

Zoning

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Zoning

Zoning enables you to set up access control between storage devices or user groups. If you have administrator privileges in your fabric, you can create zones to increase the network security and to prevent data loss or corruption. Zoning is enforced by examining the source-destination ID field.

From SAN Controller Release 12.0.1a, Regular zones, and IVR zones are merged into a single zoning page.

Note When device aliases are used for zoning in Web UI, end devices must be logged into the fabric thus web GUI can configure zoning using device aliases. If end nodes are not logged in, PWWN can be used for zoning.

The following table describes the fields and icons that appear on SAN Controller **Virtual Management** > **Zoning** tab.

Field	Description
Zoning Type	Choose radio button next to **Regular** or **IVR** to select required zoning type.
Fabric	From the Fabric drop-down list, you can choose the fabric for which you are configuring or viewing the Zoning. If admin role locks the fabric, you can view lock icon next to the fabric field.
VSAN	Choose Regular Zoning type to view VSAN field. From the VSAN drop-down list, you can choose the VSAN for which you are configuring regular zones.
Region ID	Choose IVR Zoning type to view Region ID field. From the Region ID drop-down list, you can choose the region name for which you are configuring IVR zones.

Field	Description
Enhanced Zoning	Click **configurations** icon next to **VSAN** text field to view Enhanced zoning window. **Note** Enhanced Zoning is supported only for Regular zone. For more details, refer to Enhanced Zoning section.
Cisco Fabric Services (CFS)	Click **set-up assistant** icon next to the **Region ID** field to view CFS window. **Note** CFS is supported only for IVR Zoning. For more details, refer to CFS section.
Switch	From the Switch drop-down list, select the switch to which you want to configure.
Action	On Zoning field, click **Actions** to view the following items: • Changes • Database • Clear Server Cache • Discovery Sync
Changes	On Zoning field, click **Actions** > **Changes**. • Enable smart zoning - Enables smart zoning configuration for all the switches. • Commit Changes - Commits the Zoning configuration changes to all the switches. This field is only applicable when a zone is in the enhanced or smart mode. • Discard Pending - Discards the changes in progress.
Database	On Zoning field, click **Actions** > **Database**. • Backup database – Choose Backup Database, the **Backup Database** window is displayed. Enter a name and click **Backup**. • Restore database – Choose Restore Database, the **Restore Database** window is displayed. Upload appropriate file and click **Restore**.
Clear Server Cache	On Zoning area, choose **Actions** > **Clear Server Cache**. Clears the cache on the server.
Discovery Sync	On Zoning area, choose **Actions** > **Discovery Sync**. To synchronize zoning modules with discovery.

This chapter contains the following sections:

Enhanced Zoning

From SAN Controller Release 12.0.1a, Enhanced Zoning feature is added for Regular Zoning type.

Enhanced zoning performs all configurations within a single configuration session for regular zoning. When you begin a session, the switch locks the entire fabric to implement the changes.

Choose **Regular** radio button on Zoning type, Click **configurations** icon next to **VSAN** field to view Enhanced zoning window.

The **Enhanced Zoning** window has the following fields and their descriptions.

Field	Description
Switch	Specifies IP address of the switch.
Mode	Displays mode of the switch, that can be one of the following: • Basic • Enhanced
Result	Displays the activation results, which can be one of the following: • Success • Failed
Config DB locked by	Displays the role name of locked configuration database.
Action	Displays the action on the switch, that can be one of the following: • No operation • Commit changes • Cleanup Click **edit** icon on last column to select required action and click check mark icon to save.
Last Action Results	Displays status of last configuration database.
Enforce full DB merge	Displays status as enabled or disabled. Click **edit** icon on last column to select required action and click check mark icon to save. Enabling it ensures that both the active and local zones are merged and are identical on all switches for a VSAN.

Field	Description
Read from	For enhanced zones or IVR CFS enabled zones when a change is made to zoning DB on a switch, all zone data is pushed into a pending database, until commit command is issued. This flag helps user to get data either from pending zone DB (Copy DB) or regular zone DB (Effective DB). Click **edit** icon on last column to select required action and click check mark icon to save.
Activation Date	Specifies date of the zoneset activated.

To perform various operations on Enhanced Zoning window from SAN Controller Web UI, perform the following steps:

Procedure

Step 1 Choose **Virtual Management** > **Zoning**, choose required **Zone Type**, **Fabric**, and **VSAN**.

Step 2 Click **configurations** icon adjacent **VSAN** field

The **Enhanced Zoning** window is displayed.

Step 3 Click **Edit** icon next to **Read from** column, to select required database and click **Tick** icon to save.

Step 4 To change the mode from basic to enhanced, choose **Actions** > **Set Mode to Enhanced**, and click **Apply**.

