Manage the Shelf

This chapter describes the tasks related to shelf management in Cisco NCS 2000 SVO.

Configure Alarms and Controls

Use this task to configure external (environmental) alarms and external controls.

Note   You can configure up to 14 alarms in the external alarms mode. You can configure up to 10 entities under external alarms and 4 entities under external controls in the external controls mode.

Before you begin

Log into the SVO Web Interface

Procedure

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 chassis and select **Open**.

The chassis view appears.

Step 4   Click the **Provisioning** > **Alarm Extender** > **Alarm Dry Contacts Mode** tabs.

Step 5   Choose whether to configure the alarms as external alarms or external controls.

    a.   To configure external alarms, click the **External Alarm** option and click **Apply**.

    b.   To configure external controls, click the **External Control** option and click **Apply**.

Step 6   To configure external alarms, click the **External Alarms** tab, complete the following fields, and click **Apply**.

- **Enabled**—Check the check box to activate the fields for the alarm input number.
- **Severity**—Choose a severity from the drop-down list.

  The severity determines the alarm's severity in the Alarms and History tabs.

- **Alarm Type**—Choose an alarm type from the drop-down list.
- **Virtual Wire**—Choose the virtual wire number from the drop-down list to assign the external device to a virtual wire. Otherwise, do not change the None value.
- **Raised When**—From the drop-down list, choose the contact condition (open or closed) that triggers the alarm.
- **Description**—Enter a description.

Step 7   To configure external controls, click the **External Controls** tab, complete the following fields, and click **Apply**.

- **Enabled**—Check this check box to activate the fields for the alarm input number.
- **Control Type**—Choose the control type from the drop-down list: air conditioner, engine, fan, generator, heat, light, sprinkler, or miscellaneous.
- **Trigger Type**—Choose a trigger type: a local minor, major, or critical alarm; a remote minor, major, or critical alarm; or a virtual wire activation.
- **Description**—Enter a description.

Note   External alarms and external controls must be recorded locally for the network element (NE). Both the alarm name and resolution are node-specific.

Step 8   To add new alarm types, complete the following:

a)   Click the **User Defined Alarms** tab.

The user-defined alarms are displayed under the External Alarms tab if provisioned. If the user-defined alarm is configured as an external alarm, the alarm cannot be deleted. You can create up to 50 user-defined alarms.

b)   Click **Add**.

c)   Enter the new alarm type and click **OK**.

Display Power Monitoring Parameters

Use this task to display the power monitoring parameters of a chassis.

Before you begin

Log into the SVO Web Interface

Procedure

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 chassis and select **Open**.

The chassis view appears.

Step 4   Click the **Provisioning** > **Power Monitor** tabs.

The Power Monitor tab displays the environment type, power summary, voltage thresholds for NCS 2006, and PSU configuration for NCS 2015.

Set Voltage Thresholds

Use this task to set voltage thresholds within a –48 (ECU48) VDC environment and –60 (ECU60) VDC environment for NCS 2006.

Note   This task is applicable only for NCS2006-SA; voltage thresholds are not applicable for NCS2015-SA.

Caution   The default battery voltage thresholds are not changed. Threshold changes must only be performed at the direction of your site administrator.

The voltage threshold range for each battery is –40.5 to –57.2 for ECU 48 and 40.5 to 72.0 for ECU 60.

Before you begin

Log into the SVO Web Interface

Procedure

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 chassis and select **Open**.

The chassis view appears.

Step 4 Click the **Provisioning** > **Power Monitor** tabs.

Step 5 To change the extreme low battery voltage threshold in 0.5 VDC increments, choose a voltage from the ELWBATVGVdc drop-down list. The default value is -40.5.

Step 6 To change the low battery voltage threshold in 0.5 VDC increments, choose a voltage from the LWBATVGVdc drop-down list. The default value is -44.

Step 7 To change the high battery voltage threshold in 0.5 VDC increments, choose a voltage from the HIBATVGVdc drop-down list. The default value is -54 or -68.5 (for ECU 60).

Step 8 To change the extreme high battery voltage threshold in 0.5 VDC increments, choose a voltage from the EHIBATVGVdc drop-down list. The default value is -57.5 or -72.0 (for ECU 60).

Step 9 Click **Apply**.

