Managing Resource Groups

This chapter contains the following sections:

Resource Groups

You can use a resource group to select the appropriate resources for a tenant based on the requirements of an application. Additional concepts, such as a service offering, tenant profile, application profile, and resource group, are all required. Using these resource group concepts, you can onboard tenants and deploy applications based on a dynamic selection of resources. You can share resources in a resource group across tenants or you can dedicate them to a specific tenant.

A resource group is a pool of resources. Each group can contain physical infrastructure resources, virtual infrastructure resources, or a combination of physical and virtual infrastructure resources. Resource groups enable you to onboard tenants into Cisco UCS Director with minimum intervention.

As an infrastructure administrator or system administrator, you can add physical or virtual accounts to a resource group one at a time. Also, you can assign a pod to a resource group where all the accounts in the pod are added to the resource group. For more information about assigning a pod to a resource group, see Adding a Pod to a Resource Group, on page 21.

When an account is added to a resource group, the resource group by default announces all the capabilities and capacities for objects for that account as resource group entity capacities and capabilities. With Cisco UCS Director, you can selectively disable certain capacities or capabilities from the resource group.

Environment Variables

You can configure the environment variable for each resource. These environment variables are used during provisioning of the tenant onboarding and application deployment.

You can set the following default environment variables for both virtual and physical accounts. Also, you can add an environment variable in Cisco UCS Director and use the environment variable in the resource group. For more information on how to add an environment variable, see Adding a Custom Environment Variable, on page 10.

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Note The listed environment variables are not required for every workflow. The subset of required environment variables depends on the use case and the specific workflow(s) being executed.

Virtual Compute Environment Variables

Environment Variable	Description	Sample Value
Container Parent Folder	The folder to which you want to add the newly created container.	*APIC*
IP Subnet Pool Policy	The APIC container uses an IP subnet pool policy that is defined in Cisco UCS Director. Each tier inside the container gets a unique subnet address from the IP subnet pool policy. This environment variable is used for container provisioning.	*IP-Pool*

Virtual Storage Environment Variables

No environment variables are required for virtual storage.

Virtual Network Environment Variables

Environment Variable	Description	Sample Value
VMM Domain for VMware	VMware vCenter is configured ACI-vCenter with the Virtual Machine Manager (VMM) domain. When VMware vCenter is associated with Cisco APIC, a distributed virtual switch (DVS) with the same name is created in VMware vCenter. This environment variable is used for tenant onboarding. Choose VMM domain with Cisco AV switch to support AVS in VXLAN mode. Cisco UCS Director offers AVS support in both VLAN and VXLAN mode. The VM gets the VLAN ID or VXLAN ID from the pool assigned to the VMM domain.	*ACI-Bldg4-1-vCenter*

Environment Variable	Description	Sample Value
DV Switch	Choose either DV switch or Cisco AV switch according to the requirement. The DV switch is available on the vCenter account and is used to connect the selected host during onboarding. The Cisco AV switch is used to support AVS in VXLAN mode. This environment variable is used for tenant onboarding.	*virt_switch*

Physical Compute Environment Variables

Environment Variable	Description	Sample Value
Physical Domain for UCS	The physical domain for Cisco UCS. This environment variable is used for bare metal provisioning.	*Phys*
VLAN Pool	The VLAN pool from which you want to assign a VLAN ID for the account.	*ACI3-Eng-VLAN-Pool*
iSCSI PXE Boot Service Profile Template	The template used for creating the host service profile on which you want to provision bare metal. This environment variable is used for bare metal provisioning on a NetApp storage system.	*DR_UCSM;org-root;org-root/ls-ACI-DR-Hosts*
Service Profile Template for Full Width Blade	The service profile template is used to create a service profile. When a service profile is created, the software identifies and selects free servers from the server pool that is associated with the service profile template. This environment variable is used for the VNX tenant onboarding.	*VNX_UCSM;org-root/ls-PSC-FullBlade-Template*

Environment Variable	Description	Sample Value
Service Profile Template for Half Width Blade	The service profile template is used to create a service profile. When a service profile is created, the software identifies and selects free servers from the server pool that is associated with the service profile template. This environment variable is used for the VNX tenant onboarding.	*VNX_UCSM;org-root/ls-PSC-HalfBlade-Template*
IQN Pool	The IQN pool that contains the iSCSI Qualified Names (IQNs) used as initiator identifiers by iSCSI vNICs in a Cisco UCS domain. The IQN pool is used to create a service profile iSCSI boot policy. This environment variable is used for bare metal provisioning on a NetApp storage system.	*IQN_Pool*
Boot Policy	Boot policy for the physical compute account. This environment variable is used for a VNX-type account.	*VNX_UCSM;org-root;org-root//boot-policy-SAN_NEW*
VLAN	VLAN for the physical compute account. This environment variable is used for a VNX-type account.	*VNX_UCSM;fabric/lan/net-MGT-ACI-POOL*

Physical Storage Environment Variables

Environment Variable	Description	Sample Value
Physical Domain for NetApp	The physical domain that is used to connect the NetApp account to the APIC. This environment variable is used for tenant onboarding.	topology/pod-1/paths-201/pathep-[eth1/36] • Pod-1—The pod ID of the APIC account. • Paths-201—The node ID of the leaf to which the NetApp controller is connected. • Pathep-[eth1/36]—The port on which the NetApp controller is connected.

Environment Variable	Description	Sample Value
NetApp Static Path	The static path defines the port on the APIC where the NetApp cluster node is connected. This environment variable is used to add the static path to the endpoint group (EPG) during tenant onboarding.	*topology/pod-1/node-302/sys /cdp/inst/if-[eth1/47]adj-1*
Vlan pool	The VLAN pool that is used to create the cluster vServer. This environment variable is used for tenant onboarding.	*Vlan_pool*
SP Port	The storage processor (SP) port for the physical storage account. This environment variable is used for VNX type account.	*VNX-POD;VNX_BLOCK;A-0;50:06:01:60:88:60:1B:6A: 50:06:01:60:08:60:1B:6A ,VNX-POD;VNX_BLOCK;A-1;50:06:01:60:88:60:1B:6A: 50:06:01:61:08:60:1B:6A*
Replication Storage Group	The replication storage group for the physical storage account. This environment variable is used for VNX type account.	
NFS Vlan Pool	This environment variable is used to define a VLAN pool. Individual VLANs are then assigned to a physical storage account dynamically from the pool.	*NetApp-vlan-pool*
SVM mgmt Vlan Pool	The VLAN pool for management of Storage Virtual Machine (SVM).	*NetApp-vlan-pool*
iSCSI_A VLAN Pool	The VLAN pool from which a VLAN is chosen as iSCSI_A VLAN.	*NetApp-vlan-pool*
iSCSI_B VLAN Pool	The VLAN pool from which a VLAN is chosen as iSCSI_B VLAN.	*NetApp-vlan-pool*
APIC vPC Static Path for Node 1	The static path of virtual port channel (vPC) for node 1.	*topology/pod-1/path-101/pathep-[PGr-FAS-A]*
APIC vPC Static Path for Node 2	The static path of virtual port channel (vPC) for node 2.	*topology/pod-1/path-101/pathep-[PGr-FAS-B]*
NFS IP Subnet Pool Policy	The subnet IP pool policy for NFS.	*ip_nfs_subnet_pool*
iSCSI_A IP Subnet Pool Policy	The IP subnet pool policy to be used for the first iSCSI VLAN.	*NetApp_ISCSI_A_Subnet_pool*

