



## SVO Web User Interface

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This chapter describes the web user interface used in Cisco NCS 2000 SVO and its related tasks.

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## Understanding Shelf Virtualization Orchestrator

Shelf Virtualization Orchestrator (SVO) is a node-level software solution that addresses multishelf scalability issues and provides node aggregation functions. The SVO solution runs on the SVO card that is installed in the NCS 2006 or NCS 2015 chassis.

The SVO solution introduces a NETCONF interface with Cisco YANG models and a SVO web user interface from R12.0. The web user interface is also referred to as the nodal craft.

The NETCONF/YANG interface is used by network management systems such as Cisco Evolved Programmable Network Manager (EPNM) whereas the SVO web user interface is used to install and troubleshoot.

The SVO solution works in high availability (HA) mode. Each SVO card can have combination of SVO instances that can be in primary or secondary mode. The card running the SVO ROADM primary instance is the main card that monitors and handles the SVO admin plane, networking, and so on.

The SVO solution provides a mechanism for collecting alarms from the subtended NCS 2006 and NCS 2015 nodes and then forwards them to the NETCONF interface. The alarms that are generated by SVO provide the actual root cause of the failure to the end user.

The SVO solution supports:

- One ROADM SVO instance with up to 50 NCS 2006 chassis and 20 NCS 2015 chassis
- 15 OLA SVO instances in Release 12.3 and below

# SVO Web User Interface

The SVO web user interface (UI), also called the nodal craft, is designed to manage the NCS 2000 network elements and replaces CTC. The SVO web UI runs on the browser without the need to download any JAR or Java files. The SVO web UI can be used across multiple operating systems and browsers.

The SVO web UI performs the following functions:

- Manages the chassis, cards, and passive devices
- Manages alarms, faults, and conditions
- Manages users and user profiles
- Administers devices
- Troubleshoots issues
- Provides a seamless user experience with Cisco Evolved Programmable Network Manager (EPNM)



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**Note** When multiple web UI sessions are open, and there are changes in the card status, it is possible that these changes are not updated correctly in some of the web UI sessions. In such situations, you can refresh the web UI page, and confirm if the expected and actual card states are the same.

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## Log into the SVO Web Interface

Use this task to log into the SVO web interface (SVO instance).

### Procedure

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- Step 1** In the browser URL field, enter the IP address of the SVO instance.  
The IP address to be used is the management IP address that is configured in the [Create an SVO Instance](#) task.  
The SVO login page appears.
- Step 2** Enter the username and password.  
**Note** Use the credentials (configured in the [Create an SVO Instance](#) task) to log into a SVO instance.
- Step 3** Click **Login**.
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## Log into the SVO Web Interface Using EPNM

From R12.0.1 onwards, SVO provides single sign-on (SSO) support when accessed from EPNM.

For releases before R12.0.1, if the SVO has not configured an SSO server, EPNM users can launch SVO web interface, but users must enter the username and password to log into the SVO web UI.

From R12.0.1 onwards, SVO enables you to configure SSO authentication for some predefined users to add an SSO user and enable SSO authentication. For more information, see [Add an SSO User, on page 3](#) and [Enable SSO, on page 4](#). EPNM users whose SSO is configured can open the SVO web UI without logging in again.

From R12.1 onwards, SVO web user interface allows you to configure Single Sign On (SSO) capability from EPNM. This allows you to redirect from EPNM to SVO without additional sign-on request. For example, if you have a specific alarm present in EPNM and when you click that alarm from EPNM, you can directly navigate to that specific alarm page or global alarm page of SVO. Ensure that the EPNM is configured for SVO navigation pages and SSO is enabled on SVO.

Use this task to start SVO from EPNM.

### Before you begin

[Enable SSO, on page 4](#)

### Procedure

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- Step 1** From the left sidebar of EPNM, choose **Inventory > Device Management > Network Devices**.  
The **Network Devices** page appears.
- Step 2** From the **Network Devices** list, click the SVO instance you want to start.  
The SVO web interface dashboard appears directly without prompting for SVO login credentials.
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## Add an SSO User

Use this task to add an SSO user. Only an admin or superuser can add SSO users.

Ensure that both SSO users and other users must be different.

### Procedure

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- Step 1** Click the hamburger icon at the top-left of the page, and select **Access Configuration**.
- Step 2** In the **Access Configuration** window, click the **SSO** tab.  
The SSO Configuration dialog box appears.
- Step 3** In the **SSO Users** area, perform these steps:
- Click the + button.  
The **SSO Users** dialog box appears.
  - Enter the username in the **Username** field.
  - Choose the user group from the **User Group** drop-down list.

The options are Viewer and Editor. The Viewer when mapped for SSO, can only view the SVO configurations. The Editor when mapped for SSO, can configure devices.

**Step 4** Click **Apply**.  
A confirmation message appears.

**Step 5** Click **Yes**.

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## Enable SSO

Use this task to enable SSO. Only an admin or superuser can enable SSO.

### Procedure

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**Step 1** Click the hamburger icon at the top-left of the page, and select **Access Configuration**.

