



Service Profiles

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Service Profiles in UCS Manager

A service profile defines a single server and its storage and networking characteristics. You can create a service profile for Cisco UCS Manager and UCS Mini. When a service profile is deployed to a server, UCS Manager automatically configures the server, adapters, fabric extenders, and fabric interconnects to match the configuration specified in the service profile.

A service profile includes four types of information:

- **Server definition:** Defines the resources (e.g. a specific server or a blade inserted to a specific chassis) that are required to apply to the profile.
- **Identity information:** Includes the UUID, MAC address for each virtual NIC (vNIC), and WWN specifications for each HBA.
- **Firmware revision specifications:** Used when a certain tested firmware revision is required to be installed or for some other reason a specific firmware is used.
- **Connectivity definition:** Configures network adapters, fabric extenders, and parent interconnects, however this information is abstract as it does not include the details of how each network component is configured.

The UCS system provides two types of service profiles: Service profiles that inherit server identity and service profiles that override server identity.

Service Profiles that Override Server Identity

This type of service profile provides the maximum amount of flexibility and control. This profile allows you to override the identity values that are on the server at the time of association and use the resource pools and policies set up in Cisco UCS Manager to automate some administration tasks.

You can disassociate this service profile from one server, then associate it with another server. This re-association can be done either manually or through an automated server pool policy. The burned-in settings, such as UUID and MAC address on the new server are overwritten with the configuration in the service profile. As a result, the change in the server is transparent to your network. You do not need to reconfigure any component or application on your network to begin using the new server.

This profile allows you to take advantage of and manage system resources through resource pools and policies, such as the following:

- Virtualized identity information, including pools of MAC addresses, WWN addresses, and UUIDs
- Ethernet and Fibre Channel adapter profile policies
- Firmware package policies
- Operating system boot order policies

Unless the service profile contains power management policies, a server pool qualification policy, or another policy that requires a specific hardware configuration, you can use the profile for any type of server in the Cisco UCS domain.

You can associate these service profiles with either a rack-mount server or a blade server. The ability to migrate the service profile depends upon whether you choose to restrict migration of the service profile.



Note If you choose not to restrict migration, Cisco UCS Manager does not perform any compatibility checks on the new server before migrating the existing service profile. If the hardware of both servers are not similar, the association might fail.

Service Profiles that Inherit Server Identity

This hardware-based service profile is the simplest to use and create. This profile uses the default values in the server and mimics the management of a rack-mounted server. It is tied to a specific server and cannot be moved or migrated to another server.

You do not need to create pools or configuration policies to use this service profile.

This service profile inherits and applies the identity and configuration information that is present at the time of association, such as the following:

- MAC addresses for the two NICs
- For a converged network adapter or a virtual interface card, the WWN addresses for the two HBAs
- BIOS versions
- Server UUID

**Important**

The server identity and configuration information inherited through this service profile might not have the values burned into the server hardware at the manufacturer if those values were changed before this profile is associated with the server.

Guidelines and Recommendations for Service Profiles

In addition to any guidelines or recommendations that are specific to policies and pools included in service profiles and service profile templates, such as the local disk configuration policy, adhere to the following guidelines and recommendations that impact the ability to associate a service profile with a server:

Limit to the Number of vNICs that Can Be Configured on a Rack-Mount Server

You can configure up to 56 vNICs per supported adapter, such as the Cisco UCS P81E Virtual Interface Card (N2XX-ACPCI01), on any rack-mount server that is integrated with Cisco UCS Manager.

No Power Capping Support for Rack-Mount Servers

Power capping is not supported for rack servers. If you include a power control policy in a service profile that is associated with a rack-mount server, the policy is not implemented.

QoS Policy Guidelines for vNICs

You can only assign a QoS policy to a vNIC if the priority setting for that policy is not set to **fc**, which represents the Fibre Channel system class. You can configure the priority for the QoS policy with any other system class.

QoS Policy Guidelines for vHBAs

You can only assign a QoS policy to a vHBA if the priority setting for that policy is set to **fc**, which represents the Fibre Channel system class.

The Host Control setting for a QoS policy applies to vNICs only. It has no effect on a vHBA.

Methods of Creating Service Profiles

Creating a Service Profile with the Expert Wizard

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profiles**.
- Step 3** Expand the node for the organization where you want to create the service profile.
If the system does not include multitenancy, expand the **root** node.

- Step 4** Right-click the organization and select **Create Service Profile (expert)**.
- Step 5** In the **Identify Service Profile** panel, specify the service profile **Name**, UUID assignment and click **Next**.
You can provide an optional description for this service profile. If the UUID is not available, you can also create a UUID Suffix Pool from this panel.
- Note** To create a service profile quickly, you can click **Finish** after specifying the name. Cisco UCS Manager creates a new service profile with the specified name and all system default values.
- Step 6** (Optional) In the **Networking** panel, specify the required information for the **Dynamic vNIC Connection Policy** and **LAN Connectivity** sections, then click **Next**.
You can create a dynamic vNIC connection policy and LAN connectivity policy from this panel.
- Note** Dynamic vNICs, usNICs, and VMQs are not supported when creating a vNIC for a LAN Connectivity Policy. RoCE, VXLAN, NvGRE are not supported when configuring the Ethernet Adapter Policy.
- Step 7** (Optional) In the **Storage** panel, specify the SAN configuration information such as, **Local Storage Policy**, **SAN Connectivity**, **WWNN** and **VSAN**, then click **Next**.
You can create a local disk configuration policy and SAN connectivity policy from this panel.
- Note** FC vNICs are not supported when configuring vHBA under the Storage Policy.
- Step 8** (Optional) In the **Zoning** panel, specify the required zoning information, then click **Next**.
You can create the vHBA initiator groups from this panel.
- Step 9** (Optional) In the **vNIC/vHBA Placement** panel, specify the placement method and PCI order, then click **Next**.
You can create a placement policy from this panel.
- Step 10** (Optional) In the **Server Boot Order** panel, specify the **Boot Policy** from the drop-down list, then click **Next**.
You can create a boot policy from this panel.
- Step 11** (Optional) In the **Maintenance Policy** panel, specify the maintenance policy, then click **Next**.
You can create a new maintenance policy and specify a maintenance schedule from this panel.
- Step 12** (Optional) In the **Server Assignment** panel, specify the **Server Assignment** from the drop down list and the power state to apply on assignment, then click **Next**.
You can create a server pool or a host firmware package from this panel.
- Step 13** (Optional) In the **Operational Policies** panel, specify the system operational information such as, **BIOS Configuration**, **External IPMI Management Configuration**, **Management IP Address**, **Monitoring Configuration (Thresholds)**, **Power Control Policy Configuration**, and **Scrub Policy**, then click **Finish**.
- Note** To set up an Outband IPv4 address or an Inband IPv4 or IPv6 address, click the respective tabs and complete the required fields.
- If you do not find the policies you need for each of these configurations, you can create them from this panel.
-

