Oracle® Communications

Active Topology Automation and Service Impact Analysis User's Guide



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Oracle Communications Active Topology Automation and Service Impact Analysis User's Guide, Release 8.26

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About This Content

This guide describes how to use Oracle Communications Active Topology Automation (ATA) to view and analyze network data that is collected from Unified Inventory Management (UIM). It also describes how to use Service Impact Analysis to view and analyze service and resource impacts data from Unified Assurance (UA), or from any assurance system supporting TMF688 Event Management API and TMF642 Alarm Management API.

Audience

This document is intended for the operations and planning personnel who use the ATA application to view and analyze the network data that is collected from UIM, along with event and impact data collected from the assurance system.

Before reading this guide, you should have a basic understanding of UIM. See *UIM Concepts* for more information.

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Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

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Part I

Active Topology Automation

This part describes how Oracle Communications Active Topology Automation (ATA) functions. It contains the following chapters:

- About ATA
- Setting Up ATA
- Getting Started with ATA
- Searching for Topology Graphs
- Changing the Topology Graph Settings
- Viewing the Details of Topology Components

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1

About ATA

Oracle Communications Active Topology Automation (ATA) is a web application that collects network and service data from UIM and displays the data in the form of topology graphs.

Use ATA to:

- View networks, services, corresponding resources, and their inter-relationships in the form of topology graphs and geographical maps.
- Plan network capacity.
- Track networks.
- Identify problematic hotspots within networks.
- Filter topology graphs to retrieve the desired information using various search criteria.

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2

Setting Up ATA

This chapter describes how to set up and configure ATA.

Prerequisites for Setting Up ATA

Before you set up ATA, you need to install all the prerequisite software. See "About Unified Inventory and Topology" in *Unified Inventory and Topology Deployment Guide* for installing the prerequisite software.

From Oracle E-delivery site, download the Common Cloud Native Toolkit (Common CNTK) and create an instance for ATA. See the "Unified Inventory and Topology Toolkit" chapter from *Unified Inventory and Topology Deployment Guide* for more information.

Setting Up ATA

To set up ATA:

1. Set up Graph DB by following the instructions mentioned in Oracle Database Graph Developer's Guide for Property Graph.
2. Install or upgrade UIM. See "Overview of the UIM Cloud Native Deployment" in *UIM Cloud Native Deployment Guide* for UIM cloud native deployment or "Unified Inventory Management Installation Overview " in *UIM Installation Guide* for UIM traditional deployment.
3. Configure the Unified Operations Message Bus microservice. See the "Unified Operations Message Bus" chapter in *Unified Inventory and Topology Deployment Guide* for more information.
4. Configure the Active Topology Automation microservice and create an instance. See the "Active Topology Automation Service" chapter in *Unified Inventory and Topology Deployment Guide* for more information.
   An ATA instance is created and a URL is generated. Use this URL to access the ATA application. Alternatively, you can open the ATA home page from UIM. See "Accessing ATA" for more information.

> **Note**
>
> If you have deployed Service Impact Analysis, you will be navigated to a landing page and from that page, you click on ATA application link to open the application.

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3

Getting Started with ATA

ATA helps you with a pictorial representation of the topology information that you collect from UIM. You can customize the layouts and other display settings according to your choice. You can customize your search, view and analyze each topology component, its associated resources, and its capacity consumed.

Accessing ATA

Access the ATA home page using any of the following options:

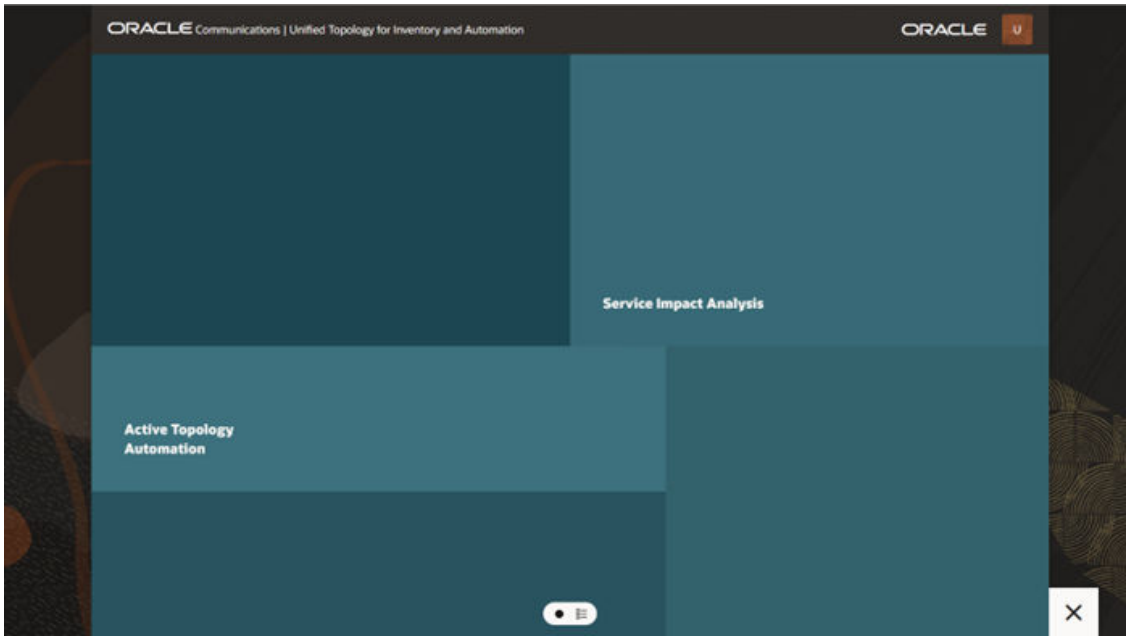
- Use the ATA application's URL that is generated after configuring the ATA microservice in a Kubernetes environment. See "About Unified Inventory and Topology" in *Unified Inventory and Topology Deployment Guide* for more information.

  > **Note**
  >
  > You require SSO credentials to access ATA. If you have already logged into UIM using SSO credentials, you do not have to log in again to access ATA and vice versa.

- On the UIM home page, in the left navigation pane, click **Topology**. This opens the ATA application's home page in a new tab or browser window, as shown in . See "Getting Started with Unified Inventory Management" in *UIM Online Help* for more information.
- Within UIM, open the summary page of a network, and then navigate to the **Associated Resources** tab. Click **View Topology** for a resource. This opens the ATA application and displays the topology graph for the corresponding resource. See "Getting Started with Unified Inventory Management" in *UIM Online Help* for more information.
- Within UIM, click **Topology** on the corresponding summary page of any of the following entities:
  - Pipe
  - Connectivity
  - Equipment
  - Physical Device
  - Logical Device
  - Service
  - Property Location
  - Place

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Figure 3-1 ATA Landing Page



About the ATA Home Page

On the top-right corner of the ATA home page, you can find a user profile drop-down list with some options. You can use these options for:

- Opening the ATA user's guide using **Help**.
- Logging out of ATA using **Sign Out**. This action logs you out of the application and displays the ATA login page. You can log out of the application from ATA and Service Impact Analysis Landing page.

You can also access UIM from the **General Information** tab of a topology component's summary page. See "Accessing UIM from ATA" for more information.

You can also localize ATA UI in a different language. To localize ATA UI, see "ATA Localization" in *Unified Inventory and Topology Deployment Guide*.

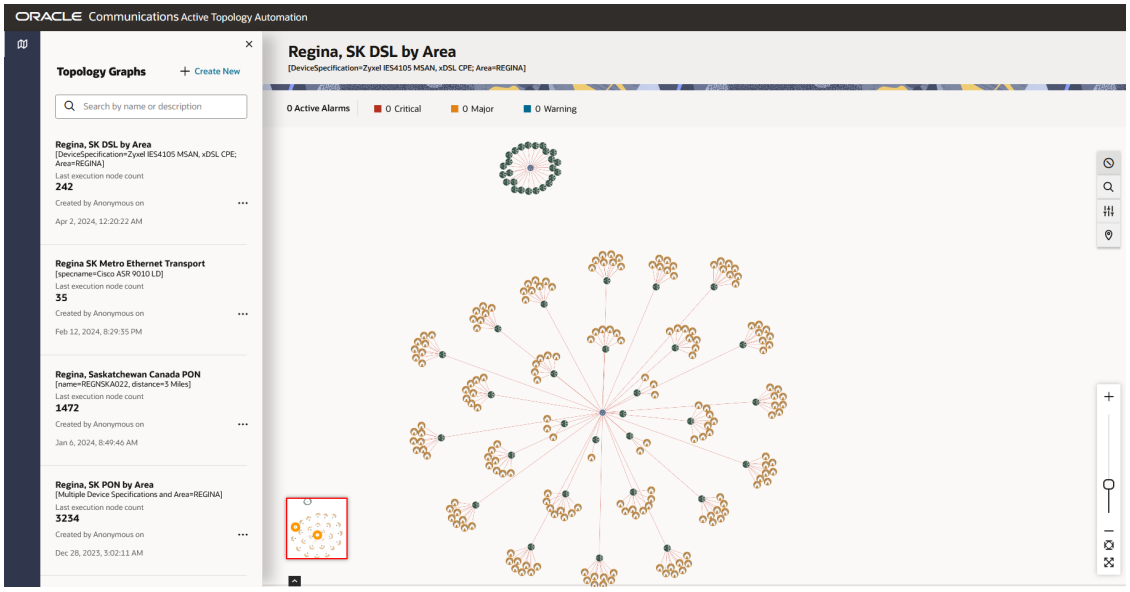
About the Topology Graph

On the home page, you can search for a topology graph and view it.

The following figure shows the ATA home page with the topology graph of a network.

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Figure 3-2 Topology Graph View of a Network



The topology graph shows the following:

- A left navigation bar that shows the list of topology graphs you have created. You can search for a topology graph using the Search field or you can create a new topology graph using **Create New** option.
- The diagram canvas on which all the topology components are depicted.
- The **Alarm Details** pane that shows the number of active alarms in the topology graph.

  Click the  icon above the **Search** option at the right side of the screen toggles its visibility.
  Use the **Alarm Type** list in the **Settings** pane to select the alarm context to display: **Planned** or **Unplanned**. The **Alarm Details** pane identifies the selected alarm type and displays the corresponding number for that type. Cleared alarms are not included in the alarm counts. The alarm icon in the upper-left corner of a topology component represents the highest-severity active alarm for the selected alarm type.
- A minimap shows the overall view of the topology graph. If you select a network element, the minimap shows the selected network element highlighted and the location of the element within the topology graph.

  > **Note**
  >
  > The minimap shows the corresponding part of the graph when you zoom in or zoom out.

- Selecting a node shows the corresponding overview details within the Overview panel.
- A legend in the left-bottom corner (below the minimap) that opens when clicked. It describes the custom colors and icons that represent the corresponding specifications in the topology graph along with the corresponding device count. The default and custom icon preferences are grouped as separate lists, as are specifications. Clicking on any of

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the specifications or icons or edges highlights all the respective nodes and edges on the graph.

- A zoom scroll bar on the right-end corner that helps you to change the zoom settings. You can change the zoom settings by scrolling the mouse or by using these controls.
- A **Settings** icon that opens the **Settings** pane to change the display and advanced settings to customize the graph as per your choice. See "Changing the Topology Graph Settings" for more information.
- A **Search** text box to search for a specific topology component within the topology graph. See "Searching within a Topology Graph" for more information.

On the topology graph, you can select a topology component, and view its details. A topology component can be a node or an edge. If the selected component is a node, you can isolate, expand, or collapse the node by right-clicking on the node and selecting the corresponding option. See "Viewing the Details of Topology Components" for more information.

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4

Searching for Topology Graphs

This chapter describes how to search for topology graphs and customize the search.

Searching for a Topology Graph

To search for a topology graph:

1. On the ATA home page, click the  icon on the top-left corner.

   This opens the **Topology Graphs** search pane with a list of topology graphs that you have saved (if any). These topology graph records show the corresponding names, descriptions, and the number of nodes. See "Customizing a Topology Graph Search" for more information.

2. (Optional) Type the name or description of a topology graph in the Search field.

   A list of related search results appears.

3. Choose a topology graph and click on it or select **Render Map** in the ellipsis options.

4. (Optional) Select **Edit** or **Discard** to edit or discard the topology graph search.

5. (Optional) Click **Create New** to customize a new topology graph search.

   A **Create New** pane appears. See "Customizing a Topology Graph Search" for more information.

Customizing a Topology Graph Search

You can customize your topology graph search in the **Create New** search pane. You can use this customized topology graph search for quickly accessing and monitoring the topology graph without selecting the attributes every time.

To customize your topology graph search:

1. Enter a name and a description for the topology graph.

   > **Note**
   >
   > **Name** is mandatory for **Save & Search**.

2. In the **Attributes** side pane, click the '**=**' icon of an entity to drag and drop the corresponding attributes to the topology graph. See "Selecting Attributes while Customizing a Topology Graph Search" for more information on the list of supported entities and the corresponding attributes.

3. You can add attributes using the following options:

   - To add a specific attribute within an entity, expand the entity and drag and drop the specific attribute to the list.

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- To add a specific attribute to the list, click the '**+** ' icon of the required attribute. You can add all attributes within an entity to the list.

> **Note**
>
> - If you add a specific attribute to the list, the corresponding entity gets added to the list.
> - You can add multiple attributes associated with the entity that is already added to the list.
> - If you have added an attribute of an entity, you cannot add another attribute from another entity.

4. (Optional) To add an attribute from another entity, remove the existing attribute or attributes from the list and then add the required attribute from another entity.
5. To remove an attribute or entity, click the Remove icon from the list of added attributes.

> **Note**
>
> Removing an entity removes all corresponding attributes from the list.

6. After you add all attributes, click **Save & Search**.

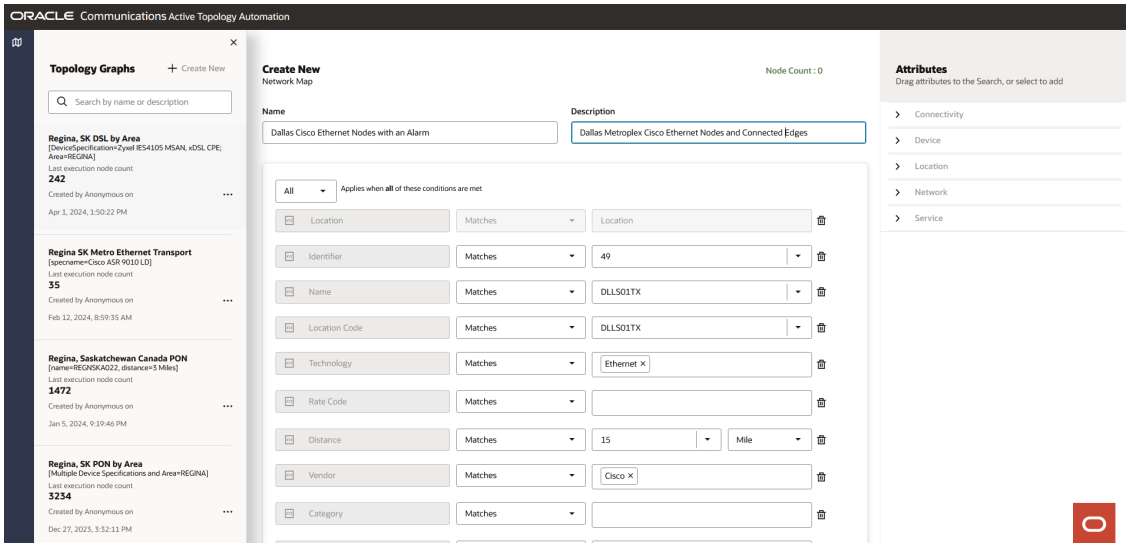
   The customized topology graph search is saved and the corresponding topology graph appears. All users can use this customized search from the list of saved searches for quickly accessing it.
7. (Optional) Click **Search** to open the topology graph without saving the search.

   The topology graph that contains all the selected attributes appears.
8. (Optional) Click **Cancel** to cancel the search.

The following image shows the **Create New** search pane.

Figure 4-1 Customizing Network Search

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Selecting Attributes while Customizing a Topology Graph Search

You can select an entity and its corresponding attributes to customize a topology graph search. Select or enter the corresponding values of these attributes to customize your search. The search returns results with a topology graph that contains only the selected entity types.

You can add only one entity from the list of entities. Adding an entity adds all the corresponding attributes to the search.

The list of supported entities are:

- Connectivity
- Device
- Location
- Network
- Service

Each entity has a list of attributes. You can select all or a few of these attributes. By selecting a set of attributes, you can customize your topology graph to display only the corresponding information.

> **Note**
>
> The customized topology graph search returns results of both devices and connectivities even when the entities selected are of a specific type (such as device, location or connectivity). For example, if you have selected a device entity and specified the device name, the results will still return all the connectivities linked to the device. You can also provide additional criteria such as Technology and RateCode to get the desired connectivities from the specified device.

Except for **Service**, all other entities have both generic and entity-specific attributes. The list of these specific attributes varies with the entity that you select. The **Service** entity has only two attributes, **Name** and **Version**.

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Table 4-1 lists the generic attributes.

Table 4-1 Generic Attributes

Attribute	Description
Identifier	The identifier of the topology component. You can enter an identifier or select from the list of identifiers.
Name	The name of the topology component. You can enter a name or select from the list of names.
Technology	Enter the technology to search for the topology components operating under the technology. This is a connectivity filter.
Rate Code	Enter the rate code to view the topology components that are associated with it. This is a connectivity filter.
Hops	Enter the number of hops or select from the list, to search for the topology components within that number.
Vendor	Enter the name of the vendor to search for all the topology components of the vendor. This is a device filter.
Category	Enter a category for **Network** or a device category for **Connectivity**, **Device**, and **Location**. For **Network** category, this is a network filter. For other categories, it is a device filter. The values are defined by the customer. See "Dynamic Attribute Mapping between UIM and ATA" in *Unified Inventor and Topology Deployment Guide* for more information.
Ring Name	Enter a complete or partial **Ring Name**, or select one or more values from the suggested list, to view topology components associated with the selected rings. This is a **Connectivity** filter. The topology graph includes connectivities that match any selected **Ring Name**.

Table 4-2 lists the entity-specific attributes.

Table 4-2 Entity-Specific Attributes

Attribute	Description
Domain	Enter the domain or select from the dropdown. This attribute is a **Device** filter.
Specification	Enter the specification that is used to create the entity. This attribute is specific to **Connectivity** and **Device**.
Node Type	Enter the node type. This is a **Device** filter.
Distance	Enter the distance to search for all the topology components available within the given distance from the location or device. Select the distance unit from the list beside this field. You can select **Meter**, **Kilometer**, or **Mile** as distance unit. This attribute is specific to **Location** and **Device**.
Device Specification	Enter the device specification that is used to create the entity. This attribute is specific to **Location** and **Network**.
Area	Enter the location area to search for all topology components available within that area. This attribute is specific to **Location**.

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Table 4-2 (Cont.) Entity-Specific Attributes

Attribute	Description
Circle	Enter the circle to search for all topology components within the circle. This attribute is specific to **Location**.
SubCategory	Enter the subcategory to search for all subnetworks with the specified types. See "Viewing Networks and Subnetworks" for more information. This attribute is specific to **Network**.
Topology Type	Enter the topology type. This attribute is specific to **Network**.
Sub Type	Enter the topology sub type. This attribute is specific to **Network**.

> **Note**
>
> Category, Domain, Node Type, Area, Circle, SubCategory, Topology Type, Sub Type are defined by the customer through Topology Mappings.

Displaying Device Hierarchy When No Topology Graph Is Found

When you perform a device search using filters such as vendor and specification, and no matching topology graph is found, the system displays an informational message indicating that no topology data is available for the selected devices. You are then prompted to optionally explore the device hierarchy.

To explore the device hierarchy:

1. Perform a device search using filters such as vendor and specification.
2. Observe the message displayed when no topology graph is found: **A Topology Graph, including nodes and edges, could not be found with edges terminating on the device(s) specified. Would you like to search the device hierarchy?**
3. Choose one of the following options:
   - **Yes**: To load the hierarchical view of devices in the topology canvas and view relationships such as equipment, physical devices, and logical devices in a structured graph. Verify that all relevant devices matching the applied filters are displayed along with their associated hierarchy. Use **Expand Connectivity** on any node to explore detailed connectivity.
   - **No**: To remain on the current screen without loading additional data.

Viewing Networks and Subnetworks

You can view multiple layers of a network by navigating up or down the network hierarchy.

An example of a network hierarchy is:

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National > **Regional** > **CircleCore** > **Aggregate** > **Pre-Aggregate** > **Access**

You can have either of the following types of networks:

- Multiple layers within a single network that follows the network hierarchy. For example: A **Regional** network has few nodes and one **Aggregate** subnetwork. You can see the subnetworks within the **Aggregate** subnetwork by clicking on it.
- Different types of subnetworks within a single parent network. For example: You can have a **Regional** network that in turn has its own nodes along with **Aggregate** and the corresponding **Access** networks. The nodes within the **Access** network can connect to the nodes within the **Regional** network through the **Aggregate** network. Figure 4-2 shows a network having different types of subnetworks.
- All the devices and connectivities exist within a single network. Oracle does not recommend this approach.

