Global VLAN and VSAN

This chapter includes the following sections:

Global VLANs

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 available and can be used in Cisco UCS Manager, even if no global service profile with reference to a global VLAN is deployed in that UCS domain. See Enabling Global VLANs in a Cisco UCS Manager Instance. in the Cisco UCS Central CLI Reference Manual.

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

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 or Editing a VLAN

You can create a VLAN at the domain group root or at a specific domain group level, and assign specify the orgs that can access the VLAN.

You can edit **VLAN ID**, **Multicast Policy** and access for control for any selected VLANs. After creating a VLAN in a domain group, you can not change the **Domain Group Location** or the **VLAN Name**.

Step 1 In the Task bar, type **Create VLAN** and press Enter.
This launches the **Create VLAN** dialog box.

Step 2 In **Basic**, click **Domain Group Location** and select the location in which you want to create this VLAN.

Step 3 Enter a **Name** for this VLAN.
VLAN name is case sensitive.

Important Do not use the name **default** when you create a VLAN in Cisco UCS Central. If you want to create a global default VLAN, you may use **globalDefault** for the name.

Step 4 Enter **VLAN ID**.
A VLAN ID can:

- Be between 1 and 3967

  Note If the registered Cisco UCS Domain has UCS Manager version 2.2(4) or above the ID range can be between 1 an 4027.

- Be between 4048 and 4093

- Overlap with other VLAN IDs already defined in other domain groups

Step 5 (Optional) Click **Check VLAN Name Overlap** and **Check VLAN ID Overlap** to identify any overlaps.

Step 6 (Optional) if you want to associate a **Multicast Policy** with this VLAN, enter the multi cast policy name.
Cisco UCS Central identifies the multicast policy and attaches it to the VLAN in the back end.

Step 7 In **Access Control**, click the plus sign to display available orgs.

Step 8 Select the orgs and click the checkmark to apply the selected orgs as **Permitted Orgs** for this VLAN.

Step 9 In **Aliased VLANs**, you can view the existing VLANs to see if a VLAN of the same name already exists.

Step 10 Click **Create**.

Creating or Editing a VLAN Range

Step 1   In the Task bar, type **Create VLAN Range** and press Enter.
This launches the **Create VLAN Range** dialog box.

Step 2   In **Basic**, click **Domain Group Location** and select the location in which you want to create this VLAN.

Step 3   Enter a **Name Prefix** for this VLAN range.

Step 4   Enter **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

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

Step 5   (Optional) Click **Check VLAN Name Overlap** and **Check VLAN ID Overlap** to identify any overlaps.

Step 6   (Optional) if you want to associate a **Multicast Policy** with this VLAN, enter the multi cast policy name.
Cisco UCS Central identifies the multicast policy and attaches it to the VLAN in the back end.

Step 7   In **Access Control**, click the plus sign display available orgs.

Step 8   Select the orgs and click the checkmark to apply the selected orgs as **Permitted Orgs** for this VLAN.

Step 9   In **Aliased VLANs**, you can view the existing VLANs to see if a VLAN of the same name already exists.

Step 10   Click **Create**.

Global VSANs

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.

Global VSANs are available and can be used in Cisco UCS Manager, even if no global service profile with reference to a global VSAN is deployed in that UCS domain. 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 or Editing a VSAN

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.

You can create a VSAN at the domain group root or in a specific domain. You can also assign the VSAN to either fabric A or fabric B, or to both fabric A and B. When you assign the VSAN to both fabrics, both of them must have different VSAN ID and FCoE vLAN ID.

After creating a VSAN, if necessary, you can edit **Fabric Zoning**, **Fabric** assignment, **VSAN ID** and the **FCoE vLAN ID**.

Step 1   In the Task bar, type **Create VSAN** and press Enter.
This launches the **Create vSAN** dialog box.

Step 2   Click **Domain Group Location** and select the location in which you want to create this VSAN.

Step 3   Enter a **Name**.
VSAN name is case sensitive.

Important   Do not use the name **default** when you create a VSAN in Cisco UCS Central. If you want to create a global default VSAN, you may use **globalDefault** for the name.

Step 4   (Optional) Select 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 5   Select the Fabric you want to assign this VSAN.
If you assign the VSAN to both fabrics, enter VSAN ID and FCoE vLAN ID for both fabrics. If not assign the IDs for selected VSAN.

Step 6   Click **Create**.