Creating a Service Profile that Inherits Server Identity

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profiles**.
- Step 3** Expand the node for the organization where you want to create the service profile.
If the system does not include multitenancy, expand the **root** node.
- Step 4** Right-click the organization and select **Create Service Profile**.
- Step 5** In the **Naming** area of the **Create Service Profile** dialog box, complete the following fields:
- In the **Name** field, enter a unique name that you can use to identify the service profile.

This name can be between 2 and 32 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and this name must be unique across all service profiles and service profile templates within the same organization.
 - In the **Description** field, enter a description of this service profile.
- Step 6** In the **vNICs** area of the **Create Service Profile** dialog box, choose the primary and secondary vNICs.
- Step 7** In the **vHBAs** area of the **Create Service Profile** dialog box, choose the primary and secondary vHBAs.
- Step 8** In the **Boot Order** area of the **Create Service Profile** dialog box, choose the primary and secondary boot devices.
- Step 9** (Optional) In the **Select** column of the **Server Association (optional)** area, click the radio button for a server to associate this service profile with that server.
- Step 10** Click **OK**.
-

Creating a Hardware Based Service Profile for a Blade Server

You cannot move a hardware based service profile to another server.

Procedure

- Step 1** In the **Navigation** pane, click **Equipment**.
- Step 2** Expand **Equipment > Chassis > Chassis Number > Servers**.
- Step 3** Choose the server for which you want to create a hardware based service profile.
- Step 4** In the **Work** pane, click the **General** tab.
- Step 5** In the **Actions** area, click **Create Service Profile**.
- Step 6** In the **Create Service Profile for Server** dialog box, do the following:
- From the **Create Service Profile in Organization** drop-down list, select the organization in which you want to create the service profile.
 - Click the **Hardware Based Service Profile** radio button.
 - In the **Name** field, enter a unique name for the service profile.

This name can be between 2 and 32 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and this name must be unique across all service profiles and service profile templates within the same organization.

- d) If you want Cisco UCS Manager to create vNICs for the service profile, check the **Create Default vNICs** check box.
- e) If you want Cisco UCS Manager to create vHBAs for the service profile, check the **Create Default vHBAs** check box.
- f) Click **OK**.

Cisco UCS Manager inherits and automatically applies the identity and configuration information in the server, creates the service profile, and associates it with the server.

Creating a Hardware Based Service Profile for a Rack-Mount Server

You cannot move a hardware based service profile to another server.

Procedure

- Step 1** In the **Navigation** pane, click **Equipment**.
- Step 2** Expand **Equipment > Rack Mounts > Servers**.
- Step 3** Choose the server for which you want to create a hardware based service profile.
- Step 4** In the **Work** pane, click the **General** tab.
- Step 5** In the **Actions** area, click **Create Service Profile**.
- Step 6** In the **Create Service Profile for Server** dialog box, do the following:
 - a) From the **Create Service Profile in Organization** drop-down list, select the organization in which you want to create the service profile.
 - b) Click the **Hardware Based Service Profile** radio button.
 - c) In the **Name** field, enter a unique name for the service profile.

This name can be between 2 and 32 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and this name must be unique across all service profiles and service profile templates within the same organization.
 - d) If you want Cisco UCS Manager to create vNICs for the service profile, check the **Create Default vNICs** check box.
 - e) If you want Cisco UCS Manager to create vHBAs for the service profile, check the **Create Default vHBAs** check box.
 - f) Click **OK**.

Cisco UCS Manager inherits and automatically applies the identity and configuration information in the server, creates the service profile, and associates it with the server.

Inband Service Profiles

Deleting the Inband Configuration from a Service Profile

This procedure removes the inband management IP address configuration from a service profile. If this action is greyed out, no inband configuration was configured.

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers** > **Service Profiles** > *Service_Profile_Name*.
- Step 3** In the **Work** pane, click the **General** tab.
- Step 4** In the **Actions** area, click **Delete Inband Configuration**.
- Step 5** Click **Yes** in the **Delete** confirmation dialog box.

The inband management IP address configuration for the service profile is deleted.

Service Profile Tasks

Renaming a Service Profile

When you rename a service profile, the following occurs:

- Event logs and audit logs that reference the previous name for the service profile are retained under that name.
- A new audit record is created to log the rename operation.
- All records of faults against the service profile under its previous name are transferred to the new service profile name.



Note You cannot rename a service profile with pending changes.

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers** > **Service Profiles**.
- Step 3** Expand the node for the organization that includes the service profile you want to rename.