Environment Variable	Description	Sample Value
iSCSI_B IP Subnet Pool Policy	The IP subnet pool policy to be used for the second iSCSI VLAN.	*NetApp_ISCSI_B_Subnet_pool*
SVM mgmt IP Subnet Pool Policy	The subnet IP pool policy for SVM management.	*netapp_svm_subnet_pool*
VMNet IP Subnet Pool Policy	The subnet IP pool policy for VM network.	*VMNet_IP_Subnet_pool_policy*
APIC Vlan Pool for Node 1	The APIC VLAN pool from which the VLAN ID needs to be assigned for node 1.	*NetApp-Pool*
APIC Vlan Pool for Node 2	The APIC VLAN pool from which the VLAN ID needs to be assigned for node 2.	*NetApp-Pool*
Cluster Node 1 Identity	The identity of the first Netapp C-mode account node.	*ACI2-CMODE-01*
Cluster Node 2 Identity	The identity of the second Netapp C-mode account node.	*ACI2-CMODE-02*
Default Recovery Point	The recovery point attached to the VNX account.	*RP*
Recovery Point Cluster Identity	The identity of the recovery point attached to the VNX account.	*RP@1649417791*

Physical Network Environment Variables

Environment Variable	Description	Sample Value
IP Pool	The IP pool that is used to assign the IP addresses between the NetApp datastore and host vmkernel. This environment variable is used for tenant onboarding.	*IP_pool*
PXE Server IP Pool	The IP pool of the Preboot eXecution Environment (PXE) server. This environment variable is used for bare metal provisioning.	*pxe_ip_new11*
BMA EPG Entity	The Cisco UCS Director Bare Metal Agent endpoint group (EPG) entity. This environment variable is used for bare metal provisioning.	*VNX_APIC185@common@BMA-AP@PSC_BMA*

Environment Variable	Description	Sample Value
Connected to FI A	When configuring the physical setup for FlexPod, VSAN is created for the Fabric Interconnect (FI) A - NXOS switch 1 connection and FI B - NXOS switch 2 connection. In BMA provisioning, zoning is configured for FI A - NXOS controller. Choose this environment variable to specify whether a Cisco Nexus switch is connected to Cisco UCS FI A. This environment variable appears for the MDS switch.	*Yes*
Physical domain for LB	The physical domain that you need to use for the load balancer service.	*Phy_LB_Domain*
Physical LB Path	The physical path of the load balancer service.	*topology/pod-1/node-101/sys/cdp /inst/if-[eth1/12]/adj-1*
DPC Static path 1	The static path of the first Direct Port Channel (DPC).	*topology/pod-1/paths-302/ pathep-[PC_Policy_1Gb]*
DPC Static path 2	The static path of the second DPC.	*topology/pod-1/paths-303/ pathep-[PC_Policy_1Gb]*
Path 1 to L3Out	The first transit path from the ACI leaf to an external router.	*topology/pod-1/protpaths- 103-104/pathep-[ifs-n3k-b_PolGrp]*
Path 2 to L3Out	The second transit path from the ACI leaf to an external router.	*topology/pod-1/protpaths- 103-104/pathep-[ifs-n3k-a_PolGrp]*
L2 Physical Domain	The physical domain for Layer 2. This environment variable is used for configuring EPG transit.	*L2-2960*
IP Subnet Pool Policy	The pool policy to be used to get the IP addresses for sub-interfaces.	*Ipsubnetpoolpolicy*
L3 Vlan Pool	The pool to be used to get the VLAN ID that is used to communicate between the external router and ACI fabric. This environment variable is used to configure the external routed network.	*L3out_Pool*
L2 Transit Vlan Pool	The pool to be used to get the VLAN ID for the transit EPG. This environment variable is used for creating a transit EPG.	*L2out_Pool*

Environment Variable	Description	Sample Value
Node	The leaf nodes of the APIC account. This environment variable is used for creating a transit EPG.	*topology/pod-1/node-302*
Routed Sub-Interface Path	The sub-interface routed path based on the leaf node selection.	*topology/pod-1/paths-303/pathep-[eth1/47], topology/pod-1/paths-303/pathep-[eth1/48], topology/pod-1/paths-302/pathep-[eth1/47] topology/pod-1/paths-302/pathep-[eth1/48]*
Nexus Switches	The Nexus switches for the APIC account.	*192.0.232.166, 192.0.232.167*
Loop Back IP Subnet Pool Policy	The pool policy to be used to get the IP address for Loop Back.	*loop_back_ip_pool_policy*
L3 Domain	The Layer 3 domain of the APIC account. This environment variable is used to configure the external routed network.	*Phy_L3out_domain*
Router IP Pool	The IP pool to configure router ID for routers on an external Layer 3 network. This environment variable is used to configure the external routed network.	*IP_pool*
LB Cluster IP Pool	The IP pool to provide the cluster management IP address for the load balancer device cluster.	*IP_pool*
SVI Path	The interface connecting APIC to a router on an external Layer 3 network. This environment variable is used to configure the external routed network.	*topology/pod-1/protpaths-101-102 /pathep-[vpcPG_ec1acifwi001-2_DATA*
SVI IP Pool	The subnet for configuring a switch virtual interface (SVI) on APIC leaves. This environment variable is used to configure the external routed network.	*IP_pool*

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Note The following environment variable are not supported in Cisco UCS Director Release 5.4: IP Subnet Pool Policy, iSCSI PXE Boot Service Profile Template, IQN Pool, Replication Storage Group, PXE Server IP Pool, BMA EPG Entity, Physical domain for LB, and Physical LB Path.

The environment variable that need to be defined for VNX tenant onboarding are:

- Physical Compute—Cisco UCS Manager

  - Service Profile Template for Full Width Blade

  - Service Profile Template for Half Width Blade

- EMC VNX Unified

  - SP Port

- VMware Account

  - DV Switch-Virtual Network

  - VMM Domain for VMware-Virtual Network

- APIC (Physical Network)

  - DPC Static Path 1 (for L2 configuration)

  - DPC Static Path 2 (for L2 configuration)

  - L2 Physical Domain (for L2 configuration)

  - IP Subnet Pool Policy (for L3 configuration)

  - L3 VLAN Pool (for L3 configuration)

  - Routed Sub-Interface Path (for L3 configuration)

  - Node (for L3 configuration)

  - Nexus Switches (for L3 configuration)

  - Loop Back IP Subnet Pool Policy (for L3 configuration)

The environment variable that need to be defined for FlexPod tenant onboarding as per the Cisco UCS Director and FlexPod Cisco validated design (CVD) are:

- APIC Account

  - IP Pool

- NetApp

  - Vlan Pool

  - Physical Domain for NetApp

  - NFS Vlan Pool

- SVM mgmt Vlan Pool

- APIC vPC Static Path for Node 1

- APIC vPC Static Path for Node 2

- NFS IP Subnet Pool Policy

- SVM mgmt IP Subnet Pool Policy

- VMNet IP Subnet Pool Policy

- APIC Vlan Pool for Node 1

- APIC Vlan Pool for Node 2

- Cluster Node 1 Identity

- Cluster Node 2 Identity

- iSCSI_A VLAN Pool

- iSCSI_B VLAN Pool

- iSCSI_A IP Subnet Pool Policy

- iSCSI_B IP Subnet Pool Policy

- VMware Account

  - DV Switch

  - VMM Domain for VMware-Virtual Network

The environment variable that need to be defined for NetApp tenant onboarding (obsolete) are:

- APIC Account

  - IP Pool

- NetApp

  - Vlan Pool

  - NetApp Static Path

  - Physical Domain for NetApp

- Virtual Network

  - DV Switch

  - VMM Domain for VMware

Adding a Custom Environment Variable

You can define an environment variable that you want to use in the resource group and workflow. The type of the user-defined environment variable is custom.

