widget on or off as per your requirement and also configure the settings for displaying similar records and predicting values of fields. For more information on how to configure this widget, see the *Working with Modules - Alerts & Incidents* chapter.

Custom Content

iFrame

You can use the iFrame widget to display any external HTML page inside an HTML iFrame component. The iFrame widget is present in the **Dashboard** and **List Views** templates.

Warning: Use the iFrame widget responsibly. FortiSOAR™ has no control over and assumes no responsibility for, the content, privacy policies, or practices of any third-party websites. Ensure all external HTML pages are verified and approved by your organization's Legal and IT teams.

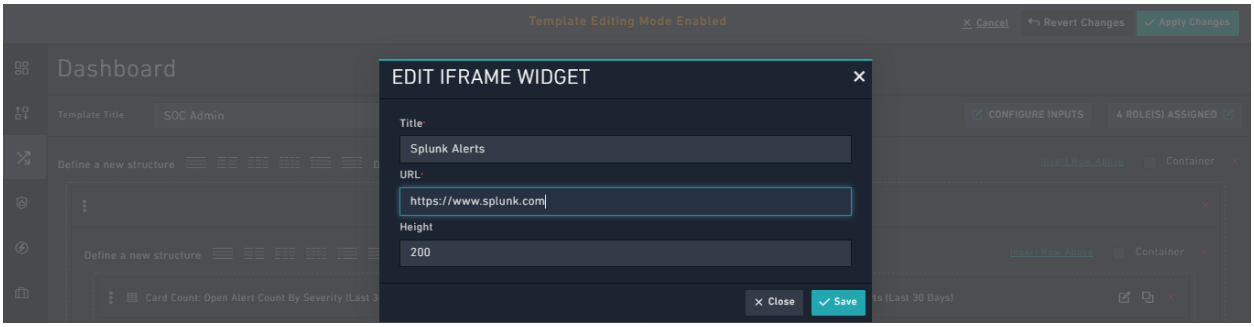


Figure 132. *iFrame Widget*

Note: You should not add a Dashboard page as a URL in the iFrame Widget, since adding a dashboard page can lead to recursive calls to other pages, which could cause the iFrame to respond very slowly and FortiSOAR™ to become unresponsive.

An example of how you can use iFrame widgets would be that you could embed URLs of external cyber security tools (e.g., hex to ascii or url decoding services) that you often use within this widget. Then, when an alert comes into the system, you can gather the data from the alert and paste it into the iFrame and quickly get analysis for the same, instead of having to jump back and forth between tabs or windows. In some cases, it also helps to avoid using the API route, which has its own limits.

Important: The iFrame Widget supports websites that have CORS enabled. If FortiSOAR™ displays a blank frame or an error in the iFrame then check the browser developer tools for more information.

Richtext Content

Use the Richtext Content widget to include formatted content, including lists and tables, images, and source code in your **Dashboard**, **List Views**, and **Details View** templates.

From version 6.4.3 onwards, the Richtext Content widget contains a "HTML WYSIWYG" editor for rendering rich text. An "HTML WYSIWYG" editor is extremely easy to use and it

renders the content in HTML and therefore can be used easily at places where HTML needs to be rendered, for example, in an email, without the need for users to write code.

You can add styles such as headings, bold, italics, add lists, tables, and insert links, media, etc. using the "Styling" toolbar provided in the widget. To get help on what an icon in the styling toolbar represents, hover your mouse over that icon. Click the **Full Screen** icon to move to the full screen view of the widget.

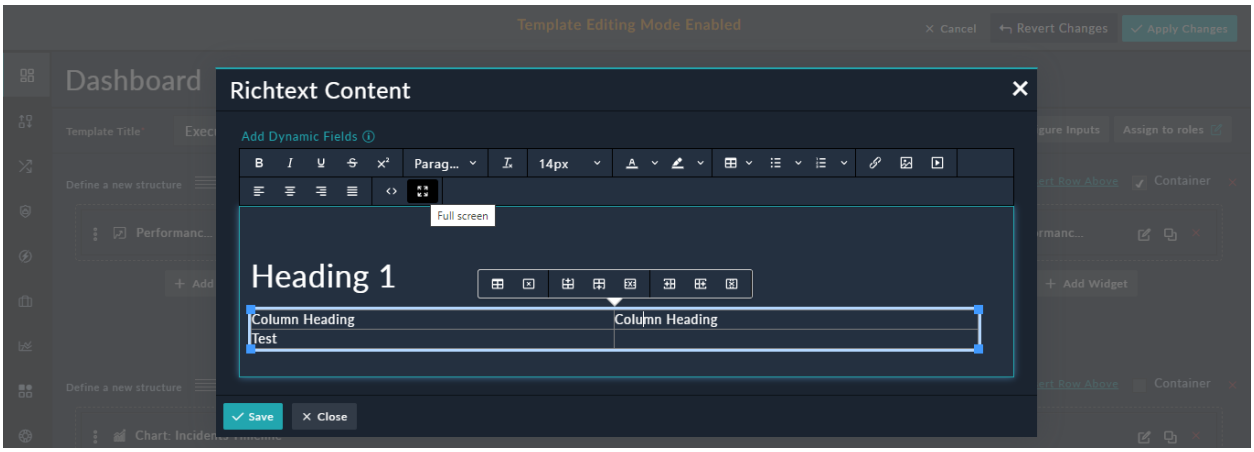


Figure 133. *Richtext Content Widget*

Figure 134. *Richtext Content Widget - Source Code*

Example of using Richtext Content Widget

In our example, we have arranged alerts according to their source, for example, alerts that are from Splunk in one category and alerts from another source in another category as shown in the following image:

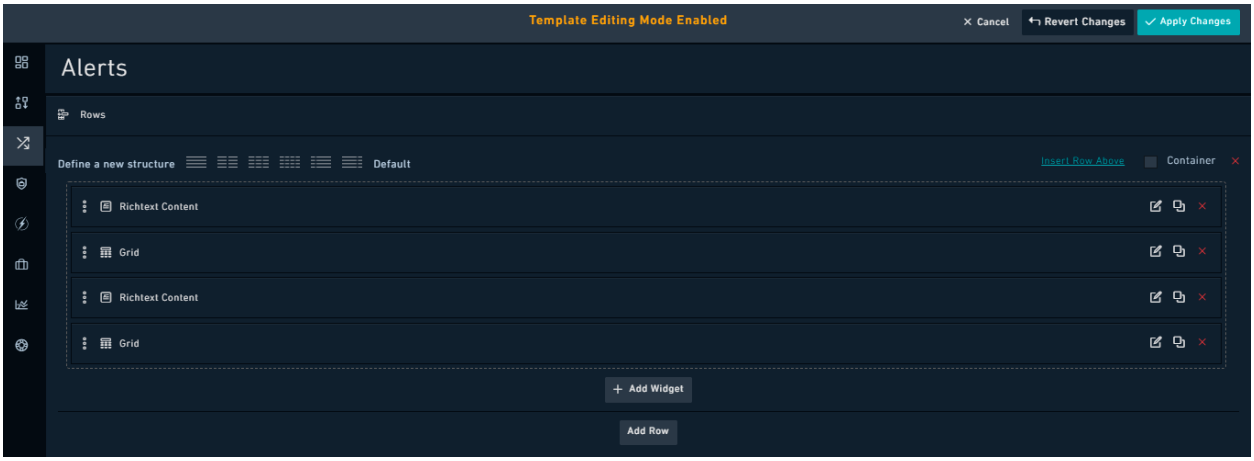


Figure 135. *Richtext Content Widget Example*

The Alerts Details Listing view will appear as follows, based on the template you have defined:

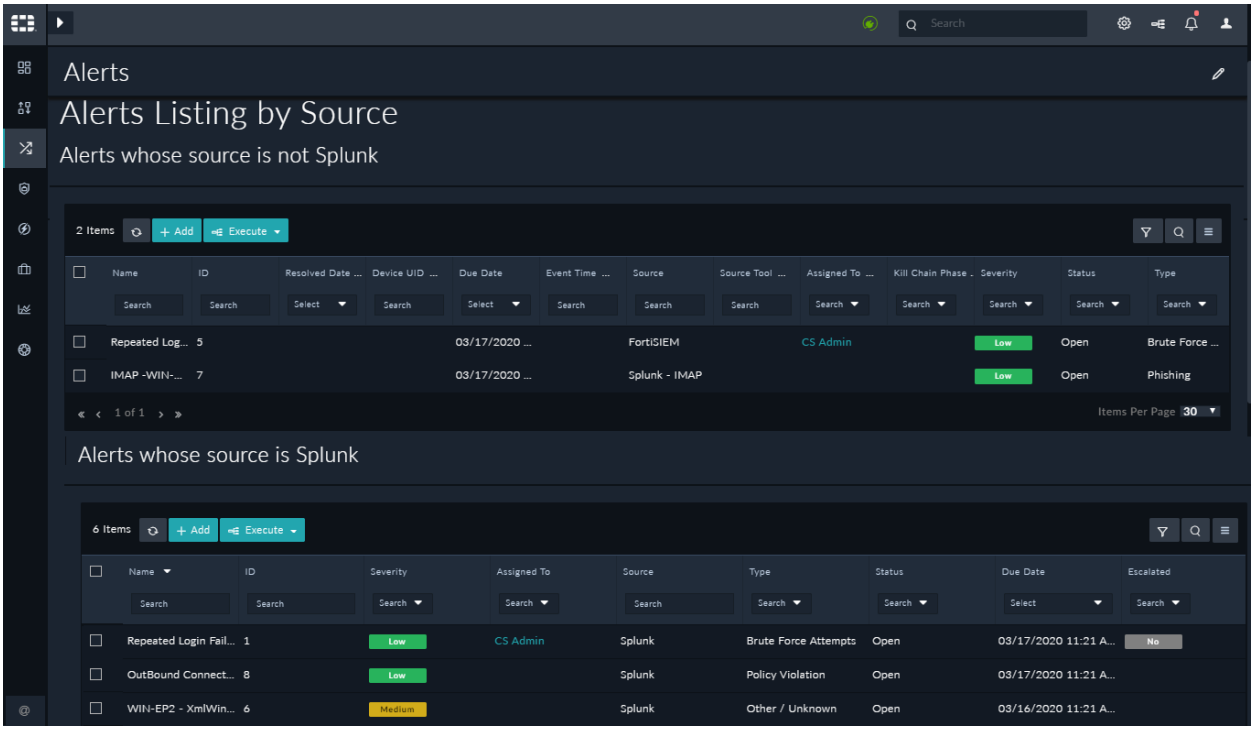


Figure 136. *Richtext widget output in Listing View*

In the context of Dashboards or Reports, you can also use the identifiers defined in the input variables as part of the Richtext Content. For more information, see the Input Variables in Dashboards and Reports section.

For example, if you are creating a dashboard or a report for a particular Incident ID, then you can add the identifier (`{{identifier}}`) for the Incident ID that you have defined as the input variable to the Richtext content as `Incident Id: {{identifier}}`. Based on the value you have specified in **Inputs** (for example `626`), the Richtext content will display **Incident ID: 626** on the report or dashboard you are creating. For more information, see the Related Records Filter in Widgets section. Similarly, you can also use `{{todayDate}}` to display the current date in a dashboard or report.

In the context of Dashboards or Reports, you can also choose the dynamic fields that you want to display in the Richtext Content, making it simpler and efficient for you to add dynamic fields to the Richtext Content.

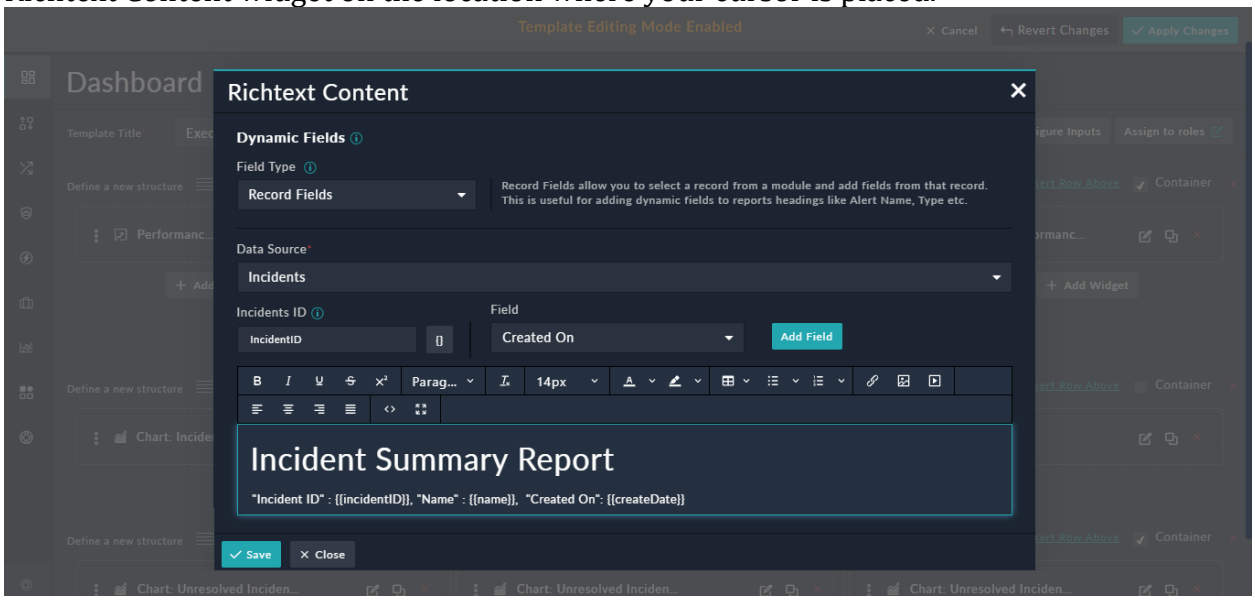
Do the following, if for example, you want to add a Richtext Content widget, in the *Incident Summary Report*, which contains the following fields: name of the incident and the date the incident was created on.

1. Click the **Add Dynamic Fields** link that appears at the top of the RichText Content Widget.
2. From the **Field Type** drop-list, select the type of dynamic field you want to add. You can choose from Record Fields, Configured Input Fields, or Utility Fields.
   Record Fields are fields that are part of the module that you select from the **Data Source** drop-down list. Based on the module that you select and the provided record ID, using either a specific record ID or a pre-defined configured input variable, you can add fields from the records.
   Configured Input Fields are fields that you have defined earlier as input variables (see Input variables). These fields allow you to add defined report input fields, and pull the value dynamically based on the input parameters specified at the time of running the report.
   Utility Fields are dynamic fields commonly used to add dynamic content, such as `todayDate` and `timezone`.
3. For our example, we need to add the name of the incident and the date the incident was created on. To add the `Name` and `Created on` fields in the Richtext Content widget, do the following:
   a. From the **Field Type** drop-down list, select **Record Fields**.
   b. From the **Data Source** drop-down list, select **Incidents**.
   Once you click **Incidents**, the **Incidents ID** field is displayed. The Incidents ID field is the `<Module ID>` field that specifies the ID of the record from which you want to pick up the content of the dynamic field. You can either provide a unique ID (i.e., the ID of a particular incident like `626`) or select an ID dynamically from the list of input parameters you have configured. In case of our example, an identifier, **IncidentID**, has been defined as an input variable. Therefore, in our

example, the **Incidents ID** field is displayed with `ID` selected. You should click the **Add Custom Expression** button and from the **Select variable** drop-down list, select **IncidentID**. This means that users will provide the Incident ID (`{{incidentID}}`) at the time they run the *Incident Summary Report*.

c. To add the `Name` field, from the **Field** drop-down list, select **Name** and then click **Add Field**.
This will paste the jinja value of the Name field, i.e., `{{name}}` in the Richtext Content widget on the location where your cursor is placed.

d. To add the `Created On` field, from the **Field** drop-down list, select **Created On** and then click **Add Field**.
This will paste the jinja value of the Created On field, i.e., `{{createDate}}` in the Richtext Content widget on the location where your cursor is placed.



Important Points:

- Once you add a dynamic field to the Richtext Content widget, you cannot edit this field, also when you hover on the added field, you will see the context of field. In the above image, the Incident ID is undefined since we have used an input variable in the Incident ID field, which means that the user running the record will require to provide the Incident ID at the time of running the report by clicking **Input** and entering the Incident ID.
- In case of **Record Fields**, you must add dynamic fields for a single module, for example the name and description of an incident record. If you add dynamic fields for multiple modules, the dynamic fields for the last specified module are considered.
For example, if you have added the name field for the incident module and then you add the name field for the alert module, the Richtext Content widget will display the name only of the alert record and not of the incident record.

Common components within Widgets

You can use common components that are part of widgets in the same way across Dashboards and Templates. Some of the common items are:

- Default Sort
- Nested Filters

Default Sort

Default sort is part of the **Grids**, **Card Lists**, and **Single Line Items** widgets. Use **Default Sort** to specify fields based on which the records in the module will be sorted by default.

Following example describes how to use default sort in a **Grid** widget:

In the `Default Sort` section, you can specify fields based on which the records in the module will be sorted by default. Click the **Add Sorting Parameter** link to get a drop-list of all fields for that module. Select the field based on which you want to sort the records, for example, **Due Date**, and then select whether you want the records to sort in the **Ascending** or **Descending** order.

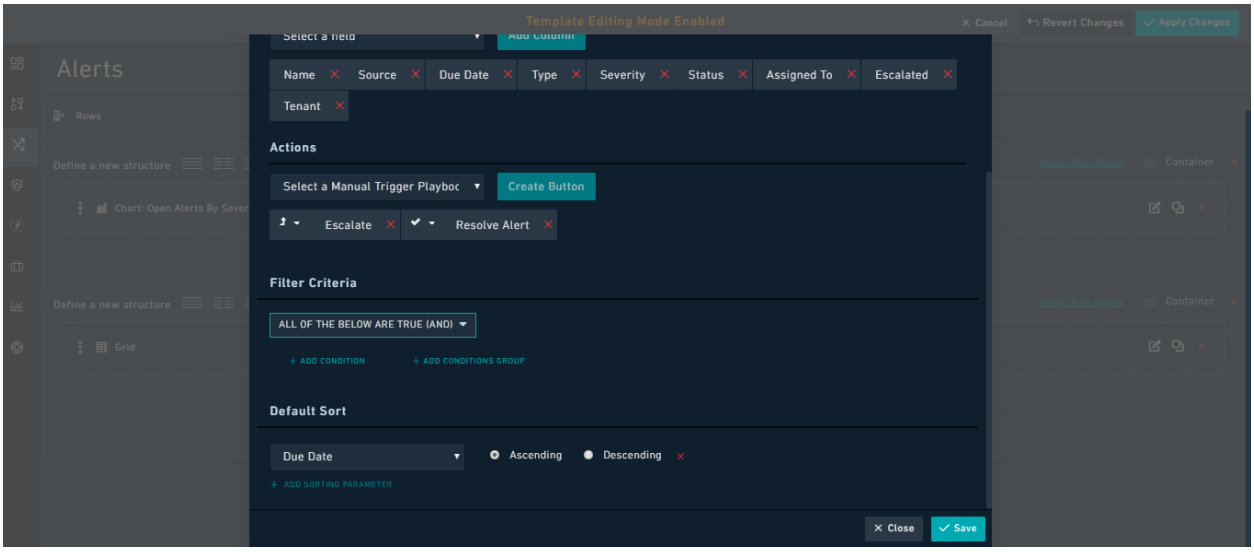


Figure 137. *Default Sort*

Nested Filters

Nested Filters is part of all the widgets, except the **Custom Content** and **Structure** Widgets. Use **Nested filters** to filter records using a complex set of conditions. Nested filters group conditions at varying levels and use **AND** and **OR** logical operators so that you can filter down to the exact records you require.

Important: You cannot search or filter encrypted fields. Also, if you want to apply a filter with an `Equals` or `Not Equals` logical operator to a richtext content field, such as **Description**, you must enclose the content you want to filter in `<p>...</p>` tags.

The Nested Filters component also has the ability to display fields with many-to-many relationships. Earlier, only primitive types and one-to-many relationship fields were displayed in the Nested Filters component. For example, now you can use this component to display all alerts that are associated with a specified Incident ID. An example of this is included in the Related Records Filter in Widgets section. The **Select a field** drop-down list in `Filters` now also categorizes fields into `Primary Fields` and `Related Modules` making it easier for you to understand whether a field is a field of that module or a field of a related module. For example, for the `Incidents` Module, **Assigned To** and **Created On** would be listed in the `Primary Fields` section, and **Alerts** and **Assets** would be listed in the `Related Modules` section.

Following example describes how to use Nested Filters in a **Chart** widget:

In the `Filters` section, you can add conditions by clicking the **Add Condition** link or add a condition group by clicking the **Add Conditions Group** link.

For example, if you want to display alerts in a chart that have been created in the last calendar year and whose severity is critical and whose status is open or investigating, you would create a filter as shown in the following image:

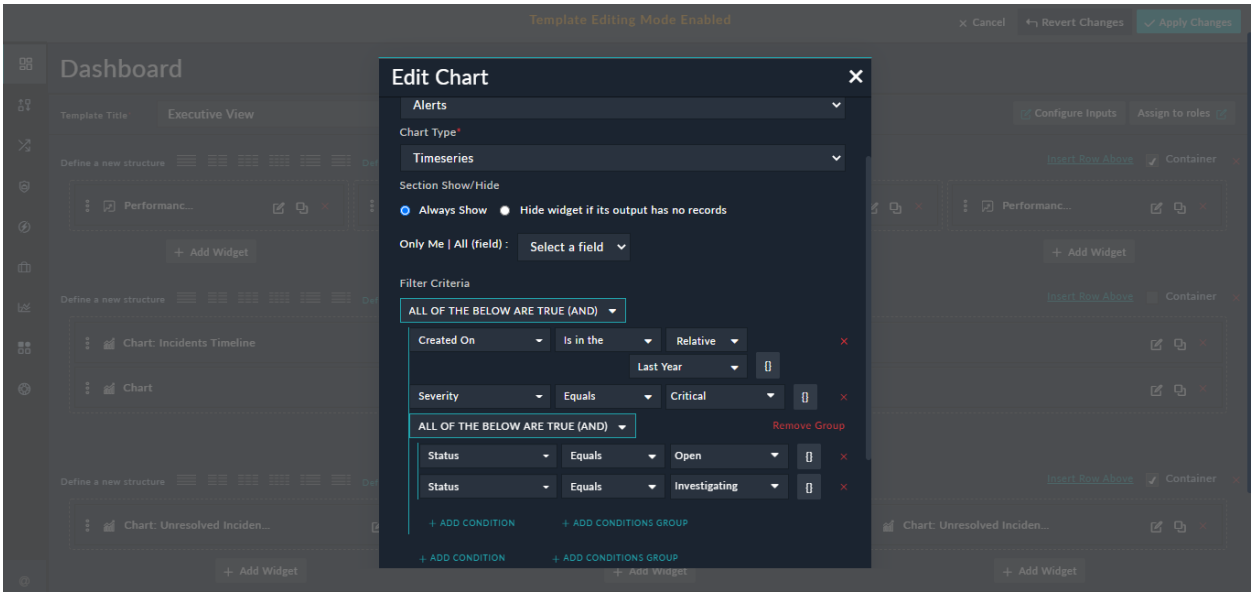


Figure 138. *Example of creating nested filters*

To create nested filters based on the example, perform the following steps:

1. In the `Filters` section, select the logical operator, **All of the below are True (AND)**, or **Any of the below is True (OR)**. For our example, we require the AND operator, since

we want alerts that were created in the last 30 days and whose severity is critical, so select **All of the below are True (AND)**.

2. Click the **Add Condition** link and create a filter for alerts that have been created in the last year.
   From the `Select a field` drop-down, select **Created On**, from the `Operator` drop-down list select **Is in the**, select **Relative** and then from the `Created On` drop-down list select **Last Year**. For more information on date/time ranges, see Support for Custom Time Ranges in Filters.
3. Click the **Add Condition** link and create another filter for alerts whose severity is critical.
   From the `Select a field` drop-down, select **Severity**, from the `Operator` drop-down list select **Equals** and, in the `Severity` drop-down list select **Critical**.
4. Create a condition group for the status condition, since you require to choose between two conditions in `Status`. Click the **Add Conditions Group** link and select the logical operator. For our example, we require the OR operator, since we want alerts whose status is Open or Investigating, so select **Any of the below is True (OR)**.
5. Click the **Add Condition** link and create a filter for alerts whose Status is Open.
   From the `Select a field` drop-down, select **Status**, from the `Operator` drop-down list select **Equals** and, in the `Status` drop-down list select **Open**.
6. Click the **Add Condition** link and create a filter for alerts whose Status is Investigating.
   From the `Select a field` drop-down, select **Status**, from the `Operator` drop-down list select **Equals** and, in the `Status` drop-down list select **Investigating**.
7. Click **Save** to save the filter.

Nested filters display logical operators depending on the type of field selected as a filter. For example, if you select a `Date/Time` field, then you will see the following operators:

- Is in the
- Is Null
- Equals
- Not Equals
- Before
- On or Before
- After
- On or After

Similarly, if you select a field of type `Integer` you will see the following logical operators:

- Equals
- Not Equals
- Less Than
- Less Than or Equal To
- Greater Than

- Greater Than or Equal To
- Is Null

Or, if you select a field of type `Text` you will see the following logical operators:

- Equals
- Not Equals
- Contains
- Does not Contain
- Matches Pattern
- Does Not Match Pattern
- Is Null

The **Matches Pattern** and **Does Not Match Pattern** operators allow you to use basic pattern matching in conditional statements using the percent (`%`) or underscore (`_`) wildcards. The `%` sign represents zero, one, or multiple numbers or characters. The `_` sign represents a single number or character.

Support for Custom Time Ranges in Filters

You can define a date range, for `Date/Time` fields, using the operators mentioned earlier and filter records using the following types of filters:

- **Relative Date Ranges**, A custom relative date, or a relative date range. A relative date is a date that is relative to the current date. In case of a custom relative date range you define your own relative date range, for example, filtering records in the last 4 days. In case of the relative date range, you can choose from a list of predefined options such as, Last Year.
- **Today**, i.e., 00:00 hours of the current day to 23:59 hours of the current day.
- **Static Date Ranges**, For example, filtering records for December 2018, i.e., from 1st December 2018 00:00 hours to 1st January 00:00 hours.

Definitions of time ranges while using the `Is in the` operator:

- **Years** and **Months**: Is the calendar year or months. This filter considers the current year and month, and then applies the filter. For example, if you apply the **Last Year** filter on 1st February 2019 09:00 hours, then it would be to filter records from 1st January 2018 00:00 hours to 1st February 2019 09:00 hours. Similarly, if you apply the **Last Month** filter on 1st February 2019 09:00 hours, then it would filter records from 1st January 2019 00:00 hours to 1st February 2019 09:00 hours.
- **Days**: Is the number of days for applying the filter. This filter considers the current day and time and then applies the filter. For example, if you apply the **Last 7 Days** filter on 4th February 2019 09:00 hours, then records from 29th January 2019 00:00hrs to 4th February 2019 09:00 hours will be considered.

- **Hours** (and **Minutes**): Is the hours and minutes for applying the filter. This filter considers the current hour and minute and then applies the filter. For example, if you are applying the **Last 24 Hours** filter on 5th February 2019 15:30 hours, then records from 4th February 2019 15:00 hours to 5th February 2019 15:30 hours will be considered.

Important: The definition of the relative date time ranges has been simplified and changed in version 6.4.3 to include the current unit of time, for example in case of last x years/months/days/hours/minutes, etc. Earlier the definition used to exclude the current unit of time, for example, the filter would exclude the current hour in case the **Last 24 Hours** filter was applied. Due to this change if you have used the `Is in the` operator and you have upgraded your environment from a version prior to 6.4.3, then data will differ after the upgrade.

For the `Is in The` operator you can choose a relative date or a custom date to filter records. For example, if you have a chart that displays alerts according to the created date, then in the `Filter Criteria` section when you select the **Created On** field and the **Is in the** operator, you will see **Relative** and **Custom** options:

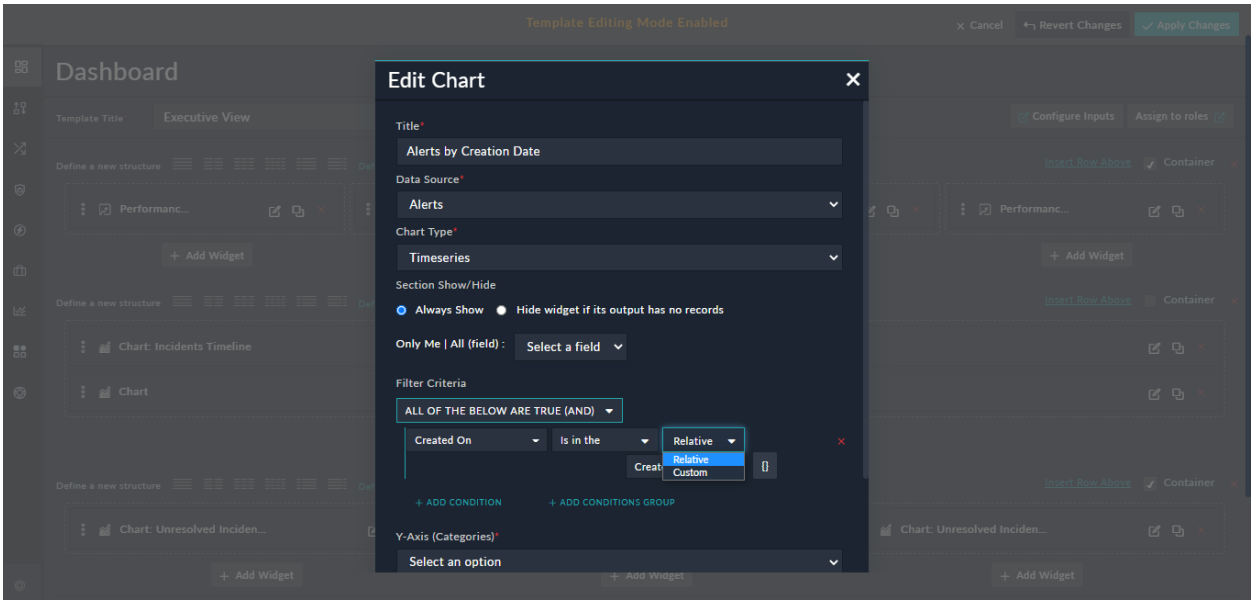


Figure 139. *Filters Criteria section with the Relative and Custom Options*

If you want to filter records based on a relative date and time, i.e, date and time relative to today, for example, you want the dashboard or report to display all the alerts that were created in the last six months, then click **Relative** and then select the **Last 6 Months** option.

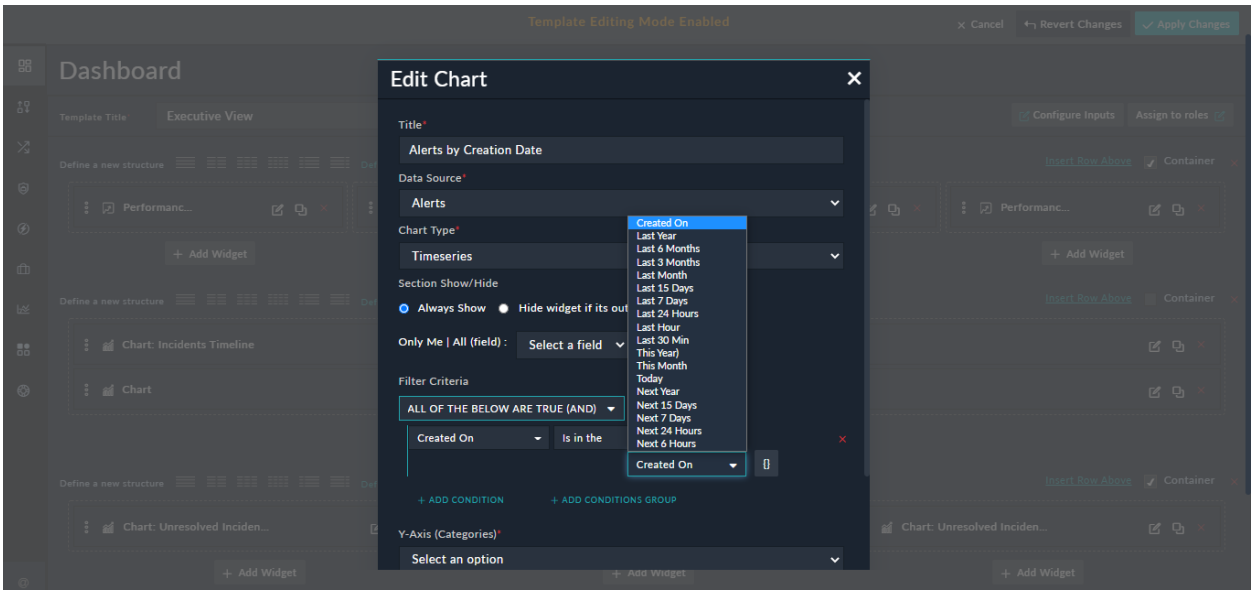


Figure 140. *Relative Options - Last 6 Months*

Based on this filter the dashboard will display a timeseries of all alerts that were created in the last 6 months. For example, Last 6 Months would be 1st July 2019 00:00 hours to 1st January 2019 09:00 hours, if you are applying this filter on 1st January 2020 09:00 hours.

If you want to filter records on a custom relative date, i.e., if the datetime for which you want to filter records is not present in the predefined list of relative dates, then you can choose the **Custom** option and specify the relative datetime. For example, if you want the dashboard or report to display all the alerts that were created in the last nine months, then click **Custom** and then select **Last**, type **9** in the next text box, and then select **Months**.

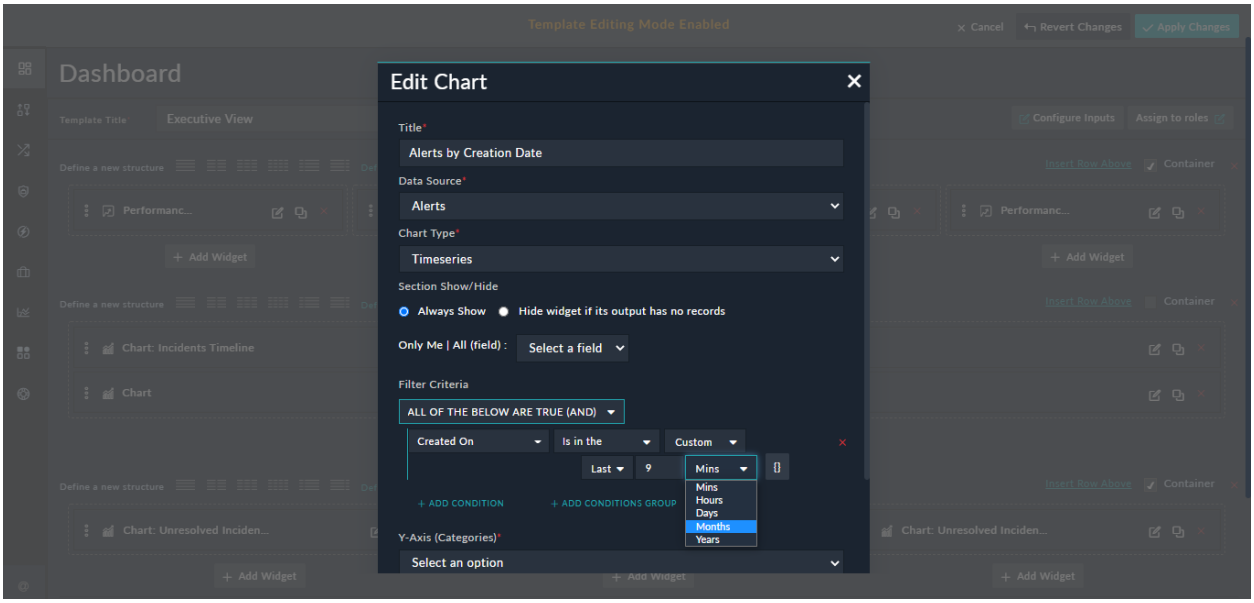


Figure 141. *Custom Options*

Based on this filter the dashboard will display a timeseries of all alerts that were created in the last 9 months. For example, Last 9 Months would be 1st April 2019 00:00 hours to 1st January 2020 09:00 hours, if you are applying this filter on 1st January 2020 09:00 hours.

Note: When you are using the `Is in the` operator and you specify a Custom filter with the same time range as the options present in the Relative filters, then after you save the filter, the filter changes from Custom to Relative. This does not impact any functionality. For example, if you have specified a Custom filter as `Is in the Last 1 hour`, then after saving this filter when you reopen the template you will observe that the filter has changed to a relative filter since the Last 1 hour option is present in the pre-defined list of Relative filters.

For the `Before`, `On or Before`, `After`, or `On or After` operators you can also choose a static date or a custom date based on which you can filter records.

Important: In case you have upgraded to a version later than 5.0.0, then you will have to reselect your datetime filters, since the new datetime filters are not backward compatible. You will be able to see the older applied datetime filter in the FortiSOAR™ reports and dashboards. However, if you want to edit these filters, then you will have to reselect all the datetime filters in that dashboard or report. Similarly, if you import a report or dashboard into version 5.0.0 or later, it will work fine. However, if you want to edit the datetime filter, you will have to reselect all the filters in that datetime dashboard or report.

You can also use variables that you have defined in the Input variables in the Nested Filter component. To use defined input variables, click the **Add Custom Expression** icon and select the defined input variable. For example, if you have defined the **From Date** input variable to be used in Dashboards or Reports, select this variable, as shown in the following image:

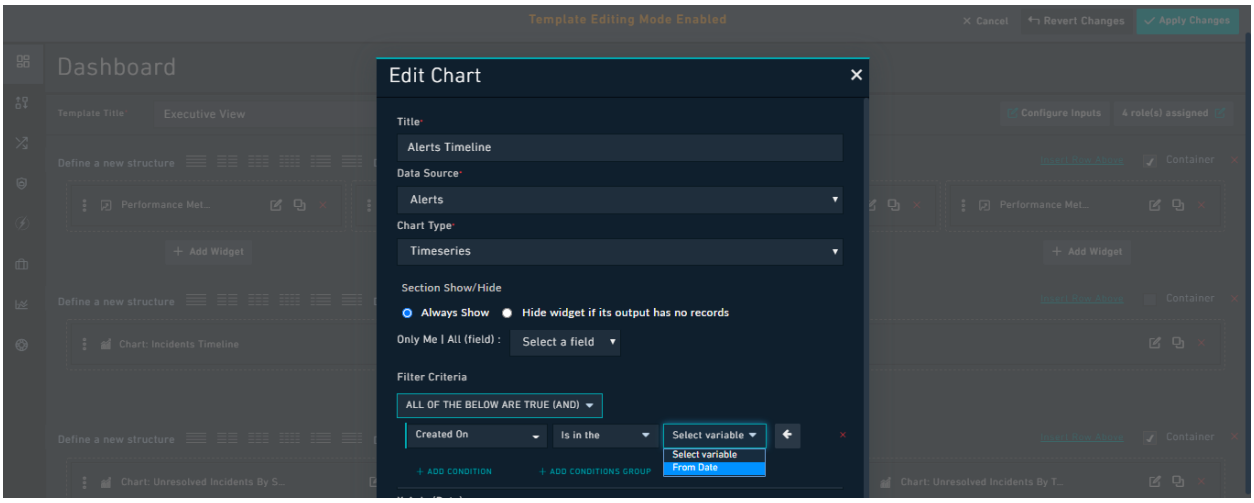


Figure 142. *Nested Filters component with the variable selected*

Behavior of Nested Filters in case of records that have 'null' value

Important: Records that have a 'null' value in a field are not displayed when you filter records using the Not Equals operator.

Example:

If you want to define a filter that will retrieve all records whose severity is not equal to critical, you must add the following two conditions to ensure you retrieve all records: **Severity Not Equals Critical**, and **Severity Is Null True**. If you add only the **Severity Not Equals Critical** condition, then records that do not have any Severity assigned to them (null records) will not be retrieved.

Display Elements

You can use the following display elements within widgets to control the behavior and display of fields within widgets:

- All Inline or Inline Editor
- All Read-Only or Read-Only
- All Clickable Links

All Inline or Inline Editor

Selecting the **All Inline** or **Inline Editor** checkbox treats all the fields within the widget as inline fields. Inline fields are editable by clicking the fields. If a field is not inline then to edit that field, you must click the **Edit** button that appears alongside the field.

Read-Only

Selecting the **Read-Only** checkbox treats all the fields within the widget as read-only fields, irrespective of the permissions assigned.

Clickable Links

Selecting the **Clickable Links** checkbox converts any URL or email address present in `text` and `textarea` fields to hyperlinks, which are clickable.

Note: Links in `richtextarea` fields are not converted into hyperlinks and therefore not automatically clickable.

Container

Selecting the **Container** checkbox to arranges and styles the widgets within it appropriately such that they appear as one cohesive unit.

Insert Row Above

Click the **Insert Row Above** link to insert a blank row, wherever required.

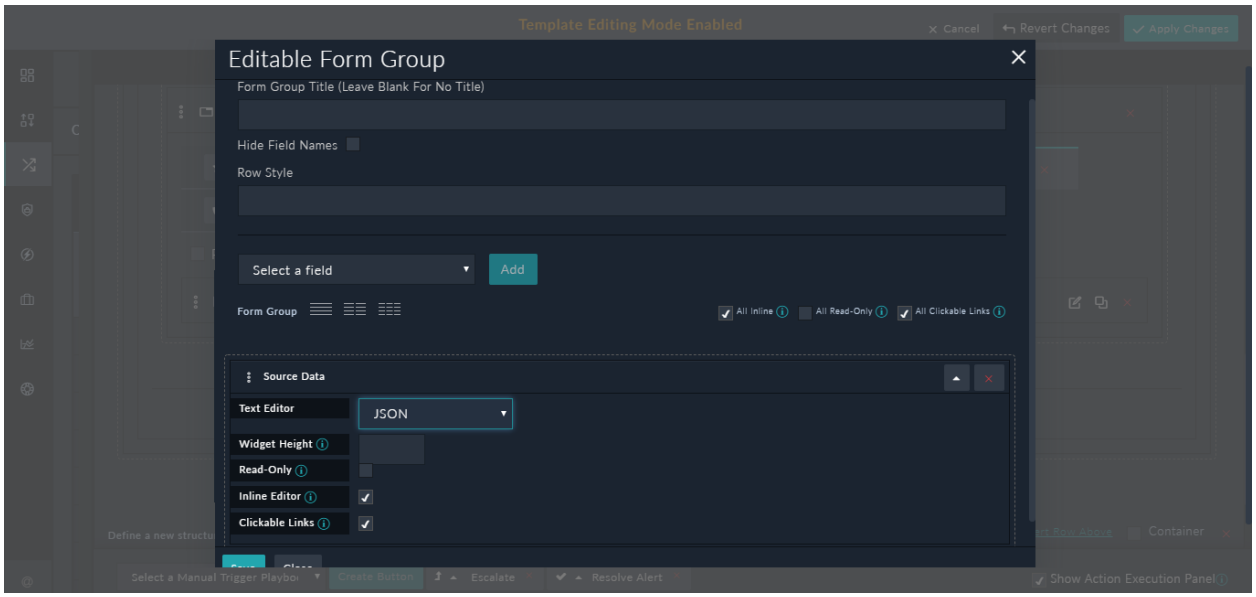
Displaying “Text Area” fields in the JSON format

Note: You can use the "JSON field" type to store data in the JSON format directly for fields such as `Source Data` that commonly store data in the JSON format.

The `Editable Form Group` widget also provide you with the ability to display JSON data in the JSON format for fields that have their field type set as `Text Area`. For example, if alert data is forwarded from a SIEM to FortiSOAR™ in the JSON format, you can change the `Editable Form Group` widget to display this data in the JSON format in a JSON viewer instead of the string format.

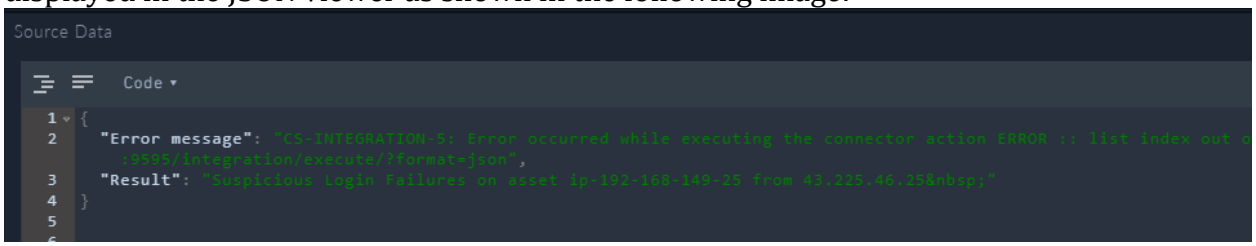
To enable the option for the JSON viewer in case of `Editable Form Group` widget:

1. Navigate to the module where you want the data to be displayed in JSON format, for example, `Alerts` and click a record in this module to open the `Detail` view of this module.
2. Click the **Edit Template** icon to open the Template Editor and modify the interface.
3. Click **Edit** in the `Editable Form Group` and modify the field, whose field type is set as `Text Area`, for example, **Source Data**, for which you want to display the data in the JSON format.
   Click the **v** icon in the **Source Data** field to display more options and from the **Text Editor** drop-down list select **JSON**:



In the **Widget Height** field, you can define the height, in pixels, of the JSON editor.

4. Click **Save** and **Apply Changes**.
5. Open the record in the `Detail` view; you will see the field that you have modified is displayed in the JSON viewer as shown in the following image:



You can edit the JSON directly in the JSON viewer, and if you have made any errors while editing the JSON, the JSON viewer will display a red cross on that line.

Default Modules

Modules provide access to individual data models within the FortiSOAR™ database, such as `Incidents`.

You will see the following default modules in case of a fresh install of FortiSOAR™.

In FortiSOAR™, the left navigation bar categorizes the modules as follows:

- Dashboard
- Queue Management
- Incident Response
  Alerts
  Incidents
  Tasks
  Indicators
  Emails
  MITRE ATT&CK Techniques
- Vulnerability Management
  Vulnerabilities
  Assets
  Scans
- Automation
  Playbooks
  Connectors
  Schedules
  SLA Templates
- Resources
  Attachments
  Email Templates
- Reports
- Widget Library
- Help

Dashboard

Dashboards are generally the users' default home page. Administrators create dashboards that are applicable throughout the application and are assigned to users based on their roles. For more information, see the *Dashboards, Templates, and Widgets* chapter.

Queue Management

Queue Management provides you with an overview of work (records) that requires to be completed and enables you to assign pending work to users. You can also configure queue management to assign unassigned items to specific queues or users automatically. For more information, see the *Queue Management* chapter.

Incident Response

The Incident Response Component is a collection of all modules typically related to Security Incidents. You might work on the entire Incident lifecycle from within this component.

This component underpins the operational side of your SOC. The standard flow starts within the `Alerts` module.

Alerts

Alerts in FortiSOAR™ are essentially notifications indicating that an attack has been directed at an organization's systems. Alerts are related to events and often contain essential information for addressing the attack by including vulnerabilities and exploits being leveraged by the potential attack.

Incidents

Incidents represent a collection of information discovered during an Incident Response investigation. Incidents are triggered based on the suspicion or confirmation of a security breach. Incidents can be cyber or physical security related.

Campaigns represent a collection of Incidents that can be tied to a single Threat Actor. Seemingly disparate Incidents might actually be related attempts from a malicious attacker attempting to probe and gain access to your network.

It is generally difficult to determine if Incidents themselves are related and roll them into a Campaign. Typically, they would be linked by a known, single threat actor based upon some uniquely identifiable piece of information that ties the Actor across multiple Incidents. Note that Campaigns are not part of default modules.

Tasks

Tasks represent a discrete action taken by either an individual or automated response. Tasks might link to outside systems, such as ticketing systems, to track specific actions beyond that of your SOC team.

Tasks might also be created to represent actions taken automatically as a part of a response policy enacted by a Workflow. This requires that the Workflow must have a step to insert a Task as a record of an action undertaken by an external system, such as an IP address to the denylist in the firewall rule set.

Indicators

Indicators contain details of all the data that is collected from system log entries or files, which identify potentially malicious activity on a system or network. It contains records of identifiable information regarding a threat, such as an IP or URL.

Once an alert is created FortiSOAR™ extracts the metadata from the raw alert data and creates indicators, with details such as type of indicator, i.e. IP address, URL, attachment, domain, etc., the value of the indicator, such as the IP address number, the domain name, whether this indicator has been sighted any other alerts, and what is the IOC status of that indicator.

Emails

Emails contain potentially malicious emails, such as phishing emails. Once an email is added to this module, FortiSOAR™ extracts and stores the Email Headers for further investigation. FortiSOAR™ also creates an alert with a link to the email.

MITRE ATT&CK Techniques

The **MITRE ATT&CK Techniques** module displays MITRE ATT&CK Techniques. FortiSOAR™ contains some playbooks that pull these techniques and some playbooks that can classify alerts into the relevant MITRE ATT&CK Techniques.

Vulnerability Management

The Vulnerability Management Component is a collection of all modules typically related to vulnerabilities that exist in your system.

Vulnerabilities

Vulnerabilities represent a collection of weaknesses in your systems that can lead to security concerns. You can configure vulnerability scans to run periodically on your network, creating an inventory of the vulnerabilities for your specific assets.

Assets

Computers represent the Assets of your organization. Assets represent a unique piece of hardware and any information known about that hardware, such as MAC address, hostname, or IP address. Assets preferably have a unique identifier.

Assets typically are only stored within FortiSOAR™ as records related to Incidents, Alerts, or Vulnerabilities. Asset information may be pulled from a CMDB or other resource available with knowledge of the asset characteristics, such as an ARP table or DHCP records.

In the case of large networks, Asset tracking is often a complicated process and plagued with limitations. We recommend that Asset creation involve corroboration between multiple unique sources of data that build a level of confidence in the accuracy of the Asset information, as single sources can be unreliable with respect to data integrity and accuracy.

Scans

Scans contain the details of all the scans that you run on your systems. It contains records of a bulk scan from scanners.

Automation

The Automation Component is a collection of modules that you can use to automate your security operations.

Playbooks

Playbooks in FortiSOAR™ allows you to automate your security processes across external systems while respecting the business process required for your organization to function. For more information, see the *Playbooks Guide*.

Connectors

Connectors provide you the ability to retrieve data from custom sources and perform automated operations. For more information, see the *Connectors Guide*.

Schedules

Schedules in FortiSOAR™ allows you to schedule playbooks to run at regular intervals. For more information, see the *Schedules* chapter.

Note: Schedules as a module is removed, i.e., you will not find schedules on the `Modules` page and you cannot modify the mmd of the schedules using the Application Editor.

SLA Templates

SLA Templates in FortiSOAR™ can be used to create an in-built SLA management for incidents and alerts. For more information, see the *SLA Templates* chapter.

Resources

The Resources Component is a collection of all modules typically related to components stored in FortiSOAR™ such as attachments and templates.

Attachments

Attachments represent files that are uploaded and stored in FortiSOAR™. You submit files that are available in the FortiSOAR™ `Attachments` module to 3rd-party tools to scan and analyze suspicious files and retrieve reports for the submitted samples.

Important: You can add a file up to the maximum file size of **100 MB** in the Attachments module.

Email Templates

Email Templates represent templates that are stored in FortiSOAR™ that you can use when you want to send emails from FortiSOAR™. For example, if you have created a rule that requires FortiSOAR™ to send an email automatically if a particular condition is met, then you must create a template for the email and save that email in the Email Templates module.

Email Templates contain a set of standard templates included with FortiSOAR™. Standard templates include emails that are sent by FortiSOAR™ when a new user is added in FortiSOAR™ or an email that is sent to users when they forget their passwords and send a request to reset the FortiSOAR™ password.

Reports

Reports represent FortiSOAR™ Reports that you should use for your reporting purposes. You can easily create rich reports and dashboards in FortiSOAR™. You can also schedule reports, view historical reports and also search for text in the report PDF, which is in the text PDF format. For more information, see the *Reports* chapter.

Widget Library

Widget Library allows users to edit out-of-the-box (OOB) widgets and build new widgets for custom use cases. Users can use the widget library to customize existing widgets or build new widgets as per their requirements. For more information, see the *Widget Library* chapter.

Help / Knowledge Base

The Help Component contains the Knowledge Base, which is the FortiSOAR™ Product documentation, along with small tutorials and examples, to help you work effectively with FortiSOAR™.

Working with Modules - Alerts & Incidents

Alerts

Alerts in FortiSOAR™ are essentially notifications indicating that an attack has been directed at an organization's systems. Alerts are related to events and often contain essential information for addressing the attack by including vulnerabilities and exploits being leveraged by the potential attack.

Alerts Dashboard

The *Alerts Dashboard* is a collection of graphs and charts showing visual representations of specific incident activity in the module. An example of the collection of graphs and charts that the system can display by default can be *Open Alerts By Severity* and *Alerts By Type* as shown in the following image:

Figure 143. *Alerts Dashboard*

You can customize the graph and chart display to meet your individual team or organization's needs. For more information on `Dashboards`, see the *Dashboard, Template, and Widgets* chapter.

Incidents

Incidents represent a collection of information discovered during an Incident Response investigation. Incidents are triggered based on the suspicion or confirmation of a security breach. Incidents may be cyber or physical security related.

Incidents in FortiSOAR™ document vital information related to cybersecurity violations and attacks that threaten the integrity of your systems and/or data. Critical information such as origin points, severity, and source allow SOC users to assess the scope and reliability of breach while tracking various data such as containment and recovery times help teams identify efficiency trends and gaps in efficiency.

Incidents Dashboard

The Incidents Dashboard is a collection of graphs and charts showing visual representations of specific incident activity in the module. An example of the collection of graphs and charts that the system can display by default can be *Open Incidents By Severity* and *Unresolved Incidents By Severity By Type* as shown in the following image:

Figure 144. *Incidents Dashboard*

You can customize the graph and chart display to meet your individual team or organization's needs. For more information on `Dashboards`, see the *Dashboard, Template, and Widgets* chapter.

Working with Alerts and Incidents

In FortiSOAR™, modules have a `List View` and a `Detail View` as described in the following sections. Modules that are used for automation, such as `Playbooks`, `Rule Engine`, and `Queue Management` have been described in the other sections.

Important: In this chapter, we have taken the example of the 'Alerts' Module and described how you could work with alerts. You can work the same way with other modules such as 'Incidents.'

Alerts List View

The Alerts List View shows the user all the existing alerts the current user's teams own and high-level detail about each alert.

To add an alert in FortiSOAR™, click **Add Alert** in the top bar of the `Alerts` Module to open the `Create New Alert` form. Fill in the required details the `Create New Alert` form and click **Save** to create an alert. If your administrator has configured default values for any fields, then that default value will be displayed in the `Create New Alert` form. For example, if your administrator has set the default value of the **Status** field as **Open**, then when you create a new alert, by default, the **Status** field is already set as **Open**.

The Alerts List View displays records that are sorted by modified date/time with the most recently created/edited alert first. You can change the sort order by clicking on the column headers and specifying the sort criterion. For example, you can sort the `Created On` column to display either the oldest or the most recent created alerts first. Your administrator can also specify fields based on which the records in the module will be sorted by default. For more information on `Default Sort`, see *Dashboards, Templates, and Widgets*.

You can right-click an alert in the grid view to display the three new context menu options that have been added that enable you to copy record details to the clipboard. **Copy Row To Clipboard**, **Copy Column Data To Clipboard** and **Copy Cell Value To Clipboard** are the context menu options that you can use to copy data for a single row, single column, and single cell respectively. These options do not copy a blank row, a blank column, or a blank cell.

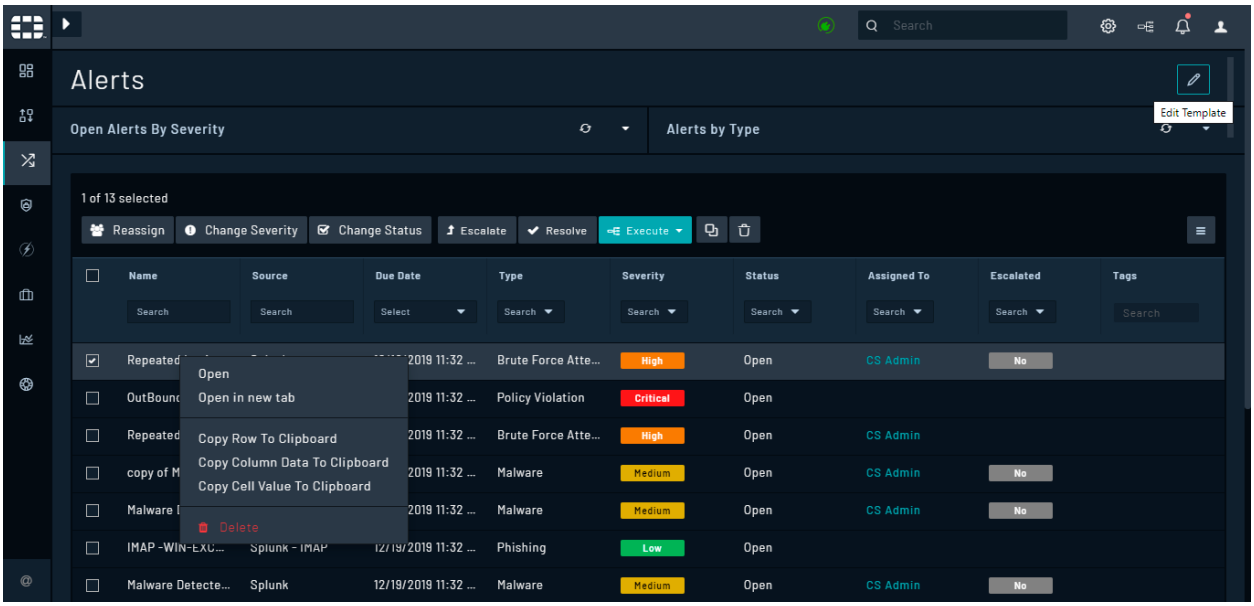


Figure 145. *Context Menu items to copy data to the clipboard in the grid view*

The **Copy Row To Clipboard** option copies the data only for the *visible columns* of the selected row to the clipboard in the JSON format. JSON format makes it very easy for you to understand the field name and its value. If you want to copy data other than those of the visible columns, then you must make those columns visible by adding them to the grid in the UI. Use the **More Options** icon ( ) to the right of the table header to hide and unhide columns. Visible columns appear with a green tick icon and hidden columns appear with a red cross icon.

