



## Node Functional View

This chapter describes the Node Functional View (NFV) used in Cisco Optical Site Manager and its related tasks.

**Table 1: Feature History**

Feature Name	Release Information	Description
Detailed View in NFV for Transponder and Muxponder Card on Third-party OLS Networks	Cisco IOS XR Release 24.2.1	<p>The Node Functional View (NFV) has been enhanced to provide a detailed view of transponder and muxponder cards on NCS1014 deployed within networks utilizing third-party Optical Line Systems (OLS).</p> <p>This detailed view provides a graphical representation of the connections between the trunk and client ports on the transponder and muxponder cards, thereby simplifying the visualization of the network's connection layout.</p>
Detailed View in NFV for Transponder and Muxponder Cards on OLS Networks	Cisco IOS XR Release 24.1.1	<p>You can now access a detailed graphical representation of the connections between the trunk and client ports of the transponder and muxponder cards on Optical Line System (OLS) NCS 1010 networks. This is available in the Map View of Node Functional View (NFV).</p> <p>This view is based on the card mode configured on the cards. When you access the detailed view, the right-panel of the Node Functional View displays the card mode details and a list of ports and their settings.</p>

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## Understanding Node Functional View

The Node Functional View (NFV) provides you with a display of the components and the association links between them in a graphical view. The graphical representation allows you to understand the connections and also guides you to troubleshoot.

The NFV can be accessed by clicking the hamburger icon at the top-left of the page in Cisco Optical Site Manager web interface and selecting **Node Functional View**.

There are three views in the NFV representation:

View	Description
Rack view	Displays a visual representation of a rack, including the node and all its cards.
Map view	<p>Displays a visual map of the components of the node (sides, cards, and so on), connected by patch cords according to physical connections.</p> <p>In this view, you can switch between different contexts, such as the node view, side view, card view, circuit view, port view, and patch cord view. Based on the chosen context, the relevant details are displayed on the right side of the screen.</p> <p>When you expand a node or a branch in the map view, the cards associated with them are highlighted in the Rack view. Similarly, when you expand a card in the map view, the card is zoomed in and the corresponding rack is highlighted and zoomed in the Rack view.</p> <p>In the Map view, you can view the connection between the trunk and client ports on a card as well as the Internal Patch Cords (IPC) connecting the devices and line cards. The connections are based on the card modes configured on a card.</p>

View	Description
Detail view	Displays all relevant information about nodes, sides, cards, circuits, ports, or patch cords. This view also displays card mode details and a list of ports and their settings when you access a card in the Map view.

## Alarm Status

The highest alarm severity appears as the overall status on the right. Possible alarm statuses, sorted by severity, are:

- Normal - Displayed with White color
- Minor - Displayed with Yellow color
- Major - Displayed with Orange color
- Critical - Displayed with Red color

## Action Icons in NFV

Icon	Description
Scroll View/Fit View	Scrolls or fits the rack view.
Zoom Reset	Resets the zoomed view to normal view.
Refresh	Refreshes the view with current information.
Last graph update	Displays the last timestamp of NFV pane refresh that is done using the <b>Refresh</b> button.
Open/Close Rack View	Opens or closes the rack view.
Status Filters	Displays only the alarms with specific severity. Click this button and check the <b>Critical</b> , <b>Major</b> , <b>Minor</b> , or <b>Normal</b> check boxes and click <b>Apply</b> .
User Settings	Sets the user preferences. See <a href="#">#unique_76</a> .
Zoom In	Zooms in the map view.
Zoom Out	Zooms out the map view.
Show/Hide Shoulder	Displays or hides the right shoulder.

## View Details of Node

Use this task to view the details of the node in the Node Functional View.

### Before you begin

[Log into Cisco Optical Site Manager](#)

### Procedure

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- Step 1** Click **Node Functional View** in the left panel.  
The Node Functional View page appears.
- Step 2** Click **Collapse Shoulder** to expand the right shoulder.
- Step 3** View the **Name**, **Topology**, and **Status** fields in the right shoulder.  
The **Status** field shows the most severe problem on the node.
- Step 4** View the **Side List** pane that has two tabs - **Info on side** and **Display Neighbors**.

The **Info on side** tab displays the following information:

- Current status
- Span loss
- (Optional) OTDR, OSC, and PPC information is displayed when available

The **Display Neighbors** tab displays the list of optional neighbors of the components of the node. The following information is displayed for each side:

- Name of the side
  - Icon corresponding to the alarm severity level
  - (Optional) IP address of the node of its optional neighbor. To open the SVO web UI of the neighbor node in a new browser tab, click the IP address of the neighbor node.
  - Degree of its optional neighbor
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## View Details of OLS Node

Use this task to view the details of a node in NFV.



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**Note** In OLA database, all the cards must be placed in the same degree and only one degree must be present in the node.