Step 5 You can follow the same procedure to set mode from enhanced to basic, choose **Actions** > **Set Mode to Basic**, and click **Apply**.

CFS

Cisco Fabric Services (CFS) provides a common infrastructure for automatic configuration synchronization in the fabric for IVR zoning. When a CFS is configured on one switch and same properties can be transmitted on other switches. You can enable or disable IVR on the switch. Furthermore, you can enable or disable both CFS and global CFS on the selected switch.

Choose **IVR** radio button on Zoning type, Click **set-up assistant** icon next to **VSAN** field to view CFS window.

You can view below tabs on CFS window:

- Control
- IVR
- Action

The following table describes the fields that appear on **Control** tab.

Fields	Description
Switch	Specifies IP address of the switch.

Fields	Description
IVR Status	Displays whether IVR is enabled or disabled on the switch.
Edit	Click **Edit** icon to enable or disable IVR on the switch and click tick mark to save changes.
Refresh	Click **Refresh** icon to refresh table.
Apply	Click **Apply** to save changes for each modification on the switch.
Done	Click **Done** to save all changes and to exit from CFS window.

The following table describes the fields and descriptions that appears on **IVR** tab.

Fields	Description
Switch	Specifies IP address of the switch.
CFS Status	Specifies whether CFS status is enabled or disabled.
Global CFS	Specifies whether this feature is enabled or disabled on the switch.
Read from	Specifies status: • Effective DB • Copy DB
Lock Owner	Specifies switch is locked by admin.
Merge Status	Specifies fabric merge that occurred.
Region ID	Specifies the region id of the switch.
Edit	Click **Edit** icon to perform changes in Read from and Region ID column for selected row.
Apply	Click **Apply** to save changes for each modification on the switch
Refresh	Click **Refresh** icon to refresh table.
Done	Click **Done** to save all changes and to exit from CFS window.

To perform various operations on a switch in the IVR tab from SAN Controller Web UI, perform the following steps:

Procedure

Step 1 Select a switch, choose **Actions** > **Commit** and click **Apply** to enable IVR on a switch.

Note
You can commit changes only CFS is enabled on selected switch.

Step 2 Select a switch, choose **Actions** > **Abort** and click **Apply** to disable IVR on a switch.

Step 3 Select a switch, choose **Actions** > **Clear** and click **Apply** to clear IVR information on a switch.

Step 4 Select a switch, choose **Actions** > **Enable CFS** and click **Apply** to enable CFS on a switch.

Step 5 Select a switch, choose **Actions** > **Disable Global CFS** and click **Apply** to enable CFS globally on a switch.

The following table describes the fields and descriptions that appears on **Action** tab.

Actions	Description
Switch	Specifies IP address of the switch.
Active	Specifies switch active status is true or false.
Activation Time	Specifies the activation date and time.
IVR NAT Status	Specifies IVR status is enabled or disabled.
Auto Discover Topology	Specifies whether auto discover topology status is true or false
Edit	Click **Edit** icon to perform changes in IVR NAT Status and Auto Discover Topology columns for selected row.
Region ID	Specifies the region id of the switch.
Edit	Click **Edit** icon to perform changes in Read from and Region ID column for selected row.
Apply	Click **Apply** to save changes for each modification on the switch
Refresh	Click **Refresh** icon to refresh table.
Done	Click **Done** to save all changes and to exit from CFS window.

Zonesets

Based on the selected Fabric, VSAN and Switch, the Zoneset area displays the configured zonesets and their status. You can create, copy, delete, or edit the zonesets. Further, the zonesets can be activated or deactivated.

The following table describes the fields and descriptions that appear on SAN Controller **Zoning** Zonesets table.

Field	Description
Zoneset Name	Lists all the names that are configured under the selected Zoneset. Click on the Zoneset name to view the summary information in a slide-in pane. Click **Edit Zoning** to edit and activate zoneset.
Modified	Displays if the zoneset is modified or not.
Activation Date	Specifies date of the zoneset activated.

Procedure

Step 1 To create zonesets from SAN Controller Web UI, choose **Actions** > **Create Zoneset**.

The **Create Zoneset** window appears.

Step 2 Enter a valid name for the zoneset, and click **Create zoneset**.

A zoneset is created and is listed in the **Zoneset** area.

Step 3 To Copy/Clone zonesets, choose radio button and choose **Actions** > **Copy / Clone Zoneset** or click **ellipse** icon in last column on required zone name.

The **Clone or Copy Zoneset** window shows two options.

Choose the appropriate radio button. You can choose one of the following:

- **Copy**: Creates a new zoneset that consists copies of the zones in the initial zoneset.
  - You can prepend or append a string to identify the copied zoneset. Enter a valid string in the **Tag** field, and choose the **Prepend names** or **Append names** radio button.
  - **Clone**: To create a new zoneset with a new name consisting of the same zones as the source zoneset.

