

Managing Intercloud Fabric Resources and Policies

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Managing Users

Managing User Groups

A user group is the group to which the user belongs. A user group determines what resources an end user can access.

Use this procedure to manage user groups.

- **Step 1** Log in to Intercloud Fabric.
- **Step 2** Choose Manage > Users > User Groups.
- **Step 3** Click the + icon.
- **Step 4** Complete the following fields for Create User Group:

Name	Description
Name	Enter the name of the user group.
	The name can contain from 1 to 64 alphanumeric characters, including hyphens, underscores, periods, and colons.
Description	Enter the description of the user group.

Step 5 Click Submit.

Step 6 To delete a user group, select the user group, click the gear icon, and choose **Delete**. You cannot delete the default system admin user group or the default system end user group.

Managing Users

Intercloud Fabric supports two types of users: end users and an admin user. End users can have access to VDCs, VMs, catalogs, and service requests.

Use this procedure to manage a user.

Before You Begin

You have created a user group.

Procedure

- **Step 1** Log in to Intercloud Fabric.
- **Step 2** Choose Manage > Users > Users.
- **Step 3** Click the + icon.
- **Step 4** Complete the following fields for **Create User Group**:

Name	Description		
User Group	Choose the group to which the user belongs.		
Login Name	Enter the login name of the user.		
Password	Enter the password of the user.NoteIf Lightweight Directory Access Protocol (LDAP) authentication is configured for the user, the password is validated only at the LDAP server, and not at the local server.		
Confirm Password	Enter the password of the user again for confirmation.		
Email	Enter the email address of the user.		

Name	Description
First Name	Enter the first name of the user.
Last Name	Enter the last name of the user.
Phone	Enter the phone number of the user.
Address	Enter the postal address of the user.

Click Submit. Step 5

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tep (5	To perform	an action o	on the user,	select the user,	click the gear i	con, and choos	e any of the	following actions:

Action	Description
Delete	Deletes a user.
Reset Password	Enables an admin user to reset password for an end user.

Managing Resources

About Networks in Intercloud Fabric

There are three types of networks in Intercloud Fabric:

- Management network—Manages Intercloud Fabric components and ICF services. In this network, Intercloud Fabric components and services are attached to the management network for connectivity.
- Data network—Manages cloud virtual machine interfaces. In this network, VMs can be attached to one or more data networks for connectivity.
- Transport network-Connects the Intercloud Fabric Routing Service back to the private cloud so that the cloud virtual machine can reach remote networks that are not extended to the public cloud. The transport network is used by the routing service in the public cloud to communicate with the private cloud. Traffic from VMs in the public cloud is routed to the enterprise gateway on the transport network, if the destination network is not in the public cloud.

Use the following guidelines to create networks in Intercloud Fabric:

- During the installation of the Intercloud Fabric components, you must define the management network. The same network is also used as the transport network.
- · Management and transport networks are always extended to the cloud. Cloud properties such as DHCP and L3 are not applicable.

- During the installation of the Intercloud Fabric components, you can use the same network as your data network and enable DHCP for the network on the private cloud.
- Network with IP addresses in the range 10.0.3.0/24 is reserved for internal communication. Do not assign IP addresses in this range for ICF or as IP pool addresses for the management network.
- · You can create additional networks later.

See Creating Networks, on page 4.

• You can only have one management and one transport network. You can use the management network defined during the installation of the Intercloud Fabric components as the transport network. Alternatively, you can disable the transport network created during the installation of the Intercloud Fabric components and create a new transport network. You can also use the data network as the transport network.

IP pools

In Intercloud Fabric, IP pools are used for the following:

- Intercloud Fabric components in the private cloud.
- Intercloud Fabric link components, such as the Intercloud Fabric Extender or an Intercloud Fabric Switch, in the public cloud.
- Virtual machine addresses in the cloud.

Use the following guidelines to create IP pools:

- You can either use the same IP pool for the data and management networks, or create separate IP pools.
- You must create at least one IP pool for the management network during the installation of Intercloud Fabric components and creation of the Intercloud Fabric cloud.
- You can assign IP pools to resource pools and use them for the data network.