The **Copy Column Data To Clipboard** option copies the data of the selected column to the clipboard in the newline-separated format.

The **Copy Cell Value Clipboard** option copies the data of the selected cell to the clipboard.

You can add tags while creating records, enabling you to search for records in FortiSOAR™ using tags, making tags very useful in searching and filtering records. You can create tags that have a minimum of three characters. You can add special characters and spaces in tags from version 6.4.0 onwards. However, the following special characters are not supported in tags: `'`, `,`, `"`, `#`, `?`, and `/`. The **Tag** field gets auto populated based on tags that are already created. Tags are case insensitive; however, if you create two tags with different case, for example, BFA and bfa, FortiSOAR™ will display results containing both “BFA” and “bfa”.

Administrators can also configure grid and relationships templates so that horizontal scrolling in grid views gets enabled, which provides better usability to users in scenarios where the data grids that have a large number of columns. For more information on how to configure the template, see the *Dashboard, Template, and Widgets* chapter.

To edit the template for any module, including `Alerts`, click the **Edit Template** icon that is present in the upper right-hand corner. For more information on `Templates`, see *Dashboards, Templates, and Widgets*.

Searching and Filtering Alerts

Users can search for a specific alert(s) within the list view in the following ways:

- **List View Search** - enter text in the search field and click on the search icon to search every column in the list view for the data criteria.
- **Filter Search** - enter text in the search criteria row underneath the column header or select one or more options from the picklist under the column header.
  Note: You cannot search or filter encrypted fields.

You can also customize or select system filters by clicking the **Filter** icon next to the list view search field. Then either enter a filter criterion or select a filter from the drop-down menu from the search criteria row underneath the column header or select column filters to customize a view and click the **Save Filter** button. Clicking **Save Filter** opens a `Save New Filter` Dialog in which you must assign a name to the newly created filter.

For example, in the following image, a filter is being created for alerts whose `Severity` is **Critical**.

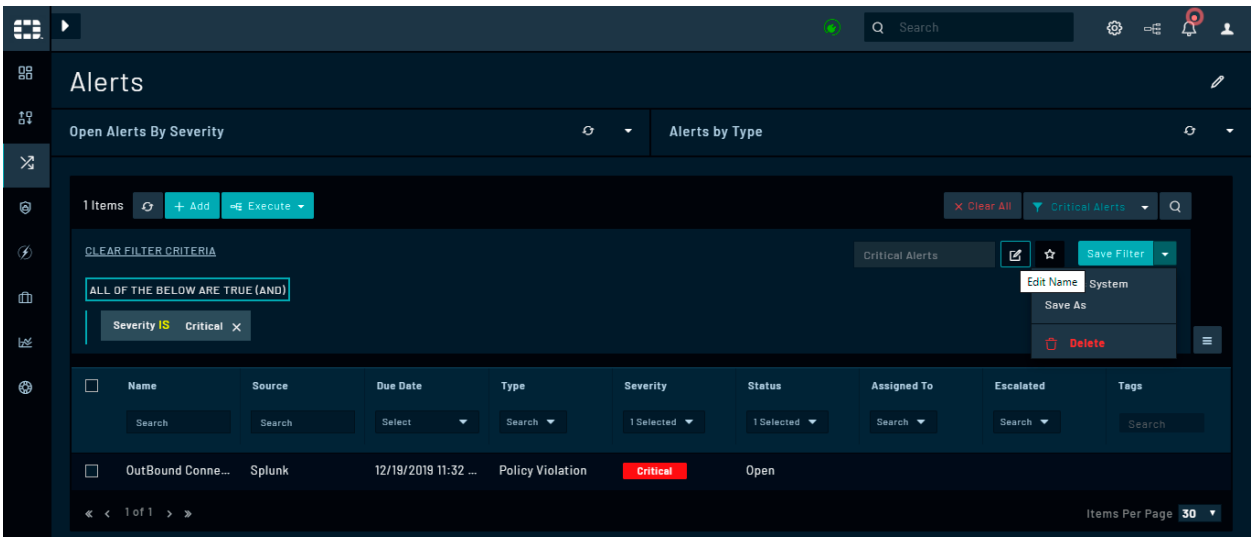


Figure 146. *Records with Severity set as critical*

Click **Clear All** to remove the filter.

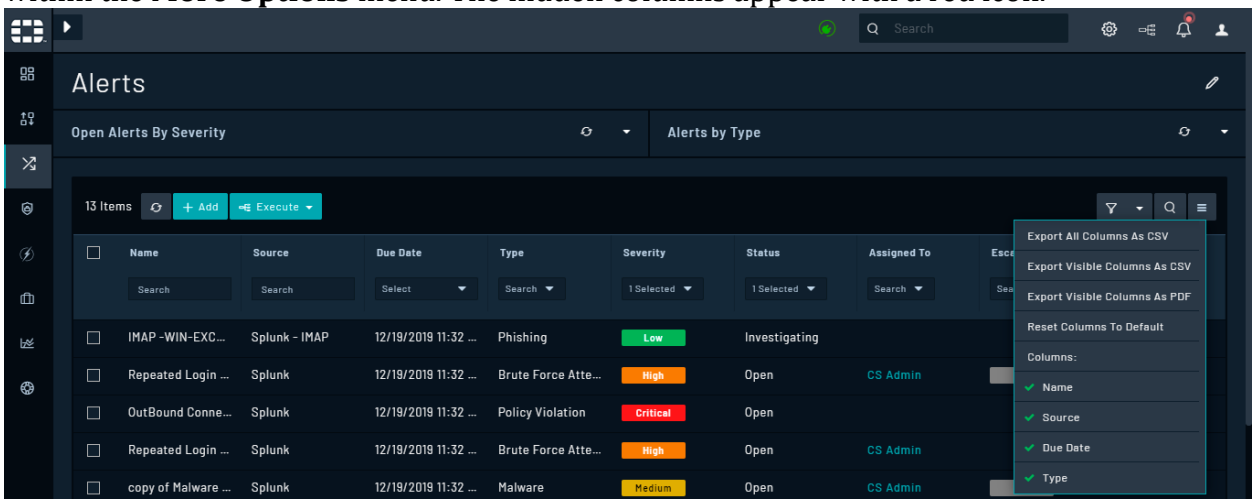
You can also define filters for records in the Grid Widget itself. The Grid Widget includes the Nested Filters component that you can use to filter records in the list view using a complex set of conditions, including the **OR** condition.

See the *Searches and Filters* and *Dashboards, Templates, and Widgets* topics for more information on searching and filtering records.

Exporting Records from the List view

To export records, click the **More Options** icon ( ) to the right of the table header:

- **Export All Columns as CSV**: Use this option to export all the columns of the alert record to a `.csv` file.
- **Export Visible Columns as CSV**: Use this option to export visible columns of the alert record to a `.csv` file. The visible columns appear with a green tick icon.
  Note: You can hide columns by deselecting a column from the list of columns present within the **More Options** menu. The hidden columns appear with a red icon.



- **Export Selected Rows as CSV**: This option is visible only if you select the row(s) in the grid. Use this option to export selected rows in the alerts grid to a `.csv` file. Data for only the *visible* columns are exported.
- **Export Visible Columns as PDF**: Use this option to export visible columns of the alert record to a `.pdf` file.
- **Export Selected Columns as CSV**: This option is visible only if you select the row(s) in the grid. Use this option to export selected columns in the alerts grid to a `.csv` file. Data for only the *visible* columns are exported.
- **Reset Columns To Default**: Use this option to reset the alert record fields to the default fields specified for the alert module.

Editing a record in the List view

Select a record in the list view to delete, clone, perform bulk and automated actions, on that record as shown in the following image:

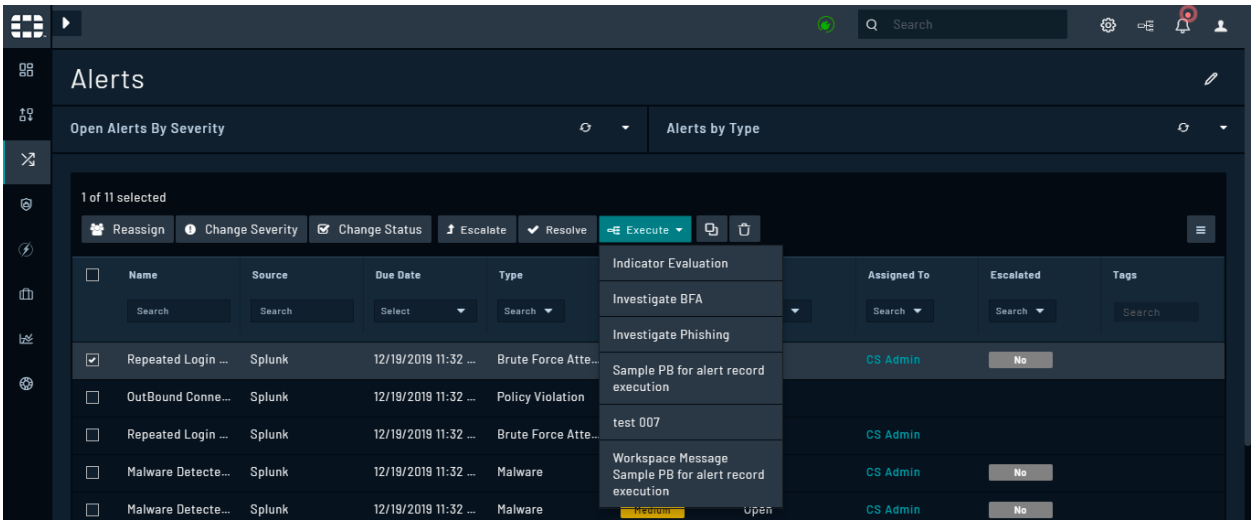


Figure 147. *Alert Lists View for a selected record*

To reassign a record to another user(s), select the record(s) and click the **Reassign** button. Clicking the **Reassign** button displays the `Assigned To` list. Select the user to whom you want to reassign the record(s) and click **Reassign**.

To delete a record, select the record and then click the **Delete** button.

Note: Deleting a record deletes the data and the relationships to the record, but not the entities to which the record is related.

To clone a record, select the record and then click the **Clone** button. Clicking the Clone button opens a `Confirm` dialog, where you can choose whether you want to clone only the record, or also the related records for that record. Once you clone a record, you can edit it as per your requirements. FortiSOAR™ names the cloned record as `Copy of <content of the Name field>`. In case the record does not have the **Name** field in its MMD, then FortiSOAR™ picks up the value of the first field that is of text format. For example, in the case of the `Indicator` module, **Value** is the first field that is of text format. So, if you clone an indicator record, the cloned record will be named as `Copy of <content of the Value field>`.

Note: You can clone only up to 100 records in a single selection. Select 100 records or less to perform the clone operation.

Executing default actions on records in bulk

If your administrator has configured bulk edit on a field in a particular module, then you can modify those records in bulk. The **Change Severity**, **Change Status**, **Reassign**, **Resolve**, and **Escalate** buttons are bulk operation buttons, which are included by default in FortiSOAR™. Your administrator can also configure the bulk edit operation on any other field, such as **Type**, in the `Alerts` module, then you can select multiple records and perform

a bulk change on that field. Administrators can refer to the *Application Editor* chapter in the "Administration Guide" for the process of configuring `Bulk Edit`.

Example of the working of Change Severity: In case of Change Severity, you can select multiple records and change their `Severity` to the same particular severity level. Select multiple records and click the **Change Severity** button, which displays a `Severity` dialog box. The `Severity` dialog box contains the severity options configured, for example, Critical, High, Medium, etc. Select the severity level that you want to set for the multiple records, for example, select **High**.

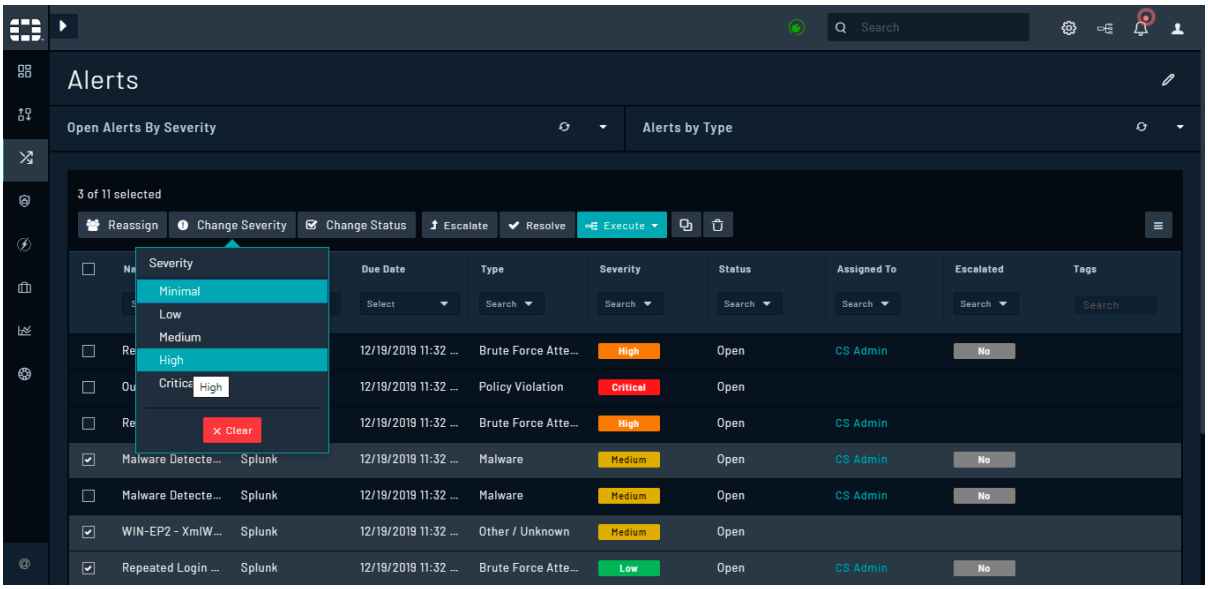


Figure 148. *Change Severity Dialog*

Once you click the severity that you want to set for the records, you will see a `Success` message, and see that the `Severity` level of the selected records has all been modified to **Critical**, as shown in the following image:

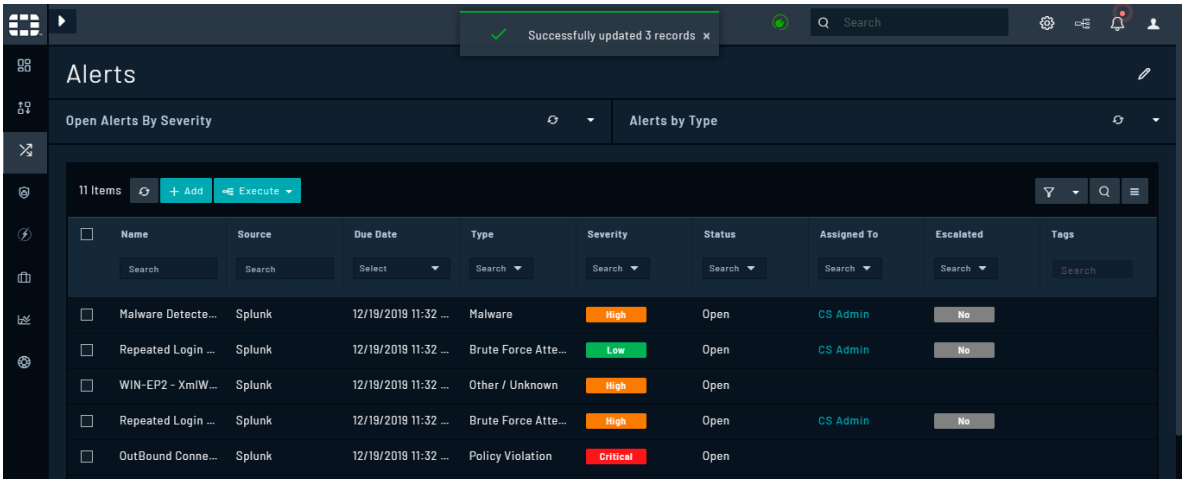


Figure 149. *Bulk modified records with Severity set to High*

You can also change the status of multiple records to the same particular status level in the same way and also perform a bulk reassign to records to a particular person. You can also close multiple records in bulk by selecting multiple records and then clicking the **Resolve** button. Once you click the **Resolve** button FortiSOAR™ displays a `Resolve` dialog in which you are required to add the reason for closing the alerts in the **Closing Reason** field and click the **Execute** button. This reason that you add for closing the alert is included in the **Closure Notes** fields, and the status of the records is changed to **Closed**.

Example of escalating an alert to an incident: When your administrator is editing the template for a module, the administrator can create buttons for commonly used actions on that module. For more information on editing templates, see the *Dashboard, Templates, and Widgets* chapter. For example, the **Escalate** button for the Escalate manual trigger on the `Alerts` module, which escalates alerts to incidents is included by default in FortiSOAR™.

You can select an alert record or records in the grid view and click the **Escalate** button to create a new incident based on the provided inputs and link the alert to the newly created incident.

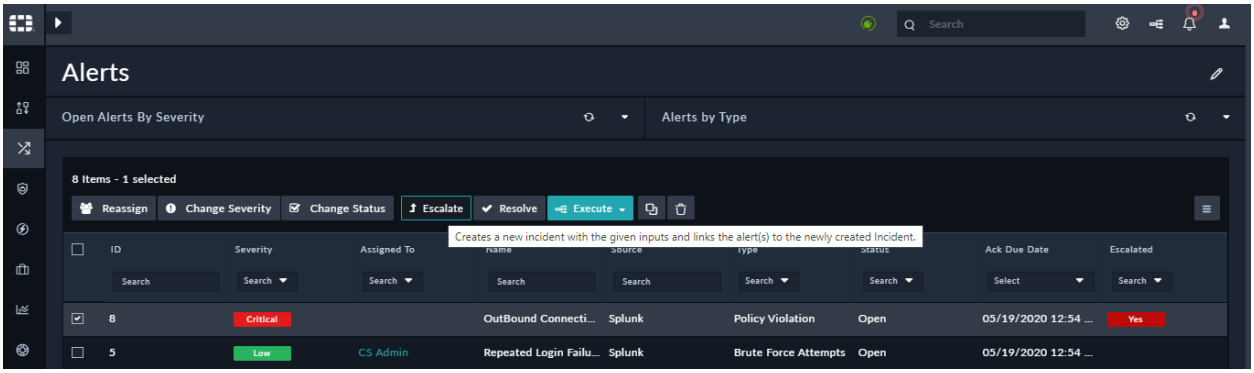


Figure 150. *Escalate button*

For example, if you want to escalate a `Critical` alert to an incident, you must select that record from the grid and then click the **Escalate** button. This triggers the Escalate playbook and based on the configuration of this playbook; you must specify the value of specific fields, such specifying the name and severity (default set to "Medium") of the incident that will be created by the playbook, the person to whom this incident will be assigned, and the reason for escalation (default set to "Alert needs to be investigated.").

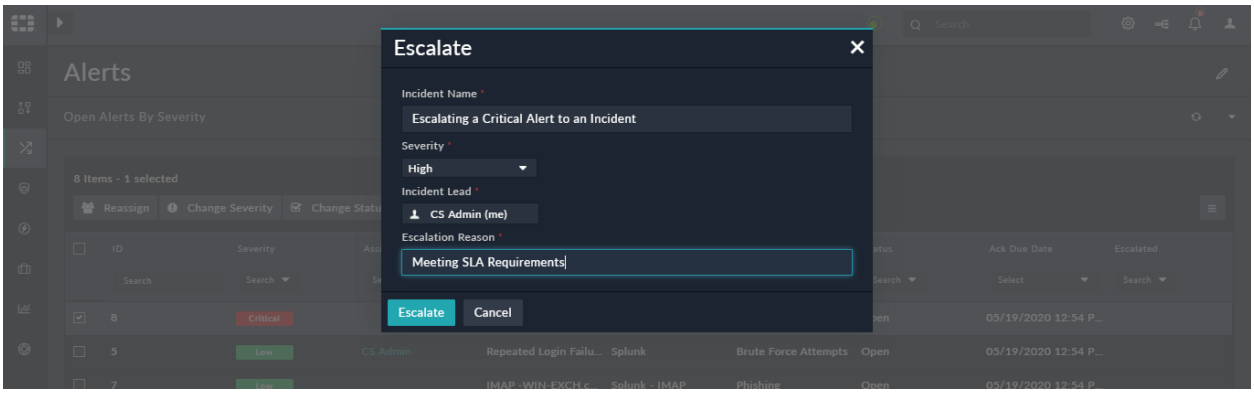


Figure 151. *Escalate dialog box*

Click **Escalate** to run the playbook and based on whether the playbook runs successfully or not, you will get an appropriate message, success in our example, as shown in the following image:

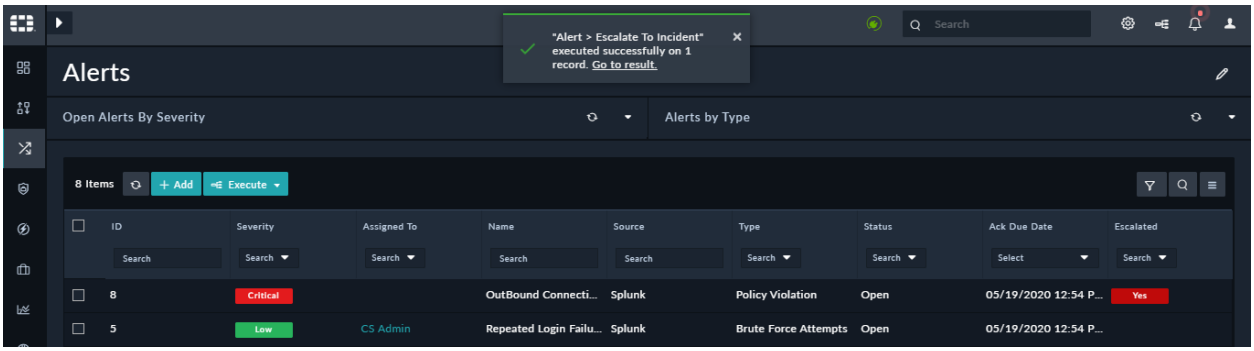


Figure 152. *Escalate playbook run successfully*

You will see **Yes** in the `Escalated` column in the row of the alert that you have escalated. You can see that an incident is created based on your inputs by either clicking the **Go to result** link as shown in the previous image or by opening the Incidents module. In our example, we named the incident as `Escalating a Critical Alert to an Incident`, and the following image displays this newly created incident:

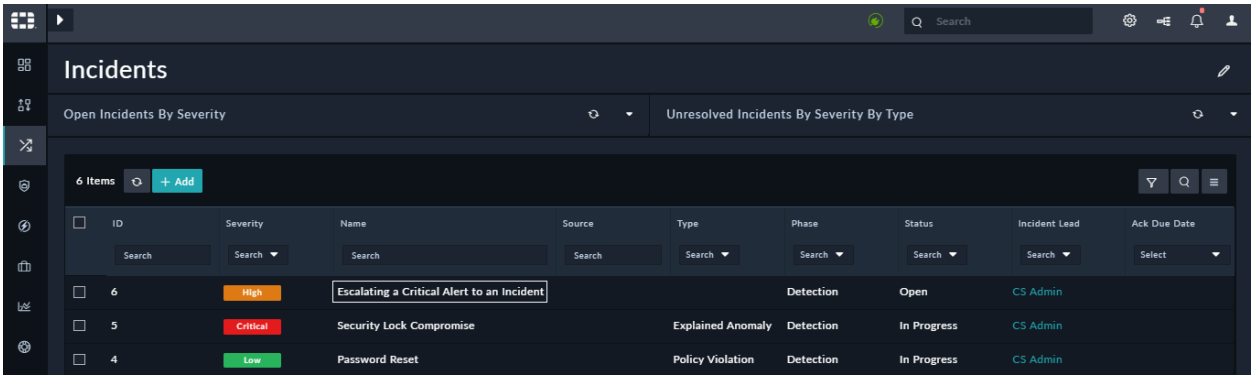


Figure 153. *Incident created by the Escalate Playbook*

Executing playbook actions on a record

If you have registered any manual triggers on the module, in this case, the `Alerts` module, and you select a record, then you can see those actions listed in the `Execute` drop-down list. If you want to run any action against the selected record, then click **Execute** and select the action that you want to execute.

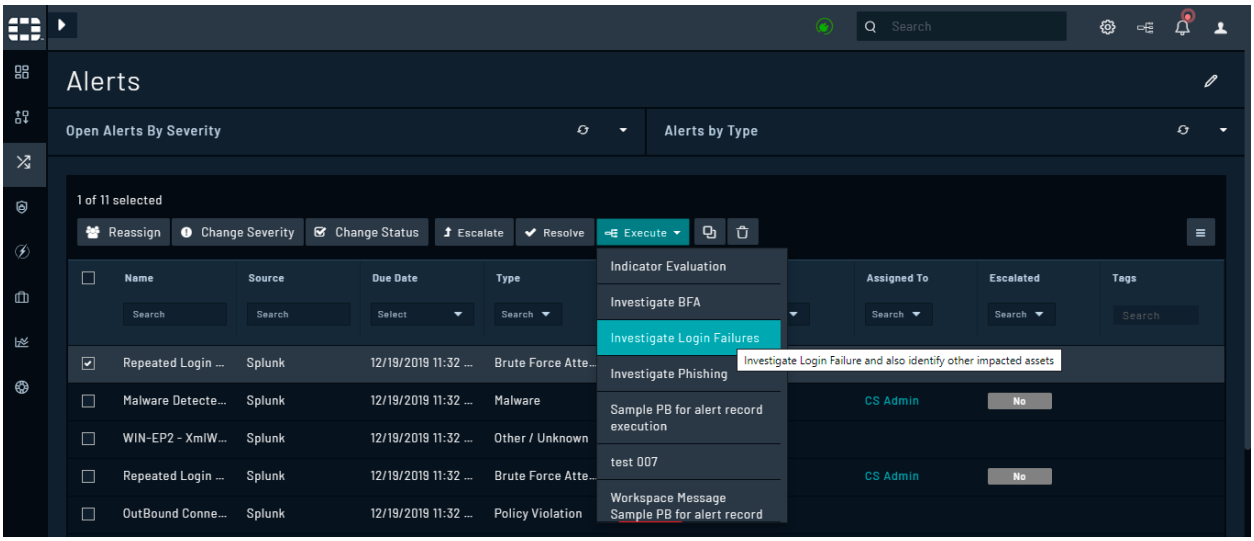


Figure 154. *Execute drop-down list*

The names that are displayed in the **Execute** drop-down list are the names that you have specified as the playbook name or the name that you have specified in the **Trigger Label Button** field in a manual trigger playbook. If you have specified both, then the name you have specified in the in the **Trigger Label Button** field will be displayed in the Execute drop-down list. For more information about playbooks and triggers, see the *Triggers & Steps* chapter.

For example, if you want to investigate a brute force attack then select the alert for which you want to run the investigation and click the **Investigate Login Failures** option from the `Execute` drop-down list. This will run the `Investigate Login Failures` playbook as shown in the following image:

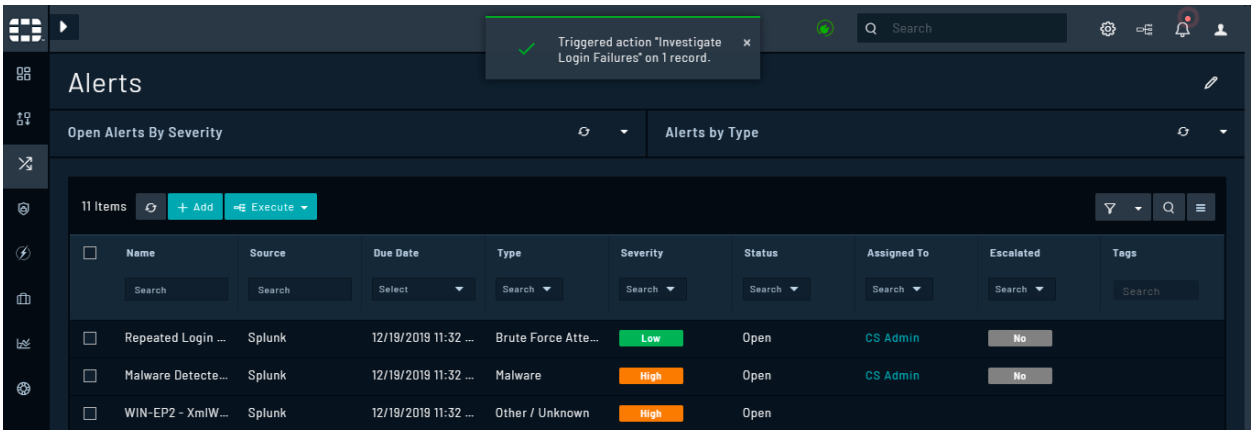


Figure 155. *Triggered playbook on the selected record*

Important: FortiSOAR™ implements RBAC for playbooks, including the ability to define the ownership, Public or Private, for playbooks. A "Private" playbook is one that can be executed only by those teams to which it is assigned. A "Public" playbook is one that can be executed by all (if they have other appropriate rights). Execute actions include actions such as **Escalate**, **Resolve**, or any actions that appear in the **Execute** drop-down list on module records are shown based on ownership. For example, if you have created a **Private** playbook with a Manual Trigger on the `Alerts` module, and if you go to the alerts module and select the record, then the **Execute** drop-down list will contain only those playbooks that belong to your team(s). Also, you can only execute playbooks, if your administrator has assigned you a role that has the Execute permission selected for the Playbooks module.

Using Grid Expansion

Administrators can also configure your template to display the overview for records, such as incident or alert records, without having to open that record in the detail view. For more information on how to configure the template, see *Dashboards, Templates, and Widgets*. If the template is configured for grid expansion, then you can click expand icon (**>**) in the record row to display the details for that record. The fields that are displayed here is dependent on what your administrator has configured in the template.

The following image illustrates how FortiSOAR™ displays the detail view of an alert whose template has been configured for grid expansion:

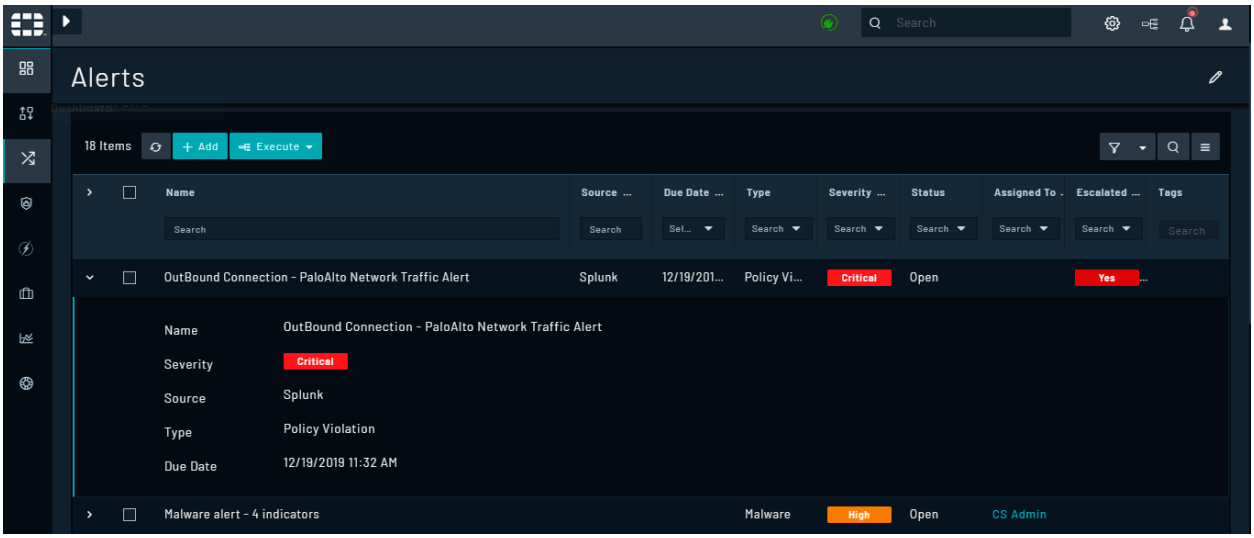


Figure 156. *Alerts Grid Expansion*

Alert Details View

When you click an alert in the list view, it opens the alert in the `Detail` view. You can view in-depth information about the alert as well as review comment activity and any records related to the alert (attachments, tasks, etc.). The details of the alert such as Severity, ID, Name, and the datetime when the alert was last modified. You can also add or view tags associated with the record in the detail view.

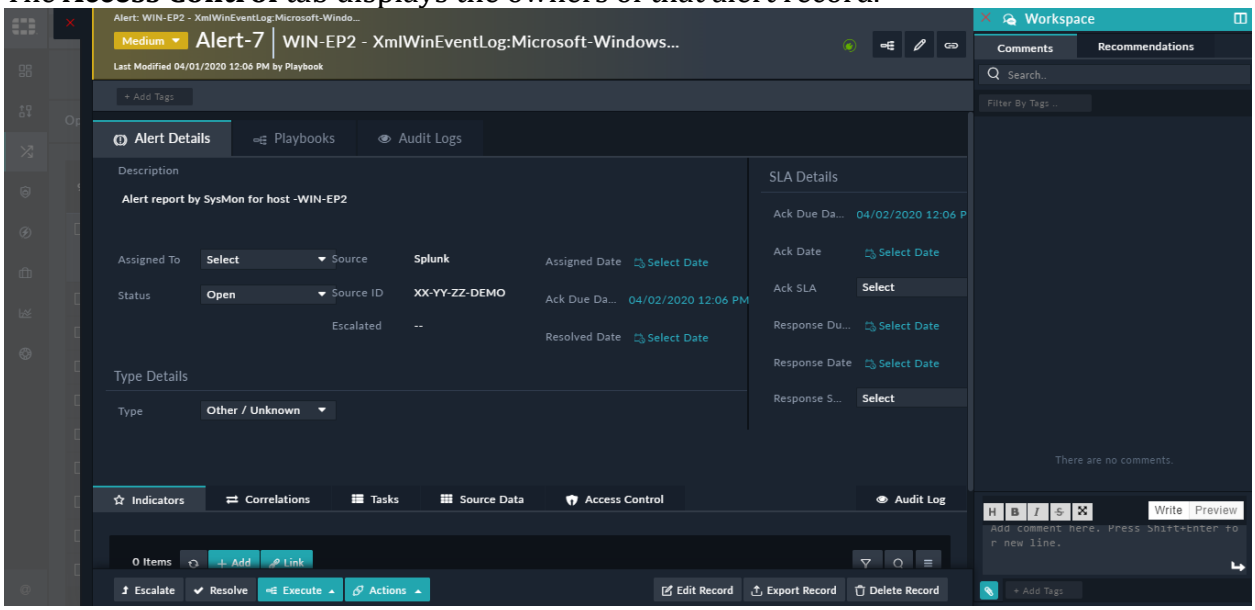
You can click the **Copy Record Link** icon ( ) that appears on the right of the detail view to copy the record link to the clipboard and share the record. The record link gets copied to the clipboard as follows: `https://{*Your_FortiSOAR_IP*} /modules/{*module_name*} /{*record_ID*}`. For example, `https://xx.xx.xx.xxx/modules/alerts/5f213267-8683-43c4-8560-b45eda413145`.

You can design the detail view using templates. For more information on templates, see the *Dashboards, Templates, and Widgets* chapter.

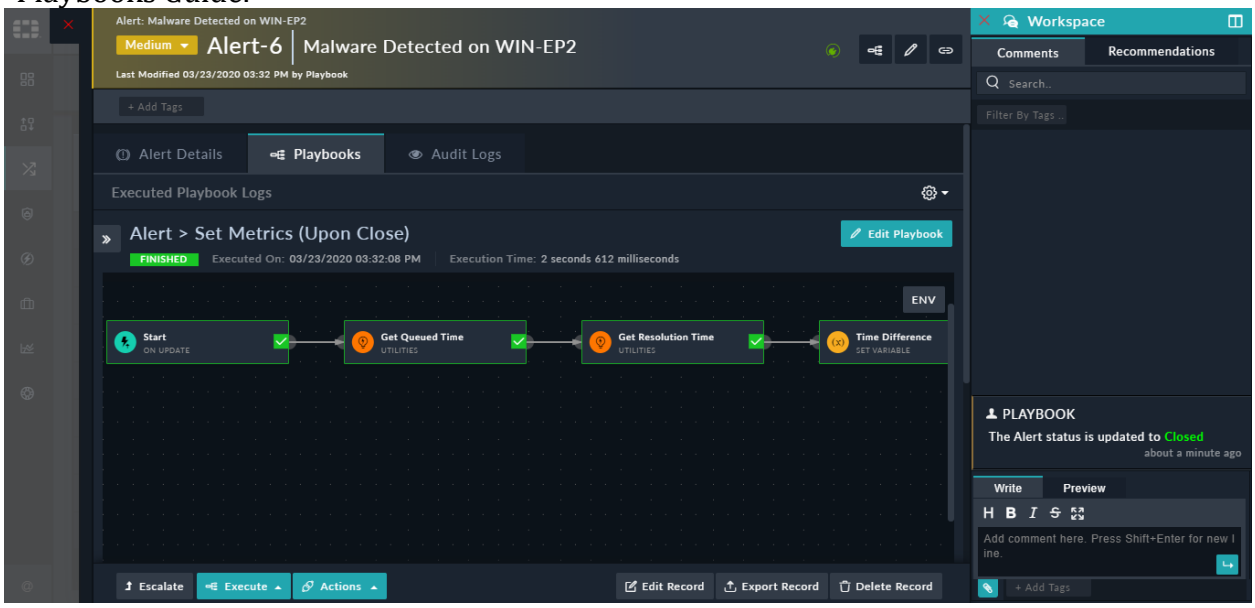
The `Details` view by default has the following tabs:

- The **Alert Details** tab displays details of the alert such as to whom the alert is assigned, the status, severity, type, source, etc of the alert. The Alerts Details tab contains the following tabs:
    - The **Indicators** tab displays the indicators such as URLs and IP addresses, which are linked to that alert record.
    - The **Correlations** tab displays subtabs that displays the entities to which the alert is actively related.
    - The **Tasks** tab displays the tasks that are linked to that alert record.
    - The **Source Data** tab displays the raw data of that alert record.

- The **Access Control** tab displays the owners of that alert record.

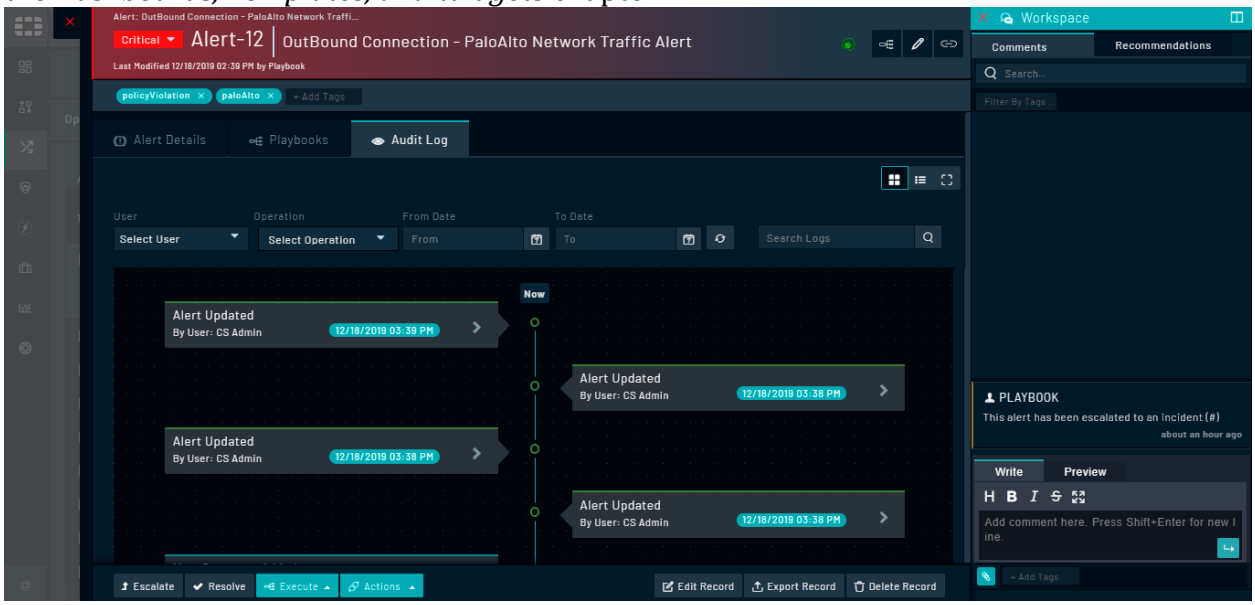


- The **Playbooks** tab displays the playbooks that have been executed on that alert in the flowchart format, as is displayed in the **Executed Playbook Logs**. This makes it easier for users to view the flow of playbooks, especially useful for viewing the parallel execution paths in playbooks. The same view can be seen when you click the **Executed Playbooks Logs** icon ( ) on the right of the Detail view.
  For more information on all the **Executed Playbook Logs** and the details of the playbooks tab, see the *Debugging and Optimizing Playbooks chapter* in the "Playbooks Guide."



- The **Audit Log** tab displays the historical timeline, in a graphical format, for the current record. Click the **Full-screen Mode** button to view the audit log in the

full-screen mode. You can expand and collapse the entries in the timeline (audit log) to view the details of the changes. For more information on `Timeline`, see the *Dashboards, Templates, and Widgets* chapter.



Editing a record in the Alert Details tab

Overview

To edit the template for any module, including `Alerts`, click the **Edit Template** button. For more information on `Templates`, see the *Dashboards, Templates, and Widgets* chapter.

You can run actions on the record, such as escalating an alert to an incident by clicking the **Escalate** button. Or, you can resolve an alert by clicking the **Resolve** button. The **Escalate** and **Resolve** buttons have been explained in the `Alerts List View` section.

Click the **Delete Record** button to delete the alert record from the `Details` page.

Note: Deleting an alert record deletes the alert data and the relationships to the record, but not the entities to which the alert is related.

You can export the detailed information of the alert in the `.csv` and `.pdf` formats, by clicking the **Export Record** button.

You can execute a playbook on the record by clicking the **Execute** button and selecting the playbook that you want to run on the record. From version 6.4.0 onwards, you can also search through the list of playbooks by typing the search keywords in **Search Playbook**.

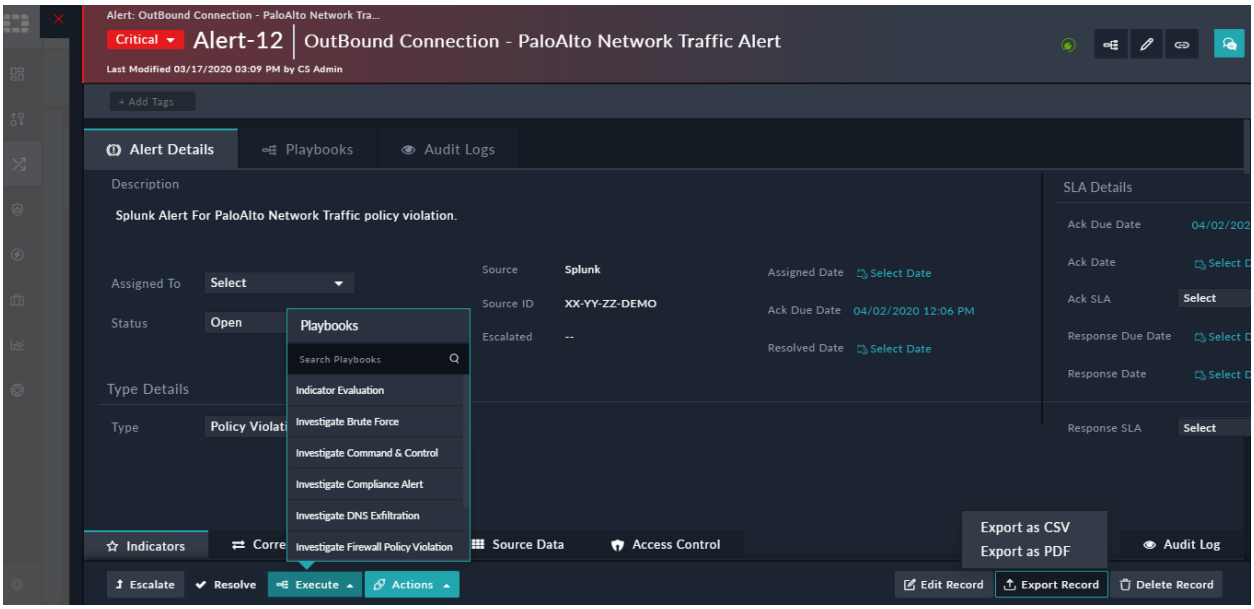


Figure 157. *Execute and export buttons in the Alerts Detail View*

Click the **Workspace** icon ( ) to view the Workspace panel, which appears on the right side of the Detail view of a record and consists of the Comments tab and the Recommendations tab. You can use the **Comments** tab of the Workspace to add comments and attachments to the record. The **Recommendations** tab of the Workspace provides you with a list of similar records.

In the **Comments** tab, you can add comments and attachments to the record. Use the "Styling" toolbar to apply some formatting, such as bold, italics, underline, and strikethrough to the content that you add as a comment. From version 6.4.3 onwards, you can edit the **Contents** field in the "Comments" module, and choose how this field should be rendered, either Rich Text (Markdown), which is the default or as Rich Text (HTML).

The following image illustrates how the Comments widget is displayed in the Detail View of a record, when the "Content" field is set as Rich Text (HTML):

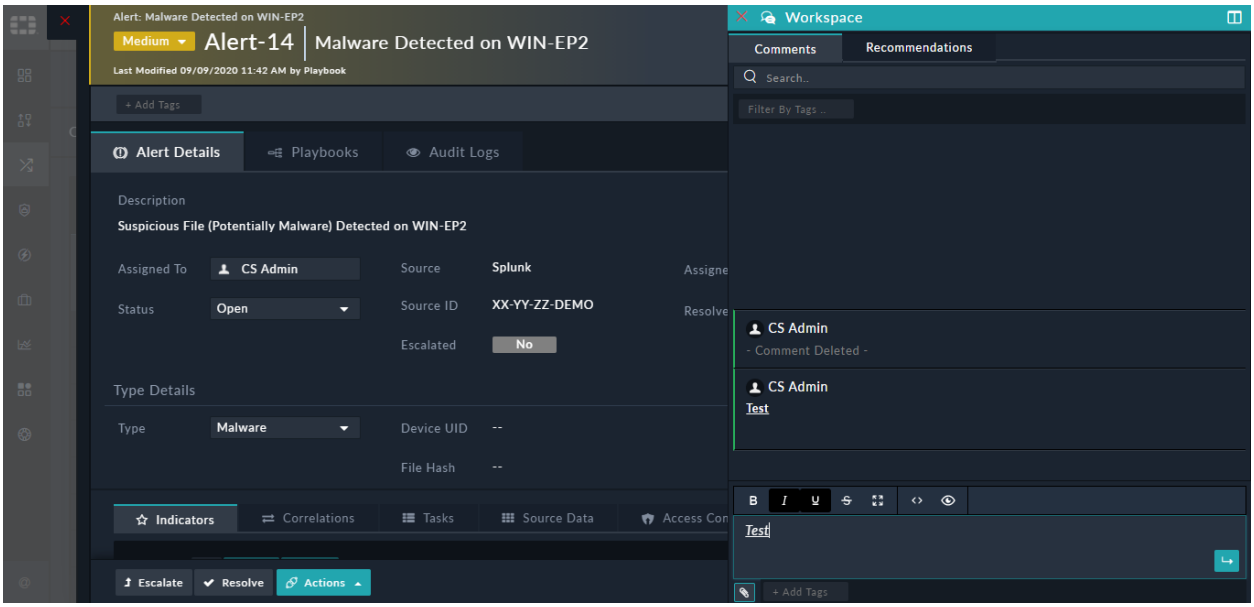


Figure 158. *Alerts Detail View - Workspace panel - Comments rendered using HTML*

The following image illustrates how the Comments widget is displayed in the Detail View of a record, when the "Content" field is retained as Rich Text (Markdown):

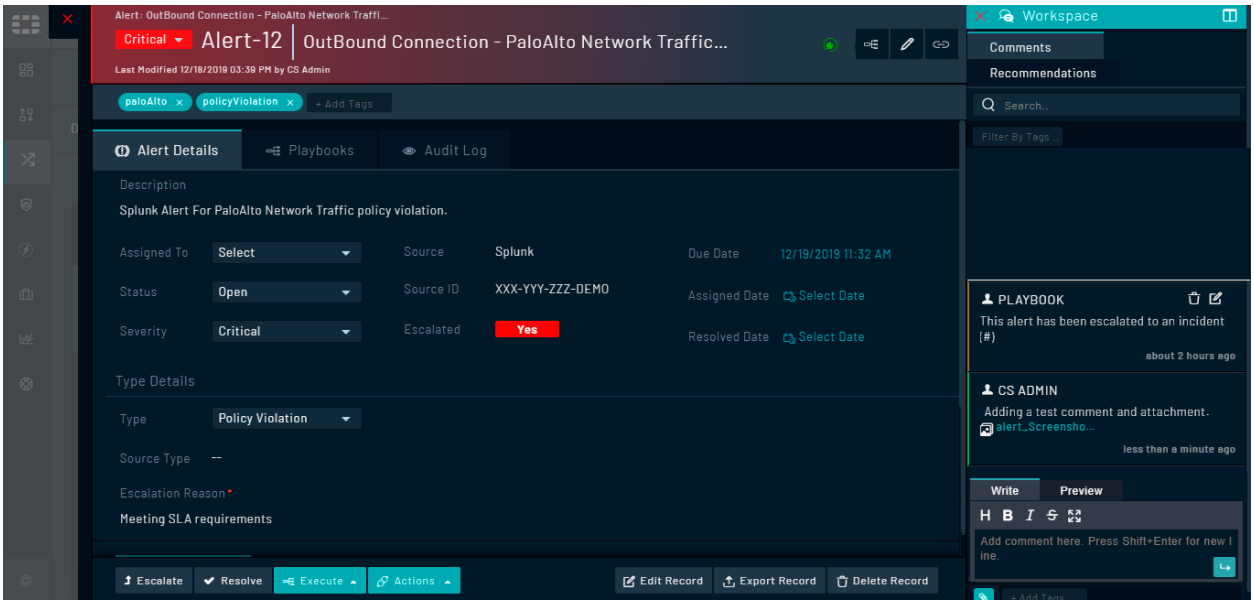


Figure 159. *Alerts Detail View - Workspace panel - Comments rendered using Markdown*

If you have large files or images to be added to comments, you can add them as attachments to the comments. Add files or images by dragging-and-dropping files or images (these are added as inline images) onto the comments panel, or by clicking the **Attachments** button. You can attach a maximum of five files to a single comment. Both Inline images and images that are attached get appropriately resized within comments. To

view the images as per its original size so that it becomes possible to read the contents of the images, click the attachment name to see the enlarged image. In case of inline images, clicking the image name downloads the original image.

You can preview the comment by clicking on the **Preview** tab and click the **Full Screen** icon to make the workspace cover the complete screen. Press `Enter` or click the `Post Comment` icon to add the comment to the collaboration panel. Press `Shift + Enter` to add a new line.

You can increase the width of the workspace panel by clicking the **Expand** icon ( ). The Comments panel displays the latest 30 comments, and if you want to view older comments, then click the **View More** link that at the top of the Comments panel.

You can edit and delete your own comments if your administrator has enabled the settings for comment modification and if you have appropriate CRUD permissions on the `Comments` module. You can edit or delete your comments within the time duration that your administrator has set, by default this is set to "5 minutes". This means that you can edit and delete your comments within 5 minutes of adding the comment.

If you want to edit a comment, click the **Edit** icon within the comment, make the necessary modifications to the comment and press Enter. The Collaboration Panel would now display the modified comment with the `Modified <time when the comment was modified>`, for example, `Modified less than a minute ago`, content appearing under the modified comment, as shown in the following image:

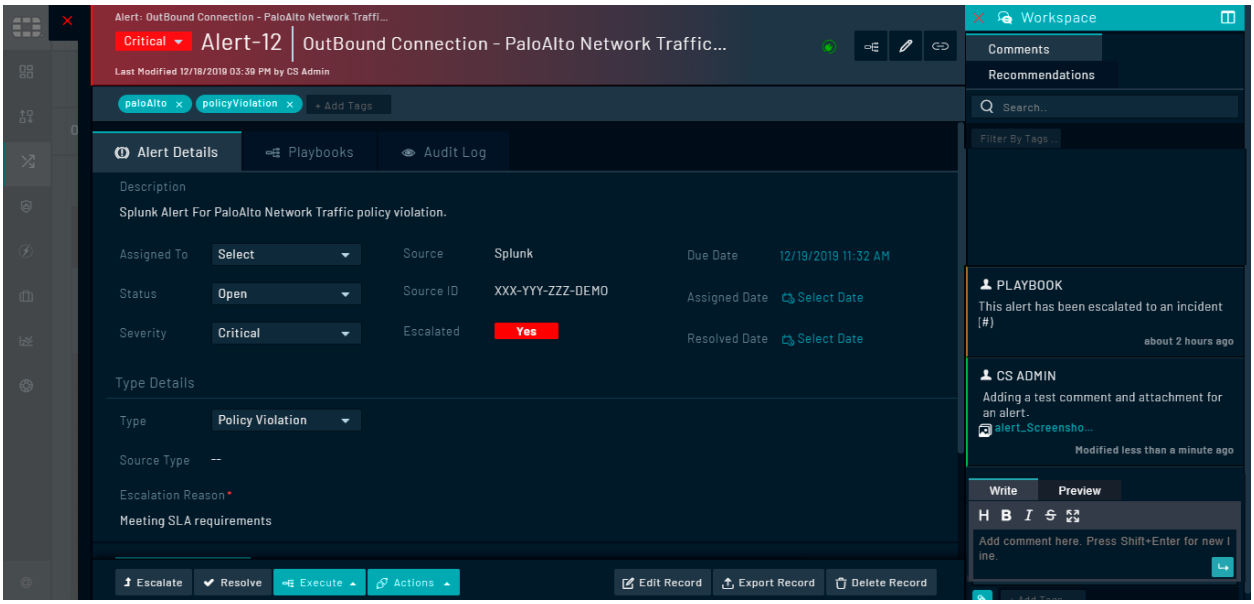


Figure 160. *Collaboration Panel with modified comments*

If you want to delete a comment, click the **Delete** icon within the comment and in the confirmation dialog click **Confirm**. Then Collaboration Panel would display the comment as `- Comment Deleted -` under the username, as shown in the following image:

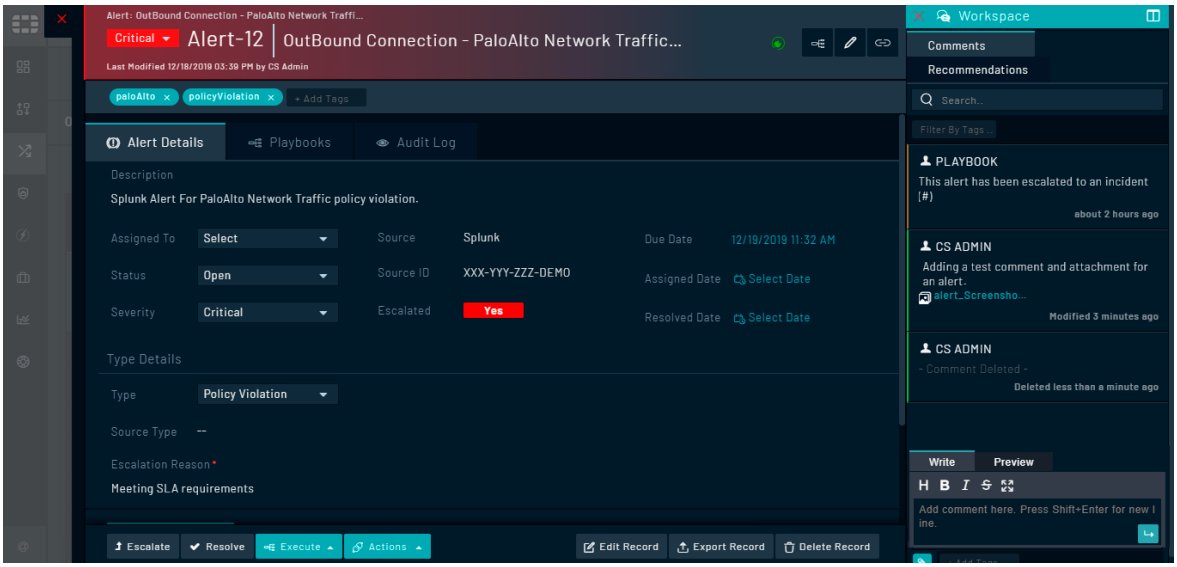


Figure 161. *Collaboration Panel with comments deleted*

You will observe the same behavior in case the **Comments** widget has been added in the detail view of the record.

Related records permissions are defined by the parent record, and therefore comments are associated with the record instead of the module. Therefore, anybody who can see the record as per ownership or team hierarchy can see all the comments added to that record irrespective of who added the comments to that particular record.

