



## Global VLANs and VSANs

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This chapter includes the following sections:

- [Global VLAN](#) , page 1
- [Global VSAN](#), page 6

### Global VLAN

Cisco UCS Central enables you to define global VLANs in LAN cloud at the domain group root or at the domain group level. You can create a single VLAN or multiple VLANs in one operation.

Global VLAN resolution takes place in Cisco UCS Central prior to global service profiles deployment. If a global service profile references a global VLAN, and that VLAN does not exist, the global service profile deployment fails in the Cisco UCS domain due to insufficient resources. All global VLANs created in Cisco UCS Central must be resolved before deploying that global service profile.

Global VLANs are pushed to Cisco UCS along with the global service profiles that reference them. Global VLAN information is visible to Cisco UCS Manager only if a global service profile with reference to a global VLAN is deployed in that UCS domain. When a global VLAN is deployed and becomes available in the UCS domain, locally-defined service profiles and policies can reference the global VLAN.



#### Note

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A global VLAN is not deleted when a global service profile that references it is deleted.

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You cannot delete a global VLAN from Cisco UCS Manager. If you want to delete a global VLAN from Cisco UCS Manager, you have to localize the VLAN and then delete it.

#### VLAN Org Permission

All VLANs configured in Cisco UCS Central are common to the orgs in which they are created. You must assign organization permissions before the Cisco UCS Manager instances that are part of the organizations can consume the resources. When you assign org permission to a VLAN, the VLAN is visible to those organizations, and available to be referenced in service profiles maintained by the Cisco UCS Manager instances that are part of the organization.

VLAN name resolution takes place within the hierarchy of each domain group. If a VLAN with the same name exists in multiple domain groups, the organization permissions are applied to all VLANs with the same name across the domain groups.

You can create, modify or delete VLAN org permission.

**Note**

Make sure to delete the VLAN org permission from the same org you created it in. On Cisco UCS Central GUI you can view the org structure where this VLAN is associated. But at the sub org level on the Cisco UCS Central CLI, you cannot view the VLAN org permission association hierarchy, so if you try to delete the VLAN at the sub org level on the Cisco UCS Central CLI the delete operation will fail.

## Creating a Single VLAN

This procedure describes how to create a single VLAN in the domain group root or in a specific domain group.

**Important**

The VLAN name is case sensitive.

### Procedure

- Step 1** On the menu bar, click **Network**.
- Step 2** In the **Navigation** pane, do one of the following:
  - To add a VLAN to the domain group root, expand **Domain Group root > LAN > LAN Cloud**.
  - To add a VLAN to a specific domain group, expand that node and click **LAN Cloud**.
- Step 3** Right click on **LAN Cloud**, and click **Create VLANs**.  
In the **Create VLANs** dialog box, **Single VLAN** is selected by default.
- Step 4** Enter a **VLAN Name** and a **VLAN ID**.  
A VLAN ID can:
  - Be between 1 and 3967
  - Be between 4048 and 4093
  - Overlap with other VLAN IDs already defined in other domain groups
- Step 5** Click **OK**.  
The VLAN is added to the list of **Common VLANs** in the **LAN Cloud**.

## Creating Multiple VLANs

This procedure describes how to create multiple VLANs in the domain group root or in a specific domain group.



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**Important**

VLAN names are case sensitive.

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**Procedure**

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**Step 1** On the menu bar, click **Network**.

**Step 2** In the **Navigation** pane, do one of the following:

- To add multiple VLANs to the domain group root, expand **Domain Group root > LAN > LAN Cloud**.
- To add multiple VLANs to a specific domain, expand that node and click **LAN Cloud**.