Procedure

Step 1	Choose **Policies** > **Resource Groups**.	
Step 2	On the **Resource Groups** page, click **Environment Variables**.	
Step 3	Click the row with anenvironment variable and click **View** to view the name, variable type, and identity type of the environment variable.	
Step 4	Click the row with the environmental variable and click **Delete** to delete the environment variable.	
	You can delete only the user-defined environment variable that is categorized as custom.	
Step 5	Click **Add**.	
Step 6	On the **Resource Group Environment Variable** screen, complete the following fields:	

Name	Description
Custom Environment Name field	The name of the environment variable.
Description field	The description of the environment variable.
Resource Type drop-down list	Choose one of the following as the resource type for the environment variable: • VIRTUAL_COMPUTE • VIRTUAL_NETWORK • VIRTUAL_STORAGE • PHYSICAL_COMPUTE • PHYSICAL_STORAGE • PHYSICAL_NETWORK The environment variable is categorized under the chosen resource type.
Input Type field	Expand **Input Type** and check the variable type that you want to use for the environment variable. The variable type can be text, list of variable (LoV), multiple selection, table, and popup table.

Step 7   Click **Submit**.

The added custom environment variable is listed on the **Environment Variables** page. You can add this custom environment variable in the Resource Group.

Adding a Resource Group

Before you begin

Ensure that the IP subnet pool policy and VLAN pool policy are defined to use the policy in the environment. Also, you can add a policy on the **Add Entry to Environment Variables** screen when adding a resource group.

Procedure

Step 1	Choose **Policies** > **Resource Groups**.
Step 2	On the **Resource Groups** page, click **Resource Groups**.
Step 3	Click the row with a resource group and click **View** to view the name and description of the resource group.
Step 4	Click the row with a resource group and click **View Details** to view the resources that are associated with a resource group.
	The ID, pod, account name, category, account type, resource type, and resource name of the resources in the resource group are displayed.
Step 5	Click the row with a resource and click **View Details** to view the capacities and capabilities of a resource.
Step 6	Click **Add**.
Step 7	On the **Create Resource Group** screen, complete the following fields:

Name	Description
Name field	The name of the resource group.
Description field	The description of the resource group.
Enable DR check box	Check to enable the disaster recovery service support for the resource group. **Note** The disaster recovery service support is enabled based on the use case and the workflow being executed.
Accounts Priority drop-down list	This field appears only when **Enable DR** is checked. By default, **Primary** is selected to set the resource group as primary. If you want to set the resource group as secondary, choose **Secondary**.
DRS Resource Group drop-down list	Choose a resource group as a disaster recovery service resource group for handling failover and recovering data during disaster.

Note   The primary and secondary resource groups must each have an equal number of accounts in order to support the disaster recovery service.

Step 8	Click **Next**.

Step 9 (Optional) On the **Virtual Compute** screen, choose the virtual compute account and the interested capabilities and capacities:

a) Expand **Virtual Accounts** and click the + icon to add a virtual account.

b) On the **Add Entry to Virtual Accounts** screen, expand **Accounts**, check the virtual account that you want to use, and then click **Validate**.

> **Note** You can choose either a VMware account or a Hyper-V account from the account list. According to the chosen virtual account, you need to choose environment variable, capabilities, and capacities. If the required environment variable is not available in the drop-down list, you can create a new environment variable. For more information on how to create an environment variable, see Adding a Custom Environment Variable, on page 10.

c) Expand **Environment Variables** and click the + icon.

1. On the **Add Entry to Environment Variables** screen, choose an environment variable from the **Name** drop-down list.

2. In the **Required Value** field, choose the value according to the selected environment variable. When you choose **IP Subnet Pool Policy** from the **Name** drop-down list, expand **Required Value** and check the policy that you want to use. You can also add a policy by clicking the + icon.

3. Click **Submit**.

d) In the **Selected Capabilities** field, the capabilities of the chosen virtual account appear by default.

You can opt to disable the capabilities by unchecking the capability in the edit window that appears on clicking the Edit icon. You can remove the capability from the list by clicking the Delete icon.

e) In the **Selected Capacities** field, the capacities of the chosen virtual account appear by default.

You can opt to disable the capacities by unchecking the capacity in the edit window that appears on clicking the Edit icon. You can remove the capacity from the list by clicking the Delete icon.

f) Click **Submit** on the **Add Entry to Virtual Accounts** screen.

> **Note** An account that is added to a resource group cannot be added to another resource group and cannot be deleted from Cisco UCS Director.

Step 10 Click **Next**.

Step 11 On the **Virtual Storage** screen, expand **Virtual Accounts** click the row with the virtual compute account and the interested capabilities and capacities.

a) Click the + icon to add a virtual account.

b) On the **Add Entry to Virtual Accounts** screen, expand **Accounts**, check the virtual account you want to use, and click **Validate**.

> **Note** You can choose either a VMware account or a Hyper-V account from the account list. According to the chosen virtual account, you need to choose environment variable, capabilities, and capacities. If the required environment variable is not available in the drop-down list, you can create a new environment variable. For more information on how to create an environment variable, see Adding a Custom Environment Variable, on page 10.

c) Expand **Environment Variables** and click the + icon.

1. On the **Add Entry to Environment Variables** screen, choose an environment variablefrom the **Name** drop-down list.

2. In the **Required Value** field, choose the value according to the selected environment variable.

3. Click **Submit**.

d) In the **Selected Capabilities** field, the capabilities of the chosen virtual account appear by default.

   You can opt to disable the capabilities by unchecking the capability in the edit window that appears on clicking the Edit icon. You can remove the capability from the list by clicking the Delete icon.

e) In the **Selected Capacities** field, the capacities of the chosen virtual account appear by default.

   You can opt to disable the capacities by unchecking the capacity in the edit window that appears on clicking the Edit icon. You can remove the capacity from the list by clicking the Delete icon.

f) Click **Submit** on the **Add Entry to Virtual Accounts** screen.

   Note　　An account that is added to a resource group cannot be added to another resource group and cannot be deleted from Cisco UCS Director.

Step 12　Click **Next**.

Step 13　On the **Virtual Network** screen, expand **Virtual Accounts** and click the row with the virtual network account and the interested capabilities and capacities:

a) Click the + icon to add a virtual account.

b) On the **Add Entry to Virtual Accounts** screen, expand **Accounts**, check the virtual account that you want to use, and click **Validate**.

   Note　　You can choose either a VMware account or a Hyper-V account from the account list. According to the chosen virtual account, you need to choose environment variable, capabilities, and capacities. If the required environment variable is not available in the drop-down list, you can create a new environment variable. For more information on how to create an environment variable, see Adding a Custom Environment Variable, on page 10.

c) Expand **Environment Variables** and click the + icon.

   1. On the **Add Entry to Environment Variables** screen, choose an environment variable from the **Name** drop-down list.

   2. Expand **Required Value** field and check the value according to the selected environment variable that you want to use in the environment.

   3. Click **Submit**.

d) In the **Selected Capabilities** field, the capabilities of the chosen virtual account appear by default.

   You can opt to disable the capabilities by unchecking the capability in the edit window that appears on clicking the Edit icon. You can remove the capability from the list by clicking the Delete icon.

e) In the **Selected Capacities** field, the capacities of the chosen virtual account appear by default.

   You can opt to disable the capacities by unchecking the capacity in the edit window that appears on clicking the Edit icon. You can remove the capacity from the list by clicking the Delete icon.

f) Click **Submit** on the **Add Entry to Virtual Accounts** screen.