From version 6.4.0 onwards, the table view has been enhanced to allow for editing a table in the Collaboration Panel by clicking the **Edit** icon and also for viewing the table in the full screen by clicking the **Full-Screen** icon as shown in the following image:

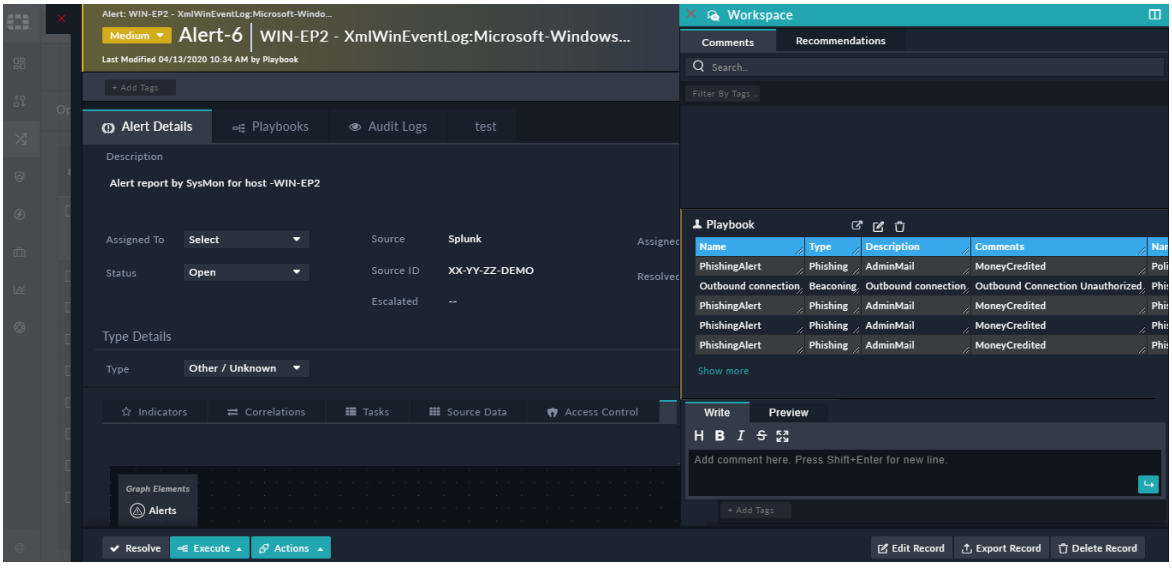


Figure 162. *Collaboration Panel containing the enhanced table view*

Clicking the **Full-Screen** icon opens the table in the full screen as shown in the following image:

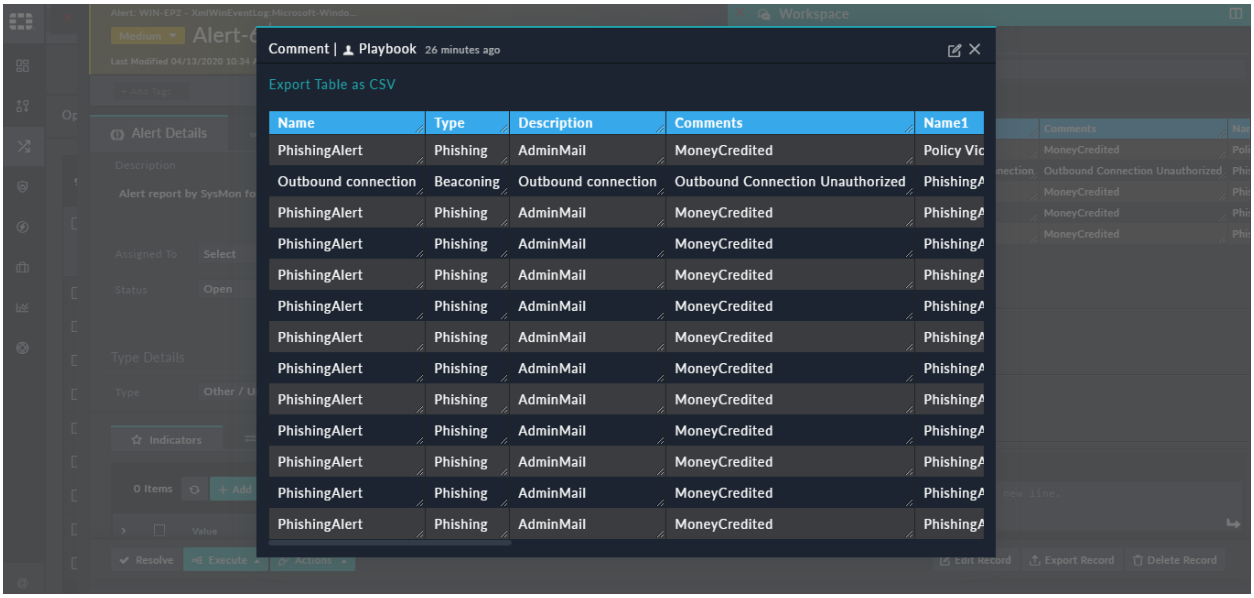


Figure 163. *Full-Screen table view from Collaboration Panel*

This enhancement makes it easier for you to view and edit large tables in the Collaboration Panel, especially those that have been converted from JSON to HTML using the "Util: Convert JSON into an HTML Table" action of the "Utilities" connector and added into the alert using a playbook as shown in the above image. In the full-screen mode also you can edit the table and you can export the table in the `.csv` format by clicking the **Export Table as CSV** link. Also, if there are more than "5" rows in the table then a **Show More** link will be displayed, clicking which you can view all the rows of the table.

From version 6.4.0 onwards, you can view fields related to SLA management in you alert or incident records. You will see fields such as Ack Due Date, Ack Date, Ack SLA, Response Due Date, etc. using which you can track whether or not the SLAs have been met. For more information, see the *SLA Management* chapter in the "Administration Guide."

Editing Records

Editing the complete record

To edit the complete record, click the **Edit Record** button, which opens the `Edit Alert` dialog that contains the details of the alert in a form. You can edit multiple fields at one time for the record and then click **Save** to save the changes to the record.

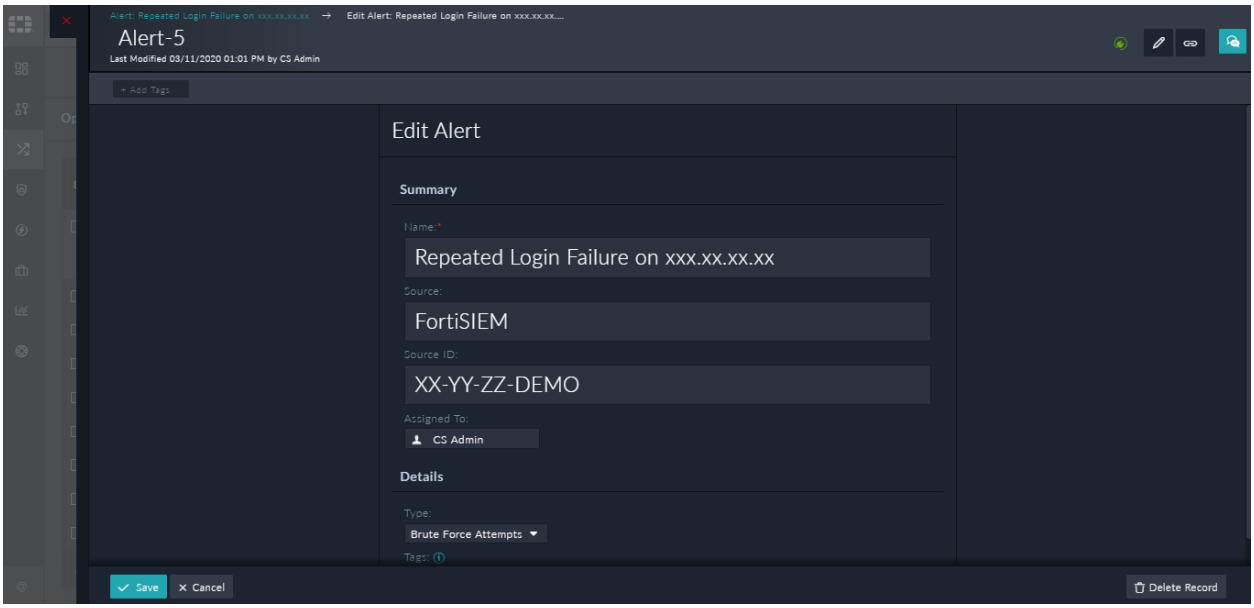


Figure 164. *Editing a complete alert record*

Editing Fields

To edit any fields in the record, go to that field, and if that field is an editable field then you can click and change the value of that field either by typing content in the text field or by selecting a value from a drop-down list.

The alerts detail view contains a **Description** field that provides the description of the alert and it is generally a "Rich Text" field. Rich Text fields allow you to apply formatting to the content entered in this field. Rich Text fields can either have a "Markdown" editor or an "HTML WYSIWYG" editor, based on the sub-type that is set for this text field. The default editor is set as "Markdown" for all modules, which can be changed to the "HTML" editor using 'Module Editor'.

You can add styles such as headings, bold, italics, add lists, tables, and insert links, images, attachments etc. using the "Styling" toolbar provided in the rich text field in both the Markdown and HTML editors. Note that video is not supported in the "Markdown" editor.

In case of the Markdown editor, you can write in markdown in the "Write" mode and click **Preview** to view how your content will be displayed. The following image displays content in the "Write" mode:

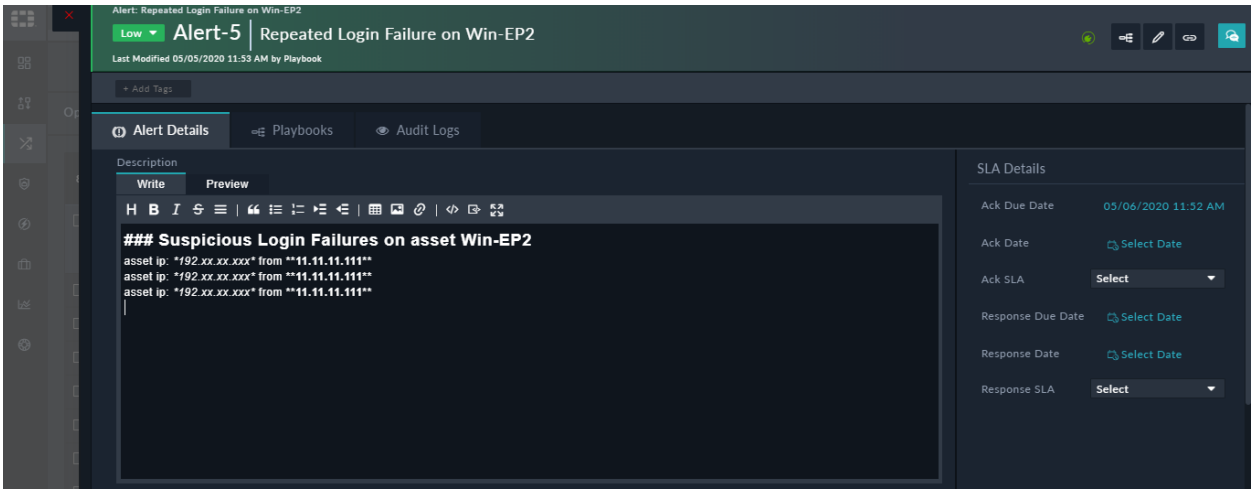


Figure 165. *Rich Text field - Write mode*

The following image displays content in the "Preview" mode:

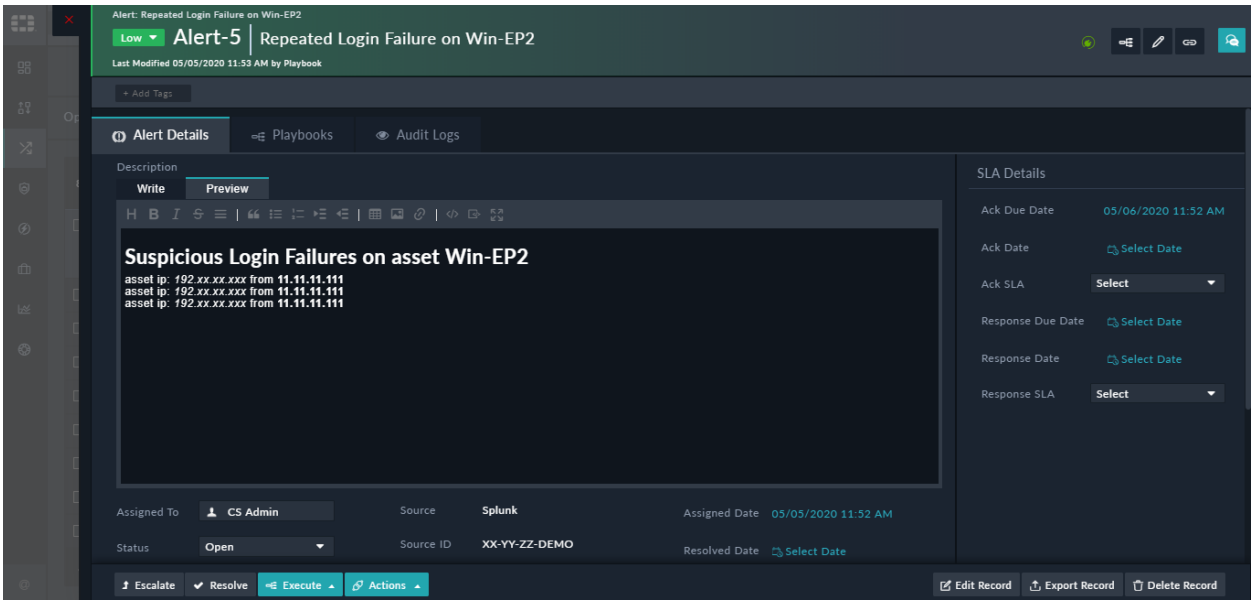


Figure 166. *Rich Text field - Preview mode*

You can also add an inline css or add inline styles such as `"style="color:blue;""` to your content in the Rich Text field.

Important: Some tags such as script, textarea, form, select, meta, style, link, title, embed, object, details, and summary and some attributes such as onLoad are not supported in the Rich Text field and the Richtext Content widget. If you want to use these tags or attributes, contact FortiSOAR™ support.

The following image displays editing of content of a rich text field using the HTML editor:

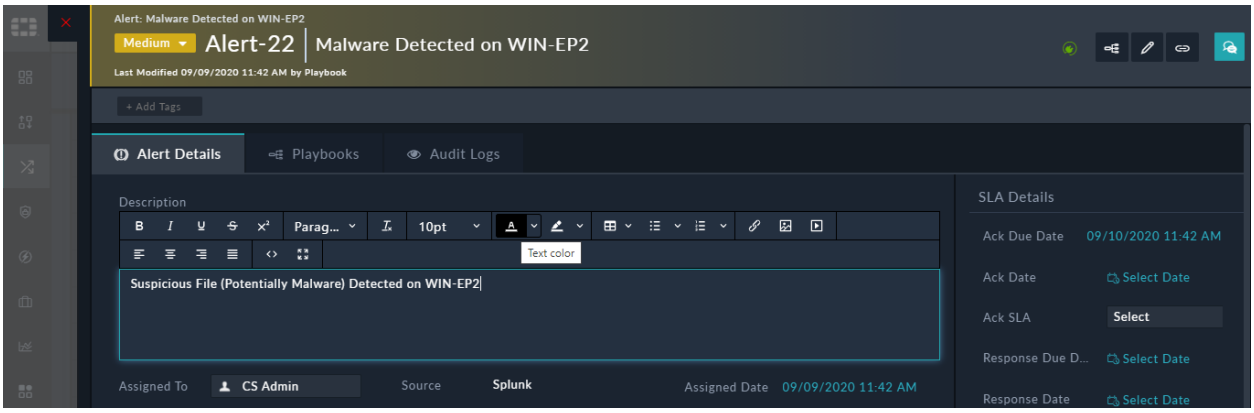


Figure 167. *Rich Text field HTML Editor*

If the editor of the "Rich Text" field is changed from Markdown to HTML or vice-versa, note the following:

- If the content was in the HTML format and you change the format to Markdown, then the Markdown editor will display the HTML code in ''Write'' mode and the "Preview" will work fine.
- If the content was in Markdown format and you change the format to HTML, then the HTML editor will show the Markdown code in the source code mode; however, the content will not get rendered. You must convert the markdown code to HTML code for the content to correctly render the content.

Editing picklists or lookups

To change a value of a picklist or a lookup, select the required value from their respective drop-down list as shown in the following image:

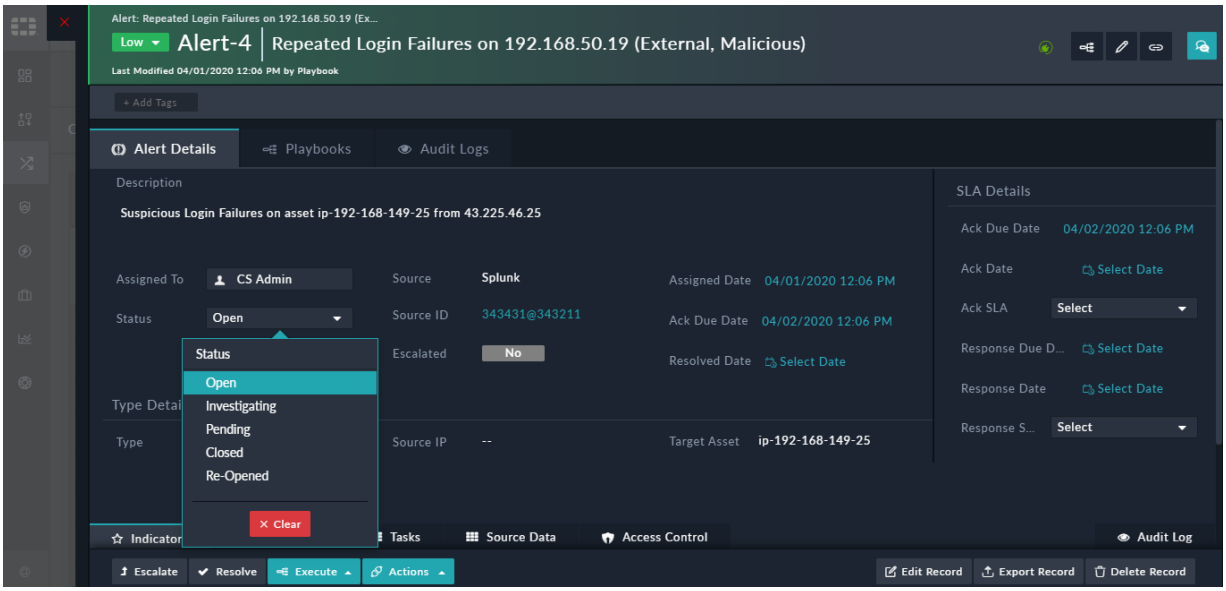


Figure 168. *Editing an Alert*

Note: By default, `lookup` fields in FortiSOAR™ display only the first 30 items. To search for more than 30 items, use the `Search` text box. For example, the `Status` list in the above image will display only the first 30 users.

The `lookup` fields for the `People` module, such as **Assigned To** or **Incident Lead**, also contains a **View** button. Clicking the **View** button opens the `User Profile` page for that user.

FortiSOAR™ also supports a special type of picklist, called "Multiselect Picklist". You can use the multiselect picklist for fields that can contain more than one value. For example, you can have an alert be assigned more than one "Type", i.e., an alert can be of type Brute Force Alert and Malware. If your administrator has assigned "Multiselect Picklist" field type to any picklist, then you can assign more than one value to that field as shown in the following image:

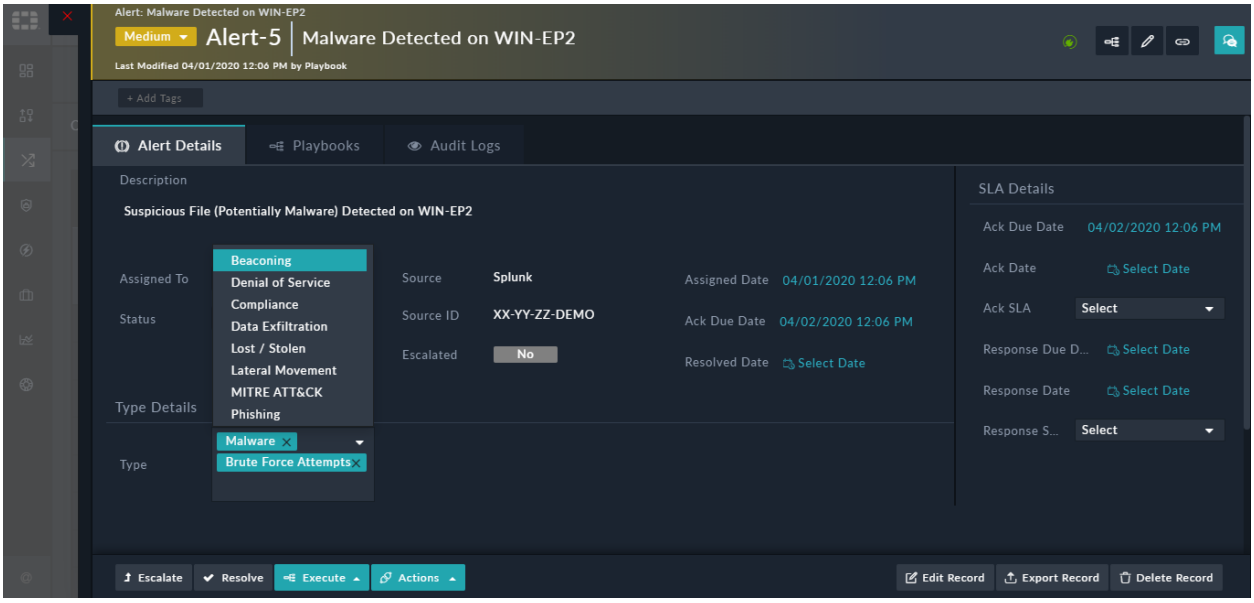


Figure 169. *Selecting multiple values for the "Type" field*

Working with Related Records

Clicking the **Correlations** tab displays subtabs that contain the entities, such as incidents or emails or events, to which the alert is actively related.

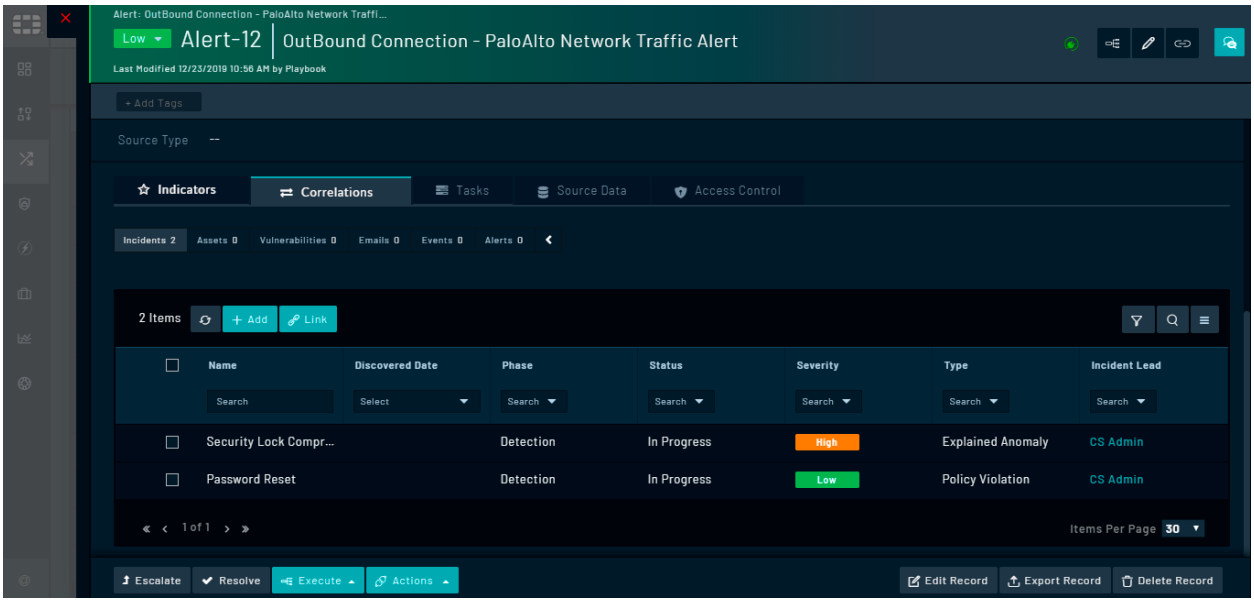


Figure 170. *Alert Detail View - Correlations tab*

Clicking the **<** icon collapses the subtabs and displays entities to which the alert has an active relationship and clicking **>** icon expands the subtabs displaying all the entities.

If you want to add relationships to any other entity, click that entity and then click the **Link {Entity}** button. For example, to link an incident to an alert click **Incidents** and then click the **Link Incidents** button. This displays the `Change Relationship` dialog which displays the list of Incidents. Click the incident that you want to link to the alert and then click **Save Relationship** to add the incident as a related record to the alert.

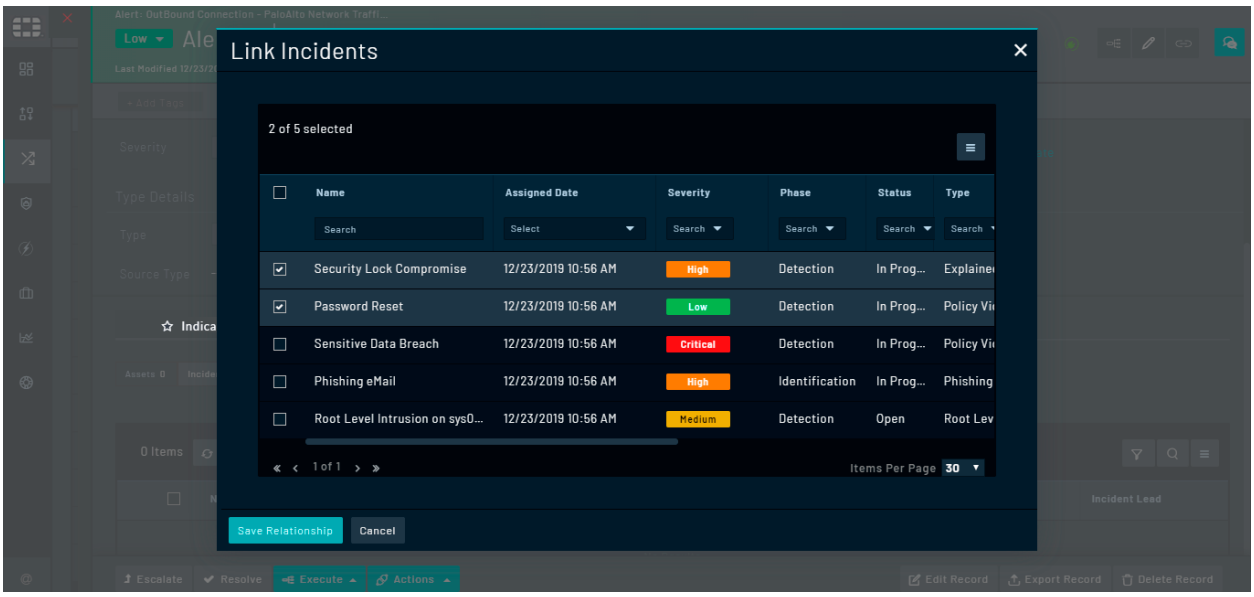


Figure 171. *Adding or removing relationships*

You can perform update field operations on the related item, such as change status, change severity and change lead, by clicking the respective buttons. The operation of these fields is similar to Executing default actions on records in bulk. To remove a relationship, select the related item and click **Remove Link**.

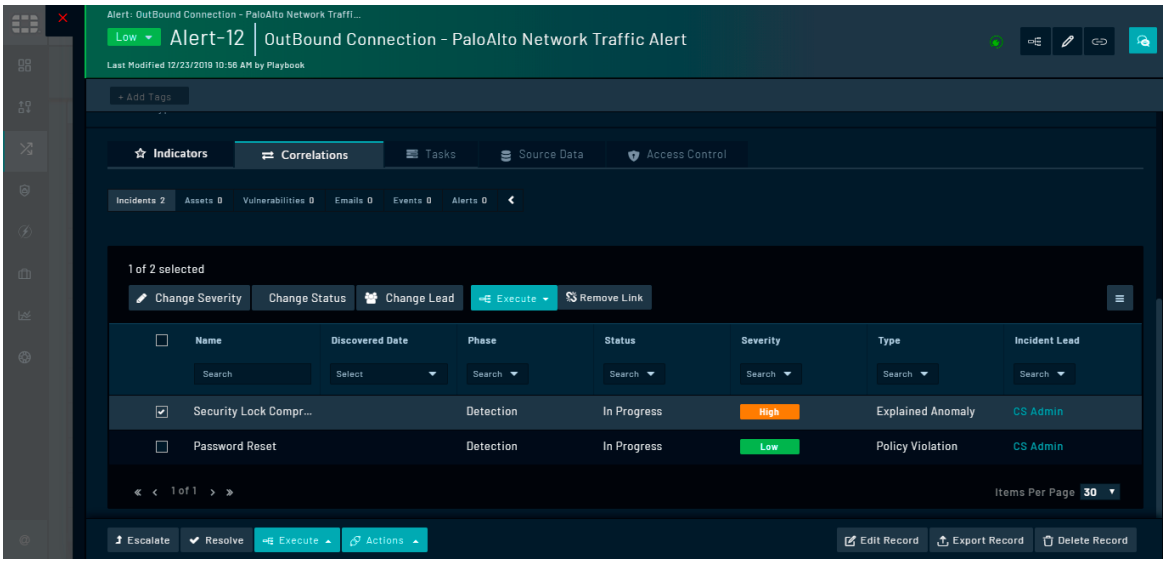


Figure 172. *Alert Detail View - Update Operations*

Related records permissions are defined by the parent record. For example, if there is an alert record that contains a related incident record to which you do not have permissions, you will be able to view that incident record (read-only permissions) in the **Related Records** tab.

You can also view the relationships of a particular record in a graphical format, by adding the Visual Correlation widget to the detail view of the records. For more information, see the Dashboards, Templates, and Widgets chapter.

Viewing Breadcrumbs

FortiSOAR™ displays breadcrumbs in the top bar of a record so that you can view your navigational trail and immediately know your location within FortiSOAR™. Using the breadcrumbs, you can navigate easily through several related records and come back to your original record.

For example, click a record in a module, for example, `Alerts`, then click the **Related Records** tab, click the **Incidents** subtab, select the related incident. You will see the breadcrumbs in the top bar of the record, as shown in the following image:

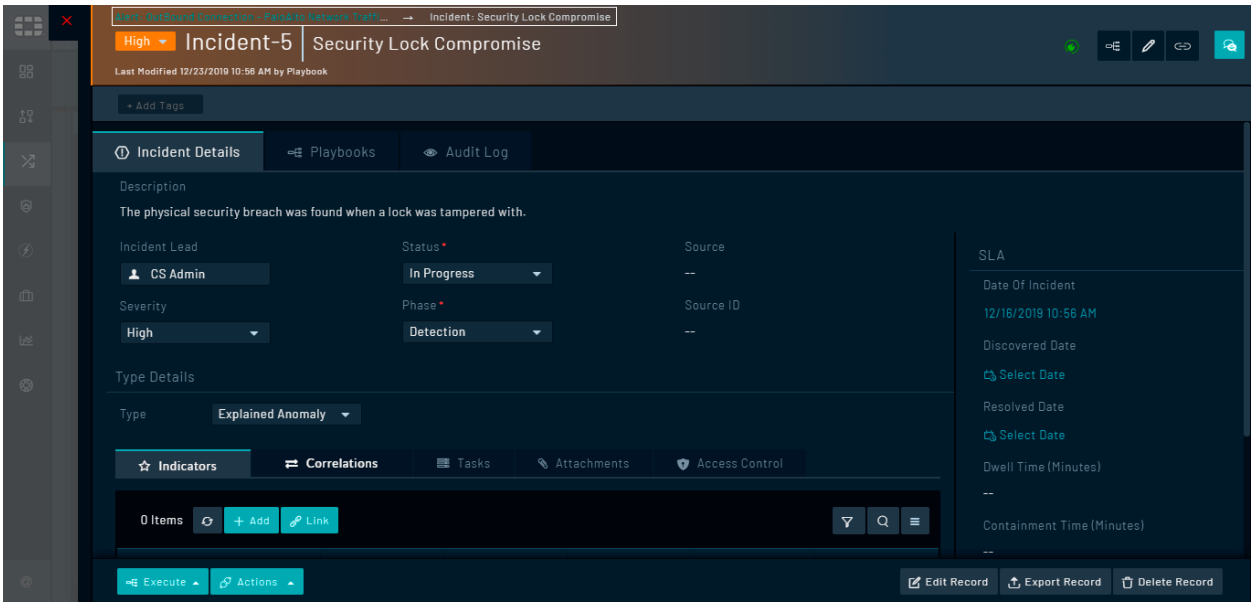


Figure 173. *Alert Detail View - Breadcrumbs*

Using Grid Expansion in Relationships

If your administrator has configured your template to display the overview of related records in the detail view of the record itself without having to open the related record in a new window. For example, you can view the details of an incident related to an alert in the alert detail view itself, without having to open the incident record in a new window. For more information on how to configure the template, see the *Dashboards, Templates, and Widgets* chapter. If the template is configured for grid expansion, then you can click expand icon (**>**) in the related record row to display the details for that record. The fields that are displayed here is dependent on what your administrator has configured in the template.

The following image illustrates how FortiSOAR™ displays the detail view of an alert and its **Related Records** tab, with the **Incidents** tab selected. The Incidents records have been configured for grid expansion:

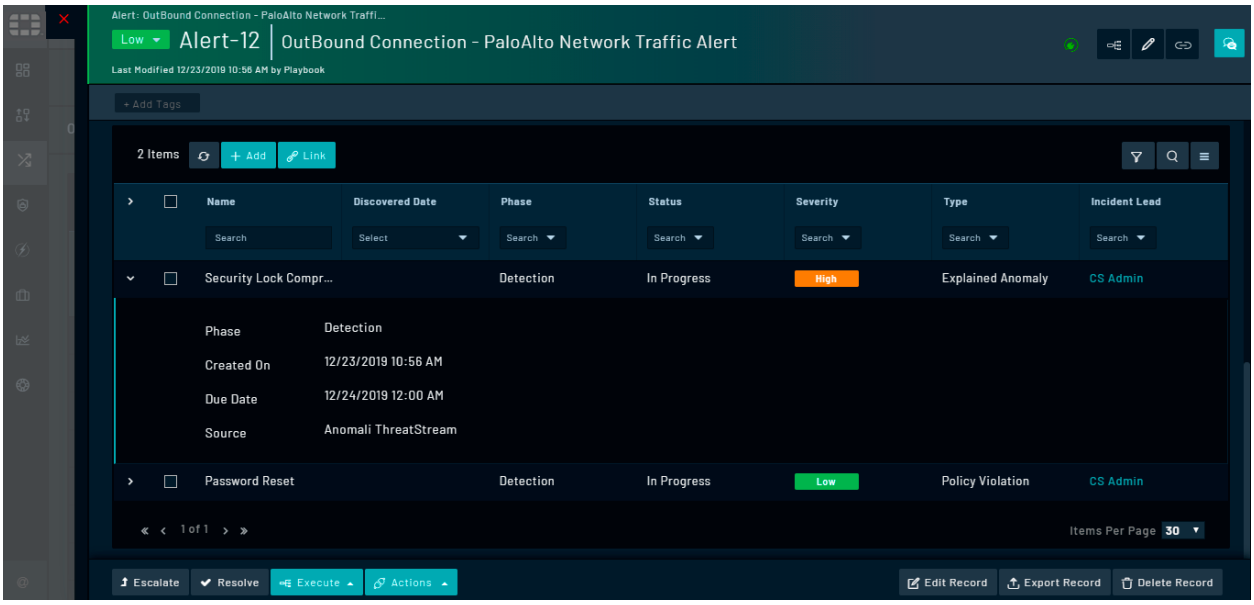
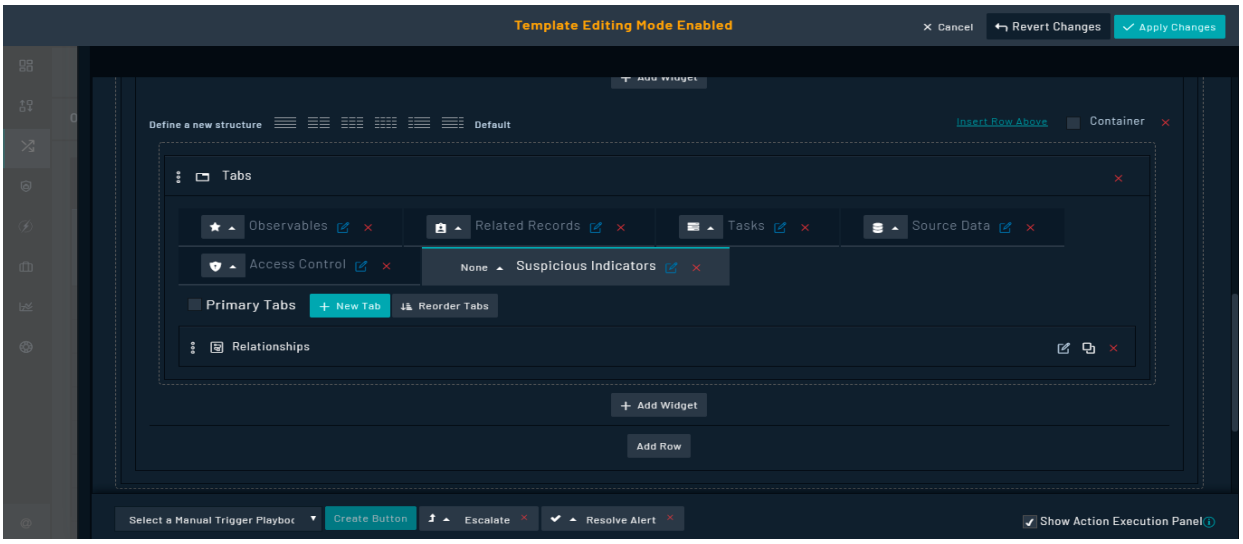


Figure 174. *Relationships Widget Output in Relationships tab*

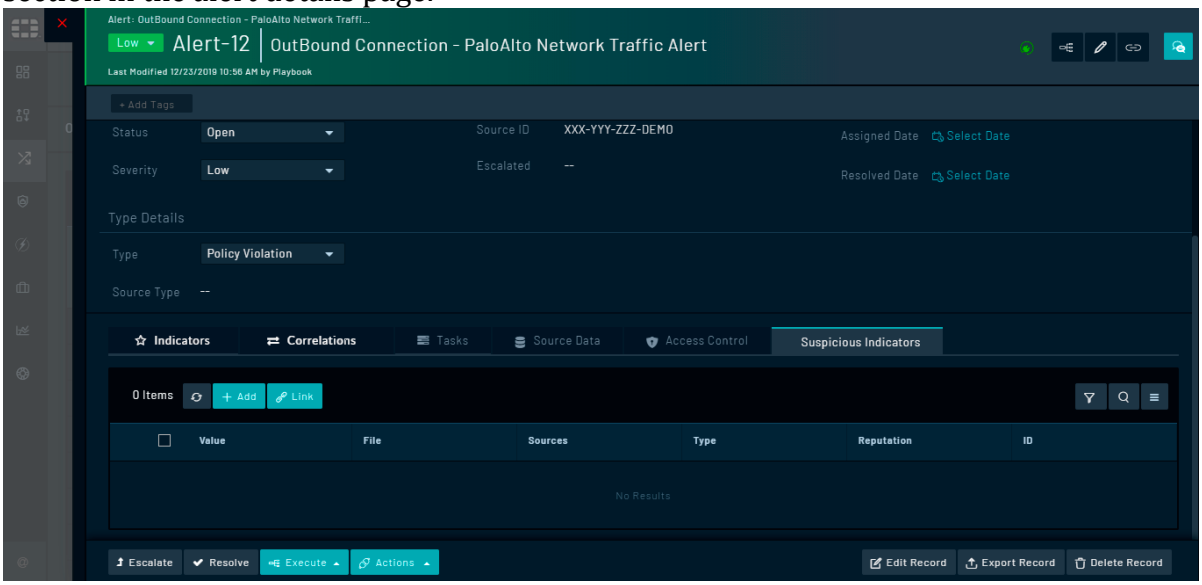
Applying different default filters for each relationship grid

You can apply different default filters for each relationship grid widget. For example, if in the alert details, you want one relationship grid to display only “Suspicious” Indicators and another to display only “Malicious” Indicators, this can be achieved as follows:

1. In the alerts detail view, add a relationship grid for Indicators, named “Suspicious Indicators” as follows:
    a. Open an alert in the detail view and click **Edit Template**.
    b. In the Template Editing Mode, go towards the end of the template, where various tabs for related records are present, and click **New Tab**, and enter the title as `Suspicious Indicators` and click the **green** checkbox.
    Then, click **Add Widget** in the Suspicious Indicators tab and optionally add an icon for this tab. rom the `Choose Widget` dialog, select **Relationships**.
    Click **Edit** in the Relationships grid, and in the `Relationships` dialog, click **Remove All** and then from the **Select a module** drop-down list, select **Indicators**, click **Add To View** and click **Save**.



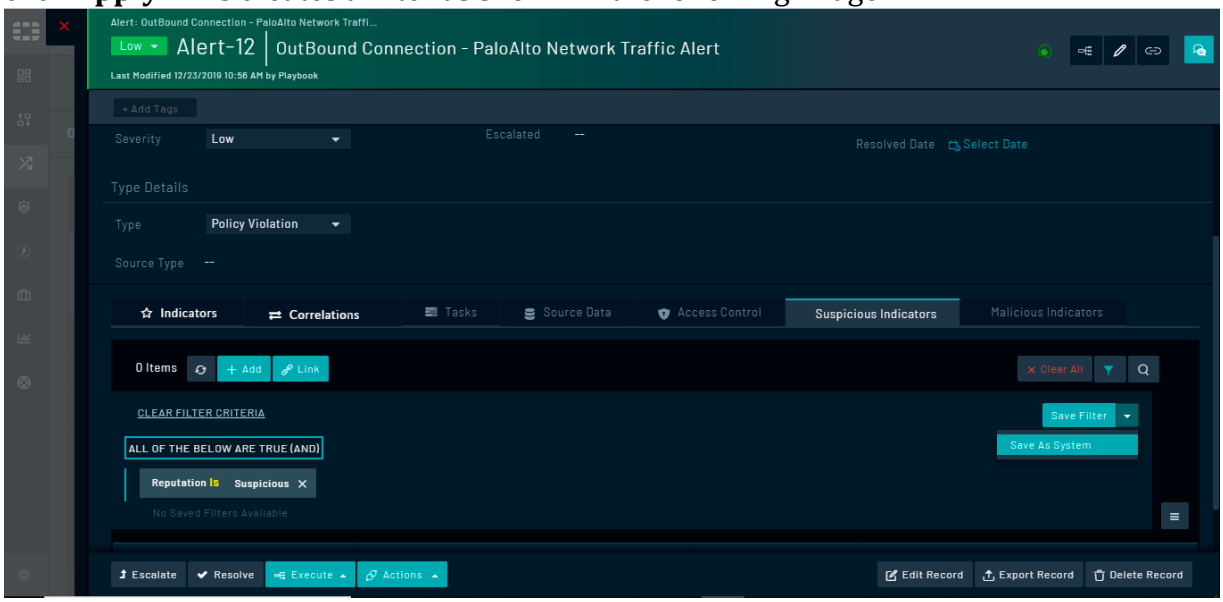
This creates a tab called **Suspicious Indicators** in the `Related Records` section in the alert details page.



Similarly, perform the above steps for creating the **Malicious Indicators** tab.

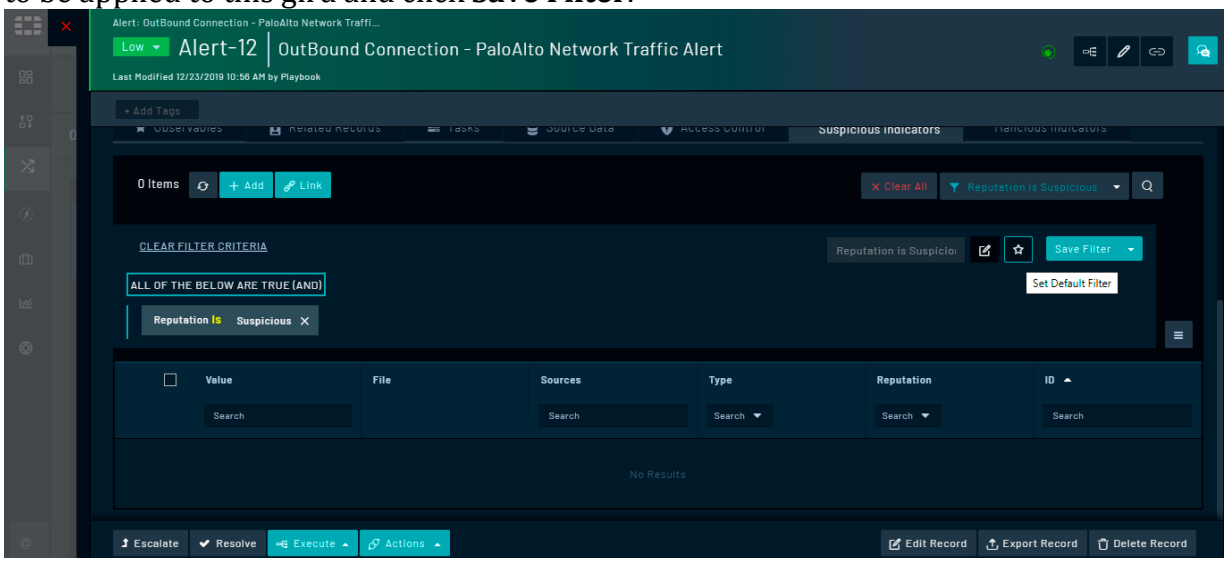
2. In the Suspicious Indicators tab, create a filter for “Reputation = Suspicious” as follows:

a. Click **Filters** and from the **Reputation** drop-down list select **Suspicious** and click **Apply**. This creates a filter as shown in the following image:

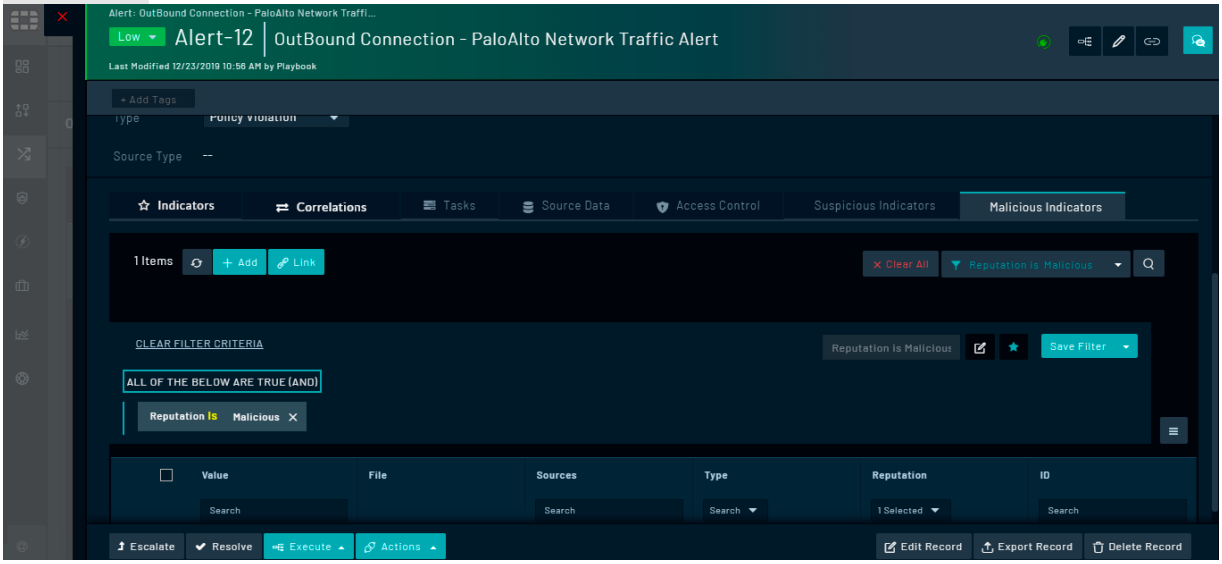


b. Click the **Save Filter** drop-down list as select the **Save as System** option (if you want this filter to be applicable to all users) which opens the `Save As System Filter` dialog, in which enter the name of the filter such as, `Reputation is Suspicious`, and click **Save**.

c. Click the **Set Default Filter** (star) icon to save this filter as the default filter to be applied to this gird and click **Save Filter**.



d. Perform steps similar to the above steps for creating the `Reputation is Malicious` filter.



Once you have added these default filters, you will observe that the relationship grid in the Suspicious Indicators tab will contain only those indicators whose reputation is suspicious.

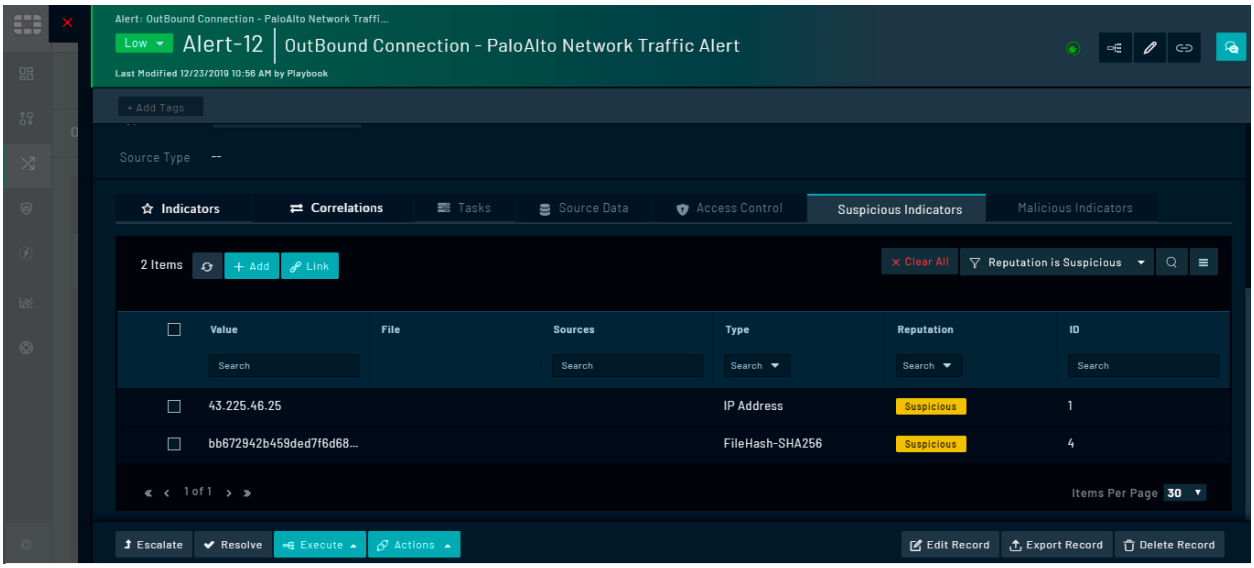


Figure 175. *Viewing indications in the Suspicious Tab*

Similarly, you will observe that the relationship grid in the Malicious Indicators tab will contain only those indicators whose reputation is malicious.

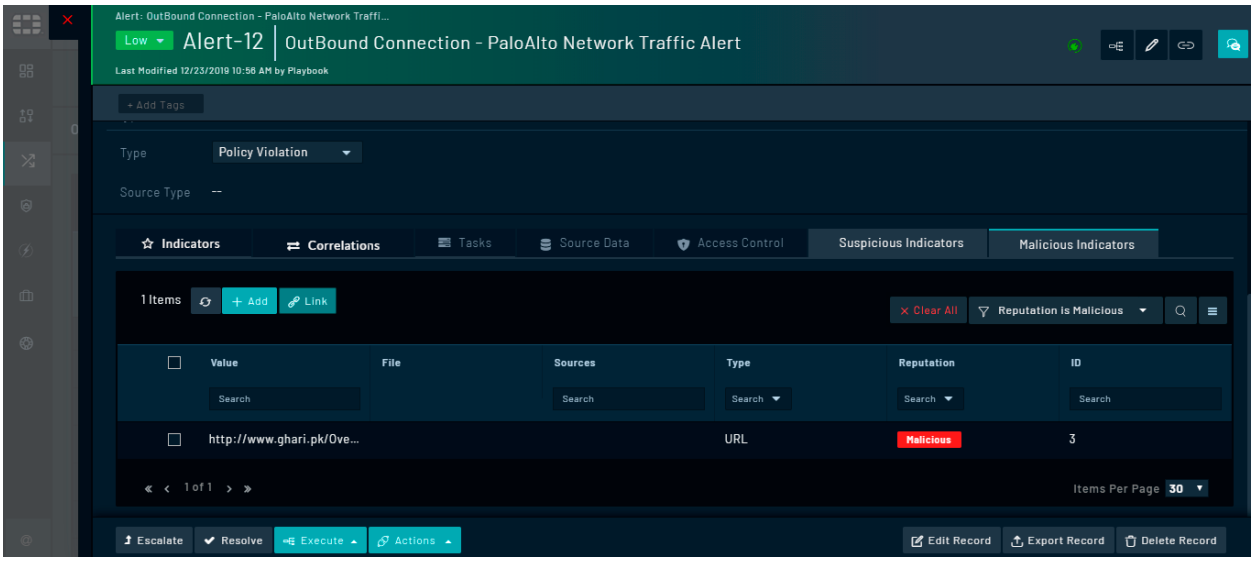


Figure 176. *Viewing indications in the Malicious Tab*

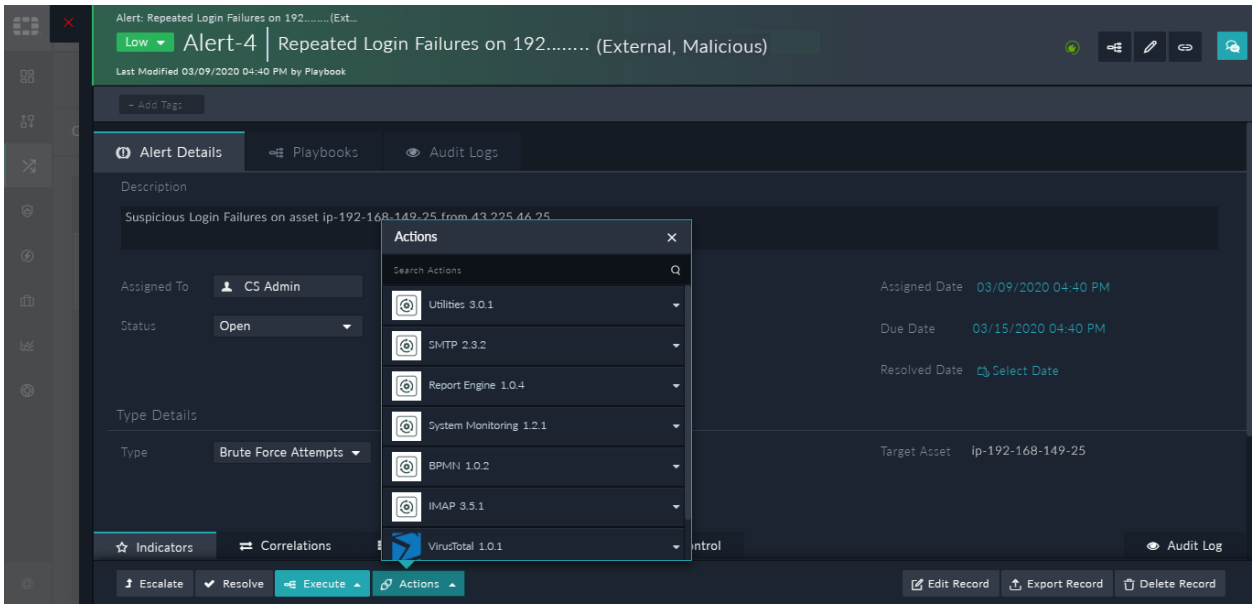
Invoking connector actions directly on a record

You can run connector actions directly in the detail view of a record and investigate the alert without the need of writing a playbook.

Important: To run connector actions on the record, you must be assigned a role that contains **Read** and **Execute** permissions on the "Connectors" module.

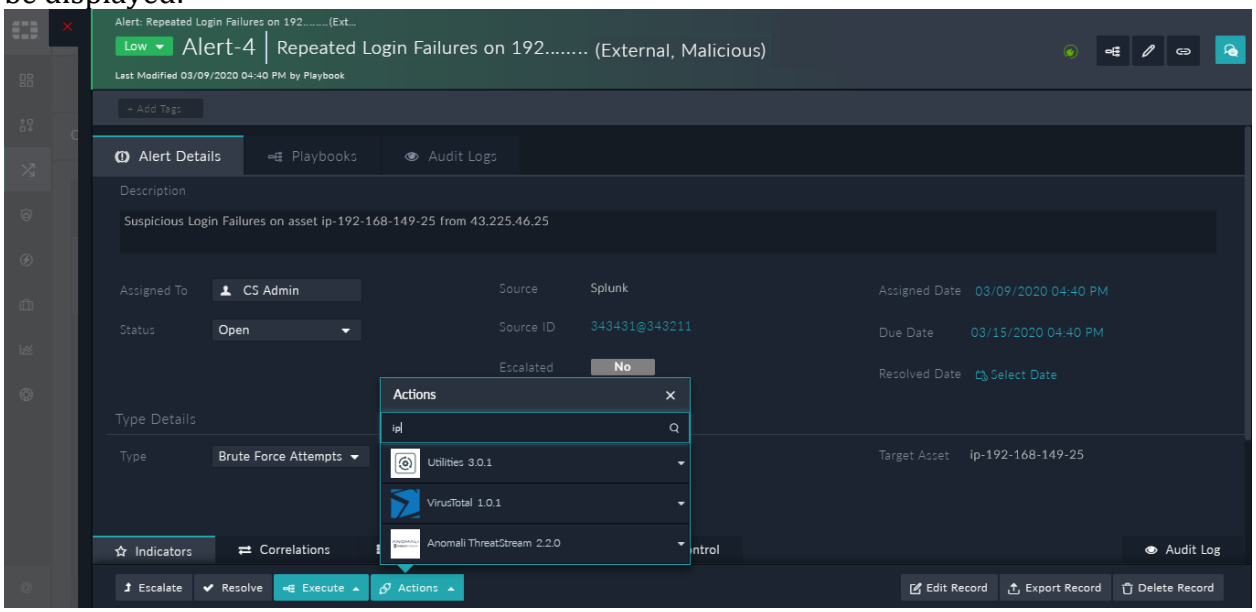
For example, if want to retrieve the reputation of a source IP address in an alert from a threat intelligence tool such as VirusTotal, you can do the following:

1. Open the detail view of the alert record on which you want to run the connector action.
2. Click the **Actions** button.
   You will see the Actions button, if the **Show Action Execution Panel** checkbox is checked, which is the default option. For more information, see the *Dashboard, Template, and Widgets* chapter.