> **Note**
>
> Setting a device category attribute is supported on device or connectivity search.

You can open any network, whether a subnetwork or parent network, using the network name. The topological view for the selected network will automatically show both parent networks and their connections as well as subnetworks and their connections.

The subnetwork appears with a network badge. The number of internetworking nodes within the subnetwork appear as a number on the icon. The internetwork nodes of a subnetwork are the nodes that have a connection (edge) with the nodes in the parent network. In most situations, the internetwork nodes show the ingress and egress paths into the network and simplify the expansion and viewing of the network.

However, in some situations, you may wish to drill down into the subnetwork and view all of the nodes and edges:

- Right-click on the subnetwork and select **Isolate** to view all the nodes and edges associated with the subnetwork. This option isolates the subnetwork alone into a new view and does not show all the nodes and edges of the parent network, but shows the node connecting it to the parent network. See "Isolating a Subnetwork in a Topology Graph" for more information.
- Use the **Expand Node** action to show the internetwork nodes.
- Use the **Expand Subnetwork** option to view all nodes and edges along with the access nodes in the canvas. See "Expanding Subnetworks in a Topology Graph" for more information.

> **Note**
>
> After you expand or isolate a subnetwork, you can view the subnetwork name on the top-left corner of the canvas.

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Figure 4-2 Network with Subnetworks

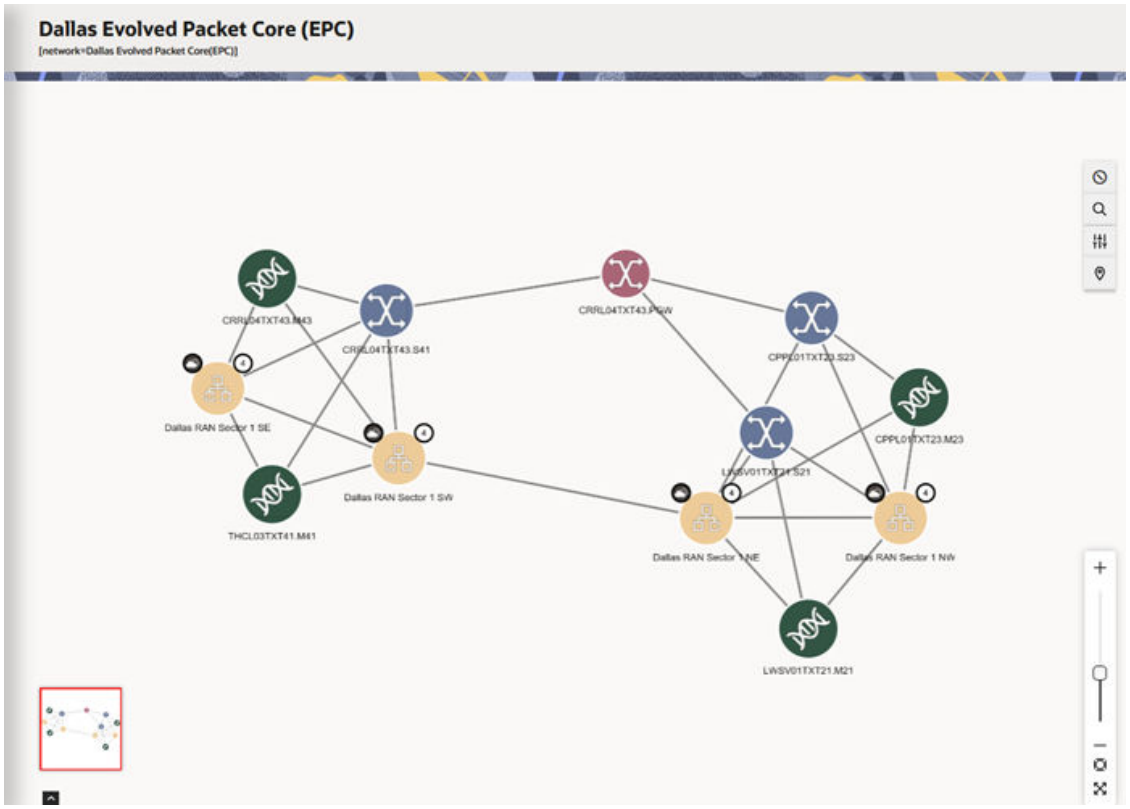
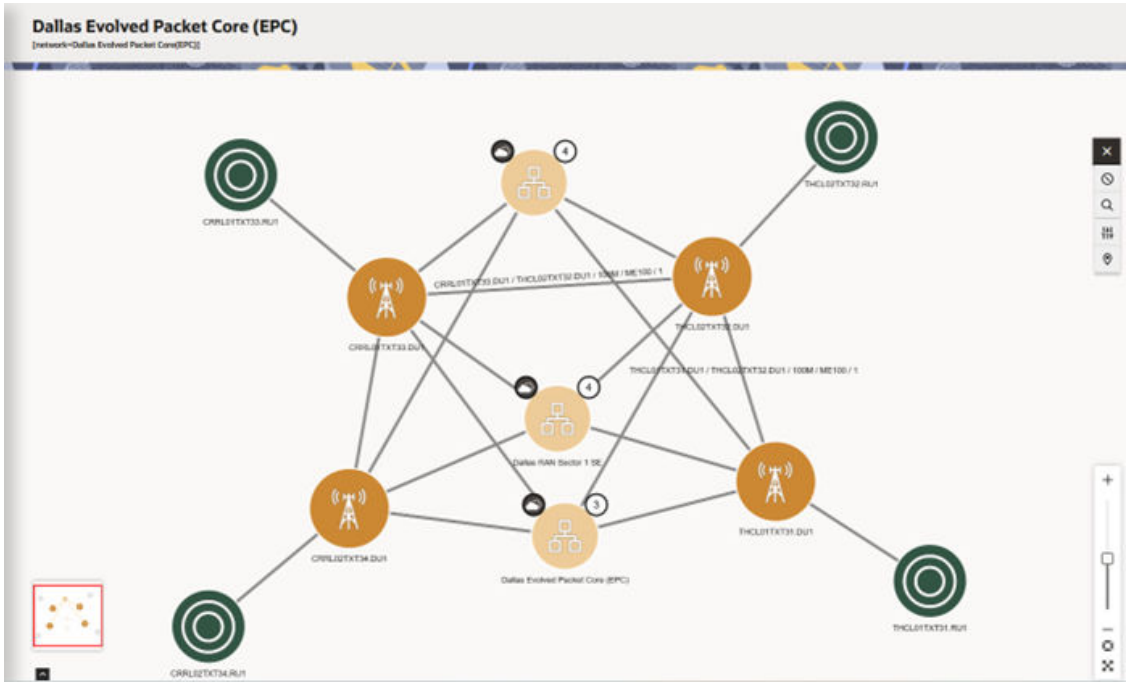


Figure 4-2 shows the Dallas EPC network with four subnetworks, where each subnetwork has four internetwork nodes.

Figure 4-3 Isolated view of Subnetwork



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Figure 4-3 shows the **Isolate** view of the Dallas RAN Sector 1 SE subnetwork. It shows all the nodes in the subnetwork and all interconnections to that subnetwork.

Figure 4-4 Expand Node view of a Subnetwork

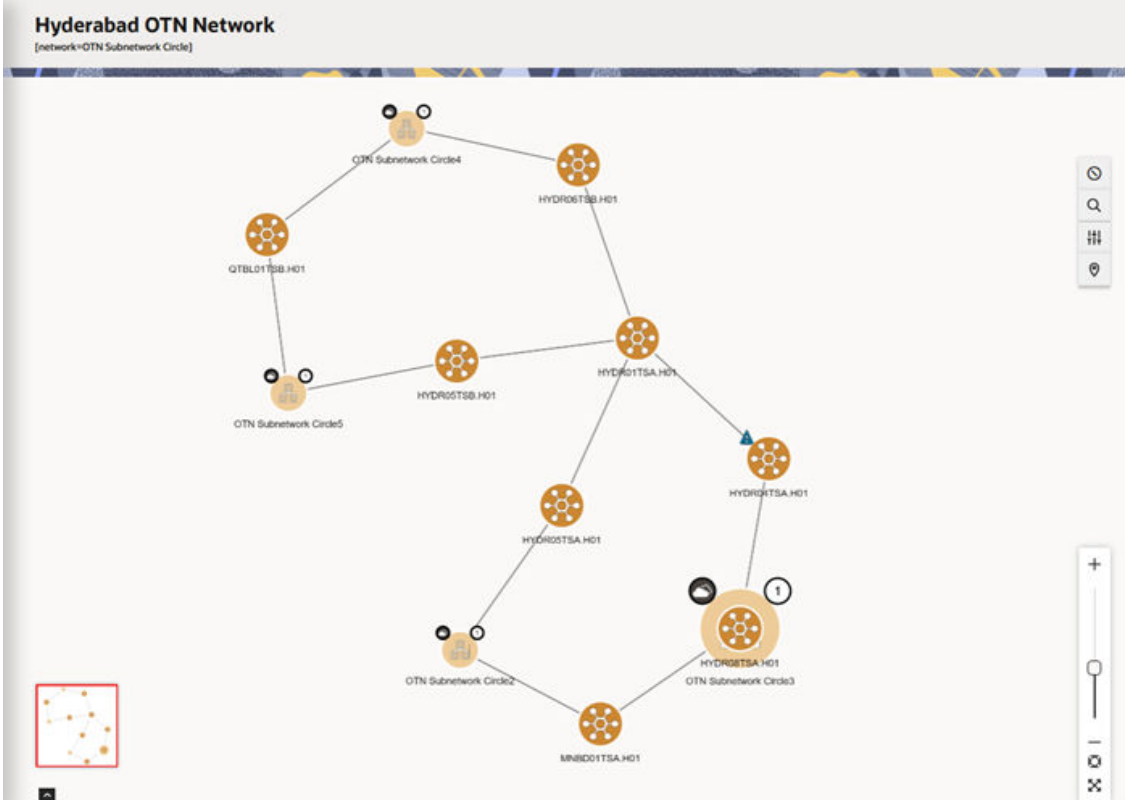
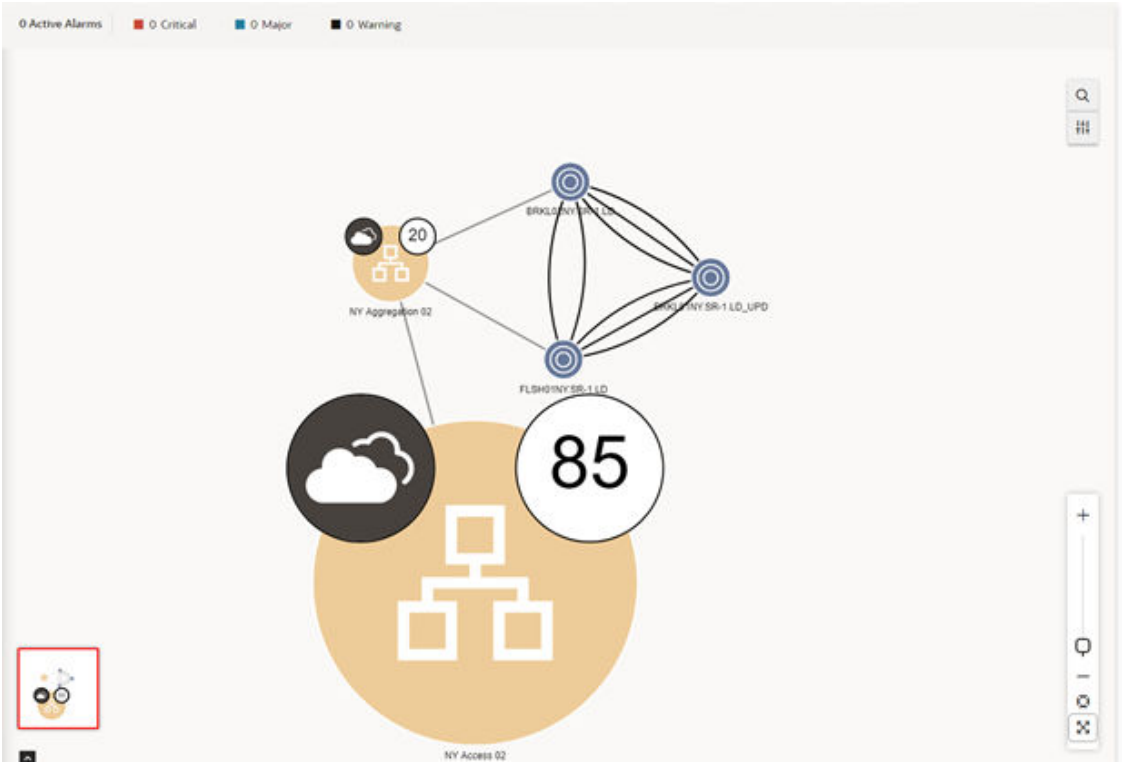


Figure 4-4 shows the **Expand Node** feature with one internetwork node.

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Figure 4-5 Subnetworks within a Single Network



Expanding Subnetworks in a Topology Graph

You can expand subnetworks within a topology graph to visualize the internal nodes (including the access nodes), connectivity, and hierarchical relationships directly in the canvas.

Expanding subnetworks is supported to multiple levels.

When you expand a subnetwork, all internal nodes appear (along with access nodes) in the canvas. When you collapse the expanded subnetwork, all internal nodes (both access and non-access nodes) continue to appear in the parent network. Therefore, using **Expand Subnetwork** option is disabled after the first use as the subnetwork stays expanded with all internal nodes appearing.

After you expand a subnetwork, you will observe the following limitations:

- The **Group By** option under **Display Settings** is not available.
- When you choose **Geo Map Layout** from **Display Settings**, you receive a message that the expanded subnetworks will not be in the same state when toggled back from the geo map layout. Click **OK** to proceed.

To expand subnetworks in the topology graph:

1. Open the topology graph.
2. Locate the subnetwork that you want to expand.

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> **Note**
>
> Subnetwork nodes are represented by a unique icon.

3. Right-click on the subnetwork and select **Expand Subnetwork** from the context menu.
The subnetwork is expanded within the current canvas. The canvas automatically lays out the nodes and edges in the subnetwork for optimal visibility. The subnetwork name appears on the top-left corner of the canvas.

> **Note**
>
> Use **Expand Node** to view only access nodes within a subnetwork and use **Expand Subnetwork** to view all internal nodes (along with access nodes) within a subnetwork.

4. (Optional) You can click  icon to search for components within the topology graph.
The **Search and Filter Topology** panel appears on the left navigation pane that shows all internodes of the subnetwork along with all nodes and edges of the parent network in a tree view.
5. (Optional) Expand multiple subnetworks including the nested subnetworks.
6. Use Zoom options or move the subnetwork for a better visibility.
7. Right-click on the subnetwork and select **Collapse Node** from the context menu.
The expanded subnetwork is now collapsed into the parent network. However, all internal nodes of the subnetwork continue to appear in the parent network.

Isolating a Subnetwork in a Topology Graph

You can isolate a subnetwork within a topology graph to view all the nodes and edges associated with the subnetwork. This option isolates the subnetwork alone into a new view and does not show all the nodes and edges of the parent network, but shows the node connecting it to the parent network.

Isolating subnetworks is supported to multiple levels.

To isolate a subnetwork in the topology graph:

1. Open the topology graph.
2. Locate the subnetwork that you want to isolate.

> **Note**
>
> Subnetwork nodes are represented by a unique icon.

3. Right-click on the subnetwork and select **Isolate** from the context menu.
The subnetwork is isolated from the parent network and canvas shows only the isolated subnetwork with all its subnetwork nodes. The subnetwork name appears on the top-left corner of the canvas.
4. (Optional) You can click  icon to search for components within the topology graph.
The **Search and Filter Topology** panel appears on the left navigation pane that shows only the nodes and edges within the isolated subnetwork in a tree view.

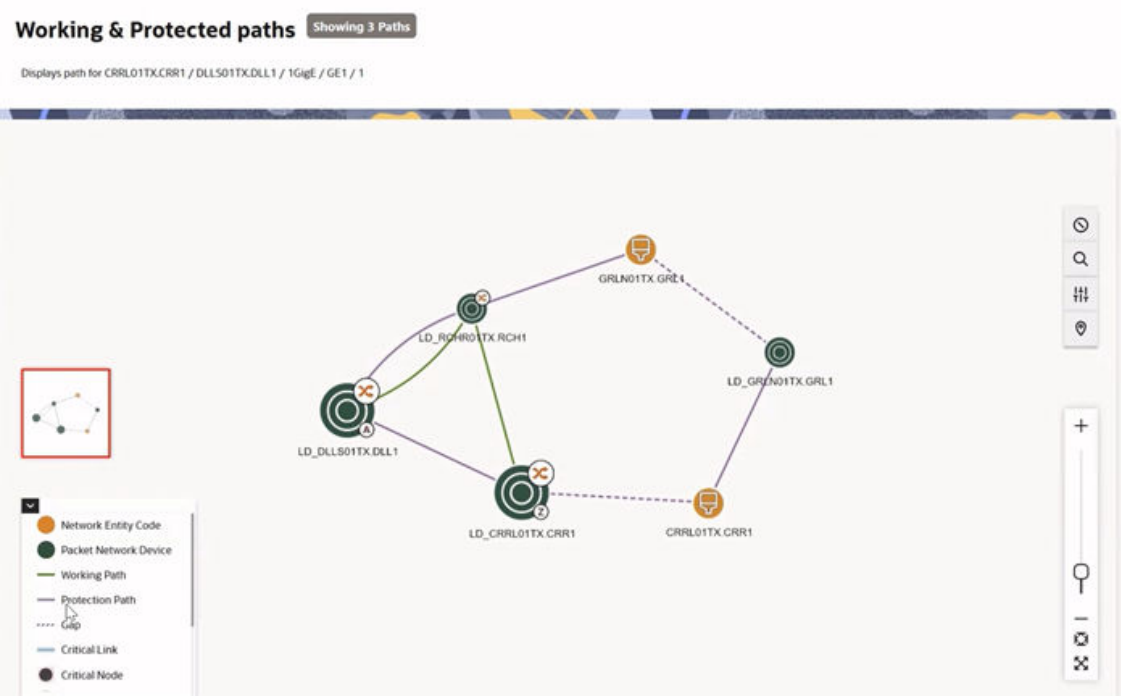
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5. (Optional) You can further isolate the nested subnetworks.
6. Use Zoom options or move the subnetwork for a better visibility.
7. Use × to exit the isolate mode.

Viewing the Working and Protected Paths

You can view the available paths for any connectivity on the canvas by right clicking on the edge and selecting **Show Paths**. The **Show Paths** action opens the **Working and Protected Paths** page. As shown in Figure 4-6, the page displays that three paths are available for the selected connectivity 1GigE connectivity from CRRL01TX to DLLS01TX.

Figure 4-6 Working and Protected Paths



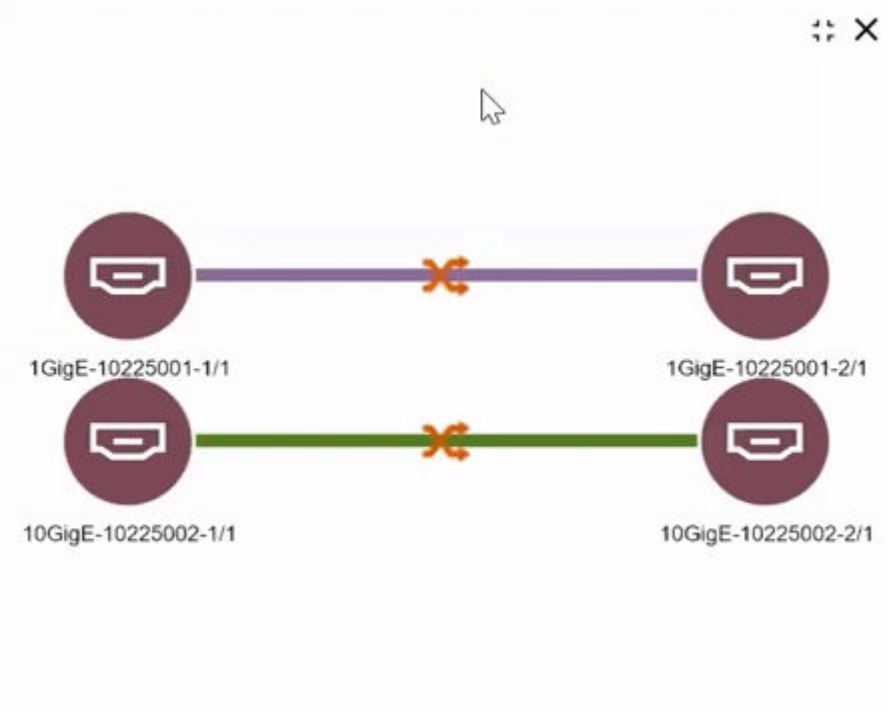
The legend in Figure 4-6 displays the following:

- The green path represents working paths. There is one working path in the above figure.
- The purple path represents protection paths. There are two protection paths in the figure.
- The **A** and **Z** icons represent the termination points for the connectivity trail.
- The icon represents a cross-connection on the device.
- The icon represents a jumper on the device.

If you click on either the cross-connect or jumper icons, the device interface or port details are displayed, as shown in Figure 4-7.