If the system does not include multitenancy, expand the **root** node.

- Step 4** Click the service profile you want to rename.
 - Step 5** In the **Work** pane, click the **General** tab.
 - Step 6** In the **Actions** area, click **Rename Service Profile**.
 - Step 7** In the **Rename Service Profile** dialog box, enter the new name for the service profile in the **New Name** field.
This name can be between 2 and 32 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and this name must be unique across all service profiles and service profile templates within the same organization.
 - Step 8** Click **OK**.
-

Cloning a Service Profile

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
 - Step 2** Expand **Servers > Service Profiles**.
 - Step 3** Expand the node for the organization where you want to create the service profile.
If the system does not include multitenancy, expand the **root** node.
 - Step 4** Right-click the service profile you want to clone and select **Create a Clone**.
 - Step 5** In the **Create Clone From Service Profile** dialog box:
 - a) Enter the name you want to use for the new profile in the **Clone Name** field.
This name can be between 2 and 32 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and this name must be unique across all service profiles and service profile templates within the same organization.

This name must be unique within the organization or sub-organization in which you are creating the service profile.
 - b) Click **OK**.
 - Step 6** Navigate to the service profile you just created and make sure that all options are correct.
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Changing the UUID in a Service Profile

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profiles**.
- Step 3** Expand the node for the organization that contains the service profile for which you want to change the UUID.

If the system does not include multitenancy, expand the **root** node.

Step 4 Choose the service profile that requires the UUID for the associated server to be changed.

Step 5 In the **Work** pane, click the **General** tab.

Step 6 In the **Actions** area, click **Change UUID**.

Step 7 From the **UUID Assignment** drop-down list, do one of the following:

Option	Description
Select (pool default used by default)	Assigns a UUID from the default UUID Suffix pool. Continue with Step 9.
Hardware Default	Uses the UUID assigned to the server by the manufacturer. If you choose this option, the UUID remains unassigned until the service profile is associated with a server. At that point, the UUID is set to the UUID value assigned to the server by the manufacturer. If the service profile is later moved to a different server, the UUID is changed to match the new server. Continue with Step 9.
XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX	Uses the UUID that you manually assign. Continue with Step 8.
Pools <i>Pool_Name</i>	Assigns a UUID from the UUID Suffix pool that you select from the list at the bottom of the drop-down list. Each pool name is followed by two numbers in parentheses that show the number of UUIDs still available in the pool and the total number of UUIDs in the pool. Continue with Step 9.

Step 8 (Optional) If you selected the **XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX** option, do the following:

- a) In the **UUID** field, enter the valid UUID that you want to assign to the server which uses this service profile.
- b) To verify that the selected UUID is available, click the **here** link.

Step 9 Click **OK**.

Modifying the Boot Order in a Service Profile

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profiles**.
- Step 3** Expand the node for the organization that includes the service profile for which you want to change the boot order.
- If the system does not include multi-tenancy, expand the **root** node.
- Step 4** Click the service profile for which you want to change the boot order.
- Step 5** In the **Work** pane, click the **Boot Order** tab.
- Step 6** Click **Modify Boot Policy** to change the existing boot policy.
- Step 7** In the **Modify Boot Policy** dialog box, choose one of the following from the **Boot Policy** drop-down list:

Option	Description
Select Boot Policy to use	Assigns the default boot policy to this service profile. Continue with Step 14.
Create a Specific Boot Policy	Enables you to create a local boot policy that can only be accessed by this service profile. Continue with Step 8.
Boot Policies <i>Policy_Name</i>	Assigns an existing boot policy to the service profile. If you choose this option, Cisco UCS Manager displays the details of the policy. If you do not want use any of the existing policies, but instead want to create a policy that all service profiles can access, click Create Boot Policy and continue with Step 2. Otherwise, continue with Step 14.

- Step 8** If you chose to create a boot policy, in the **Create Boot Policy** dialog box, enter a unique name and description for the policy.
- This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
- Step 9** (Optional) To reboot all servers that use this boot policy after you make changes to the boot order, check the **Reboot on Boot Order Change** check box.
- In the Cisco UCS Manager GUI, if the **Reboot on Boot Order Change** check box is checked for a boot policy, and if CD-ROM or Floppy is the last device in the boot order, deleting or adding the device does not directly affect the boot order and the server does not reboot.
- Step 10** (Optional) If desired, check the **Enforce vNIC/vHBA/iSCSI Name** check box.
- If checked, Cisco UCS Manager displays a configuration error and reports whether one or more of the vNICs, vHBAs, or iSCSI vNICs listed in the **Boot Order** table match the server configuration in the service profile.

- If not checked, Cisco UCS Manager uses the vNICs or vHBAs (as appropriate for the boot option) from the service profile.

Step 11 To add a local disk, virtual CD-ROM, or virtual floppy to the boot order, do the following:

- a) Click the down arrows to expand the **Local Devices** area.
- b) Click one of the following links to add the device to the **Boot Order** table:

- **Add Local Disk** or

- **Add Local LUN**
- **Add Local JBOD**
- **Add SD Card**
- **Add Internal USB**
- **Add External USB**
- **Add Embedded Local LUN**
- **Add Embedded Local Disk**

- **Add CD/DVD** or

- **Add Local CD/DVD**
- **Add Local Remote CD/DVD**

In a setup with M5 blade servers, if an ISO is mapped to the KVM console, use only **Add Remote CD/DVD** in **Boot Order**.

- c) Add another boot device to the **Boot Order** table, or click **OK** to finish.

Step 12 To add a LAN boot to the boot order, do the following:

- a) Click the down arrows to expand the **vNICs** area.
- b) Click the **Add LAN Boot** link.
- c) In the **Add LAN Boot** dialog box, enter the name of the vNIC that you want to use for the LAN boot in the **vNIC** field, then click **OK**.
- d) Add another device to the **Boot Order** table, or click **OK** to finish.