**Step 3** Right click on **LAN Cloud**, and select **Create VLANs**.

**Step 4** Click **Multiple VLANs**, then enter a **VLAN Prefix**.

**Step 5** Enter **VLAN IDs**.

VLAN IDs can be individual IDs, or ranges of IDs separated by commas. A VLAN ID can:

- Be between 1 and 3967
- Be between 4048 and 4093
- Overlap with other VLAN IDs already defined in other domain groups

**Example:**

For example, to create six VLANs with IDs 4, 22, 40, 41, 42, and 43, you would enter 4, 22, 40-43.

**Step 6** Click **OK**.

The VLANs are added to the list of **Common VLANs** in the **LAN Cloud**.

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## Deleting VLANs

This procedure describes how to delete one or more VLANs from the domain group root or from a specific domain group.

### Before You Begin

Consider the following points before deleting global VLANs in Cisco UCS Central:

- Before deleting global VLANs, ensure that any global service profiles that reference them are updated.

- Before deleting the last global VLAN from a domain group, you should remove its organization permissions.
- If you delete a global VLAN, it is also deleted from all registered Cisco UCS Manager instances that are associated with the domain groups in which the VLAN resides.
- Global service profiles that reference a global VLAN that is deleted in Cisco UCS Central will fail due to insufficient resources. Local service profiles that reference a global VLAN that is deleted will be set to virtual network ID 1.

### Procedure

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- Step 1** On the menu bar, click **Network**.
- Step 2** In the **Navigation** pane, do one of the following:
- To delete one or more VLANs from the domain group root, expand **Domain Group root** and click **Common VLANs**.
  - To delete one or more VLANs from a specific domain group, expand that node and click **Common VLANs**.
- Step 3** In the **Navigation** pane, highlight the VLAN or VLANs you want to delete. You can use Shift+Click or Ctrl+Click to select multiple VLANs.
- Step 4** Right click the highlighted VLAN or VLANs and select **Delete**.
- Step 5** In the **Confirm** dialog box, do one of the following:
- Click **Yes** to immediately delete the VLAN or VLANs.
  - Click **Estimate Impact** to view information about **UCS Domain Impact**, **UCS Central Pending Changes**, and **UCS Central Issues Reported**.
- Step 6** To proceed with the delete operation after choosing **Estimate Impact**, click **Apply Changes**.
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## Assigning VLAN Organization Permissions

This procedure describes how to assign a VLAN organization permissions.



### Note

You can assign organization permissions to only one VLAN at a time. VLAN organization permissions assigned in Cisco UCS Central have no effect in Cisco UCS Manager.

### Procedure

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- Step 1** On the menu bar, click **Network**.
- Step 2** In the **Navigation** pane, do one of the following:

- To assign VLAN permissions in the domain group root, expand the **Domain Group root** and click **Common VLANs**.
- To assign VLAN permissions in a specific domain, expand the node for that domain group and click **Common VLANs**.

**Step 3** Highlight the VLAN to which you want to assign organization permissions.

**Step 4** Right click and select **Properties**.

**Step 5** Click the **Org Permissions** tab in the **Properties** dialog box, then click the **Modify Org Permissions** button.

**Step 6** Expand **root** in the window displayed, and check the checkbox next to the organization or suborganizations you want.

Selecting **root** assigns the VLAN permission to all domain groups under the domain group root. Selecting an organization below the root, for example, **Sub-Org 1**, assigns the VLAN permission only to the organizations that belong to that suborganization. If there are multiple suborganizations below the root, and you want to assign the VLAN permission to more than one, check the checkbox next to the sibling suborganizations.

**Step 7** Click **OK**.

The organizations to which you have assigned the VLAN permissions are displayed in the **Selected:** area of the **Org Permissions** tab in the **Work** pane.

## Modifying VLAN Organization Permissions

You can modify VLAN organization permissions in Cisco UCS Central to either remove all organization permissions, or modify those that are currently in effect. This procedure describes how to modify VLAN permissions for a VLAN in the root organization or sub organization.



### Note

You can modify organization permissions for only one VLAN at a time.