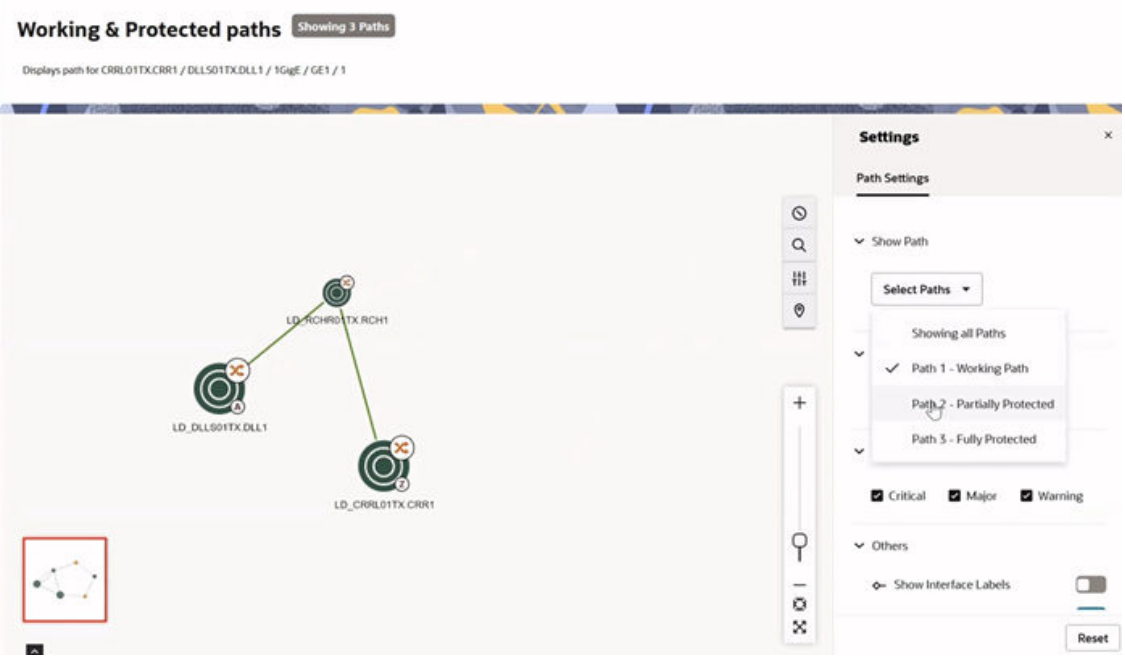
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Figure 4-7 View of Device Interface Details



You can filter specific paths in the **Settings** panel. For example, Figure 4-8 illustrates a scenario where only Working Paths are selected to be shown. It is also possible to view all paths, or any desired combination of paths. In this example, Path 2 provides Partial Protection and Path 3 provides full protection.

Figure 4-8 Customizing Paths to be Displayed on Working and Protected paths page



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You can also choose the **Show Interface Labels**, **Show Connectivity Labels** and **Show Node Labels** options in the settings panel as in Figure 4-9. By default, **Show Connectivity Labels** and **Show Node Labels** are enabled and **Show Interface Labels** is disabled. Enabling the **Show Interface Labels** option will display the device interface ID/Name, or the Port ID/Name.

Figure 4-9 Interface Labels Enabled on Working and Protected Paths



Viewing Connectivities in a Layered View

You can use the layered view to display the hierarchical structure of services and connectivities within the topology graph. You can use the following options:

- To view connectivities below a selected connectivity, use **Show Underlay**.
- To view services or connectivities above a selected connectivity, use **Show Overlay**.

To view connectivities in a layered view:

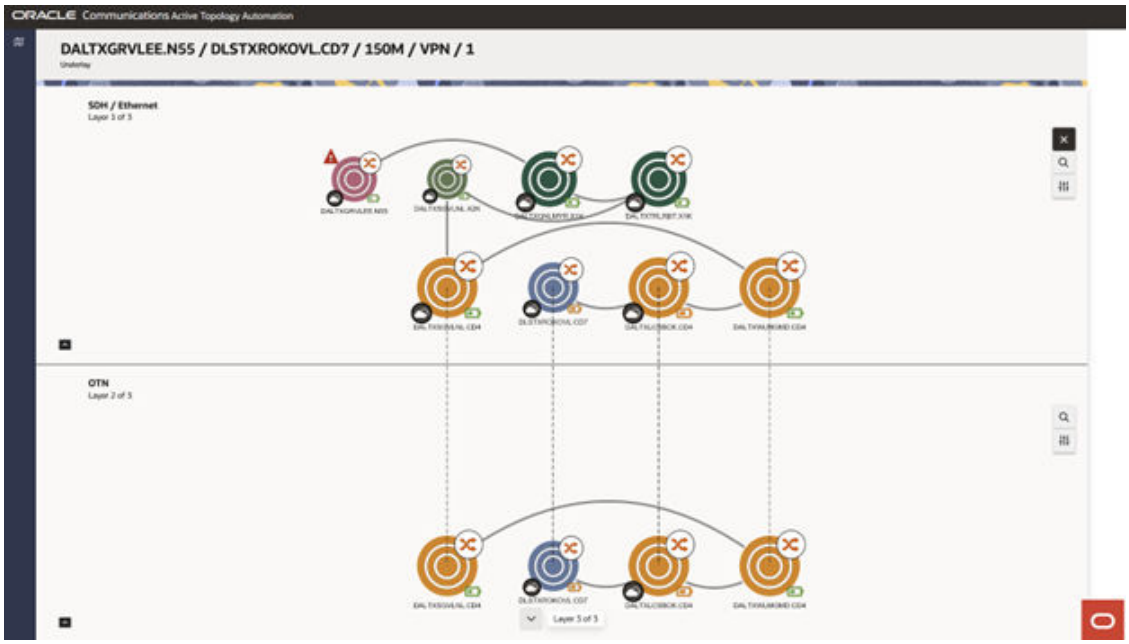
1. Select the required connectivity from the topology graph.
2. Right-click, and then select one of the following options from the context menu:
   - **Show Paths:** To view the paths associated with the selected connectivity in the topology graph. For more information, see "Viewing the Working and Protected Paths".
   - **Show Underlay:** To view the connectivities below the selected connectivity in the hierarchy. For more information, see "Viewing Underlay Connectivities in a Layered View".
   - **Show Overlay:** To view the services or connectivities above the selected connectivity in the hierarchy. For more information, see "Viewing Overlays in a Layered View".

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Viewing Underlay Connectivities in a Layered View

The layered view displays the name of the selected service or connectivity in the page title, with **Underlay** shown as the subtitle. The canvas shows the first two enabling layers. In the top-left corner of each layer, you can find the technology, layer number, and total number of layers. Nodes that exist in both visible layers are linked by a dashed line, called the bridge connection, making it easy to identify the shared nodes. Moving a common node in one layer automatically moves the corresponding node in the other layer. The following image shows the Underlay page with common nodes.

> **Note**
>
> You can have unlimited number of enabling layers in a layered view.



To view underlay connectivities in a layered view:

1. Right-click on the required service or connectivity and select **Show Underlay**.
   The **Underlay** page appears, displaying a layered view of all nodes and connectivities under the selected connectivity or service.
2. Select a network element or a connectivity in a layer to view its details.
3. Click the **Settings** icon to adjust the settings.
4. Use the **Layer *n*** tab or **Global** tab to customize layer-specific or global settings. Where, '*n*' indicates the selected layer number.
5. On the **Layer *n*** tab:
   - Select a layout from the **Layout** list.

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> **Note**
>
> If you choose **Geo Map Layout**, the view switches to the map layout.

- Enable the required options in **Alarm Status**.

> **Note**
>
> You can choose multiple alarm statuses.

6. On the **Global** tab:
   - Select the desired path from the **Show Path** list.

> **Note**
>
> You can select either a single path or all available paths. By default, the first path is displayed on the canvas.

   - Set the maximum number of paths using the **Max Paths** list.

> **Note**
>
> The maximum number of paths supported is **10**.

   - Enable required labels and synchronization settings under **Other Settings**. The options are:
     - **Show Interface Labels**: By default this label is turned off.
     - **Show Connectivity Labels**: By default this label is turned on.
     - **Show Node Labels**: By default this label is turned on.
     - **Bridge Node Synchronization**: By default this label is turned on. If you do not want the corresponding node in the adjacent layer to move when you move the selected node, turn off this label.
7. In the layered view, click the **Cross Connect** icon above the network element to view the cross connects.
8. View the node capacity by clicking the battery icon below the network element. The bottom-right corner shows the capacity badge that indicates the current node capacity in **0–25%**, **25–50%**, **50–75%**, or **75–100%** range.
   If there is an alarm on the node, an alarm badge appears. If the node is part of a network, the network badge appears in the bottom-right corner. Hover over the network badge or the node, the corresponding network name appears above the node.
9. Zoom in or out on the desired layer using your mouse to adjust the view.
10. Refer to the legend at the bottom of the layered view for icon, path, and specification definitions, and their corresponding colors and symbols.
11. If there are more than two layers, a dropdown arrow appears indicating the number of additional layers available. Select the down arrow to navigate to the next layer. The canvas will scroll showing layers 2 and 3.

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Similarly, if more layers exist above the currently visible ones, an upward arrow appears indicating the additional layers above.

The following image shows the view when there are more than two layers.



Viewing Overlays in a Layered View

A connectivity can have multiple services or connectivities running on it. To visualize a specific overlay, you must select the required connectivity, facility, channel, or service.

To view overlay connectivities:

1. Right-click on the desired connectivity and select **Show Overlay**.
   The Overlay page appears and lists all connectivities and their IDs above the selected connectivity.

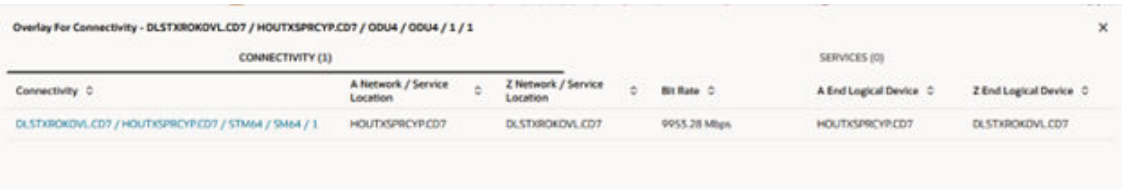
   > **Note**
   >
   > If there is only one overlay, this page does not appear.

2. Click an ID link from the list to view details for that connectivity.
   The corresponding connectivity and service details are displayed in a table in separate tabs.

   > **Note**
   >
   > If the circuit is channelized you can select either the facility or a specific channel.

3. Select the required connectivity or service on the **Service** tab to view the corresponding underlays. The following image shows the layered view that appears.

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Viewing Underlays for Service Topology

If you access the Service Topology directly using the **Topology** link from UIM or search for a specific Service Topology with the ATA Search feature, you can view the underlays by selecting the layered view icon  located along the right margin of the canvas.

> **Note**
>
> The underlay view shows only the first path for all the connectivities present. To view all available paths, you can check the individual connectivity underlays.

Searching within a Topology Graph

You can search for the required network elements within a selected topology graph. You use the **Search** icon at the right corner of your topology canvas.

Click on the **Search** icon opens a search panel on the left. You can select the following options while searching:

- Select **Search and Filter Topology** to search, filter, and view the topology based on a search criterion. See "Using Search and Filter Topology" for more information.
- Select **Ring Search** to search the naturally occurring rings in the topology graph displayed on the canvas. See "Using Ring Search" for more information.

Using Search and Filter Topology

The **Search and Filter Topology** panel has a search bar with filter options under it. Each filter option represents one filter type, such as **Location**, **Network Type**, and so on. Each option has a value chosen by default. Below the search bar is a list of all the nodes and edges in a topology graph. The nodes are grouped into categories by **Location**, while the edges are grouped separately.

The following filters and child filters are available in ATA:

1. Location
   - Location Code
   - Alarm (Yes, No)
   - Device Type
2. Network Type
   - Alarm (Yes, No)
   - Device Type

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3. Device Type
   - Alarm (Yes, No)
4. Technology
   - Rate Code
   - Connectivity Specification

When a user selects any filter, the corresponding child filter (the second-level filter) appears, and it's corresponding values can be selected.

Use **Search and Filter Topology** as follows:

1. Search for a network element or multiple network elements within the topology graph.

   > **Note**
   >
   > You can use a global search by entering a required value to search for the network element.
   >
   > The search is case sensitive.

2. View all nodes and edges in a tree view.
3. Select the required nodes or edges from the tree view to the selected elements highlighted within the topology graph and an overview panel appears on the right-side that shows the details of the selected node or edge.
4. Use the filter chip options to filter and search for the required network elements. You get the filter chip options based on the network elements you select.
5. Use the filter chip options as follows:
   a. Select an option to view the corresponding list of network elements.

      > **Note**
      >
      > You may select any number of filter chip options.

   b. Click on the selected option within the **Search** bar to view a list of values you can select.
   c. Select the required value to view the list of network elements for the selected value.

      > **Note**
      >
      > The highlighted nodes appear along with their associated edges in the canvas. When filters are removed, the entire topology appears.

   d. Select **Node** or **Edge** to toggle between the list of nodes or edges.

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> **Note**
>
> For edge search, the terminal nodes of the matching edges appear on the canvas.

e. Click on a filter chip to change the value of the corresponding filter chip.

f. Select a filter chip to view only the corresponding part of the topology graph in the canvas.

g. Close the filter option to deselect the filter.

Figure 4-10 Example of Network Type Filter Applied to a Network

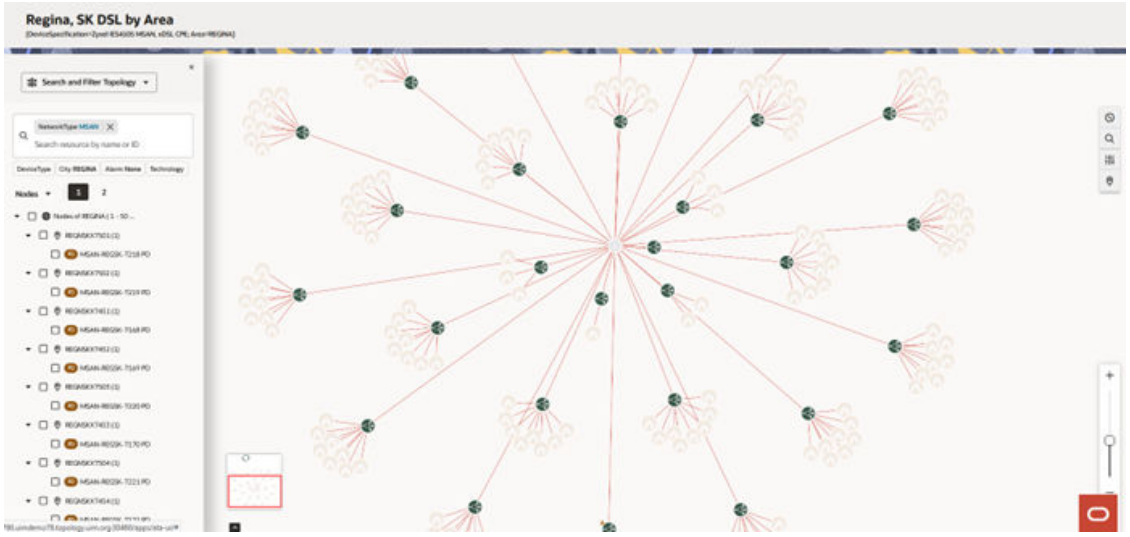


Figure 4-10 shows an example where the Network Type filter with value "MSAN" has been applied. The nodes are filtered in the tree-view on the left panel as per the value, and highlighted in the canvas.

Using Ring Search

A network ring is a closed loop of nodes and edges that starts from a node, connects other nodes and ends at the starting node.

Ring Search allows the user to find all the naturally occurring rings in a searched network displayed on the canvas. Using the **Ring Search**, you can search for all rings based on nodes and edges. The **Ring Search** can be customized by creating a custom graph based on the criteria you wish to use in identifying the rings. For example, you can build a search querying all devices with a specific technology and connectivity with a specific rate code for a specific area.

When you switch to the **Ring Search**, the list of rings in the graph appears on the left side of the screen.

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> **Note**
>
> For very large graphs the calculation of rings is limited, but you can choose to calculate all rings for a moderate graph.

You can view ring information by selecting a ring from the list. The chosen ring is highlighted on the canvas, and the **Ring Capacity** panel appears on the right side of the canvas.

The **Ring Capacity** panel provides the following details:

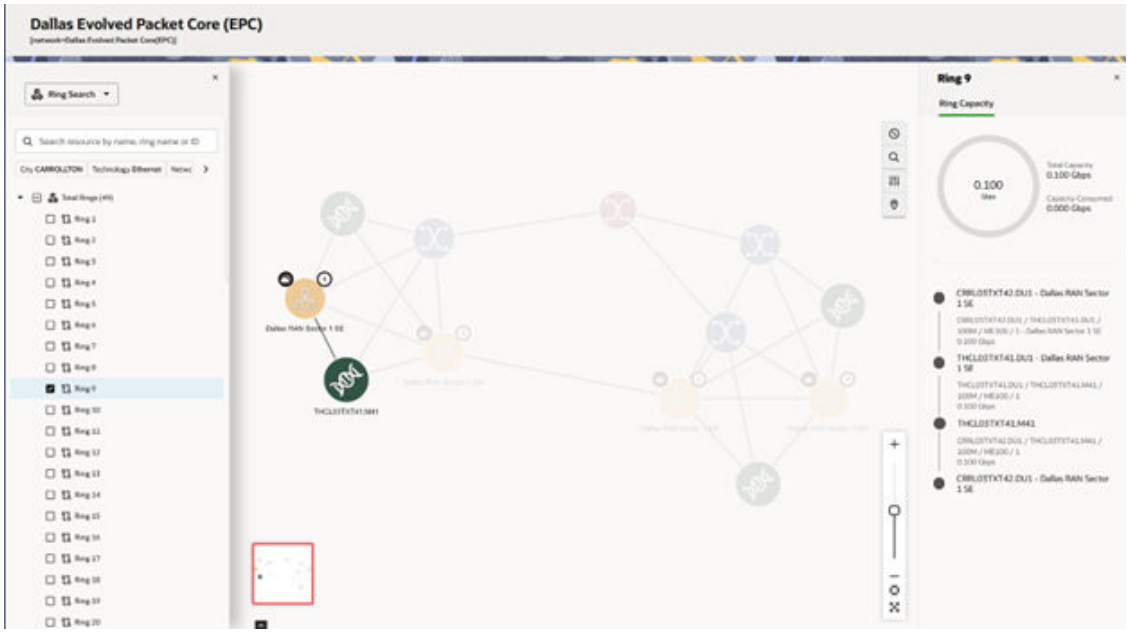
- **Total Capacity**: The total capacity of all edges within the ring.
- **Capacity Consumed**: The sum of the capacity values of all edges within the ring.
- A linear visualization of the ring with all nodes and the corresponding edges within the ring.

You can choose to view any number of rings or all rings available on the topology. When you select a ring, the associated nodes and edges appear in a tree view in the Ring Search panel. If the list of nodes/edges/rings is too long, then it is divided into different pages that can be viewed by clicking the page numbers listed next to the dropdown menu.

You can also filter rings using the filter chip options below the search bar. For example, if you select a filter chip for a specific location, all rings that are available within the filtered location in the rendered network appear. See "Viewing and Filtering Rings within a Searched Network" for more information.

The following image shows the ring search within a searched network:

Figure 4-11 Search for a Ring within a Network



Viewing and Filtering Rings within a Searched Network

To view rings within a searched network:

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1. From the topology graph, click on the Search icon.
   The search panel appears.
2. Select **Ring Search** from the dropdown list.
   The list of all rings available within the network appears.
3. Select the required ring from the list.
   The selected ring gets highlighted within the network along with **Ring Capacity** panel on the right side. You can see the list of nodes and edges associated with the selected ring in a tree view.

> **Note**
>
> You can select multiple rings from the list of rings.

To filter rings:

1. Use the filter chip options available under search to view the rings available for that filtered criteria within the searched network.

> **Note**
>
> You can use multiple filter chips to view the rings that meet the filtered criteria.

2. Click on the selected filter chip to change the value of the filter.
3. Search for any ring by its name or ID using the global search option.
4. Search for any node or edge within the ring using the global search option.

Searching for Devices

You can search for devices using available filters and view the resulting topology or device hierarchy.

1. Navigate to the device search page.
2. Apply search filters such as vendor and specification.
3. Run the search.
4. If a topology graph is available, view the devices and their connectivity in the topology canvas.
5. If no topology graph is found, review the message displayed: **A Topology Graph, including nodes and edges, could not be found with edges terminating on the device(s) specified. Would you like to search the device hierarchy?**
6. Choose one of the following options:
   - **Yes**: Load the hierarchical view of devices in the topology canvas. View relationships such as equipment, physical devices, and logical devices in a structured graph. Interact with the graph and use the Expand Connectivity option on any node to explore detailed connectivity.
   - **No**: Remain on the current screen without loading additional data.