Step 13 To add a SAN boot to the boot order, do the following:

- a) Click the down arrows to expand the **vHBAs** area.
- b) Click the **Add SAN Boot** link.
- c) In the **Add San Boot** dialog box, specify the vHBA and type, then click **OK**.
- d) If this vHBA points to a bootable SAN image, click the **Add SAN Boot Target** link and, in the **Add SAN Boot Target** dialog box, specify the boot target LUN, boot target WWPN, and type, then click **OK**.
- e) Add another boot device to the **Boot Order** table, or click **OK** to finish.

Step 14 Click **OK**.

Creating a vNIC for a Service Profile

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profiles**.
- Step 3** Expand the node for the organization that contains the service profile for which you want to create a vNIC.
- Step 4** Expand the service profile for which you want to create a vNIC.
- Step 5** Right-click the **vNICs** node and choose **Create vNICs**.
- Step 6** In the **Create vNIC** dialog box, enter the name, select a **MAC Address Assignment**, and check the **Use vNIC Template** check box if you want to use an existing vNIC template.
- You can also create a MAC pool from this area.
- Step 7** Choose the **Fabric ID**, select the **VLANs** that you want to use, enter the **CDN Name** and **MTU**, and choose a **Pin Group**.
- You can also create a VLAN and a LAN pin group from this area.
- Step 8** In the **Operational Parameters** area, choose a **Stats Threshold Policy**.
- Step 9** In the Adapter Performance Profile area, choose an **Adapter Policy**, **QoS Policy**, and a **Network Control Policy**.
- You can also create an Ethernet adapter policy, QoS policy, and network control policy from this area.
- Step 10** In the Connection Policies area, choose the **Dynamic vNIC**, **usNIC** or **VMQ** radio button, then choose the corresponding policy.
- You can also create a dynamic vNIC, usNIC, or VMQ connection policy from this area.
- Step 11** Click **OK**.
-

Deleting a vNIC from a Service Profile

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profiles**.
- Step 3** Expand the node for the organization that contains the service profile from which you want to delete a vNIC.
- Step 4** Expand the service profile from which you want to delete a vNIC.
- Step 5** Expand the **vNICs** node.
- Step 6** Right-click the vNIC you want to delete and choose **Delete**.
- Step 7** If a confirmation dialog box displays, click **Yes**.
-

Creating a vHBA for a Service Profile

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profiles**.
- Step 3** Expand the node for the organization that contains the service profile for which you want to create a vHBA.
- Step 4** Expand the service profile for which you want to create a vHBA.
- Step 5** Right-click the **vHBAs** node and choose **Create vHBAs**.
- Step 6** In the **Create vHBAs** dialog box, enter the name and optional description.
- Step 7** Choose the **Fabric ID**, **Select VSAN**, **Pin Group**, **Persistent Binding**, and **Max Data Field Size**.
You can also create a VSAN or SAN pin group from this area.
- Step 8** In the **Operational Parameters** area, choose the **Stats Threshold Policy**.
- Step 9** In the **Adapter Performance Profile** area, choose the **Adapter Policy** and **QoS Policy**.
You can also create a fibre channel adapter policy or QoS policy from this area.
- Step 10** Click **OK**.
-

Changing the WWPN for a vHBA

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profiles**.
- Step 3** Expand the node for the organization that contains the service profile for which you want to change the WWPN.
- Step 4** Expand *Service_Profile_Name* > **vHBAs**.
- Step 5** Click the vHBA for which you want to change the WWPN.
- Step 6** In the **Work** pane, click the **General** tab.
- Step 7** In the **Actions** area, click **Change World Wide Name**.
- Step 8** In the **Change World Wide Port Name** dialog box, complete the required fields.
- Step 9** Click **OK**.
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Clearing Persistent Binding for a vHBA

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
 - Step 2** Expand **Servers > Service Profiles**.
 - Step 3** Expand the node for the organization that contains the service profile for which you want to modify the vHBA.
 - Step 4** Expand *Service_Profile_Name* > vHBAs.
 - Step 5** Click the vHBA for which you want to clear the persistent binding.
 - Step 6** In the **Work** pane, click the **General** tab.
 - Step 7** In the **Actions** area, click **Clear Persistent Binding**.
 - Step 8** If a confirmation dialog box displays, click **Yes**.
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Deleting a vHBA from a Service Profile

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
 - Step 2** Expand **Servers > Service Profiles**.
 - Step 3** Expand the node for the organization that contains the service profile from which you want to delete a vHBA.
 - Step 4** Expand the service profile from which you want to delete a vHBA.
 - Step 5** Expand the vHBAs node.
 - Step 6** Right-click the vHBA you want to delete and choose **Delete**.
 - Step 7** If a confirmation dialog box displays, click **Yes**.
-

Adding a vHBA Initiator Group to a Service Profile

Procedure

- Step 1** Expand **Servers > Service Profiles**.
- Step 2** Expand the node for the organization that contains the service profile to which you want to add a vHBA initiator group.

If the system does not include multitenancy, expand the **root** node.
- Step 3** Choose the service profile to which you want to add a vHBA initiator group.
- Step 4** In the **Work** pane, click the **Storage > vHBA Initiator Groups**.
- Step 5** On the icon bar at the right of the **Select vHBA Initiator Groups** table, click **+**.

