



Configuring Cisco UCS Server Pools and Policies

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UUID Pools

A UUID pool is a collection of SMBIOS (Systems Management Built In Operating System) UUIDs (Universally Unique Identifiers) that are available to be assigned to servers. The first number of digits that constitute the prefix of the UUID are fixed. The remaining digits, the UUID suffix, are variable. A UUID pool ensures that these variable values are unique for each server associated with a service profile which uses that particular pool to avoid conflicts.

If you use UUID pools in service profiles, you do not have to manually configure the UUID of the server associated with the service profile.

Creating a UUID Pool

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- Step 1** On the menu bar, choose **Physical > Compute**.
 - Step 2** In the left pane, expand **Multi-Domain Managers**.
 - Step 3** In the left pane, expand **UCS Central Accounts** and then click the Cisco UCS Central account.
 - Step 4** In the right pane, click the **Organizations** tab.
 - Step 5** Click the organization in which you want to create the pool and then click **View Details**.
 - Step 6** Click the **UUID Pools** tab.
 - Step 7** Click **Add**.
 - Step 8** In the **Add UUID Pool** dialog box, complete the following fields:

Name	Description
Name field	A unique name for the pool.
Description field	A description for the pool.
Prefix drop-down list	Choose how the prefix is created. This can be one of the following: <ul style="list-style-type: none"> • Derived—The system creates the prefix. • Other—You specify the desired prefix. If you select this option, a text field displays where you can enter the desired prefix, in the format XXXXXXXX-XXXX-XXXX.
From field	The first UUID address in the block.
Size field	The number of UUID addresses in the block.
ID Range Qualification Policy drop-down list	Choose the ID Range Qualification Policy.

Step 9 Click **Submit**.

Adding an Address Block to a UUID Pool

- Step 1** On the menu bar, choose **Physical > Compute**.
- Step 2** In the left pane, expand **Multi-Domain Managers**.
- Step 3** In the left pane, expand **UCS Central Accounts** and then click the Cisco UCS Central account.
- Step 4** In the right pane, click the **Organizations** tab.
- Step 5** Click the organization in which you want to modify the pool and then click **View Details**.
- Step 6** Click the **UUID Pools** tab.
- Step 7** Click the pool to which you want to add a block of addresses and then click **Add UUID Addresses Block**.
- Step 8** In the **Add UUID Pool Block** dialog box, complete the following fields:

Name	Description
From field	The first UUID address in the block.
Size field	The number of UUID addresses in the block.
ID Range Qualification Policy drop-down list	Choose the ID Range Qualification Policy

Step 9 Click **Submit**.

Server Pools

A server pool contains a set of servers. These servers typically share the same characteristics. Those characteristics can be their location in the chassis, or an attribute such as server type, amount of memory, local storage, type of CPU, or local drive configuration. You can manually assign a server to a server pool, or use server pool policies and server pool policy qualifications to automate the assignment.

If your system implements multitenancy through organizations, you can designate one or more server pools to be used by a specific organization. For example, a pool that includes all servers with two CPUs could be assigned to the Marketing organization, while all servers with 64 GB memory could be assigned to the Finance organization.

A server pool can include servers from any chassis in the system. A given server can belong to multiple server pools.

Creating a Server Pool

- Step 1** On the menu bar, choose **Physical > Compute**.
- Step 2** In the left pane, expand **Multi-Domain Managers**.
- Step 3** In the left pane, expand **UCS Central Accounts** and then click the Cisco UCS Central account.
- Step 4** In the right pane, click the **Organizations** tab.
- Step 5** Click the organization in which you want to create the pool and then click **View Details**.
- Step 6** Click the **Server Pools** tab.
- Step 7** Click **Add**.
- Step 8** In the **Add Server Pool** dialog box, add a name and description for the pool.
- Step 9** (Optional) In the **Servers** field, do the following to add servers to the pool:
- Click **Select**.
 - On the **Select Items** page, check the check boxes for the servers that you want to add to the pool.
 - Click **Select**.
- Step 10** Click **Add**.
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Server Pool Qualification Policy

The Server Pool Qualification policy qualifies servers based on the servers available in the system. You can use this policy to qualify servers according to

- Server-related criteria such as model or type, product family, or chassis location
- Domain-related criteria such as domain group or domain name
- Processor-related criteria such as CPU cores, type, and configuration
- Storage configuration and capacity
- Memory type and configuration
- Other criteria such as adapter type, owner, site, or IP address

Based on the criteria added in the Server Pool Qualification policy, the servers qualified can then be used in the create server pool operation.