Set PSU Configuration

Use this task to set PSU configuration for NCS 2015.

Before you begin

Log into the SVO Web Interface

Procedure

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 chassis and select **Open**.

The chassis view appears.

Step 4 Click the **Provisioning** > **Power Monitor** tabs.

Step 5   Choose the appropriate PSU configuration for each PSU. The applicable values are none, work, protect, and both.

Step 6   Click **Apply**.

Display Voltage and Temperature Information

Use this task to display the voltage and temperature information of a chassis.

Before you begin

Log into the SVO Web Interface

Procedure

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 chassis and select **Open**.

The chassis view appears.

Step 4   Click the **Provisioning** > **Voltage/Temperature** tabs.

The **Voltage/Temperature** tab displays the voltage and temperature information of the chassis.

Cooling Profile

The cooling profile feature allows you to control the speed of the fans in the Cisco NCS 2006 depending on the line cards used.

You can enable automatic cooling profile or manual cooling profile at the node level. The automatic cooling profile is selected by default. In this case, the cooling profile of the shelf is set, based on the line cards used in the shelf. The supported cooling profile values are Low, Medium, and High. The default cooling profile value is High.

You can change the cooling profile of the node from automatic to manual. In this case, you must change the cooling profile of the shelf depending on the line cards used in the shelf. If there are multiple cards in the shelf, you must choose the cooling profile of the card that requires the highest cooling profile. For example, if the shelf has two cards with low cooling profile, three cards with medium cooling profile, and one card with high cooling profile, you must choose a high cooling profile for the shelf.

Set Cooling Profile

Use this task to set the cooling profile on Cisco NCS 2006.

Before you begin

- Log into the SVO Web Interface
- Change the Cooling Profile Control

Procedure

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 NCS 2006 chassis and select **Open**.

The chassis view appears.

Step 4 Click the **Provisioning** > **Voltage/Temperature** tabs.

Step 5 From the **Cooling Profile** drop-down list, choose the cooling profile.

Step 6 Click **Apply**.

Set IP Address, Subnet Mask, Default Router Using LCD

Use this task to change the IP address, default router, and network mask using the LCD of NCS 2006 and NCS 2015. On NCS 2006, the LCD is a separate unit at the top of the shelf with a display. On NCS 2015, the LCD is on the fan tray.

Note You cannot perform this task if the LCD IP display screen is set to *Display Only* or *Suppress Display*.

Note The LCD reverts to normal display mode after five seconds of button inactivity.

Procedure

Step 1 On the NCS 2000 front panel, repeatedly press the **Slot** button until SHELF appears on the first line of the LCD. You are in the Shelf menu.

Step 2 Repeatedly press the **Port** button until the following information appears:

- To change the node IP address, Node Status=IpAddress

- To change the node network mask, Node Status=Net Mask

- To change the default router IP address, Node Status=Default Rtr

Step 3　Press the **Status** button to display the node IP address, the node subnet mask length, or the default router IP address.

The following IP addresses are displayed in the LCD one after the other:

- Regular IP—Node IP address that is used to access the node when the controller card is in nonsecure mode.

- Secure IP (15454 secure mode IP)—IP address that is assigned to the backplane LAN port. This port connects the node to an operations support system (OSS) through a central office LAN or private enterprise network. This IP address becomes a private address in the secure mode and prevents the front-access craft port user from accessing the LAN through the backplane port.

Step 4　Push the **Slot** button to move to the digit of the IP address, subnet mask, or default router that you want to change. The selected digit flashes.

The Slot, Status, and Port button positions correspond to the positions of the commands shown on the LCD. For example, you press the Slot button to invoke the Next command and the Status button to invoke the Done command.

Step 5　Press the **Port** button to cycle the IP address, subnet mask, or default router to the correct digit.

Step 6　When the change is complete, press the **Status** button to return to the relevant Node Status menu.

Step 7　Repeatedly press the **Port** button until the Shelf Save Configuration option appears.

Step 8　Press the **Status** button to choose the Save Configuration option.

A Save and REBOOT message appears.

Step 9　Press the **Slot** button to apply the new IP address, subnet mask, or default router configuration or press **Port** to cancel the configuration.

Note　The IP address and default router must be on the same subnet. If it is not, you cannot apply the configuration.