**Step 2** In the **Access Configuration** window, click the **SSO** tab.

The SSO Configuration dialog box appears.

**Step 3** In the **SSO** page, perform these steps:

- a) Check the **Enable SSO** check box to enable SSO on SVO.
- b) Enter the EPNM server IP address in the **IP Address** field.
- c) The default port number is 443. You can change the port number using the **Port** field, .

**Step 4** Click **Apply**.  
A confirmation message appears.

**Step 5** Click **Yes**.

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## SVO Views

The SVO Topology page helps you access the topology in two different views:

- The Logical or Tree View (default)
- The Tabular or Table View

The logical or tabular view allows you to view and manage the NCS 2006 and NCS 2015 nodes connected to the SVO controller.

You can access the tabular view by clicking the **Table** toggle button in the logical view. You can access the logical view by clicking the **Tree** toggle button in the Tabular View.

You can display or hide the left panel in either view by using the toggle button on the top-right of the SVO topology page.

Both views allow you to add additional racks to the topology by clicking **Add Rack**.

### Logical View

The left panel of the logical view contains the list of racks and the SVO cards. You can navigate to the nodes in the network by clicking the node or chassis name from the expanded rack view in the left panel or by clicking the node from the logical view. When you hover over a node in the logical view, the chassis type and alarm details are displayed. You can zoom in or zoom out the view by clicking the + and - symbols.

### Tabular View

The tabular view displays two lists:

- The Chassis List table lists the IDs of the nodes, chassis type, Rack ID, and Description.
- The SVO List table lists the SVO ID, Chassis ID, Chassis type, Rack ID, and State.

You can navigate to the nodes in the network by clicking the chassis name from the expanded rack tree view in the left panel or by clicking the ID of the chassis in the Chassis List or the Chassis ID in the SVO List.



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**Note** When you navigate between the rack or chassis view, especially on larger nodes and low connection speeds, the information on the right panel of the alarms pane displays before the images on the left panel. The loading spinner is only present until the information on the right panel displays. However, the SVGs (images) on the left panel takes some more time to display the racks and cards.

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**Note** In conditions panel while fetching conditions, sometimes *Applying configuration* follows the fetching data spinner, even though there is no configuration change happening.

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## Open the Card View

Use this task to open the card view.

### Before you begin

[Log into the SVO Web Interface, on page 2](#)

### Procedure

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- Step 1** Click the hamburger icon at the top-left of the page, and select **SVO Topology**.  
The SVO Topology page appears.
- Step 2** Navigate to the chassis view using any one of the following steps:
- Click the chassis icon in the logical view.
  - Click the ID in the Chassis List or the Chassis ID in the SVO List in the tabular view.
  - Click the rack ID in the left panel to open the rack view and identify the chassis of interest.
  - Click the chassis name in the expanded rack tree view in the left panel.

**Step 3** Click the slot that contains the card, and click **Open Card**.

The card view appears.

## Card and Port Status LED

This chapter describes the different LED colors available on a card and a port for indicating status.

*Table 1: Feature History*

Feature Name	Release Information	Feature Description
Card and Port Status LED	Cisco NCS 2000 Release 12.3.1	<p>You can now accurately identify the status of a card and a port through different LED colors. A card has following color indicators:</p> <ul style="list-style-type: none"> <li>• Green- active; represents card is operational</li> <li>• Red- inactive; represents hardware issue</li> <li>• Amber- inactive; represents signal fail and loss of frame</li> </ul> <p>In addition to the gray color, which indicates the inactive state of a port, A port has following color indicators:</p> <ul style="list-style-type: none"> <li>• Green- active</li> <li>• Red- inactive; represents availability of major alarms</li> <li>• Yellow- active; represents availability of minor alarms</li> </ul>

## Card LED and Port LED

### Card LED

Each card faceplate has following three card-level LED indicators:

LED Color	Card Status
Green	Active (ACT LED)

LED Color	Card Status
Amber	Inactive; represents a signal failure (SF) or conditions such as loss of frame and high bit error rate
Red	Inactive; represents a hardware failure (FAIL LED)

### Port LED

For a port, the available color indicators are:

LED Color	Port Status
Green	Active
Yellow	Active with minor alarms
Red	Inactive with major alarms and conditions

## Create a Rack

Use this task to add a rack.

### Before you begin

[Log into the SVO Web Interface, on page 2](#)

### Procedure

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- Step 1** Click the hamburger icon at the top-left of the page, and select **SVO Topology**.  
The SVO Topology page appears.
- Step 2** Click **Add Rack**.  
The Add rack dialog box appears.
- Step 3** Enter a rack ID in the **Rack ID** field.  
You can enter any value from 1 through 32767.
- Step 4** Click **Apply**.  
The rack is added to the left panel.
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## Add a Chassis

Use this task to add a chassis to the rack. The chassis types are:

- NCS2015-ANSI
- NCS2015-ETSI
- NCS2006-ANSI
- NCS2006-ETSI
- NCS2K-MF-6RU
- NCS2K-MF10-6RU

The NCS2K-MF-6RU and NCS2K-MF10-6RU types are passive chassis.