Creating a Server Pool Qualification Policy

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- Step 1** On the menu bar, choose **Physical > Compute**.
- Step 2** In the left pane, expand **Multi-Domain Managers**.
- Step 3** In the left pane, expand **UCS Central Accounts** and then click the **Cisco UCS Central** account.
- Step 4** In the right pane, click the **Organizations** tab.
- Step 5** Click the organization in which you want to create the policy and then click **View Details**.
- Step 6** Click the **Server Pool Qualification Policy** tab.
- Step 7** Click **Add**.
The **Create Server Pool Qualification Policy** dialog box appears.
- Step 8** In the **Create Server Pool Qualification Policy Name** screen, type a name for the policy, an optional description, and an optional Server Model/PID. Click **Next**.
- Step 9** In the **Domain** screen, click the plus (+) sign to optionally add the domain qualifier.
The **Add Entry to Domain Qualifier** screen appears. You can qualify servers based on the following criteria:
- Owner - The owner of the servers.
 - Site - The site that the servers belong to.
 - IP Address Range - The IP address range of the servers.
 - Blade Servers - The chassis IDs and slot IDs of the servers.
 - Rack Servers - The rack IDs of the servers.
 - Domain Group - The domain groups that the servers belong to.
 - Domain Name - The domains that the servers belong to.

- Product Family - The product family of the servers.

- Step 10** In the **Add Entry to Domain Qualifier** screen, type a name for the qualifier in the **Name** box. Check the criteria you want to add. Then click the plus (+) sign to add the criteria. After adding the domain qualification option, click **Next**.
- Step 11** In the **Hardware - Processors** screen, check the **Processor** box to optionally add processor-related criteria. Then click **Next**.
- Step 12** In the **Hardware - Memory** screen, check the **Memory** box to optionally add memory-related criteria. Then click **Next**.
- Step 13** In the **Hardware - Storage** screen, check the **Storage** box to optionally add storage-related criteria. Then click **Next**.
- Step 14** In the **Hardware - Adapter** screen, check the **Adapter** box to optionally add the adapter type, number of adapters, and Model/PID.
- Step 15** After adding all the criteria, click **Submit**.
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Editing or Deleting a Server Pool Qualification Policy

- Step 1** On the menu bar, choose **Physical > Compute**.
- Step 2** In the left pane, expand **Multi-Domain Managers**.
- Step 3** In the left pane, expand **UCS Central Accounts** and then click the **Cisco UCS Central** account.
- Step 4** In the right pane, click the **Organizations** tab.
- Step 5** Click the organization in which you want to modify or delete a server qualification policy and then click **View Details**.
- Step 6** Click the **Server Pool Qualification Policy** tab.
- Step 7** To delete a server pool qualification policy, choose the policy and click **Delete**. A confirmation message appears. Click **Delete** again.
- Step 8** To modify an existing server pool qualification policy, choose the policy and click **Edit**. The **Edit Server Pool Qualification Policy** dialog box appears. It contains the following screens:
- Create Server Pool Policy Qualification Name
 - Domain
 - Hardware - Processors
 - Hardware - Memory
 - Hardware - Storage
 - Hardware - Adapter
- Step 9** After modifying existing qualification options or adding new options, click **Submit**.
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Boot Policy



Important Cisco UCS Manager Release 3.1(2) and later releases do not support Cisco UCS M-Series Servers.

The Cisco UCS Manager enables you to create a boot policy for blade servers, rack servers, and modular servers.

The Cisco UCS Manager boot policy overrides the boot order in the BIOS setup menu and determines the following:

- Selection of the boot device
- Location from which the server boots
- Order in which boot devices are invoked

For example, you can have associated servers boot from a local device, such as a local disk or CD-ROM (VMedia), or you can select a SAN boot or a LAN (PXE) boot.

You can either create a named boot policy to associate with one or more service profiles, or create a boot policy for a specific service profile. A boot policy must be included in a service profile, and that service profile must be associated with a server for it to take effect. If you do not include a boot policy in a service profile, Cisco UCS Manager applies the default boot policy.



Note Changes to a boot policy might be propagated to all servers created with an updating service profile template that includes that boot policy. Re-association of the service profile with the server to rewrite the boot order information in the BIOS is automatically triggered.

You can also specify the following for the boot policy:

- Local LUN name. The name specified is the logical name in the storage profile, not the deployed name. For modular servers, you can specify both a primary and secondary name. For other servers, specify only a primary name. Specifying a secondary name results in a configuration error.
 - Specific JBOD disk number for booting from JBOD disks. This is not supported for the Modular servers.
 - Any LUN for backward compatibility; however, we do not recommend this. Other devices must not have bootable images to ensure a successful boot.
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SAN Boot

You can configure a boot policy to boot one or more servers from an operating system image on the SAN. The boot policy can include a primary and a secondary SAN boot. If the primary boot fails, the server attempts to boot from the secondary.

