

Distributing Device Alias Services

All switches in the Cisco MDS 9000 Family support Distributed Device Alias Services (device alias) on a per VSAN basis and on a fabric-wide basis. Device alias distribution allows you to move host bus adapters (HBAs) between VSANs without manually reentering alias names.

This chapter includes the following sections:

- [About Device Aliases, page 30-1](#)
- [Device Alias Databases, page 30-2](#)
- [Legacy Zone Alias Conversion, page 30-6](#)
- [Database Merge Guidelines, page 30-7](#)
- [Default Settings, page 30-8](#)

About Device Aliases

When the port WWN of a device must be specified to configure different features (zoning, QoS, port security) in a Cisco MDS 9000 Family switch, you must assign the right device name each time you configure these features. An inaccurate device name may cause unexpected results. You can circumvent this problem if you define a user-friendly name for a port WWN and use this name in all the configuration commands as required. These user-friendly names are referred to as *device aliases* in this chapter.

This section includes the following topics:

- [Device Alias Features, page 30-1](#)
- [Device Alias Requirements, page 30-2](#)
- [Zone Aliases Versus Device Aliases, page 30-2](#)

Device Alias Features

Device aliases have the following features:

- The device alias information is independent of your VSAN configuration.
- The device alias configuration and distribution is independent of the zone server and the zone server database.
- You can import legacy zone alias configurations without losing data.

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- The device alias application uses the Cisco Fabric Services (CFS) infrastructure to enable efficient database management and distribution. Device aliases use the coordinated distribution mode and the fabric-wide distribution scope (see [Chapter 13, “Using the CFS Infrastructure”](#)).
- When you configure zones, IVR zones, or QoS features using device aliases, and if you display these configurations, you see that the device aliases are displayed along with their respective pWWNs.

Device Alias Requirements

Device aliases have the following requirements:

- You can only assign device aliases to pWWNs.
- The mapping between the pWWN and the device alias to which it is mapped must have a one-to-one relationship. A pWWN can be mapped to only one device alias and vice versa.
- A device alias name is restricted to 64 alphanumeric characters and may include one or more of the following characters:
 - a to z and A to Z
 - 1 to 9
 - - (hyphen) and _ (underscore)
 - \$ (dollar sign) and ^ (up carat)

Zone Aliases Versus Device Aliases

[Table 30-1](#) compares the configuration differences between zone-based alias configuration and device alias configuration.

Table 30-1 Comparison Between Zone Aliases and Device Aliases

Zone-Based Aliases	Device Aliases
Aliases are limited to the specified VSAN.	You can define device aliases without specifying the VSAN number. You can also use the same definition in one or more VSANs without any restrictions.
Zone aliases are part of the zoning configuration; the alias mapping cannot be used to configure other features.	Device aliases can be used with any feature that uses the pWWN.
You can use any zone member type to specify the end devices.	Only pWWNs are supported along with new device aliases like IP addresses.
Configuration is contained within the zone server database and is not available to other features.	Device aliases are not restricted to zoning. Device alias configuration is available to the FCNS, zone, fcping, traceroute, and IVR applications.

Device Alias Databases

The device alias feature uses two databases to accept and implement device alias configurations.

- Effective database—The database currently used by the fabric.

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- Pending database—Your subsequent device alias configuration changes are stored in the pending database.

If you modify the device alias configuration, you need to commit or discard the changes as the fabric remains locked during this period.

This section includes the following topics:

- [About Device Alias Distribution, page 30-3](#)
- [Distributing the Device Alias Database, page 30-4](#)
- [About Creating a Device Alias, page 30-4](#)
- [Committing Changes, page 30-5](#)
- [Discarding Changes, page 30-6](#)
- [Legacy Zone Alias Conversion, page 30-6](#)
- [Using Device Aliases or FC Aliases, page 30-7](#)

About Device Alias Distribution

By default, device alias distribution is enabled. The device alias feature uses the coordinated distribution mechanism to distribute the modifications to all switches in a fabric.

If you have not committed the changes and you enable distribution, then a commit task will fail.

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Distributing the Device Alias Database

To enable the device alias distribution using Fabric Manager, follow these steps:

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- Step 1** Expand **End Devices** and then select **Device Alias** in the Physical Attributes pane. You see the device alias configuration in the Information pane [Figure 30-1](#).

Figure 30-1 *Device Aliases in Fabric Manager*



The **CFS** tab is the default tab.