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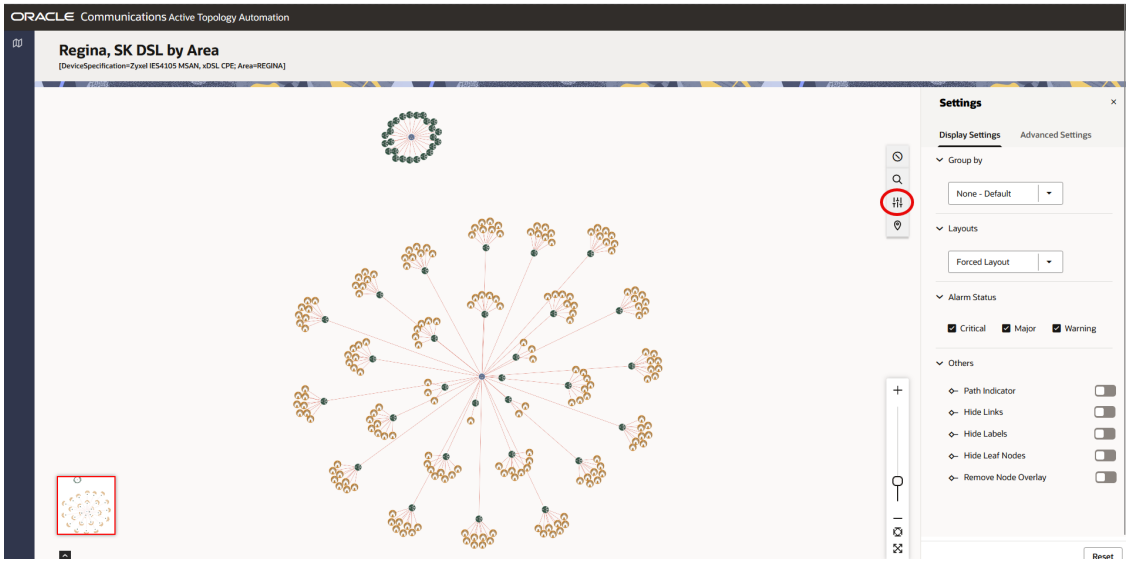
Changing the Topology Graph Settings

This chapter describes how to change topology graph settings.

Opening the Settings Pane

Use the **Settings** icon from the quick navigation bar to open the Settings pane.

Figure 5-1 Opening Settings Pane



The **Settings** pane helps you to change the display and advanced settings.

Changing the Display Settings

You can change the display settings of the topology graph using the options under the Display Settings tab.

The following table provides the list of options you can use to change the display settings.

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Table 5-1 Display Settings

Setting Name	Description
Group by	Select an option to group the topology components. You can group the components by **None - Default**, **State**, **City**, **Postal Code**, **Circle**, and **Location Code**. The **Group by** dropdown list shows only the options that have corresponding data populated in the graph. For example, if province is not populated in a graph, the province option does not appear in the dropdown list. Figure 5-2 depicts an example where the topology components are grouped by **City**. This mechanism builds containers showing the cities with the highest concentration of devices.
Layouts	Select an option to change the layout of the topology graph. Forced Layout is the default layout. See "Changing the Topology Graph Layout" for more information.
Alarm Status	Select one or more alarm severity values to highlight topology components with matching alarms in the currently selected alarm type. The available severity values are **Critical**, **Major**, **Minor**, **Intermediate**, and **Warning**. Alarm severity highlighting is available only when the rendered topology graph contains 100 or fewer nodes.
Alarm Type	Select **Planned** or **Unplanned** to set the alarm context for the topology graph. The selected value determines the alarm counts shown in the Alarm Details pane and the alarm icon displayed on each topology component. Each component displays the icon for its highest-severity active alarm of the selected type. Cleared alarms are not included in the displayed counts.
Others	Enable an option to change the corresponding setting. You can hide the links, labels, and leaf nodes, loop edges, meta nodes, and remove the node overlays by enabling the corresponding option.
Reset	Click **Reset** to change the display settings back to the default options.

Table 5-2 Options under Others Section

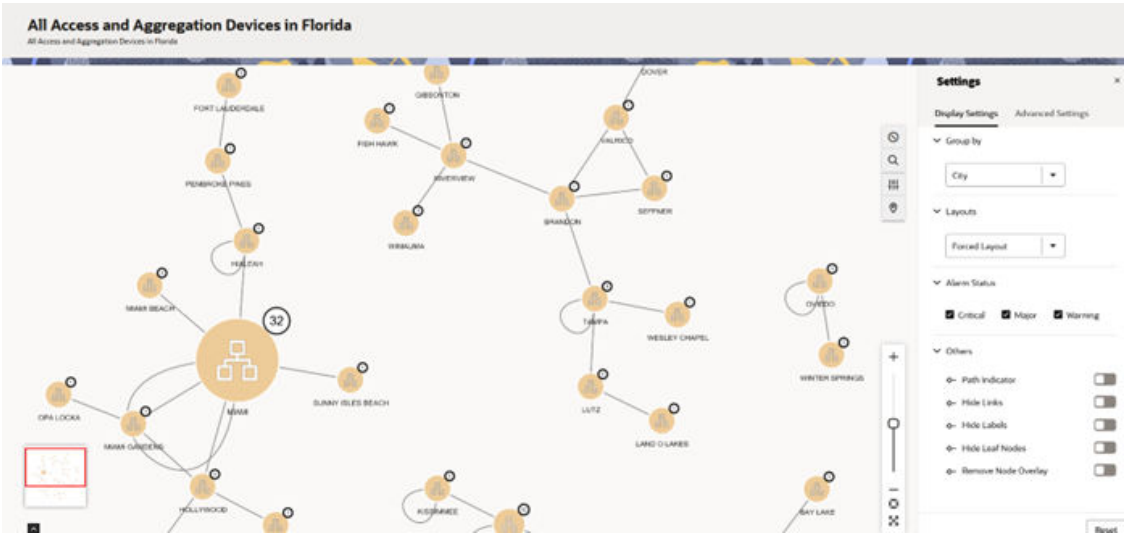
Option	Description
Path Indicator	The edges displayed on the topology graph represent trail paths between two nodes. When you turn on **Path Indicator** (under display settings) you will see the number of paths available, and you can drill down to see the working and protect paths by selecting the **Show Paths** action on the edge.
Hide Links	You can hide links between the nodes by turning on this option.
Hide Labels	You can hide labels between the nodes by turning on this option. The labels do no appear even if you hover over the node.

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Table 5-2 (Cont.) Options under Others Section

Option	Description
Hide Leaf Nodes	You can hide all leaf nodes in the topology graph by turning on this option. This option displays the number of leaf nodes that each of the parent nodes have.
Remove Node Overlay	You can remove node overlay in the topology graph by turning on this option. This option is not available for **Geo Map Layout**.
Hide Loop Edges	You can hide any edges which have the same source and target nodes. By default, this option is enabled.
Hide Meta Edges	You can hide the meta edges. The meta edges show the connection between nodes and networks or between multiple networks.

Figure 5-2 Example of Group By Applied on a Network



Changing the Topology Graph Layout

You can change the layout of a topology graph into any of the layouts listed in the following table:

Table 5-3 Topology Graph Layouts

Layout	Description
Forced Layout	Displays the topology components in an aesthetically pleasing way. This is the default layout.
Geo Map Layout	Displays the topology graph in a geographical map view. See "Working with the Geo Map Layout" for more information. **Note:** Geo Map Layout can be toggled by selecting the location pin on the topology graph.
Circular Layout	Displays the topology components in a circle.

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Table 5-3 (Cont.) Topology Graph Layouts

Layout	Description
Grid Layout	Displays the topology components in the form of a grid.
Hierarchical	Displays the topology components according to the hierarchy and without any overlaps.

> **Note**
>
> If you isolate a node or open its summary, the layout resets to the default option.

Working with the Geo Map Layout

You can view the topology graph in a geographic map layout. In a Geo Map layout, all the topology components appear according to their geographic locations.

You can view Geo Map layout using the following ways:

- Select **Geo Map Layout** from the **Layouts** field of the display settings.
- Navigate to the **Advanced Settings** tab and select a map background under the **Geo Map** section.

> **Note**
>
> Selecting a geo map background changes the map layout (under **Display Settings** > **Layouts**) to **Geo Map Layout**.

You use the Geo Map layout as follows:

1. Open the topology graph in the Geo Map layout.
2. Under the **Advanced Settings** tab, select a map background under **Geomap**.
3. Use the following zoom options:
   - Zoom in to a specific network element to view the exact location of it within the geo map.
   - Zoom out of the map to view all network elements or all graphs within the specific geographic location.
   - Click the **Fit to Zoom** icon in the zoom settings bar to fit to the standard view of the geographic location.
   - Click the **Full Screen** icon in the zoom settings bar to view the map in full screen.
4. Enter a value between **0** and **100** in **Opacity in Percentage** to set the opacity percentage of the map.

> **Note**
>
> You use this option to minimize the map background.

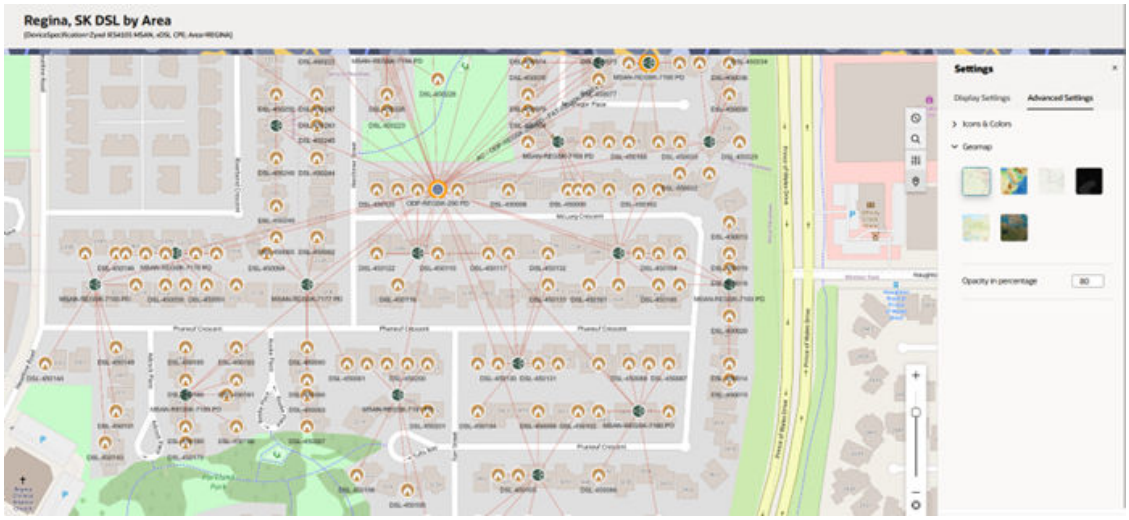
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5. Use  to toggle between the Geo Map layout and the canvas layout.

You can view the details of a topology component by clicking on it. This action opens an **Overview** tab that includes the alarm details associated with the component. See "Viewing the Details of Topology Components" for more information.

You can change the geographical map type on the **Advanced Settings** tab. See "Adding Advanced Settings" for more information.

Figure 5-3 Example of Map Layout



Adding Advanced Settings

You can further customize the topology graph by adding the following advanced settings:

- Using the **Icons & Colors** option, you can enable or disable icons for topology components.
- You can change the type of geographical map using the **Geo Maps** option.
- You can change the opacity percentage for the selected geographical map.

Customizing Node Icons in the Topology

You can customize node icons in the topology graph by choosing from a predetermined or uploaded range of icons. You can add multiple customizations by filtering nodes according to specification and network type.

To customize node icons:

1. Select **Customize Icons** from **Advanced Settings**.

   The **Custom Icons** pop-up window opens.

2. Select the specification and network type of the nodes you want to customize. Then click the **Select Icon** menu to select an icon.
3. Click **Add** to add your customization as a preference. You can edit or delete this customized entry anytime.

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4. Click **Apply**.

   The customization is applied to the topology.

> **Note**
>
> You can upload a custom icon by clicking on **Upload From Computer**. You can also delete each uploaded icon or all of them by using the **Delete** or **Delete All** buttons. Deletion operation is only applicable for uploaded custom icons, and only when it is not being used to represent any devices on the graph.

You must follow these style guidelines for uploading custom icons:

- The icon should be of SVG format.
- The icon should have a transparent background.
- The icon should be white.
- The icon should be of similar size to the ones provided by Oracle.

Customizing Edge Colors in the Topology

You can customize edge colors in the topology graph.

To customize edge colors:

1. Select **Customize Colors** from **Advanced Settings**.

   The **Custom Colors** pop-up window opens.

2. Select the technology and rate code of the edges you want to customize. Then click the **Select Style** menu.

   In the pop-up window, you can select any color from the gradient palette or input a specific RGBA value. You can also adjust **Line Styling** according to your preferences.

3. Click **Add** to add your customization as a preference. You can edit or delete this customized entry anytime.

4. Click **Apply**.

   The customization is applied to the topology.

Viewing Planned and Unplanned Alarms

Use the **Alarm Type** list to view planned or unplanned alarms in a topology graph.

To view planned or unplanned alarms:

1. Open the required topology graph.
2. Click the **Settings** icon in the quick navigation bar.
3. On the **Display Settings** tab, select a value from the **Alarm Type** list:
   - Select **Planned** to view planned alarms.
   - Select **Unplanned** to view unplanned alarms.

   The **Alarm Details** pane updates to identify the selected alarm type and show the corresponding active alarm counts. Cleared alarms are not included in the counts. The

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alarm icon in the upper-left corner of each topology component updates to show the highest-severity active alarm for the selected alarm type.

4. To highlight components by alarm severity, open the Alarm Details pane and select **Critical**, **Major**, **Minor**, **Intermediate**, or **Warning**. The topology components with alarms of the selected severity are highlighted.

> **Note**
>
> Alarm severity display is available only when the rendered topology graph contains 100 or fewer nodes. If the graph contains more than 100 nodes, ATA displays a warning and does not highlight topology components. Filter, isolate, or otherwise reduce the graph, and then select the alarm severity again.

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6

Viewing the Details of Topology Components

This chapter describes how to view the details of topology components.

Viewing the Details of a Topology Component

In a topology graph, you can view the details of a topology component by clicking on it. The details appear in a side pane that contains the **Overview** and **Alarm Details** tabs. To view more information about the topology component, click **More Info** on the details side pane. See "Viewing Additional Information About a Topology Component" for more information.

The **Overview** tab displays the corresponding details of the topology component such as ID, Inventory Status, location details, entity category, subnet type, Created Date, and so on. These details vary from component to component.

You use **Properties** from **Overview** to view the list of all properties that are associated with the topology component.

As an authorized user, you can decrypt the encrypted values using the **Decrypt** icon in the following locations:

- At the **Overview** tab title.
- On the top-right corner of the **Properties** pop-up window.

> **Note**
>
> If you are not an authorized user, you do not see the **Decrypt** icon.

The **Alarm Details** tab displays the list of active alarms present in the topology graph. You can see the corresponding severities of the alarms, such as **Critical**, **Major**, **Minor**, **Intermediate**, and **Warning**. You can expand each alarm to view the details.

Viewing Additional Information About a Topology Component

You can view the additional information about a selected topology component by clicking **More Info** on the overview details side bar that opens a summary page.

The topology component's summary page has the following:

- **General Information** tab: This tab shows details such as ID, name, specification, location, and so on. It also shows the total capacity available, the capacity consumed, and the percentage of the capacity consumed. You can view the characteristics of the component (if any) in the **Characteristics** side pane.

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> **Note**
>
> For device, pipe and connectivity, clicking on the ID field will take you to the corresponding summary page within UIM.

As an authorized user, you can decrypt the encrypted values using the **Decrypt** icon in the **Characteristics** side pane.

> **Note**
>
> If you are not an authorized user, you do not see the **Decrypt** icon.

- **Device Interfaces** tab: This tab's label shows the number of device interfaces that the logical device is associated with. After you open the tab, a list of all the device interfaces (if any) appears. From the list, you can view the name, specification, inventory status, assigned status, and alarm status of the device interfaces. You can select a device interface and view its summary in the **Summary for DI <ID>** side pane. If a device interface has sub-interfaces in a channelized connectivity, you can view the hierarchy of the device interface by expanding it.

  > **Note**
  >
  > Physical device and equipment do not have Device Interfaces associated with them and therefore, the **Device Interfaces** tab does not appear for either of these entities.

- **Associated Resources** tab: The label of this tab shows the number of associated resources that the topology component has.

  For example: If a Logical Device and Equipment are associated with a Physical Device, the **Associated Resources** tab of the Physical Device shows the Logical Device and Equipment associated with it.

  After you open the tab, a list of all the associated resources (if any) appears. You can filter this list with the entity type. From the list, select a resource to view the details in the side pane. You can also view the summary of the resource from the **Summary for <resource ID>** side pane.

  You can view the alarms associated with the entities in a tree view. Clicking on the entity shows the alarm details in the Summary panel on the right. These alarms are always shown on the highest-level devices. For example, if there is an alarm on a Port in an Equipment, and the Equipment has association to a Physical Device which is associated to a Logical Device, the alarm appears on the highest-level device, which is Logical Device.

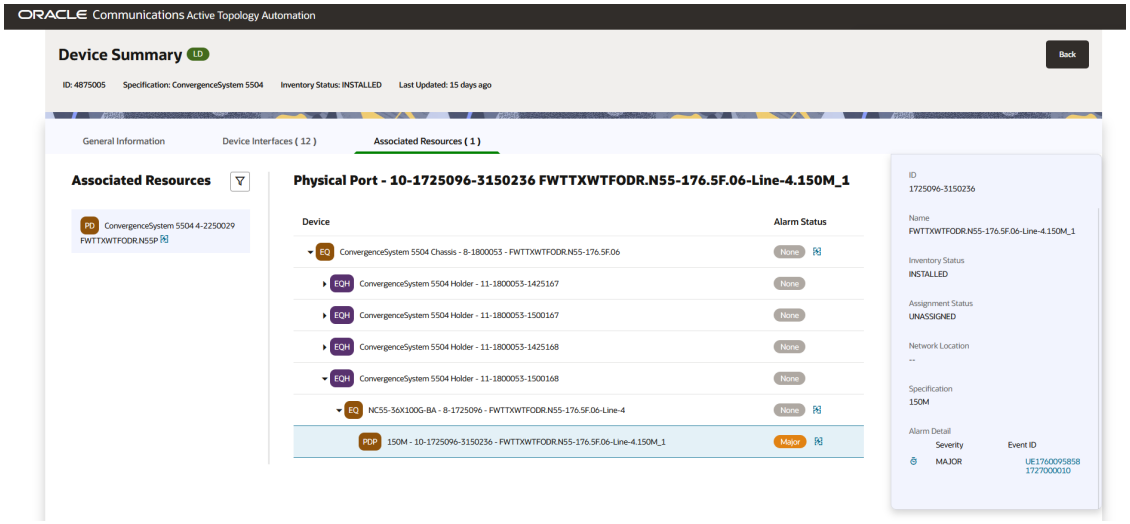
  You can use icon to view the alarm details within ATA.

- **Back** button: Click this button to go back to the topology graph.

The following image shows the **Associated Resources** tab:

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Figure 6-1 View of Associated Resources tab

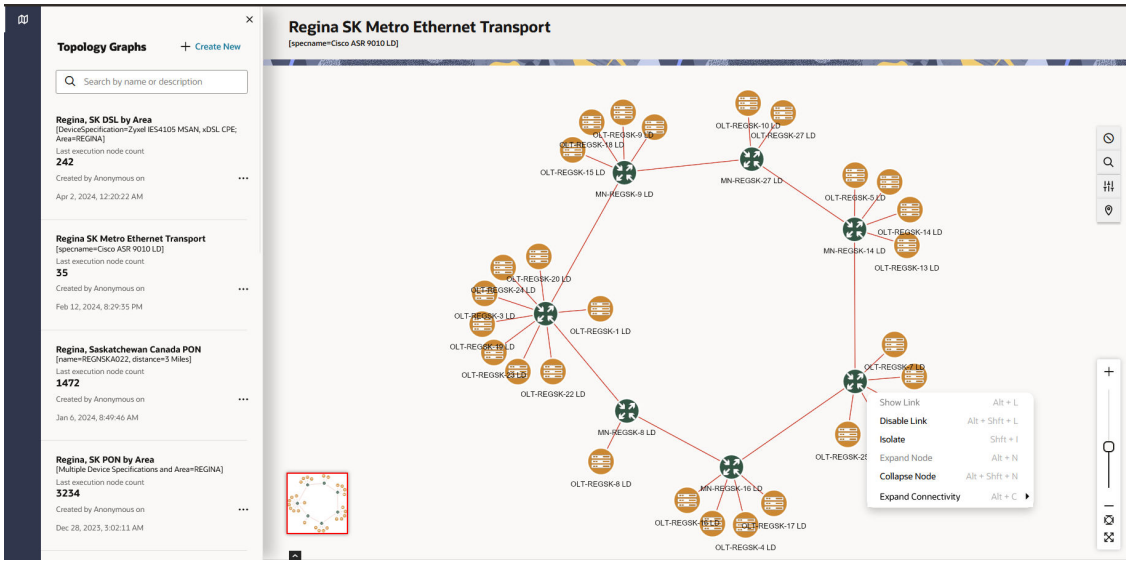


Adding Settings from a Context Menu

You can select a topology component and add settings using the context menu, which opens when you right-click on the component. You can also use the keyboard shortcuts for adding these settings.