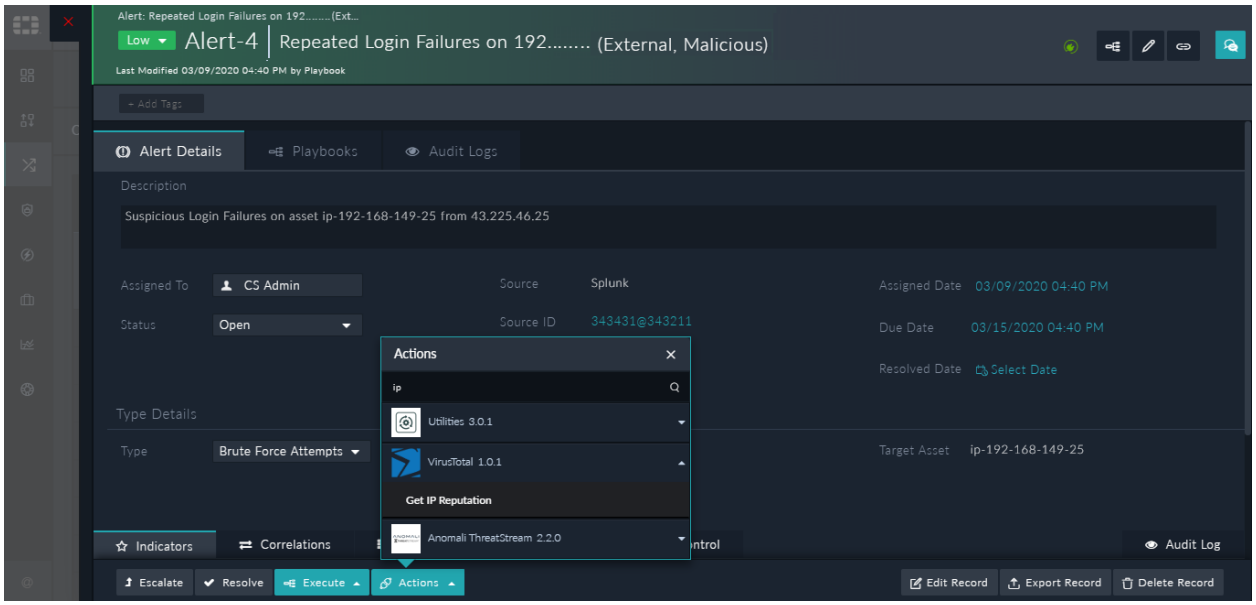


Note: The **Actions** list only displays the active and configured connectors.

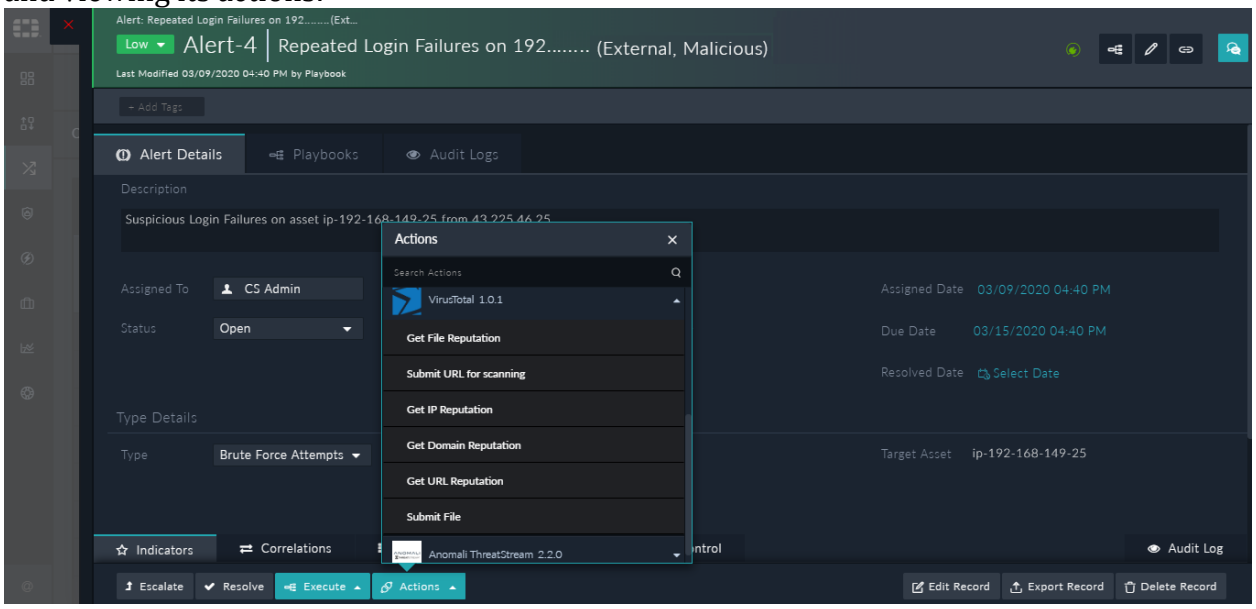
3. Search for actions that you want to perform using the **Search Action** box. For example, if you want to search for a reputation of an IP address, then you can type `IP` in the Search Action box, and the connectors that have any action related to an IP address will be displayed:



As shown in the above image, VirusTotal, Anomali Threatstream, and the Utilities connector have “IP” in their actions. Click the down arrow to view the actions associated with IP for each connector. For example, if you click VirusTotal, you will see the Get IP Reputation action:

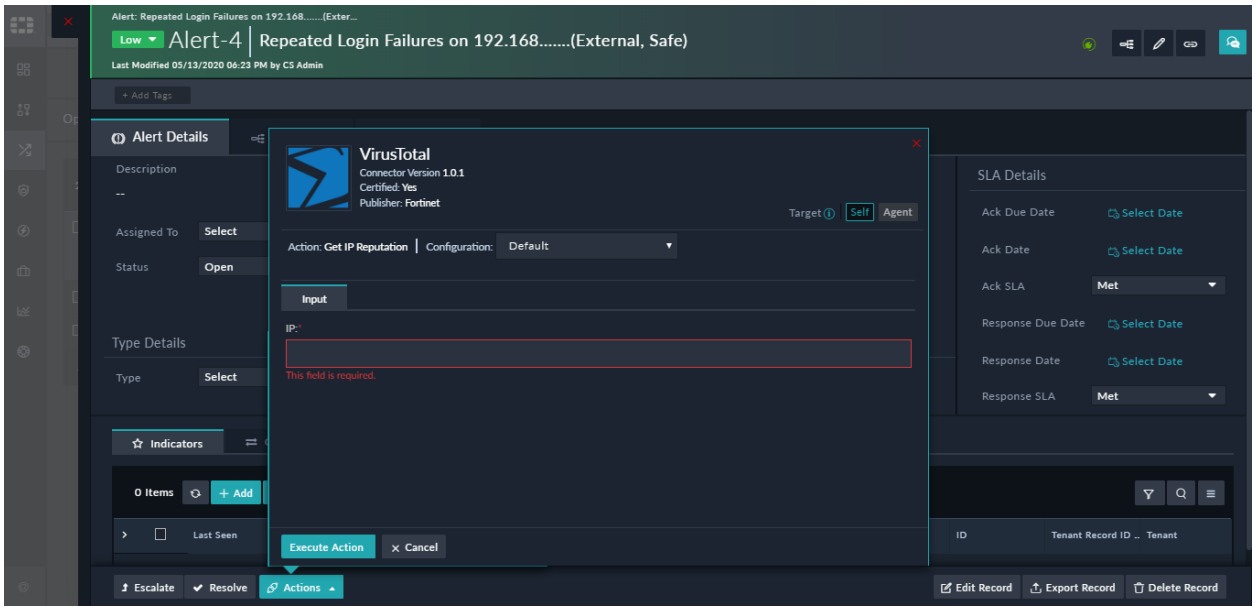


You can also view all the actions associated with a connector by clicking the connector and viewing its actions:

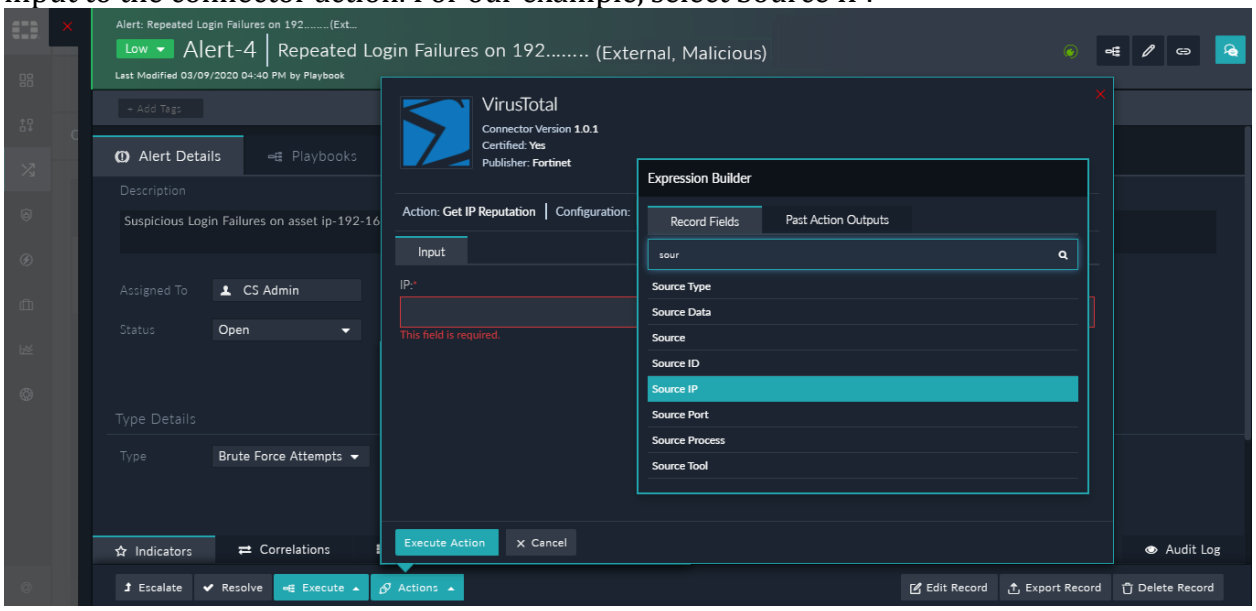


4. Click the action that you want to perform on the alert. For our example, click **Get IP Reputation** (associated with VirusTotal), which displays the VirusTotal dialog. From version 6.4.1 onwards, you are required to specify whether you want to run the action on the current FortiSOAR™ node or remotely on the agent node by clicking the **Self** or **Agent** buttons besides `Target`. By default, **Self** is selected, which means that the action will run on the current FortiSOAR™ node, then you must select the configuration using which you want to run the action since the FortiSOAR™ node can have multiple configurations. If you click **Agent**, then you can select the agent on which you want to run the action and you must also select the configuration using which you want to run

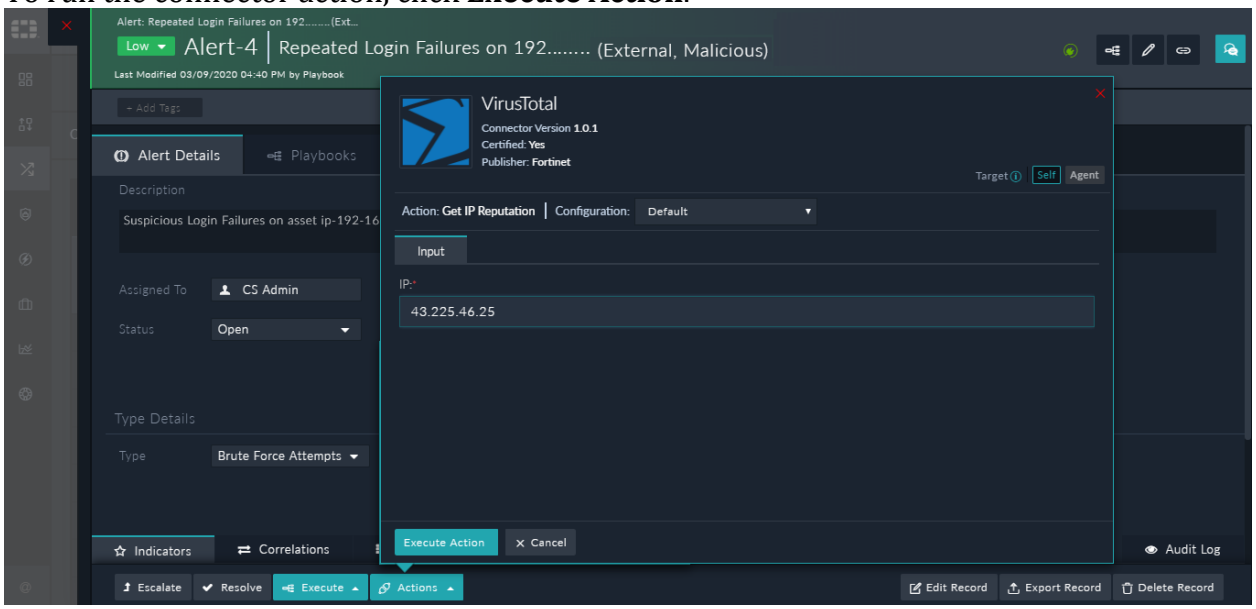
the action since agents can have multiple configurations. For more information on agents and how to run remote actions using agents, see the *Segmented Network support in FortiSOAR™* chapter in the "Administration Guide." For our example, we have chosen **Self**.



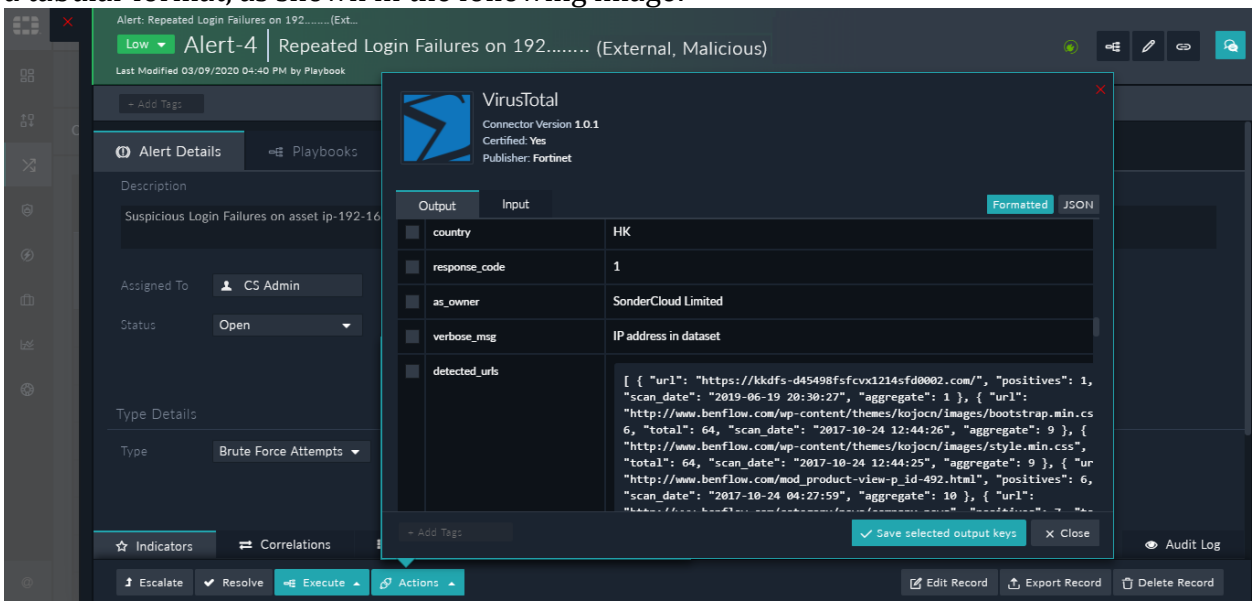
Next, in the Input tab, in the IP field, either enter an IP address or use the value of a record field. For our example, we will use the value of the IP address that is present in the Source IP field. To input the value from a record field, in the `Input` tab, click the **IP** field, which displays an `Expression Builder` dialog. On the **Record Fields** tab, select or search for the record field, using the **Search Fields** box, that you want to add as the input to the connector action. For our example, select Source IP:



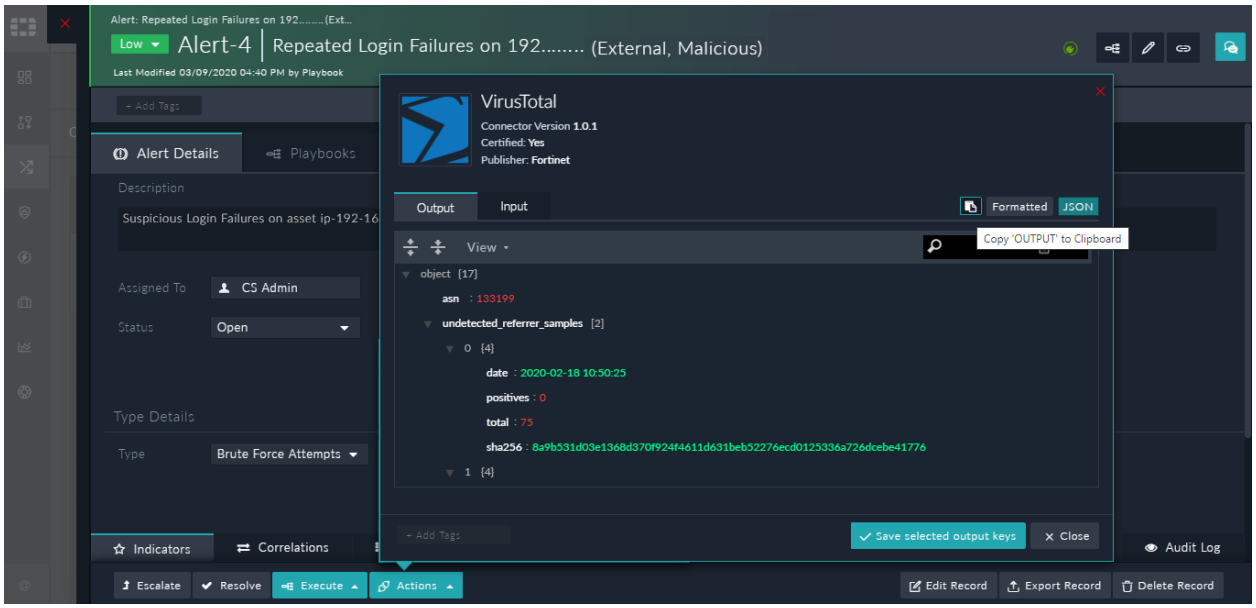
5. To run the connector action, click **Execute Action**.



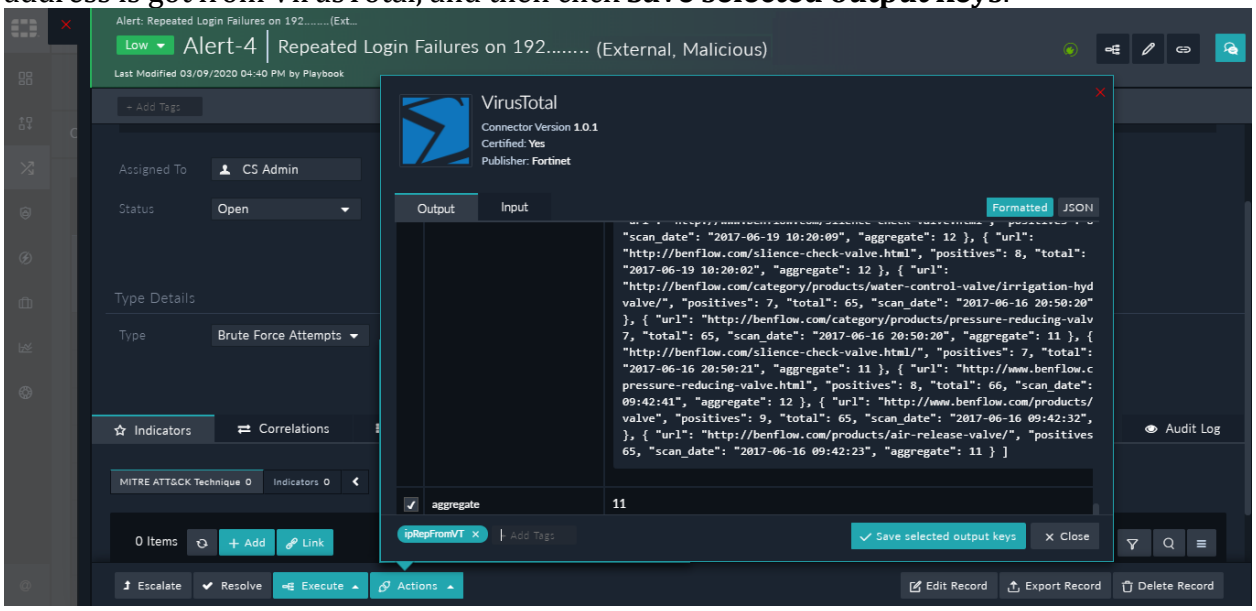
6. Once the connector action is executed, you can see the formatted output of the action, in a tabular format, as shown in the following image:



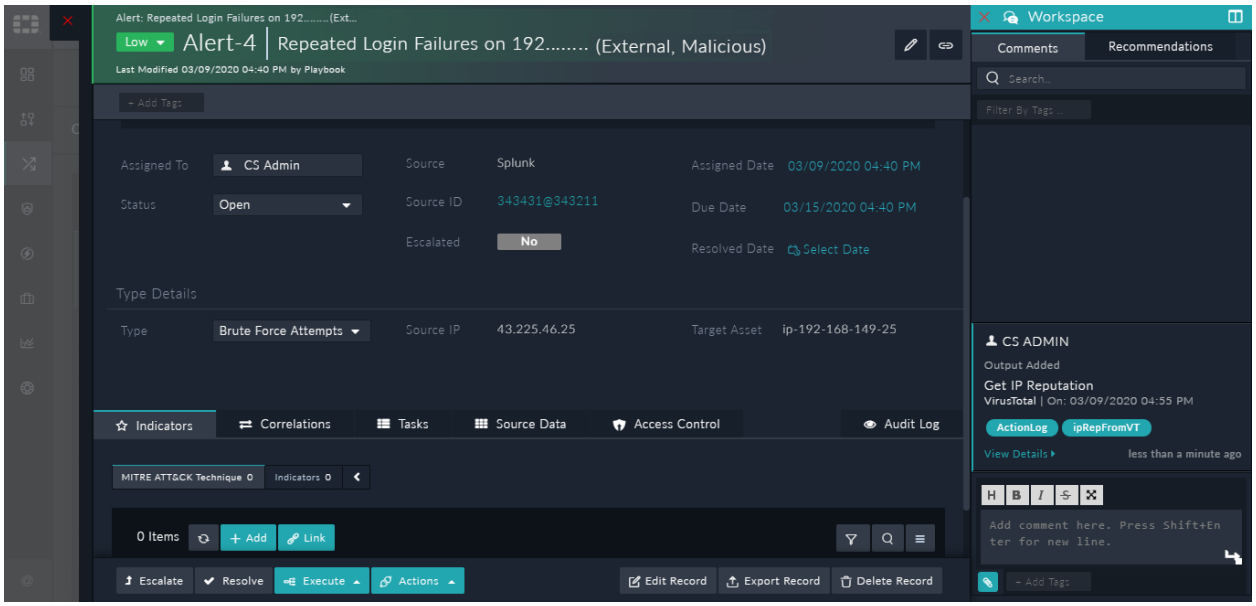
You can also view the output and in the JSON format:



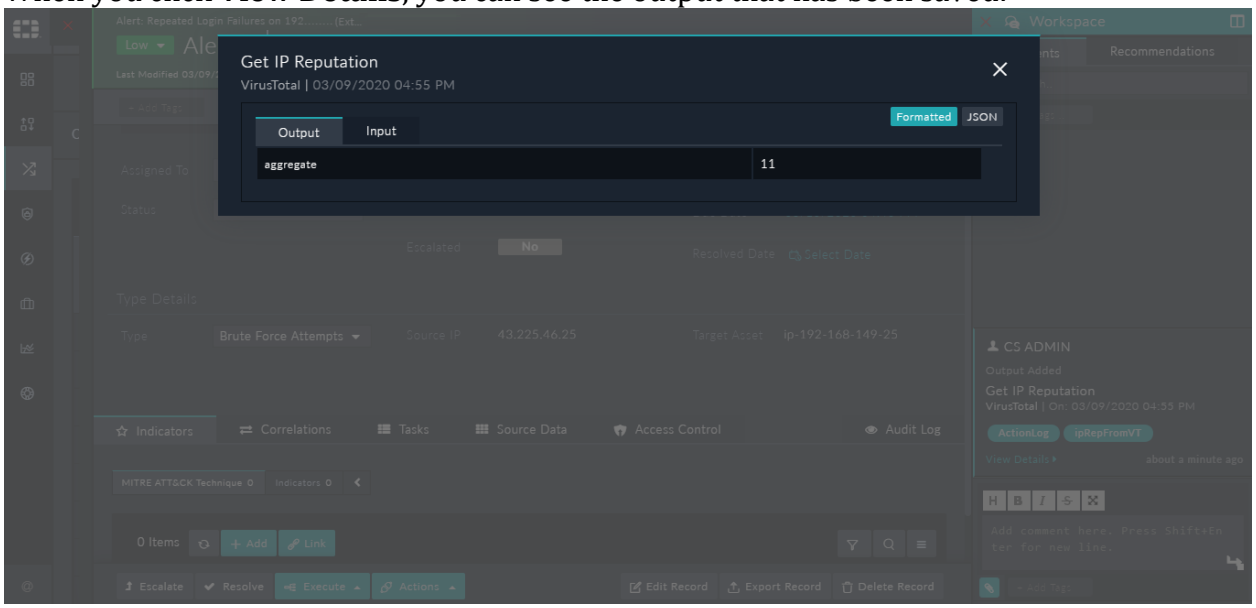
You can also copy the output to the clipboard.
Select the output keys that you want to save, for example **aggregate**. You can also add tags to the results making it easy for you to search for and filter the outputs. For example, you can add a tag `ipRepFromVT` to mark that the reputation of the specified IP address is got from VirusTotal, and then click **Save selected output keys**.



The output keys get saved as **Action Log** in the **Comments** tab in the Workspace section:



Also, since we also added a tag to the output, you can see the **ipRepFromVT** tag added to the entry in the Comments tab.
When you click **View Details**, you can see the output that has been saved:



You can also consume the saved output for past connector actions as an input to another connector action within the record. For example, you want to get the reputation of a filehash using the Anomali ThreatStream connector, which supports only the MD5 as a filehash value and you have only the SHA256 value. In this case, you can extract and save the MD5 value from a filehash using the **Get File Reputation** action in VirusTotal:

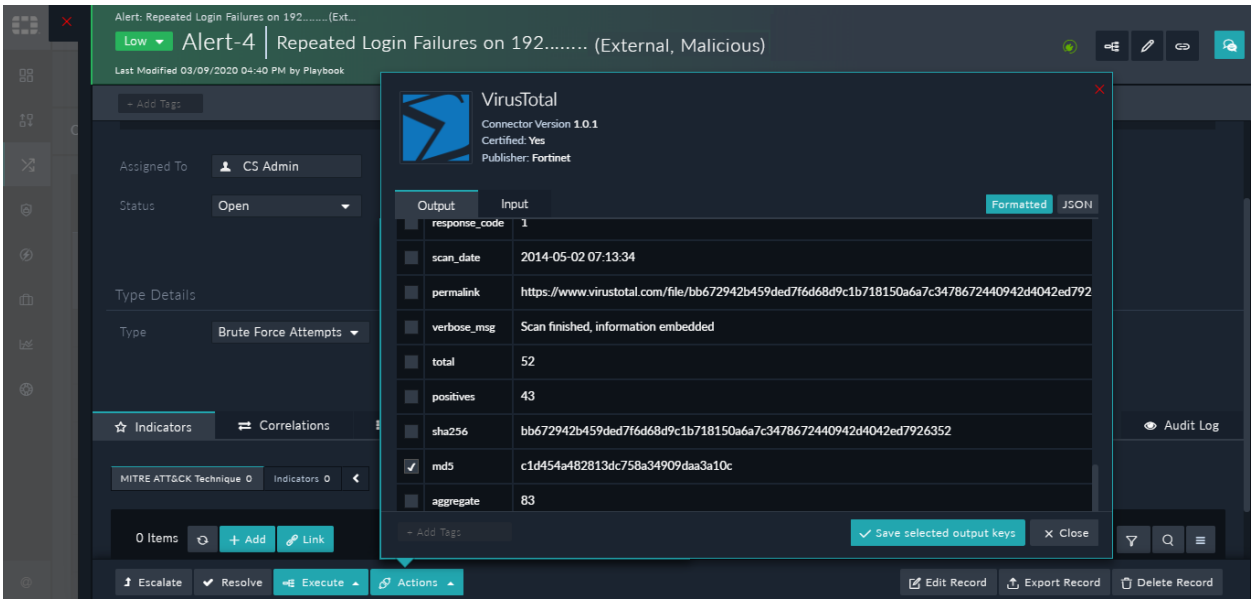


Figure 177. *Saving the MD5 Value from the VirusTotal connector using the Get File Reputation action*

Then, you can use the saved MD5 value to get the reputation of this filehash from Anomali ThreatStream, by clicking the **Actions** button and selecting the **Get File Reputation** action from the Anomali ThreatStream. In the **Input** tab, click the **Filehash** field, which displays the `Expression Builder`. Click the **Past Action Outputs** tab, where you can view the saved output of the past 10 actions. Select the action whose output you want to consume, in our example, choose the Get File Reputation action (from VirusTotal) and select or search for the parameter ("md5") that you add to the field:

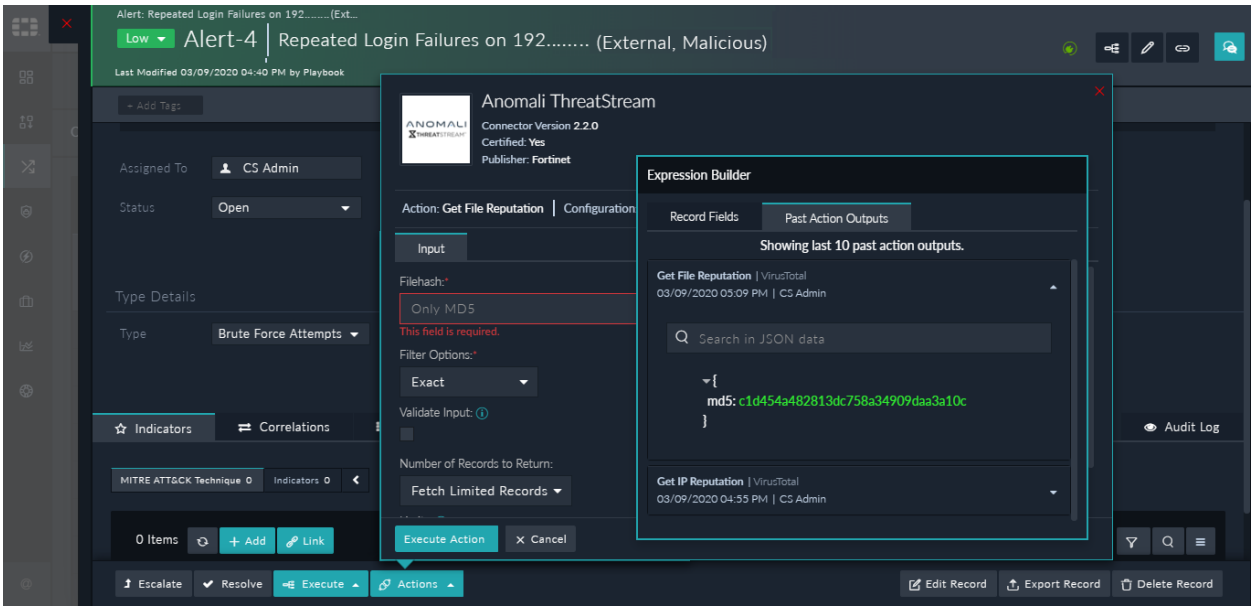


Figure 178. *Past Actions Output tab in the Expression Builder*

To run the action on the record and retrieve the reputation of the MD5 filehash from Anomali ThreatStream, click **Execute Action**:

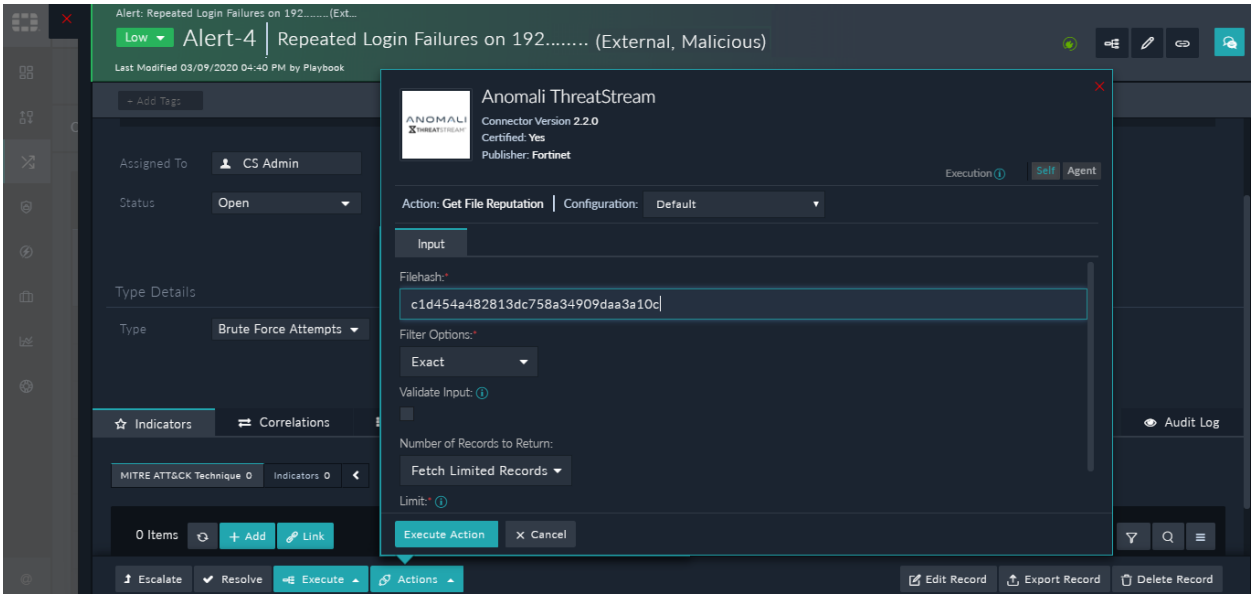


Figure 179. *Execute Action on the input derived from past action outputs*

You can then check the output of the connector action and further perform actions as described earlier, including adding output keys to the action log and adding tags for future processing.

Using record similarity

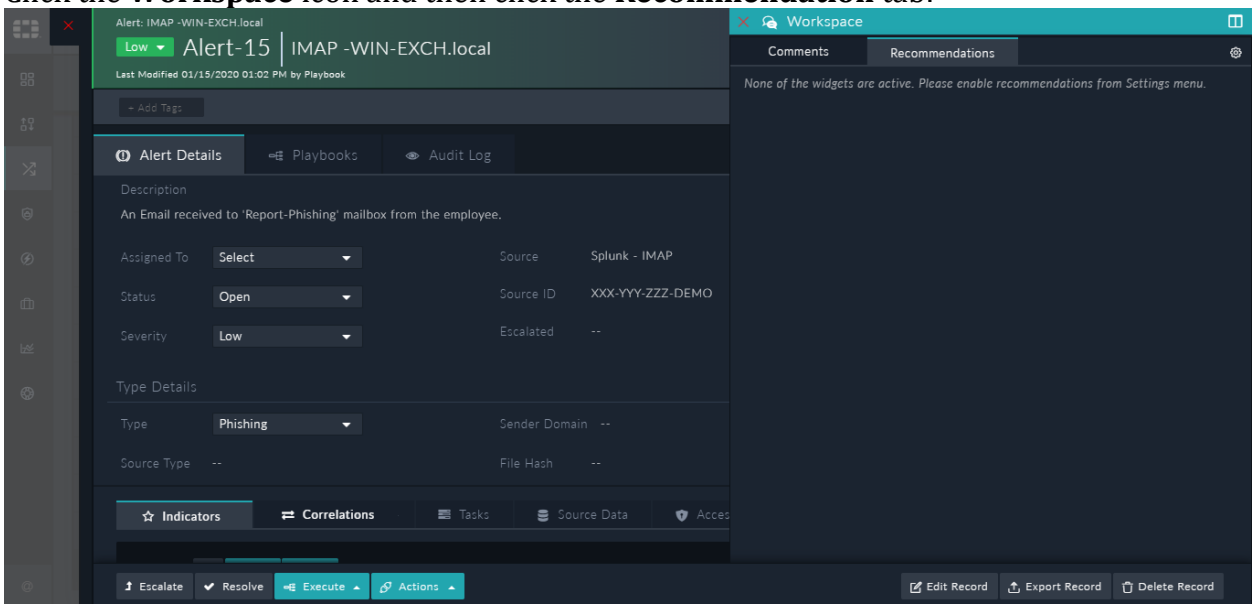
FortiSOAR™ displays records that are similar to the record on which you are working. For example, FortiSOAR™ will display alerts that contain similar filehashes, source IP, domains, etc. based on the similarity criteria you have defined.

A scenario where analysts can use this feature would be the case of a Phishing alert being created in FortiSOAR™ from your Email Gateway. Users might click the URLs which in turn will create multiple Malware alerts from your SIEM (or Endpoint Detection Response tools). Therefore, a single event, i.e., a Phishing email generates separate alerts in FortiSOAR™. FortiSOAR™ displaying similar alerts within an alert an analyst is working on gives the analyst the complete picture of the event and makes it easier for the analyst to take remedial action.

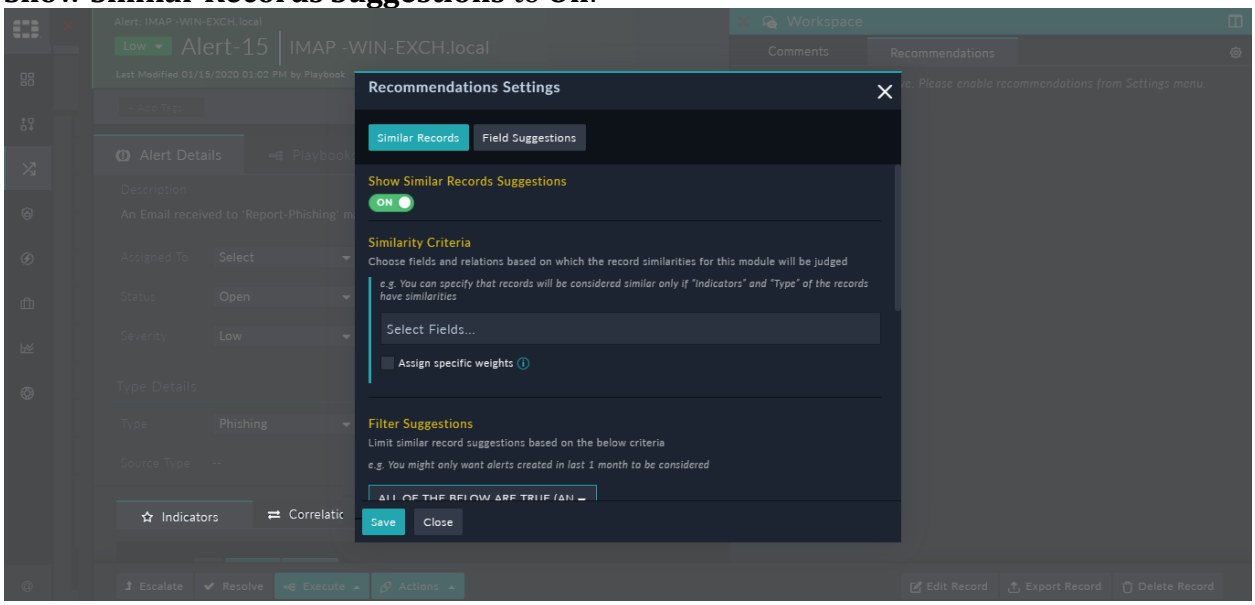
Following is an example of using the similarity feature in an alert:

1. Open the Detail view of the alert record.

2. Click the **Workspace** icon and then click the **Recommendation** tab:

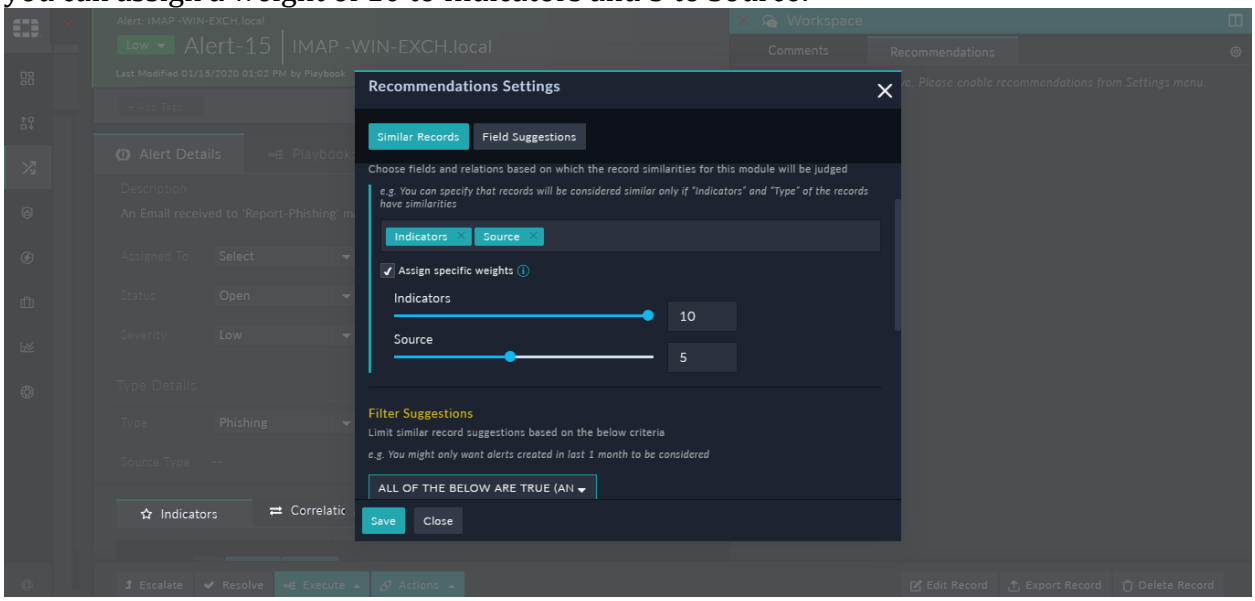


3. To display similar records and specify the similarity criteria do the following:
   a. Click the **Settings** icon (⚙) on the **Recommendations** tab.
   b. In the `Recommedations Settings` dialog, on the **Similar Records** tab, toggle the **Show Similar Records Suggestions** to **On**:

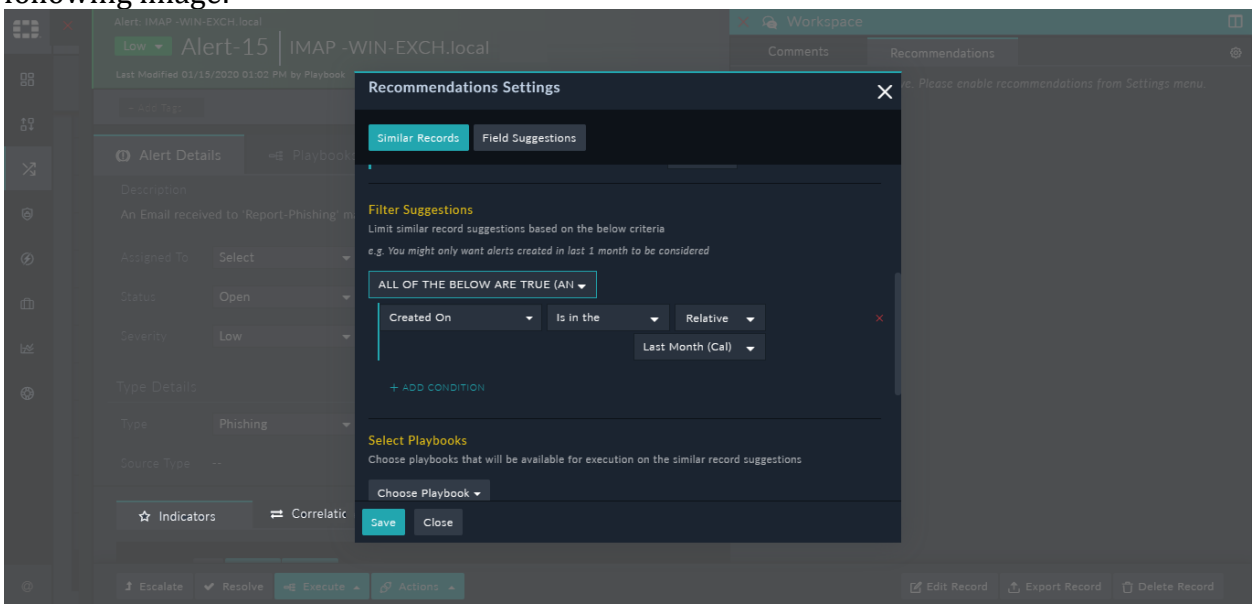


   c. In the `Similarity Criteria` section, choose the fields and relations to create the criteria based on which records will be displayed.
   For our example, we want to display the alerts whose indicators, such as domains, IP addresses, URLs, etc match the indicators of the alert record on which you are working and we also want to match the source of the alerts. Therefore, you will choose **Indicators** and **Source** from the **Select Field** drop-down list.

You can also assign weights to the selected fields based on which the recommended similar records will be ranked. To assign ranks, select the **Assign specific weights** checkbox, then use the slider to assign weights for each of the selected field from 1 to 10, with 10 being the highest value. For example, if you want to give higher weightage to similar Indicators as compared to Source, then you can assign a weight of 10 to Indicators and 5 to Source:



4. (Optional) To filter the similar record suggestions, in the `Filter Suggestions` section, add the filter criteria. For example, if you only want to show similar records that have been created in the last month, then you can add a filter criteria as shown in the following image:

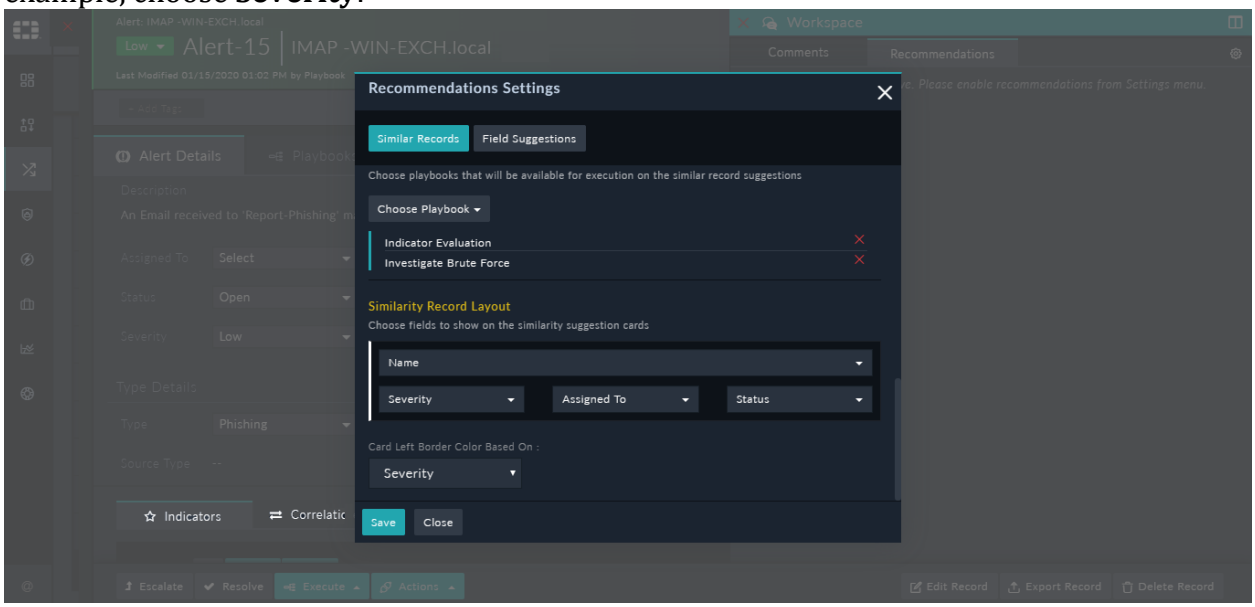


Adding filters narrows the records down to a smaller set, which in turn returns the results faster. For example, searching for similar records in the last one month will return results faster than searching for similar records in the last one year.

Note: If you assign a "Custom" filter to a datetime field, such as Assigned Date, then the date considered will be in the "UTC" time and not your system time.

a. (Optional) In the `Select Playbooks` section, from the **Choose Playbook** list, search and select the playbooks that will be displayed on the **Recommendations** pane and which you can execute on similar records. For example, you can choose to evaluate indicators and therefore choose to run the `Indicator Evaluation` playbook on similar records.

b. To define the layout of the similar records, in the **Similarity Record Layout** section, you can specify the fields of the similar records that you want to include. For example, you can choose **Name**, **Severity**, **Assigned To**, and **Status**, as the fields of the similar records that should be displayed.
You can also define the color of the left border of the card based on a specific picklist or field in the **Card Left Border Color Based On** field. The color of the card will depend on the colors that you have defined for the picklist items. For example, choose **Severity**:



c. To save the similarity settings, click **Save**.

Based on the similarity criteria that has been defined, the **Recommendation** pane will display similar alerts as follows:

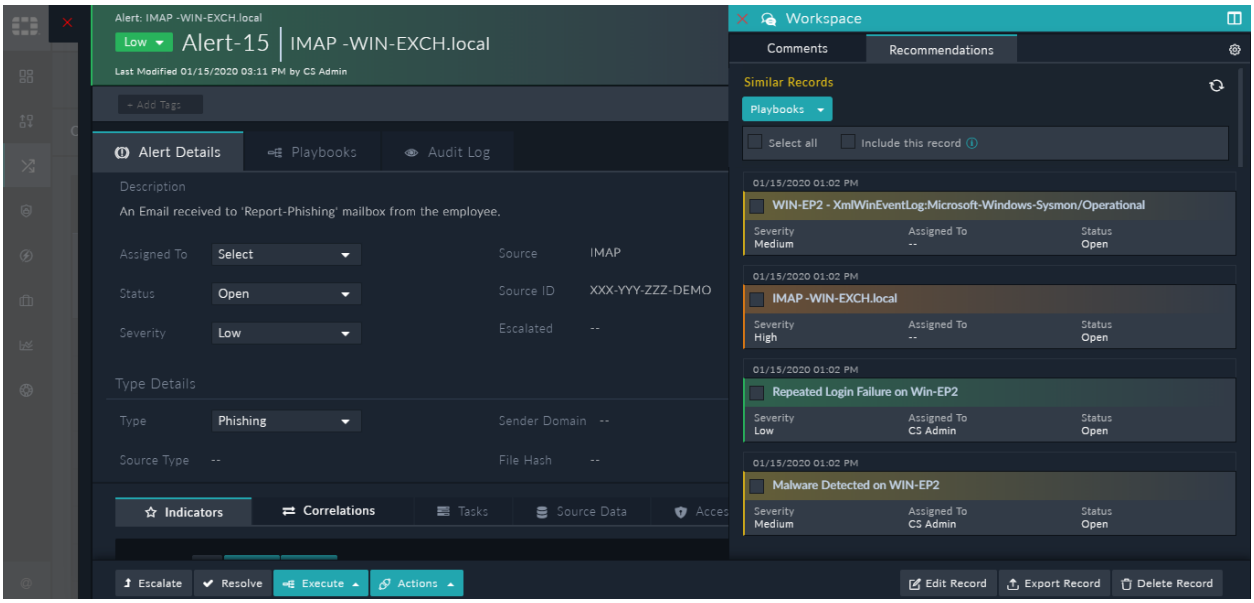


Figure 180. *Recommendation pane - Display of similar alerts*

As seen in the image above, the alerts that match the "Indicator" criteria (which are `gumblar.cn`, `http://ghari.pk`, etc.) are displayed first and then the alert that matches the "Source" criteria (which is IMAP), since the indicator criteria has been given a greater weight than the source criteria.

The **Playbooks** drop-down list displays the list of playbooks that you had specified while configuring the recommendation settings. In our example, we had selected the `Indicator Evaluation` playbook, which get displayed in the Playbooks drop-down list. You can select a similar record or click **Select All** to select all the similar records, and then click Indicator Evaluation to execute the playbook on that record(s). To execute the `Indicator Evaluation` playbook on the current (parent) record also, i.e., `Alert 15...` in the above image, select **Include this record** checkbox. Therefore, you can choose to execute the selected playbook on the current record as well as the selected similar record(s).

You might also want to perform an action, for example, *Resolve*, on similar alerts (records) but you do not want to resolve the current (parent) record, i.e., `Alert 15...`. However you do want to link the similar records to the parent record, then in the `Resolve Alert` playbook, which is present in **System Fixtures > System Notification and Escalation Playbooks**, open the "Update Record" step and in the **Alerts** field (under `Correlations` section), enter `vars.request.data.__parentId`. This is also useful if you want to resolve duplicate records and keep only the parent record open.

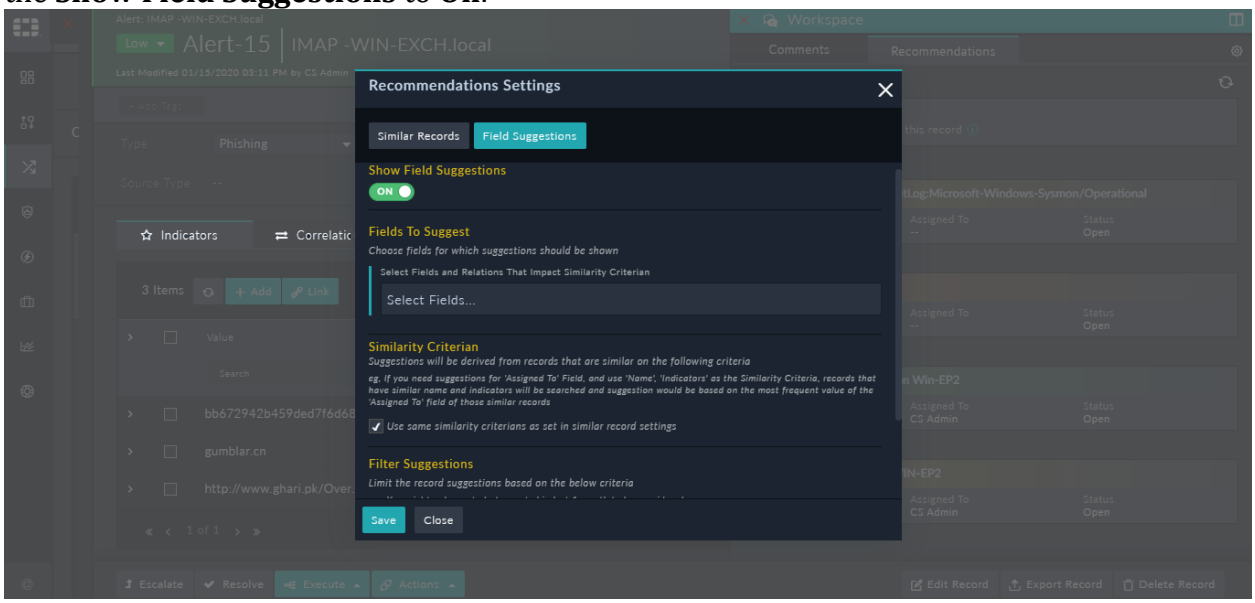
Predicting values of field values in a record

FortiSOAR™ predicts values of fields of your choice within a record from the values of fields of existing records based on the criteria you have defined, making it easier for analysts to make informed decisions.

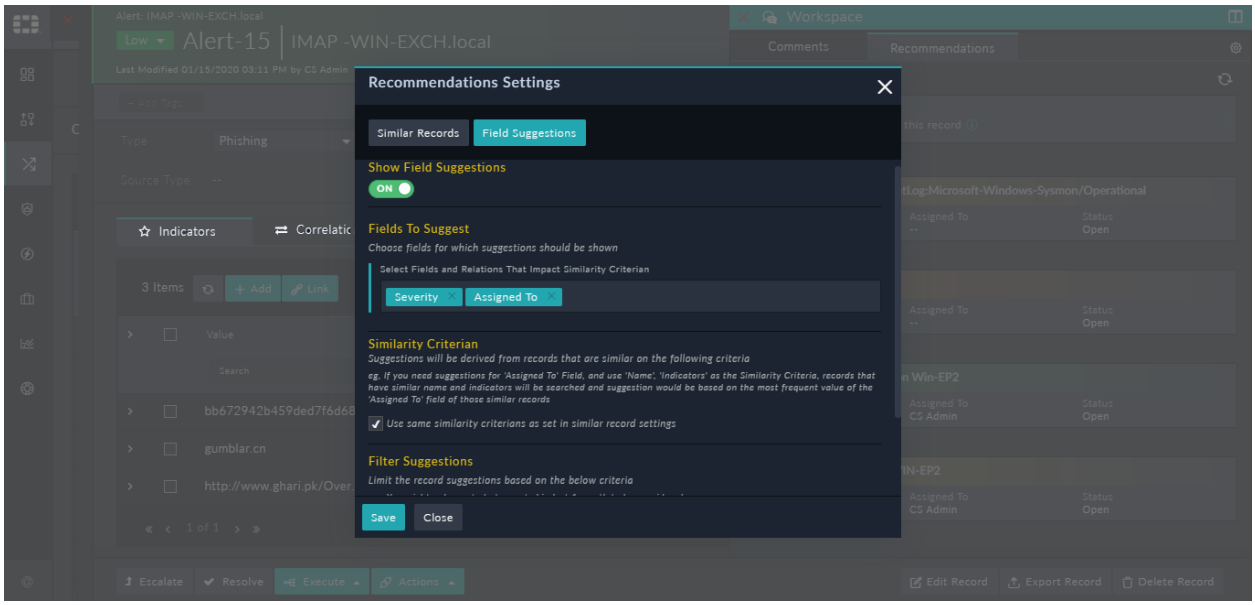
A scenario where analysts can use this feature would be the case of an alert, where you want FortiSOAR™ to predict the severity and assign the alert to a particular user, based on matching the alert's indicators and type.