Cisco recommends using a SAN boot, because it offers the most service profile mobility within the system. If you boot from the SAN when you move a service profile from one server to another, the new server boots from the same operating system image. Therefore, the new server appears as the same server to the network.

To use a SAN boot, ensure that the following is configured:

- The Cisco UCS domain must be able to communicate with the SAN storage device that hosts the operating system image.
- A boot target LUN (Logical Unit Number) on the device where the operating system image is located.



Note SAN boot is not supported on Gen-3 Emulex adapters on Cisco UCS blade and rack servers.

Creating a SAN Boot Policy



Tip We recommend that the boot order in a boot policy include either a local disk or a SAN LUN, but not both, to avoid the possibility of the server booting from the wrong storage type. If you configure a local disk and a SAN LUN for the boot order storage type and the operating system or logical volume manager (LVM) is configured incorrectly, the server boots from the local disk rather than the SAN LUN.

For example, on a server with Red Hat Linux installed, where the LVM is configured with default LV names and the boot order is configured with a SAN LUN and a local disk, Linux reports that there are two LVs with the same name and boots from the LV with the lowest SCSI ID, which could be the local disk.

Before You Begin



Note If you are creating a boot policy that boots the server from a SAN LUN and you require reliable SAN boot operations, we recommend that you first remove all local disks from servers associated with a service profile that includes the boot policy.

- Step 1** On the menu bar, choose **Physical > Compute**.
- Step 2** In the left pane, expand **Multi-Domain Managers**.
- Step 3** In the left pane, expand **UCS Central Accounts** and then click the Cisco UCS Central account.
- Step 4** In the right pane, click the **Organizations** tab.
- Step 5** Click the organization in which you want to create the policy and then click **View Details**.
- Step 6** Click the **Boot Policies** tab.
- Step 7** Click **Add**.
- Step 8** In the **Add Boot Policy** dialog box, complete the following fields:

Name	Description
Name field	A unique name for the policy.
Description field	A description for the policy.

Name	Description
Reboot on Order Change check box	<p>If checked, reboots all servers that use this boot policy after you change the boot order.</p> <p>If this check box is checked 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.</p>
Enforce vNIC/vHBA Name check box	<p>If checked, a configuration error is displayed if one or more of the vNICs, vHBAs, or iSCSI vNICs listed in the Boot Order table matches the server configuration in the service profile.</p> <p>If this check box is not checked, the policy uses the vNICs, vHBAs, or iSCSI vNICs (as appropriate for the boot option) from the server configuration in the service profile. It does not report whether the vNICs, vHBAs, or iSCSI vNICs specified in the boot policy match the server configuration in the service profile.</p>

Step 9 In the **Add Boot Device** area, check **Add SAN Boot**.

Step 10 In the **Primary vHBA** field, enter the name of the vHBA that you want to use as the first address defined for the SAN boot location.

Step 11 In the **Secondary vHBA** field, enter the name of the vHBA that you want to use as the second address defined for the SAN boot location.

Step 12 (Optional) If either or both of the primary and secondary vHBAs points to a bootable SAN image, check the appropriate **Add SAN Boot Target** check box for that vHBA and complete the following fields:

Name	Description
Storage Account Type drop-down list	Choose the type of storage account where the bootable SAN image is located. This field is only available for the primary vHBA.
Storage Account Name drop-down list	Choose the storage account where the bootable SAN image is located.
Primary Boot Target LUN field	The LUN that corresponds to the location of the boot image.
Primary Boot Target WWPN field	Click Select and choose the WWPN that corresponds to the location of the boot image.
Secondary Boot Target LUN field	The LUN that corresponds to the location of the boot image.
Secondary Boot Target WWPN field	Click Select and choose the WWPN that corresponds to the location of the boot image.

Step 13 Click **Submit**.

LAN Boot

You can configure a boot policy to boot one or more servers from a centralized provisioning server on the LAN. A LAN (or PXE) boot is frequently used to install operating systems on a server from that LAN server.

You can add more than one type of boot device to a LAN boot policy. For example, you could add a local disk or virtual media boot as a secondary boot device.

Creating a LAN Boot Policy

Step 1 On the menu bar, choose **Physical > Compute**.

Step 2 In the left pane, expand **Multi-Domain Managers**.

Step 3 In the left pane, expand **UCS Central Accounts** and then click the Cisco UCS Central account.

Step 4 In the right pane, click the **Organizations** tab.

Step 5 Click the organization in which you want to create the policy and then click **View Details**.

Step 6 Click the **Boot Policies** tab.

Step 7 Click **Add**.