Step 6 In the **Create vHBA Initiator Group** dialog box, complete the following fields to set the name and description:

Name	Description
Name field	<p>The name of the vHBA initiator group.</p> <p>This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.</p>
Description field	<p>A description of the group.</p> <p>Enter up to 256 characters. You can use any characters or spaces except ` (accent mark), \ (backslash), ^ (carat), " (double quote), = (equal sign), > (greater than), < (less than), or ' (single quote).</p>

Step 7 In the **Select vHBA Initiators** table, check the check box in the **Select** column for each vHBA you want to include in the vHBA initiator group.

Step 8 To add a storage connection policy to the initiator group, choose one of the following options:

- Choose an existing storage connection policy from the **Storage Connection Policy** drop-down list. Continue with Step 10.
- Click the **Create Storage Connection Policy** link if you want to create a new storage connection policy that will be available for use by other vHBA initiator groups within the Cisco UCS domain. For more information, see [Creating a Fibre Channel Storage Connection Policy](#). After you create the storage connection policy, continue with Step 10.
- Choose the **Specific Storage Connection Policy** option to create a storage connection policy that is only available to this vHBA initiator group. Continue with Step 9.

Step 9 In the **Specific Storage Connection Policy** area, complete the following fields to create a storage connection policy that is only available to this vHBA initiator group:

Name	Description
Description field	<p>A description of the policy. Cisco recommends including information about where and when to use the policy.</p> <p>Enter up to 256 characters. You can use any characters or spaces except ` (accent mark), \ (backslash), ^ (carat), " (double quote), = (equal sign), > (greater than), < (less than), or ' (single quote).</p>

Name	Description
Zoning Type field	<p>This can be one of the following:</p> <ul style="list-style-type: none"> • None—Cisco UCS Manager does not configure Fibre Channel zoning. • Single Initiator Single Target—Cisco UCS Manager automatically creates one zone for each vHBA and storage port pair. Each zone has two members. We recommend that you configure this type of zoning unless you expect the number of zones to exceed the maximum supported. • Single Initiator Multiple Targets—Cisco UCS Manager automatically creates one zone for each vHBA. We recommend that you configure this type of zoning if you expect the number of zones to reach or exceed the maximum supported.
FC Target Endpoints table	<p>The Fibre Channel target endpoints associated with this policy. This table contains the following columns and buttons:</p> <ul style="list-style-type: none"> • WWPN column—The World Wide Port Name associated with the endpoint. • Path column—The path to the endpoint. • VSAN column—The VSAN associated with the endpoint. • Add button—Creates a new FC target endpoint. • Delete button—Deletes the selected endpoint. • Properties button—Displays all properties for the selected endpoint.

Step 10 Click **OK**.

Step 11 If a confirmation dialog box displays, click **Yes**.

Deleting a Service Profile

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profiles > Organization_Name**.
- Step 3** Right-click the service profile you want to delete and select **Delete**.
- Step 4** If a confirmation dialog box displays, click **Yes**.
- Step 5** Click **OK**.

Service Profile Association

Associating a Service Profile with a Server or Server Pool

Follow this procedure if you did not associate the service profile with a blade server or server pool when you created it, or to change the blade server or server pool with which a service profile is associated.

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profiles**.
- Step 3** Expand the node for the organization that contains the service profile that you want to associate with a new server or server pool.
- If the system does not include multitenancy, expand the **root** node.
- Step 4** Right-click the service profile you want to associate with a server and select **Associate Service Profile**.
- Step 5** In the **Associate Service Profile** dialog box, select one of the following options:

Option	Description
Server Pool	Select a server pool from the drop-down list. Cisco UCS Manager assigns a server from this pool to the service profile. Continue with Step 7.
Server	Navigate to the desired available server in the navigation tree and select the server which will be assigned to the service profile. Continue with Step 7.
Custom Server	Specifies the chassis and slot that contains the server that will be assigned to the service profile. If the server is not in the slot or is otherwise unavailable, the service profile will be associated with the server when it becomes available. Continue with Step 6.

- Step 6** If you chose **Custom Server**, do the following:
- In the **Chassis Id** field, enter the number of the chassis where the selected server is located.
 - In the **Server Id** field, enter the number of the slot where the selected server is located.
- Step 7** If you want to restrict the migration of the service profile after it is associated with a server, check the **Restrict Migration** check box.
- If you choose not to restrict migration, Cisco UCS Manager does not perform any compatibility checks on the new server before migrating the existing service profile. If the hardware of both servers are not similar, the association might fail.
- Step 8** Click **OK**.

Disassociating a Service Profile from a Server or Server Pool

When you disassociate a service profile, Cisco UCS Manager attempts to shutdown the operating system on the server. If the operating system does not shutdown within a reasonable length of time, Cisco UCS Manager forces the server to shutdown.

Procedure

-
- Step 1** In the **Navigation** pane, click **Servers**.
 - Step 2** Expand **Servers > Service Profiles**.
 - Step 3** Expand the node for the organization that contains the service profile that you want to disassociate from a server or server pool.
If the system does not include multitenancy, expand the **root** node.
 - Step 4** Right-click the service profile you want to disassociate from a server and select **Disassociate Service Profile**.
 - Step 5** In the **Disassociate Service Profile** dialog box, click **Yes** to confirm that you want to disassociate the service profile.
 - Step 6** (Optional) Monitor the status and FSM for the server to confirm that the disassociation completed.
-

Service Profile Templates

Initial and Existing Templates

With a service profile template, you can quickly create several service profiles with the same basic parameters, such as the number of vNICs and vHBAs, and with identity information drawn from the same pools.



Tip If you need only one service profile with similar values to an existing service profile, you can clone a service profile in the Cisco UCS Manager GUI.

For example, if you need several service profiles with similar values to configure servers to host database software, you can create a service profile template, either manually or from an existing service profile. You then use the template to create the service profiles.