Following is an example of using the predicting values of field values feature in an alert:

1. Open the Detail view of the alert record.
2. Click the **Workspace** icon and then click the **Recommendation** tab:
3. To display prediction of values of fields and specify the criteria for the same, do the following:
    a. Click the **Settings** icon ( ) on the **Recommendations** tab.
    b. In the `Recommendations Settings` dialog, on the **Field Suggestions** tab, toggle the **Show Field Suggestions** to **On**:



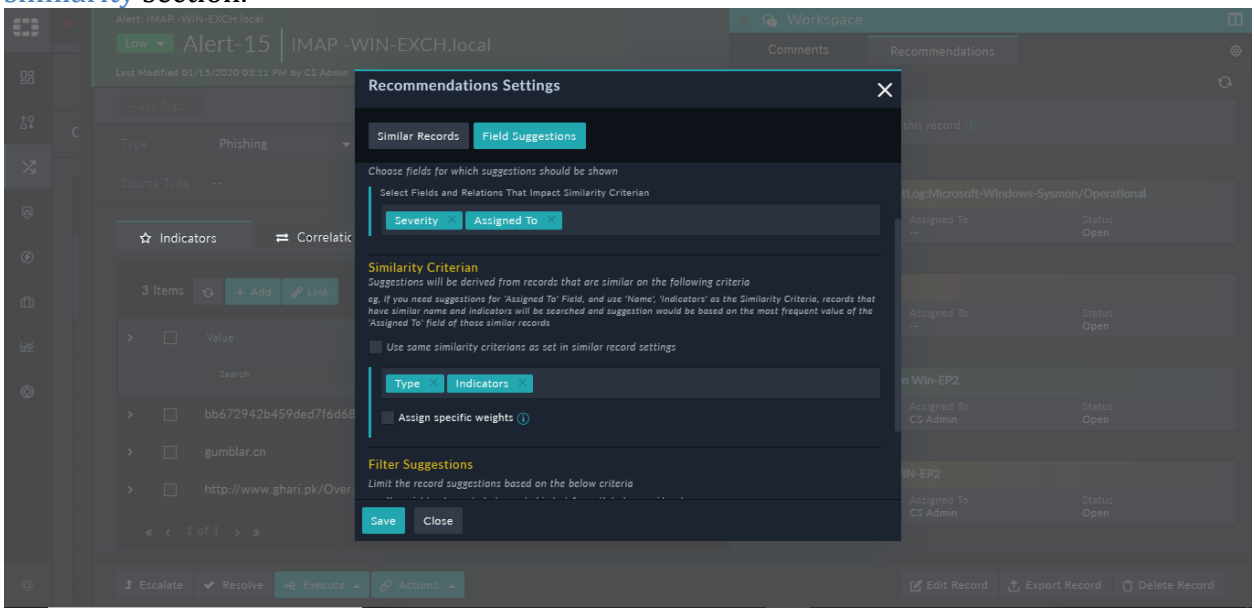
    c. In the `Fields To Suggest On` section, choose the fields for which you want FortiSOAR™ to predict the field values. For example, you can choose the **Severity** and **Assigned To** fields:



Important: Fields for which you want to predict values should not be fields that require some workflow or playbooks to be run if the value of the field is changed, since in this case though the value of the field gets updated the complete workflow will not be completed. An example of such a type of field would be the **Escalated** field in the "Alerts" module and if you have added *Escalated* in the `Field Suggestions`, then even though you can change the value of the Escalated field in the record as per the field suggestions, which we are assuming is set to "Yes"; the complete Escalate workflow is not completed. In this case, even though the Escalated value of the alert record is set to Yes; however, the alert is not really escalated to an incident, i.e., no corresponding Incident is created, and therefore the Escalate workflow of remains incomplete.

d. To use the same criteria to form the field value suggestion as you have defined for similar records, ensure that the **Use the same similarity criteria as set in similar record settings** checkbox is selected (default).
If you want to use a different criteria form the field value suggestion, then clear the **Use the same similarity criteria as set in similar record settings** checkbox. Then, in the `Similarity Criteria` section, choose the fields that would form the basis for predicting field values. For our example, choose the "Type" and the "Indicators" field.
You can also assign weights to the selected fields based on which the recommended similar records will be ranked as described in the Using record

similarity section.



e. (Optional) To filter the field value suggestions, in the `Filter Suggestions` section, add the filter criteria. For example, if you only want to show similar records that have been created in the last 15 days, then you can add that as a filter criterion.

f. To save the prediction settings, click **Save**.

Based on the prediction criteria that has been defined, the **Recommendation** pane will display field value suggestions as follows:

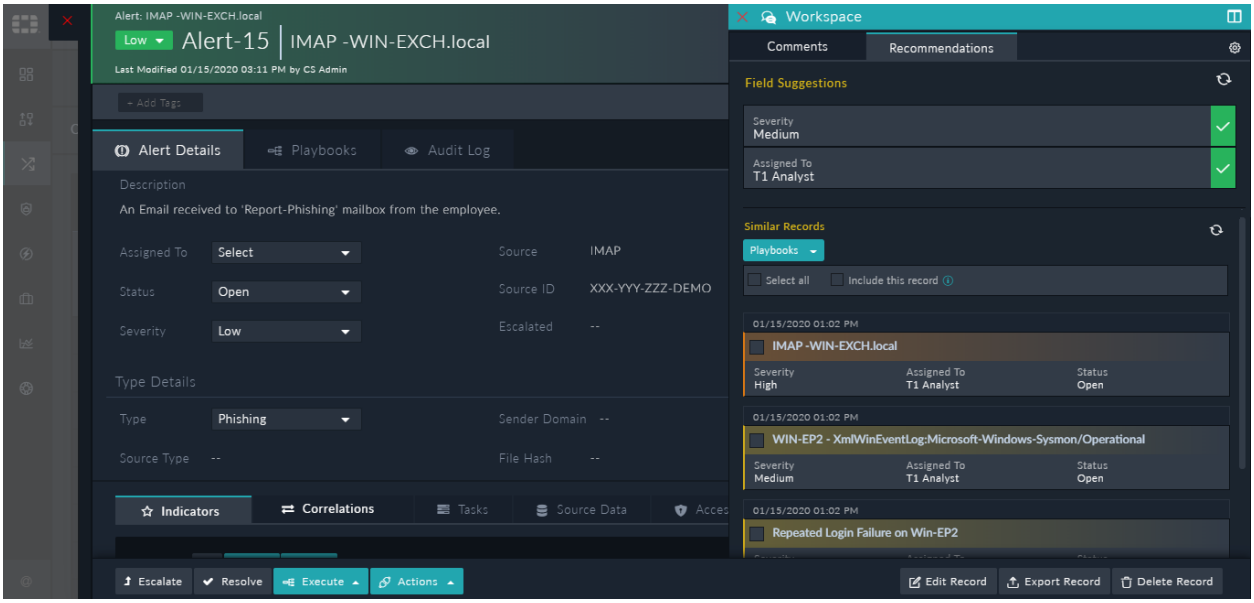


Figure 181. *Recommendation pane - Field Value Suggestions*

As shown in the above image, FortiSOAR™ recommends that the severity of the record should be set to “Medium” and the record be assigned to “T1 Analyst”. FortiSOAR™ makes these predictions based on your criteria and the ranking that is given to matching records.

If you agree to the suggestions and want to make the change in the record, click the green checkbox in the row of the field, which in turn will update or add the field value in the record. For example, if you want to update the value of the severity of the record to match the suggested similarity, then click the green checkbox in the severity row:

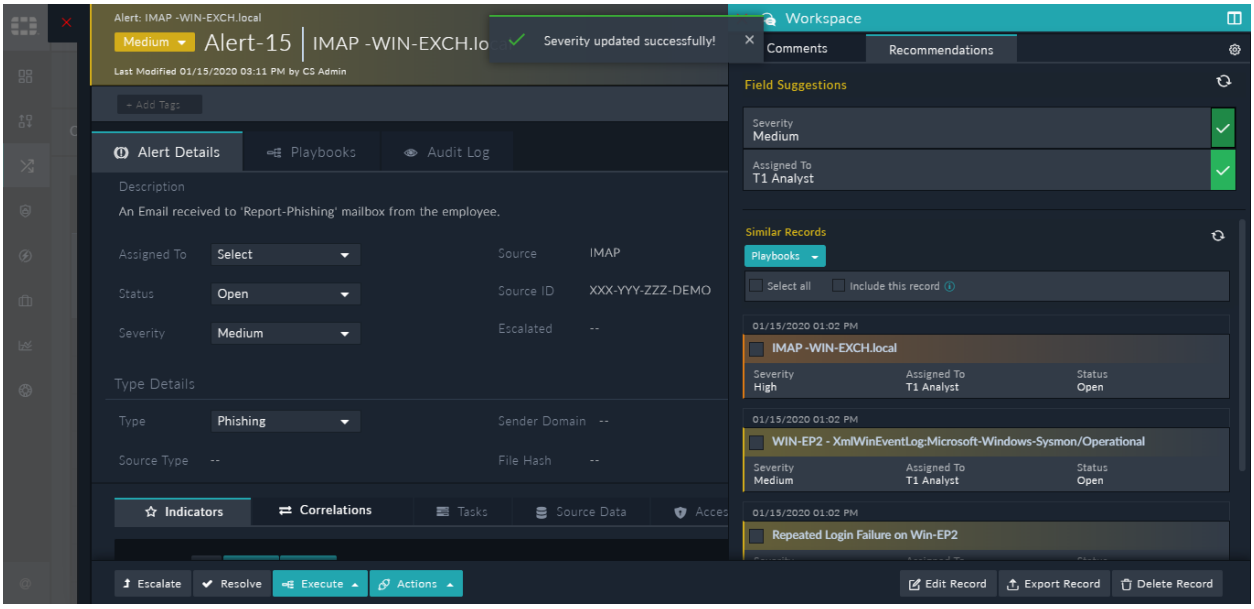


Figure 182. *Using suggestions to update field values in a record*

As shown in the above image, once you click the green checkbox, the value of the severity field changes from Low to Medium as per the predicted field value.

Similarly, you can also add T1 Analyst in the Assigned To field:

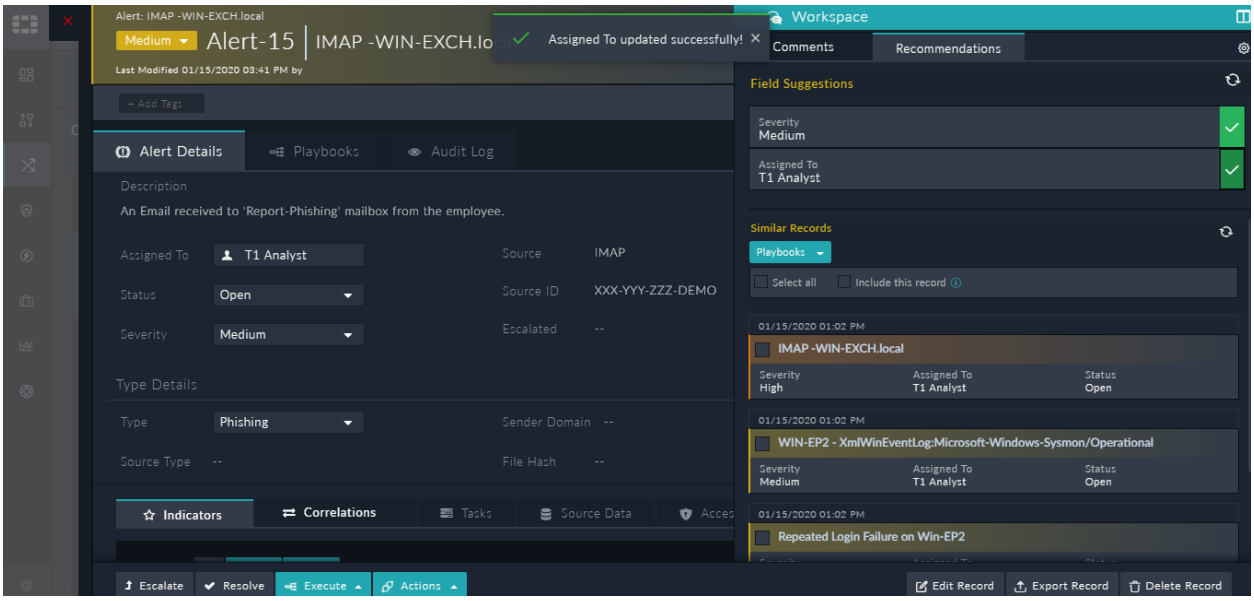


Figure 183. *Using suggestions to add field values in a record*

Queue Management

Overview

Queues provide managers a view that answers questions like, “what are my resources working on currently?”, “how many tasks are pending?”, and “do any tasks require reallocation?”. Queues provide users a view that answers questions like “what is my work?”, “how much of my work is pending?”, and “what is the priority of my tasks?”.

FortiSOAR™ provides you with the Queue Management feature that provides you with an overview of work (records) that requires to be completed and enables you to assign pending work to users. You can also reassign assignments in case of absence or shift change.

Note: The Alerts, Incidents, and Tasks modules are added as default modules in Queue Management. You do not require to configure these modules for Queue Management.

Queue Management roles

Logical Role	Description	Minimum permissions required
Queue administrator	The queue administrator has the rights to manage queues, including creating and deleting queues, assigning a queue leader and members and assigning tasks. A queue administrator can also be a queue leader or a queue member.	`Create`, `Read`, `Update`, and `Delete` permissions on the `System Assigned Queues` module.
Queue leader	A queue lead has similar rights to the queue administrator, except that the lead cannot create or delete queues.A queue leader can also be a queue member.	`Read` and `Update` permissions on the `System Assigned Queues` module.
Queue member	A queue member can view, assign, and remove the items from their queue.	`Read` permissions on the `System Assigned Queues` module.

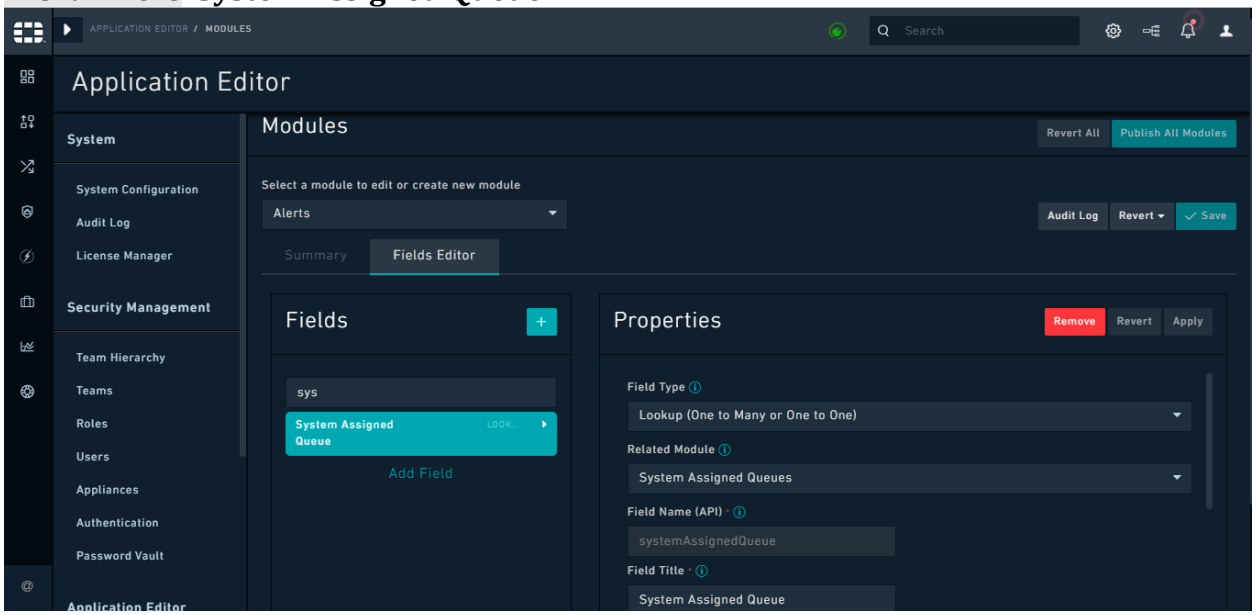
Note: To change the configurations or settings of queue management, you must be assigned a role that has Create, Read, Update, and Delete (CRUD) permissions on the `Application` module and at the minimum `Read` permissions on the `System Assigned Queues` module.

Prerequisites to configuring queue management

To use queue management, follow the given steps to enable a module for queue management:

Note: The following procedure is an example of how you can enable a module for queue management. This procedure takes the example of the 'Alerts' module. However, by default the Alerts, Incidents, and Tasks modules are added as default modules in Queue Management and therefore you do not need to add the System Assigned Queue for the 'Alerts' module.

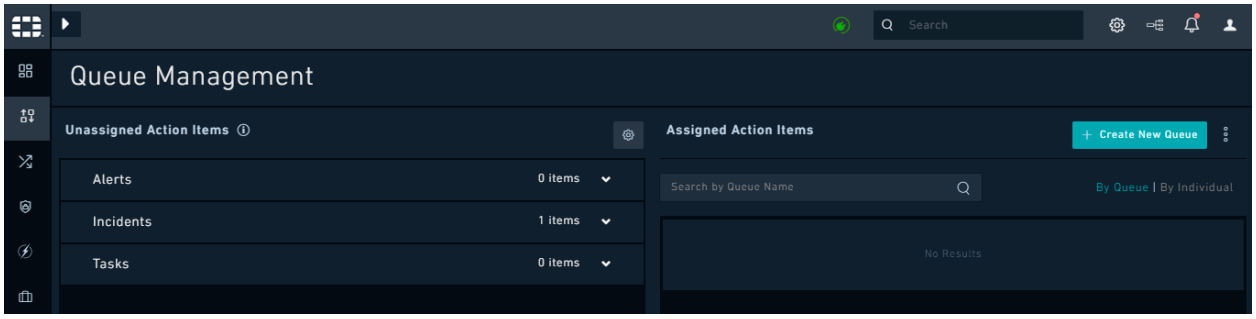
1. User must be assigned the role that has Create, Read, Update, and Delete (CRUD) permissions on the `Application` module and at the minimum `Read` permissions on the `System Assigned Queues` module.
2. Click **Settings** and click **Modules** in the `Application Editor` section, to open the Module Editor.
3. On the `Modules` page, from the drop-down list, select the module for which you want to enable queue management.
   For example, select **Alerts**.
4. Click the **Fields Editor** tab and click **Add (+)**.
5. Add the `Properties` for the field as follows:
   `Field Type`: **Lookup (One to Many or One to One)**
   `Related Module`: **System Assigned Queues**
   `Field Name(API)`: **systemAssignedQueue**
   Note: You must always add the `Field Name (API)` field as **systemAssignedQueue**. After you publish the module, you cannot modify the Name field.
   `Field Title`: **System Assigned Queue**



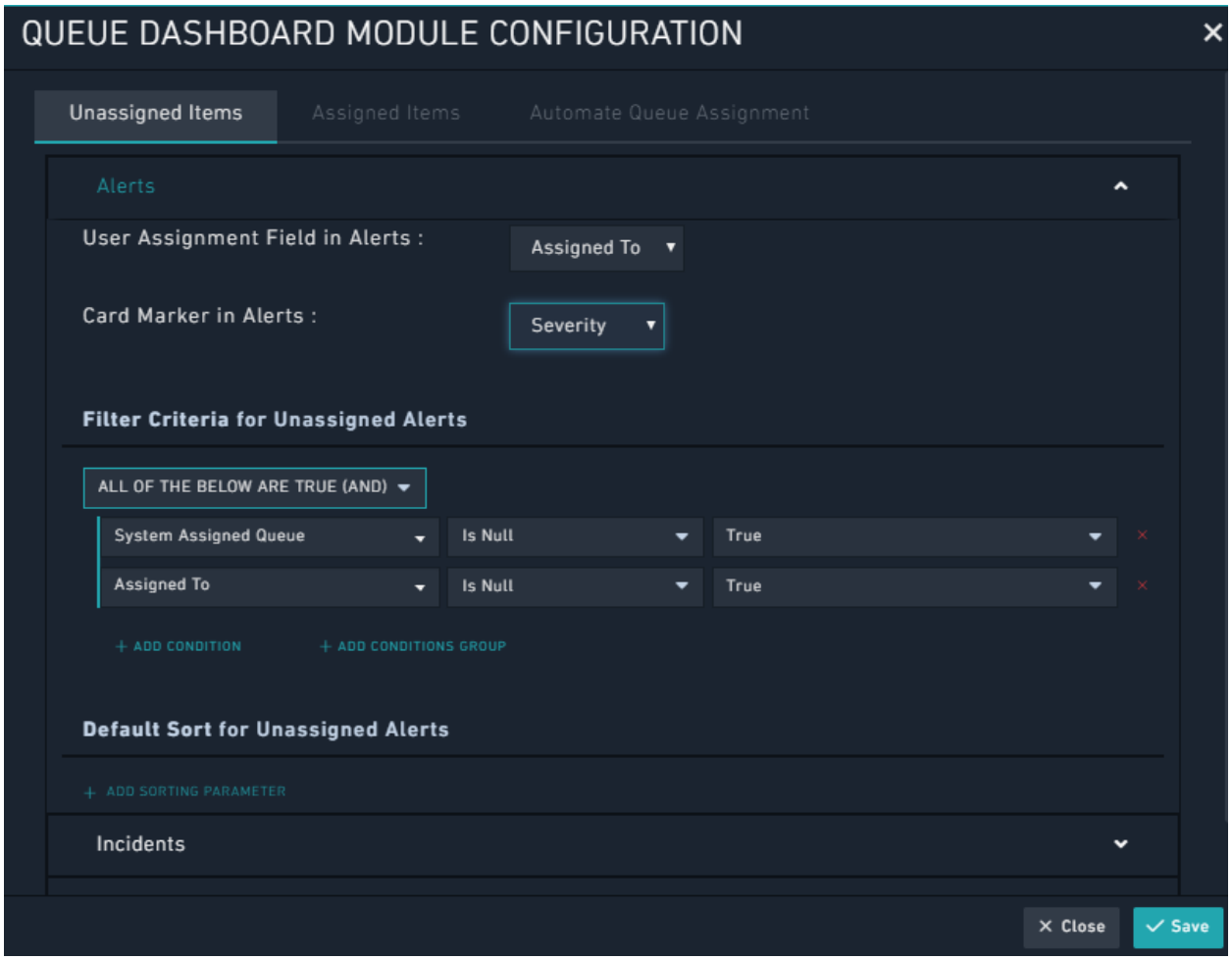
6. Click **Save** and **Publish** the module.
   Note: We recommend that you send a prior notification to all users of a publish since while the publish is in progress users are unable to work.
   Once the module has published, you are now ready to start configuring queue management.

Configuring queue management

1. User must be assigned the role that has `Create`, `Read`, `Update`, and `Delete` (CRUD) permissions on the `Application` module and at the minimum `Read` permissions on the `System Assigned Queues` module.
2. Click **Queue Management** in the left navigation bar.
3. In the `Unassigned Action Items` pane, you can view the module (s) that have been enabled for queue management. See the Prerequisites section for information on how to enable a module for queue management. In our example, we can see the `Alerts` module.
   Note: The Alerts module is added as a default module in Queue Management, which does not require any configuration. The following images and steps are a representation of how you can configure any other module in Queue Management.
4. To open the `Queue Dashboard Module Configuration` dialog, click the **Settings** ( ) icon.



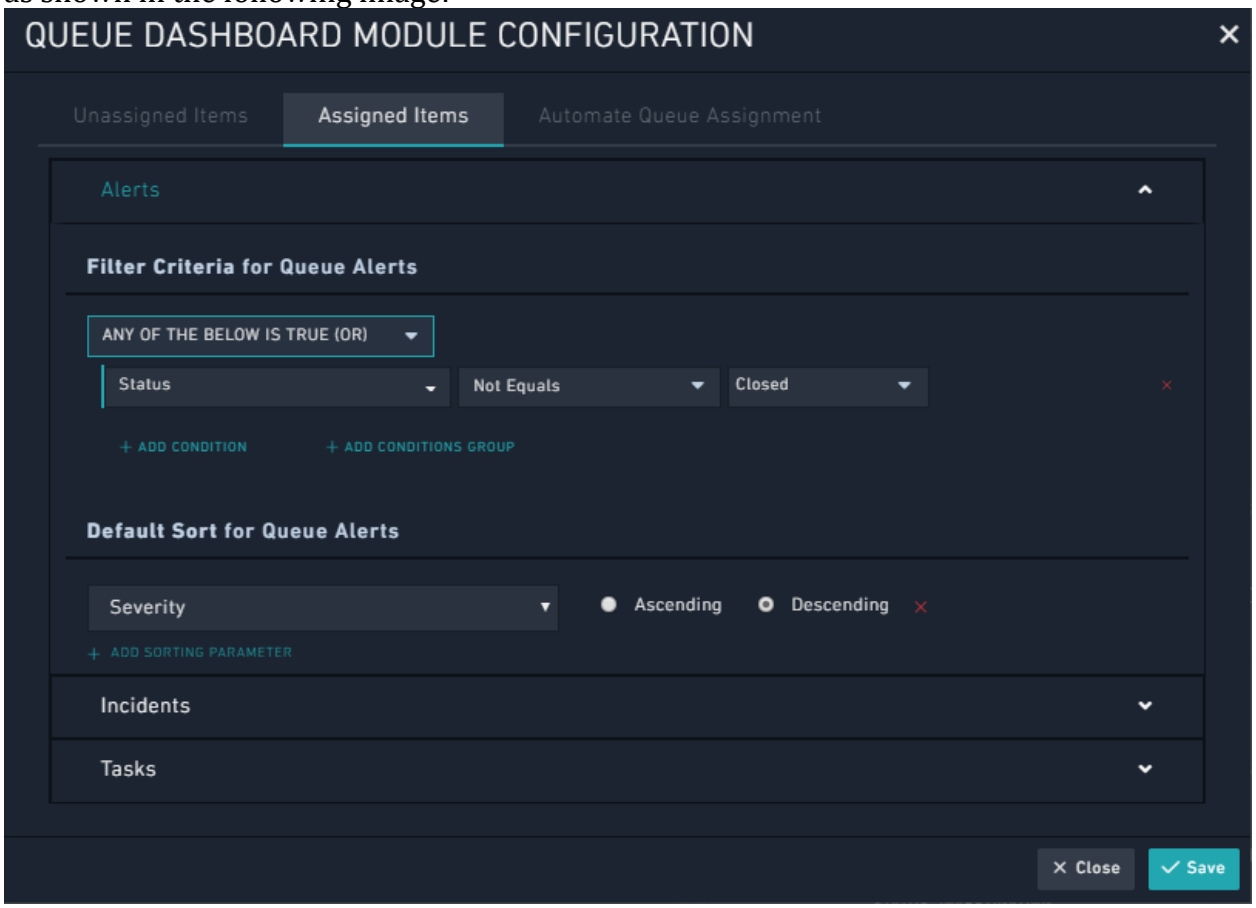
5. On the **Unassigned Items** tab, click the module from which you want to assign items, for example, click `Alerts`. This displays the **User Assignment Field in "Module Name"** drop-down list in which select the field that is used in the module for assigning the record to a user. For example, select `Assigned To`.
   Note: By default, `lookup` fields in FortiSOAR™ display only the first 30 items. If you want to search for more than 30 items, please use the **Search** text box.
6. In the `Filter Criteria for Unassigned "Module Name"` section, add a criterion that filters the User Assignment Field in the module (`Alerts` in our example) for unassigned records, i.e., set the **User Assignment Field in "Module Name"** field to (`Assigned To`" in our example) to **null**, as shown in the following image:



Also, in the **Card Marker in "Module Name"** drop-down list, select the criteria based on which you that you want to display the marker beside the unassigned items. You can choose between **Severity**, **Status**, and **Type**. For example, if you select **Severity** as the criteria, markers are displayed beside the unassigned alerts, so that users can immediately know the items that they need to prioritize.
The nested filter component is also added to the **Unassigned Items** and **Assigned Items** tabs, allowing you to filter these items. For more information about nested filters, see the *Dashboards, Templates, and Widgets* chapter.
Note: You cannot apply filters to encrypted fields.

7. Click the **Assigned Items** tab, click the module from which you want to assign items, for example, click `Alerts`. This displays the `Filter Criteria for Queue "Module"` section to add a criterion that filters records that specifies the field and state to determine that the task (record) is not completed, and therefore should be added to the queue. For example, for the `Alerts` module, specify that the **Status** field of the record is not `Closed`,

as shown in the following image:

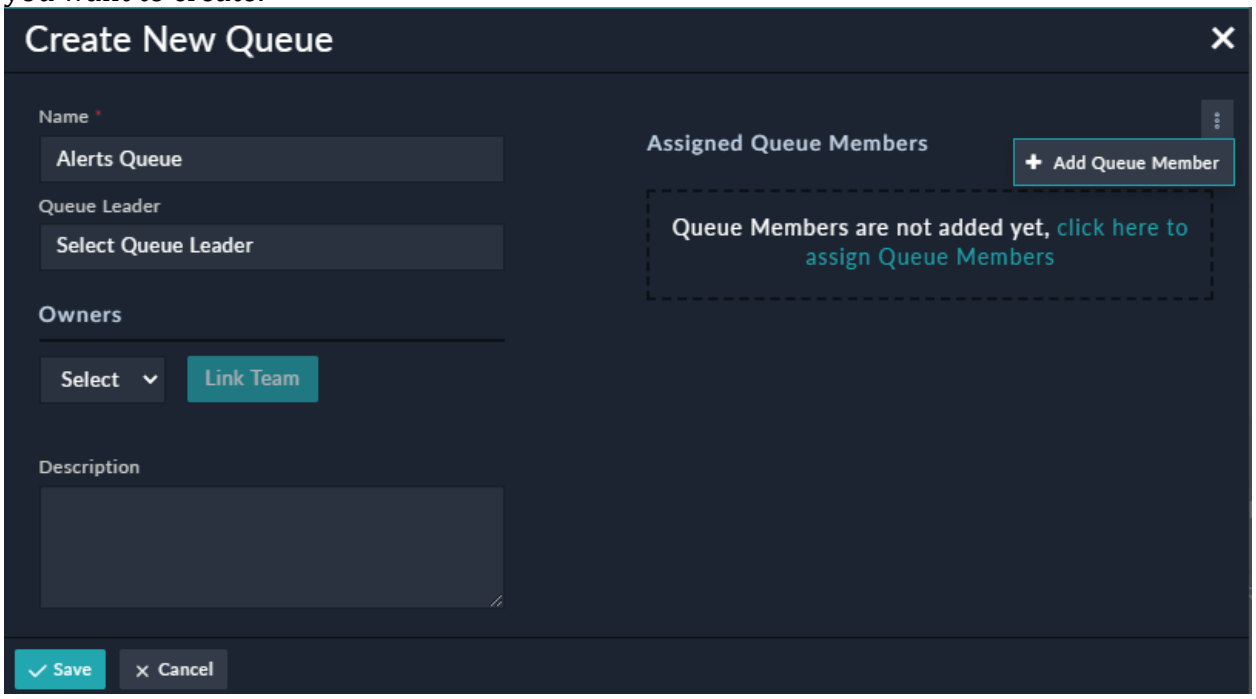


8. (Optional) In the `Default Sort For Queue <Name of the module>` section, you can specify the sorting criteria for records in the queue. For example, for the `Alerts` module, specify that the records should be sorted on **Severity** in the descending order.
9. Click **Save**.

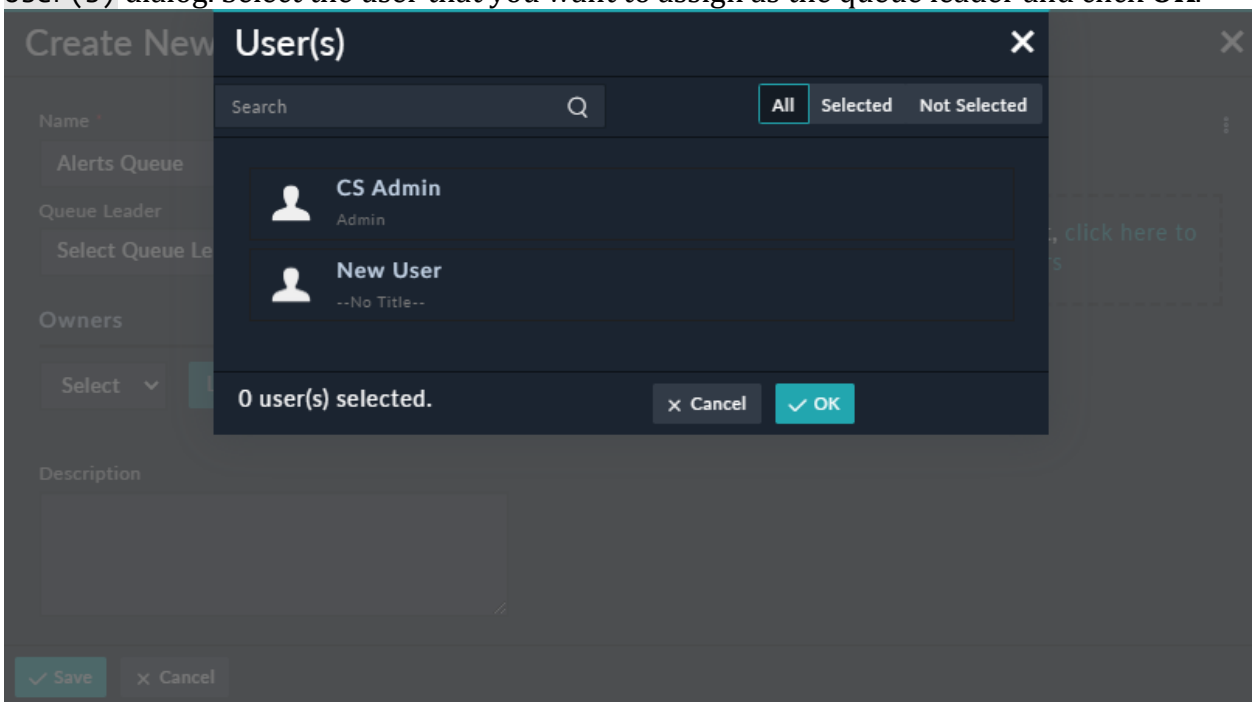
Creating and deleting queues

1. To create a new queue, or to delete a queue, you must be assigned the role of `Queue administrator`.
2. Click **Queue Management** in the left navigation bar and click **+ Create New Queue**.

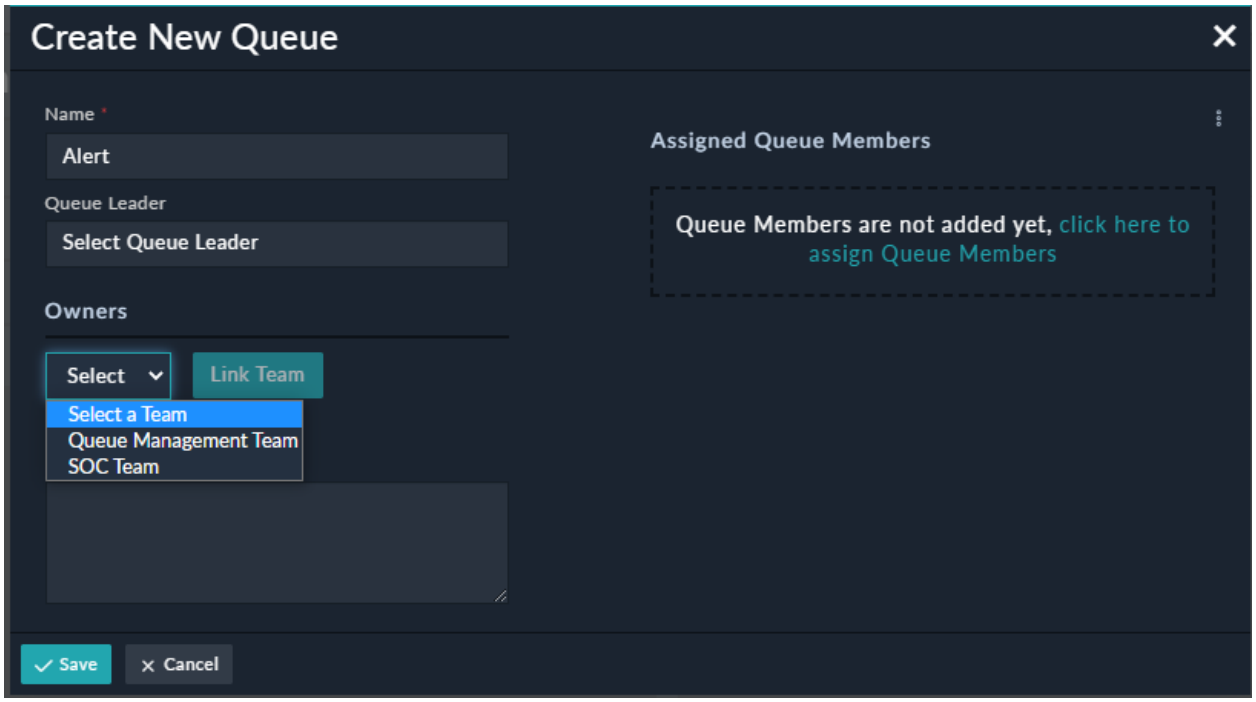
3. On the `Create New Queue` dialog, in the **Name** field, enter the name of the queue that you want to create.



4. (Optional) In the **Queue Leader** field, click the **Select Queue Leader** link to open a `User(s)` dialog. Select the user that you want to assign as the queue leader and click **OK**.

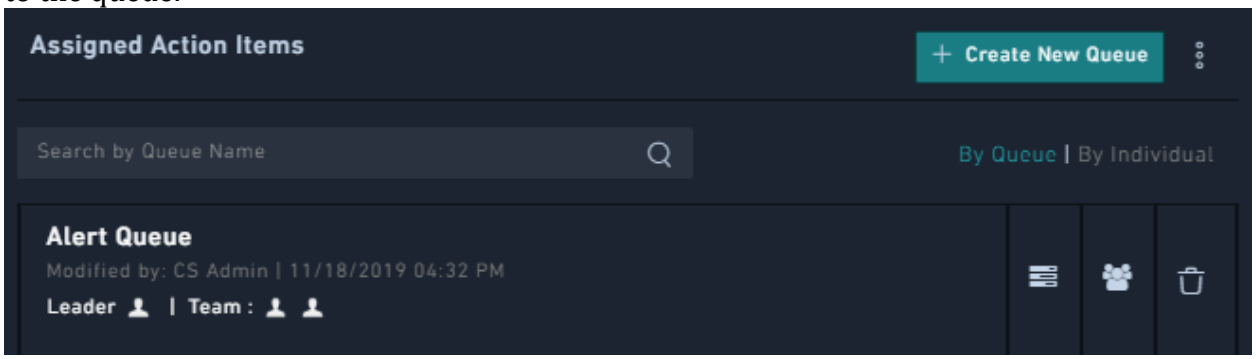


5. From the **Owners** drop-down list, assign the team which will be the owners of this queue and click **Link Team**.



Important: If you do not select any team to be the owner of this queue, then by default the queue is assigned to the team of the user who created the queue.

6. (Optional) In the **Description** field, enter the description for the queue.
7. (Optional) In the `Assigned Queue Members` section, click the **click here to assign Queue Members** link or click the **Add Queue Member** menu, to open a `User(s)` dialog. Select the user (s) that you want to assign as team members and click **OK**.
8. Click **Save** to create the new queue.
   The new queue appears in the `Assigned Action Item` pane. You can view the queue details like team members of this queue, the leader of the queue, and the tasks assigned to the queue.



9. To delete a queue, click the **Delete Queue** icon.
   Note: A queue can be deleted only when there are no tasks assigned to the queue.

Assigning tasks to queues or users

To assign or remove tasks from a queue or to users, you must be assigned the role of `Queue administrator` or `Queue leader`. You can assign tasks in bulk, or individually to a queue, or individually to a user. Tasks that are unassigned appear in the `Unassigned Action Items` pane. Queues and individuals to whom tasks can be assigned are present in the `Assigned Action Items` pane. To assign tasks to a queue ensure that you select the **By Queue** option in the `Assigned Action Items` pane. To assign tasks to an individual ensure that you select the **By Individual** option in the `Assigned Action Items` pane.

Once you assign a task to a user, a user gets a notification. The **Notification** icon is present on the top-right corner in FortiSOAR™, and when a user has a notification, the icon blinks with a red light. Click the icon to open the list of your notifications. In the case of tasks, the notifications, appear as `Action Items` as shown in the following image:

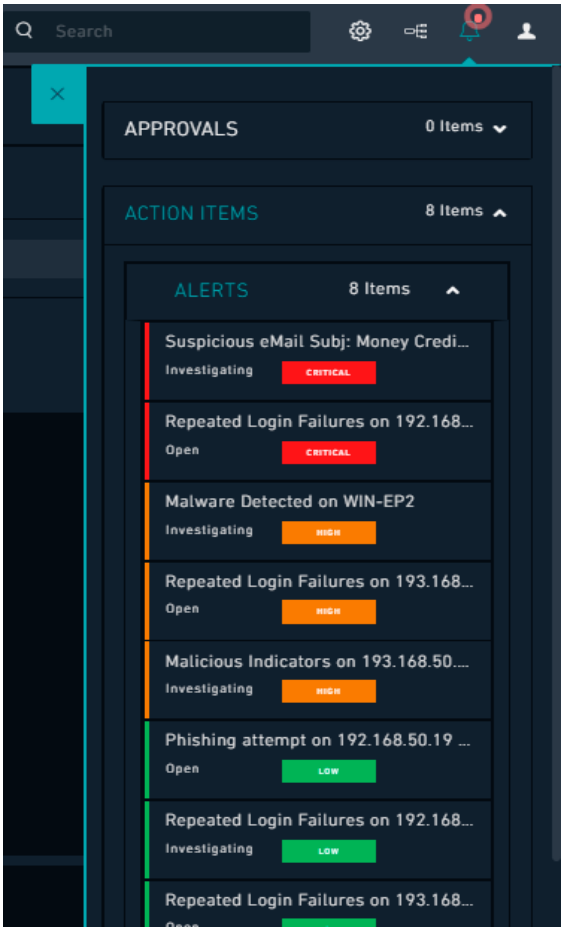
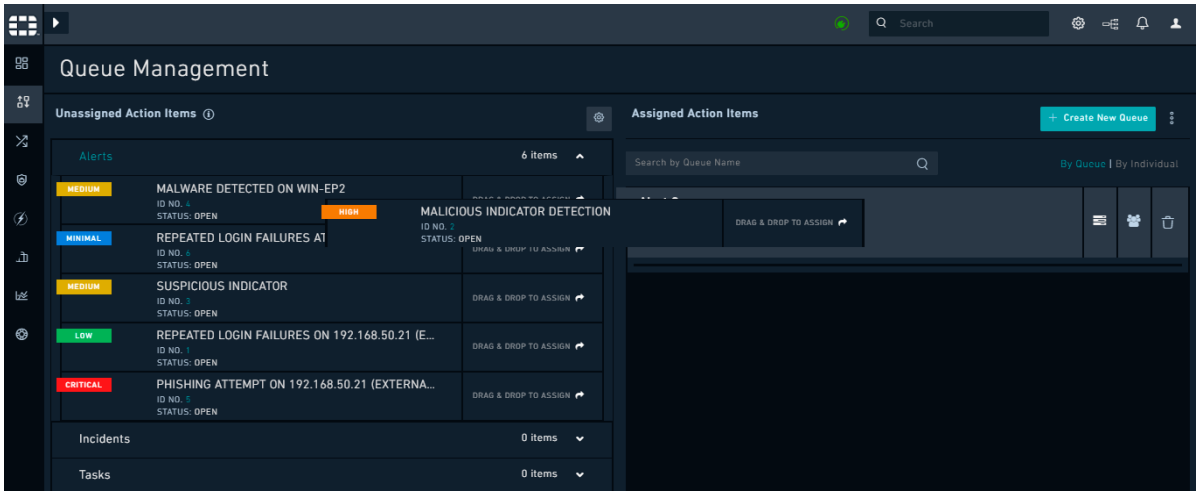


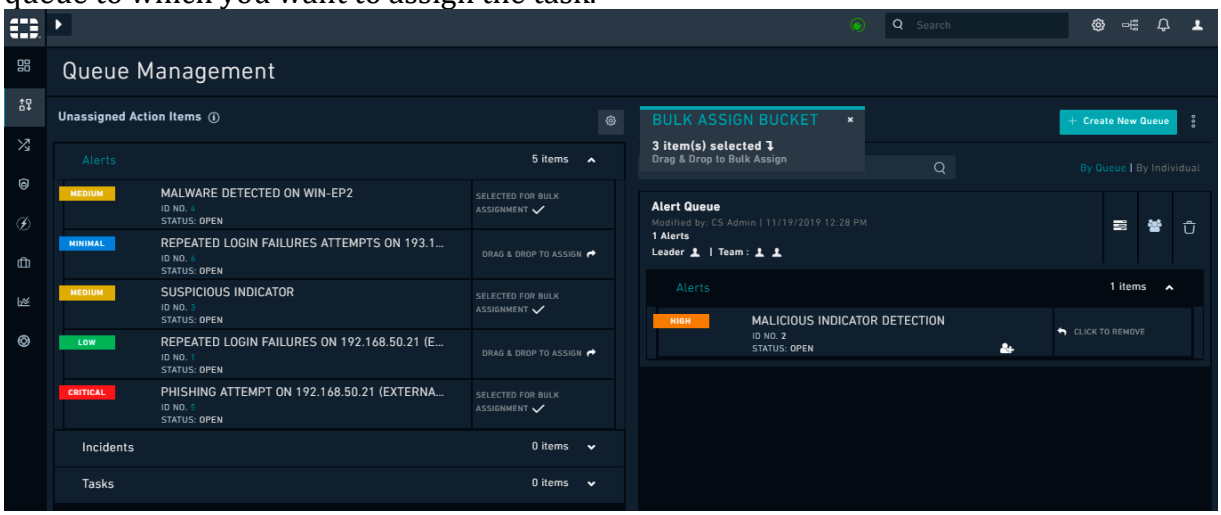
Figure 184. *Notifications list*

1. To assign tasks individually to a queue, select the unassigned task from the module, for example, `Alerts`, and drag and drop that task on the queue to which you want to assign

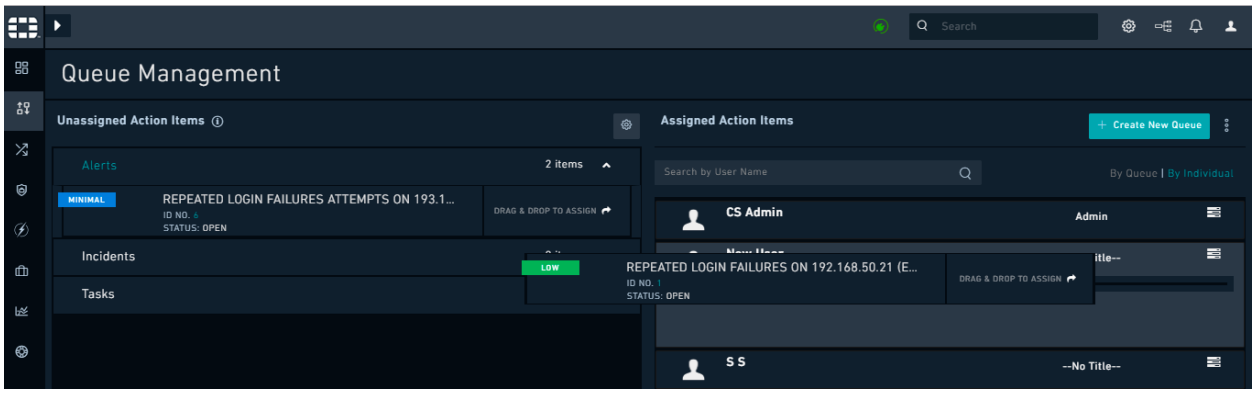
the task.



2. To assign tasks in bulk to a queue, click to select the unassigned tasks from the module, for example, `Alerts`. You will see the number of items that you have selected appear in the `Bulk Assign Bucket` dialog. Drag and drop the `Bulk Assign Bucket` dialog on the queue to which you want to assign the task.

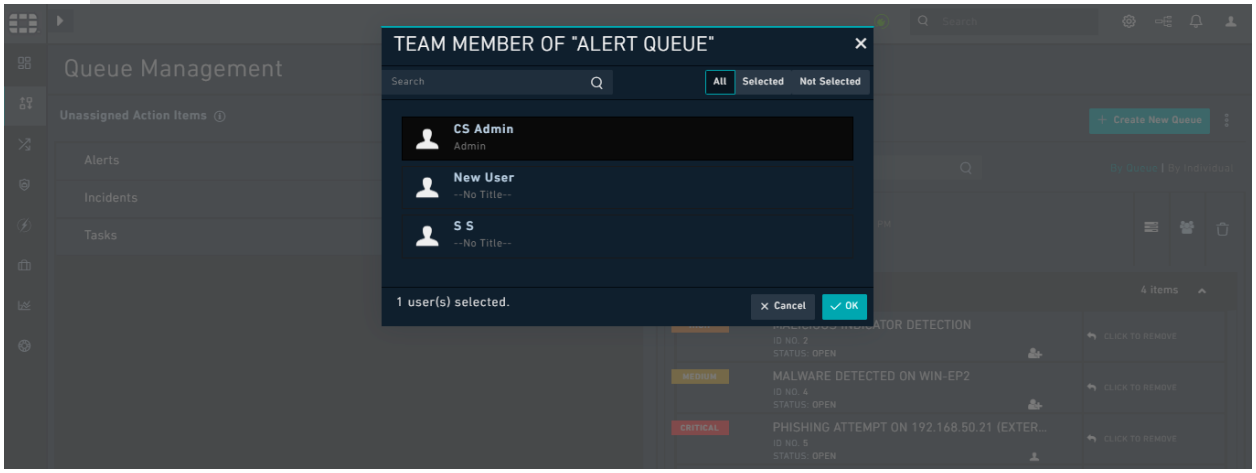


3. To assign tasks individually to an individual, click the **By Individual** link and then select the unassigned task from the module, for example, `Alerts`, and drag and drop that task on the username to whom you want to assign the task.

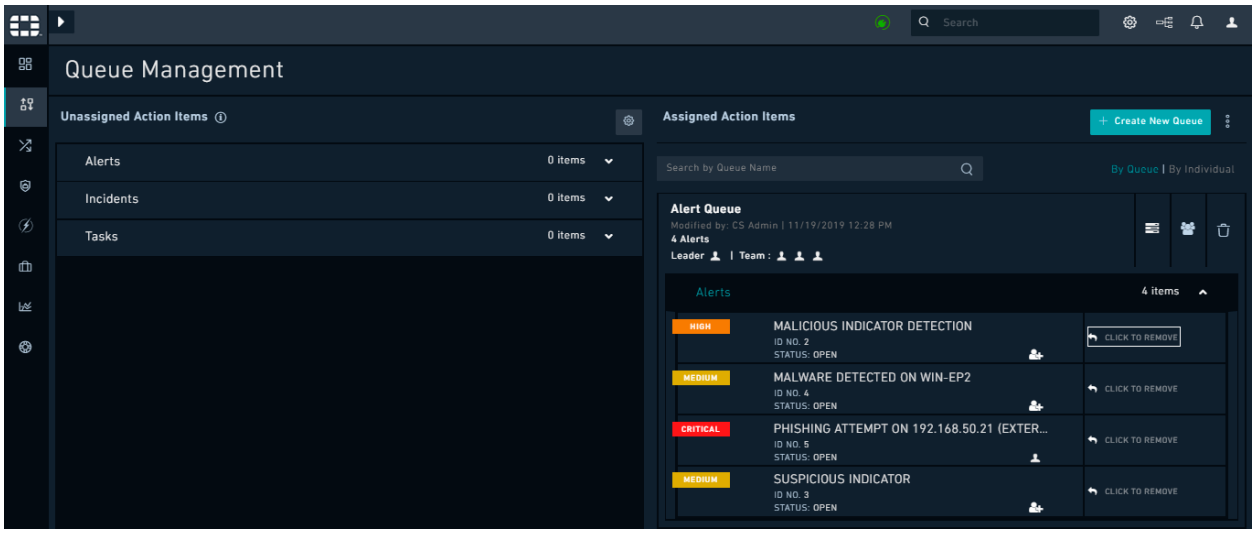


Similarily, to assign tasks in bulk to an individual, click the **By Individual** link and then select the unassigned tasks from the module, for example, `Alerts`. You will see the number of items that you have selected appear in a dialog. Drag and drop that dialog on the username to whom you want to assign the task.

4. To reassign tasks, click the **Queue Tasks** icon to open the list of tasks assigned to that queue. On the task row that you want to reassign, click the **User** icon. Clicking the User icon opens a `Team Member of "Queue Name"` dialog. Select the user to whom you want to reassign the task and click **OK**. In the following image, the task has been reassigned to the `CS Admin` user.

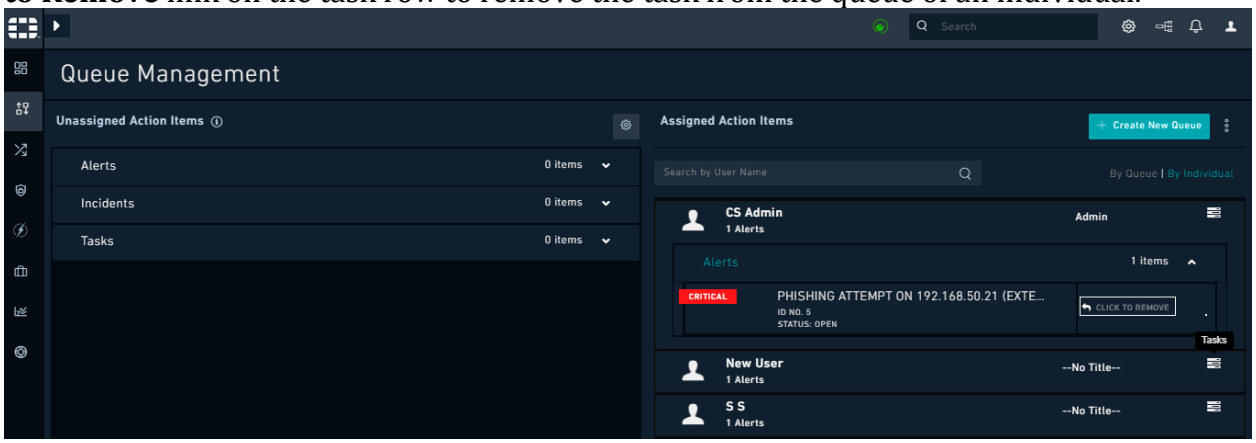


5. To remove a task from a queue, click the **Queue Tasks** icon to open the list of tasks assigned to that queue. Click the **Click to Remove** link on the task row to remove the task from the queue.



You will be presented with a `Confirm` dialog, asking you to confirm the removal of the task and once you click **OK** the task is removed from the queue.

6. To remove a task from the queue of an individual, click the **By Individual** link, and then click the **Tasks** icon, which displays the tasks assigned to that individual. Click the **Click to Remove** link on the task row to remove the task from the queue of an individual.



You will be presented with a `Confirm` dialog, asking you to confirm the removal of the task and once you click **OK** the task is removed from the queue.

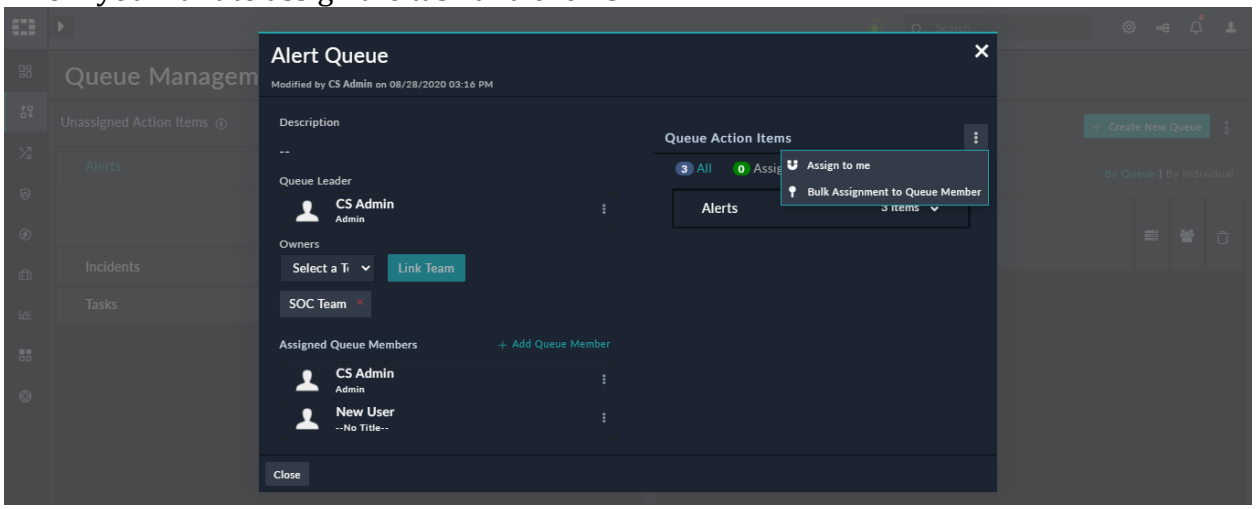
Working with queues

A queue member can view, assign, reassign and remove the items only from their own queue.

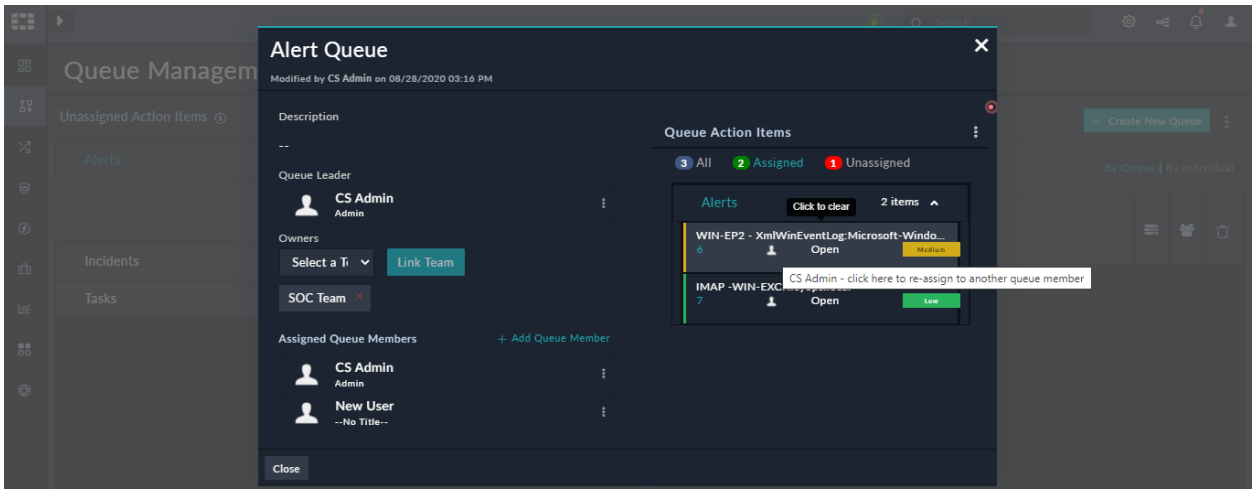
1. To view, assign or reassign the tasks assigned to you, click **Queue Management** in the left navigation bar and then click the **By Individual** link in the `Assigned Action Items`

pane. Click the **Tasks** icon that appears in the row with your username to view and perform actions on your tasks.