The following image shows the context menu options and the corresponding keyboard shortcuts.

Figure 6-2 Context Menu for Adding Settings to topology Components



The following context menu options appear based on the entity/node you have selected:

- **Show Link**: Displays the links that are connected to the selected component.

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- **Disable Link**: Disables all the links that are connected to the selected component.
- **Isolate**: Isolates the selected component from the rest of the topology graph. You can go back to the original topology graph by clicking .
- **Expand Node**: Displays all the internetwork nodes within the network.
- **Collapse Node**: Collapses all the expanded subnetworks.
- **Expand Connectivity**: Expands the connectivity by the number of hops that you select. For example, you can view the connectivity for an additional 3 hops even though the original query does not include these nodes.

Accessing UIM from ATA

To access UIM from ATA:

1. Open the required topology graph and select a topology component.

   The Overview panel, of the component appears.
2. Click **More Info**.

   The summary page of the component appears.
3. Under the **General Information** tab, click on the **ID** link.

   The corresponding component's summary page in UIM appears.
4. Alternatively, on the top-right corner of the **Overview** panel, click on the ellipses option and select **View Resource in Inventory** to view the resource summary in UIM.

Accessing Service Impact Analysis from ATA

You can access Service Impact Analysis from ATA through:

- The **Overview** panel
- The **Device Interfaces** tab of the node summary page
- The **Associated Resources** tab of the node summary page
- The **Summary** panel of the **Associated Resources** tab

Accessing from Overview Panel

To access Service Impact Analysis from the **Overview** panel:

1. Open the required topology graph.
2. Click the  icon to view the number of active alarms exist in the topology.
3. Click the alarm type: **Critical**, **Major**, **Minor**, **Intermediate**, or **Warning**.

   The corresponding nodes with alarms are highlighted in the canvas.
4. Select the topology component that has active alarms.

   The overview pane of the component appears.
5. On the top-right corner of the **Overview** panel, click on the ellipses option and select **View Resource in Service Impact Analysis**.

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The alarms of the resource appear in the Service Impact Analysis application.

Accessing from the Device Interfaces Tab

To access Service Impact Analysis from the **Device Interfaces** tab:

1. In the **Overview** panel, click **More Info**.

   The summary page of the topology component appears.
2. Go to the **Device Interfaces** tab that shows the list of all device interfaces and the corresponding alarms.
3. Under the **Alarm Status** column, click icon that appears next to each alarm in the table. The selected alarm details appear in the Service Impact Analysis application.

Accessing from the Associated Resources Tab

To access Service Impact Analysis from the **Associated Resources** tab:

1. In the **Overview** panel, click **More Info**.

   The summary page of the topology component appears.
2. Go to the **Associated Resources** tab that shows the list of all associated resources and the corresponding alarm statuses.
3. Expand the hierarchy until the required alarm appears.
4. Under the **Alarm Status** column, click icon that appears next to each alarm.

   The selected alarm details appear in the Service Impact Analysis application.

Accessing from the Summary Panel of Associated Resources

To access Service Impact Analysis from the **Summary** panel of **Associated Resources**:

1. In the **Overview** panel, click **More Info**.

   The summary page of the topology component appears.
2. Go to the **Associated Resources** tab that shows the list of all associated resources and the corresponding alarm statuses.
3. Expand the hierarchy until the required alarm appears.
4. Select the node with alarm from the hierarchy.

   The corresponding node summary appears in the side **Summary** panel.
5. Under **Alarm Detail**, click on the event ID link.

   The selected alarm details appear in the Service Impact Analysis application.

> **Note**
>
> You can use icon to view the alarm details within ATA.

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7

Working with Service Summary

This chapter describes viewing and analyzing service summary details.

Viewing Service Summary Details

The Service Summary page provides the following details:

- Customer details
- Service configuration
- Orders
- Events

You can perform the following tasks:

- Analyze a service
- Inspect the associated resources
- Review related business interactions
- Investigate operational events

To access the Service Summary page, click **Service Details** on the top-right corner of the topology graph in ATA.

Viewing Customer Details of a Service

From the Service Summary page, you can view the corresponding customer details on the left navigation pane under **Information**. You can find the following details from this pane:

- Customer image
- Customer name
- Account details

Working with Service Configuration Details

You use the **Configuration** tab to view the insights into the service composition in a table with the following columns:

- Configuration
- Resource Specification
- Assignment/Reference Status
- Resource
- Start Date
- End Date

You can find the following insights along with the above details on this tab:

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- Associated business interaction
- Service status

You can toggle between **Table View** and **Tree View** using the corresponding icons on the top-right corner of the page.

You can select a version from the list on the top-right corner that refreshes the corresponding Configuration hierarchy, associated business interaction, and service status details of the service version.

Tree View of the Service Summary

Click the corresponding **Tree View** icon on the top-right corner to open the service summary configuration details in a hierarchical view.

Click on the corresponding resource to open its details on a right pane. The details can include, ID, resource name, specification, and inventory status.

The tree view details changes according to the version you select.

Viewing Order Details of a Service

You use the **Orders** tab to view the insights into orders in a table with the following columns:

- Order ID
- Order Name
- Specification
- Status
- Configuration ID
- Effective Date
- System Name
- Entity Name
- Entity ID

You can sort the list of orders as per your requirement.

Viewing Event Details of a Service

You use the **Events** tab to view the insights into events in a table with the following columns:

- Severity
- Event ID
- Alarm Type
- Event Status
- Analysis Status
- Event Date
- Owner

You can sort the list of events as per your requirement.

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Part II

Service Impact Analysis

This part describes how Oracle Communications Service Impact Analysis functions. It contains the following chapters:

- About Service Impact Analysis
- Setting Up Service Impact Analysis
- Getting Started with Service Impact Analysis
- Using the Overview Tab
- Using the Events Tab
- Using the Impacts Report

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8

About Service Impact Analysis

Oracle Communications Service Impact Analysis receives the alarm events from an assurance system and visualizes the data in the form of charts and reports. It analyzes the events and provides a list of all the impacted services using an event lifecycle and finalizes the lifecycle with a report. These reports help you to analyze the data for impact on the services on your network.

This module helps the operations team to perform the following activities:

- Faster Root Cause Analysis (RCA)
- Faster Mean Time to Repair (MTTR)
- Faster Mean Time to Provision (MTTP)
- Enrich the Trouble Ticket with the impacted services

Service Impact Analysis enables you to assess the potential impact of a planned network change before the change is implemented. You can create a simulation, review the predicted impacts, and schedule the simulation as a planned event.

You use Service Impact Analysis to:

- View the summary of the Alarm Events passed from the Assurance system.

  > **Note**
  >
  > The assurance system filters the alarm events to send only the critical events.

- View the analysis of the alarm types.
- View the list of the 10 most recent events.
- Search, filter, and sort events, impacts, and reports.
- Customize impact reports and export them to XLS format for further analysis.
- View the insights for events, impacts, and reports.
- View impacted resources in ATA.

You can use simulations to assess impacts on physical resources, logical resources and connectivities, networks and rings, services, customers, and locations.

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9

Setting Up Service Impact Analysis

This section describes how to set up and configure Service Impact Analysis.

Prerequisites for Setting Up Service Impact Analysis

Before you set up Service Impact Analysis, you need to install all the prerequisite software. See "About Unified Inventory and Topology" in Unified Inventory and Topology Deployment Guide for installing the prerequisite software.

From the Oracle edelivery website, download the Common Cloud Native Toolkit (Common CNTK) and deploy Service Impact Analysis. See the "Unified Inventory and Topology Toolkit" chapter in Unified Inventory and Topology Deployment Guide for more information.

Setting Up Service Impact Analysis

To set up Service Impact Analysis:

1. Install or upgrade ATA. See "Upgrading ATA" in *Unified Inventory and Topology Deployment Guide* for upgrading AIA.
2. Install or upgrade UIM. See "Overview of the UIM Cloud Native Deployment" in *UIM Cloud Native Deployment Guide* for UIM cloud native deployment.
3. Configure the Unified Operations Message Bus microservice. See the "Unified Operations Message Bus" chapter in *Unified Inventory and Topology Deployment Guide* for more information.
4. Configure the Service Impact Analysis microservice. See the "Deploying Service Impact Analysis" chapter in *Unified Inventory and Topology Deployment Guide* for more information.
   Service Impact Analysis instance is created and a URL is generated. Use this URL to access the Service Impact Analysis application. See "Deploying Service Impact Analysis Instance" in *Unified Inventory and Topology Deployment Guide* for more information.

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10

Getting Started with Service Impact Analysis

Service Impact Analysis enables network operators to visualize and analyze the services, resources, locations, networks, and other impacts affected by events occurring on physical, logical, or virtual infrastructure. These events, such as faults at the node or sub-node level (for example: shelf, card, port, or device interface), are received from the Assurance systems that monitor and collect the real-time network events.

Service Impact Analysis correlates these events to assess the impacts and displays the analysis in the form of interactive charts and reports. It allows operators to view, sort, and analyze the effects of these events, enabling faster identification of root causes and affected areas. Operators can also generate customized reports and apply advanced filters that help in refining their analysis and enabling faster and better resolutions.

> **Note**
>
> Service Impact Analysis supports an Assurance system using TMF 688 Event Management API and TMF 642 Alarm Management API.

The supported resource types are:

- Physical Port
- Device Interface
- Equipment
- Physical Device
- Logical Device

The supported resource sub types are:

- Shelf
- Card

Accessing Service Impact Analysis

To access Service Impact Analysis:

- Use the Service Impact Analysis application's URL that is generated after configuring the Service Impact Analysis microservice. See "About Unified Inventory and Topology" in *Unified Inventory and Topology Deployment Guide* for more information.

> **Note**
>
> You require SSO credentials to access Service Impact Analysis. If you have already logged into UIM or ATA using SSO, you do not have to log in again to access Service Impact Analysis.

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- On the landing page, click **Service Impact Analysis**.
  The **Overview** page appears.

About the Service Impact Analysis User Interface

Data in Service Impact Analysis can be viewed and analyzed using tabs that provide various features.

The tabs provide the following functionality:

- **Overview**: Use this tab to view the service impacts summary, alarm events, alarm severity distribution, and the 10 most recent events. The Overview tab also includes the Heat Map, which displays the locations of resources impacted by events within the selected time range.
- **Events**: Use this tab to view, filter, sort, and generate reports of the list of all alarm events that occurred. The Events tab can include assurance, simulated, simulated-child, and planned events.
- **Simulations**: Create and manage simulations for proposed network changes, review their predicted impacts, and schedule a simulated event as a planned event.
- **Impact Reports**: Use this tab to customize reports using filters and to export the reports to XLS format.
- **Topology**: This tab opens ATA. For more information on ATA, see "About ATA".

The following figure shows the home page of Service Impact Analysis.

Figure 10-1 Service Impact Analysis Home Page



About Alarm Types

The impacts data is grouped into the following alarm types based on their severity:

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- Operation Violation
- Environmental Alarm
- Mechanism Violation
- Communications Alarm
- Integrity Violation
- Processing Error Alarm
- Quality of Service Alarm
- Equipment Alarm
- Physical Violation
- Security Service
- Time Domain Violation

About Event Statuses

The events have the following statuses that originate from the assurance system:

Table 10-1 Event Status

Event Status	Description
RAISED	The alarm is detected.
UPDATED	The alarm status is successfully updated.
CLEARED	The alarm is resolved and is no longer active.
REJECTED	The alarm status change is rejected due to an error or other reasons.

About Analysis Status

Service Impact Analysis has the following lifecycle statuses:

Table 10-2 Analysis Status

Analysis Status	Description
PENDING	The event is received but not assigned to anyone to analyze.
ASSIGNED	A user (or Owner) is assigned to analyze the impact.
INITIATED	The system has started analyzing the impacts in UIM.
COLLECTED	The system has completed the analysis of impacts in UIM. Analysis status value is changed to **COLLECTED** if the analysis is completed successfully.
FAILED	The system has failed in analyzing the impacts in UIM. If the initiate analysis is not completed successfully, the analysis status is changed to **FAILED**.
ANALYZING	The user (or Owner) has started analyzing the impact.
COMPLETED	The analysis of the impact is completed by the user (or Owner) and the system.

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For a simulated event, the user interface can display **Calculating** while Service Impact Analysis generates the predicted impact. When the analysis completes successfully, the event can display **Collected**. Verify the exact status labels and transitions in the target release.

> **Note**
>
> The Analysis Status can be **COMPLETED** only if all the impacted items are **QUALIFIED** or **DISQUALIFIED**.
>
> The event or analysis lifecycle status is different to the impact review status. You can qualify or disqualify individual impacted items during impact review.

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11

Using the Overview Tab

The Overview tab of Service Impact Analysis provides a summary of all service impact events.

The service impacts summary is categorized into the following sections:

- Total Events
- Alarm Types
- Recent Events

The Overview tab includes the Heat Map. Use the Heat Map to identify locations associated with events and assess the geographical distribution of event impacts.

Viewing the Events Summary

You can view the events summary in the form of a pie chart using the **Total Events** section.

The pie chart shows the grouping of events based on their alarm severity. It shows the percentage of each group of events.

The summary can include assurance events, simulated events, and planned events. Continue to use severity-based grouping only for event types for which severity is available.

To view the events summary:

1. In the **Overview** tab, navigate to the **Total Events** section.
   The **Total Events** section shows the total number of all events that occurred.
2. On the pie chart, hover over the corresponding sector to view the following details:
   - **Severity**: Provides the alarm severity.
   - **Count**: Provides the number of events that occurred with the corresponding alarm severity.
3. Use the alarm type legend to understand the alarm severity and the corresponding color marked on the pie chart.

Viewing the Types of Alarms Occurred

You can view the types of alarms that occurred using the **Alarm Types** section.

The bar graph shows the types of alarms grouped against the number of alarms that occurred. Each type of alarm can be further distributed based on the alarm severity.

To view the alarm types:

1. In the **Overview** tab, navigate to the **Alarm Types** section.
2. On the bar graph, hover over the required alarm type for a specific severity to view the following details:
   - **Severity**: Provides the alarm severity.
   - **Alarm Type**: Provides the alarm type.

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- **Count**: Provides the number of events that occurred with the corresponding alarm type and severity.

3. Use the alarm type legend in the **Total Events** section to understand the alarm severity and the corresponding color.

Analyzing Recent Events

You can view the 10 most recent events in the **Recent Events** section.

To analyze the recent events occurred:

1. In the **Overview** tab, navigate to the **Recent Events** section.
   The section shows a list of recent 10 events occurred.
2. Click on any required event ID link in the **Event ID** column.
   The **Event Details** panel appears. The panel shows the corresponding event details. See "Viewing the Events Summary" for more information.
3. Click on any required resource link in the **Resource** column.
   The corresponding resource summary page within UIM opens in a different browser tab (for ports and device interfaces) or in Service Impact Analysis UI (for physical devices or equipment).
4. (Optional) Click **See All** on the top-right corner of the **Recent Events** section to view the list of events that occurred.

The **Events** tab shows the list of all events that occurred. See "Using the Events Tab" for more information.

Viewing Event Locations on the Heat Map

Use the Heat Map on the Overview tab to identify locations associated with events in a selected period.

To view the event locations on the heat map:

1. Open the **Overview** tab.
2. Open the **Heat Map** view.
3. Select a predefined date range, or specify custom start and end dates.
4. Zoom or pan the map to inspect markers.
5. Select a marker to review the associated event information.
   Markers and colors represent the location and relative impact of events.

> **Note**
>
> Check the legend to interpret the displayed colors and counts.

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Using the Events Tab

You use the Events tab to view the list of all events occurred in a table with the following columns:

Table 12-1 Events Columns

Column	Description
Severity	The severity of the alarms. The alarm severities are: • Critical • Major • Warning • Indeterminate • Minor
Event ID	A unique ID for the event.
Alarm Type	The alarm type of the event. See "About Alarm Types" for the list of alarm types.
Event Status	The event status that you get from the assurance system. See "About Event Statuses" for more information.
Resource	The resource that on which the event has occurred. This is a hyperlink, clicking on which you can view the summary of the corresponding resource in UIM. If you are an authorized user, you can decrypt the encrypted values using the **Decrypt** icon from the resource summary **Characteristics** side pane of the **General Information** tab.
Analysis Status	The lifecycle status of the impact data analysis. See "About Analysis Status" for more information.
Created On	The date when the event was created.
Source	The source of the event, which is the unique identifier of the assurance system from which the event is collected.
Owner	The person who is assigned to work on the alarm event.

Using the Events tab, you can perform the following:

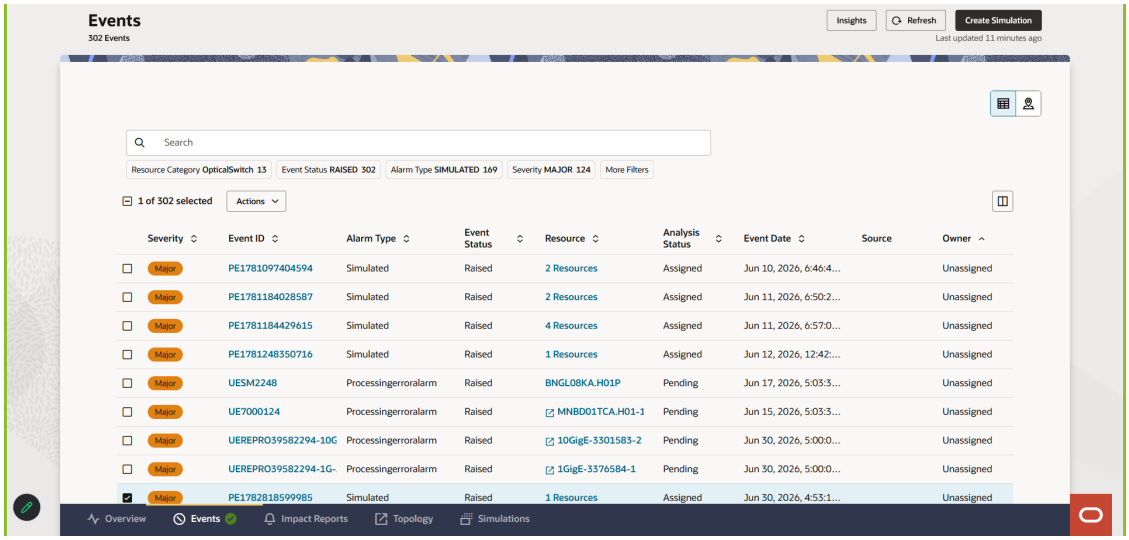
- Viewing the list of events.
- Searching and filtering the events using customizable filter chips.
- Customizing the columns.
- Viewing insights of the events.
- Performing actions on the selected events.
- Toggling between table view and map view.

> **Note**
>
> Any SmartSearch filters applied in the **Table** view are automatically reflected in the **Map** view, ensuring a consistent view of filtered event data.

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The following figure shows the Events tab of Service Impact Analysis.

Figure 12-1 Events tab of Service Impact Analysis



Viewing the List of Events

The **Events** tab provides the details of all events that have occurred. You can scroll down to view the list of all events.

The **Events** tab can include simulated events, simulated child events, and planned events. Use the event source, alarm type, creation type, or other available filter values to distinguish these events from events received from an assurance system. Verify the exact column and filter labels.

To view the list of events:

1. Navigate to the **Events** tab.
   The list of events appears in a table.
2. (Optional) Click the **Map View** icon on the top-right corner to view heatmap of the events.

> **Note**
>
> You can toggle between **Table View** and **Map View** using the corresponding icons on the top-right corner of the Events page.

3. Search the events using the filter options. See "Searching and Filtering the Events" for more information.
4. Sort the columns using the corresponding sort options.
5. Click on the required event ID link to view the event details.
   The **Event Details** panel appears that shows the event summary. See "Working with Event Details" for more information.
6. Click on the required resource link to open the corresponding resource summary.
7. Select a row using the corresponding checkbox.

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8. (Optional) Select all rows in the table using the total count checkbox.
9. Select an option from the **Actions** list. See "Performing Actions on the Selected Events" for more information.
10. Click **Insights** on the top-right corner of the **Events** page to view the insights. See "Viewing Insights of the Events" for more information.
11. Click the **Refresh** icon beside the **Insights** button to refresh the events list.

Working with Event Details

You can use the **Event Details** panel to view and edit an event and initiate the analysis.

For a simulated event, **Event Details** provides access to the simulated impact summary. From the summary, you can review potential impacts, open affected resources in Inventory or Topology, view impact details, or schedule the simulated event.

To do so:

1. From the list of events, click on the required event ID.
   The **Event Details** panel appears.
2. Click on the links for **Alarm Details** to view the alarm details.
   The **Alarm Details** pop-up window appears that shows the alarm details.

> **Note**
>
> The **Alarm Details** link provides the entire message sent from the assurance system for additional information.

3. Click **Edit Event** to edit the event description and owner.
   a. Enter the change description in **Description**.
   b. Select the owner of the change from **Owner**.
   c. Click **Save**.
      The changes are saved.
4. On the top-right corner of the **Event Details** panel, click on the ellipses option and select either of the following:
   a. **View Resource in Topology** to view the resource in ATA.
   b. **View Resource in Inventory** to view the resource summary in UIM.
5. Click **Initiate Analysis** to start a new analysis.
   The system performs an analysis, and you will get a notification after the analysis completes. See "About Analysis Status" for more information on analysis lifecycle statuses.