Cisco UCS supports the following types of service profile templates:

Initial template

Service profiles created from an initial template inherit all the properties of the template. Service profiles created from an initial service profile template are bound to the template. However, changes to the initial template do not *automatically* propagate to the bound service profiles. If you want to propagate changes to bound service profiles, unbind and rebind the service profile to the initial template.

Updating template

Service profiles created from an updating template inherit all the properties of the template and remain connected to the template. Any changes to the template automatically update the service profiles created from the template.



Note Service profiles that are created from the initial template and normal service profiles fetch the lowest available IDs in the sequential pool when you press **Reset**.

Service profiles created from updating template might attempt to retain the same ID when you press **Reset** even when lower IDs of sequential pool are free.

Creating a Service Profile Template

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers** > **Service Profile Templates**.
- Step 3** Expand the node for the organization where you want to create the service profile template.
If the system does not include multitenancy, expand the **root** node.
- Step 4** Right-click the organization and choose **Create Service Profile Template**.
- Step 5** In the **Identify Service Profile Template** panel, specify the service profile **Name**, **Type**, and **UUID Assignment**, then click **Next**.
You can provide an optional description for this service profile template.
Note To create a service profile template quickly, you can click **Finish** after specifying the name. Cisco UCS Manager creates a new service profile template with the specified name and all system default values.
- Step 6** (Optional) In the **Networking** panel, specify the required information for the **Dynamic vNIC Connection Policy** and **LAN Connectivity** sections, then click **Next**.
You can create a dynamic vNIC connection policy and LAN connectivity policy from this panel.
- Step 7** (Optional) In the **Storage** panel, specify the SAN configuration information such as, **Local Storage Policy**, **SAN Connectivity**, **WWNN**, and **vHBAs**, then click **Next**.
You can create a local disk configuration policy and SAN connectivity policy from this panel.
- Step 8** (Optional) In the **Zoning** panel, specify the required zoning information, then click **Next**.
You can create the vHBA initiator groups from this panel.
- Step 9** (Optional) In the **vNIC/vHBA Placement** panel, specify the placement method and PCI order, then click **Next**.
You can create a placement policy from this panel.
- Step 10** (Optional) In the **Server Boot Order** panel, specify the **Boot Policy** from the drop-down list, then click **Next**.

You can create a boot policy from this panel.

Step 11 (Optional) In the **Maintenance Policy** panel, specify the maintenance policy, then click **Next**.

You can create a new maintenance policy and specify a maintenance schedule from this panel.

Step 12 (Optional) In the **Server Assignment** panel, specify the **Pool Assignment** from the drop down list and the power state to apply on assignment, then click **Next**.

You can create a server pool or a host firmware package from this panel.

Step 13 (Optional) In the **Operational Policies** panel, specify the system operational information such as, **BIOS Configuration**, **External IPMI Management Configuration**, **Management IP Address**, **Monitoring Configuration (Thresholds)**, **Power Control Policy Configuration**, and **Scrub Policy**, then click **Finish**.

Note To set up an Outband IPv4 address or an Inband IPv4 or IPv6 address, click the respective tabs and complete the required fields.

If you do not find the policies you need for each of these configurations, you can create them from this panel.

Creating One or More Service Profiles from a Service Profile Template

Procedure

Step 1 In the **Navigation** pane, click **Servers**.

Step 2 Expand **Servers > Service Profile Templates**.

Step 3 Expand the node for the organization that contains the service profile template that you want to use as the basis for your service profiles.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click the service profile template from which you want to create the profiles and select **Create Service Profiles From Template**.

Step 5 In the **Create Service Profiles From Template** dialog box, complete the required fields.

Step 6 Click **OK**.

Creating a Template Based Service Profile for a Blade Server

Before you begin

A qualified service profile template with the desired values must exist in Cisco UCS Manager.

Procedure

Step 1 In the **Navigation** pane, click **Equipment**.

- Step 2** Expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.
- Step 3** Choose the server for which you want to create a template based service profile.
- Step 4** In the **Work** pane, click the **General** tab.
- Step 5** In the **Actions** area, click **Create Service Profile**.
- Step 6** In the **Create Service Profile for Server** dialog box, do the following:
- Click the **Template Based Service Profile** radio button.
 - In the **Name** field, enter a unique name for the service profile.

This name can be between 2 and 32 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and this name must be unique across all service profiles and service profile templates within the same organization.
 - From the **Service Profile Template** drop-down list, select the template from which you want to create the service profile associated with this server.

Note The drop-down list only lists service profile templates compatible with the selected blade server.
 - Click **OK**.
-

Creating a Template Based Service Profile for a Rack-Mount Server

Before you begin

A qualified service profile template with the desired values must exist in Cisco UCS Manager.

Procedure

- Step 1** In the **Navigation** pane, click **Equipment**.
- Step 2** Expand **Equipment** > **Rack Mounts** > **Servers**.
- Step 3** Choose the server for which you want to create a template based service profile.
- Step 4** In the **Work** pane, click the **General** tab.
- Step 5** In the **Actions** area, click **Create Service Profile**.
- Step 6** In the **Create Service Profile for Server** dialog box, do the following:
- Click the **Template Based Service Profile** radio button.
 - In the **Name** field, enter a unique name for the service profile.