2. To assign a task to yourself, click the **By Queue** link in the `Assigned Action Items` pane. Click the `<Queue Name>`, for example Alert Queue, which displays the `<Queue Name>` dialog. In the `Queue Actions Items` section, click **Unassigned** to view the list of unassigned tasks. To assign a single task, click the **User** icon to open a `Team Member of "Queue Name"` dialog, select yourself and click **OK**. You can also click multiple tasks that you want to assign to yourself and click **More Options** > **Assign to me**.
   A `Queue administrator` or `Queue leader` can click **More Options** > **Bulk Assignment to Queue Member** to assign tasks to a team member. Clicking **Bulk Assignment to Queue Member** opens a `Team Member of "Queue Name"` dialog. Select the user to whom you want to assign the task and click **OK**.



3. To reassign your task to another user, on the `<Queue Name>` dialog, in the `Queue Actions Items` section, click **Assigned** to view the list of tasks that are assigned to you. Select the task that you want to reassign and click the **User** icon to open a `Team Member of "Queue Name"` dialog, select the user to whom you want to reassign the task and click **OK**.

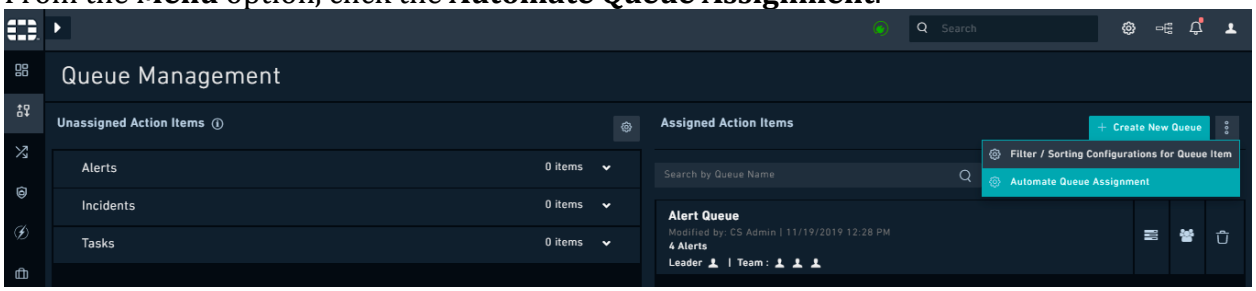


4. To unassign a task that you are assigned to from your queue, on the `<Queue Name>` dialog, in the `Queue Actions Items` section, click **Assigned** to view the list of tasks that are assigned to you. Select the task that you want to remove from your queue and click the **User** icon to open a `Team Member of "Queue Name"` dialog, select yourself and click **OK**. This removes the task from your queue and moves that task back to the queue as an unassigned item.

Automating queue assignment

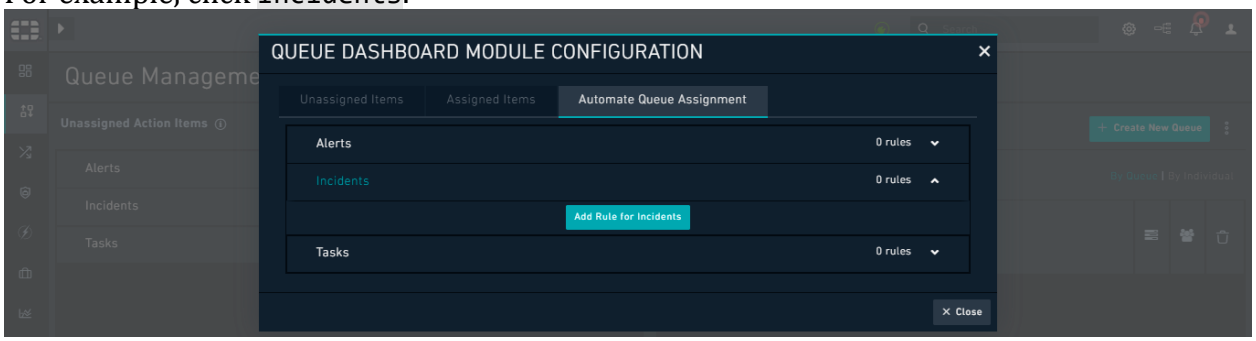
You can add rules to automatically assign unassigned items to specific queues or users for modules that have been configured for queue management.

1. Click **Queue Management** in the left navigation bar.
2. From the **Menu** option, click the **Automate Queue Assignment**.



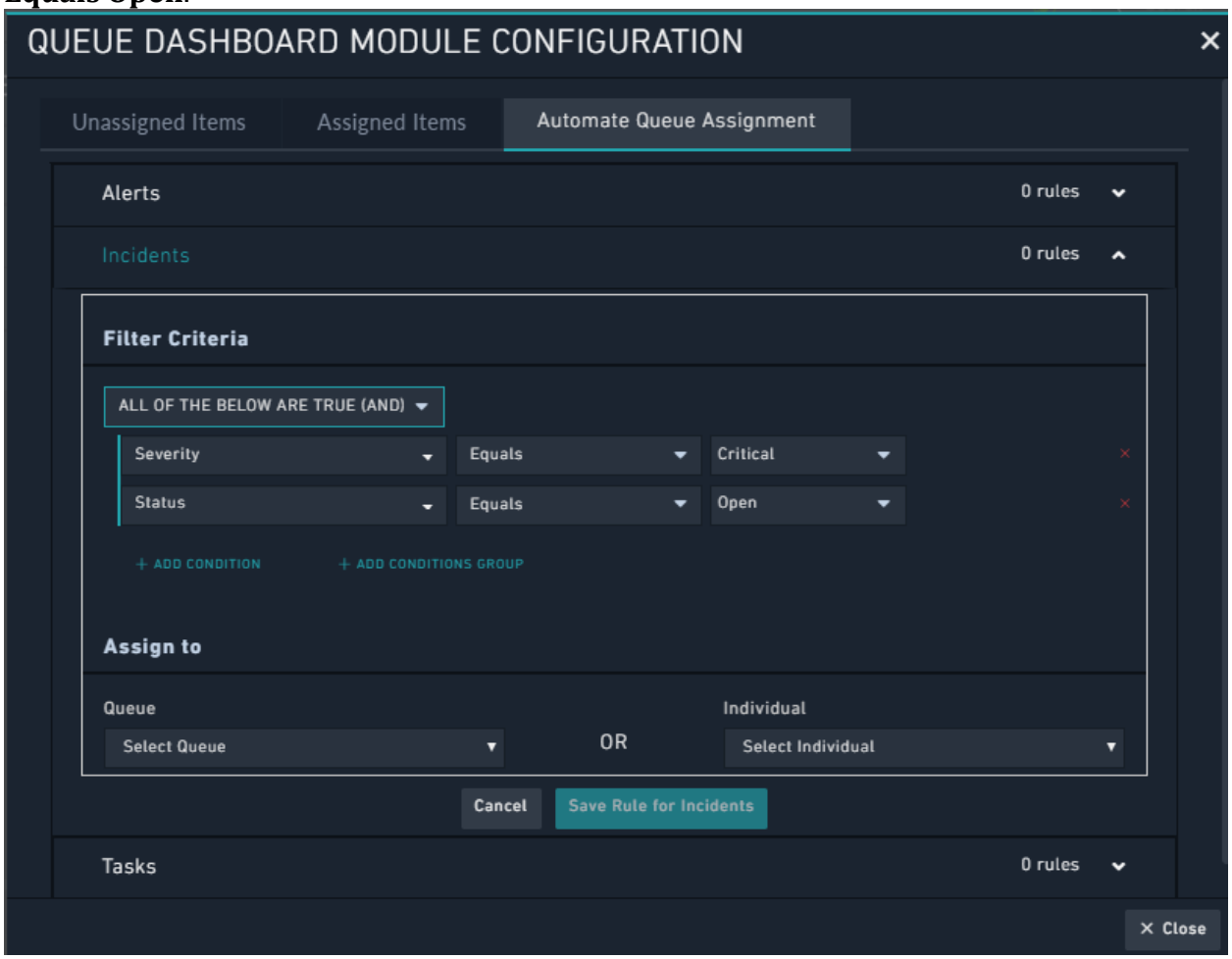
This opens the `Queue Dashboard Module Configuration` dialog with **Automate Queue Assignment** tab selected. The **Automate Queue Assignment** tab displays all the modules that have been configured for queue management.

3. Click the module for which you want to automate queue assignment.
For example, click `Incidents`.

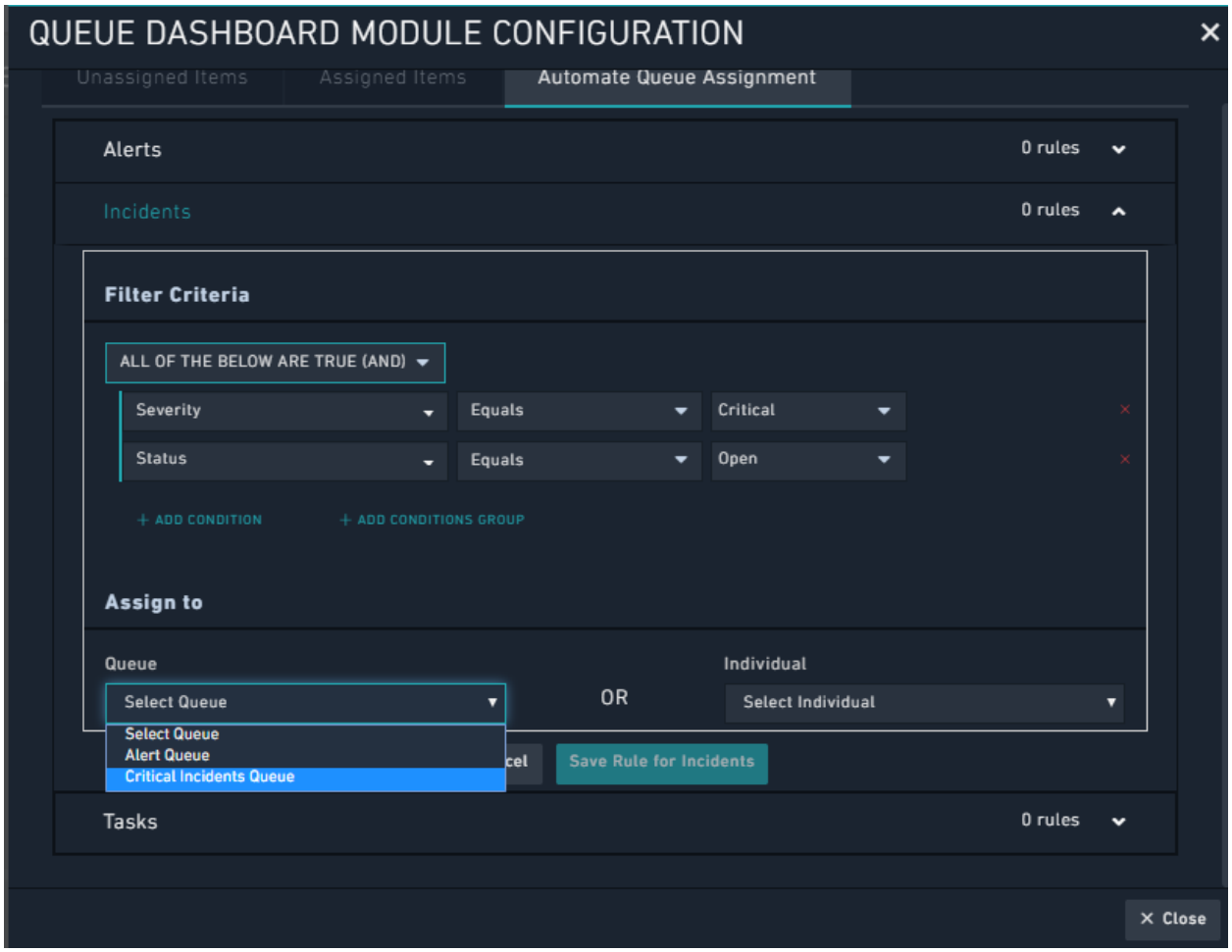


4. To add the rules based on which unassigned items will be assigned, click **Add Rule for Incidents**.
5. In the `Filter Criteria` section, click the **Add Condition** link.
For example, if you want to assign only critical and open unassigned items automatically, then you can specify the rules as follows:
Specify a condition by specifying a field, based on the resource you have selected, in our example `Incidents`.

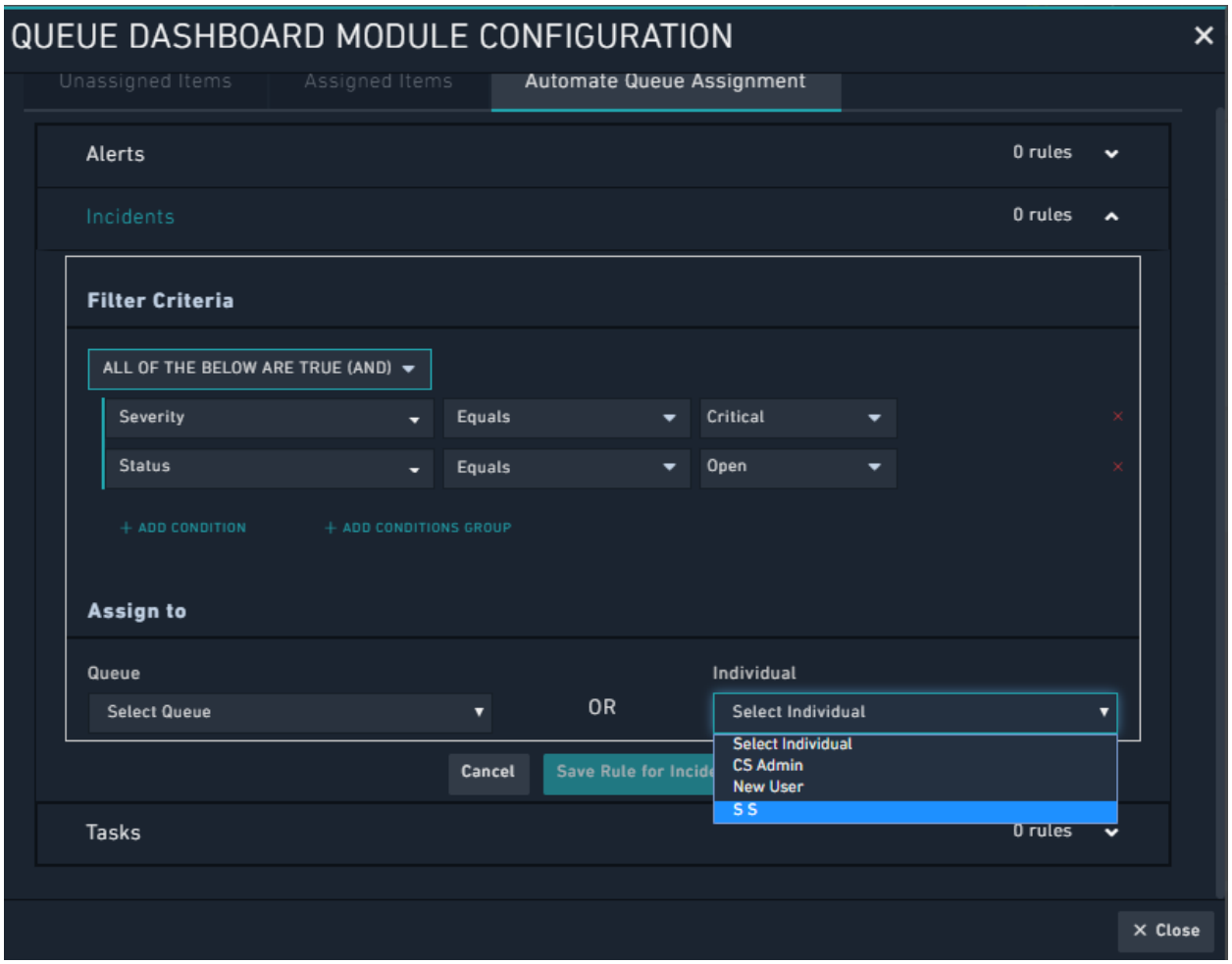
For our example, In the `Filter Criteria` section, click the **Add Condition** link, and from the **Select a field** drop-down list select the field on which you want to define the filter, select **Severity**, next specify an operator from the **Operator** drop-down list, select **Equals**, and then select an option from the **Select an Option** drop-down list, select **Critical**.
To add multiple conditions, click the **Add Condition** link again. If you have multiple conditions, you must define a Logical operator such as `and` or `or` from the **Select Logical** drop-down list. By default, this is set to `and`.
For our example, click **Add Condition** , and then add another condition for **Status Equals Open**.



6. To assign the unassigned items based on the condition you have specified, in the `Assign to` section, do the following:
   To assign the unassigned items to a queue, in the `Assign To` section, from the **Select Queue** drop-down list select the queue. For example, `Critical Incidents Queue`.

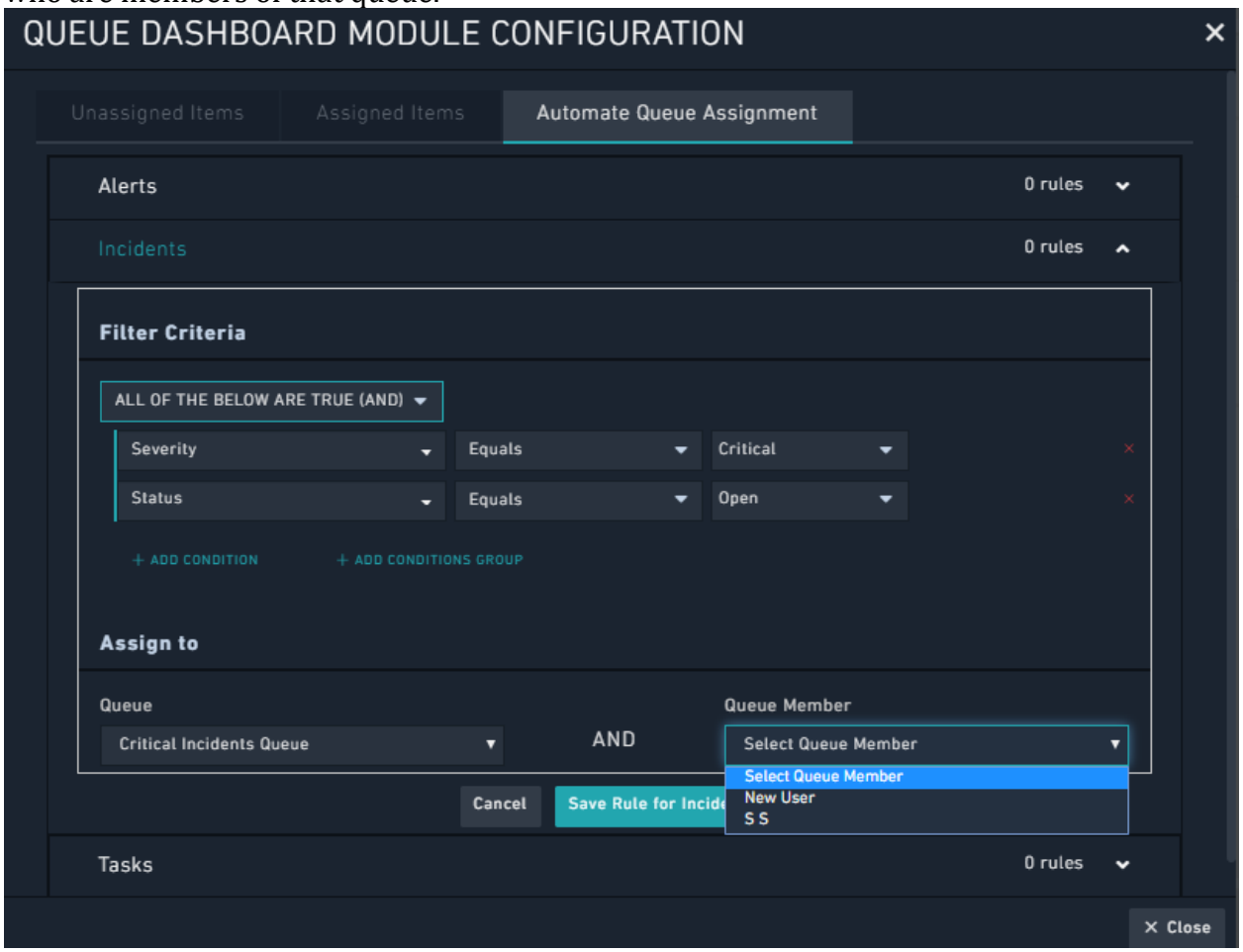


To assign the unassigned items to an individual, in the `Assign To` section, from the **Select individual** drop-down list select the individual. For example, `S S`.

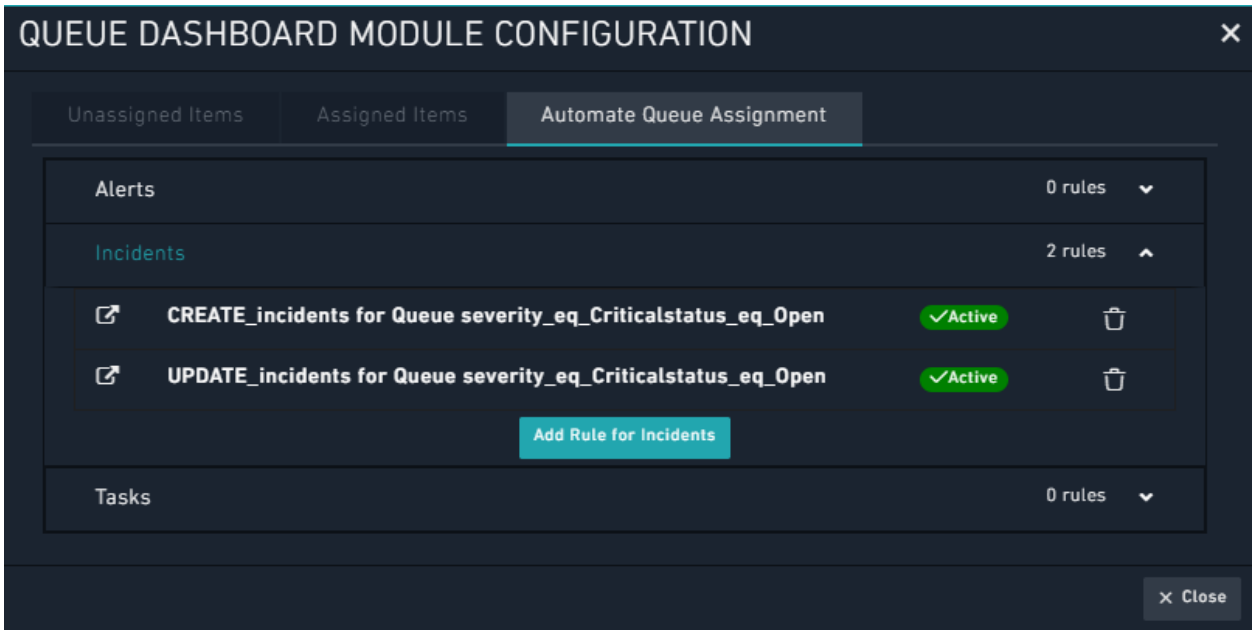


You can also specify both the user and the queue. In this case, once you specify a queue, you will see only the users who are the members of that queue. For example, if you have specified the `Critical Incidents Queue` queue, you can see only those users who are members of this queue. You can assign the tasks of this queue to either `S S` or `New User`

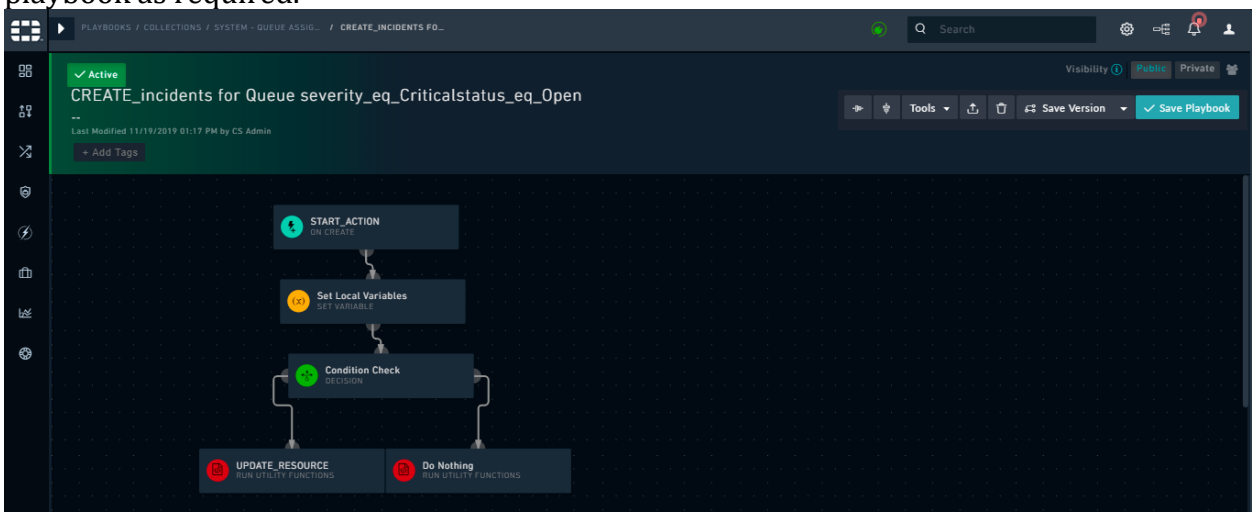
who are members of that queue.



7. Click **Save Rule for Incidents**.
   Once you save the rule, FortiSOAR™ adds two `Active` playbooks based on the rules, one for the `Create` action and one for the `Update` action. In our example, this means that the playbooks would automatically run and assign unassigned critical items in two scenarios, once when a critical incident is created, and secondly when the severity of an already created incident is changed to `Critical`.



If you want to extend the functionality or modify the created playbooks, click the **New Tab** ( ) icon. This will open the created playbook, and then you can modify the playbook as required.



To delete a rule, click the **Delete Rule** icon.

Reports in FortiSOAR™

Overview

You should use FortiSOAR™ Reports for your reporting purposes since you can easily create rich reports and dashboards in FortiSOAR™. You can also schedule reports, view historical reports and also search for text in the report PDF, which is in the text PDF format.

You can design your report to include a date or date range as an input parameter to a report; i.e. define a date range, date, or filter criterion in the template for reports. Similarly, users of the report can also specify a date range and filter data in the report whose template have the date or filter parameter defined. For information on how you can define and use dates or date ranges to filter data in the reports, see the *Dashboards, Templates, and Widgets* chapter. You can also specify the timezone in which you want to export your reports.

From version 6.4.0 onwards, the performance of dashboards and reports has improved since now only the required content is loaded and lazy loading of the content is enabled.

Click **Reports** in the FortiSOAR™ left navigation to display the `Reporting` page, which now has the following three tabs:

- **Library**: Centralized repository of all reports. The Library page displays a list of reports and its associated schedules. To see the details of schedules associated with a report, you can click the down arrow in the reports row. You can also view the generated reports from this page and also see the roles that have been assigned to a particular report. You can create new reports, edit and manage reports, and search for reports on this page. You can also import a valid JSON report template on this page.
- **Schedules**: Lists all the created schedules on this page. You can click **View Details** in a schedule row to view the detail schedule record page. Using the schedule detail record page, you can view the logs of the playbooks (by clicking the **View Executed Playbooks**) that were executed using this schedule, and also perform actions such as stopping, updating, or starting the schedule using this page. You can also search for schedules by schedule name, and filter schedules by status and report on this page.
- **History**: Lists all created (historical) reports on this page. You can search for report using its historical name and filter reports and schedules by various criteria. You can also download a pdf version of the historical report from this page.

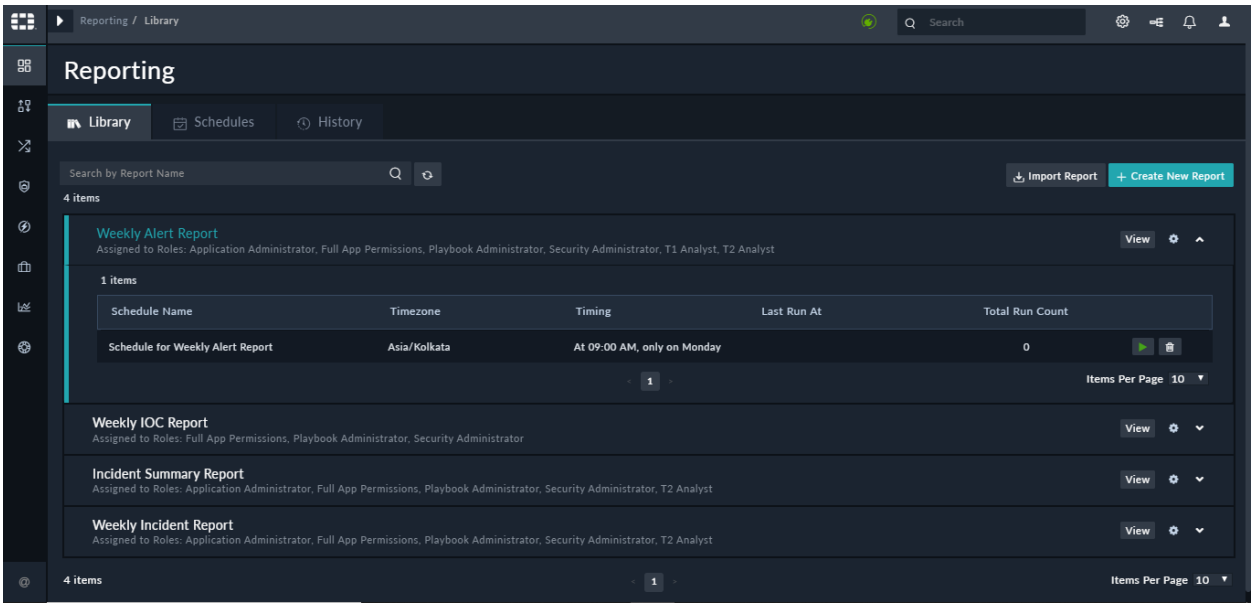


Figure 185. *Reports page*

From version 6.4.0 onwards, pagination has been introduced on all pages within Reporting, i.e., on the Library, Schedules, and History pages for better navigation. Pagination has also been introduced on the item rows within the report rows, for example, the schedule entries within a report row.

Permissions required for working with reports

Note: Only when an administrator modifies reports, those modifications are applicable across the system and applicable to users, based on their roles.

To view reports, you must be assigned a role that has `Read` permissions on the `Application` and `Reporting` modules, and the report must be assigned to your role.

To create and edit reports, you must be assigned a role that has `Read`, `Create`, and `Update` permissions on the `Reporting` module and `Read` permission on the `Application` module. Additionally, if you also want to delete reports and configurations, you must be assigned a role that has `Read`, `Create`, `Update`, and `Delete` permissions on the `Reporting` module and `Read` permissions on the `Application` module.

For users who should only be able to customize their own reports, and whose changes will not be visible to any other user, a role with `Read`, `Update` and `Create` permission on the `Reporting` module and `Read` permission on the `Application` module is sufficient. If such a user (a non-admin user) changes the dashboard, then a copy of the original dashboard is created and those changes are visible to only that particular user and not to other users.

For users who should be able to customize reports, and whose changes should be visible to all users who have access to that report, a role that has `Read` and `Update` permissions on the

Reporting module and Read permissions on the Application and Security modules must be assigned. If you have these permissions, then the changes are made in the original dashboard and these changes are visible to all the users who have access to the dashboard.

In addition to the appropriate permissions mentioned above, users also require to have appropriate rights on the module for which they want to create or edit reports. Since if users do not have Module Read permissions on the module that they want to consume in the report, then they will not be able to view the details of that module in the report. For example, if you have Module Read permissions on the **Alerts** module but not on the **Incidents** module, then you can update reports that consume Alerts as their data source. However, if you try to update a report that consumes Incidents as the data source, FortiSOAR™ displays a message such as You do not have necessary permissions for Incidents.

To create a schedule, you must be assigned a role that has Read, Create, and Update permissions on the Schedules and Read and Create permissions on the Playbooks module. To delete schedules, you must be assigned a role with Delete permissions on the Schedules module.

To view saved reports, you must be assigned a role that has Read, Create, and Update permissions on the Saved Reports module. To delete saved reports, you must be assigned a role with Delete permissions on the Saved Reports module.

To export your reports as a PDF file, you must be assigned a role that has Read permissions on the Application and Reporting modules, Create, Read, and Update permissions on the Saved Reports modules, Read and Execute permissions on the Playbooks module, and Create and Read permissions on the Files module.

Working with reports

To create a new report, click **Reports** in the FortiSOAR™ left navigation, which displays the **Library** tab on the Reporting page, and click the **+ Create New Report** button.

The **Library** tab contains a list of reports that have been created. You can search for reports by report name using the **Search** box and refresh the Library page using the **Refresh** icon. You can also edit existing reports and perform other operations from this page.

To view the details of the schedules associated with a report, click the down arrow in the report row whose associated schedules you want to view or modify, and then click on the schedule row. This will display the Schedule Details dialog, using which you can view or modify the schedule. One report can have multiple schedules, but one schedule can only be associated with a single report.

Importing a report template:

Use the export and import template feature to share reports across users. If you see a report that a colleague has created that you feel would be useful to you as well, then instead of you having to recreate the report, your colleague can export the report, and you can import it and start using the same.

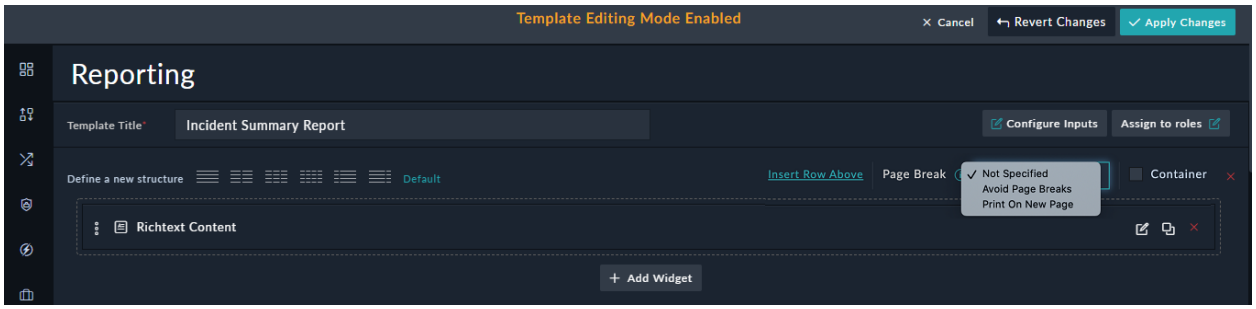
Note: You can only import a valid JSON template. The template that you import is only applicable to your report. Administrators must import, update, and assign reports for the changes to apply to all users.

1. Log on to FortiSOAR™ and click **Reports** in the left navigation.
2. On the `Library` page, click **Import Report**.
3. In the `Import Report Template` dialog box, drag-and-drop the JSON template file, or click to browse to the JSON template file.
4. Click **Import**.
   If the file is in the appropriate JSON format, FortiSOAR™ displays `Template Imported successfully!`

Based on the permissions that are set for you, you can perform the following operations on the `Library` page:

Adding or Editing Reports on the Library page

1. Log on to FortiSOAR™ and click **Reports** in the left navigation.
2. To create a new report, click the **+ Create New Report** button on the `Library` page. To edit an existing report, click the **Actions** ( )icon, in the row of the report that you want to edit, and click **Edit Template**.
   Templates are JSON definitions of the interface structure composed of widgets. Widgets are configurable interface elements that are used to represent data, such as charts or lists visually. For more information on Templates and Widgets, see the *Dashboards, Templates, and Widgets* chapter.
   From version 6.4.4 onward, reports are enhanced to support page breaks, by providing a **Page Break** option on the `Edit Template` page. To insert page breaks for reports (rows in report), you can choose from the following options:
   Not Specified: In this case, page breaks are not added, i.e., this option allows page breaks within rows.
   Avoid Page Breaks: In this case page breaks are avoided, i.e., if a page break occurs within a row in a report, then the row automatically gets printed on a new page.
   Print On New Page: In this case, page breaks are added between rows, i.e., each row of a report is printed on a new page.



Note: If you have changed a report that an administrator has assigned to you, then you will not be able to view the administrator changes to that report. To reset the administrator changes to the report, click **Actions** > **Reset to Original State**, i.e., the changes that the administrator made will be visible and your changes will be lost.

3. In the **Template Title** field, enter the template title.
4. Click **Add Row** and structure the row by defining the number and layout of columns from the options displayed in **Define a new structure**.
5. Click **Add Widget** and from the **Choose Widget** dialog box, select the appropriate widget.
   For more information on Templates and Widgets, see the *Dashboards, Templates, and Widgets* chapter.
6. Click **Edit Widget** to configure or reconfigure the widget properties and click **Save**.
7. Click **Apply Changes**.
   To revert the changes, you have made to the template, click **Revert Changes**.

Tip: To add a report heading, you can use the Richtext Content widget. You can also add fields (choose fields) from modules that you want to display in the Richtext Content widget making it simpler and efficient for you to add fields in the Richtext format. For more information on the Richtext Content widget, see the *Dashboards, Templates, and Widgets* chapter.

To clone a report template:

1. Log on to FortiSOAR™ and click **Reports** in the left navigation.
2. On the `Library` page, click the **Actions** icon, in the row of the report that you want to edit, and click **Clone Template**.
3. Update the template title.
   By default, the template title appears as **cloned: name of the original template**.
4. Update the template and widgets as required.
5. Click **Apply Changes**.

To export a report template:

Note: Report templates get exported as a JSON template.

1. Log on to FortiSOAR™ and click **Reports** in the left navigation.

2. On the `Library` page, click the **Actions** icon, in the row of the report that you want to edit, and click **Export Template**.
   FortiSOAR™ downloads the template on your machine in the JSON format.

To remove a report template:

Note: You can only remove reports that you have added. You cannot remove reports created by an administrator or by any other user.

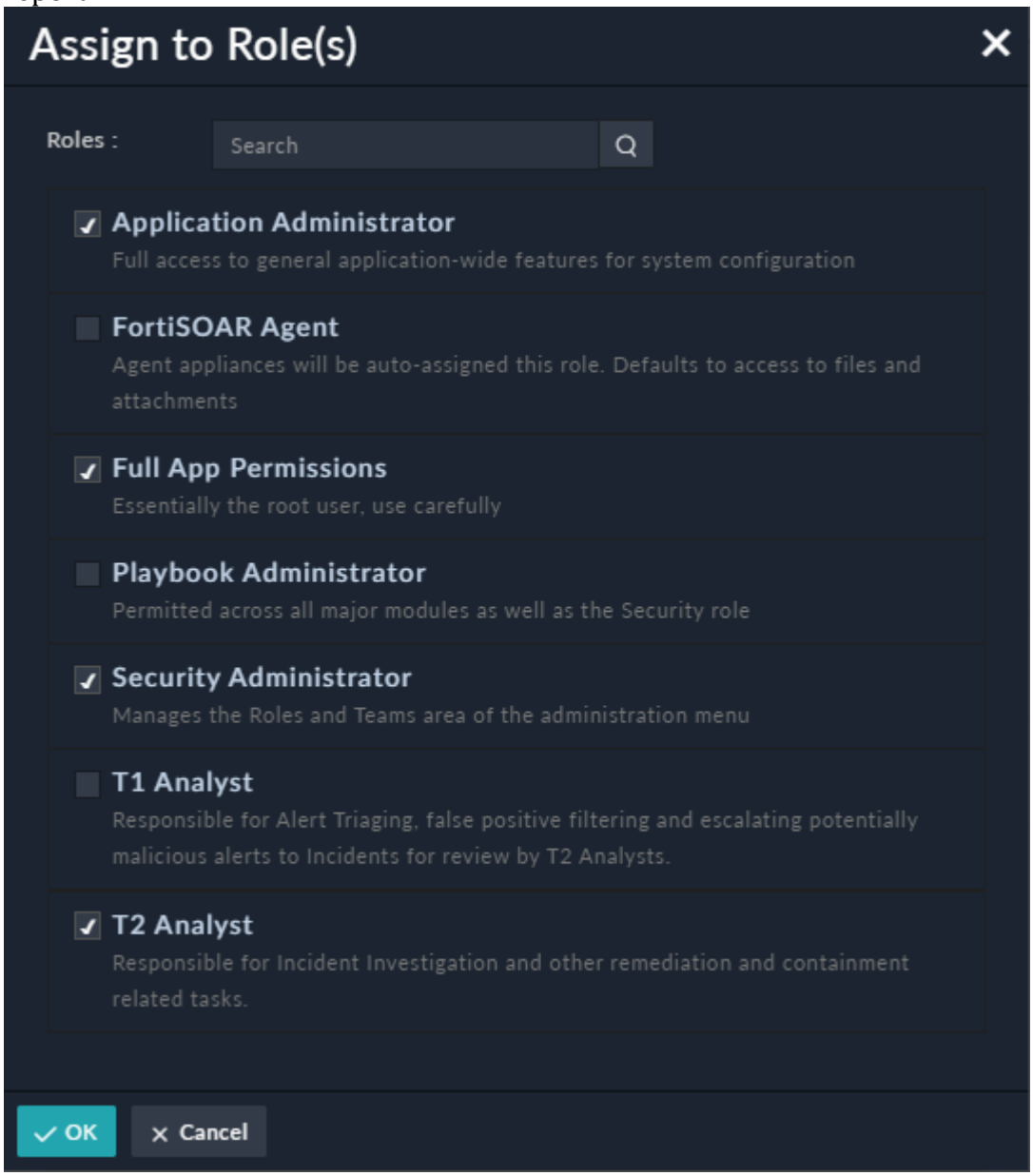
1. Log on to FortiSOAR™ and click **Reports** in the left navigation.
2. On the `Library` page, click the **Actions** icon, in the row of the report that you want to remove, and click **Remove Template**.
3. On the **Confirm** dialog, select **Confirm**.

To assign roles to reports

Important: You must have a minimum of "Read" permission on the Security module, apart from other appropriate privileges to perform this task.

1. Log on to FortiSOAR™ and click **Reports** in the left navigation.
2. On the `Library` page, click the **Actions** icon, in the row of the report to which you want to assign a role, and click **Assign to Role**.
   This displays the Assign to Role (s) dialog in which you can select the role(s) to which you want to assign the report.

3. In the **Assign to Role(s)** dialog box, select the role to which you want to assign the report.



4. Click **OK**.
   Users having the role specified will be able to see the report(s) associated with that role the next time they log on to FortiSOAR™.

Performing operations on the Report Page

To view the generated report

To view the generated report, on the `Library` page, click **View** in the row of the report that you want to view. This displays the *Report Page*. You can also perform the Assign to Role (if you have administrative privileges), Edit Report, New Report, Clone Report, and Remove Report operations by clicking the **Actions** ( ) icon on the *Report Page*. In addition to these operations, you can export a report as a pdf and take a screenshot of a report.

To go back to the `Library` page, click **Back to Library**.

To export a report as a PDF

On the *Report Page*, you can download the report in a `.pdf` format by clicking the **Export As PDF** button. The report is exported in text PDF format, which enables you to search text in the report PDF and also reduces the file size of your report as compared to an image PDF.

Note: The PDF report that you export might not exactly match with the report view that you see on the FortiSOAR™ UI. This happens if the data that is used to create the report gets updated from the time you have viewed the report till the time the report is exported.

By default, reports are exported in the light theme. This report gets downloaded on your machine. This report also gets saved and is available in the `History` page (**Reports** > **History**).

Note: You can export a FortiSOAR™ report that contains more than one page in the PDF format, i.e., the exported report PDF can consist of multiple pages. However, note that report pages are split into multiple pages based on the height of the report. Therefore, you must arrange your widgets, especially widgets in the *Chart* category, in the report in such a way that widgets are not placed between two pages, else the data of that widget will get split into two parts.

If you have manually exported the report, i.e, by clicking the **Export As PDF** button on the *Reports* page, then the report is generated by default in the timezone that is set by your administrator. If the administrator has not set any timezone, then the report is generated in the timezone of the user's browser. Administrators can define a timezone that will be used by default for exporting reports. This timezone will be applied by default to all reports that you export from the *Reports* page. For more information, see the *System Configuration* chapter in the "Administration Guide."

If your administrator has set the default timezone in which to export reports, then that timezone is displayed when you click the **Export As PDF** option. The default timezone set will be displayed in the `Timezones` dialog:

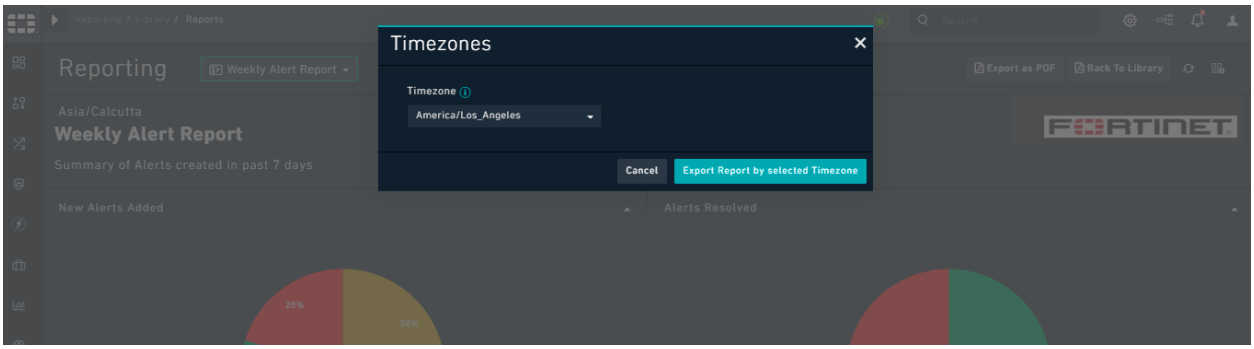


Figure 186. *Timezones Dialog*

Either retain the default timezone or change the timezone using the **Timezone** drop-down list, and then click the **Export Report By Selected Timezone** button in the `Timezones` dialog. For our example we have retained the default timezone. Therefore, the report will be exported in the default timezone (America/Los_Angeles), which is visible on the exported report as shown in the following image, if you have added timezone as part of the report. For more information see Displaying of timezone within exported reports.

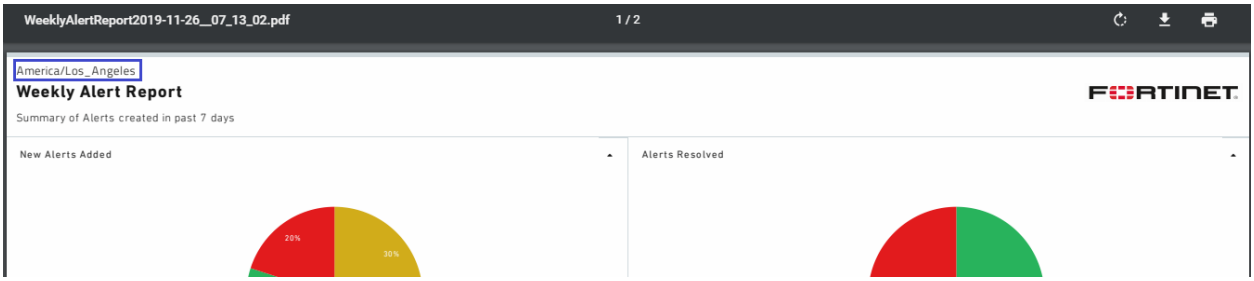


Figure 187. *Exported report displaying default Timezone*

If you want to export the report in the timezone other than the default timezone, then in the `Timezones` dialog that appears when you click the **Export As PDF** option, choose the required timezone. In the `Timezones` dialog, you can search and select the timezone in which you want to export the report. For our example the default timezone is set as America/Los_Angeles and if for example, you want to export the report in the Asia/Kolkata timezone, then type `kol` in the search box below the Timezone field to find the correct timezone, as shown in the following image:

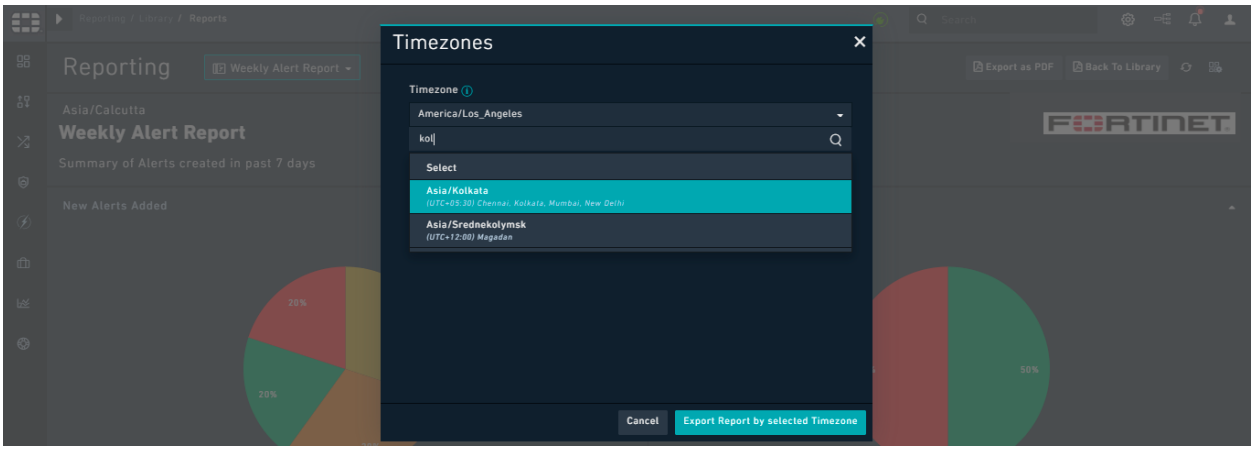


Figure 188. *Timezones dialog for exporting reports*

Now, click the **Export Report By Selected Timezone** button. This will export the report and you will be able to see this timezone (Asia/Calcutta) on the exported report as shown in the following image, if you have added timezone as part of the report. For more information see Displaying of timezone within exported reports.

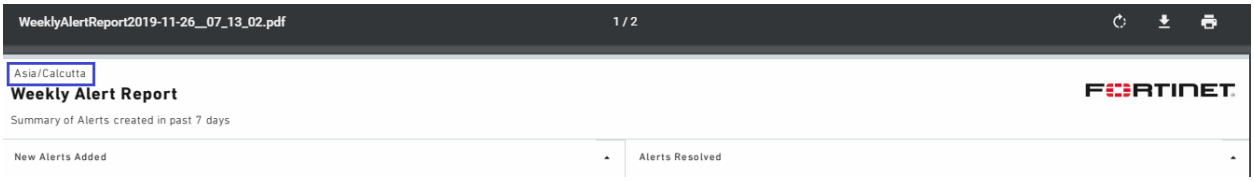


Figure 189. *Exported report displaying selected Timezone*

To take a screenshot of the report:

1. Log on to FortiSOAR™ and click **Reports** in the left navigation.
2. On the `Library` page, click **View** in the row of the report whose screenshot you want to take.
   This displays the report that has been created (*Report Page*).
3. On the *Report Page*, click the **Actions** icon and select **Take Screenshot**. FortiSOAR™ takes a screenshot of the report and downloads the report on your machine in the PDF (image pdf) format. The screenshot will be taken in the current theme in which you are working. For example, if you are working in the dark theme, then the PDF will also be in the dark theme.
   The name of the pdf file will be the `<name of the report>Timestamp.pdf`. For example, `Weekly Alert Report[Tue Nov 26 2019 13_16_59 GMT+0530 (India Standard Time)].pdf`.

Input Variables in Dashboards and Reports

You can define variables that you can use in widgets as filters to consume inputs and create a dashboard or a report dynamically. Using input variables, you can filter data in a dashboard or report to display a particular set of data without having to define the same criteria in each widget in the dashboard or report. Once you configure the variable as a filter in widgets, the dashboard or report is displayed according to the filter value you have specified. You can also specify inputs for dashboards or reports, based on which dashboard or reports are updated dynamically to display the dashboard or report according to the updated input values.

For more information and examples of input variables, see the *Dashboards, Templates, and Widgets* chapter.

From version 6.4.0 onwards, the user experience of working with reports that need input to load has been improved. If a report, for example, Incident Summary Report was configured such that no default incident ID was specified and required the user to provide the incident ID before the report could be displayed, then earlier FortiSOAR™ would display messages such `Widget not configured properly`. Now, FortiSOAR™ displays a message such as `Please provide required input to load the report` and prompts you to enter the **Incident ID** in the `Configure Reports Inputs` dialog, as shown in the following image:

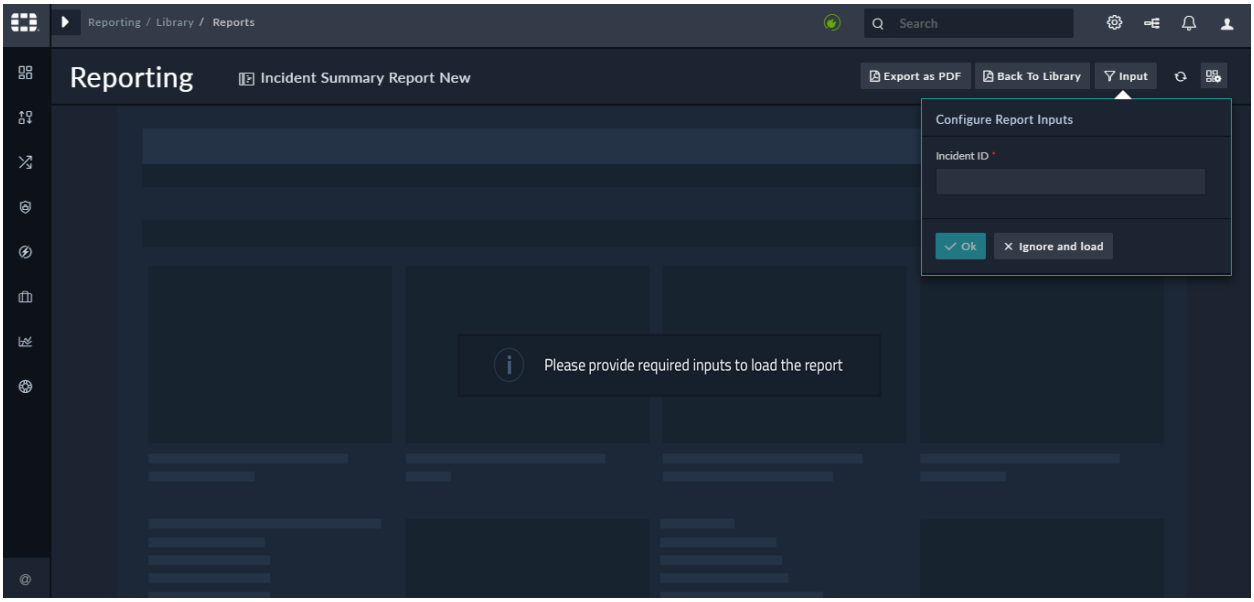
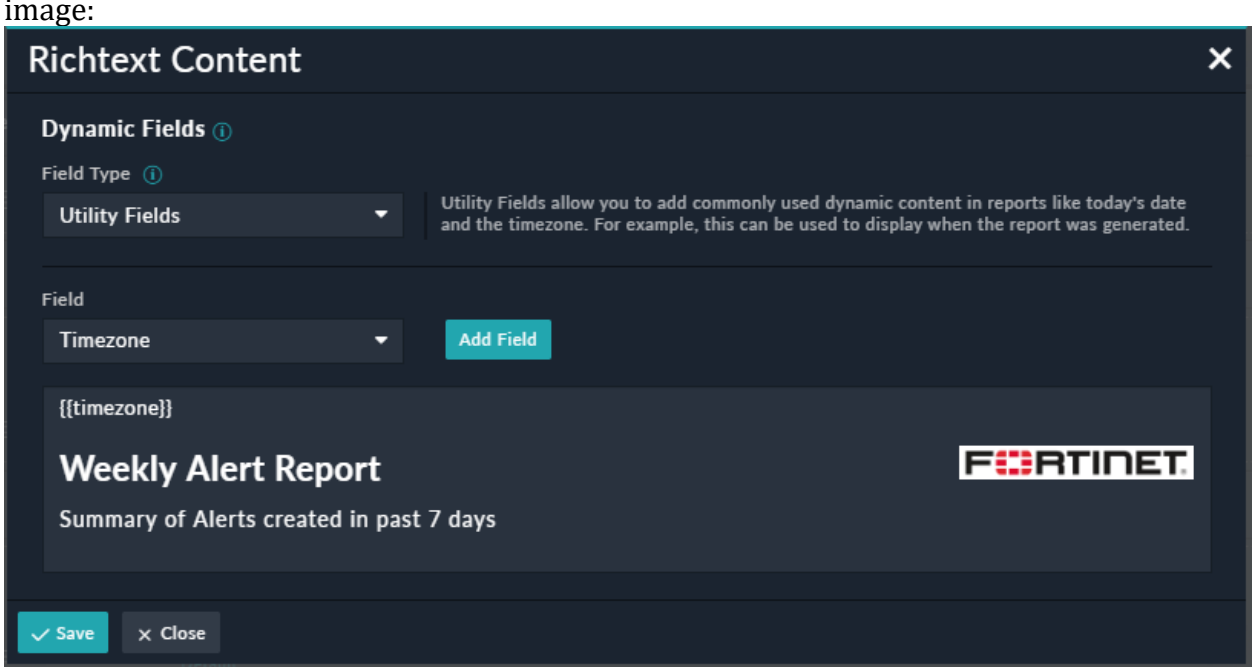


Figure 190. *Reporting page that requires inputs from users*

Displaying of timezone within exported reports

If you want to display the timezone in which the report (.pdf) has been exported, do the following steps in the template of the report in which you want to display the timezone:

1. On the `Reports` page, in the report row in which you want to display the timezone, click the **Actions** icon, and then select **Edit Template**.
   Generally, you will find that the heading of the report is displayed using the Richtext Content widget.
2. In the **Richtext Content** widget row, click the **Edit** icon.
3. In the Richtext Content widget, click the **Add Dynamic Fields** link.
   For more information on templates and widgets, see the *Dashboards, Templates, and Widgets* chapter.
4. From the **Field Type** drop-down list, select **Utility Fields**.
5. From the **Field** drop-down list, select **Timezone**, and click **Add Field**.
   This will paste the jinja value of the Timezone field, i.e., `{{timezone}}` in the Richtext Content widget on the location where your cursor is placed as shown in the following image:



6. Click **Save** to save the updates to the reports template.

If your report has been scheduled using the timezone as Asia/Kolkata, then you will be able to see this timezone (Asia/Calcutta) on the exported report as shown in the following image:

Figure 191. *Exported report displaying the timezone*

Scheduling Reports

You can schedule reports to run automatically at specific times and also automatically send reports to the relevant users. For example, you can schedule a report that contains Critical Open Alerts to be sent out to, for example, managers in a SOC team, at 8 am in the morning on Mondays.