   Note　　An account that is added to a resource group cannot be added to another resource group and cannot be deleted from Cisco UCS Director.

Step 14   Click **Next**.

Step 15   (Optional) On the **Physical Compute** screen, expand **Compute Accounts** and click the row with the physical compute account and the interested capabilities and capacities:

a)   Click the + icon to add a compute account.

b)   On the **Add Entry to Compute Accounts** screen, check the compute account that you want to use, and click **Validate**.

c)   Expand **Environment Variables** and click the + icon.

    1.   On the **Add Entry to Environment Variables** screen, choose an environment variable from the **Name** drop-down list.

    2.   Expand **Required Value** field, and check the value according to the selected environment variable. When you choose **Vlan pool** from the **Name** drop-down list, expand **Required Value** and check the policy that you want to use. You can also add a policy by clicking the + icon.

    3.   Click **Submit**.

d)   Expand **Selected Capabilities** and click on the row with the resource and resource capability that you want to use.

e)   Expand **Selected Capacities** and click on the row with the resource and resource capacities that you want to use.

f)   Click **Submit** on the **Add Entry to Compute Accounts** screen.

> **Note**   An account that is added to a resource group cannot be added to another resource group and cannot be deleted from Cisco UCS Director.

Step 16   Click **Next**.

Step 17   (Optional) On the **Physical Storage** screen, expand **Storage Accounts** and click the row with the physical storage account and the interested capabilities and capacities:

a)   Click the + icon to add a storage account.

b)   On the **Add Entry to Storage Accounts** screen, check the storage account that you want to use, and click **Validate**.

c)   Expand **Environment Variables** and click the + icon.

    1.   In the **Add Entry to Environment Variables** dialog box, choose an environment variable from the **Name** drop-down list.

    2.   Expand **Required Value** and check the value according to the selected environment variable. When you choose **Vlan pool** from the **Name** drop-down list, expand **Required Value** and check the policy that you want to use. You can also add a policy by clicking the + icon.

    3.   Click **Submit**.

    The IP address and subnet mask of the storage device must be within the IP address range specified based on the policy.

d)   Expand **Selected Capabilities** and click on the row with the resource and resource capability that you want to use.

e)   Expand **Selected Capacities** and click on the row with the resource and resource capacities that you want to use.

f)   Click **Submit** on the **Add Entry to Storage Accounts** screen.

| | **Note** | An account that is added to a resource group cannot be added to another resource group and cannot be deleted from Cisco UCS Director. |

Step 18   Click **Next**.

Step 19   (Optional) On the **Physical Network** screen, expand **Network Accounts** and click the row with the physical network account and the interested capabilities and capacities:

a) Click the + icon to add a network account.

b) On the **Add Entry to Network Accounts** screen, choose the storage account.

c) Expand **Environment Variables** and click the + icon.

   1. On the **Add Entry to Environment Variables** screen, choose an environment variable from the **Name** drop-down list.

   2. Expand **Required Value** and check the value according to the selected environment variable. When you choose **IP Pool** from the **Name** drop-down list, expand **Required Value** and check the policy that you want to use.

   3. Click **Submit**.

d) Expand **Selected Capabilities** and click the + icon.

   1. On the **Add Entry to Selected Capabilities** screen, choose **FC Capability on MDS** or **Zone Support** from the **Select Resource** drop-down list.

   2. In the **Resource Capability** field, choose a value from the list of values that are displayed according to the selected resource.

   3. Click **Submit**.

e) Expand **Selected Capacities** and click on the row with the resource and resource capacities that you want to use.

f) Click **Submit** on the **Add Entry to Network Accounts** screen.

| | **Note** | An account that is added to a resource group cannot be added to another resource group and cannot be deleted from Cisco UCS Director. |

Step 20   Click **Next**.

Step 21   On the **L4L7 Devices** screen, choose the firewall specification and load balancer specification:

a) Expand **Firewall Specification** and click the + icon.

   On the **Add Entry to Firewall Specification** screen, complete the following fields:

Name	**Description**
Firewall Type drop-down list	Choose **VIRTUAL** or **PHYSICAL** as the firewall type.
The following fields appear when you choose **VIRTUAL** as the firewall type:	
Virtual Accounts field	Expand **Virtual Accounts** and check the virtual account you want to use.

Name	Description
VM Deployment Policy drop-down list	Choose a VM deployment policy. Click the + icon to add a VM deployment policy. For more information about how to add a VM deployment policy, see the Adding an ASAv VM Deployment Policy section in the Cisco UCS Director Application Container Guide.
Firewall Management Port Group field	Expand **Firewall Management Port Group** and check the port group of vCenter that you want to use. The management interface will be placed in the chosen port group during ASAv deployment.
Management IP Pool field	Expand **Management IP Pool** and check the IP pool that you want to use for assigning management IP address.
Regular HA IP Pool field	Expand **Regular HA IP Pool** and check the IP pool (private IP range) to allocate IP address from the pool. This pool is used as failover link between primary and secondary ASA devices. This pool is used when the firewall HA is enabled in the Layer 4 through Layer 7 service policy.
Stateful HA IP Pool field	Expand **Stateful HA IP Pool** and check the IP pool (private IP range) to allocate IP address from the pool. This pool is used as state link between primary and secondary Cisco ASA devices. This pool is used when the stateful failover is enabled in the Layer 4 through Layer 7 service policy. The stateful HA IP pool and regular HA IP pool must be in different subnets to avoid network IP conflict.
The following fields appear when you choose **PHYSICAL** as the firewall type.	
APIC Accounts field	Expand **APIC Accounts** and check the APIC account that you want to use.
Multi Context Enabled check box	Check **Multi Context Enabled** if the multiple context configuration is enabled on the Cisco ASA device.
Firewall Cluster IP field	This field appears only when **Multi Context Enabled** is checked. The IP address of the physical Cisco ASA device. This IP address is configured as the Admin Context IP address.
Cluster Username field	This field appears only when **Multi Context Enabled** is checked. The username of the cluster that is used by APIC to access ASA.

Name	Description
Cluster Password field	This field appears only when **Multi Context Enabled** is checked. The password of the cluster that is used by APIC to access ASA.
Firewall/Context IP field	The IP address that is used to reach the firewall device. If **Multi Context Enabled** is checked, this field collects the User Context IP address of the virtual ASA device that is configured on Day 0.
Port field	The port number of the firewall device.
Username field	The username that is used to access the firewall device. If **Multi Context Enabled** is checked, this field collects the username of the user context.
Password field	The password that is used to access the firewall device. If **Multi Context Enabled** is checked, this field collects the password of the user context.
Physical Domain field	Expand **Physical Domain** and check the physical domain that you want to use. Click the + icon to add a physical domain.
Static Path field	Expand **Static Path** and check the static path that you want to use. Cisco UCS Director displays the path types, such as VPC and leaf, in the table.
Port Channel Name field	The port channel interface of the Cisco ASA device which is connected to leaf (for example, Po1, Port-channel1).
Channel Group Id field	The unique ID of the channel group. This field appears only when **Multi Context Enabled** is unchecked.
Port Channel Member Interfaces field	The interface name(s) of the port channel member. This field appears only when **Multi Context Enabled** is unchecked. **Note** — Enter the interface name without space. If there are more than one interfaces, enter the interface names separated by comma.

b) Click **Submit**.

Note — If the multiple context is enabled on the Cisco ASA device, repeat the firewall specification to add the details for each context.

c) Expand **Load Balancer Specification**, click the + icon.