This name can be between 2 and 32 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and this name must be unique across all service profiles and service profile templates within the same organization.
 - From the **Service Profile Template** drop-down list, select the template from which you want to create the service profile associated with this server.
 - Click **OK**.
-

Creating a Service Profile Template from a Service Profile

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
 - Step 2** Expand **Servers > Service Profiles**.
 - Step 3** Expand the node for the organization that contains the service profile that you want to use as the basis for your template.
If the system does not include multitenancy, expand the **root** node.
 - Step 4** Right-click the service profile from which you want to create the template and select **Create a Service Profile Template**.
 - Step 5** In the **Create Template From Service Profile** dialog box, complete the required fields.
 - Step 6** Click **OK**.
-

Setting an Asset Tag for a Service Profile

Procedure

- Step 1** Navigate to **Servers > Service Profiles**
 - Step 2** Expand the node for which you want to create the asset tag.
If the system does not include multitenancy expand the **root** node
 - Step 3** In the Work pane, click the **General** tab.
 - Step 4** In the **Asset Tag** field, enter a name to identify the server.
The name can be between 2 to 32 alphanumeric characters. You can use space or any special characters other than ` (accent mark), \ (backslash), ^ (carat), " (double quote), = (equal sign), > (greater than), < (less than), or ' (single quote).
 - Step 5** Click **Save Changes**.
 - Step 6** Reboot the server manually for the changes to be in effect.
-

Service Profile Template Tasks

Binding a Service Profile to a Service Profile Template

You can bind a service profile to a service profile template. When you bind the service profile to a template, Cisco UCS Manager configures the service profile with the values defined in the service profile template. If the existing service profile configuration does not match the template, Cisco UCS Manager reconfigures the

service profile. You can only change the configuration of a bound service profile through the associated template.

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
 - Step 2** Expand **Servers > Service Profiles**.
 - Step 3** Expand the node for the organization that includes the service profile you want to bind.
If the system does not include multi-tenancy, expand the **root** node.
 - Step 4** Click the service profile you want to bind.
 - Step 5** In the **Work** pane, click the **General** tab.
 - Step 6** In the **Actions** area, click **Bind to a Template**.
 - Step 7** In the **Bind to a Service Profile Template** dialog box, do the following:
 - a) From the **Service Profile Template** drop-down list, choose the template to which you want to bind the service profile.
 - b) Click **OK**.
-

Unbinding a Service Profile from a Service Profile Template

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
 - Step 2** Expand **Servers > Service Profiles**.
 - Step 3** Expand the node for the organization that includes the service profile you want to unbind.
If the system does not include multi-tenancy, expand the **root** node.
 - Step 4** Click the service profile you want to unbind.
 - Step 5** In the **Work** pane, click the **General** tab.
 - Step 6** In the **Actions** area, click **Unbind from the Template**.
 - Step 7** If a confirmation dialog box displays, click **Yes**.
-

Changing the UUID in a Service Profile Template

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profile Templates**.

Step 3 Expand the node for the organization that contains the service profile template for which you want to change the UUID.

If the system does not include multitenancy, expand the **root** node.

Step 4 Choose the service profile template whose UUID assignment you want to change.

Step 5 In the **Work** pane, click the **General** tab.

Step 6 In the **Actions** area, click **Change UUID**.

Step 7 From the **UUID Assignment** drop-down list, choose one of the following:

Option	Description
Select (pool default used by default)	Assigns a UUID from the default UUID Suffix pool.
Hardware Default	Uses the UUID assigned to the server by the manufacturer. If you choose this option, the UUID remains unassigned until the service profile is associated with a server. At that point, the UUID is set to the UUID value assigned to the server by the manufacturer. If the service profile is later moved to a different server, the UUID is changed to match the new server.
Pools <i>Pool_Name</i>	Assigns a UUID from the UUID Suffix pool that you select from the list at the bottom of the drop-down list. Each pool name is followed by two numbers in parentheses that show the number of UUIDs still available in the pool and the total number of UUIDs in the pool.

Step 8 Click **OK**.

Resetting the UUID Assigned to a Service Profile from a Pool in a Service Profile Template

If you change the UUID suffix pool assigned to an updating service profile template, Cisco UCS Manager does not change the UUID assigned to a service profile created with that template. If you want Cisco UCS Manager to assign a UUID from the newly assigned pool to the service profile, and therefore to the associated server, you must reset the UUID. You can only reset the UUID assigned to a service profile and its associated server under the following circumstances:

- The service profile was created from an updating service profile template and includes a UUID assigned from a UUID suffix pool.
- The UUID suffix pool name is specified in the service profile. For example, the pool name is not empty.
- The UUID value is not 0, and is therefore not derived from the server hardware.

Procedure

Step 1 In the **Navigation** pane, click **Servers**.

Step 2 Expand **Servers > Service Profiles**.

- Step 3** Expand the node for the organization that contains the service profile for which you want to reset the UUID. If the system does not include multitenancy, expand the **root** node.
- Step 4** Choose the service profile that requires the UUID for the associated server to be reset to a different UUID suffix pool.
- Step 5** In the **Work** pane, click the **General** tab.
- Step 6** In the **Actions** area, click **Reset UUID**.
- If this action is not visible, then the UUID configuration in the service profile does not meet the requirements for resetting a UUID.
- Step 7** If a confirmation dialog box displays, click **Yes**.
- Step 8** Click **OK**
-

Resetting the MAC Address Assigned to a vNIC from a Pool in a Service Profile Template

If you change the MAC pool assigned to an updating service profile template, Cisco UCS Manager does not change the MAC address assigned to a service profile created with that template. If you want Cisco UCS Manager to assign a MAC address from the newly assigned pool to the service profile, and therefore to the associated server, you must reset the MAC address. You can only reset the MAC address assigned to a service profile and its associated server under the following circumstances:

- The service profile was created from an updating service profile template and includes a MAC address assigned from a MAC pool.
- The MAC pool name is specified in the service profile. For example, the pool name is not empty.
- The MAC address value is not 0, and is therefore not derived from the server hardware.