    In the **Name** field, enter a valid name for the new zoneset.

- Click **Copy zoneset** to clone or copy the zoneset.

  The cloned or the copied zoneset appears in the **Zoneset** area.

Step 4 To delete the zoneset, choose the zoneset radio button next to **Zoneset Name** column and choose **Actions** > **Delete Zoneset**.

A confirmation window appears. Click **Yes** to delete the zoneset.

Step 5 To edit the zone name, choose the zone radio button next to the **Zoneset Name** column and choose **Actions>** > **Edit zones & members** or click **ellipse** icon in last column on required zone name.

The **Zoneset** page for the selected fabric is displayed.

Choose check box next to **Zone Name** column, choose **Actions** > **Rename zone**.

Enter the new name for the zoneset. Click **Rename**.

Step 6 To deactivate a zoneset, choose the zoneset radio button next to the **Zoneset Name** column and click **Actions** > **Deactivate**.

A confirmation window appears. Click **Yes** to deactivate the zoneset.

Step 7 To activate a zoneset, choose radio button next to the **Zoneset Name** column and click **Activate**.

The **Zoneset Differences** window shows the changes made to the zoneset since it was activated previously. Click **Activate**.

Zones

UI Path: **Zoning**. Select a zone member, a slide-in panel appears. Click on **Launch** icon to view **Zones** window.

Based on the Zoneset that is selected, the zones that are configured under that zoneset are displayed in the **Zones** area. To view Zones tab, click on a radio button for a zoneset, choose **Actions** > **Edit zones & members**. A **Zoneset** window is displayed. It also displays true or false only when the VSAN has smart zone that is enabled.

You can create, copy, delete, or clone, and rename the zones. It also displays true or false only when the VSAN has smart zone that is enabled. Furthermore, the zones can be added to or removed from the selected Zoneset. You can also enable or disable the smart zone on the zone table.

The Zones area has the following fields and their descriptions.

Field	Description
Filter by Attribute	You can search by specifying the required zone name or zoneset and members.
Add to zoneset	You can select zone name and click **Add to zoneset.**
Refresh	Click **Refresh** icon to refresh table.
Zone Name	Displays the name of the zone. You can search by specifying the zone name. From Release 12.1.2e, you can click **Topology** icon next to the Zone name to view **Zone Topology**. The topology is displayed in **Hierarchical Left-Right** layout by default. In the topology view, hover on the nodes to see tool tip. Click on switch to view the switch summary. Click **Launch** icon to view Switch Overview. **Note** You cannot save any changes made to topology layout from this screen. Select the zone name to view the members of the zoneset. From Release 12.1.2e, the Status column displays if the zone member is online or offline.
In Zoneset	Specifies whether a zone is part of a zoneset. Displays **true** if the zone is part of a zoneset. Otherwise, displays **false**. You can search by choosing true or false from the **In Zoneset** drop-down list.
Members	Specifies the zone members of the zone. You can search by specifying the member.

Procedure

Step 1 To create zones, choose **Zoning**.

Step 2 In the **Zonesets** area, choose required Zoneset Name.

A slide-in panel is displayed.

a) Click **Edit Zoning** or **launch** icon to view Zoneset window.

By default, Zones tab is displayed.

Step 3 To create a zone, choose **Actions** > **Create new zone**.

a) In the **Create new zone**, enter a valid name for the Zone, and click **Create**.
b) Click **Create new zone**.
c) Choose select box next to **Smart Zoning**, to enable smart zoning for new zone.

A zone is created and is listed in the **Zones** area.

Step 4 To enable a smart zone, choose required check box next to **Zone Name**, choose **Actions** > **Enable smart zoning**.

You can view smart zone column only if smart zoning is enabled for VSAN.

Step 5 To disable a smart zone, choose required check box next to **Zone Name**, choose **Actions** > **Disable smart zoning**.

Step 6 To Clone Zones, choose **Configure > SAN > Zoning > Zones**, select the **Zone** radio button and click **Clone Zone** icon.

The **Clone Zone** window is displayed.

a) In the Name field, enter a valid name for the new zoneset.
b) Click **Clone** to clone the zone.

The cloned zones appear in the **Zones** area.

Step 7 To rename a zone from a zoneset, choose required check box next to **Zone Name**, choose **Actions** > **Rename zone**.

In the **Name** field, enter the new name for the zone, and click **Rename**.

Step 8 To remove a zone from a zoneset, choose required check box next to **Zone Name**, choose **Actions** > **Remove from zoneset**.

The zone is removed from the selected Zoneset. A green tick mark disappears next to the Zone name to indicate that the zone is removed from the zoneset.