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**Before you begin**

[Log into Cisco Optical Site Manager](#)

**Procedure**

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- Step 1** Click **Node Functional View** in the left panel.  
The Node Functional View page appears.
- Step 2** Click **Show/Hide Shoulder** to open the right shoulder.
- Step 3** View the **Name**, **Topology**, and **Status** fields in the right shoulder.  
The **Status** field shows the most severe problem on the node.
- Step 4** View the **Side List** pane that has two tabs - **Info on side** and **Display Neighbors**.  
The **Info on side** tab displays the following information:
- Current status
  - Span loss for both the sides
  - (Optional) OTDR, OSC, and PPC information is displayed when available
- The **Display Neighbors** tab displays the list of optional neighbors of the components of the node. The following information is displayed for each side:
- Name of the side
  - Neighbor node
  - At Degree
- Step 5** View the **Circuit List** tab that displays the list of all the circuits present in the side.
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## View Details of Side

Use this task to view the details of the side in NFV.

**Before you begin**

[Log into Cisco Optical Site Manager](#)

**Procedure**

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- Step 1** Click **Node Functional View** in the left panel.  
The Node Functional View page appears.

- Step 2** Right-click a side in the map view and choose **View Details** to view the details of the selected side along with the right shoulder.
- Step 3** View the following information that is displayed in the right shoulder. Optional means that the information is displayed when available.
- Name of the side
  - Overall alarm status as a colored label and an icon
  - (Optional) Span loss
  - (Optional) ORL of OTDR
  - (Optional) Fiber End of OTDR
  - (Optional) OSC power
  - (Optional) IP address of the node of its optional neighbor. To open the SVO web UI of the neighbor node in a new browser tab, click the IP address of the neighbor node.
  - Degree of its optional neighbor
  - **Card List** tab - Displays the list of all the cards present in the side. The shelf number and slot number are displayed with the card name. The trunk port number is also displayed for TXP cards.  
To sort the list of cards, click the vertical ellipsis icon and choose **A-Z**, **Z-A**, **High Severity**, or **Low Severity**.
  - **Circuit List** tab - Displays the list of all the circuits present in the side.  
To sort the list of circuits, click the vertical ellipsis icon and choose **A-Z**, **Z-A**, **High Severity**, or **Low Severity**.
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## View Details of Side for OLS Node

Use this task to view the details of the side for a node in NFV.

### Before you begin

[Log into Cisco Optical Site Manager](#)

### Procedure

- Step 1** Click **Node Functional View** in the left panel.  
The Node Functional View page appears.
- Step 2** Right-click a side in the map view and choose **View Details** to view the details of the selected side along with the right shoulder.  
Or  
Click the arrow near the side name that is displayed inside the right shoulder.

- Step 3** View Side 1 and Side 2 merged information that is displayed in the right shoulder. Optional means that the information is displayed when available.
- Overall alarm status as a colored label and an icon
  - (Optional) Span loss
  - (Optional) ORL of OTDR
  - (Optional) Fiber End of OTDR
  - (Optional) OSC power
  - (Optional) IP address of the node of its optional neighbor. To open the SVO web UI of the neighbor node in a new browser tab, click the IP address of the neighbor node.
  - Degree of its optional neighbor
  - **Card List** tab - Displays the list of all the cards present in both sides. The shelf number and slot number are displayed with the card name. The trunk port number is also displayed for TXP cards.  
To sort the list of cards, click the vertical ellipsis icon and choose **A-Z**, **Z-A**, **High Severity**, or **Low Severity**.
  - **Circuit List** tab - Displays the list of all the circuits present in the side.  
To sort the list of circuits, click the vertical ellipsis icon and choose **A-Z**, **Z-A**, **High Severity**, or **Low Severity**.
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## View Details of Card

Use this task to view the details of the card in NFV.

### Before you begin

[Log into Cisco Optical Site Manager](#)

### Procedure

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- Step 1** Click **Node Functional View** in the left panel.  
The Node Functional View page appears.
- Step 2** Right-click a side in the map view and choose **Open**.
- Step 3** Right-click a card in the map view and choose **View Details**.
- Step 4** View the following information that is displayed in the right shoulder:
- Name of the card
  - Overall alarm status as a colored label and an icon
  - **Port List** tab - Displays the list of all the ports with their aggregate power.

To sort the list of ports, click the vertical ellipsis icon and choose **A-Z**, **Z-A**, **High Severity**, or **Low Severity**.

- **Circuit List** tab: Displays the list of all the circuits present in the card.

To sort the list of circuits, click the vertical ellipsis icon and choose **A-Z**, **Z-A**, **High Severity**, or **Low Severity**.

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## View Details of Port

Use this task to view the details of the port in NFV.

### Before you begin

[Log into Cisco Optical Site Manager](#)

### Procedure

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**Step 1** Click **Node Functional View** in the left panel.

The Node Functional View page appears.

**Step 2** Right-click a side in the map view and choose **Open**.

**Step 3** Right-click a card in the map view and choose **Open**.

**Step 4** Click the port name in the map view.

**Step 5** View the following information that is displayed in the right shoulder:

- Name of the port
- Overall alarm status as a colored label and an icon
- **Agg. Powers** tab - Displays the list of all the links with their aggregate power.