Step 10　Saving the new configuration causes the control cards to reboot. During the reboot, a message appears on the LCD. The LCD returns to the normal alternating display after both the control cards finish rebooting.

Configure Timing

Use this task to configure the node identification information such as NTP servers, date, time, and time zone.

Before you begin

Log into the SVO Web Interface

Procedure

Step 1	Click the hamburger icon at the top-left of the page, and select **SVO Configuration**.
Step 2	Click the **SVO Configuration** > **Time Settings** tabs to view the timezone information.

- **Enable Date and Time**—Check this check box to enable the synchronization of SVO card with network time.

- **Server Address**—Type the IP address of the primary NTP server.

- **Backup Server Address**—Type the IP address of the secondary NTP server.

  When the primary NTP server fails or is not reachable, the node uses the secondary NTP server to synchronize its date and time. If both the primary and secondary NTP servers fail or are not reachable, the SNTP-FAIL alarm is raised. The node checks for the availability of the primary or secondary NTP server at regular intervals until it can get the time from any one of the NTP servers. When the node receives the time from any one server, it synchronizes its date and time with the server's date and time and the SNTP-FAIL alarm is cleared. For each retry and resynchronization, the node checks the availability of the primary NTP server first, followed by the secondary NTP server. The node synchronizes its date and time every hour.

- **Date and Time**—Choose the date and time.

- **Time Zone**—Choose a city within your time zone from the drop-down list.

Step 3	Click **Apply**.
	A confirmation message appears.
Step 4	Click **Yes**.

Retrieve and Download SVO Diagnostics and System Diagnostics

Table 1: Feature History

Feature Name	Release Information	Feature Description
NCS Callback Log	Cisco NCS 2000 Release 12.2	This feature allows you to retrieve NCS callback diagnostic logs. This log collects information about the implementation status and return values of entire NSO data tree.

Use this task to retrieve and download SVO diagnostics and system diagnostics information.

Before you begin

Log into the SVO Web Interface

Procedure

Step 1	Click the hamburger icon at the top-left of the page, and select **SVO Configuration**.
Step 2	Click the **Diagnostics** tab.
Step 3	To retrieve SVO diagnostic logs, perform these steps:

a) Click the **SVO Logs** tab.

b) Check the **Alarms**, **Audit Logs**, **Conditions**, **DB Logs**, **Engineer Logs**, **History Logs**, and **Inventory Logs** check boxes as appropriate.

Table 2: Fields Description

Fields	Description
Alarms	Collects the active alarms
Audit Logs	Collects NSO audit logs
Conditions	Collects the active conditions
DB Logs	Collects the database logs
Engineer Logs	Collects all the system software logs
History Logs	Collects the alarms history logs
Inventory Logs	Collects the hardware inventory logs
NCS Callback Log	Collects information about the implementation status and return values of entire NSO data tree

c) Click **Retrieve** to retrieve the diagnostics report.

A confirmation message appears.

d) Click **Yes**.

e) Click **Download** to download the diagnostics report.

A zip file containing the logs is downloaded.

Step 4	To retrieve system diagnostic logs, perform these steps:

Note The System logs can be retrieved only by the superuser on a ROADM node.

a) Click the **System Logs** tab.

b) Check the **Admin Plane Logs**, **HA Logs**, and **System Logs** check boxes as appropriate.

c) Click **Retrieve** to retrieve the diagnostics report.

A confirmation message appears.

d) Click **Yes**.

e) Click **Download** to download the diagnostics report.

A zip file containing the logs is downloaded.

The following details are displayed for both SVO logs and system logs:

- **Diagnostic Type**—Displays the request of the user

- **Progress Status**—Displays the progress of retrieval of logs

- **Result Info**—Displays the completed progress of retrieval of logs

- **Latest Log Time Stamp**—Displays the latest date and time of retrieval of logs

Fault Monitoring

The Fault Monitoring pane provides an alarm summary for all alarms and conditions that are encountered. It displays the number of Critical (CR), Major (MJ), Minor (MN), Warnings (W), and Non-applicable (NA) alarms. It displays the alarms, transient conditions, and historical alarms that are related to chassis, passive devices, pluggables, line cards, amplifier cards, and control cards. You can also create custom alarm profiles and apply them on the node using this pane.

Display Alarms

Use this task to display the alarms raised on a rack, chassis, or card.