Step 9 To delete a zone from a zoneset, choose required check box next to **Zone Name**, choose **Actions** > **Delete zone(s)**.

You can select single or multiple zones to delete at an instant.

Note
You cannot delete a zone that is a member of the selected zoneset. Remove the zone from the zoneset to delete it.

FC Aliases

Navigation Path: **Virtual Management >** > **Zoning** > **Zone Sets** > **Members**

From SAN Controller Release 12.0.1a, FC Aliases feature is supported for regular zones. It is used to associate with one or more pWWNs to a required name. When you add a zone member, you can add FC Alias or delete existing FC Alias. FC Aliases tab displays below fields:

- FC Alias – Specifies the name of FC Alias.
- Member – Specifies members associated with FC Alias.

To do FCAliases operations, perform the following steps:

Procedure

Step 1 Choose **Virtual Management** > **Regular Zones**, click required Zoneset Name.

A slide-in panel window appears.

Step 2 Click **Edit Zoning** or **Launch** icon to view **Zoneset** page.

The Zoneset window is displayed.

Step 3 Click **FC Aliases** tab to view the FC Aliases area.

Step 4 To create a new FC alias, choose **Actions** > **Create new FC Alias**.

The **Create new FC Alias** window is displayed.

a) Enter a valid name in a text field and click **Create FC Alias**.

An FC alias is created and is listed in the FC Aliases area.

Step 5 To delete a new FC alias, select required check box next to the **FC Alias** column, choose **Actions** > **Delete FC Alias**.

Members

UI Path: **Virtual Management** > **Zoning** > **Zone Sets** > **Members**

Based on the selected zoneset and zone, the **Members** area displays the zone members and their status. Enter required field name in **Filter by attributes** text field to view member details.

The Members area has the following fields and their descriptions.

Field	Description
Zone/FC Alias	Displays the name of the zone member. You can search by specifying the zone name.
Member	Displays the member name for the zone.
Switch	Specifies the switch that the zone member is linked. You can search by specifying the switch.
Interface	Specifies the interface that the zone member is attached to. You can search by specifying the interface.
Status	Specifies the status of zone.
Zoned By	Displays the type of zoning. You can search by type of zoning such as WWN, FCID, FC Alias, or iSCSI, FWWN, Device Alias, IP Subnet and many more.

Field	Description
FCID	Specifies the FCID associated with the zone member. You can search by specifying the FCID associated with the zone member.
pWWN	Specifies the pWWN of the switch. You can search by specifying the WWN of the switch.

You can add or remove members from the zoneset. Furthermore, you can also add existing members and add existing FC Alias to members.

From SAN Controller Web UI, choose **Virtual Management** > **Zoning** > **Zoneset** > **Members** to view Members area on **Zoneset** window.

Select a zoneset and zones to view the list of zone members.

Procedure

Step 1 To create new member, In **Members** area, choose **Actions** > **Create new member**.

In the **Create and Add a new Member** window, choose radio button of the appropriate zone.

Enter a valid name in text field and click **Create Member**.

Based on Zone by radio button section, the new name is only for the selected zone by and not for all the zone. For example, when you choose WWN zone by, the name in the text field is for WWN zone. Similarly, when you choose **Domain & Port zone** by, the Domain ID number and Switch Interface name.

The Create new Member allows you to add a member to a zone that does not exist in the fabric, currently. This feature can be utilized when the device discovery did not discover all the devices. With the Available to add feature, you can add a discovered device to the zone.

Step 2 To remove a zone member, choose check box next to **Parent** column and then click **Actions** > **Remove Member from zone(s)**

You can select multiple zones in an instance to remove.

Step 3 To add existing member, choose **Actions** > **Add existing members**.

The **Add existing members** window is displayed.

This window has the following fields and their descriptions.

Field	Description
Zone By	The **Zone by** feature determines if the device must be added to the zone using the device WWN or device alias. If you choose **Zone By: End Ports**, the devices are added to the zones by WWN. Similarly, for Device Alias and FC Alias the devices are added to the zones by Device Alias and FC Alias respectively. Based on the zone by you choose, the devices are displayed.

Field	Description
Member Name	Displays the name of the zone. You can search by specifying the zone name.
Type	Specifies the switch is storage or host.
Switch	Specifies the switch that the zone member is linked. You can search by specifying the switch.
Interface	Specifies the interface that the zone member is attached to. You can search by specifying the interface.
pWWN	Specifies the pWWN of the switch. You can search by specifying the pWWN of the switch.
VSAN	Specifies the VSAN the zone member is in.

Step 4 Select the appropriate **Zone by** option and select required **Member Name**.

Step 5 Click **Add members**.

Note
You can select more than one zone. A dialog appears that shows a list of all the zones that are currently selected on the zone table.