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profiles**.
- Step 3** Expand the node for the organization that contains the service profile for which you want to reset the MAC address.
- If the system does not include multitenancy, expand the **root** node.
- Step 4** Expand *Service_Profile_Name* > vNICs.
- Step 5** Click the vNIC for which you want to reset the MAC address.
- Step 6** In the **Work** pane, click the **General** tab.
- Step 7** In the **Actions** area, click **Reset MAC Address**.
- Step 8** If a confirmation dialog box displays, click **Yes**.
- Step 9** Click **OK**.
-

Resetting the WWPN Assigned to a vHBA from a Pool in a Service Profile Template

If you change the WWPN pool assigned to an updating service profile template, Cisco UCS Manager does not change the WWPN assigned to a service profile created with that template. If you want Cisco UCS Manager to assign a WWPN from the newly assigned pool to the service profile, and therefore to the associated server, you must reset the WWPN. You can only reset the WWPN assigned to a service profile and its associated server under the following circumstances:

- The service profile was created from an updating service profile template and includes a WWPN assigned from a WWPN pool.
- The WWPN pool name is specified in the service profile. For example, the pool name is not empty.
- The WWPN value is not 0, and is therefore not derived from the server hardware.

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
 - Step 2** Expand **Servers > Service Profiles**.
 - Step 3** Expand the node for the organization that contains the service profile for which you want to reset the WWPN.
If the system does not include multitenancy, expand the **root** node.
 - Step 4** Expand *Service_Profile_Name* > **vHBAs**.
 - Step 5** Click the vHBA for which you want to reset the WWPN.
 - Step 6** In the **Work** pane, click the **General** tab.
 - Step 7** In the **Actions** area, click **Reset WWPN**.
 - Step 8** If a confirmation dialog box displays, click **Yes**.
 - Step 9** Click **OK**.
-

Deleting the Inband Configuration from a Service Profile Template

This procedure removes the inband management IP address configuration from a service profile template. If this action is greyed out, no inband configuration was configured.

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profile Template > Service_Profile_Template_Name**.
- Step 3** In the **Work** pane, click the **General** tab.
- Step 4** In the **Actions** area, click **Delete Inband Configuration**.
- Step 5** Click **Yes** in the **Delete** confirmation dialog box.

The inband management IP address configuration for the service profile template is deleted.

Service Profile Association

Associating a Service Profile with a Server or Server Pool

Follow this procedure if you did not associate the service profile with a blade server or server pool when you created it, or to change the blade server or server pool with which a service profile is associated.

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profiles**.
- Step 3** Expand the node for the organization that contains the service profile that you want to associate with a new server or server pool.

If the system does not include multitenancy, expand the **root** node.

- Step 4** Right-click the service profile you want to associate with a server and select **Associate Service Profile**.
- Step 5** In the **Associate Service Profile** dialog box, select one of the following options:

Option	Description
Server Pool	Select a server pool from the drop-down list. Cisco UCS Manager assigns a server from this pool to the service profile. Continue with Step 7.
Server	Navigate to the desired available server in the navigation tree and select the server which will be assigned to the service profile. Continue with Step 7.
Custom Server	Specifies the chassis and slot that contains the server that will be assigned to the service profile. If the server is not in the slot or is otherwise unavailable, the service profile will be associated with the server when it becomes available. Continue with Step 6.

- Step 6** If you chose **Custom Server**, do the following:
- In the **Chassis Id** field, enter the number of the chassis where the selected server is located.
 - In the **Server Id** field, enter the number of the slot where the selected server is located.
- Step 7** If you want to restrict the migration of the service profile after it is associated with a server, check the **Restrict Migration** check box.

If you choose not to restrict migration, Cisco UCS Manager does not perform any compatibility checks on the new server before migrating the existing service profile. If the hardware of both servers are not similar, the association might fail.

Step 8 Click OK.

Associating a Service Profile Template with a Server Pool

Follow this procedure if you did not associate the service profile template with a server pool when you created it, or to change the server pool with which a service profile created from this template is associated.

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profile Templates**.
- Step 3** Expand the node for the organization that contains the service profile that you want to associate with a server pool.
- If the system does not include multitenancy, expand the **root** node.
- Step 4** Right-click the service profile template you want to associate with a server pool and select **Associate with Server Pool**.
- The **Associate with Server Pool** dialog box opens.
- Step 5** From the **Server Pool** section of the **Pool Assignment** drop-down list, select a server pool.
- If you select **Assign Later**, the service profile template is not associated with a server pool.
- Step 6** (Optional) From the **Select Qualification** drop-down list, select the server pool policy qualifications you want to apply to a server that is associated with a service profile created from this template.
- Step 7** Click OK.
-

Disassociating a Service Profile from a Server or Server Pool

When you disassociate a service profile, Cisco UCS Manager attempts to shutdown the operating system on the server. If the operating system does not shutdown within a reasonable length of time, Cisco UCS Manager forces the server to shutdown.

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
- Step 2** Expand **Servers > Service Profiles**.
- Step 3** Expand the node for the organization that contains the service profile that you want to disassociate from a server or server pool.

If the system does not include multitenancy, expand the **root** node.

- Step 4** Right-click the service profile you want to disassociate from a server and select **Disassociate Service Profile**.
 - Step 5** In the **Disassociate Service Profile** dialog box, click **Yes** to confirm that you want to disassociate the service profile.
 - Step 6** (Optional) Monitor the status and FSM for the server to confirm that the disassociation completed.
-

Disassociating a Service Profile Template from its Server Pool

Procedure

- Step 1** In the **Navigation** pane, click **Servers**.
 - Step 2** Expand **Servers > Service Profile Templates**.
 - Step 3** Expand the node for the organization that contains the service profile that you want to disassociate from its server pool.

If the system does not include multitenancy, expand the **root** node.
 - Step 4** Right-click the service profile template you want to disassociate from its server pool and select **Disassociate Template**.
 - Step 5** If a confirmation dialog box displays, click **Yes**.
-