Before you begin

Log into the SVO Web Interface

Procedure

Step 1 Perform this step, as needed.

a) To view the alarms raised on 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.

   From R12.0.1 onwards, the alarm severities are displayed with alarm icons that are based on the alarm severity colors along with alarms. The expanded rack view on the left panel displays the highest alarm severity for each chassis.

3. Click the **Alarms** tab.

   In the rack view, the alarms that are related to the rack are displayed. The alarms with several severities such as Critical, Major, Minor, and Not Alarmed are displayed. The alarm severities are indicated by different colors.

b) To view the alarms raised on 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. Click the **Alarms** tab.

   In the chassis view, the alarms that are related to chassis and ancillaries of NCS 2006 and NCS 2015, control cards, line cards, amplifier cards, and pluggables are displayed. The alarms with several severities such as Critical, Major, Minor, and Not Alarmed are displayed. The alarm severities are indicated by different colors.

   In the chassis view, you can view borders with maximum alarm severity. For example, if critical alarms are raised for ports, then the borders of the ports section along with the chassis display with the designated alarm severity color.

c) To view the alarms raised on the specific card, 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. Left-click the card and select **Open Card**.

   The card view appears.

5. Click the **Alarms** tab.

   In the card view, the alarms that are related to the card are displayed. The alarms with several severities such as Critical, Major, Minor, and Not Alarmed are displayed. The alarm severities are indicated by different colors. The color of the card is the same as that of the highest severity alarm.

Step 2   Click the **Auto delete cleared alarms** check box to automatically delete the cleared alarms.

Step 3   Click **Export to Excel** to export the alarms to the excel sheet.

Step 4   From the **Severity** drop-down list, choose a severity to filter the alarms based on severity.

Display Transient Conditions

Use this task to display the transient conditions raised on a rack, chassis, or card.

Before you begin

Log into the SVO Web Interface

Procedure

Step 1   Perform this step, as needed.

a) To view the transient conditions raised on 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. Click the **Conditions** tab.

b) To view the transient conditions raised on 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. Click the **Conditions** tab.

c) To view the transient conditions raised on the specific card, 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. Left-click the card and select **Open Card**.

The card view appears.

5. Click the **Conditions** tab.

Step 2   Click **Fetch Conditions** to display the transient conditions.

Step 3   Click **Export to Excel** to export the transient conditions to the excel sheet.

Display Historical Alarms

Use this task to display the historical alarms raised on a rack, chassis, or card.

Before you begin

Log into the SVO Web Interface

Procedure

Step 1   Perform this step, as needed.

a) To view the historical alarms raised on 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. Click the **History** tab.

b) To view the historical alarms raised on 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. Click the **History** tab.

c) To view the historical alarms raised on the specific card, 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. Left-click the card and select **Open Card**.

      The card view appears.

   5. Click the **History** tab.

Step 2   Click **Export to Excel** to export the historical alarms to the excel sheet.

Step 3   From the **Severity** drop-down list, choose a severity to filter the alarms based on severity.

Alarm Profiles

The alarm profiles feature allows the user to change default alarm severities by creating unique alarm profiles for individual ports, cards, chassis, passive units, optical cross-connects, and optical interfaces.

The Default alarm profile containing all the alarms is preprovisioned on the node. The Default profile sets alarm severities to standard Telcordia GR-474-CORE settings. The alarm severities in the Default profile cannot be changed. After loading the Default profile on the node, you can create custom alarm profiles. In the Inherited alarm profile, alarms inherit or copy severity from the next highest level. For example, a card with an Inherited alarm profile copies the severities that are used by the node hosting the card.

You do not have to apply a single alarm profile to the node, card, and port-level alarms. Different profiles can be applied at different levels. You could use the default profile on a node and on all the cards and ports, but apply a custom profile that downgrades an alarm on a specific card.

When you modify severities in an alarm profile, all the Critical (CR) or Major (MJ) default or user-defined severity settings are demoted to Minor (MN) in Non-Service-Affecting (NSA) settings and the other way round as defined in Telcordia GR-474. Default severities are used for all alarms and conditions until you create a new profile and apply it.

Create and Load Alarm Profiles

Use this task to create and load alarm profiles on the node.

