Managing SAN Zones and SAN Zonesets

This chapter contains the following sections:

About SAN Zone and Zonesets

A zone is a collection of ports that can communicate between them over the SAN. We recommend defining a zone per initiator and target, and deploy multiple small zones, rather than having larger zones defined as they consume more resources. A Zoneset is a collection of zones that define the zoning configuration applied to a VSAN. There can be only one active zoneset per VSAN, but there can be multiple zonesets configured in a switch.

Zoning configuration is based on the following characteristics:

- Enhanced Zoning is enabled for automatic full zoneset distribution and synchronization, and preventing multiple administrators from modifying a VSAN zoneset at the same time. We recommend using enhanced zoning for all configured VSANs in the SAN.
- Device-aliases are used to configure zoning, as they are independent of the zoning database and can provide naming resolution to applications beyond the zone server.

In Cisco UCS Director, you can configure SAN Zone and Zonesets on the following Cisco network devices:

- Cisco Nexus 5000, 5500, and 5672 Series switches

- Cisco Nexus 7000 Series switches
- Cisco MDS 9100 Series switches
- Cisco MDS 9500 Series switches
- Cisco MDS 9700 Series switches

About Smart Zoning

Smart zoning is supported on network devices that run Cisco NX-OS. Smart zoning, when enabled on the device, allows you to add device types as labels to members. This labeling helps to reduce the volume of Ternary Content-Addressable Memory (TCAM) entries that are created for Access Control List (ACL). The keywords or device type values to be used are init, target, or both. Smart zoning programs TCAMs with entries that connect the initiator and the target. You need not manually edit all zones with the keywords. The conversion utility of smart zoning uses the Fibre Channel Name Server (FCNS) data to add these keywords to the members. For more information on smart zoning, refer to Smart Zoning.

In Cisco UCS Director, you can enable smart zoning on the following Cisco network devices.

- Cisco Nexus 5000 Series switches
- Cisco Nexus 7000 Series switches
- Cisco MDS 9100 Series switches
- Cisco MDS 9500 Series switches
- Cisco MDS 9700 Series switches

Creating a SAN Zone

Step 1 On the menu bar, choose **Physical** > **Network**.

Step 2 In the **Network** pane, expand the pod.

Step 3 Select the network device to be configured.

Step 4 Click the **SAN Zones** tab.

Step 5 Click **Create SAN Zone**.

Step 6 In the **Create SAN Zone** dialog box, complete the following fields:

Name	Description
Zone Name field	The name of the zone.
VSAN Id field	Click **Select**. In the **Select** dialog box, choose a VSAN ID.
Commit San Zone check box	Check this check box to enable the enhanced zoning.
Copy Running configuration to Startup configuration check box	Check the check box to copy the running configuration to the startup configuration.

Step 7 Click **Submit**.

Enabling Smart Zoning

Smart zone is enabled at VSAN level. You can choose to disable the smart zoning at zone level. However, you cannot have smart zone at zone level without enabling the smart zone at VSAN level.

Step 1 On the menu bar, choose **Physical > Network**.

Step 2 In the **Network** pane, expand the pod.

Step 3 Select the required device for which you want to enable smart zoning.
Ensure that the selected device runs NX-OS. To find the OS type of the device, click the **Summary** tab. Look for the **OS Type** value in the **Overview** box.

Step 4 Click the **VSAN** tab.

Step 5 From the VSAN list, click the VSAN that you want to enable smart zoning for.

Step 6 Click **Enable SmartZone**. This button appears only for devices that run Cisco NX-OS.

Step 7 In the **Enable SmartZone** dialog box, check the **Copy Running configuration to Startup configuration** check box to copy the running configuration to the startup configuration.

Step 8 Click **Submit**.
The smart zoning is enabled on the VSAN.

Adding a Member to a SAN Zone

Step 1 On the menu bar, choose **Physical** > **Network**.

Step 2 In the **Network** pane, expand the pod.

Step 3 Select the network device to be configured.

Step 4 Click the **SAN Zones** tab.

Step 5 Select the SAN zone to which you want to add a member.

Step 6 Click **Add SAN Zone Member**.

Step 7 In the **Add Member to SAN Zone** dialog box, complete the following fields:

Name	Description
SAN Zone field	The name of the zone.