- Step 2** Select **enable** from the Global drop-down menus to enable switch aliases.
- Step 3** Select **commit** from the Config Action drop-down menu for the newly enabled switches.
- Step 4** Click **Apply Changes** to commit and distribute these changes or click **Undo Changes** to discard any unsaved changes.
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About Creating a Device Alias

When you perform the first device alias task (regardless of which device alias task), the fabric is automatically locked for the device alias feature. Once you lock the fabric, the following situations apply:

- No other user can make any configuration changes to this feature.
- A copy of the effective database is obtained and used as the pending database. Modifications from this point on are made to the pending database. The pending database remains in effect until you commit the modifications to the pending database or discard (**abort**) the changes to the pending database.

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Creating a Device Alias

To lock the fabric and create a device alias in the pending database using Fabric Manager, follow these steps:

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- Step 1** Expand **End Devices** and then select **Device Alias** in the Physical Attributes pane.
You see the device alias configuration in the Information pane.
- Step 2** Click the **Configuration** tab and click the **Create Row** icon.
You see the Device Alias Creation dialog box in [Figure 30-2](#).

Figure 30-2 Create Device Alias Dialog Box



- Step 3** Select a switch from the drop-down menu.
- Step 4** Complete the Alias name and pWWN fields.
- Step 5** Click **Create** to create this alias or click **Close** to discard any unsaved changes.
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Committing Changes

If you commit the changes made to the pending database, the following events occur:

1. The pending database content overwrites the effective database content.
2. The pending database is emptied of its contents.
3. The fabric lock is released for this feature.

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To commit the changes to the device alias database using Fabric Manager, follow these steps:

-
- Step 1** Expand **End Devices** and then select **Device Alias** in the Physical Attributes pane.
You see the device alias configuration in the Information pane. The **CFS** tab is the default tab.
 - Step 2** Select **enable** from the Global drop-down menus to enabled switch aliases.
 - Step 3** Select **commit** from the Config Action drop-down menu for the newly enabled switches.
 - Step 4** Click **Apply Changes** to commit and distribute these changes or click **Undo Changes** to discard any unsaved changes.
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Discarding Changes

If you discard changes made to the pending database, the following events occur:

1. The effective database contents remain unaffected.
2. The pending database is emptied of its contents.
3. The fabric lock is released for this feature.

To discard the device alias session using Fabric Manager, follow these steps:

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- Step 1** Expand **End Devices** and then select **Device Alias** in the Physical Attributes pane.
You see the device alias configuration in the Information pane. The **CFS** tab is the default tab.
 - Step 2** Select **abort** from the Config Action drop-down menu.
 - Step 3** Click **Apply Changes** to discard the session.
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Legacy Zone Alias Conversion

You can import legacy zone alias configurations to use this feature without losing data, if they satisfy the following restrictions:

- Each zone alias has only one member.
- The member type is pWWN.
- The name and definition of the zone alias should not be the same as any existing device alias name.

If any name conflict exists, the zone aliases are not imported.



Tip

Ensure to copy any required zone aliases to the device alias database as required by your configuration.

When an import operation is complete, the modified alias database is distributed to all other switches in the physical fabric when you perform the **commit** operation. At this time if you do not want to distribute the configuration to other switches in the fabric, you can perform the **abort** operation and the merge changes are completely discarded.

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This section includes the following topics:

- [Using Device Aliases or FC Aliases, page 30-7](#)
- [Device Alias Statistics Cleanup, page 30-7](#)

Using Device Aliases or FC Aliases

You can change whether Fabric Manager uses FC aliases or global device aliases from Fabric Manager client without restarting Fabric Manager Server.

To change whether Fabric Manager uses FC aliases or global device aliases, follow these steps:

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- Step 1** Click **Server > Admin**.
You see the Admin dialog box in [Figure 30-3](#).

Figure 30-3 Server Admin Dialog Box



- Step 2** For each fabric that you are monitoring with Fabric Manager Server, check the **Device Alias** check box to use global device aliases, or uncheck to use FC aliases.
- Step 3** Click **Apply** to save these changes or click **Close** to exit the dialog box without saving any changes.
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Device Alias Statistics Cleanup

To clear device alias statistics (for debugging purposes), refer to the *Cisco MDS 9000 Family CLI Configuration Guide*.

Database Merge Guidelines

Refer to the “[CFS Merge Support](#)” section on [page 13-9](#) for detailed concepts.

When merging two device alias databases, follow these guidelines:

- Verify that two device aliases with different names are not mapped to the same pWWN.
- Verify that two different pWWNs are not mapped to the same device alias.
- Verify that the combined number of the device aliases in both databases does not exceed 8191 (8K). For example, if database N has 6000 device aliases and database M has 2192 device aliases, this merge operation will fail.

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Default Settings

Table 30-2 lists the default settings for device alias parameters.

Table 30-2 **Default Device Alias Parameters**

Parameters	Default
Database in use	Effective database.
Database to accept changes	Pending database.
Device alias fabric lock state	Locked with the first device alias task.