> **Note**
>
> When you initiate an analysis, the analysis status is changed to **INITIATED** and then will be changed to **COLLECTED** after the analysis is successfully completed.
>
> The analysis status changes to **FAILED** if there is a system failure during the impact gathering phase.

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6. Click **View Impact Summary** to view the impact summary. See "Viewing Impact Summary" for more information.

Viewing Impact Summary

You can view a summary of an impact analysis for an unplanned event, simulated event, or planned event.

Customer Insights groups the resources impacted by the selected event by customer. Use Customer Insights to identify the customers affected by the event.

The number under **Customers** is a link only when the event has one or more impacted customers and you have the `CustomerInsights: View` permission. If the event has no impacted customers or you do not have this permission, the number is displayed as text and is not a link.

Click the number under **Customers** to open Customer Insights for the selected event. Click the **Back** icon to return to the Impact Summary page.

To do so:

1. From the **Event Details** panel of a selected event, click **View Impact Summary** after you perform a new impact analysis.
   The **Impact Summary** page appears with further analysis of the event. The impact analysis details include Event ID, Creating Type, Analysis State, and Owner.
2. For a simulated event, click **Schedule Event** to provide the planned-change details and create a planned event.
3. Use the pie chart to understand the impact analysis.
4. Hover over the pie chart for more details on the event.
5. Hover over the resources legend to highlight the corresponding resource details in the pie chart.
6. Click on the **View Resource in Inventory** icon to open the resource summary in UIM.
7. Click on the **View Resource in Topology** icon to open the resource details in ATA.
8. Click the **Customers** count link to open Customer Insight page. See "#unique_85" for more information.
9. Click **View Details** at the bottom of the page to view further details on the impact analysis details.
   The **Impact Analysis Details** page appears. See "Working with Impact Analysis Details" for more information.
10. Click **Reanalyze Impact** to delete the current impact and run the impact analysis again.
11. Click **Schedule Event** or **Reschedule Event** to schedule or reschedule an event.
    The Schedule Planned Event panel appears on the right side.

> **Note**
>
> If you have already scheduled an event, you can only see **Reschedule Event** button.

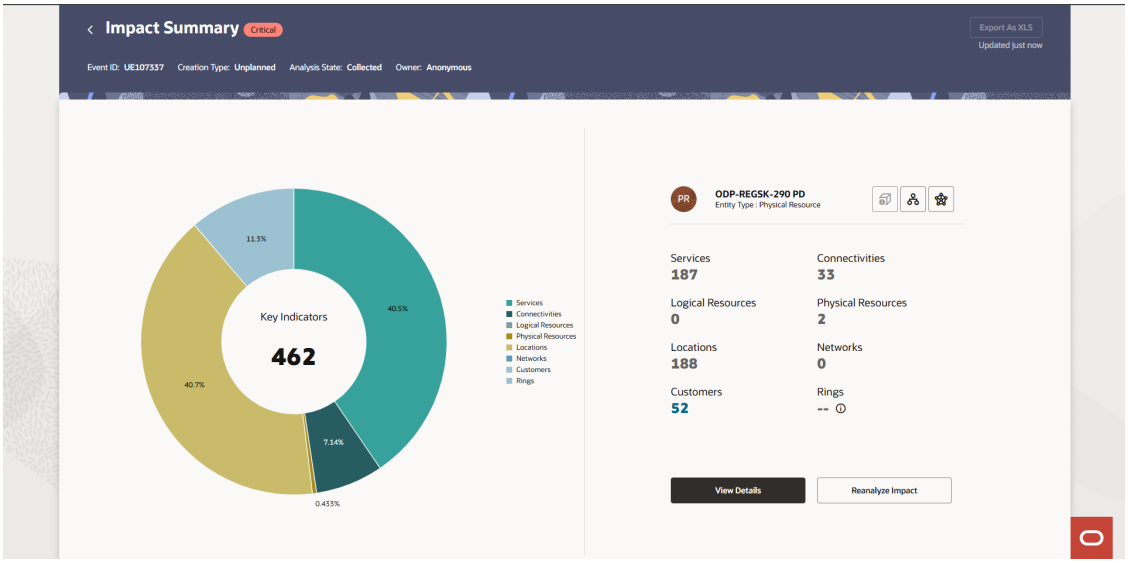
   a. Enter the corresponding details in the Schedule Planned Event panel.
   b. Click **Schedule Event** or **Reschedule Event** to schedule or reschedule the event.

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12. Click the **Calculate Rings** icon on the top-right of the summary pane. See "Calculating Ring Impacts" for more information.
13. On the top-right corner of the page, click **Export As XLS** to export the analysis into a spreadsheet.
    The spreadsheet is downloaded to your system.
14. On the top-left corner of the page, click on the **Back** icon to go back to the **Events** tab.

The following figure shows the impact summary of a selected event:

Figure 12-2 Impact Summary View of a Selected Event



Viewing Customer Insights of the Events

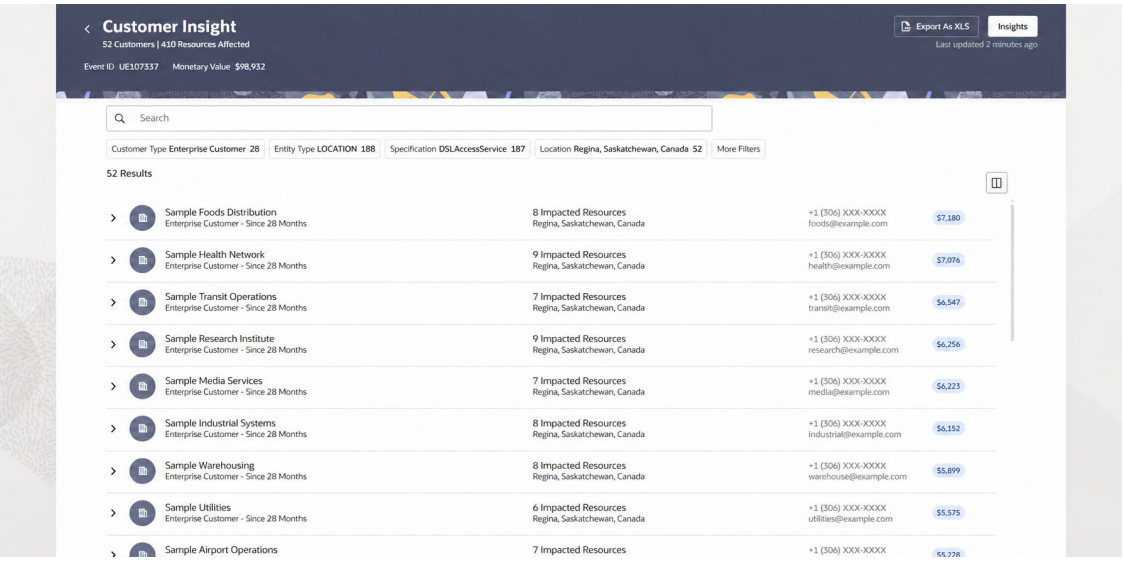
You can view customer insights that include the following details:

- Customer name: This field provides name of the corresponding customer.
- Customer type: The valid customer types are **Enterprise Customer** and **Retail Customer**
- Customer since: This field is automatically populated based on the customer start date.
- Impacted resources count: This field provides the list of all impacted resources of the corresponding customer. Expanding
- Customer location: This field provides location of the corresponding customer.
- Customer phone number and email ID: This field provides the phone number and the email ID of the customer base location.
- Bill amount or Customer tier: The bill amount provides the sum of one bill amount per unique matching customer. The customer tier provides the priority from highest to lowest. The default values are `platinum`, `gold`, `silver`, and `bronze`.

The following figure illustrates the Customer Insight page.

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Figure 12-3 Customer Insight Page



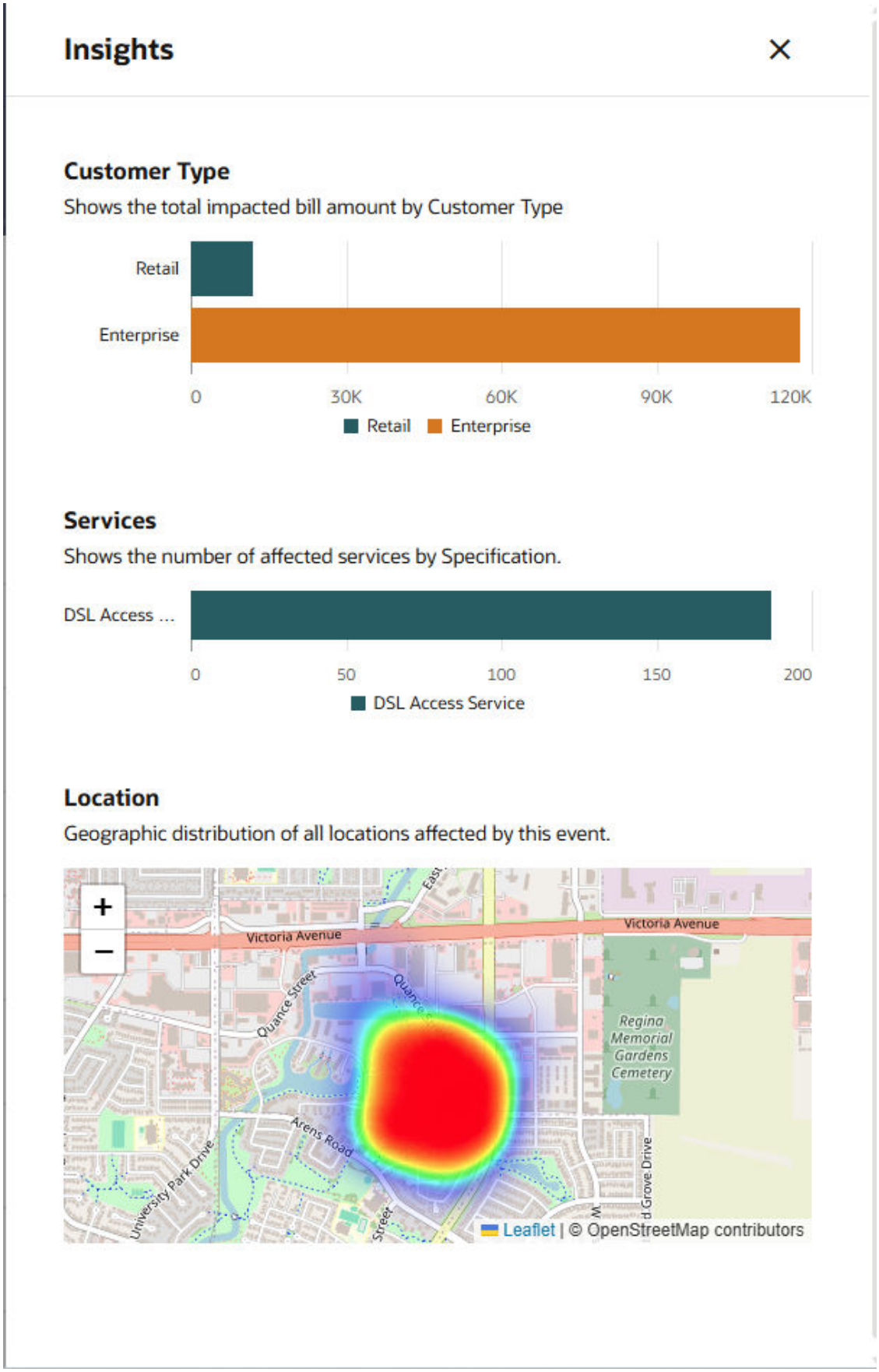
To view and analyze customer insights:

1. On the Simulated Impact Summary page, click on the count link under **Customers**. The Customer Insight page appears with list of all customers and their corresponding details in a table.
2. Expand a customer record to view the corresponding impacted resource details.
3. (Optional) Use search filters to filter the customers data.
4. Click **Export As XLS** on the top-right corner to export the customer details to an Excel sheet.
5. Click **Insights** on the top-right corner to open and view the following insights:
    - **Customer Type** or **Customer Tier**: The **Customer Type** field provides the total impacted bill amount for each customer type. The **Customer Tier** field provides the number of customers in each tier.
    - **Services**: This field provides the number of affected services for each specification.
    - **Location**: This field provides the geographic distribution of all locations affected by the event for all customers on a heatmap.

The following figures illustrates the Insights panel that shows customer type along with services and heatmap.

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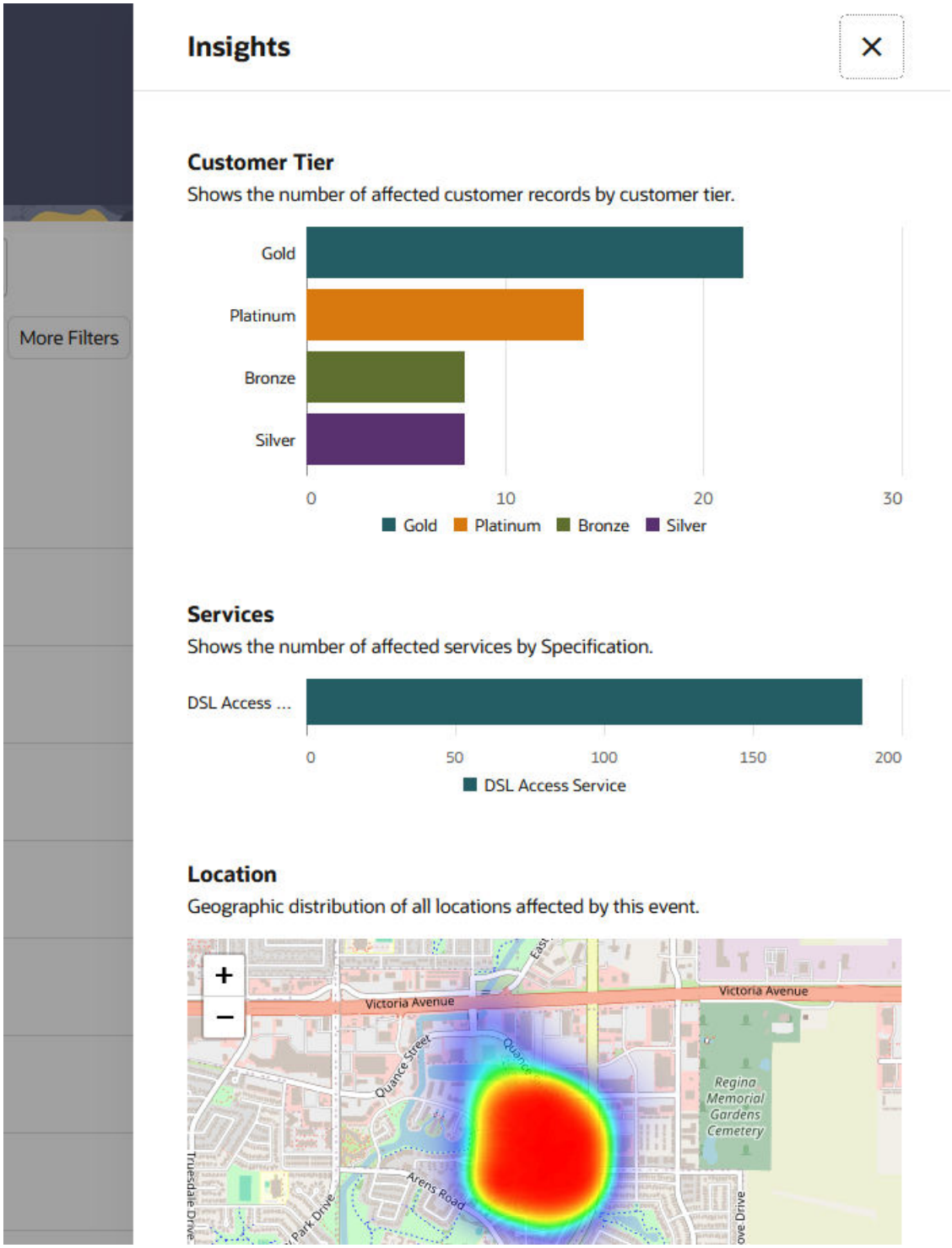
Figure 12-4 Insights with Customer Type, Services, and Heatmap



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The following figures illustrates the Insights panel that shows customer tier details along with services and heatmap.

Figure 12-5 Insights with Customer Tier, Services, and Heatmap



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Calculating Ring Impacts

Ring impact analysis identifies ring topologies that are affected by an impact analysis event. Ring calculations evaluate the directly impacted connectivity associated with the event.

Each calculation uses one calculation method. When you calculate rings again by using a different method, the new calculation replaces the results of the earlier calculation.

Ring impact analysis returns only rings associated with directly impacted connectivity. It does not return every ring that matches the selected calculation method.

Use **Calculate Rings** to identify rings affected by an event.

Consider the following conditions before you start calculating ring impacts:

- You must be assigned the Analyst role or Administrator role.
- For a planned or simulated event, select a specific resource before calculating rings. Ring calculation is not supported when the resource selection is All.

To calculate ring impacts:

1. In the **Events** tab, open the required event.
2. Click **View Impact Summary**.
3. For a planned or simulated event, select a specific resource by name or ID.

> **Note**
>
> Do not select **All**.

4. Click **Calculate Rings**.
5. In the **Select Ring Calculation Method** dialog box, select a calculation method.
6. Click **Calculate Rings**.
   The calculation starts. While the calculation is in progress, the action is unavailable and indicates that ring calculation is in progress.

> **Note**
>
> **Calculate Rings** remains visible when the resource selection is **All**. If you select it while **All** is selected, the calculation does not start and existing results do not change. The following message appears:
>
> ```
> Calculate Rings is not supported for All resources. Please select
> specific resource to calculate rings.
> ```

Selecting a Ring Calculation Method

Select the calculation method that provides the most appropriate scope for identifying affected rings.

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Table 12-2 Ring Calculation Methods

Method	Description
Ring Name	Uses the Ring Name associated with the directly impacted connectivity. Use this method when discovered network data identifies the ring in which the connectivity participates.
Network	Uses the network associated with the directly impacted connectivity as the search context.
Specification	Searches for rings by using the specification of the directly impacted connectivity.
Rate Code	Searches for rings by using the rate code of the directly impacted connectivity.
Technology	Searches for rings by using the technology of the directly impacted connectivity.
User Policy	Uses a policy configured by your administrator to select the appropriate calculation method.

Use the most specific method that is appropriate for the event. **Ring Name** and **Network** typically provide a narrower search scope than **Specification**, **Rate Code**, or **Technology**.

> **Note**
>
> When you use the **Specification**, **Rate Code**, or **Technology** method, an edge that contains multiple connectivities is treated as having equivalent connectivity. The calculation evaluates one connectivity for the edge rather than evaluating all possible connectivity combinations.
>
> The selected method defines where Service Impact Analysis searches for affected rings. The calculation returns only affected rings, not all rings that match the method criteria.

Viewing Ring Calculation Results

After ring calculation completes, the **Rings** value on the Impact Summary page displays the result. Select the information icon next to the value to view the calculation method that was used. You can select a ring calculation method using the **Calculate Rings** icon on the top-right corner of the summary pane.

Table 12-3 Ring Calculation Results

Rings Value or State	Meaning	Recommended Action
`--`	Rings have not been calculated, or the results were cleared when the impact was reanalyzed.	Click **Calculate Rings** and select a calculation method.
`Calculating`	The ring calculation request is in progress.	Wait for the calculation to complete. Do not start another calculation or reanalyze the impact.
`Positive count`	One or more affected rings were identified.	Select the information icon to view the calculation method. Click **View Details** to review the ring records.

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Table 12-3 (Cont.) Ring Calculation Results

Rings Value or State	Meaning	Recommended Action
`0`	No affected rings were identified.	Review the calculation method and select a broader or more appropriate method, if required.
`FAILED`	The ring calculation could not complete.	Review the displayed failure details, correct the condition, and calculate rings again by using an appropriate method.

For planned and simulated events, the **All** resource selection displays an aggregated Rings count for the parent event as follows:

- A positive count indicates that one or more child resources have calculated affected rings.
- A value of `0` indicates that ring calculation completed for every child resource and no affected rings were found.
- A value of `--` indicates that ring calculation has not completed for every child resource. For example, some child resources can have a result of 0 while other child resources have not been calculated.

Hover over the **Rings Information** icon to view the resources and method considered for ring calculations.

> **Note**
>
> The ring calculations work only for ports and Device interfaces.

Recalculating Ring Impacts

Use **Recalculate Rings** to calculate rings by using a different method.

A new calculation replaces the existing ring impact results. It does not combine results from multiple calculation methods.

For planned and simulated events, select a specific resource before recalculating rings. Do not recalculate rings while the resource selection is **All**.

Reanalyzing an Impact After Calculating Rings

Reanalyzing an impact discards the current impact analysis and all calculated ring results.

If rings have been calculated, selecting Reanalyze Impact displays the following confirmation message:

```
Are you sure you want to reanalyze? Doing so requires recalculation of the
rings.
```

Click **Reanalyze** to continue. The analysis restarts, the Rings value returns to `--`, and you must calculate rings again after the impact analysis completes.