Creating Networks

Networks in Intercloud Fabric can be local to the cloud, or stretched from the private cloud to the public cloud. In addition to data networks used to connect VMs, Intercloud Fabric requires one management network used by Intercloud Fabric components and an optional transport network. A transport network is required if the routing service is enabled for local routing in the public cloud. The management network can be specified as the transport network. The management or transport network can also be specified as the data network.

Use this procedure to create a network.

- **Step 1** Log in to Intercloud Fabric.
- Step 2 Click Create Network.
- **Step 3** Complete the following fields for **Create Network**:

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Name	Description
Name	Enter the name of the network.
	The name can contain from 1 to 64 alphanumeric characters, including hyphens, underscores, periods, and colons.
Description	Enter the description of the network.
VLAN ID	Enter the VLAN ID of the network. The VLAN ID range is from 1 to 3967 and 4048 to 4093.
	If you are using Cisco Nexus 1000V, VLAN IDs 3968 to 4047 are unavailable for use.
	If the network is stretched from the private cloud, the VLAN ID should be the same as your network in the private cloud being stretched.
	If the network is local to the cloud, use a VLAN ID that is not used by any stretched network.
Subnet	Enter the subnet of the network.
	The subnet defines the base network and mask. The supported format is $x.x.x.x/xx$.
Enterprise Gateway	Enter the IP address of the private cloud gateway of the network.
	An enterprise gateway applies only to stretched networks and is mandatory for management and transport networks.
	A stretched network without an enterprise gateway is treated as an unroutable network.
Туре	Choose the network type:
	• A management network is used to manage Intercloud Fabric components and ICF services. In this network, Intercloud Fabric components and services are attached to the management network for connectivity.
	• A data network is used to manage cloud virtual machine interfaces. In this network, VMs can be attached to one or more data networks for connectivity.
	• A transport network is used to connect the Intercloud Fabric Routing Service back to the private cloud so that the cloud virtual machine can reach remote networks that are not extended to the public cloud. The transport network is used by the routing service in the public cloud to communicate with the private cloud. Traffic from VMs in the public cloud is routed to the enterprise gateway on the transport network, if the destination network is not in the public cloud.

Name	Description
Cloud Properties	Choose the cloud properties.
	Based on the selected type, the appropriate options are displayed.
	• Stretched : Check this check box to extend the network from the private cloud to the public cloud. This option is mandatory for management and transport networks.
	• L3: Check this check box to connect to the Intercloud Fabric Routing Service. This option applies only to data networks. When this property is set, the network is eligible for routing in the public cloud by the Intercloud Fabric Routing Service.
	For non-stretched networks, a network is eligible for routing only when this property is set. For stretched networks, the enterprise gateway determines whether the network is eligible for routing. The L3 property optimizes the routing by locally routing VM-to-VM traffic in the cloud.
	• DHCP : Check this check box to enable DHCP for the network on the private cloud. This option applies only to data networks.
	When this option is set, the DHCP service is available for VMs on the network and the IP pool is used to assign IP addresses to the ICF components.
	The defaults for the management network include:
	• The network is always stretched.
	The defaults for the data network include:
	• The network is always stretched.
	• The network is connected to the Intercloud Fabric Routing Service.
IP Pool Name	Enter the name of the IP pool associated with the network.
	The name can contain from 1 to 64 alphanumeric characters, including hyphens, underscores, periods, and colons. You cannot change this name after the object has been saved.

Name	Description
IP Pool Range	Enter the start and end IP address for the range of IP addresses to add to the IP pool. Enter multiple IP ranges separated by commas.
	Supported formats include:
	<pre>x.x.x.x - y.y.y.y IP addresses between x.x.x.x - y.y.y.y inclusive x.x.x.x#n n IP addresses from x.x.x.x x.x.x.x only one IP address x.x.x.x x.x.x.x-y x.x.x.x-y x.x.x.x-y.y x.x.x.x-y.y.y</pre>
	Examples: 10.2.94.197 10.2.94.197-200 10.2.94.197-10.2.94.200 10.2.94.197#5

- Step 4 Click Submit.
- **Step 5** To view the status of the task, see Managing Service Requests, on page 18.