Step 8 In the **Add Boot Policy** dialog box, complete the following fields:

Name	Description
Name field	A unique name for the policy.
Description field	A description for the policy.
Reboot on Order Change check box	<p>If checked, reboots all servers that use this boot policy after you change the boot order.</p> <p>If this check box is checked 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.</p>

Name	Description
Enforce vNIC/vHBA Name check box	<p>If checked, a configuration error is displayed if one or more of the vNICs, vHBAs, or iSCSI vNICs listed in the Boot Order table matches the server configuration in the service profile.</p> <p>If this check box is not checked, the policy uses the vNICs, vHBAs, or iSCSI vNICs (as appropriate for the boot option) from the server configuration in the service profile. It does not report whether the vNICs, vHBAs, or iSCSI vNICs specified in the boot policy match the server configuration in the service profile.</p>

- Step 9** In the **Add Boot Device** area, check the **Add LAN Boot** check box.
- Step 10** In the **Primary vNIC** field, enter the name of the vNIC that you want to use as the first address defined for the LAN boot location.
- Step 11** In the **Secondary vNIC** field, enter the name of the vNIC that you want to use as the second address defined for the LAN boot location.
- Step 12** Click **Submit**.
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Local Disk Boot

If a server has a local drive, you can configure a boot policy to boot the server from that device or from any of the following local devices:

- Local hard disk drive
- SD card
- Internal USB
- External USB

Creating a Local Disk Boot Policy

You can add more than one type of boot device to a boot policy. For example, you could add a local disk boot as a secondary boot device.

- Step 1** On the menu bar, choose **Physical > Compute**.
- Step 2** In the left pane, expand **Multi-Domain Managers**.
- Step 3** In the left pane, expand **UCS Central Accounts** and then click the Cisco UCS Central account.
- Step 4** In the right pane, click the **Organizations** tab.
- Step 5** Click the organization in which you want to create the policy and then click **View Details**.
- Step 6** Click the **Boot Policies** tab.
- Step 7** Click **Add**.
- Step 8** In the **Add Boot Policy** dialog box, complete the following fields:

Name	Description
Name field	A unique name for the policy.
Description field	A description for the policy.
Reboot on Order Change check box	<p>If checked, reboots all servers that use this boot policy after you change the boot order.</p> <p>If this check box is checked 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.</p>
Enforce vNIC/vHBA Name check box	<p>If checked, a configuration error is displayed if one or more of the vNICs, vHBAs, or iSCSI vNICs listed in the Boot Order table matches the server configuration in the service profile.</p> <p>If this check box is not checked, the policy uses the vNICs, vHBAs, or iSCSI vNICs (as appropriate for the boot option) from the server configuration in the service profile. It does not report whether the vNICs, vHBAs, or iSCSI vNICs specified in the boot policy match the server configuration in the service profile.</p>

- Step 9** In the **Add Boot Device** area, check the **Add Local Disk** check box.
- Step 10** Click **Submit**.

Virtual Media Boot

You can configure a boot policy to boot one or more servers from a virtual media device that is accessible from the server. A virtual media device mimics the insertion of a physical CD/DVD disk (read-only) or floppy disk (read-write) into a server. This type of server boot is typically used to manually install operating systems on a server.

Creating a Virtual Media Boot Policy

You can add more than one type of boot device to a boot policy. For example, you could add a local disk boot as a secondary boot device.

- Step 1** On the menu bar, choose **Physical > Compute**.
- Step 2** In the left pane, expand **Multi-Domain Managers**.
- Step 3** In the left pane, expand **UCS Central Accounts** and then click the Cisco UCS Central account.
- Step 4** In the right pane, click the **Organizations** tab.
- Step 5** Click the organization in which you want to create the policy and then click **View Details**.
- Step 6** Click the **Boot Policies** tab.
- Step 7** Click **Add**.
- Step 8** In the **Add Boot Policy** dialog box, complete the following fields:

Name	Description
Name field	A unique name for the policy.
Description field	A description for the policy.
Reboot on Order Change check box	<p>If checked, reboots all servers that use this boot policy after you change the boot order.</p> <p>If this check box is checked 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.</p>
Enforce vNIC/vHBA Name check box	<p>If checked, a configuration error is displayed if one or more of the vNICs, vHBAs, or iSCSI vNICs listed in the Boot Order table matches the server configuration in the service profile.</p> <p>If this check box is not checked, the policy uses the vNICs, vHBAs, or iSCSI vNICs (as appropriate for the boot option) from the server configuration in the service profile. It does not report whether the vNICs, vHBAs, or iSCSI vNICs specified in the boot policy match the server configuration in the service profile.</p>

Step 9 In the **Add Boot Device** area, check one or both of the following check boxes:

- **Add CD ROM**
- **Add Floppy Disk**

Step 10 Click **Submit**.