The aggregate power displays the current power in case of a single port. The aggregate power displays a list of all the different power levels in case of an MPO port or logical group.

To sort the list of links, click the vertical ellipsis icon and choose **A-Z**, **Z-A**, **High Setpoint**, or **Low Setpoint**.

- **Circuit List** tab: Displays the list of all the circuits present in the port.

To sort the list of circuits, click the vertical ellipsis icon and choose **A-Z**, **Z-A**, **High Severity**, or **Low Severity**.

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# View Details of Patch Cord

Use this task to view the details of the patch cord in NFV.

## Before you begin

[Log into Cisco Optical Site Manager](#)

## Procedure

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- Step 1** Click **Node Functional View** in the left panel.  
The Node Functional View page appears.
- Step 2** Click the patch cord in the map view.
- Step 3** View the following information that is displayed in the right shoulder:
- Type of the patch cord
  - Status of the patch cord as a colored label and an icon
  - **Connections** tab - Displays the ports that the patch cord connects with their cards and the aggregate power.
- To sort the list of patch cords, click the vertical ellipsis icon and choose **A-Z**, **Z-A**, **High Severity**, or **Low Severity**.
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# View Details of Circuit

Use this task to view the details of the circuit in NFV.

Circuits are created in EPNM and displayed as read-only in the **Optical Cross Connections** tab.

## Before you begin

[Log into Cisco Optical Site Manager](#)

## Procedure

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- Step 1** Click **Node Functional View** in the left panel.  
The Node Functional View page appears.
- Step 2** Click **Show/Hide Shoulder** to open the right shoulder.
- Step 3** Click > against the circuit in the right shoulder to view the sides that are involved in the circuit in graphical view.
- Step 4** View the following information that is displayed in the right shoulder:

- **Circuit Info** pane - Displays information on **Admin State**, **Frequency**, **From Degree**, and **To Degree**.
  - **Path (Forward path)** pane - Click **:** next to the Path (Forward Path) pane and choose **Forward path**, **Backwards path**, or **Both paths** to specify the order of display of internal links. The pane name changes correspondingly.
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## Set User Preferences

Use this task to set the user preferences in Node Functional View. The user preferences are stored in the local storage of the browser and are retained for that browser.

### Before you begin

[Log into Cisco Optical Site Manager](#)

### Procedure

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- Step 1** Click **Node Functional View** from the left panel.  
The Node Functional View page appears.
- Step 2** Click the **Settings** icon.  
The **Preferences** dialog box appears.
- Step 3** In the **General** tab, perform these steps:
- Select a date format from the **Date format** drop-down list.
  - Select the channel from the **Configuration channel** drop-down list.
  - Select a unit for length from the **Length measurement unit** drop-down list.
- Step 4** In the **Right shoulder** tab, perform the following steps:
- Choose **A-Z**, **Z-A**, **Low Severity**, or **High Severity** from the **Shoulder element order** drop-down list to sort the components in the right shoulder based on name and alarm severity.
  - From the **Circuit path sorting** drop-down list, choose **Forward path**, **Backward path**, or **Both paths** to set the link path between source and destination.
  - Select the **Always display details** check box to automatically display the right shoulder upon opening NFV.
- Step 5** In the **Graph** tab, perform the following steps:
- Enter a degree space in the **Degrees space from the center** field.
  - Enter a value in the **Layers spacing** field to set the horizontal distance between the components in the map view.
  - Enter a value in the **Column spacing** field to set the vertical distance between the components in the map view.
  - Enter the zoom scale value in the **Zoom scaling factor** field.
- Refresh the browser to apply this value.

- Step 6** In the **Rack** tab, perform these steps:
- Enter a value in the **Rack opacity factor** field to highlight the cards of interest in physical view. The other cards are covered by overlay with transparency depending on the value provided.  
The range is from 0 to 1.
  - Enter the value in the **Left shoulder width (px)** field to set the width of the left shoulder.  
The range is from 400 to 600.
  - Check the **Show only visible cards on the rack** check box to display only the visible cards in the rack view.
- Step 7** In the **Backdrop** tab, select **backdrop** or **visualization** from the Bottom shoulder visualization drop-down list.
- Step 8** Click **Apply** to apply the user settings.
- Step 9** Click **Reset** to reset the user settings to default values.
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## Display Active Circuit List

You can view the total number of active circuits passing through a particular card on a degree.

Use this task to view the total number of circuits passing through a degree and a selected card.

### Before you begin

[Log into Cisco Optical Site Manager](#)

### Procedure

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- Step 1** Click **Node Functional View** in the left panel.  
The Node Functional View page appears.
- Step 2** Select and right click **Degree**. Click **Open**.  
In the right side pane, you can see the total number of circuits passing through the degree under **Circuit List**.
- Step 3** Select and right click the card. Click **Open**.  
In the right side pane, you can see the total number of circuits passing through the card under **Circuit List**.
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