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Working with Impact Analysis Details

You use the **Impact Analysis Details** page to understand more about the generated impact analysis. The Impact Analysis Details page shows the following details of the analysis:

- Entity Type
- Entity Name
- Impact Severity
- Specification
- Impact Type
- Analysis Status
- Last Updated
- Owner
- Protection Level
- Insights

The Impact Analysis Details page shows the following details of entities impacted because of the analysis:

Table 12-4 Impact Analysis Details

Impact Analysis Details Column	Description
Entity Type	The entity or resource type from UIM. The valid values are: • CONNECTIVITY • CUSTOMER • LOCATION • LOGICAL RESOURCE • NETWORK • PHYSICAL RESOURCE • RING • SERVICE • RING
Entity Name	The name or ID of the entity or resource from UIM. This is a hyperlink and displays the entity details in a side panel.
Impact Severity	The severity level of the impact. The valid values are: • HIGH • LOW • MEDIUM • NO_IMPACT
Specification	The resource or entity specification from UIM.
Impact Type	The impact type. The valid values are: • DIRECT • INDIRECT • HORIZONTAL

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Table 12-4 (Cont.) Impact Analysis Details

Impact Analysis Details Column	Description
Analysis Status	The analysis status. The valid values are: • PENDING: The impacts have been identified by the system and are available to review. • ASSIGNED: A user is assigned to analyze the event. • QUALIFIED: The user has qualified the impacted item. • DISQUALIFIED: The user has disqualified the impacted item.
Last Updated	The date when the impact was last updated.
Owner	Name of the owner who is assigned with the impact to resolve.
Protection Level	The protection level of the event.

A ring record represents an affected ring topology identified by ring impact analysis. For a ring record, the **Specification** value identifies the calculation method used to identify the ring.

To view an affected ring in Active Topology Automation:

1. On the **Impact Analysis Details** page, locate a record with the **Entity Type** value `RING`.
2. Click the ring name.
   The ring details appear in the details drawer.
3. In the details drawer, click the overflow menu and select **View Resource in Topology**.
   Active Topology Automation opens the selected ring in a new browser tab by using the Circular Layout. The topology view preserves the ring context when it is available.

> **Note**
>
> **View Resource in Inventory** is disabled for ring records.

The **Impact Analysis Details** workflow applies to impacts identified for assurance, simulated, and planned events. Before generating a report, review each impacted entity and mark the result as qualified or disqualified.

To work on the Service Impact Analysis details:

1. Open the **Impact Analysis Details** page.
2. Enter a name or a value in **Search** to view the corresponding search results.
3. Use the filter tags available and select the corresponding values to choose the filter values.
4. Click **More Filters** to customize the filters.
5. From the results table, select the required analysis record.
   a. Select **Assign Owner** from the **Mark as** list to assign the owner.
   b. Select **Change Impact Severity** to select a severity value from the list in the **Change Impact Severity** panel and then click **Save**.
   c. Click **Analyze Result**, select the required value from the **Analyze Result** panel, and then click **Mark**.
6. Click **Insights** on the top-right corner to view the following impact insights:

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- A heatmap showing the impacted nodes as per the map location.
- A bar graph showing marked and pending events.
- A bar graph showing the number of entities according to specifications.
- A pie chart showing the number of impacted entities according to the severity.

7. From the **More Actions** list on the top-right corner, select either of the following:
   a. **Export As XLS** to export the analysis to a spreadsheet.

> **Note**
>
> The **Export As XLS** is disabled by default. It is enabled after you select the entities that you want to export.

   b. **Generate Report** to generate a report.
   The **Analysis Status** value gets changed to **COMPLETED** after the report is generated.

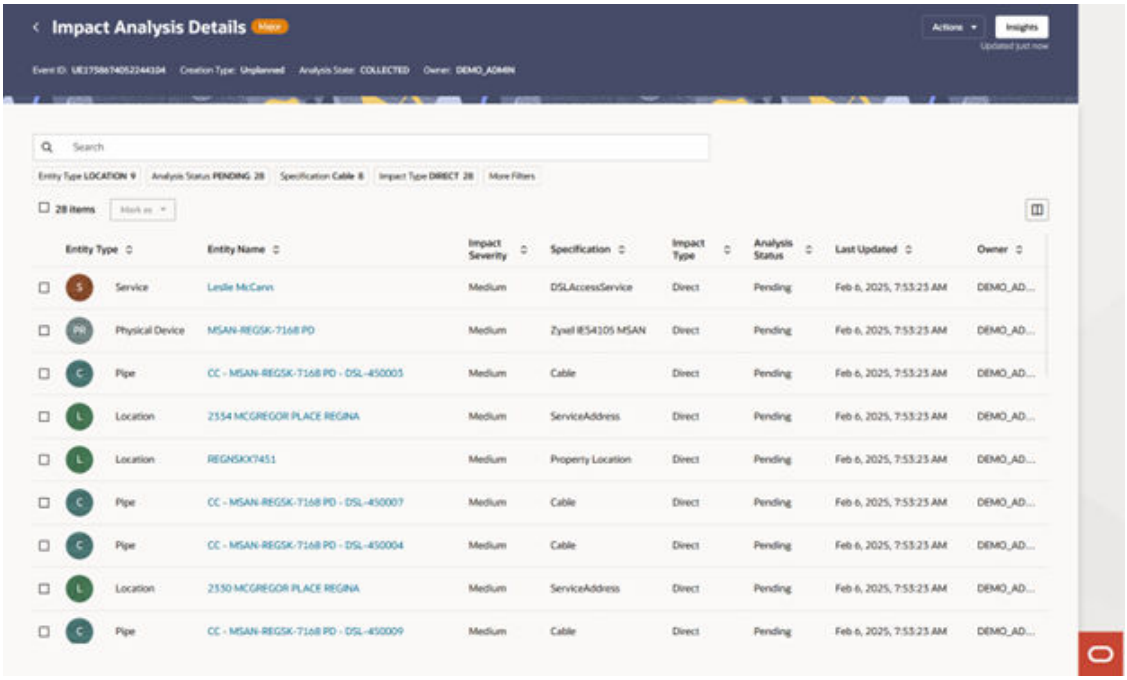
> **Note**
>
> You can no longer modify the analysis details after the Analysis Status value becomes **COMPLETED**.
>
> All impacted items of the event should be analyzed to either **Qualified** or **Disqualified** to generate the report.

8. Click **Insights** on the top-right corner.
   The **Insights** panel appears that helps you understand further details about the analysis. See "Viewing Insights of the Events" for more information.
9. (Optional) Hover over the corresponding insights details to view more details.
10. On the top-left corner, click on the **Back** icon to go back to the **Impact Summary** page.

The following figure shows the **Impact Analysis Details** page that opens from the **Impact Summary** page.

Figure 12-6 Impact Analysis Details Page

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Searching and Filtering the Events

You can search by entering the required value of the event or by using filter options. The filter options can be used to view the list of events according to the selected filter criteria. Each of the filter options displays the number of records or events exist for the corresponding filter option.

To search and filter the events:

1. In the **Events** tab, enter the required value in the **Search** field.
   The list of events appears as per the searched criteria.
2. To filter the list of events, use the following filter chips or options:
   - Resource Category
   - Event Status
   - Alarm Type
   - Severity
3. (Optional) Use **More Filters** to customize the filter tags.
   The corresponding filter criteria is added to the search criteria.
4. Select the corresponding values within the filtered criteria to filter the list further.
   The corresponding filtered list appears.

Customizing the Events

You can customize the events table columns that can help you in viewing only the required event details. You can hide the other details.

To customize the columns:

1. In the **Events** tab, click on the **Columns** icon on the top-right corner of the events table.

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The **Columns** panel appears.

2. Select the required columns and deselect the columns that you do not need.
3. (Optional) Type the column name in the **Search** field to search and choose it.
4. Click **Restore Defaults** to restore the default columns.
5. Close the **Columns** panel to reflect the changes.

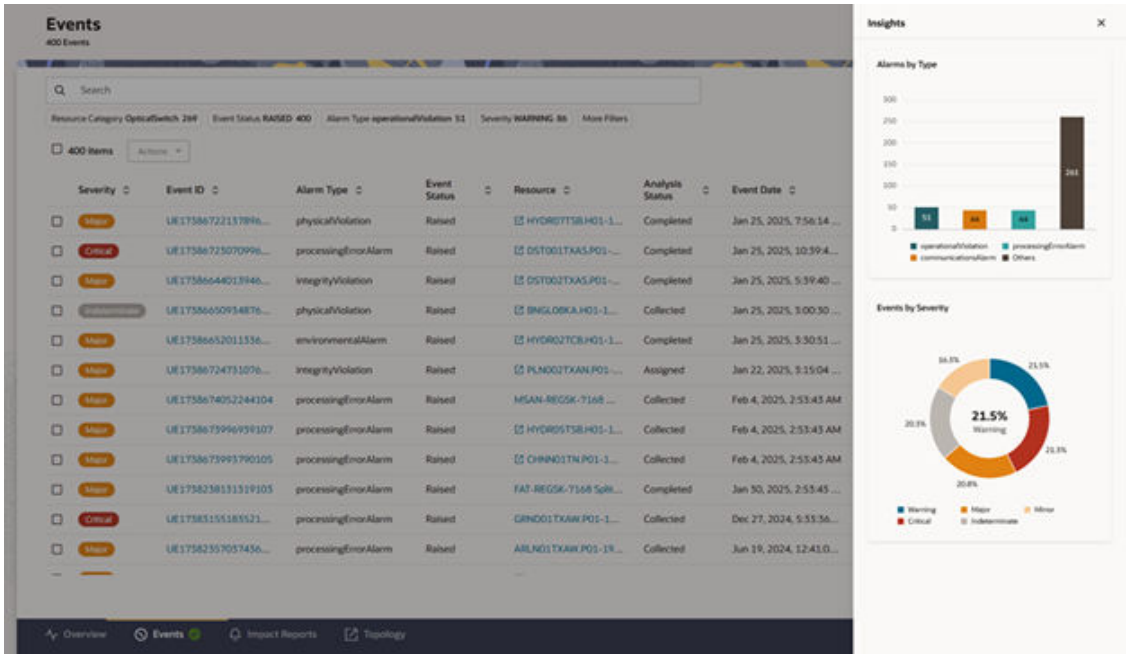
Viewing Insights of the Events

You can view additional analysis on the events using the **Insights** panel.

To view insights of the events:

1. In the **Events** tab, click **Insights** on the top-right corner of the page.
   The **Insights** panel appears with additional analysis on the list of events.
2. In the **Alarm by Type** section of the insights, hover over the corresponding alarm type to view the details.
3. In the **Events by Severity** section of the insights, hover over the pie chart to view the details.
4. Use the severity legend at the bottom of the **Insights** panel to understand the colors used for alarm severities.

Figure 12-7 Insights Panel on Events Page



Performing Actions on the Selected Events

You can perform actions on events depending on the role you are assigned with. You can select multiple events and perform an action on the selected events.

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See "About Authentication" in *Unified Inventory and Topology Deployment Guide* for more information on the Service Impact Analysis roles.

You can perform the following actions using the **Actions** menu from the **Events** tab:

- **Assign owner**: You can assign an owner to resolve the event. You need necessary permissions to perform this action.
- **Reject event**: You can remove the event from the list without deleting the event record. You reject an event when the assurance system has sent an improper event. The status changes to **REJECTED** and this enables you to track the invalid events. These events are stored separately in case analysis needs to be done on the reason behind the assurance system sending invalid events. You need necessary permissions to perform this action.
- **Delete events**: You can purge the event so that the event is no longer available. You need necessary permissions to perform this action.
- **Generate report**: You can generate reports. All impacted items in the event should be analyzed to either **Qualified** or **Disqualified** to generate a report.

To perform actions on the selected events:

1. In the **Events** tab, select the required event or events.
2. Select an option from the **Actions** menu to perform the following:
   a. Select **Assign Owner** to assign an owner to the event or events. See "Assigning an Owner to the Events" for more information.
   b. Select **Reject Event** and then click **Reject** from the dialog box to reject the selected event or events.
   c. Select **Delete Event** and then click **Delete** to delete the selected event or events.
   d. Select **Generate Report** and then click **Confirm** to generate reports for the selected event or events.

Assigning an Owner to the Events

You can assign an owner if you have the necessary permission to perform this action.

See "About Authentication" in *Unified Inventory and Topology Deployment Guide* for more information on the Service Impact Analysis roles.

You can assign an owner to the selected events.

To do so:

1. In the events table, select the required events.
2. Select **Assign Owner** from the **Actions** menu.
   The **Assign Owner** popup appears.
3. Enter a name in **Search** and select it.
4. (Optional) Use the dropdown arrow in the **Search** field to select a name.
5. Click **Assign** to assign the owner.
6. (Optional) Click **Cancel** to cancel it.

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13

Using Simulations

This chapter provides information about using the Simulations tab.

Use the **Simulations** tab to create a simulated event for selected resources and evaluate its potential impact before making a network change. You can review the simulated event, analyze the resulting impacted entities, and schedule the event as a planned event. Simulation supports planned network-change scenarios, such as hardware or software upgrades, port or card replacements, link upgrades, device dismantling or relocation, technology transitions, vendor swaps, and bandwidth expansion.

Creating a Simulated Impact

Create a simulation to evaluate the potential impact of a proposed change as follows:

1. Open the **Simulations** tab.
2. Click **Create Simulation**.
3. Search for and select the resources affected by the proposed change.

> **Note**
>
> Add or remove resources as necessary. Only supported resources are available for selection.

Service Impact Analysis creates a simulated event and associated child events after adding the resources, then calculates the predicted impact after initiating the analysis. The event status can display **Calculating** while the analysis is in progress and **Collected** when event data is available.

Viewing Simulated Events and Child Events

Use the simulation event list to monitor simulations and open their details. The simulated event is the parent event for the proposed change. Its child events identify the resources included in the simulation.

Filter the list to locate an event by its status, severity, owner, type, or date, depending on the fields available in your deployment. Select an event to view its details, selected resources, and predicted impacts. Select a resource link to open the related inventory or topology view.

> **Note**
>
> The event lifecycle status is not an impact-review decision. Impact qualification and disqualification are different review actions.

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Viewing a Simulated Impact Summary

To view a simulated impact summary:

1. Open a simulated event.
2. Open the impact summary.
3. Review the key indicators, entity counts, and impact chart.
4. (Optional) Filter the results by entity type or resource.
5. To investigate an impact, click **View Details**.

You can open related inventory and topology information from the available links.

Scheduling a Simulated Event

You can convert a reviewed simulated event to a planned event.

To review the simulated impact and confirm that the proposed change is ready to schedule:

1. Open the Simulated Impact Summary page.
2. Click **Schedule Event** to open Schedule Planned Event pane.
3. Enter the planned-event details, including the external reference ID, severity, owner, maintenance category, scheduled start and end dates and times, and description.
4. Click **Schedule Event** within Schedule Planned Event pane after you enter all details.

> **Note**
>
> After the event is scheduled for the first time, you can reschedule the event using **Reschedule Event** (that replaces **Schedule Event**).

Viewing Simulated Impact Details

To view the simulated impact details:

1. From the simulated impact summary, click **View Details**.
2. Filter the impact list to focus on the required entity type, resource, or impact status.
3. Review each impact and its related inventory or topology information.
4. Assign, qualify, or disqualify an impact as required.
5. Export the selected results from the **More Actions** menu.
   The review workflow for simulated impacts is the same as for other analyzed impacts, subject to role permissions.

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14

Using the Impacts Report

After all impacted items are **Qualified** or **Disqualified**, the event is completed, and the report ID is generated. The report is sent to the supporting systems such as ticket management. Each impacted item is stamped with a time that provides details about the items that take a long time to resolve. This provides a mechanism for streamlining their process.

You use the **Impact Reports** tab to view the list of all impact reports generated in a table with the following columns:

- Report ID
- Event ID
- Resource
- Entity Type
- Event Created On
- Report Created On
- Source
- Owner
- Description

Using the **Impact Reports** tab, you can perform the following:

- Viewing the list of impact reports
- Searching and filtering the reports
- Customizing the columns
- Viewing insights of the reports

Viewing the List of Impact Reports

The **Impact Reports** tab provides the details of all impact reports that are generated. You can scroll down to view the list of all reports.

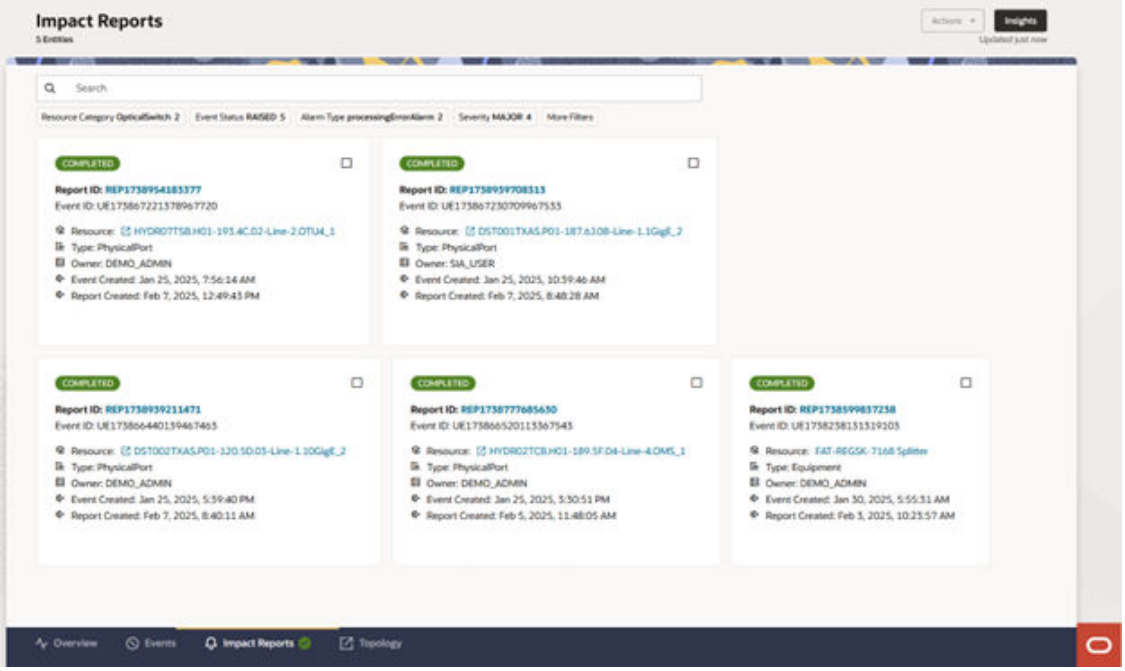
To view the list of reports:

1. Navigate to the **Impact Reports** tab.
   The list of reports appears in a table.
2. Sort the columns using the corresponding sort options.
3. Click on the required report ID link to view the report details.
   The **Impact Report Summary** page appears that shows the report summary. See "Working with Impact Report Details" for more information.
4. Click on the required resource link to open the corresponding summary as follows:
   - For ports and device interfaces, the corresponding resource summary in UIM opens.
   - For physical devices and equipment, the corresponding device summary from ATA opens in Service Impact Analysis.

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5. Select a row using the corresponding checkbox.
6. (Optional) Select all rows in the table using the select all checkbox.
7. Select an option from the **Actions** list to:
   a. Export the selected reports into a spreadsheet using **Export As XLS**.
   b. Delete the selected reports using **Delete**.
8. Click **Insights** on the top-right corner of the **Impact Reports** page to view the insights. See "Viewing Insights of the Impact Reports" for more information.

Figure 14-1 Impact Reports Page



Searching and Filtering the Events

To search and filter the impact reports:

1. In the **Impact Reports** tab, enter the required value in the **Search** field. The list of reports appears as per the searched criteria.
2. To filter the list of reports, use the following filter tags:
   - Event Status
   - Alarm Type
   - Severity
   - Owner
3. (Optional) Use **More Filters** to customize the filter tags. The corresponding filter criteria is added to the search criteria.
4. Select the corresponding values within the filtered criteria to filter the list further. The corresponding filtered list appear.

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Customizing the Impact Report Columns

The impact reports appear in a table if there are more than 6 reports. If there are less than 6 reports, the reports appear in a card layout.

You can customize the impact reports table columns that can help you in viewing only the required report details. You can hide the other details.

To customize the columns:

1. In the **Impact Reports** tab, click on the **Columns** icon on the top-right corner of the reports table.
   The **Columns** panel appears.
2. Select the required columns and deselect the columns that you do not need.
3. (Optional) Type the column name in the **Search** field to search and choose it.
4. Click **Restore Defaults** to restore the default columns.
5. Close the **Columns** panel to reflect the changes.

Viewing Insights of the Impact Reports

You can view additional analysis on the impact reports using the **Insights** panel.

To view insights of the impact reports:

1. In the **Impact Reports** tab, click **Insights** on the top-right corner of the page.
   The **Insights** panel appears with additional analysis on the list of impact reports.
2. In the **Reports by Type** section of the insights, hover over the corresponding entity type to view the details.
3. In the **Events by Severity** section of the insights, hover over the pie chart to view the details.
4. Use the severity legend at the bottom of the **Insights** panel to understand the colors used for alarm severities.