Note: You can create multiple schedules for a single report.

When you click **Reports** in the left navigation, the `Reporting` page with the **Library** tab selected is displayed.

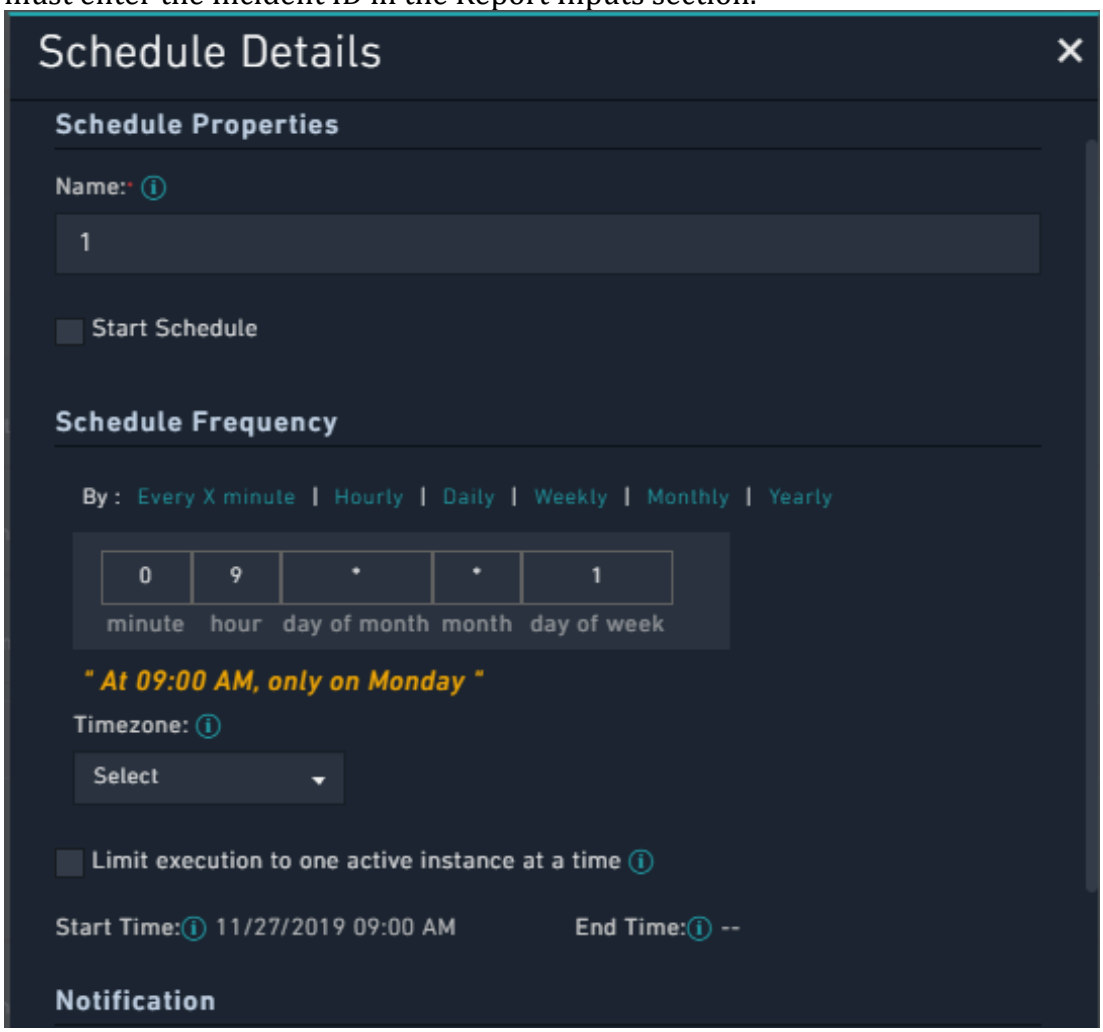
On the `Library` page, you can see the list of reports and its associated schedules. You can also add new schedules to a report or modify existing schedules on this page.

Important: To schedule a report you must be assigned with the appropriate role associated with that report, and also appropriate permissions on the `Schedules` and `Saved Reports` modules.

To add a new schedule, do the following:

1. On the `Library` page, in the report row for which you want to add a new schedule, click the **Actions** icon, and then select **Schedule Report**.
2. In the `Schedule Details` dialog, configure the following parameters
    a. In case of a report that takes input variables, you must specify the required inputs in the `Report Inputs` section.
    For example, if a report requires the incident id as an input parameter, then you

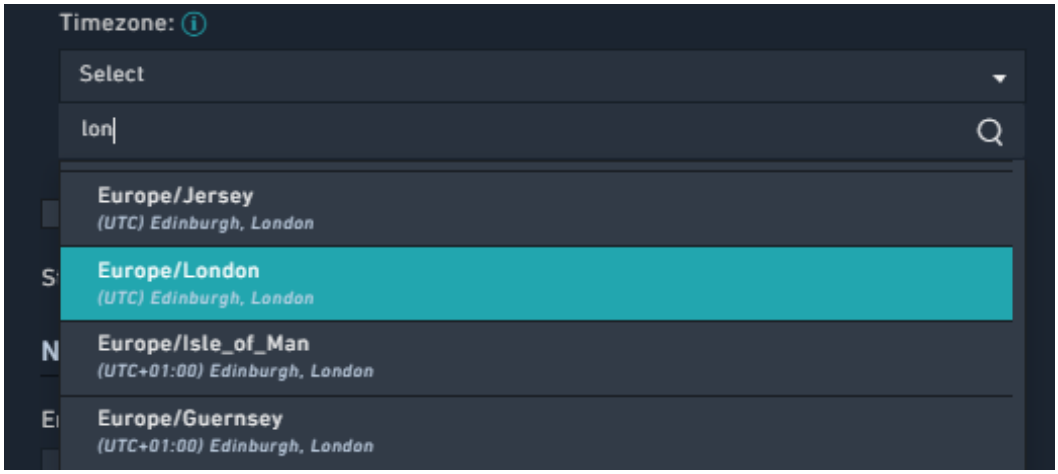
must enter the Incident ID in the Report Inputs section.



b. In the **Schedule Name** field, enter the name of the schedule.
c. If you want to start the schedule immediately after creating the schedule, click the **Start Schedule** checkbox.
d. In the `Cron Expression` section, add a valid cron expression to schedule the report.
Cron expression is a string consisting of upto five subexpressions (fields) that describe individual details of the schedule.
In the Cron Expression section, you can click the Hourly, Daily, Weekly, Monthly or Yearly links in the `By` row to schedule your report and define the schedule for your report. For example, to schedule a report to run weekly at 9:00 am in the morning every Monday, click the **Weekly** link and in the hour box type `9`, in the minute box type `0`, and in the day of the week type `1` (1-Monday, 2-Tuesday...7-Sunday) as shown in the above image. A short description of the schedule also appears below the cron expression box, in our example, it appears as `At 9:00 AM, only on Monday`, which means the report will run every Monday at 9 am as shown in the above image.

Note: The schedule runs as per the timezone selected in the **Timezone** drop-down list.

e. From the **Timezone** drop-down list, search for and select the timezone in which you want to export the report. For example, if you want to search for the timezone of London, you can type `lon` in the search box below the Timezone field to find the correct timezone.



The time that is displayed in the generated reports, i.e., reports that are present in the **History** tab, will be based on the timezone you have selected.
If you do not select any timezone, then by default, the timezone is set as UTC.

f. If you want to ensure that you do not rerun the workflow, if previous scheduled instance of the report is yet running, then click **Limit execution to one active instance at a time**.

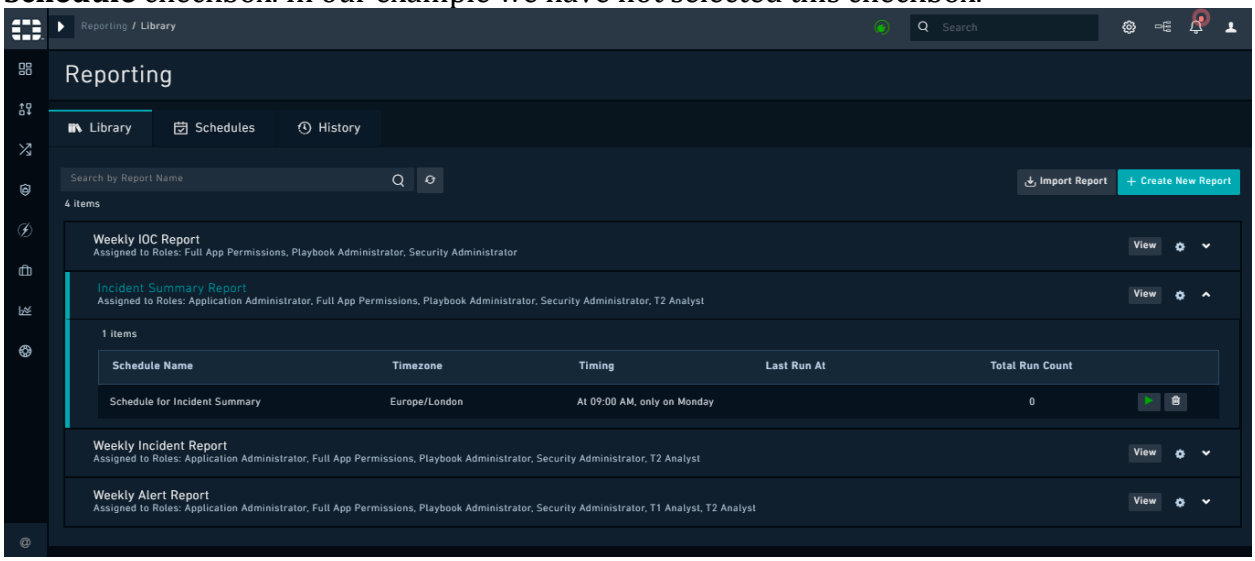
g. (Optional) In the **Start Time** field, you can specify the date and time from when the schedule will start running.

h. (Optional) In the **End Time** field, you can specify the date and time after which the schedule will not run, i.e., the date and time to stop the schedule.
Note: Once a schedule reaches the specified end time, then the schedule displays **Yes** in the Expired column on the schedules listing page. It is recommended that you should make the expired schedules "Inactive".

i. In the **Email Address** field, enter a semicolon-separated list of email IDs to whom you want to send this scheduled report.
Note: Ensure you provide valid email addresses.

j. Click **Save** to save this schedule.
The schedule is saved in the **Inactive** state if you have not selected the **Start**

Schedule checkbox. In our example we have not selected this checkbox.



To start your newly created schedule, click the **Start Schedule** button in the schedule row:

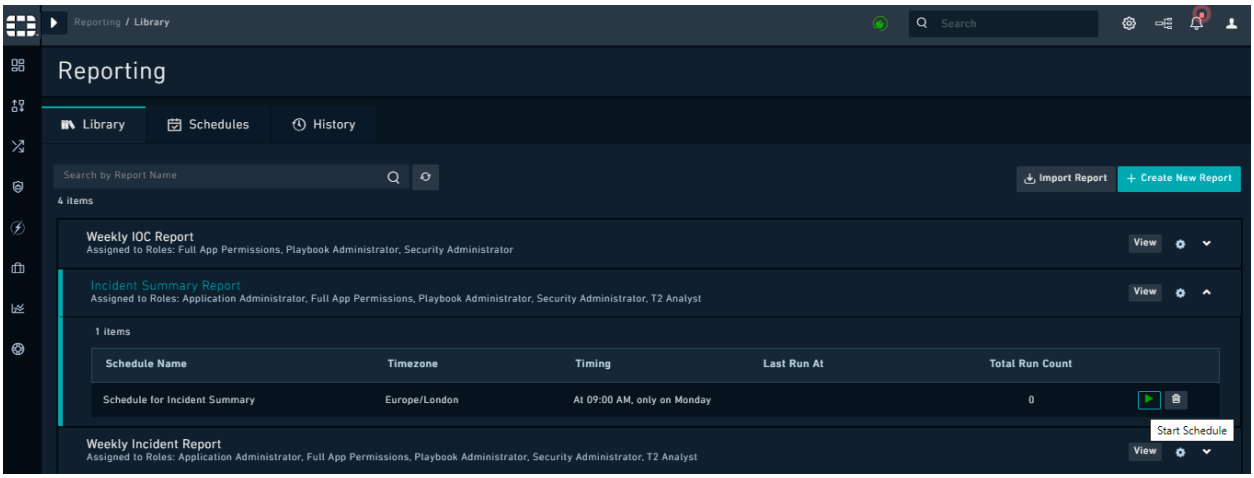
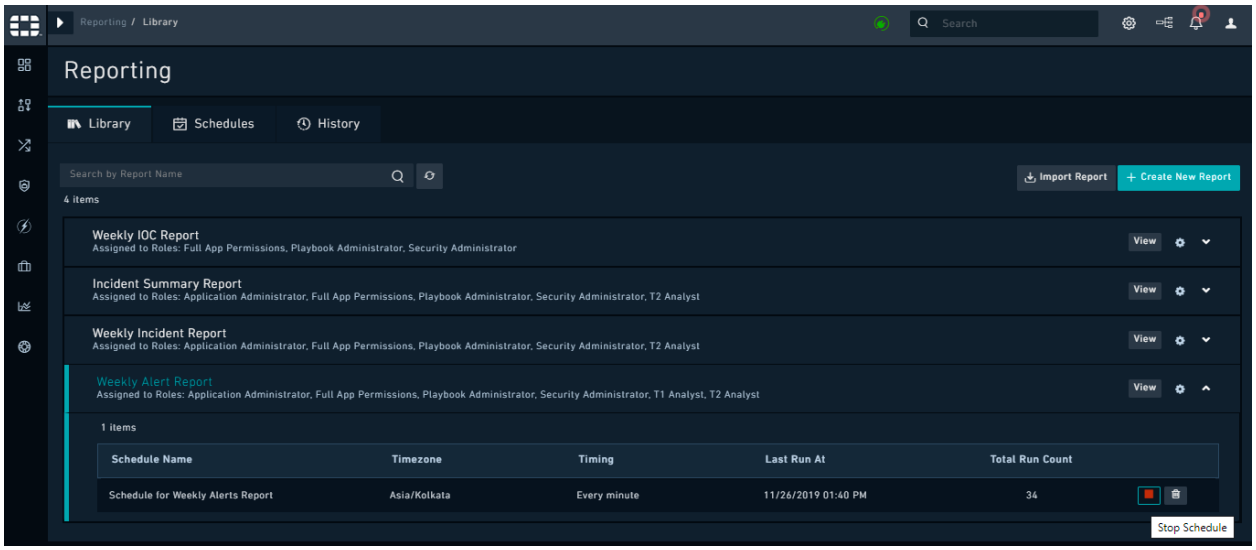


Figure 192. *Start Schedule*

To perform other actions, on the `Library` page, do the following:

- To view schedules associated with reports and the details of the schedule, click the down arrow in the report row whose associated schedules you want to view as shown in the following image:



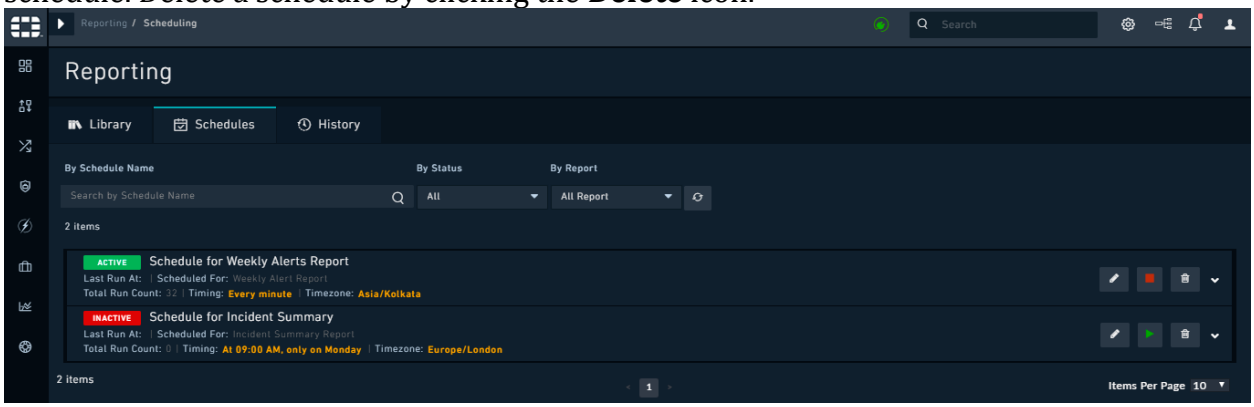
The schedule details include information such as, the name of the schedule, the schedule timezone, the timing of the schedule, the last run of the schedule, and the total run count of the schedule. You can also stop a running schedule using the **Stop Schedule** button; similarly, you can also start a stopped schedule using the **Start Schedule** button.
Note: When you stop a schedule the value, i.e., datetime of the **Last Run At** field becomes blank.

- To modify a schedule, click the down arrow in the report row whose associated schedules you want to modify, and then click on the schedules row. This will display the `Schedule Details` dialog, using which you modify an existing schedule.

Click the **Schedules** tab, to do the following:

- View a list of all the schedules associated with reports, i.e., all schedules that have been created for reports are visible on this tab.
- Search for schedules by schedule name.
- Filter schedules by Status and Report name. Filtering by Report name will display the schedule associated with the report. One report can have multiple schedules, but one schedule can only be associated with a single report.
- Refresh the `Schedules` page using the **Refresh** icon.
- Perform the following actions in a particular schedule row: Stop a running schedule using the **Stop** button in the schedule row; similarly, you can also start a stopped schedule using the **Start** button. Update a schedule, by clicking the **Edit** icon. Clicking the **Edit** button, displays the `Schedule Details` dialog, using which you can update the

schedule. Delete a schedule by clicking the **Delete** icon.



- View brief details of the reports associated with the schedule by clicking the down arrow in the row of the schedule whose report details you want to view.
  The report details include information such as, name of the playbook that ran for the schedule, a link to the PDF version of the report, the name of the report, the date on which the schedule was created, and the name of the user who created the schedule.
  Clicking the report link in the `File` column downloads the PDF version of the historical report associated with the schedule.

Historical Reports

Click the **History** tab to view a list and details of all created (historical) reports on this page, as shown in the following image:

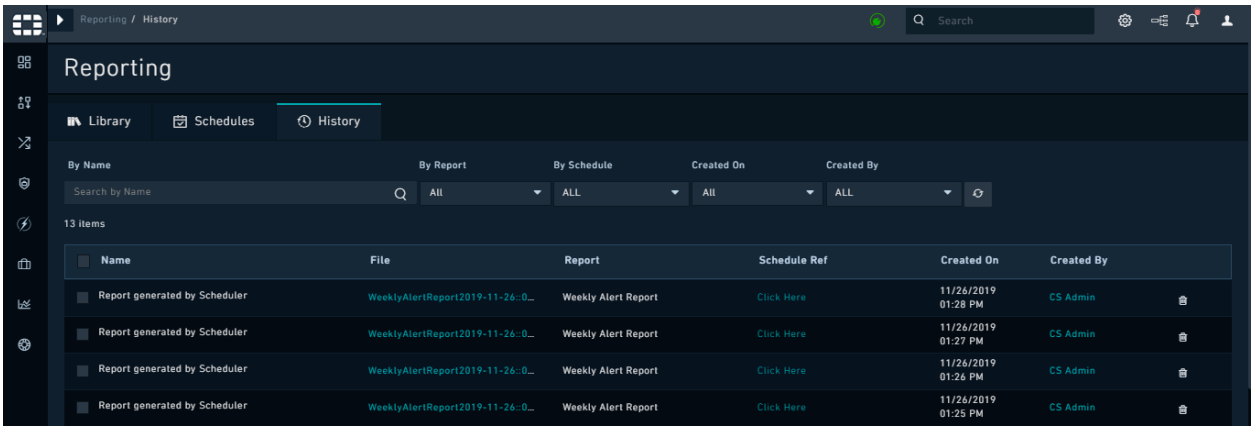


Figure 193. *Historical Reports*

The historical report details include the name of the playbook that ran for the schedule, a link to the PDF version of the report, the report name, a link to the `Schedule Details` dialog using which you can update the schedule of the report, the datetime when the historical report was created, and the name of the user who created the report. Clicking the report link in the `File` column downloads the PDF version of the historical report.

You can refresh the `History` page using the **Refresh** icon. To delete a historical report click the **Delete** icon in the row of the historical report you want to delete.

You can search for historical reports by the report's historical name and also filter reports and schedules on this page based on the following criterion:

- **By Report Name**: Enter the name of the saved report that you want search.
- **By Report**: Select the name of the report from this drop-down list to filter reports.
- **By Schedule**: Select the name of the schedule from this drop-down list to filter reports.
- **Created On**: Select the relative date range within which you want to search for created reports, for example, all reports created in the Last 30 Mins.
- **Created By**: Select the user from this drop-down list to filter reports based on the user who has created the reports.

Widget Library

FortiSOAR™ contains a "Widget Library" that allows users to edit out-of-the-box (OOB) widgets and build new widgets for custom use cases. FortiSOAR™ provides many OOB widgets for graphs, charts, utilities etc., however there are always customizations and new use cases that are required to meet the user expectations. This feature provides more control to users and allows them to shape the widget based on their available data. For more information on the OOB widgets available in FortiSOAR™, see the *Dashboards, Templates, and Widgets* chapter.

The feature is introduced as a "BETA" feature with more enhancements being planned to be added in the subsequent releases to make the Widget Library more robust and comprehensive.

Important: If you have upgraded your instance to FortiSOAR™ 6.4.1 or later from a version earlier than 6.4.1, then you will not be able to view the Widget Library, due to missing permissions on the Widgets module. Administrators require to assign appropriate permissions to users according to the operations using the Widget Library.

Widget Store

Use the Widget Store to easily view, search, and install, upgrade, and uninstall widgets that are part of the FortiSOAR™ OOB widget library.

Following are the permissions that you must be assigned to perform operations on widgets:

- To install a widget, you must be assigned a role that has a minimum of `Create`, `Update`, and `Read` access on the `Widgets` module.
- To upgrade and configure a widget, you must be assigned a role that has a minimum of `Update` and `Read` access on the `Widgets` module.
- To uninstall a widget, you must be assigned a role that has a minimum of `Read` and `Delete` access on the Widgets module.
- To view the widget listings in the Widget Store and to use the widgets as part of FortiSOAR™ pages you must be assigned a role that has a minimum of `Read` access on the `Widgets` module.

Once you create a new widget or edit an existing OOB widget, and you want to display that widget in dashboards, reports, view panel, listings, etc., you also require appropriate permissions to the FortiSOAR™ page in which you want to display the widget.

Important: To access the Widget library, you must ensure that update.cybersponse.com is reachable from your FortiSOAR™ instance.

To open to the widget store, on the FortiSOAR™ left navigation, click **Widget Library**. On the `Widget Library` page, click the **Widget Store** tab. The `Widget Store` page appears as shown in the following image:

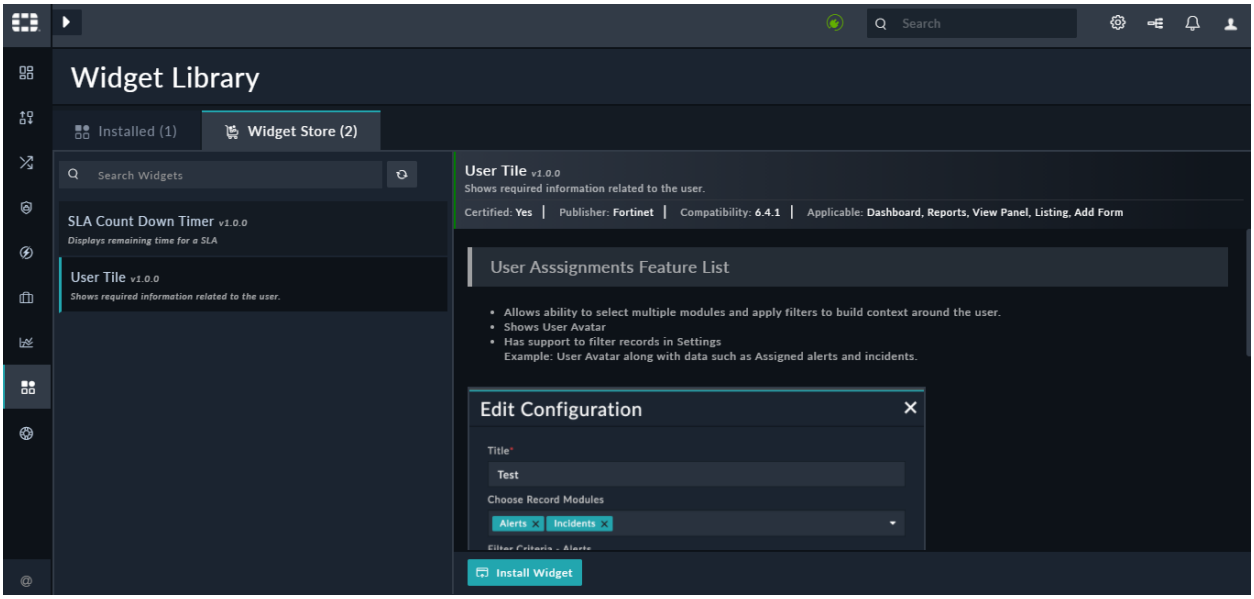


Figure 194. *Widget Store page*

You can search for a widget using the **Search Widgets** field.

Each widget that is part of the Widget Store has a brief description of the widget, the feature list for the widget. It contains compatibility information, information on which FortiSOAR™ pages, such as dashboards, add forms, etc., on which the widget will be displayed, and an example of the widget usage along with a sample screenshot of the widget.

To install a widget, click **Install Widget**. Once you install a widget you can add a widget to FortiSOAR™ pages, such as reports, view panel, etc., based on the widget configuration specified.

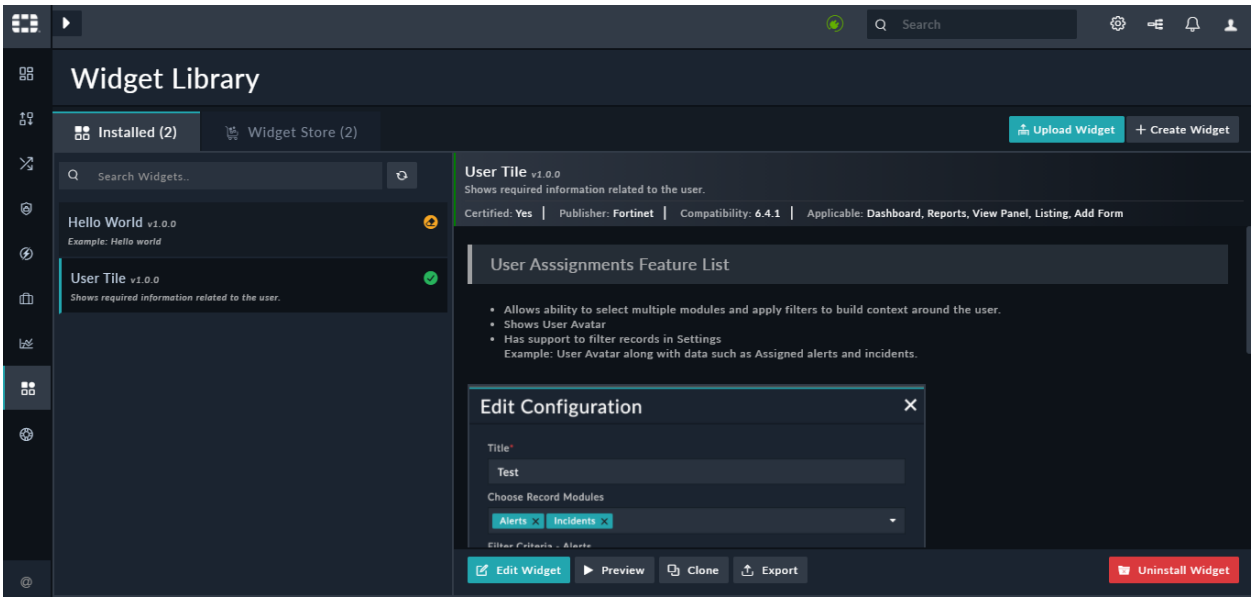


Figure 195. *Widget Library - Installed tab*

To edit a widget to suit your requirements, click **Edit Widget**, which opens the code editor interface. For details on editing widgets, see Editing an existing widget.

To clone a widget, for example in cases where you want to enhance an existing widget without impacting the original one, click the **Clone** button. Then in the `Clone Widget` dialog enter the title for the cloned widget and click **Save**. This opens the widget in the code editor interface, where you can choose to make changes to the cloned widget or close the widget. The cloned widget gets saved in the `Draft` State.

To create a new custom widget, click **Create Widget**, which opens a code editor interface. For details creating widgets, see Creating Widgets.

To upload a custom widget (.tgz) that you have already created, click **Upload Widget**. This opens the `Upload Widget` popup where you can drag-and-drop the .tgz file of the widget or browse to the .tgz file to add the widget in FortiSOAR™.

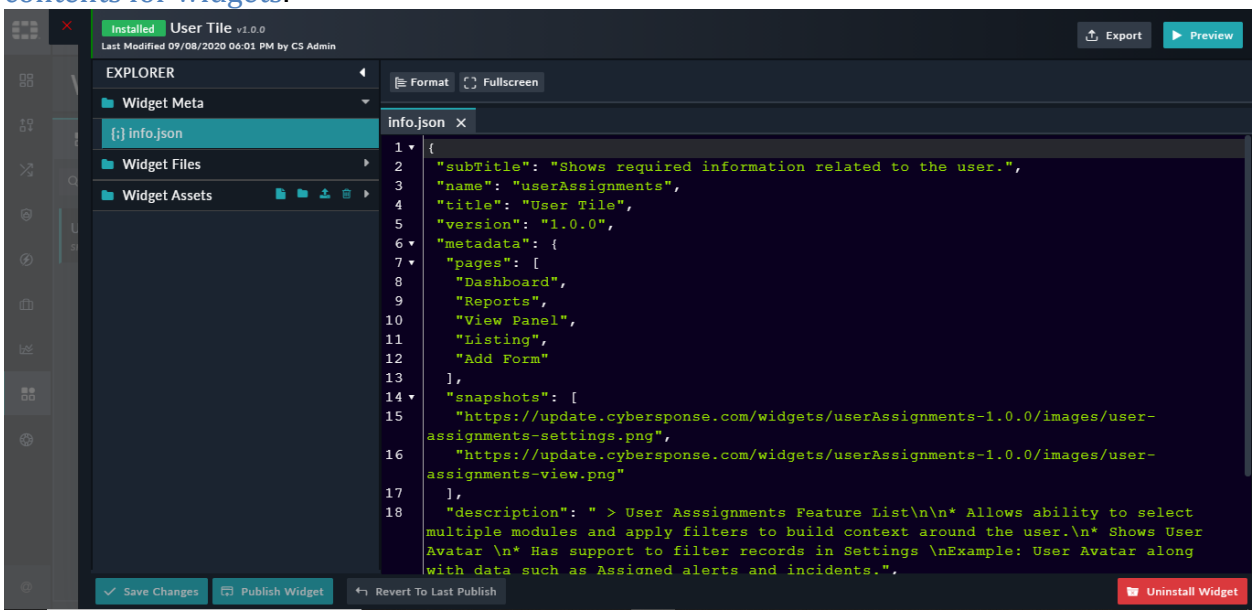
To uninstall an installed widget click **Uninstall Widget** or to delete a widget (which is uninstalled), click **Delete Widget**. Clicking either of the buttons displays a `Confirmation` dialog, on which you click **Confirm** to uninstall or delete the widget. FortiSOAR™ displays the Success message and the installed widget number decreases by 1.

Editing an existing widget

To edit a widget to suit your requirements, do the following:

1. On the FortiSOAR™ left-navigation, click **Widget Library**.

2. On the **Installed** tab, click the widget you want to edit, and the click **Edit Widget**.
   This displays the code editor interface for the selected widget. The code editor interface contains the following folders: Widget Meta, Widget Files, and Widget Assets. For the description of the contents of these folders and files, see the Directory structure and contents for widgets.



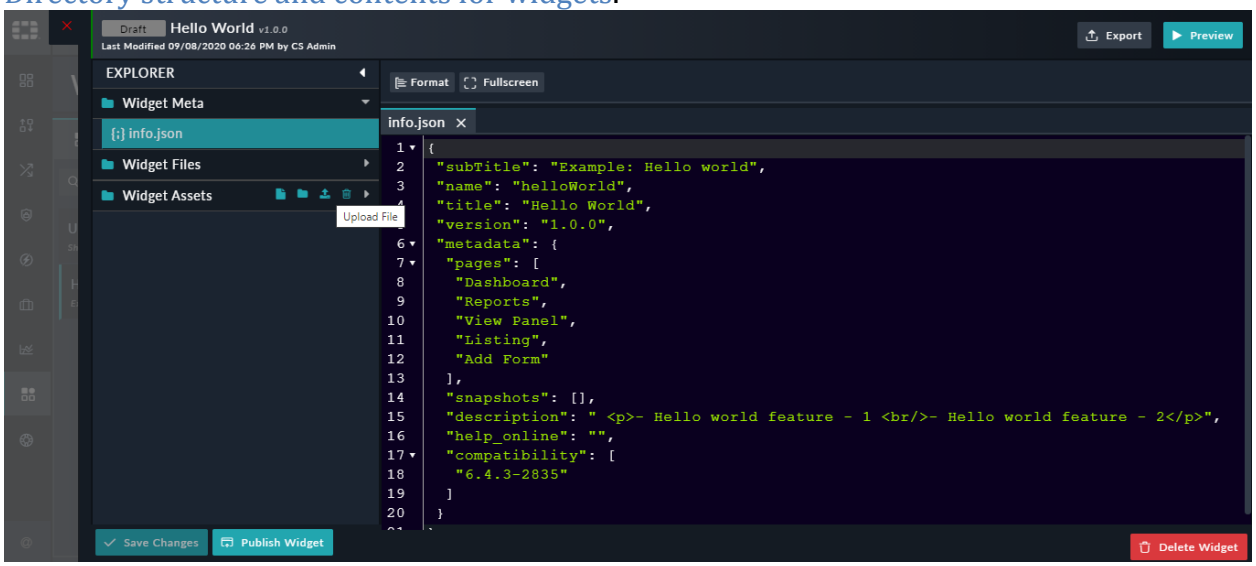
   You can also perform the following operations:
   a. To export the widget as a .tgz file, so that it can be used in another environment, click the **Export** button. Once the widget is saved as a .tgz file, you can import the same using the **Upload Widget** button.
   b. To preview the changes made to the widget before you publish the widget, and to the view how the widget will appear on the pages specified, click the **Preview** button. Based on the configurations specified in the widget, you require to add the inputs such as title of the widget, the module on whose records data the widget is configured, etc., and then click **Save**.
3. Edit the existing widget as required, and click **Save Changes**.
   The widget gets saved in the `Draft` state.
   You can also perform the following operations on the code editor interface:
   a. **Code Formatting**: To lint your code automatically and make the code more human-readable and error-free (programming and programming errors), select the entire code in the editor and click the **Format** button.
   b. **Full Screen**: To get a better working view and make the editor go full-screen, click the **Fullscreen** button. To exit the full screen, press `ESC`.
   c. **Export**: To export the widget as a .tgz file, so that the widgets click the **Export** button.
   d. **Preview**: To preview the widget development progress, at any time during the development, so that it becomes easier to make changes, click the **Preview** button.

4. Once you have completed making the changes, click **Publish Widget**.
   This will publish the widget and enable you to use this widget on the pages as specified in the widget configuration.
   Clicking **Revert To Last Saved** clears any changes made to the widget code since the last `Save` event.

Creating Widgets

To create a custom widget, do the following:

1. On the FortiSOAR™ left-navigation, click **Widget Library**.
2. Click **Create Widget**.
   This displays the code editor interface with the contents of the default "Hello World v1.0.0" widget.
   The code editor interface contains the following folders: Widget Meta, Widget Files, and Widget Assets. For the description of the contents of these folders and files, see the Directory structure and contents for widgets.



3. Edit the custom widget as required; details on editing widgets are present in the Editing an existing widget section. Once you have completing editing the widget, click **Save Changes**.
   The widget gets saved in the `Draft` state.
4. Once you have completed making the changes, click **Publish Widget**.
   This will publish the widget and enable you to use this widget on the pages as specified in the widget configuration.
   Clicking **Revert To Last Saved** clears any changes made to the widget code since the last `Save` event.

Directory structure and contents for widgets

widgetname folder

```
--+ Widget Meta
---+ info.json
--+ Widget Files
---+ html
----+ view.html
----+ edit.html
---+ js
----+ viewController.js
----+ editController.js
--+ Widget Assets
---+ js
---+ css
---+ html
---+ images
```

Widget Meta

The `Widget Meta` folder contains the `info.json` file. The `info.json` file contains information about the name, title, subtitle that represents a brief description of the widget, and the version of the widget. In its `metadata` section it contains a comma-separated list of FortiSOAR™ pages, such as dashboards, view panel, etc., in which you can add and display the widget. For example:

```
    "pages": [
       "Dashboard",
       "View Panel"
      ]
```

It also contains information of whether it has been certified by FortiSOAR™, the path of where the screenshots that are part of the widget example added to the `snapshots` parameter, feature list of the widget added to the `description` parameter, the link to the widget documentation added to the `help_online` parameter, and a comma-separated list of versions of FortiSOAR™ with which the widget is compatible added to the `compatibility` parameter.

Widget Files

The Widget Files folder contains two subfolders, the `html` folder containing `view.html` and `edit.html` files and the `js` folder containing `viewController.js` and `editController.js` files These files are used to define and stylize the widget.

The `view.html` and `viewController.js` defines the output of the widget, i.e., how the widget will be displayed on the specified FortiSOAR™ pages. The `edit.html` and `editController.js` defines the settings of the widget.

Widget Assets

Use the "Widget Assets" folder to create or import external assets that can be used in widgets, which enables you to create complex widgets and expands the capabilities of the "Widget Library." The Widget Assets folder can contain subfolders or files. You can create or import files such as, external JS files (external libraries), image files, etc. directly in the `Widget Assets` folder or in their respective subfolders under the `Widget Assets` folder.

You can perform various actions such as creating or importing files or folders in the Widgets Assets folder. Action buttons are present only at the “Widget Assets” level and you perform the following actions at the "Widgets Assets" level:

- **Create File** - Creates a file in the Widgets Assets folder or in the selected folder, i.e., this action creates a file in the Widgets Assets folder, or if you have selected a folder in Widgets Assets, then this action creates the file in the selected folder. All the actions work in the similar way.
- **Create Folder** - Creates a folder in the Widgets Assets folder or in the selected folder.
- **Import File** - Imports a file to the Widgets Assets folder or in the selected folder.
- **Delete File or Folder** - Deletes the selected file or folder. If you have selected a folder, and you click the **Delete** button, then this action will delete all files within the selected folder.

Once you have created or imported the required files you can use them in the widget. You can also edit the imported files in the code editor interface and can perform all the operations such as formatting the code, previewing the code, etc. as described the Editing an existing widget section.

Using Widget Assets – Use the widget assets to upload or create external JS libraries that can be leveraged to build widgets. You can also create your own library. To use an uploaded or created JS library, select the respective file and click **copy_ path** icon and then include the path in the "src" of the `script` tag in `edit.html` or `view.html` according to your requirement.

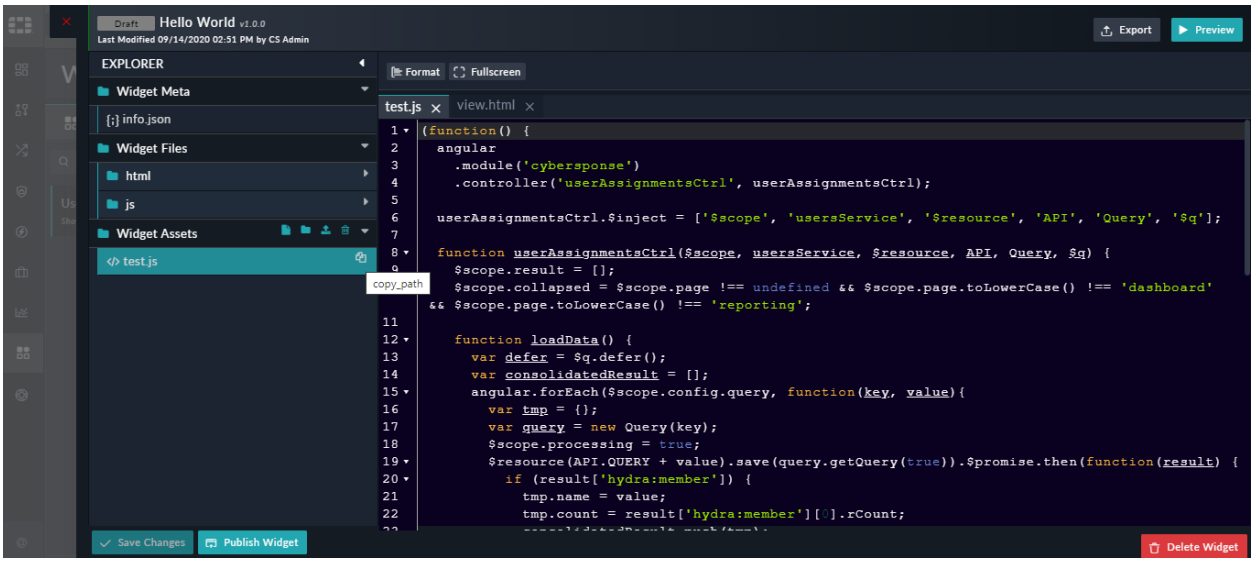


Figure 196. *Widget Assets - copy_path icon*

You can also include CDNs (Content Delivery Networks) in edit.html and view.html by using standard link syntax.

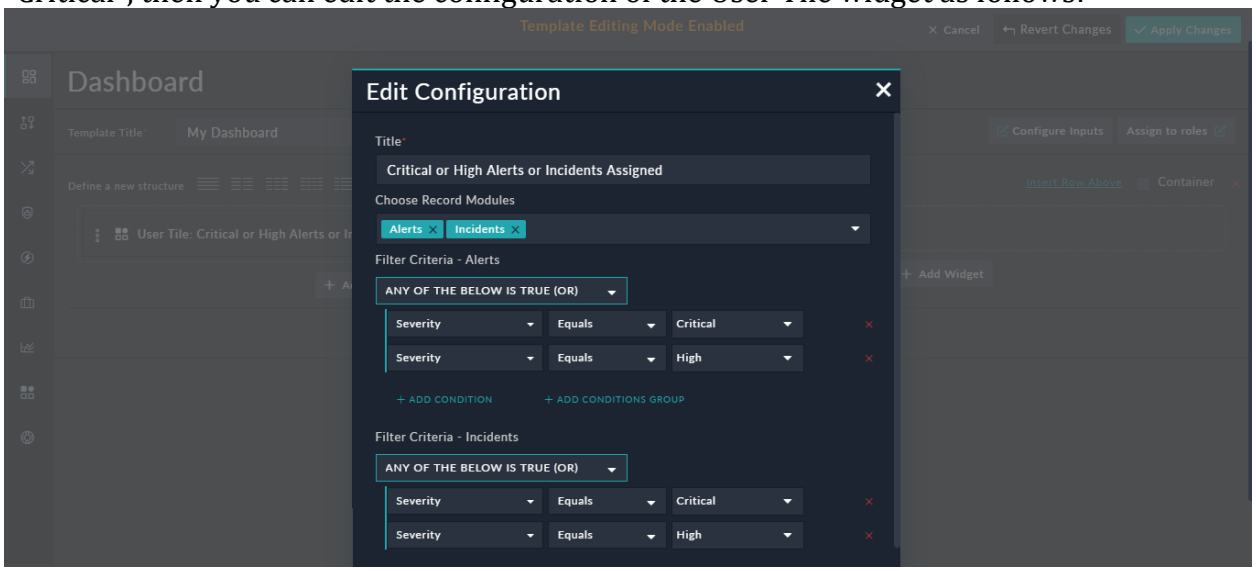
Using a widget in FortiSOAR™ pages

To use a FortiSOAR™ OOB widget or to use a custom widget that you have created, click the FortiSOAR™ page in which you want to add the widget. Then in the edit view of that page, add and configure the widget.

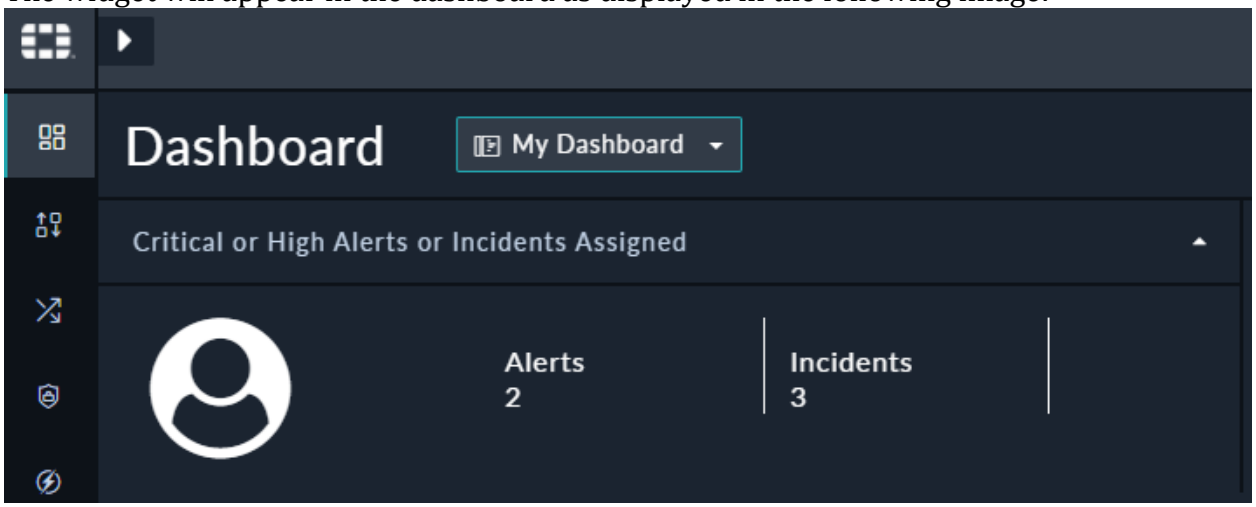
Let us take the example of the "User Tile" widget, which is used to view the logged in user's assigned records across multiple modules along with the user's avatar. It also supports filtering of records. If you want to add this widget to your dashboard, then do the following:

1. Click **Dashboard** and to edit an existing dashboard, click the Actions icon ( ), and then click **Edit Dashboard**.
2. Click **Add Widget** and from the `Widget Library` section, click **User Tile**.
3. Edit the configuration of the widget as per the settings defined in the widget configuration.
   In case of the "User Tile" widget, you need to provide the widget with a title, then choose the modules for whose records you want to view and you can also define filter criteria for filtering records of the selected module. For example, if you want to display Alerts and Incidents that are assigned to you, whose severity is set to "High" or

"Critical", then you can edit the configuration of the User Tile widget as follows:



4. Click **Save** and **Apply Changes**.
The widget will appear in the dashboard as displayed in the following image:



Important: To view the custom widgets that are part of FortiSOAR™ pages such as `Dashboards` and `Reports` you must be assigned a role that has a minimum of `Usage` access on the `Widgets` module.

Rules Engine

Overview

FortiSOAR™ provides you with a Rules Engine that allows you to automate processes and build rules based on logic. This makes it easier for you to maintain changes in your data in the future since all the logic is laid out in rules. You can develop rules to solve your business issues, such as sending an email to your `SOC` team when an `Alert` is "Created" or "Updated" whose `Severity` is "Critical" and `Type` is "Phishing."

Note: To create and update Rules; you must be assigned a role with a minimum of `Create`, `Read`, and `Update` permission on the `Rules` module. To modify rules, you must be assigned a role with a minimum of `Read` and `Update` permission on the `Rules` module. To view the existing Rules, you must be assigned a role with a minimum of `Read` permission on the `Rules` module. To create and delete Rules, you must be assigned a role with a minimum of `Create`, `Read`, `Update`, and `Delete` permission on the `Rules` module.

From version 6.4.1 onwards, Rules are not part of the default navigation. You can add "Rules" to your default navigation using the `Navigation Editor`. To add Rules to the default navigation, do the following:

1. Click **Settings** and in the `Application Editor` section, click **Navigation**.
2. Click the **Modules** tab, select **Rules**, and then click **Add to Menu**.
3. In `Menu Items`, drag-and-drop **Rules** to place Rules as per your preference in the Navigation bar.
   You can also optionally add an icon to represent Rules.
4. Click **Save**.
   This add **Rules** to the left navigation as per your preference.

For more information on the navigation editor, see the `Navigation Editor` section in the *Application Editor* chapter of the "Administration Guide."

Organizing Rules

Rules Collections

Use Rule Collections to organize your rules. A rule collection is similar to a folder structure in which you create and store rules that can be used for a particular strategy in your environment.

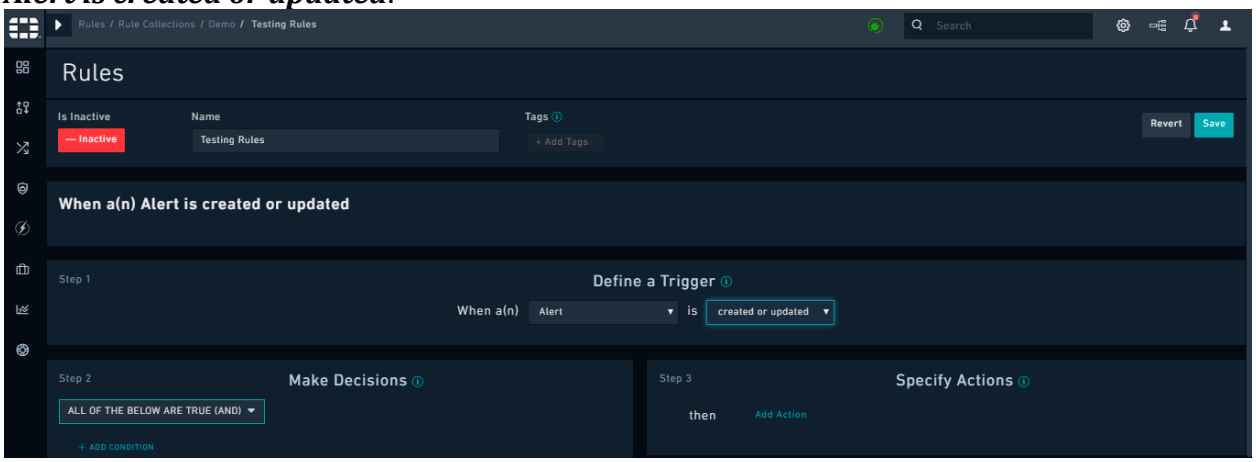
Rules

Based on the definition of a rule, FortiSOAR™ can take automatic actions when conditions fulfilling the rule are met. You must choose what triggers the rule, next, decide as to whether any action requires to be taken on the trigger, and then also specify what automatic action FortiSOAR™ will take based on the rule.

Creating Rules

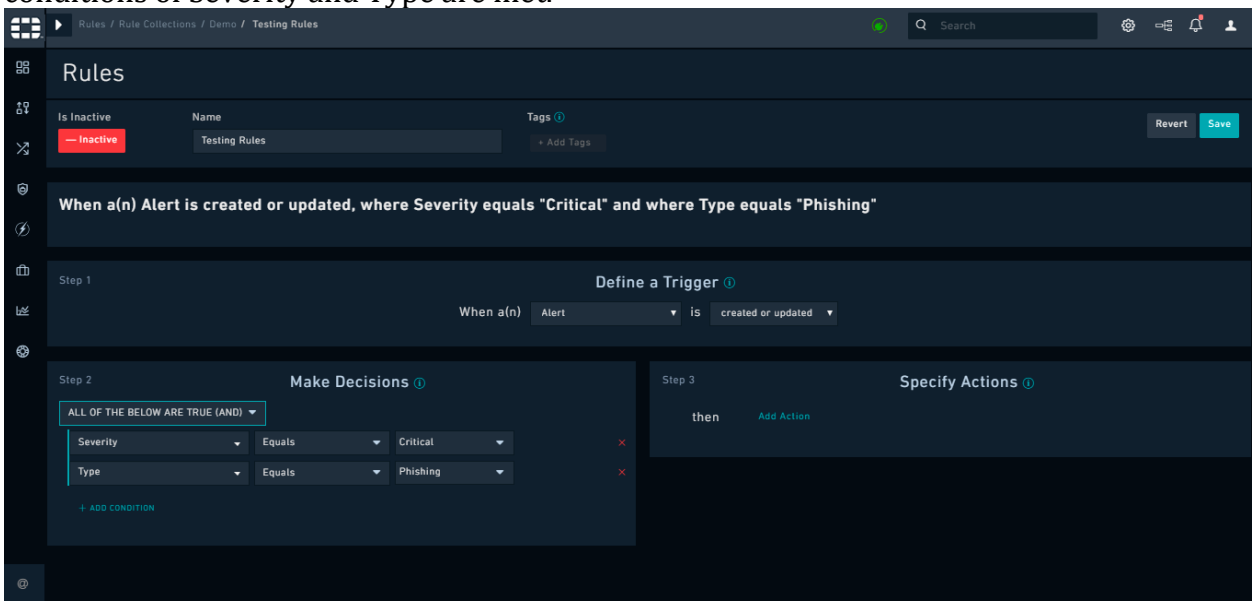
1. Click **Automation** > **Rule Engine** in the left navigation bar.
2. On the `Rule Collections` page, click **New Collection** to define a new rule collection in which to save the rule you want to create, or, click an existing rule collection and add the new rule in that collection.
   Note: You cannot add a rule directly on the `Rule Collections` page, you require to add rules to a rule collection.
3. In the `Add New Rule Collection` dialog, add the name of the collection in the **Name** field and optionally in the **Description** field, add the description for the rule collection. You can also change the icon that represents the rule collection, by clicking **Change Image** and dragging and dropping your icon to the `Upload an Image` dialog, or browsing to the icon on your system, selecting the icon and then clicking **Save Image**. You can also add **Tags** to the rule collection making it easier for searching and filtering rule collections. You can add special characters and spaces in tags from version 6.4.0 onwards. However, the following special characters are not supported in tags: `'`, `,` , `"`, `#`, `?`, and `/`.
   Click **Save** to save the new rule collection.
4. To add a rule, click the collection in which you want to create the new rule, and then click **Add Rule**.
5. In the `Add New Rule` dialog, add the name of the rule in the **Name** field and optionally in the **Tags** field, add keywords that you can use to reference the rule.
   Note: Rule names must be unique within the system. Rules with the same name in different collections are not allowed.
   Click the **Active** checkbox to set the state of the rule as `Active`.
   You can also add tags to a rule making it easier for searching and filtering rules.
   Click **Create** to add the new rule.
   This opens the `<Rule Name>` page.
6. On the `<Rule Name>` page you can define conditions for the rule.
   To define a rule, you must define a trigger for the rule. Next, you must add conditions to determine whether any action requires to be taken on the trigger and then you must specify the action that FortiSOAR™ must take automatically.
7. Triggers define when a Rule is to be executed. To define a trigger, in the `Define A Trigger` section, in the `When a (n)` drop-down list, select the resource on which you want to run the rule, for example, **Alert**.

In the `is` drop-down list specify the event that will trigger the action, for example, **created or updated**.
Therefore, in our example, we have specified that the rule will be triggered when an ***Alert is created or updated***.