### Before you begin

- [Log into the SVO Web Interface, on page 2](#)
- [Create a Rack, on page 7](#)-Complete this task if no racks are available in the left panel or the existing racks are full.

### Procedure

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- Step 1** Click the hamburger icon at the top-left of the page, and select **SVO Topology**.  
The SVO Topology page appears.
- Step 2** Click the rack in the left panel, where you want to add the chassis.  
The rack view appears.
- Step 3** Left-click an empty slot in the rack.
- Step 4** Click **Add Chassis**.
- Step 5** From the **Select Device** drop-down list, choose the node.
- Step 6** From the **Select Chassis** drop-down list, choose the chassis to add to the rack.
- Step 7** From the **Enter Chassis ID** drop-down list, choose the chassis ID.
- Step 8** (Optional) Enter a name for the chassis in the **Display Name** field.
- Step 9** Click **Provision**.  
The chassis is added to the rack.
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## Add a Card to the Chassis

Use this task to add a card to the NCS 2006 or NCS 2015 chassis.

The following table lists the cards supported by the latest release of SVO.

TNCS	OPT-AMP-C	CFP-LC
TNCS-O	OPT-EDFA-17	MR-MXP



TNCE	OPT-EDFA-24	10x10G-LC
TSCE	100GS-CK-C	100G-CK-C
TNCS-2	200G-CK-C	16-AD-CCOFS
TNCS-2O	400G-XP	20-SMRFS
TNC	100G-LC-C	9-SMR17FS
9-SMR24FS	9-SMR34FS	20-SMRFS-CV
RAMAN-CTP	RAMAN-COP	EDRA1-26C
EDRA1-35C	EDRA2-26C	EDRA2-35C
1.2T-MXP	40E-MXP-C	40EX-MXP-C
40ME-MXP-C	80-WXC-C	OPT-PRE
OPT-BST	OTU2-XP	OPT-AMP-17C
OPT-EDFA-35	OSC-CSM	RMN-CTP-CL
40-SMR1-C	40-SMR2-C	6AD-DD-CFS
OPT-BST-E	OPT-AMP-17-C	PSM

### Before you begin

- [Log into the SVO Web Interface, on page 2](#)
- [Add a Chassis, on page 7](#)

### Procedure

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- Step 1** Click the hamburger icon at the top-left of the page, and select **SVO Topology**.  
The SVO Topology page appears.
- Step 2** Click the rack in the left panel.  
The rack view appears.
- Step 3** Left-click the empty slot in the chassis where you want to add the card.
- Step 4** From the **Slot** drop-down list, choose the card that you want to provision.
- Step 5** Click **Provision** to add the card to the chassis.
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# Inventory

The **Inventory** tab lists the inventory information of all the racks and chassis used on the network.

## View Inventory Information

Use this task to view inventory information.

If the user attempts to navigate to the **Inventory** tab immediately after login, the Inventory tab might be empty. Refresh the table to retrieve the inventory information.

### Before you begin

[Log into the SVO Web Interface, on page 2](#)

### Procedure

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#### Step 1

Perform this step, as needed.

- a) To view inventory information of all the racks and chassis used on the network, perform this step:
  1. Click the hamburger icon at the top-left of the page, and select **Inventory**.
  
- b) To view inventory information of the specific rack, perform these steps:
  1. Click the hamburger icon at the top-left of the page, and select **SVO Topology**.  
The SVO Topology page appears.
  2. Click the rack in the left panel.  
The rack view appears.
  3. Select the **Inventory** tab.
  
- c) To view inventory information of the specific chassis, perform these steps:
  1. Click the hamburger icon at the top-left of the page, and select **SVO Topology**.  
The SVO Topology page appears.
  2. Click the rack in the left panel.  
The rack view appears.
  3. Left-click the chassis, and select **Open**.  
The chassis view appears.
  4. Select the **Inventory** tab.

The Inventory page appears. You can view the following inventory details.

- **Location**—Identifies where the equipment is installed.

- **UID**—Displays the unique identifier of each component.
- **Display Name**—Displays the display name of each component.
- **Eqpt Type**—Displays the type of equipment.
- **Eqpt State**—Displays the state of each component.
- **Admin State**—Displays the current administrative state of each component.
- **Service State**—Displays the current service state of each component.
- **Connected To**—Displays the passive unit associated with the USB port of the chassis.
- **Actual Eqpt Type**—Displays the specific card name.
- **Serial No**—Displays the equipment serial number.
- **Product ID**—Displays the manufacturing product identifier.
- **HW Part No**—Displays the hardware part number.
- **CLEI Code**—Displays the Common Language Equipment Identifier (CLEI) code.
- **Version ID**—Displays the manufacturing version identifier.
- **HW Rev**—Displays the hardware revision number.
- **Boot ROM Rev**—Displays the boot read-only memory (ROM) revision number.

**Step 2** (Optional) Click the **Export to Excel** icon to download the inventory information to an Excel sheet.

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