Before you begin

Log into the SVO Web Interface

Procedure

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

Step 2   Click the **Profiles** > **Alarm Profile** tabs.

The Default profile along with the complete list of alarms appear in this tab.

Step 3   Click the + button to create a alarm profile.

The **Alarm Profile** dialog box appears.

Step 4   Enter the name of the custom alarm profile in the **Name** field.

Step 5   (Optional) Choose the resources such as card, ecu, and fan-tray from the **Resources** drop-down list.

A specific set of alarms is available for each resource.

Step 6   Click **Apply**.

The created alarm profile appears along with the Default alarm profile in the **Alarm Profile** tab.

Step 7   In the **Alarm Profile** tab, choose the new alarm profile and click **Load Profile** to load the new alarm profile on the node.

The alarms that belong to this alarm profile appear in the **Alarms for Profile** area.

Step 8   Perform these steps, as needed.

a) From the **SA Severity**, **NSA Severity**, and **Alarm Reported** drop-down lists for each alarm, choose the desired values and click **Apply**.

If Alarm Reported for an alarm is set as false, the alarm is not reported and is not available in the list of outstanding alarms.

b) To add a new alarm to the alarm profile, perform these steps:

1. Click the + button in the **Alarms for Profile** area.

The **Add Alarm To Profile** dialog box appears.

2. From the **Alarm Name** drop-down list, choose the alarm and click **Apply**.

c) To remove an existing alarm from the alarm profile, perform these steps:

1. Choose the alarms to be removed in the **Alarms for Profile** area.

2. Click the - button.

A confirmation message appears.

3. Click **Yes**.

Associate Alarm Profiles

Use this task to associate alarm profiles with the resources such as ports, cards, chassis, passive units, optical cross-connects, and optical interfaces.

Before you begin

Log into the SVO Web Interface

Procedure

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

Step 2   Click the **Profiles** > **Profile Association** tabs.

Step 3   Click the + button.

The **Profile Association** dialog box appears.

Step 4   Enter the name of the association in the **Association** field.

Step 5   Choose the alarm profile from the **Profile** drop-down list.

Step 6   Click **Apply**.

Step 7   Choose the association and click **Load Association**.

Step 8   In the **Resource for Association** area, click the + button to associate a resource to the association.

The **Resource** dialog box appears.

Step 9   From the **Resoure Type** drop-down list, choose the resource such as device, chassis, passive unit, module, port, and so on.

The **Resource Type** drop-down list contains all the resources to which the alarm profile can be associated. Multiple resources can be associated with the same alarm profile. The other drop-down list options in the **Resource** dialog box vary based on the selected resource type.

Step 10   Choose the desired values from the other drop-down lists in the **Resource** dialog box.

Step 11   From the **Inherited** drop-down list, choose **Yes** or **No** to indicate whether the association must be applied to all the children of this resource or not.

Step 12   Click **Apply**.

When the alarm profile is associated with the resources, all the outstanding and new alarms matching these resources are immediately set with the new alarm severities.

High Availability Support on SVO

High Availability (HA) runs as a service package in each of the SVO instances. It is responsible for:

- Manual switchover for ROADM and OLA nodes

- Public IP address management after switchovers

A manual switchover is performed by the user for load balancing or during an upgrade, where an active instance is made standby and the standby instance becomes active. When the switchover is completed, the public IP address of the active instance is moved to the standby instance (which is currently the active instance). When the switchover between the primary and secondary instance is completed, the user must relogin.

Perform Manual Switchover for High Availability

Use this task to perform the manual switchover for high availability.

Before you begin

Log into the SVO Web Interface

Procedure

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

The HA Status pane is displayed with the following details:

- **SVO Instance Name**—Displays the name of the SVO instance.

- **SVO Instance IP**—Displays the public IP address of the SVO instance that is used to access the Web UI of the SVO instance.

- **SVO Role on Primary**—Displays the role of the SVO instance on the primary card. The role can be primary or secondary.

- **SVO Role on Secondary**—Displays the role of the SVO instance on the secondary card. The role can be primary or secondary.

Step 2   From the SVO Instance drop-down list, select the SVO instance for which the switch over is required.

Step 3   Click **Switch**.

The HA Status table is automatically updated with the switchover details for the selected SVO instance.

Step 4   Click the IP address in the IP address column to get the details of the nodes.