On the **Add Entry to Load Balancer Specification** screen, complete the following fields:

Name	Description
Load Balancer Type drop-down list	Choose **Virtual** or **Physical** as the load balancer type.
Virtual Accounts field	This field appears when you choose the load balancer type as **Virtual**. Expand **Virtual Accounts** and check the virtual account that you want to use.
APIC Accounts field	This field appears when you choose the load balancer type as **Physical**. Expand **APIC Accounts** and check the APIC account that you want to use.
Load Balancer IP field	The IP address that is used to reach the NetScalar device.
Port field	The port number of the NetScalar device.
Load Balancer Gateway field	The gateway IP address of the NetScalar device.
Username field	The username that is used to access the NetScalar device.
Password field	The password that is used to access the NetScalar device.
Function Profile field	Optional. Expand **Function Profile** and check the function profile that you want to use.
VMs field	This field appears when you choose the load balancer type as **Virtual**. Expand **VMs** and check the VM that you want to use.
Physical Domain field	This field appears when you choose the load balancer type as **Physical**. Expand **Physical Domain** and check the physical domain that you want to use. Click the + icon to add a physical domain.
Interface field	This field appears when you choose the load balancer type as **Physical**. The interface that is used for the device cluster configuration (for example, LA_1).
Static Path field	This field appears when you choose the load balancer type as **Physical**. Expand **Static Path** and check the static path that you want to use.

d) Click **Submit**.

Step 22 Click **Submit**.

Editing a Resource Group

When editing a resource group, you can add accounts to the resource group, edit the accounts that are added to the resource group, and delete accounts from the resource group.

You can delete an account from a resource group only when the account is not associated with other resource group objects, such as a tenant profile.

Procedure

Step 1 Choose **Policies** > **Resource Groups**.

Step 2 On the **Resource Groups** page, click **Resource Groups**.

Step 3 Click the row with the resource group that you want to edit.

Step 4 Click **Edit**.

Step 5 On the **Edit Resource Group** screen, complete the following fields for the resource group:

Name	Description
Name field	The name of the resource group.
Description field	The description of the resource group.
Enable DR check box	Check to enable the disaster recovery service support for the resource group. **Note** The disaster recovery service support is enabled based on the use case and the workflow being executed.
Accounts Priority drop-down list	This field appears only when **Enable DR** is checked. By default, **Primary** is selected to set the resource group as primary. If you want to set the resource group as secondary, choose **Secondary**.
DRS Resource Group drop-down list	Choose a resource group as a disaster recovery service resource group for handling failover and recovering data during disaster.

Step 6 Click **Next**.

Step 7 (Optional) The **Virtual Compute** screen displays the virtual compute accounts added to the resource group. Expand **Virtual Accounts**, click the row of an account, and click the **edit** icon to edit the environment variable, capabilities, and capacities of the account. You can also add an account using the **add** icon and delete the account using the **delete** icon.

Step 8 Click **Next**.

Step 9 The **Virtual Storage** screen displays the virtual storage accounts added to the resource group. Expand **Virtual Accounts**, click the row of an account, and click the **edit** icon to edit the environment variable, capabilities, and capacities of the account. You can also add an account using the **add** icon and delete the account using the **delete** icon.

Step 10 Click **Next**.

Step 11 The **Virtual Network** screen displays the virtual network accounts added to the resource group. Expand **Virtual Accounts**, click the row of an account, and click the **edit** icon to edit the environment variable, capabilities, and capacities of the account. You can also add an account using the **add** icon and delete the account using the **delete** icon.

Step 12 Click **Next**.

Step 13 The **Physical Compute** screen displays the physical compute accounts added to the resource group. Expand **Compute Accounts**, click the row of an account, and click the **edit** icon to edit the environment variable, capabilities, and capacities of the account. You can also add an account using the **add** icon and delete the account using the **delete** icon.

Step 14 Click **Next**.

Step 15 The **Physical Storage** screen displays the physical storage accounts added to the resource group. Expand **Storage Accounts**, click the row of an account, and click the **edit** icon to edit the environment variable, capabilities, and capacities of the account. You can also add an account using the **add** icon and delete the account using the **delete** icon.

Step 16 Click **Next**.

Step 17 The **Physical Network** screen displays the physical network accounts added to the resource group. Expand **Network Accounts**, click the row of an account, and click the **edit** icon to edit the environment variable, capabilities, and capacities of the account. You can also add an account using the **add** icon and delete the account using the **delete** icon.

Step 18 Click **Next**.

Step 19 On the **L4L7 Devices** screen, edit the firewall specification and load balancer specification as required.

Step 20 Click **Submit**.

Adding a Pod to a Resource Group

To add all accounts in a pod to a resource group, add the pod itself to the resource group.

Note You can also add a multi-domain manager account to a resource group using the **Add Pod to Resource Group** option, provided that the multi-domain manager account is associated with a pod.

Procedure

Step 1 Choose **Policies** > **Resource Groups**.

Step 2 On the **Resource Groups** page, click **Resource Groups**.

Step 3 Click **Add Pod to Resource Group**.

Step 4 On the **Resource Group** screen, complete the following fields:

Name	Description
Select drop-down list	Choose one of the following: • **Existing Resource Group**—To add a pod to the existing resource group. • **Name** drop-down list—Choose the resource group. • **Add New Resource Group**—To create a new resource group and add a pod to the newly added resource group. • **Name** field—The name of the resource group. • **Description** field—The description of the resource group.
Pod field	Expand **Pod** and check the pod that you want to add to the resource group.

Step 5   Click **Submit**.

Managing Tags of a Resource Group

You can add a tag to a resource group, edit the assigned tag, and delete the tag from the resource group.

Note   The Manage Tag dialog box displays tags according to the Taggable Entities that are assigned during creation. For more information on how to create a tag, see the Cisco UCS Director Administration Guide.

The resources need to be grouped based on the resource capabilities. Use a tag to group the resources. You can create the tag library based on the resource type, capacity, quality, and capability of each resource, so as to group the resources in a proper pattern.

Procedure

Step 1   Choose **Policies** > **Resource Groups**.

Step 2   On the **Resource Groups** page, click **Resource Groups**.

Step 3   Click the row with the resource group for which you want to manage the associated tags.

Step 4   From the **More Actions** drop-down list, choose **Manage Tags**.

Step 5   On the **Manage Tags** screen, expand **Tag** and click the + icon to add a tag.

Alternatively, you can click **Add Tags** on the **Resource Groups** page.

a)   On the **Add Entry to Tag** screen, complete the following fields:

Name	Description
Tag Name drop-down list	Choose the name of the tag.
Tag Value drop-down list	Choose the value of the tag.

b) Click **Submit**.

Step 6   On the **Manage Tags** screen, click the row with the tag you want to edit and click the pencil icon.

a) On the **Edit Tag Entry** screen, complete the following fields:

Name	Description
Tag Name drop-down list	Choose the name of the tag.
Tag Value drop-down list	Choose the value of the tag.

b) Click **Submit**.

Step 7   On the **Manage Tags** screen, click the row with the tag you want to delete and click the delete icon.

Alternatively, you can click **Delete Tags** on the **Resource Groups** page.

a) On the **Delete Tag Entry** screen, expand **Tag Name**, check the tag you want to delete, and click **Submit**.

Step 8   Click **Submit**.

Deleting a Resource Group

Note   You cannot delete a resource group that is in use.

Procedure

Step 1   Choose **Policies** > **Resource Groups**.

Step 2   On the **Resource Groups** page, click **Resource Groups**.

Step 3   Click the row with the resource group that you want to delete.

Step 4   Click **Delete**.

The **Delete Resource Group** screen appears.

Step 5   Click **Submit**.

Tenant

A tenant is a customer who uses resources in Cisco UCS Director to deploy and manage their application.