### Procedure

**Step 1** On the menu bar, click **Network**.

**Step 2** In the **Navigation** pane, do one of the following:

- To modify organization permissions for a VLAN in the domain group root, expand **Domain Group root** > **Common VLANs**.

- To modify organizations for a VLAN in a specific domain group, expand that node and click **Common VLANs**.

- Step 3** Highlight the VLAN you want to modify.
- Step 4** Right click the highlighted VLAN, and click **Properties**.
- Step 5** Click the **Org Permissions** tab in the **Properties** dialog box, then click the **Modify Org Permissions** button.
- Step 6** Expand **root** in the window displayed, and check or uncheck the boxes next to the organizations and sub organizations for which you want to modify VLAN permissions.
- Step 7** Click **OK**.
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## Deleting VLAN Org Permission

You must delete the VLAN org permission from the same org you created it in. If not, the delete operation will fail.

### Procedure

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- Step 1** From the **Network** tab, click **Network > VLAN Org Permissions**.  
The **Work** pane displays a list of available org permissions in the system.
- Step 2** Click to select the org permission name you want to delete.
- Step 3** In the **Confirm** dialog box, click **OK**.
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## Global VSAN

Cisco UCS Central enables you to define global VSAN in the SAN cloud, at the domain group root, or at a domain group level. The global VSANs created in Cisco UCS Central are specific to the fabric interconnect where you create them. You can assign a VSAN to either Fabric A or Fabric B, or to both Fabric A and B. Global VSANs are not common VSANs in Cisco UCS Central.

Resolution of global VSANs takes place in Cisco UCS Central prior to deployment of global service profiles that reference them to Cisco UCS Manager. If a global service profile references a global VSAN, and that VSAN does not exist, deployment of the global service profile to Cisco UCS Manager will fail due to insufficient resources. All global VSANs created in Cisco UCS Central must be resolved before deploying that global service profile.

VSANs deployed with a global service profile are visible to Cisco UCS Manager only if a global service profile is deployed that references the VSANs. Once a VSAN deployed with a global service profile becomes available in Cisco UCS Manager, locally-defined service profiles and policies can reference it. A global VSAN is not deleted when a global service profile that references it is deleted.

Global VSANs that are referenced by a global service profile available to a Cisco UCS Manager instance remain available unless they are specifically deleted for use from the domain group. Global VSANs can be

localized in Cisco UCS Manager, in which case they act as local VSANs. Unless a global VSAN is localized, it cannot be deleted from Cisco UCS Manager.

## Creating VSANs

You can create a VSAN with IDs from 1 to 4093, except for those in the following reserved ranges:

- If you plan to use FC switch mode in a Cisco UCS domain, do not configure VSANs with an ID in the range from 3040 to 4078.
- If you plan to use FC end-host mode in a Cisco UCS domain, do not configure VSANs with an ID in the range from 3840 to 4079.



### Important

FCoE VLANs in the SAN cloud and VLANs in the LAN cloud must have different IDs. Using the same ID for an FCoE VLAN in a VSAN and for a VLAN results in a critical fault and traffic disruption for all vNICs and uplink ports using that VLAN. Ethernet traffic is dropped on any VLAN which has an ID that overlaps with an FCoE VLAN ID.

This procedure describes how to create a VSAN in the domain group root or in a specific domain. When you create a VSAN, you can assign it to either fabric A or fabric B, or to both fabric A and B.

### Procedure

- Step 1** On the menu bar, click **Storage**.
- Step 2** In the **Navigation** pane, do one of the following:
  - To add a VSAN to the domain group root, expand **Domain Group root > SAN > SAN Cloud**.
  - To add a VSAN to a specific domain group, expand that node and click **SAN Cloud**.
- Step 3** Right click on **SAN Cloud**, and click **Create VSAN**.  
In the **Create VSAN** dialog box, **Fabric A** is selected by default.
- Step 4** In the **Create VSAN** dialog box, do one of the following:
  - To add the VSAN to only **Fabric A**, enter a **Name**, a **VSAN ID** and an **FCoE VLAN ID**.
  - To add the VSAN to only **Fabric B**, click the **Fabric B** radio button, enter a **Name**, a **VSAN ID**, and an **FCoE VLAN ID**.
  - To add the VSAN to both fabric interconnects, click the **Fabric A and Fabric B** radio button.