Viewing Impact Report Summary

The **Impact Report Summary** page provides the following details:

- Event ID
- Creation Type
- Analysis status
- Owner
- Severity of the event

The number under **Customers** is a link only when the impact report has one or more impacted customers and you have the `CustomerInsights: View` permission. If the impact report has no impacted customers or you do not have this permission, the number is displayed as text and is not a link.

Click the number under **Customers** to open **Customer Insights** in the context of the selected impact report. Click the **Back** icon to return to the **Impact Report Summary** page.

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To view the impact summary report:

1. In the **Impact Reports** tab, select the required report and click on the **Report ID** link.
   The **Impact Reports Summary** page appears with further analysis on the impact report you selected.
2. Use the pie chart to understand the impact report analysis, which shows the grouping of entities based on the entity types.
3. Hover over the pie chart for more details on the report.
4. Hover over the entities legend to highlight the corresponding entities details in the pie chart.
5. Click on the **View Resource in Inventory** icon to open the resource summary in UIM.
6. Click on the **View Resource in Topology** icon to open the resource details in ATA.
7. Click **View Details** at the bottom of the page to view further details on the impact report analysis details.
   The **Impact Report Details** page appears. See "Working with Impact Report Details" for more information.
8. On the top-right corner of the page, click **Export As XLS** to export the analysis into a spreadsheet.
   The spreadsheet is downloaded to your system.
9. On the top-left corner of the page, click on the **Back** icon to go back to the **Impact Reports** tab.

The **Impact Report Summary** page displays Ring calculation results for completed events. The page is read-only and does not provide **Calculate Rings**, **Recalculate Rings**, **Reanalyze Impact**, or other edit actions.

For an individual resource, the Rings value can display `--`, a positive count, or **0**. For the **All** resource selection, the Rings value is aggregated from the child resources:

- A positive count indicates that one or more child resources have calculated affected rings.
- A value of `0` indicates that ring calculation completed for every child resource and no affected rings were found.
- A value of `--` indicates that ring calculation has not completed for every child resource.

When **All** is selected, the Rings information icon displays the following message:

```
See individual resources for ring calculation details.
```

Working with Impact Report Details

You use the **Impact Report Details** page to understand more about the generated impact reports. The page shows the following details:

- Event ID
- Creation Type
- Analysis status
- Owner
- Severity of the event

To view the Impact Details:

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1. Open the **Impact Reports Details** page.
2. Enter a name or a value in **Search** to view the corresponding search results.
3. Use the filter tags available and select the corresponding values to choose the filter values.
4. Click **More Filters** to customize the filters.
5. On the top-right corner, click **Export As XLS** to export the analysis to a spreadsheet.
6. On the top-left corner, click on the **Back** icon to go back to the **Impact Report Summary** page.

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Part III

Message Reconciliation

This part describes how Oracle Communications Message Reconciliation functions. It contains the following chapters:

- About Message Reconciliation
- Setting Up Message Reconciliation
- Getting Started with Message Reconciliation
- Using the Overview Tab
- Using the Message Reconciliation Tab

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About Message Reconciliation

Oracle Communications Message Reconciliation is a user interface available as part of the Active Topology Automation web application. It can be used to analyze failed events (or messages) originating from various message consumers such as **Alarm Consumer**, **ATA Consumer**, and **Smart Search Consumer**.

Message Reconciliation helps administrators to ensure that message consumers remain synchronized with producer systems (such as Oracle Communications Unified Inventory Management (UIM)) by resolving the fallout events. The fallout events resolution includes reviewing, rebuilding, resubmitting, editing, and ignoring failed events, typically as part of periodic maintenance activities.

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Setting Up Message Reconciliation

Oracle Communications Message Reconciliation is automatically deployed when you deploy Active Topology Automation application. See "About ATA" in *Unified Inventory and Topology Deployment Guide* for more information.

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Getting Started with Message Reconciliation

Message Reconciliation is designed for administrators to analyze, track, and resolve fallout events.

Access to the Message Reconciliation UI requires permissions for the corresponding administrative group. See "Configuring Authentication for Services" in *Unified Inventory and Topology Deployment Guide*.

Message Reconciliation utilizes fallout event resolution RESTful endpoints for back-end operations.

State Life Cycle: See the "Fallout Events Resolution" in '*Unified Inventory and Topology Deployment Guide*' to understand how the fallout events are created by various consumers and the corresponding life cycles.

RESTful endpoints: See the "Fallout Events Resolution" tasks in *REST API for Active Topology Automation and Service Impact Analysis* for more details about the RESTful endpoints.

Accessing Message Reconciliation

To access the Message Reconciliation UI:

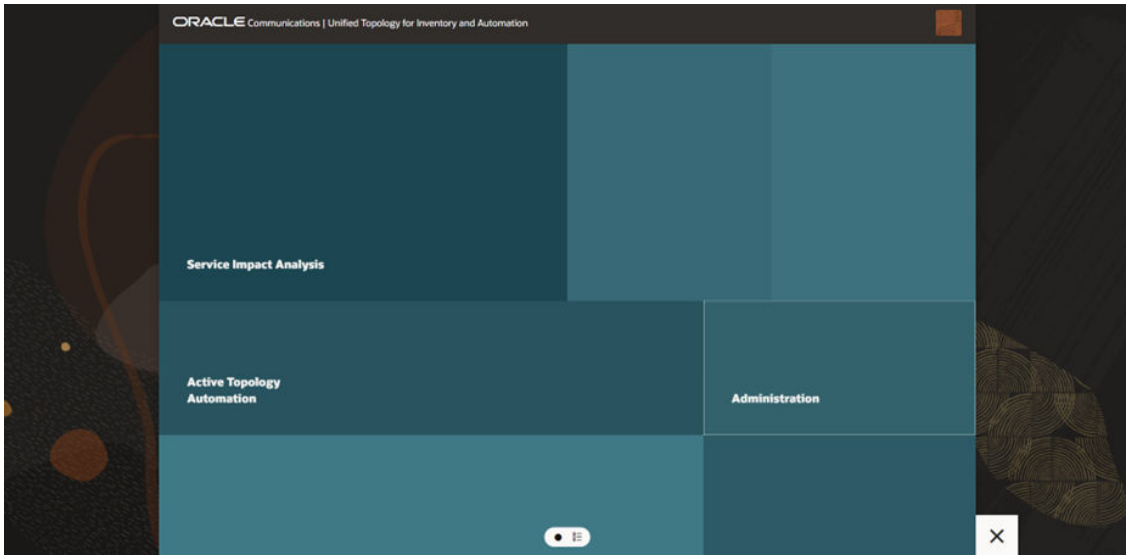
1. Use the Message Reconciliation URL that is generated after you configure the ATA microservice in a Kubernetes environment. See "About Unified Inventory and Topology" in *Unified Inventory and Topology Deployment Guide* for more information.

   > **Note**
   >
   > You require SSO credentials to access ATA. If you have already logged into UIM using SSO credentials, you do not have to log in again to access ATA and if you log in to ATA first, you do not have to log in to UIM separately. .

2. On the landing page, click **Administration** and then **Message Reconciliation**.
   If you have access, the Message Reconciliation Overview page appears. Otherwise, you receive an authorization error message.

The following figure illustrates the landing page.

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About the Message Reconciliation Home Page

On the top-right corner of the Landing page, you can find a user profile drop-down list with some options. You can use these options for:

- Opening the Message Reconciliation user's guide using **Help**.
- Logging out of Message Reconciliation using **Sign Out**. This action logs you out of the application and displays the ATA login page. You can log out of the application from ATA and Service Impact Analysis Landing page.

About the Message Reconciliation User Interface

The Message Reconciliation UI consists of the following tabs:

- **Overview:** Use this tab to view and analyze the fallout events summary.
- **Message Reconciliation:** Use this tab to view, search, filter, sort, analyze, and perform actions on fallout events such as rebuild, resubmit, and ignore.

For more information on the actions, states, and life cycle of the fallout events, see "Fallout Events Resolution" in *Unified Inventory and Topology Deployment Guide*.

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Using the Overview Tab

The **Overview** tab provides a summary of all fallout events grouped by consumer, error code, status, and actions.

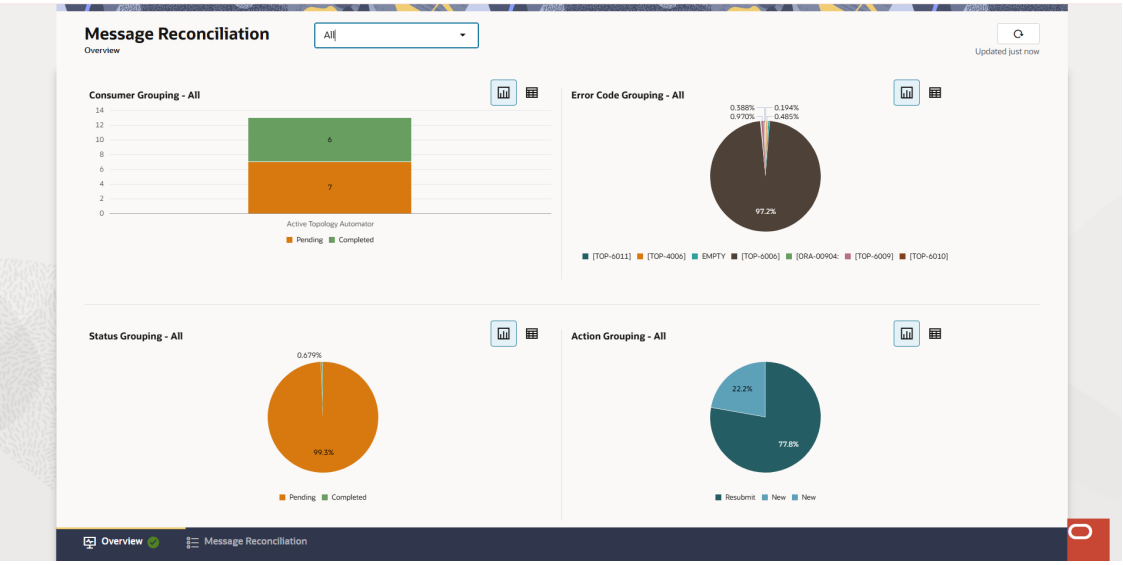
You use the **Overview** tab to:

- View the categorized display of the fallout events summary.
- Switch the fallout events summary between a table view and a chart view.
- Select a consumer from the drop-down to see the fallout events summary for that consumer.

> **Note**
>
> Select **All** from the dropdown list to see the fallout events summary for all consumers.

- Update the fallout events information with the latest data by clicking the refresh icon on the upper-right corner.

The following image illustrates the **Overview** tab of Message Reconciliation.



About the Fallout Events Groups

The fallout events information is displayed in the following groups:

- Consumer Grouping
- Error Code Grouping

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- Status Grouping
- Action Grouping

About Consumer Grouping

Consumer Grouping shows the number of events for each consumer, grouped by state, in the form of a bar chart.

Hover over the graph to view the following details:

- **Series:** Provides the fallout event status name.
- **Group**: Provides consumer name of the fallout events.
- **Value**: Provides the total number of fallout events for the corresponding status.

About Error Code Grouping

Error Code Grouping shows the percentage of events for each type of error code in the form of a pie chart.

Hover over the graph to view the following details:

- **Error Code:** Provides the fallout event error code.
- **Count:** Provides the total number of fallout events for the error code.

About Status Grouping

Status Grouping shows the number of events in each status, such as **Pending** or **Completed**, in the form of a pie chart.

Hover over the graph to view the following details:

- **Status**: Provides the fallout event status.
- **Count**: Provides the total number of fallout events for the status.

The valid values for **Status** are:

- **Pending**
- **Failed**
- **Completed**
- **In Progress**

About Action Grouping

Action Grouping shows the number of events for each type of action, such as **Resubmit**, **Rebuild**, and **New**, in the form of a pie chart.

Hover over the graph to view the following details:

- **Action**: Provides the fallout event action.
- **Count**: Provides the total number of fallout events for the action.

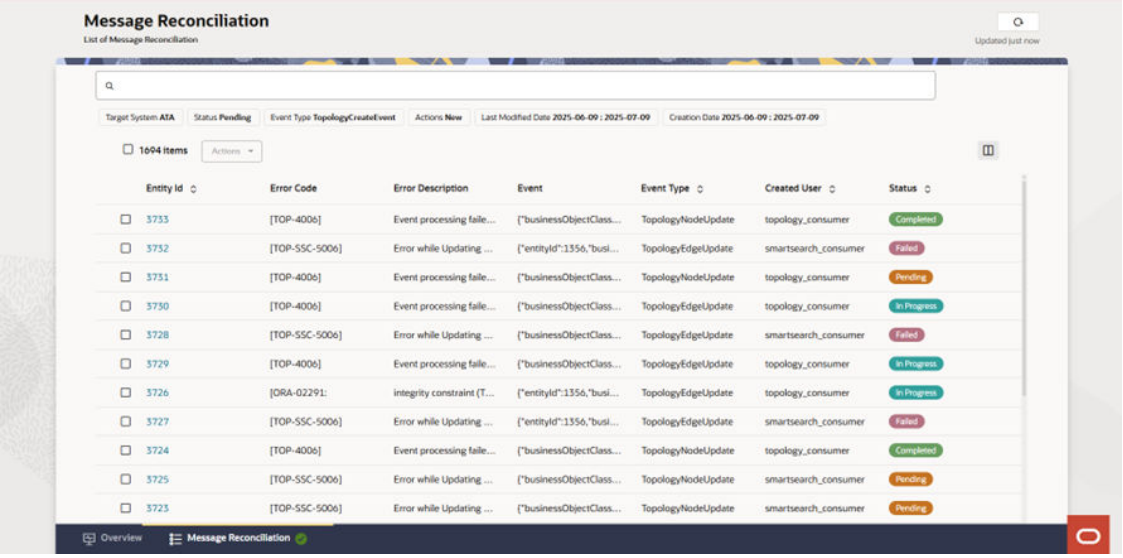
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Using the Message Reconciliation Tab

The **Message Reconciliation** tab allows you to search, view, analyze, and perform corrective actions on fallout events. The corrective actions include rebuilding, resubmitting, editing, or ignoring the fallout events.

The following image illustrates the **Message Reconciliation** tab.



You use the **Message Reconciliation** tab to:

- View the list of fallout events.
- Search and filtering the fallout events using filter chips.
- Customize the columns.
- View and modify the event details.
- Perform actions on the selected events.

Viewing the List of Fallout Events

The **Message Reconciliation** tab provides the details of all fallout events that have occurred. You can scroll down to view the list of all events.

To view the list of fallout events:

1. Navigate to the **Message Reconciliation** tab.
   The list of fallout events appears in a result table.
2. Search the fallout events using the filter options. See "Searching and Filtering the Fallout Events" for more information.
3. Sort the columns to sort the results in ascending or descending order.

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4. Customize the table columns. See "Customizing the Columns" for more information.
5. Click the required **Entity Id** to view the details.
   The **Fallout Event Details** panel appears that shows the fallout event details. See "Working with the Fallout Events Details" for more information.
6. Select a row using the corresponding checkbox.
7. (Optional) Select all rows in the table using the total count checkbox.
8. Select an option from the **Actions** list. See "Performing Actions on the Selected Events" for more information.
9. Click **Refresh** from the top-right corner of the page to update the fallout events list with the latest data.

Searching and Filtering the Fallout Events

You can search by entering the required value of the event or by using filter options.

In the **Message Reconciliation** tab, select the required filters in the **Search** field. The list of events appears. The filter options are:

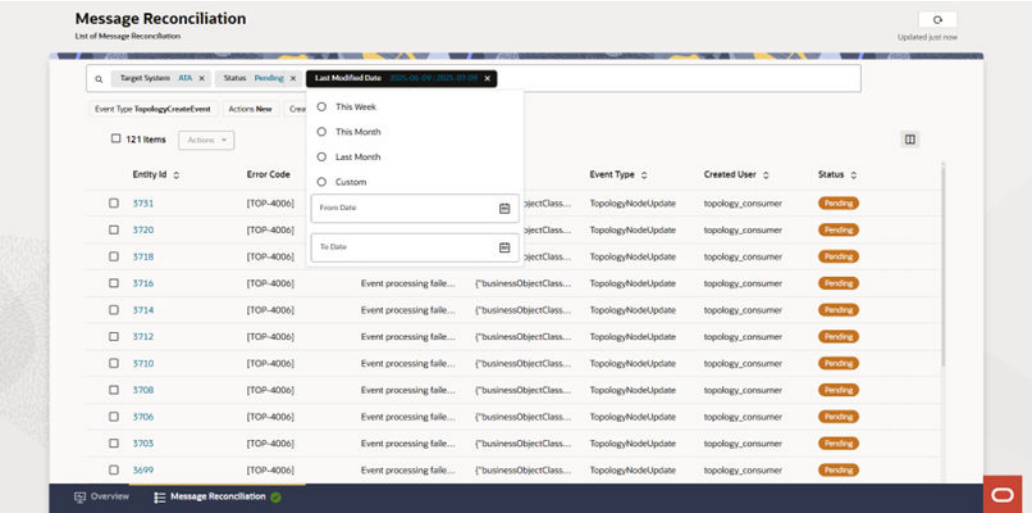
- Target System
- Status
- Event Type
- Action
- Last Modified Date
- Created Date

> **Note**
>
> The search filters do not appear if you are not authorized to search the fallout events.

For descriptions of these filter options, see "Customizing the Columns".

The following image illustrates the filter options for searching the fallout events.

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Limitations with Filtering

The filtering of fallout events include the following limitations:

- **Mandatory Target System filter for rebuild operations**: The **Target System = ATA** filter option selection is a mandatory criterion for performing rebuild operations.
- **Additional filter requirement for "Select All Rebuild"**: The **Select All Rebuild** option will not work if all events are selected without any filters applied. To enable the rebuild operation, you must select at least one additional filter, such as **State** or **Last Modified Date**.
- **"Select All Resubmit" option not available**: The **Select All Resubmit** option does not work when you select all events.

Customizing the Columns

You can customize the columns in the fallout events table.

To customize the columns:

1. In the **Message Reconciliation** tab, click the columns icon  below and to the right of the **Search** field.
   The **Columns** selection dialog box appears.
2. To add any column, do one of the following:
   - Search the column name in the **Search** field and select the checkbox for the corresponding column.
     The selected column is added to the list under the **Show** section.
   - Drag and drop the required column name from the **Hide** section to the **Show** section.
3. To remove any column, do one of the following:
   - Clear the checkbox for the required column in the **Show** section.
     The column moves to the **Hide** section and does not appear in the fallout events table.
   - Drag and drop the required column name from the **Show** section to the **Hide** section.
4. (Optional) To restore the default columns, click **Restore Defaults**.

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Table 19-1 lists the fallout events table columns and the corresponding descriptions.

Table 19-1 Fallout Events Columns

Column or Field	Description
Entity Id	A unique identifier for the fallout event
Error Code	The specific code indicating the nature and type of the error
Error Description	The description of the error or problem encountered
Event	The detailed content or message associated with the fallout event (in JSON format)
Event Type	The type, category, or action associated with the event (for example: **TopologyNodeUpdate**, **TopologyEdgeUpdate**)
Created User	The user or system that generated the event
Status	The status of the event (for example: **Pending**, **Completed**, **Failed**, **In Progress**)
Target System ID	The identifier for the target system intended to process the event
Source System ID	A unique identifier for the source system from which the event originated
Action	The latest action attempted or performed on the event. The valid values are: • **NEW** • **REBUILD** • **RESUBMIT** • **DELETE** • **EDIT**
Created Date	The date when the event was created
Last Modified Date	The date of the most recent modification to the event
Last Modified User	The user who edited or updated the event most recently

Working with the Fallout Events Details

You can use the **Fallout Event Details** panel to view, edit, and submit an event. The actions below are only available if you have the appropriate permissions.

To do so:

1. From the list of events, click on the required **Entity ID**.
   The **Fallout Event Details** panel appears.
2. You can click the **Maximize** icon to view the extended view of the **Fallout Event Details** panel, and click the **Minimize** icon to return it to the normal view.

> **Note**
>
> If you click the **Minimize** icon, the panel is minimized back to the normal view.

3. Click **Edit** to update the **Event Headers** and **Event** fields, which are in JSON format. For example, you can modify the referenceId or specName in the **Event** field.
4. Click **Save**.
   The changes are saved.

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5. Click **Submit** to resubmit the fallout event to Message Bus for reprocessing by the corresponding consumer service.
6. Click the **Close** Icon to close the **Fallout Event Details** panel.

Performing Actions on the Selected Events

The actions you can perform on events depend on your assigned role. For more information on the roles and permissions, see "About Authentication" in *Unified Inventory and Topology Deployment Guide*.

> **Note**
>
> If you do not have the appropriate permissions, the actions will be disabled.

You can select one or more events and use the **Actions** menu in the **Message Reconciliation** tab to perform the following actions:

- **Rebuild:** Rebuild the fallout events by correcting the missing dependencies (for Topology Consumer only).
- **Resubmit:** Resend the fallout events to Message Bus to retry processing by the target consumer service (for example, you can retry processing the **ora-retry-topology** topic.
- **Delete:** Remove fallout events that are no longer needed.

> **Note**
>
> This action requires the necessary permissions.

> **Note**
>
> Select the checkbox to the top-left corner above the table to select all events.

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