Name	Description
Type drop-down list	Choose one of the following as the member type: **pWWN**,**FCALIAS**, or **DeviceAlias**.
Device Type drop-down list. **Note** This field appears only when the smart zoning is enabled for the zone.	Choose one of the following as device type: **initiator**, **target**, or **both**. **Note** This field disappears on selection of **FCALIAS** as the member type.
Member field	This field appears on selection of **pWWN** as the member type. The member that you want to add to the SAN zone.
FCALIAS field	This field appears on selection of **FCALIAS** as the member type. Click **Select** and choose one or more FC Aliases.
Device Alias Name field	This field appears on selection of **DeviceAlias** as the member type. Click **Select** and choose one or more Device Aliases.
Leverage Smart Zoning check box	Check this check box to use the smart zoning feature on the device. Ensure that smart zoning is supported for the device and is enabled in the VSAN. For more information on enabling smartzone, refer Enabling Smart Zoning, on page 3. This field does not appear if the member type is FCALIAS.
Commit San Zone check box	Check this check box to enable the enhanced zoning.
Copy Running configuration to Startup configuration check box	Check the check box to copy the running configuration to the startup configuration.

Step 8 Click **Submit**.

Deleting a SAN Zone

Step 1 On the menu bar, choose **Physical** > **Network**.
Step 2 In the **Network** pane, expand the pod.
Step 3 Select the network device to be configured.
Step 4 Click the **SAN Zones** tab.
Step 5 Select the SAN zone that you want to delete.
Step 6 Click **Delete SAN Zone**.
Step 7 In the **Delete SAN Zone** dialog box, complete the following fields:

Name	Description
Zone Name field	The name of the zone.
Commit San Zone check box	Check this check box to enable the enhanced zoning.
Copy Running configuration to Startup configuration check box	Check the check box to copy the running configuration to the startup configuration.

Step 8 Click **Submit**.

Creating a SAN Zoneset

Step 1 On the menu bar, choose **Physical** > **Network**.
Step 2 In the **Network** pane, expand the pod.
Step 3 Select the network device to be configured.
Step 4 Click the **SAN Zonesets** tab.
Step 5 Click **Create SAN Zone Set**.
Step 6 In the **Create SAN Zone Set** dialog box, complete the following fields:

Name	Description
Zone Set Name field	The name of the SAN zoneset.
VSAN Id field	Click **Select**. In the **Select** dialog box, choose a VSAN ID.
Commit San Zone check box	Check this check box to enable the enhanced zoning.
Copy Running configuration to Startup configuration check box	Check the check box to copy the running configuration to the startup configuration.

Step 7 Click **Submit**.

Note During the execution of the activate SAN zoneset workflow, if the **Activate** check box of the zoneset is enabled, the zoneset is deactivated during rollback and removed from the Active list. Once the zoneset is removed, the device restarts the zone merge process.

If the **Disable Rollback** check box is enabled, the task is not listed or allowed to roll back the activated zoneset.

Adding a Member to a SAN Zoneset

Step 1 On the menu bar, choose **Physical** > **Network**.

Step 2 In the **Network** pane, expand the pod.

Step 3 Select the network device to be configured.

Step 4 Click the **SAN Zonesets** tab.

Step 5 Select the SAN zoneset to which you want to add a member.

Step 6 Click **Add SAN Zone Set Member**.

Step 7 In the **Add SAN Zone to Set** dialog box, complete the following fields:

Name	Description
SAN Zone Set field	The name of the SAN zoneset.
SAN Zone field	Click **Select** and choose the zone members.
Commit San Zone check box	Check this check box to enable the enhanced zoning.
Copy Running configuration to Startup configuration check box	Check the check box to copy the running configuration to the startup configuration.

Step 8 Click **Submit**.

Deleting a SAN Zoneset

Step 1 On the menu bar, choose **Physical** > **Network**.

Step 2 In the **Network** pane, expand the pod.

Step 3 Select the network device to be configured.

Step 4 Click the **SAN Zonesets** tab.

Step 5 Select the SAN zoneset that you want to delete.

Step 6 Click **Delete SAN Zone Set**.

Step 7 In the **Delete SAN Zone Set** dialog box, complete the following fields:

Name	Description
SAN Zone Set field	The name of the SAN zoneset.
Commit San Zone check box	Check this check box to enable the enhanced zoning.
Copy Running configuration to Startup configuration check box	Check the check box to copy the running configuration to the startup configuration.

Step 8 Click **Submit**.