When both fabric interconnects are selected, the **Create VSAN** dialog displays **VSAN ID** and **FCoE VLAN ID** fields for both **Fabric A** and **Fabric B** in the lower portion of the dialog box.
- Step 5** Enter a **Name**.
- Step 6** Change the **ID** and **FCoE VLAN ID** values for both **Fabric A** and **Fabric B**, if required.
- Step 7** Choose the **Enabled** radio button in the **FC Zoning Settings** panel to enable Fibre Channel zoning.  
Fibre Channel zoning can be one of the following:

- disabled—The upstream switch configures and controls the Fibre Channel zoning, or Fibre Channel zoning is not implemented on this VSAN.
- enabled—Cisco UCS Manager will configure and control Fibre Channel zoning when the VSAN is deployed.

**Note** Fibre Channel zoning is disabled by default.

**Step 8** Click **OK**

The Cisco UCS Central GUI adds the VSAN to VSANs for **Fabric A** or **Fabric B**, or to VSANs for both **Fabric A** and **Fabric B**.

## Modifying VSANs

You can modify VSANs in Cisco UCS Central to change the VSAN ID, the FCoE VLAN, or the Fibre Connect zoning setting.



**Note**

Fabric interconnect assignments cannot be changed after a VSAN is created.

### Before You Begin

### Procedure

**Step 1** On the menu bar, click **Storage**.

**Step 2** In the **Navigation** pane, do one of the following:

- To modify a VSAN in the domain group root, expand **Domain Group root > SAN Cloud > VSANs > Fabric A** or **> Fabric B** and locate the VSAN you want to modify.
- To modify a VSAN in a specific domain group, expand that node and click **Fabric A** or **Fabric B** and locate the VSAN you want to modify.

**Step 3** Highlight the VSAN, right click and select **Properties**.

**Step 4** In the **Properties** dialog box, change the **ID**, **FCoE VLAN ID**, or **FC Zoning**.

Fibre Channel zoning can be one of the following:

- disabled—The upstream switch configures and controls the Fibre Channel zoning, or Fibre Channel zoning is not implemented on this VSAN.
- enabled—Cisco UCS Manager will configure and control Fibre Channel zoning when the VSAN is deployed.

**Note** Fibre Channel zoning is disabled by default.

**Step 5** Click **OK**.



## Deleting VSANs

This procedure describes how to delete one or more VSANs from the domain group root or from a specific domain group.

### Procedure

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- Step 1** On the menu bar, click **Storage**.
- Step 2** In the **Navigation** pane, do one of the following:
- To delete one or more VSANs from the domain group root, expand **Domain Group root** > **SAN** > **SAN Cloud** > **Fabric A** or > **Fabric B** and click **VSANs**.
  - To delete one or more VSANs from a specific domain group, expand that node to **Fabric A** or **Fabric B** and click **VSANs**.
- Step 3** In the **Navigation** pane, highlight the VSAN or VSANs you want to delete. You can use Shift+Click or Ctrl+Click to select multiple VSANs.
- Step 4** Right click the highlighted VSAN or VSANs and select **Delete**.
- Step 5** In the **Confirm** dialog, do one of the following:
- Click **Yes** to immediately delete the VSAN or VSANs.
  - Click **Estimate Impact** to view information about UCS Domain Impact, UCS Central Pending Changes, and UCS Central Issues Reported.
- Step 6** To proceed with the delete operation after choosing **Estimate Impact**, click **Apply Changes**.
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