When a customer wants to deploy an application in Cisco UCS Director, the customer is onboarded as a tenant and the infrastructure is provided to deploy the application, using the APIC use case workflows.

To view the list of tenants that are onboarded in Cisco UCS Director choose **Policies** > **Resource Groups**. Click the row with a tenant and click **View Details** to view the service offerings of the tenant. Click the row with a service offering and click **View Details** to view the resource groups of a tenant.

Note If the disaster recovery support is enabled for the tenant, the resource groups of the primary site and the disaster recovery site are displayed.

To view the resource entity, reserved resources, and resources available for use in tenant and container, click the row with the resource group and click **View Details**. The following information appears:

- **Resource Entity**—Displays the details of the entity in the resource group. The details include name, type, component, resource group, tenant resource allocation type, application resource allocation type, container, and state of the resource entity.

- **Tenant Resource Limits**—Displays availability of both virtual and physical resources in a tenant. The resources reserved during tenant onboarding are displayed along with the used and available resource values. The VDCs Limit column specifies the maximum number of containers that are reserved for the tenant. The Available Number of VDCs column represents the number of containers that are available for provisioning. The physical resource limits display the blades that are reserved as part of tenant onboarding, along with the number of blades used for bare metal provisioning.

- **Container Resource Limits**—Displays availability of both virtual and physical resources in a container. The resource limits that are set during container creation are displayed along with the used and available resources.

Note If a container is created without a resource limit, the value of the virtual resources is displayed as Not Set.

- **Private Network**—Displays the private networks created for the tenant. Click the row of a private network and click **View Details** to view the supernet and subnet pools of the private network. The **Supernets** screen lists the supernets available for the tiers. The **Subnets** screen displays the sub-network pool that is used for load balancer configuration during the container deployment.

The tenant-specific and container-specific resource limits assist in provisioning VMs and BMs.

Service Offerings

A service offering defines the resources required to provision an application. Each service offering must include one or more service classes that represents the capacity and capability needed for the following resource layers:

- Virtual Compute

- Virtual Storage

- Virtual Network

       • Physical Compute

       • Physical Storage

       • Physical Network

       • Layer 4 to Layer 7 Services

When you define a service offering, you can specify the usage of resource groups as one of the following:

       • Shared—The resources are shared among the applications or tenants.

       • Dedicated —The resources are dedicated to a single application or tenant.

Based on the capacity, capability, and resource tags defined in the service offering, the resource groups are filtered and the matching resource groups are selected for further processing in the tenant onboarding and application deployment.

Adding a Service Offering

Before you begin

If tag-based resource selection is required for any of the resources, ensure that the tags are created in the tag library and are associated with the respective object. So that, the tags are listed when you define resource tag for service class. For more information on how to create a tag, see the Cisco UCS Director Administration Guide.

Procedure

Step 1	Choose **Policies** > **Resource Groups**.
Step 2	On the **Resource Groups** page, click **Service Offering**.
Step 3	Click the row of a service offering and click **View** to view the name, description, and service classes of the service offering.
Step 4	Click the row of a service offering and click **View Details** to view the service classes of the service offering.
Step 5	Click the row of a service class and click **View Details** to view the capabilities, capacity, and resource-group tag of the service class.
Step 6	Click **Add**.
Step 7	On the **Add Service Offering** screen, complete the following fields:

Name	Description
Name field	The name of the service offering.
Description field	The description of the service offering.

Name	Description
Override Mandatory Service Class Requirement check box	If checked, the user can define any number of resource types (minimum of one resource type to maximum of six resource types) for the service class according to the topology.
	If unchecked, the user has to define all the six resource types (physical compute, physical storage, physical network, virtual compute, virtual storage, and virtual network) for the service class. Even if the user does not define all the virtual and physical infrastructure resource types, Cisco UCS Director looks for resources for the missing resource types along with the defined resource types.
	Note To create a service offering that is used for onboarding a tenant using APIC account and VMware account, check this check box and create a service offering with service class for four resource types (physical network, virtual compute, virtual storage, and virtual network). This service offering needs to be chosen during creation of a tenant profile. The tenant profile will be used for onboarding a tenant using APIC account and VMware account (for example, tenant onboarding with private networks).

Step 8   Click **Next**.

Step 9   On the **Service Class** screen, expand **Service Class** and click the + icon to define the service class that the service offering has to provide.

Step 10   On the **Add Entry to Service Class** screen, complete the following fields:

Name	Description
Name field	The name of the service class.
Description field	The description of the service class.
Resource Allocation type for Tenant drop-down list	Choose the type of resource allocation for the tenant. It can be one of the following: • **Dedicated**—To dedicate the resources for a tenant. • **Shared**—To share the resources among the tenants.

Name	Description
Resource Allocation type for Application drop-down list	Choose the type of resource allocation for the application. It can be one of the following: • **Dedicated**—To dedicate the resources for an application. • **Shared**—To share the resources among the applications.
Resource Type drop-down list	Choose the type of resource that you are adding to the service class. It can be one of the following: • **Virtual_Compute** • **Virtual_Storage** • **Virtual_Network** • **Physical_Compute** • **Physical_Storage** • **Physical_Network** The user can define a minimum of two resource types (physical or virtual compute, and physical or virtual network) and a maximum of six resource types (virtual compute, virtual storage, virtual network, physical compute, physical storage, and physical network) during the addition of the service class, only when **Override Mandatory Service Class Requirement** is unchecked.

Name	Description
Resource Tag field	Expand **Resource Tag** and click the row with the resource tag that you want to use. For more information about the tag library, see the Cisco UCS Director Administration Guide. **Note** You can add the data store tags with multiple tag values (for example, gold, silver, bronze) in the virtual storage service class level. **Note** You can add the ESXi cluster tag with multiple tag values in the virtual compute service class level. **Important** You can modify only the required values of the tags defined in this table. You cannot add new tags to this table. For information on how to create a tag, see the Tag Library section in the Cisco UCS Director Administration Guide.
Resource Capability field	By default, the capabilities that are applicable for the VMware and Hyper-V account are displayed according to the chosen resource type. You can edit the value of the resource capability using the Edit icon. You can remove a resource capability from the service offering using the Delete icon. **Important** All the resource capabilities related to the resource type are prepopulated with the default value as **false**. You can modify the capability value.
Resource Capacity field	The available resource capacity for the service offering. To add a resource capacity, expand **Resource Capacity** and click the Add icon and choose the capacity type from the list of capacities that are applicable for the VMware and Hyper-V account. The capacities are displayed based on the chosen resource type. Choose the capacity matching criteria and set the required capacity value. To remove the resource capacity, click the Delete icon. To modify the values of the capacity, click the Edit icon.

Note The tag is used along with resource capability and capacity for filtering the resources in the resource group.

Step 11	Click **Submit**.
	The service class information is added to the table. You can define multiple service classes for the service offering.
Step 12	Click **Submit**.

Cloning a Service Offering

Before you begin

Ensure that the tags are created in the tag library and the tags are associated with the respective object. So that, the tags are listed when you define resource tag for service class. For more information on how to create a tag, see the Cisco UCS Director Administration Guide.

Procedure

Step 1	Choose **Policies** > **Resource Groups**.
Step 2	On the **Resource Groups** page, click **Service Offering**.
Step 3	Click the row with the service offering that you want to clone.
Step 4	Click **Clone Service Offering**.
Step 5	On the **Clone Service Offering** screen, complete the following fields:

Name	Description
Name field	The name of the service offering.
Description field	The description of the service offering.