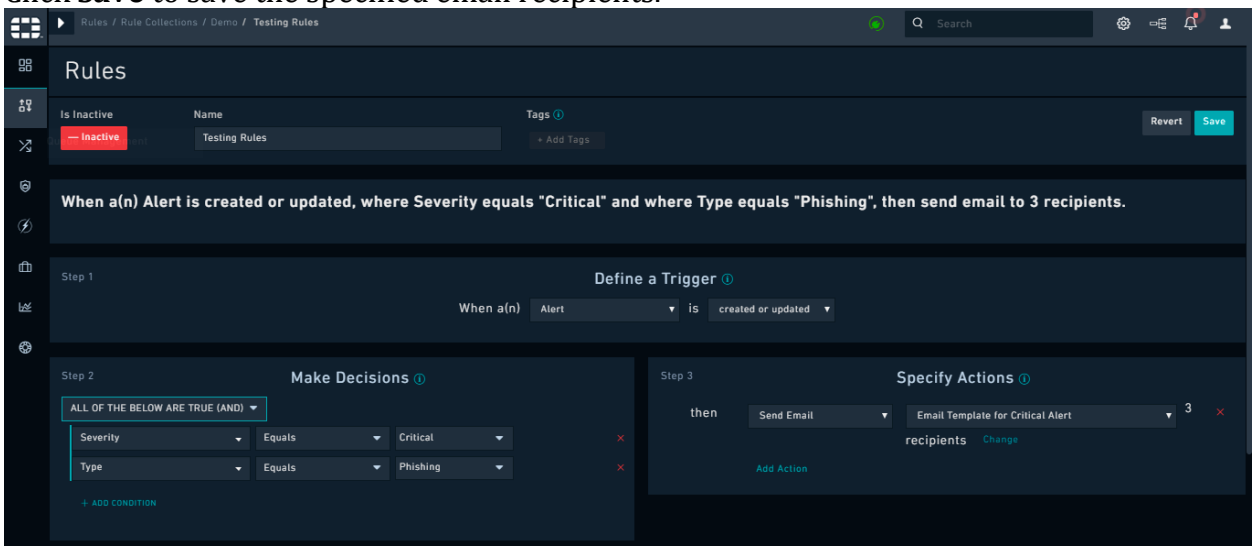
8. Next, you must add conditions to determine whether any action requires to be taken on the trigger. To take a decision, in the `Make Decisions` section, specify the required condition by using the **Nested Filters** component. For more information on Nested Filters, see the *Dashboards, Templates, and Widgets* chapter.
First, you choose the Logical operator **And** or **Or** by selecting either **All of the below are True (AND)**, or **Any of the below is True (OR)** from the drop-down list in the `Make Decisions` section. For our example, since we want to check for both the **Severity** and **Type** fields, we select the **All of the below are True (AND)** option
Next, click the **Add Condition** link to specify a condition by specifying a field, based on the resource you have selected, from the **Select a Field** drop-down list, next specify an operator from the **Operator** drop-down list and then specify an option from the **Select an Option** drop-down list. For example, specify that execute the action only when the `Severity Equals Critical`.
Note: You cannot apply filters on encrypted fields. Also, if you assign a “Custom” filter to a datetime field, such as Assigned Date, then the date considered will be in the “UTC” time and not your system time.
To add multiple conditions click the **Add Condition** link again.
For example, add a condition that `Type Equals Phishing`.
In this case, the action specified for the rule will be executed only when both the

conditions of Severity and Type are met.



a. Next, you must specify the action that FortiSOAR™ must automatically take if the conditions specified in the `Make Decisions` section are met. In the `Specify Actions` section, select the action to be performed by clicking the **Add Action** link.
You can select the following actions:
Send Email: Send an email to the specified parties based on a template.
For example, in the `Specify Actions` section, from the `Select an action` drop-down list select **Send Email**, then from the `Select a template`, select the email template to be used to send the email, or click **Create new template** to create a new email template. Clicking **Create new template** displays the `Add New Email Template` dialog, where you define the email template, by specifying the **Name**, **Subject**, and **Content**. You can use Dynamic Values to populate a template. For more information, see the *Dynamic Values* chapter in the "Playbooks Guide."
Then click the **Select Recipients** link. This opens the `Set Email Recipients` dialog, using which you can specify the distribution list in any of the following ways:
In the **Email Addresses** field, directly add the user (s) email addresses.
Or
In the `Members` section, in the **Teams** tab, select the team to whom you want to send the exported reports and click **ADD**. This moves the selected team to the `Selected Recipients` section. When you select a team as a recipient, all members of that team will receive the exported reports. For example, you can select the `SOC Managers` team, which means that if the rule is executed, all the members of the `SOC Managers` team, will receive an email.
In the `Members` section, click the **People** tab, select the user to whom you want to send the exported reports and click **ADD**. This moves the selected person to the `Selected Recipients` section.

Click **Save** to save the specified email recipients.



To add another action, such as Insert, Update, or Find, you can click the **Add Action** link:

Insert or **Update**: Creates a new record or Updates an existing record in the selected module or another module. You can also optionally link the trigger record to this record.

For example, in the `Specify Actions` section, from the `Select an action` drop-down list select **Insert** then click the **Set Data** link. This opens the `Set Data` dialog, using which you can specify the model in which you want to insert the record if the rule conditions are met. For example, from the **Model** drop-down list, select `Incidents`. Specify the properties for the record, including what should happen in case the new record is a duplicate of an existing record, and then click **Save**.

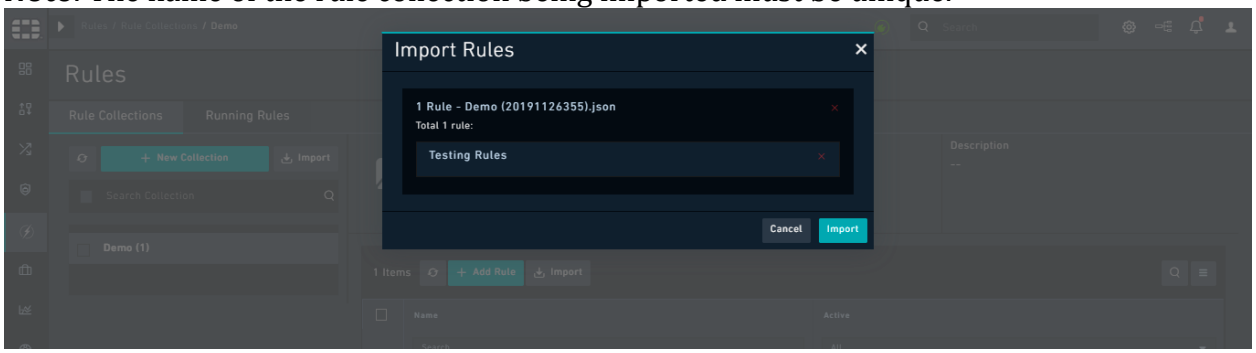
Find: Queries for records matching the specified criteria and then updates the records if necessary.

For example, in the `Specify Actions` section, from the `Select an action` drop-down list select **Find**, then from the **Select a resource** drop-down list select the resource on which you want to run the query, for example Incident and optionally specify a condition by clicking the **Add Condition** link. Then from the **Select an Action** drop-down list, select **Update** to update the record. You can click **Edit** to open the `Set Data` dialog, using which you can specify the fields that you want to update if the conditions are met.

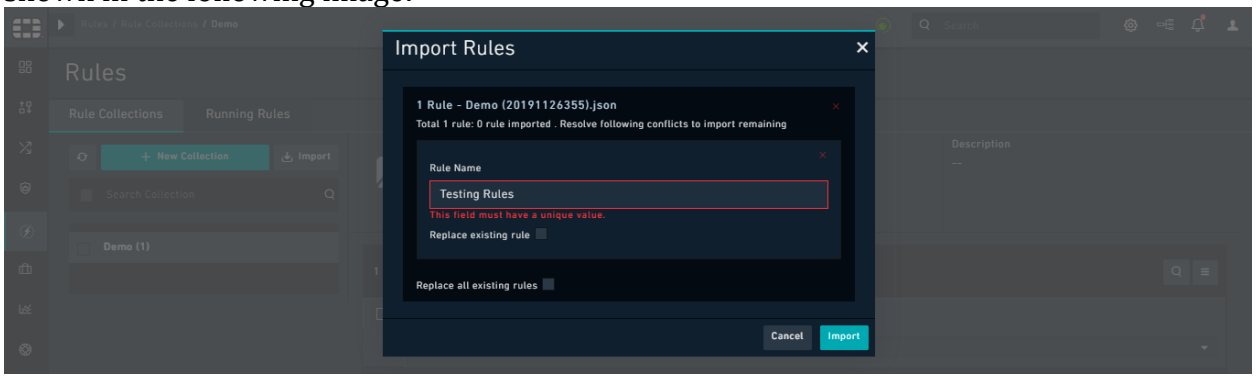
9. Click **Save** to save the rule.
   The rule based on our example, which is sending an email to your `SOC` team and two other users, when an `Alert` whose `Severity` is “Critical” and `Type` is “Phishing” is “Created” or “Updated”, is displayed at the top of the `<Rule Name>` page as shown in the previous image.

Working with Rules

1. Click **Automation** > **Rule Engine** in the left navigation bar.
2. On the `Rule Collections` page, you can import a collection of rules, if that collection in the appropriate json format. On the `Rule Collections` page, click **Import**.
   Drag and drop the json file, or click the **Upload** icon and browse to the json file to import the rule collection into FortiSOAR™ and then click **Import**.
   Note: The name of the rule collection being imported must be unique.

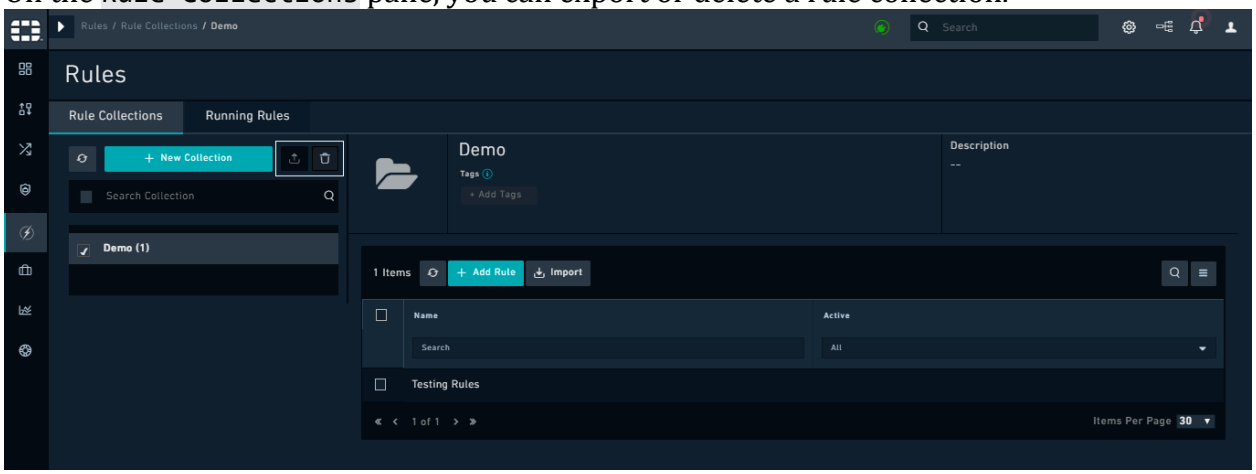


   If the JSON format is incorrect, FortiSOAR™ displays an error message and does not import the file.
   If the JSON format is correct, FortiSOAR™ imports the rule collection and displays a success message.
   If there is any conflict with an existing rule, then FortiSOAR™ displays the conflict as shown in the following image:



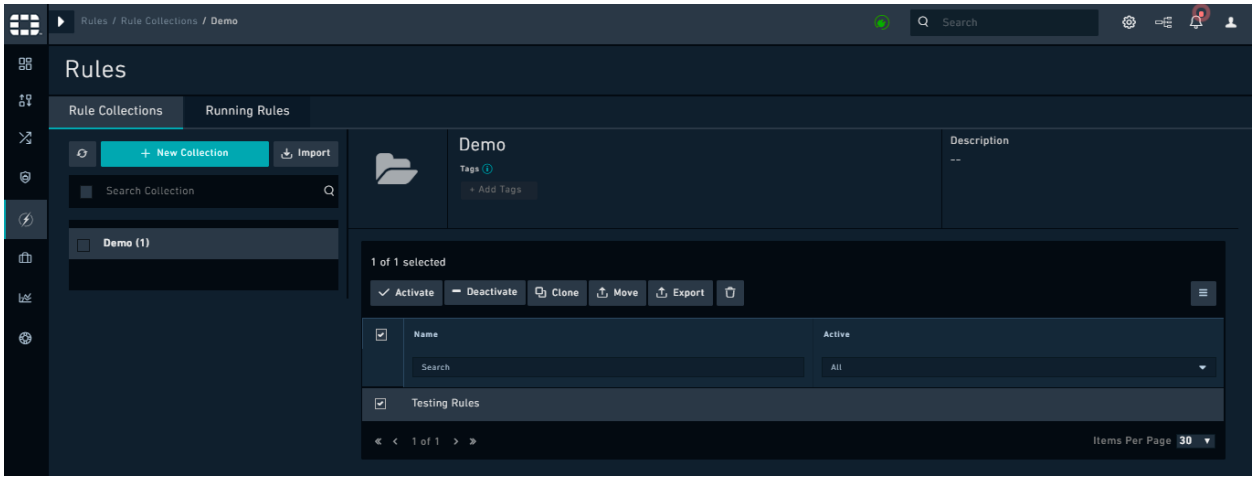
   If you want to replace an existing rules or all existing rule, then you must click the **Replace existing rule** or the **Replace all existing rules** checkbox respectively.
   You can also import a single rule, by clicking **Import Rule** on the `Rules` page.

3. On the `Rule Collections` pane, you can export or delete a rule collection.



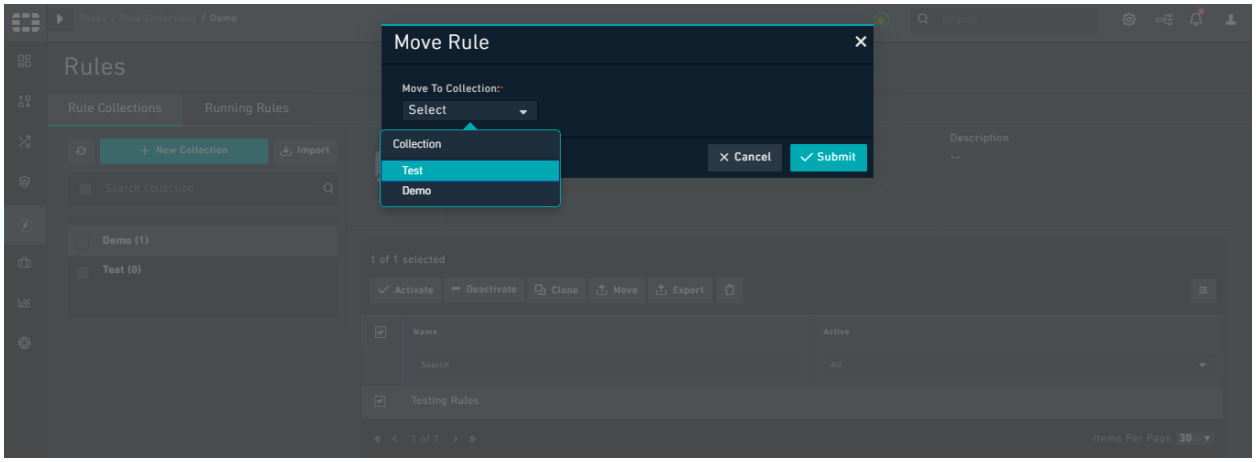
To export a rule collection, select the rule collection and click the **Export** icon. FortiSOAR™ exports the rule collection in the json format.
To delete a rule collection, select the rule collection and click the **Delete** icon. Users with `Delete` permissions on the `Rules` module can delete rule collections. FortiSOAR™ displays a confirmation dialog, and once you click **OK**, the rule collection is deleted.

4. To perform operations on rules, click the rule collection and select the rule on which you can perform the following operations: **Activate**, **Deactivate**, **Clone**, **Move**, **Export**, and **Delete**.



To export a rule, select a rule and click **Export**. FortiSOAR™ exports the rule in the JSON format.
To clone a rule, select a rule and click **Clone**. FortiSOAR™ clones the rule and places the cloned rule with the name as `Copy of %Rule Name% (%New UUID%)`. Once you clone a rule, you can edit it as per your requirements. You can select more than one rule to clone at a single time.
To move a rule to another existing collection, select a rule and click **Move**. FortiSOAR™

displays the `Move Rule` dialog that contains the `Move to collection` section. Clicking **Select** in the `Move to collection` section displays the `Collection` dialog. From the `Collection` dialog, select the collection to which you want to move the rule and click **Submit**.



To activate a rule, select a rule and click **Activate**. To deactivate a rule, select a rule and click **Deactivate**.

5. To edit a rule, select the rule collection for which you want to edit the rule and then click the rule that you want to edit.
   On the `<Rule Name>` page, you can change the state of the rule by clicking the Is **Active** box, for example, change the state of the rule from `Active` to `Inactive`.
   You can also change the **Name** or **Description** for the rule, and add or remove **Tags** for the rule.
   You can also modify the trigger for the rule, change or add conditions or actions to the rule.
   Once you have completed updating the rule, click **Save**.

Debugging Rules

As you develop more sophisticated Rules, debugging requires some knowledge of the system internals.

You can Debug Rules using the Running Rules tab present in **Automation** > **Rule Engine**.

The **Running Rules** tab displays the most recently run Rules sorted by chronological date. All *active*, *failed*, and *finished* rules are displayed in the **Running Rules** tab. You can view logs associated with rules and debug rules using logs if required.

Schedules

Overview

FortiSOAR™ provides you with a `Schedules` module that allows you to schedule playbooks to run at regular intervals.

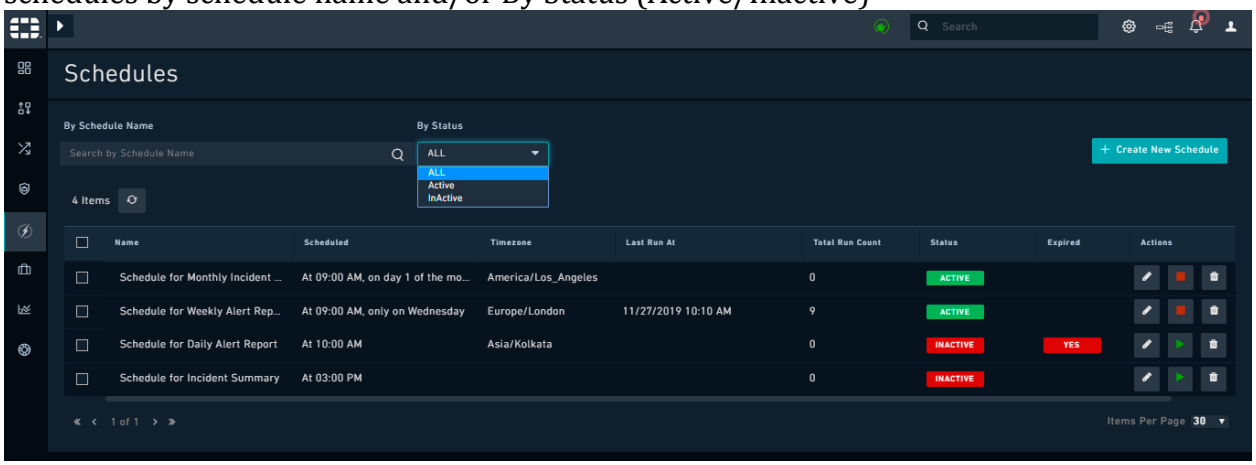
Permissions required for working with Schedules

To access the `Schedules` page, you must be assigned a role with minimum `Read` permission on the `Playbooks` module, which means that this permission must be assigned to users who require to perform any operations such as view, create or update schedules.

To create and update schedules; you must be assigned a role with a minimum of `Create`, `Read`, and `Update` permission on the `Schedules` module. To modify schedules, you must be assigned a role with a minimum of `Read` and `Update` permission on the `Schedules` module. To view the existing schedules, you must be assigned a role with a minimum of `Read` permission on the `Schedules` module. To create and delete schedules, you must be assigned a role with a minimum of `Create`, `Read`, `Update`, and `Delete` permission on the `Schedules` module.

Working with Schedules

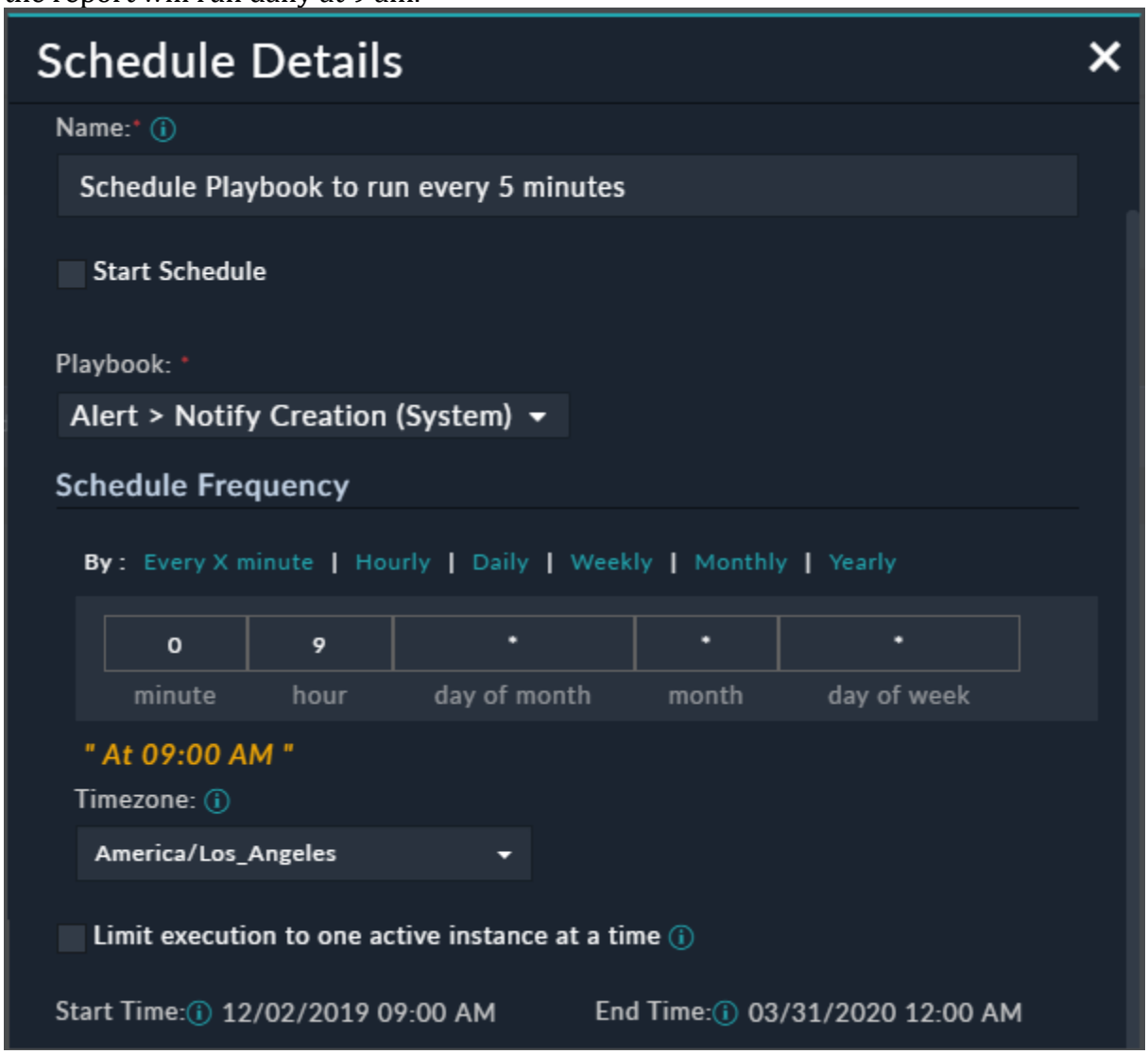
1. Click **Automation** > **Schedules** in the left navigation bar.
   On the `Schedules` page you can see the list of schedules created. You can also filter schedules by schedule name and/or By Status (Active/Inactive)



2. To define a new schedule for a periodic playbook, on the `Schedules` page, click **Create New Schedule**.
3. In the `Schedule Details` dialog, enter the following details:

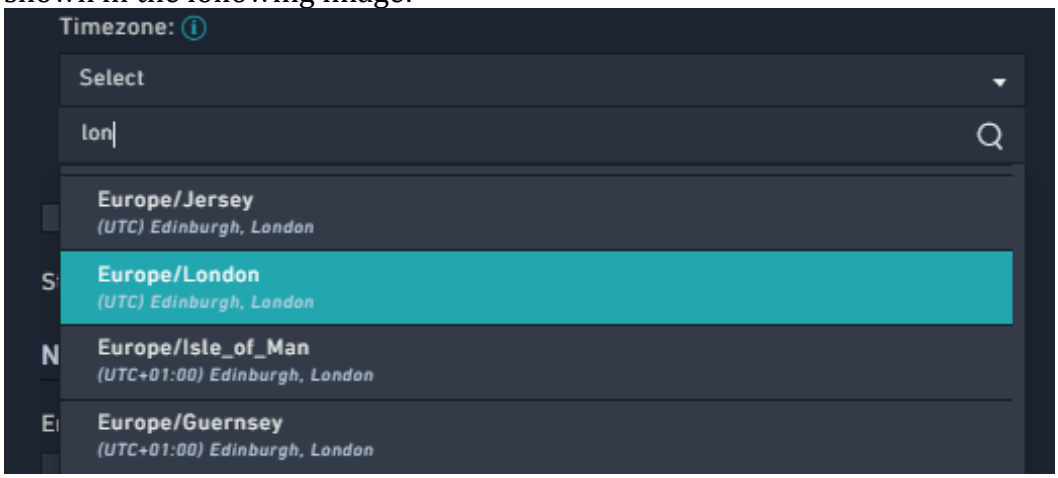
a. In the **Name** field, add the name of the schedule.
Note: Schedule names must be unique and comprehensive. You should be able to understand what the purpose of the schedule is by reading the name of the schedule. For example, if you want a playbook to run every day and connect to your SIEM, for example, Splunk, and gather alerts from Splunk, and then make the corresponding updates in the FortiSOAR™ `Alerts` module, you can name such a schedule as `Schedule PB to run daily for Splunk Updates`.
b. If you want to start the schedule immediately after creating the schedule, click the **Start Schedule** checkbox.
c. From the **Playbook** drop-down list, select the playbook that you want to schedule.
d. In the **Schedule Frequency** field, add a valid cron expression.
Cron expression is a string consisting of six or seven subexpressions (fields) that describe individual details of the schedule.
In the Cron Expression section, you can click the **Every X minute**, **Hourly**, **Daily**, **Weekly**, **Monthly**, or **Yearly** links in the `By` row to add a schedule.
For example, to schedule a report to run daily at 9:00 am in the morning, click the **Daily** link and in the Minute box type `0` and in the Hour box, type `9`, as shown in the following image. A short description of the schedule also appears below the cron expression box, in our example, it appears as `At 9:00 AM`, which means

the report will run daily at 9 am.



e. From the **Timezone** drop-down list, search for and select the timezone in which you want to export the report associated with this schedule. By default, the timezone is set as UTC. You can search for a timezone in the **Search** box as

shown in the following image:



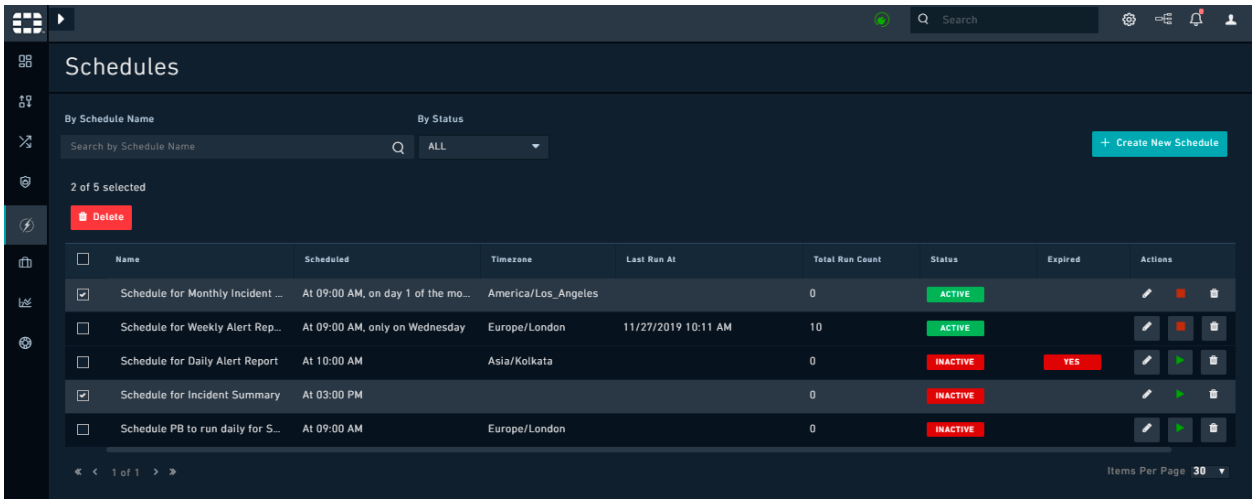
f. If you want to ensure that you do not rerun the workflow, if previous scheduled instance of the schedule is yet running, then click **Limit execution to one active instance at a time**.

g. (Optional) In the **Start Time** field, you can specify the date and time from when the schedule will start running.

h. (Optional) In the **End Time** field, you can specify the date and time after which the schedule will not run, i.e., the date and time to stop the schedule.
Note: Once a schedule reaches the specified end time, then the schedule displays **Yes** in the Expired column on the schedules listing page. It is recommended that you should make the expired schedules "Inactive".

i. Click **Save** to save the schedule.

4. Once you create a schedule, if you have not selected the **Start Schedule** checkbox, then the schedule remains in the **Inactive** state until the schedule starts at the date and time you have specified in the Start Time field. You can also manually start the schedule by clicking the **Start Schedule** icon (green play icon) in the `Actions` column.
To stop an **Active** schedule, click the **Stop Schedule** icon (red stop icon) in the `Actions` column.
To edit a schedule click the **Edit** icon in the `Actions` column, which will display the `Schedule Details` dialog in which you can edit the schedule properties.
To delete a schedule click the **Delete** icon in the `Actions` column, which will display the `Confirmation` dialog and once you click **OK** in it the schedule gets deleted.
If you want to delete multiple schedules, then select the schedules in the grid view and click **Delete**.



From version 6.4.3 onwards, you will see a schedule named "Integration Action Log Purge" active on the `Schedules` page by default, which is scheduled to run every hour and purge action integration logs. When any interaction is performed using a FortiSOAR™ Agent, for example, invoking a connector action using agents, such requests are first stored in the `connector_executeaction` database table in the base FortiSOAR™ node with its state set as "In Progress". Once the response is received from the agent then the state of this entry is updated to "Finished". The "Integration Action Log Purge" schedule clears these logs since they tend to grow after some time. Note that this action log is an event details store in the database and *not* a log file in the system. This schedule is associated with the "Purge Integration Logs" playbook that is part of the System Fixtures (**Settings** > **System Configuration** > **System Fixtures** > **Schedule Management Playbooks**).

Tutorial: Creating an Incident Form for the Phishing Type of Incident

Purpose

This tutorial aims at walking you through the steps you require to create Incident forms for various types of incidents, such as Phishing, using FortiSOAR™.

Incidents represent a collection of information discovered during an Incident Response investigation. Incidents are triggered based on the suspicion or confirmation of a security breach. Incidents can be cyber or physical security related.

This document assumes that you have completed the installation and configuration of your FortiSOAR™ instance and now you are ready to create records in FortiSOAR™.

Phishing Type of Incident should have the following additional fields, apart from the general fields of the Incident Record:

- Host Name
- Number of Hosts Affected

The Phishing Type of Incident Record without the above fields is displayed as follows:

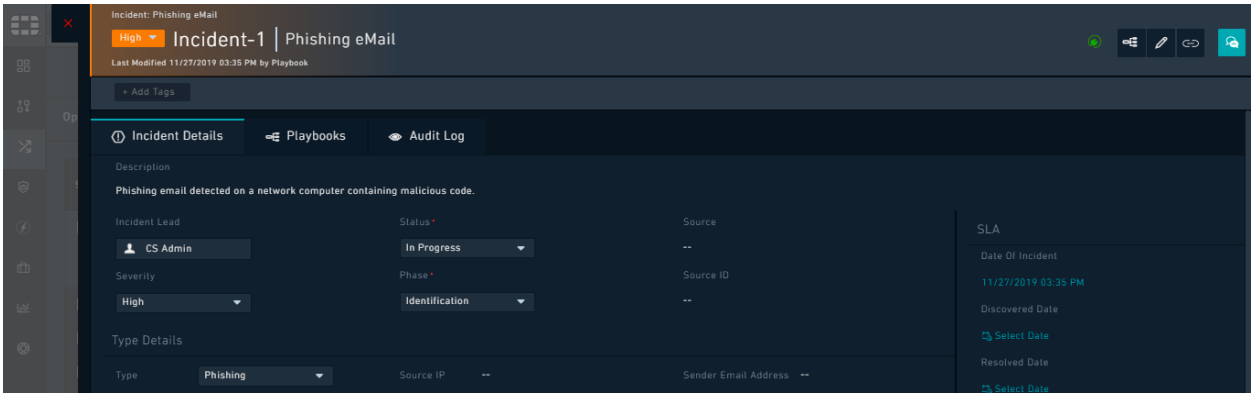


Figure 197. *Phishing Type of Incident Record*

The Phishing Type of Incident Record with the above fields will be displayed as follows:

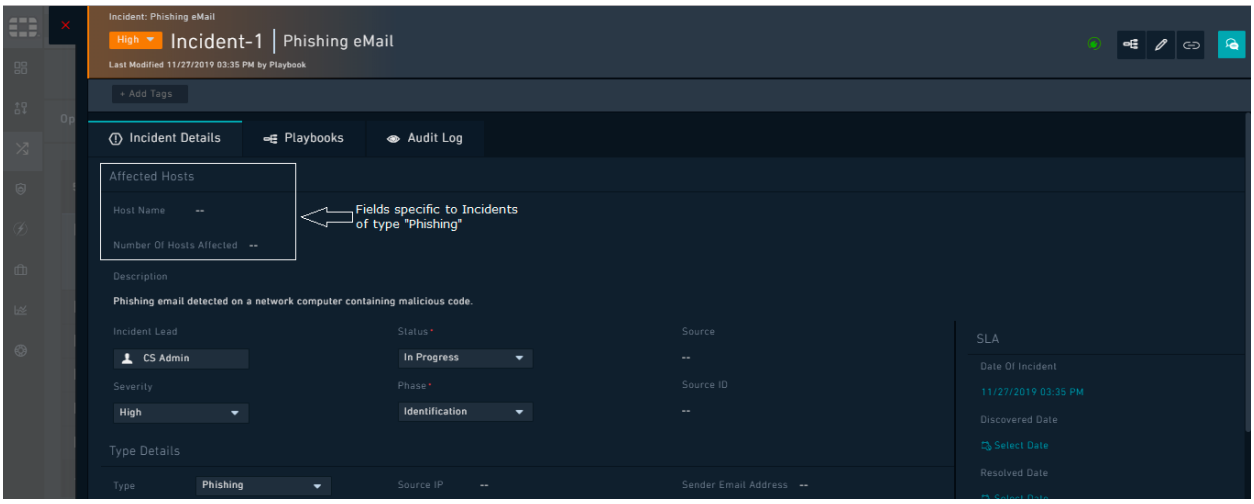


Figure 198. *Phishing Type of Incident Record with added records*

These records will only be displayed in forms when the Incident Type is set to “Phishing.”

To achieve this, we will have to perform the following steps:

1. Add the required fields to the Incident of type “Phishing” using the Module Editor.
2. Publish the Incidents module.
3. Update the System-View Templates (SVT) for the Incidents module.

Adding required fields to the Incident of type “Phishing” using the Module Editor

Use the Module Editor in FortiSOAR™ to add new modules, add new fields, and edit existing fields within a module. In our case, we assume that the Incident Module is already created with default fields and we require to add specific fields for the Phishing Type Incident. See the *Application Editor* chapter in the “Administration Guide” for information on how to add modules.

1. Log on to FortiSOAR™ using your credentials.
2. Click the **Settings** ( ) icon that appears on the top-right corner in FortiSOAR™ and in the `Application Editor` section, click **Modules** to open the `Modules` page.
3. To add fields to the Incidents module, select **Incidents** from the Modules drop-down list, click the **Fields Editor** tab on the `Modules` page and click the Add (**+**) icon beside Fields.
4. To add the **Host Name** field, configure the following properties for the field:
    a. **Field Type**: The type of field; it specifies the type of form used to render this attribute. For example, a checkbox, a picklist, or a Text field.
    For the Host Name field, select **Text Field**.

b. **Sub-Type**: This is the sub-type of the Field Type that narrows down the input format to any specific type such as Text Field, Phone Field, Email Field etc. For the Host Name field, select **Text Field**.

c. **Field Name (API)**: The name of the field at the API level. The Name field must be alphanumeric and must start with a lower-case alphabet. It cannot contain any spaces, underscores or any special characters.
For the Host Name field, type `hostname`.
Note: This field is non-editable after creation as any changes made in this field can result in data loss.

d. **Field Title**: A short display name describing the field.
For the Host Name field, type `Host Name`.

e. **Editable**: Selecting this option allows you to modify the field after the creation of a module record. If this option is not selected, then you cannot modify the initial value after the record is created.
For the Host Name field, ensure that the **Editable** checkbox is selected.

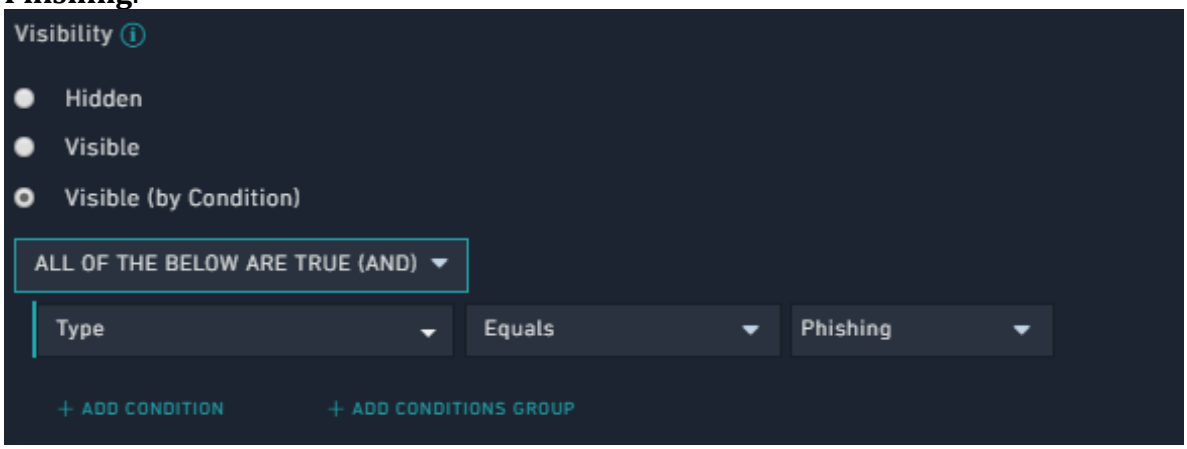
f. **Searchable**: Selecting this option makes this field searchable in the grid view. Check the Searchable option for the Host Name field. For the Host Name field, ensure that the **Searchable** checkbox is selected.

g. **Default Grid Column**: Selecting this option makes the field appear as a column by default in the grid view.
For the Host Name field, ensure that the **Default Grid Column** checkbox is cleared.

h. **Encrypted**: Selecting this option enables encrypting of field values before storing in the database for enhanced security.
For the Host Name field, ensure that the **Encrypted** checkbox is cleared.

i. **Required**: Specifies whether the field is a required field.
Select **Not Required** for the Host Name field.

j. **Visibility**: Specifies whether the field is visible or not. For the Host Name field, select **Visible (by Condition)**. In the condition builder select **Type Equals Phishing**.



This means that the Host Name field will only be visible when the Incident type

is set as Phishing. Note that the `IncidentType` is a Picklist type of field and using FortiSOAR™ you can define your incident types by editing this picklist or creating new picklists.
See the *Application Editor* topic in the "Administration" guide for information on how to create picklists and use condition builder and also for detailed explanations on fields and their properties.

k. **Default Value**, **Tooltip**, and **Length Constraints**: For the Host Name field, for the purpose of this example, leave these field blank.
l. **Allow Bulk Edit**: Selecting this option allows the bulk edit operation on the selected field, this means that you can select multiple records in the **Incidents** grid view and change the value of this field in a single click.
For the Host Name field, for the purpose of this example, do not select this option.
m. Click **Apply** to add the Host Name field to the `Incidents` module.

5. Click **Add Field** to add the Number of Hosts Affected field and configure similar properties for these fields:
   a. **Field Type**: select **Integer**.
   b. **Field Name (API)**: type `numberOfHosts`.
   c. **Field Title**: type `Number of Hosts Affected`.
   d. Configure the remaining properties for the Number of Hosts Affected field, similar to that of the Host Name field, including setting the Visibility of these fields to **Visible (by Condition)** and in the condition builder select **Type Equals Phishing**, to ensure that these fields are also only visible if the Incident Type is Phishing.
   e. Click **Apply** to add the Number of Hosts Affected field to the `Incidents` module.
6. Click **Save** to save the changes to the `Incidents` module.

Publishing the Incidents Module

Whenever you change a field or a module and click **Save**, the change is staged but is not yet live in the system. You must perform a Publish to ensure that the changes are made in the system.

You initiate a publish action by clicking the Publish All Modules button at the top-right of the Module Editor page. Publishing pushes the changes that you have made to fields and modules to the database. Up until the Publish point, all changes to the data model in the Module Editor are saved as metadata, which is information that describes the structure of other information.

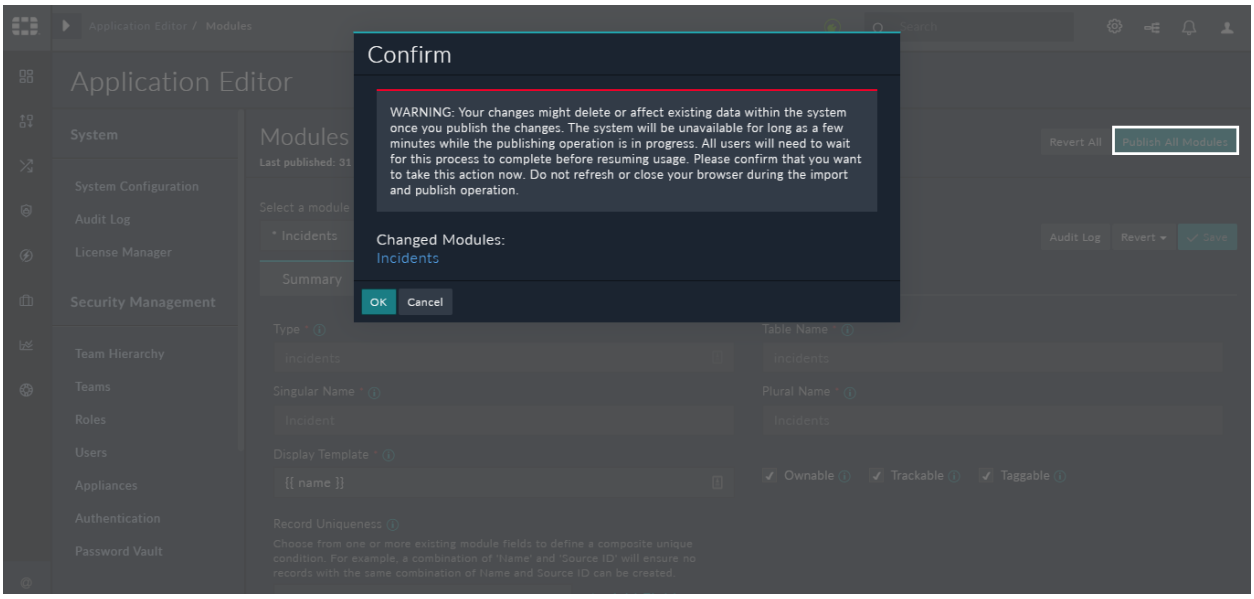


Figure 199. *Warning associated with the Publish action*

Updating the System View Templates (SVTs)

The FortiSOAR™ interface is rendered using Templates, which can be modified as needed to suit your specific purposes better. You can structure and style forms with varied types of fields by modifying templates according to your requirements. The system interface is composed of View Templates, which are JSON definitions of the interface structure composed of widgets. Widgets are configurable interface elements that are used to represent data, such as charts or lists visually.

Widgets are used to render information for visual display inside View Template. Widget types vary such that specific widgets only correspond to certain view types. For example, detail view has some exclusive widgets.

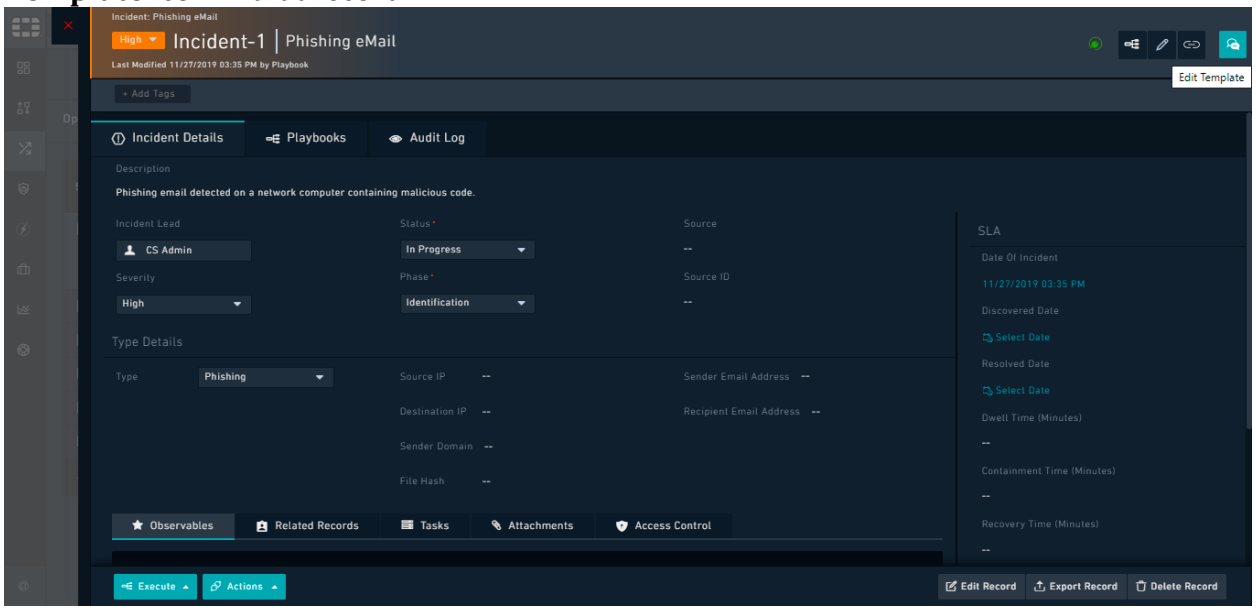
See the *Dashboards, Templates, and Widgets* topic, for a detailed explanation on how to use templates and widgets.

Editing the Detail view of the Incidents Module

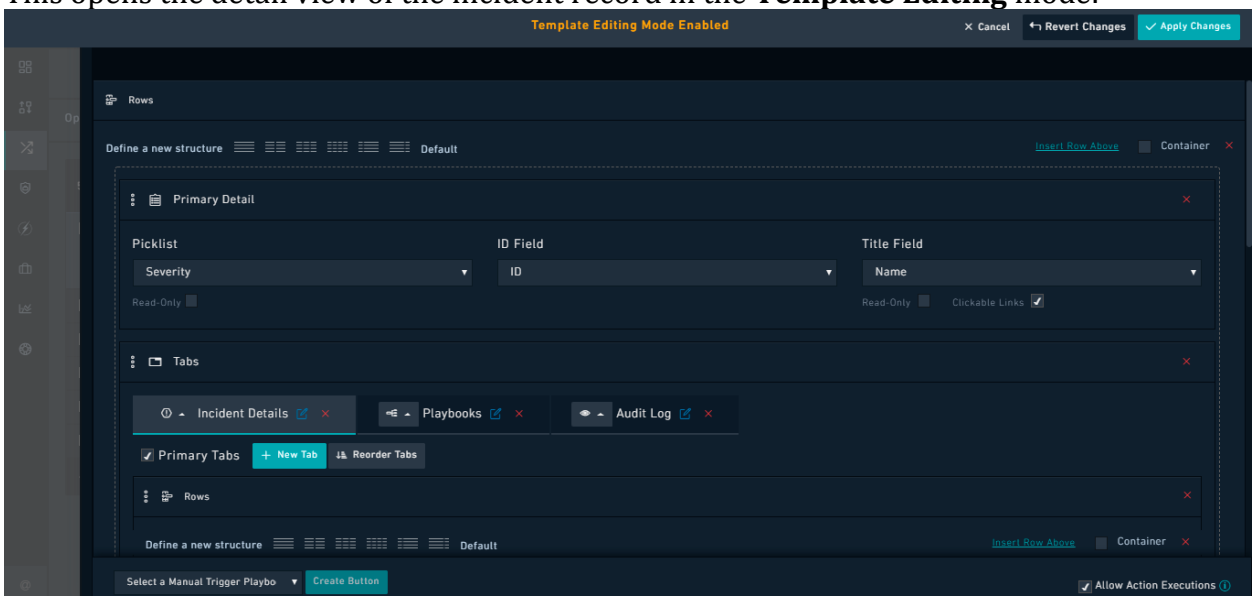
To view the Sender Domain, Sender Email Address, and Recipient Email Address fields that we have added using the Fields editor on the FortiSOAR™ UI we have to add these fields to the Detailed view of incident records by updating the SVT for the Incident Module.

1. Log on to FortiSOAR™ using your credentials.
2. Click **Incident Response** > **Incidents** in the left-navigation to open the Incidents module in the list view.

3. Click on a record to open the detailed view of an incident record and click the **Edit Template** icon in that record.

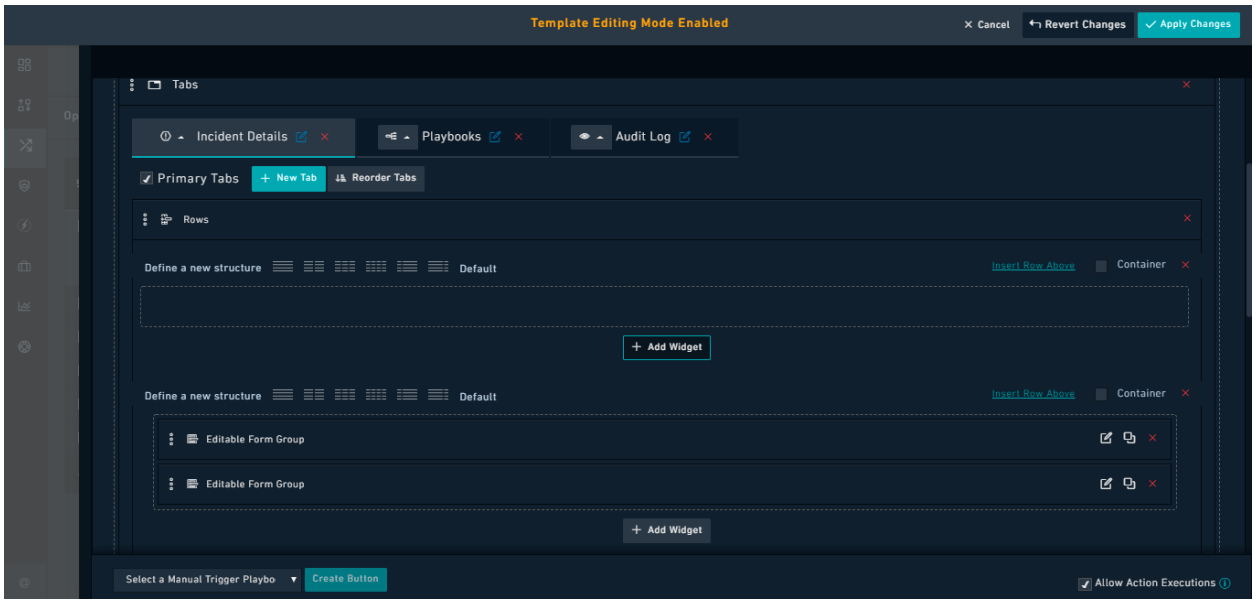


This opens the detail view of the incident record in the **Template Editing** mode:



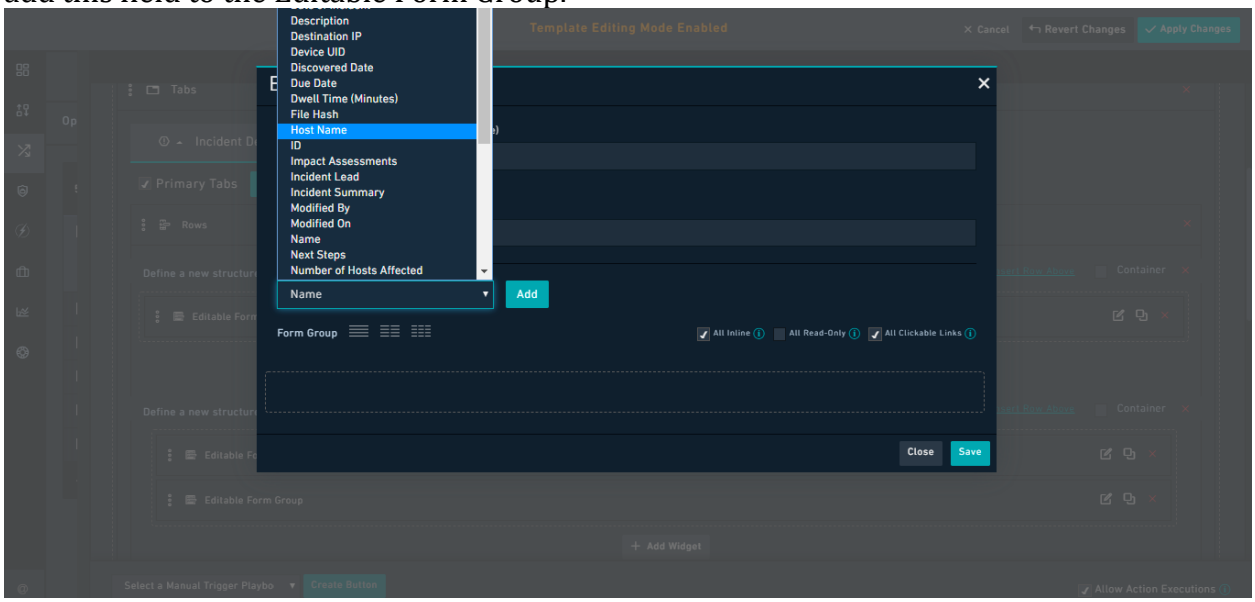
Now you can begin editing the template using Widgets.

4. In our example, we want a row to be added in which we can add the information for the **Host Name** and **Number of Hosts Affected** fields.
To achieve this, click the **Insert Row Above** link or **Add Row** button, depending on where you want to place these fields in the template. This will add a row and within this row, click **Add Widget**.



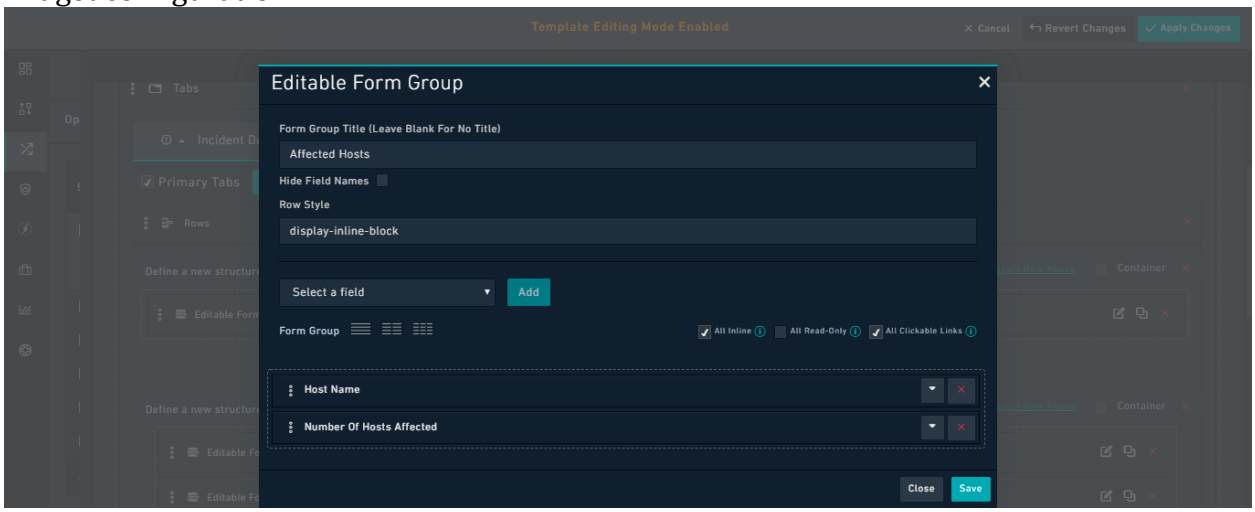
From the `Choose Widget` dialog, select **Editable Form Group** widget. This opens the Editable Form Group template for configuration. You can also click on the **Edit Widget** icon in this row to modify the widget later.

5. Configure the Editable Form Group as follows:
   a. Type `Affected Hosts` in the **Form Group Title** field and type `display-inline-block` in the **Row Style** field.
   b. Then from the **Select a Field** drop-down list, select **Host Name** and click **Add** to add this field to the Editable Form Group.

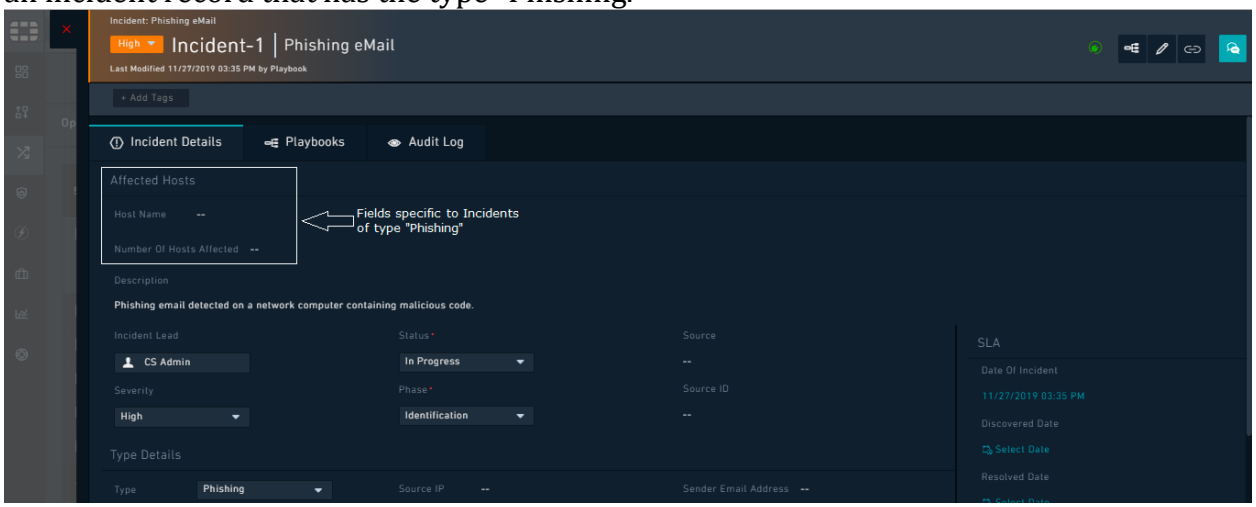


   c. Similarly, select the **Number of Hosts Affected** field and then click **Add** to add in the widget.
   This adds both the Host Name and Number of Hosts Affected fields to the

Editable Form Group as shown in the following image, and click **Save** to save the widget configuration:



6. On the template editing page, click **Apply Changes** to save changes to your template. Now, you can see the fields that you have defined to be displayed in the detailed view of an incident record that has the type "Phishing."



Conclusion

This tutorial demonstrates the flexibility that FortiSOAR™ provides for incident response.

Using this flexibility, you can create very customized forms for various types of records, each catering to your specific requirements. Fields can be customized at a very granular level using properties that can be conditional, such as the *Required By* condition.