Name	Description
Override Mandatory Service Class Requirement check box	If checked, the user can define any number of resource types (minimum of one resource type to maximum of six resource types) for the service class according to the topology.
	If unchecked, the user has to define all the six resource types (physical compute, physical storage, physical network, virtual compute, virtual storage, and virtual network) for the service class. Even if the user does not define all the virtual and physical infrastructure resource types, Cisco UCS Director looks for resources for the missing resource types along with the defined resource types.
	Note To create a service offering that is used for onboarding a tenant using APIC account and VMware account, check this check box and create a service offering with service class for four resource types (physical network, virtual compute, virtual storage, and virtual network). This service offering needs to be chosen during creation of a tenant profile. The tenant profile will be used for onboarding a tenant using APIC account and VMware account (for example, tenant onboarding with private networks).

Step 6   Click **Next**.

Step 7   On the **Service Class** screen, expand **Service Class** and click the + icon to define the service class that the service offering has to provide.

Step 8   On the **Add Entry to Service Class** screen, complete the following fields:

Name	Description
Name field	The name of the service class.
Description field	The description of the service class.
Resource Allocation type for Tenant drop-down list	Choose the type of resource allocation for the tenant. It can be one of the following: • **Dedicated**—To dedicate the resources for a tenant. • **Shared**—To share the resources among the tenants.

Name	Description
Resource Allocation type for Application drop-down list	Choose the type of resource allocation for the application. It can be one of the following: • **Dedicated**—To dedicate the resources for an application. • **Shared**—To share the resources among the applications.
Resource Type drop-down list	Choose the type of resource that you are adding to the service class. It can be one of the following: • **Virtual_Compute** • **Virtual_Storage** • **Virtual_Network** • **Physical_Compute** • **Physical_Storage** • **Physical_Network** The user can define a minimum of two resource types (physical or virtual compute, and physical or virtual network) and a maximum of six resource types (virtual compute, virtual storage, virtual network, physical compute, physical storage, and physical network) during the addition of the service class, only when **Override Mandatory Service Class Requirement** is unchecked.

Name	Description
Resource Tag field	Expand **Resource Tag** and click the row with the resource tag that you want to use. For more information about the tag library, see the Cisco UCS Director Administration Guide.
	Note You can add the data store tags with multiple tag values (for example, gold, silver, bronze) in the virtual storage service class level.
	Note You can add the ESXi cluster tag with multiple tag values in the virtual compute service class level.
	Important You can modify only the required values of the tags defined in this table. You cannot add new tags to this table. For information on how to create a tag, see the Tag Library section in the Cisco UCS Director Administration Guide.
Resource Capability field	By default, the capabilities that are applicable for the VMware and Hyper-V account are displayed according to the chosen resource type. You can edit the value of the resource capability using the Edit icon. You can remove a resource capability from the service offering using the Delete icon.
	Important All the resource capabilities related to the resource type are prepopulated with the default value as **false**. You can modify the capability value.
Resource Capacity field	The available resource capacity for the service offering.
	To add a resource capacity, expand **Resource Capacity** and click the Add icon and choose the capacity type from the list of capacities that are applicable for the VMware and Hyper-V account. The capacities are displayed based on the chosen resource type. Choose the capacity matching criteria and set the required capacity value.
	To remove the resource capacity, click the Delete icon. To modify the values of the capacity, click the Edit icon.

Step 9   (Optional) Click the **pencil** icon to edit the values of an already configured service class.

Step 10   (Optional) Click the **trash** icon to delete an already configured service class from the service offering.

Step 11   Click **Submit**.

Editing a Service Offering

✎

Note   Do not edit the service offering that is mapped to a resource group and tenant profile. If you edit the service offering that is mapped to a resource group and tenant profile, the tenant that is onboarded using the service offering will be affected.

Before you begin

Ensure that the tags are created in the tag library and the tags are associated with the respective object. So that, the tags are listed when you define resource tag for service class. For more information on how to create a tag, see the Cisco UCS Director Administration Guide.

Procedure

Step 1   Choose **Policies** > **Resource Groups**.

Step 2   On the **Resource Groups** page, click **Service Offering**.

Step 3   Click the row with the service offering that you want to edit.

Step 4   Click **Edit**.

Step 5   On the **Modify Service Offering** screen, complete the following fields:

Name	Description
Name field	The name of the service offering.
Description field	The description of the service offering.

Name	Description
Override Mandatory Service Class Requirement check box	If checked, the user can define any number of resource types (minimum of one resource type to maximum of six resource types) for the service class according to the topology.
	If unchecked, the user has to define all the six resource types (physical compute, physical storage, physical network, virtual compute, virtual storage, and virtual network) for the service class. Even if the user does not define all the virtual and physical infrastructure resource types, Cisco UCS Director looks for resources for the missing resource types along with the defined resource types.
	Note To create a service offering that is used for onboarding a tenant using APIC account and VMware account, check this check box and create a service offering with service class for four resource types (physical network, virtual compute, virtual storage, and virtual network). This service offering needs to be chosen during creation of a tenant profile. The tenant profile will be used for onboarding a tenant using APIC account and VMware account (for example, tenant onboarding with private networks).

Step 6   Click **Next**.

Step 7   On the **Service Class** screen, expand **Service Class** and click the + icon to define the service class that the service offering has to provide.

Step 8   On the **Add Entry to Service Class** screen, complete the following fields:

Name	Description
Name field	The name of the service class.
Description field	The description of the service class.
Resource Allocation type for Tenant drop-down list	Choose the type of resource allocation for the tenant. It can be one of the following: • **Dedicated**—To dedicate the resources for a tenant. • **Shared**—To share the resources among the tenants.

Name	Description
Resource Allocation type for Application drop-down list	Choose the type of resource allocation for the application. It can be one of the following: • **Dedicated**—To dedicate the resources for an application. • **Shared**—To share the resources among the applications.
Resource Type drop-down list	Choose the type of resource that you are adding to the service class. It can be one of the following: • **Virtual_Compute** • **Virtual_Storage** • **Virtual_Network** • **Physical_Compute** • **Physical_Storage** • **Physical_Network** The user can define a minimum of two resource types (physical or virtual compute, and physical or virtual network) and a maximum of six resource types (virtual compute, virtual storage, virtual network, physical compute, physical storage, and physical network) during the addition of the service class, only when **Override Mandatory Service Class Requirement** is unchecked.

Name	Description
Resource Tag field	Expand **Resource Tag** and click the row with the resource tag that you want to use. For more information about the tag library, see the Cisco UCS Director Administration Guide. **Note** You can add the data store tags with multiple tag values (for example, gold, silver, bronze) in the virtual storage service class level. **Note** You can add the ESXi cluster tag with multiple tag values in the virtual compute service class level. **Important** You can modify only the required values of the tags defined in this table. You cannot add new tags to this table. For information on how to create a tag, see the Tag Library section in the Cisco UCS Director Administration Guide.
Resource Capability field	By default, the capabilities that are applicable for the VMware and Hyper-V account are displayed according to the chosen resource type. You can edit the value of the resource capability using the Edit icon. You can remove a resource capability from the service offering using the Delete icon. **Important** All the resource capabilities related to the resource type are prepopulated with the default value as **false**. You can modify the capability value.
Resource Capacity field	The available resource capacity for the service offering. To add a resource capacity, expand **Resource Capacity** and click the Add icon and choose the capacity type from the list of capacities that are applicable for the VMware and Hyper-V account. The capacities are displayed based on the chosen resource type. Choose the capacity matching criteria and set the required capacity value. To remove the resource capacity, click the Delete icon. To modify the values of the capacity, click the Edit icon.

Step 9   Click **Submit**.

Deleting a Service Offering

Note You cannot delete a service offering that is in use.

Procedure

Step 1 Choose **Policies** > **Resource Groups**.

Step 2 On the **Resource Groups** page, click **Service Offering**.

Step 3 Click the row with the service offering that you want to delete.

Step 4 Click **Delete**.

Step 5 On the **Service Offering** screen, click **Delete**.

Tenant Profiles

Tenant profiles represent the pairing of one or more service offerings with one or more resource groups. Each tenant profile defines the characteristic of infrastructure requirements and application requirements.

You can create a tenant profile to meet each possible combination of customer and application. You can associate a tenant profile with multiple service offerings and choose a resource group for each service offering. A tenant profile can be shared by more than one tenant.

Adding a Tenant Profile

Before you begin

If the DR service support is enabled for the tenant profile, the resources that satisfy the following are displayed for choosing a resource group for a specific service offering:

- The DR service is enabled.

- The resource group is configured as primary.

- The primary resource group is mapped with the secondary resource group.

- The primary and secondary resource groups have same number of accounts.

- The resources required for the tenant are available in both the primary and secondary resource groups.

For more information on how to enable DR service and set the resource group as primary or secondary, see .

Procedure

Step 1	Choose **Policies** > **Resource Groups**.
Step 2	On the **Resource Groups** page, click **Tenant Profile**.
Step 3	Click the row with a tenant profile and click **View** to view the name, description, and service offering of the tenant profile with the resource limit added to the tag.
Step 4	Click the row with a tenant profile and click **View Details** to view the tenants that are associated with a tenant profile. The name, resource group, service offering, APIC account, service request ID, and customer assigned for the tenants in the tenant profile are displayed.
Step 5	Click the row with a tenant and click **View Details** to view the service offering.
Step 6	Click the row with a service offering and click **View Details** to view the resource entity of a tenant.
Step 7	Click **Add**.
Step 8	On the **Add Tenant Profile** screen, complete the following fields:

Name	Description
Name field	The name of the tenant profile. Once specified, you cannot edit the name of the profile.
Description field	The description of the tenant profile.
Enable DR check box	Check to enable the disaster recovery service support for the tenant profile. If checked, the tenant is allocated with resources from both the primary resource group and the secondary resource group.
Service Offering field	The service offerings to be associated with the tenant profile. Expand **Service Offering** , check the service offering that you want to use, and then click **Validate**. The service offerings are displayed based on the matching resource group availability. To create a new service offering, click the + icon. For more information about how to create a service offering, see Adding a Service Offering, on page 25. **Note** If you receive an error message instead of the service offerings list, take action according to the error message. For more details, see Troubleshooting a Service Offering List, on page 39.

Name	Description
Resource Group Selection drop-down list	Choose how the resource group selection will be made for the tenant profile: • **Admin Selection**—The resource group is selected by the administrator. • **Resource Group Tag based selection**—The resource group is selected based on the tag.

Step 9   Click **Next**.

Step 10   Expand **Resrouce Group** and click the **Add** (+) icon to choose a resource group for a specific service offering. For each service offering selected for the tenant profile, you can select the resource group.

The resource groups that match the specified requirement of the tenant profile are displayed.

Note	If there is no matching resource group for the resource requirements defined in a service offering, Cisco UCS Director will not list any resource group.

Step 11   Click **Submit**.

Troubleshooting a Service Offering List

While creating a tenant profile, you associate a tenant profile with multiple service offerings. The service offerings list is displayed based on the matching resource group availability. If you receive an error message instead of the service offerings list, take action according to the error message.

For example, on receiving the error message: *Host is not mounted on UCS servers*, check for the following:

Procedure

	Command or Action	**Purpose**
Step 1	Verify that the Cisco UCS server is managed by Cisco UCS Director. To check the status of the Cisco UCS servers, choose **Physical** > **Compute**, choose the Cisco UCS Manager account, and click the **UCS Discovered Servers**.	
Step 2	Verify that the vCenter account and Cisco UCS Manager account are in the same resource group, and host in the vCenter account is mounted on the Cisco UCS Manager account.	
Step 3	Verify that the Cisco UCS Manager accounts that are available in Cisco UCS Director each have a unique IP address. If more than one account exists with the same IP address, remove one of the accounts that is not part of the resource group.	

Cloning a Tenant Profile

Procedure

Step 1   Choose **Policies** > **Resource Groups**.

Step 2   On the **Resource Groups** page, click **Tenant Profile**.

Step 3   Click the row with the tenant profile that you want to clone.

Step 4   Click **Clone**.

Step 5   On the **Clone Tenant Profile** screen, complete the following fields:

Name	Description
Name field	The name of the tenant profile.
Description field	The description of the tenant profile.
Service Offering field	The service offerings to be associated with the tenant profile.
	Expand **Service Offering**, check the service offering you want to use, and then click **Validate**. The service offerings are displayed based on the matching resource group availability. To create a new service offering, click the + icon. For more information about how to create a service offering, see Adding a Service Offering, on page 25.
	Note If you receive an error message instead of the service offerings list, take action according to the error message. For more details, see Troubleshooting a Service Offering List, on page 39.
Resource Group Selection drop-down list	Choose how the resource group selection will be made for the tenant profile:
	• **Admin Selection**—The resource group is selected by the administrator.
	• **Resource Group Tag based selection**—The resource group is selected based on the tag.

Step 6   Click **Next**.

Step 7   Expand **Resource Group** and click the **Add (+)** icon to choose a resource group for a specific service offering. For each service offering selected for the tenant profile, you can select the resource group.

The resource groups that match the specified requirement of the tenant profile are displayed.

Note   If there is no matching resource group for the resource requirements defined in the service offering, Cisco UCS Director will not list any resource group.

Step 8   Click **Submit**.

Editing a Tenant Profile

Procedure

Step 1   Choose **Policies** > **Resource Groups**.

Step 2   On the **Resource Groups** page, click **Tenant Profile**.

Step 3   Click the row with the tenant profile that you want to edit.

Step 4   Click **Edit**.

Step 5   On the **Modify Tenant Profile** screen, complete the following fields:

Name	Description
Name field	The name of the tenant profile. Once specified, you cannot edit the name of the profile.
Description field	The description of the tenant profile.
Service Offering field	The service offerings to be associated with the tenant profile. Expand **Service Offering**, check the service offering you want to use, and then click **Validate**. The service offerings are displayed based on the matching resource group availability. To create a new service offering, click the + icon. For more information about how to create a service offering, see Adding a Service Offering, on page 25. **Note** If you receive an error message instead of the service offerings list, take action according to the error message. For more details, see Troubleshooting a Service Offering List, on page 39.
Resource Group Selection drop-down list	Choose how the resource group selection will be made for the tenant profile: • **Admin Selection**—The resource group is selected by the administrator. • **Resource Group Tag based selection**—The resource group is selected based on the tag.

Step 6   Click **Next**.

Step 7   Expand **Resource Group** click the **Add (+)** icon to choose a resource group for a specific service offering. For each service offering selected for the tenant profile, you can select the resource group.

The resource groups that match the specified requirement of the tenant profile are displayed.

> **Note**   If there is no matching resource group for the resource requirements defined in the service offering, Cisco UCS Director will not list any resource group.

Step 8   Click **Submit**.

Deleting a Tenant Profile

> **Note**   You cannot delete a tenant profile that is in use.

Procedure

Step 1   Choose **Policies** > **Resource Groups**.

Step 2   On the **Resource Groups** page, click **Tenant Profile**.

Step 3   Click the row with the tenant profile that you want to delete.

Step 4   Click **Delete**.
The tenant profile is deleted after confirmation.