Managing Networks

Use this procedure to manage networks.

Step 1	Log in to Intercloud Fabric.
Step 2	Choose Manage > Resources > Networks.
	The list of networks is displayed. See Icons Used in Intercloud Fabric for information regarding the icons used in Intercloud Fabric.

- **Step 3** Click the + icon to create a network. See Creating Networks, on page 4.
- **Step 4** To perform an action on the network, select the network, click the gear icon, and choose any of the following actions:

Delete	Description	
Delete	Deletes the network.	
	You cannot delete a network if it is in use.	

Delete	Description	
Edit	Edits the network.	
	You can edit the name, VLAN ID, subnet, enterprise gateway, type, cloud properties, and IP pool details for a network. See Creating Networks, on page 4 for more information.	

Creating a MAC Pool

Intercloud Fabric assigns MAC addresses for cloud VMs as well as system components in the cloud. A MAC pool defines the set of MAC addresses that can be used by Intercloud Fabric.

Use this procedure to create a MAC pool.



Note

Ensure that there is no overlapping MAC address pool for multiple Intercloud Fabric setups.

Procedure

- **Step 1** Log in to Intercloud Fabric.
- **Step 2** Choose Manage > Resources > MAC Pools.
- **Step 3** Click the + icon to create a MAC pool.
- **Step 4** Complete the following fields for **Create MAC Pool**:

Name	Description		
Mac Pool Name	Enter the name of the MAC pool.		
	The name can contain from 1 to 64 alphanumeric characters, including hyphens, underscores, periods, and colons.		
Pool Description	Enter a description of the MAC pool.		
Starting MAC Address	Enter the starting MAC address for the pool in 12-digit hexadecimal format.		
	Note Ensure that multicast MAC addresses are not used as the starting MAC address.		
MAC Addresses Count	Enter the number of addresses in the pool. The minimum value is 1000 MAC addresses; the maximum value is 16,000 MAC addresses.		

Step 5 Click Save.

Managing Cloud Resources

Managing Virtual Accounts

A virtual account is an abstraction that represents any cloud provider account. In Intercloud Fabric, there is one private virtual account that is created during the installation process and any number of user-defined public virtual accounts.

Use this procedure to manage a virtual account.

Procedure

- **Step 1** Log in to Intercloud Fabric.
- Step 2 Choose Manage > Cloud Resources > Virtual Accounts. The list of virtual accounts is displayed. See Icons Used in Intercloud Fabric for information regarding the icons used in Intercloud Fabric.
- **Step 3** Click the + icon to create a public virtual account. See Providing Public Cloud Credentials.
- **Step 4** To perform an action on the virtual account, select the virtual account, click the gear icon, and choose any of the following actions:

Action	Description		
Create ICF Cloud	Creates an Intercloud Fabric cloud. See Creating an Intercloud Fabric Cloud.		
Refresh	Refreshes the virtual account.		
Delete	Deletes the virtual account.		
	You cannot delete the following virtual accounts:		
	• A private virtual account.		
	• Virtual accounts associated with Intercloud Fabric clouds.		
Edit	Updates the virtual account.		
	Note Updating a private virtual account is not supported.		

Step 5 Click Submit.

Managing Intercloud Fabric Clouds

Use this procedure to manage Intercloud Fabric clouds.

Procedure

- **Step 1** Log in to Intercloud Fabric.
- **Step 2** Choose Manage > Cloud Resources > ICF Clouds. The list of Intercloud Fabric clouds is displayed. See Icons Used in Intercloud Fabric for information regarding the icons used in Intercloud Fabric.
- Step 3 Click the + icon to create an Intercloud Fabric cloud, which involves defining an Intercloud Fabric cloud and creating an Intercloud Fabric link.
 See Creating an Intercloud Fabric Cloud.
- **Step 4** Click an Intercloud Fabric cloud name to view the details of the Intercloud Fabric cloud.
- Step 5 Select an Intercloud Fabric cloud and click View Details to view the details of an Intercloud Fabric link.

Operation	Description	
Start	Starts the Intercloud Fabric link.	
Stop	Stops the Intercloud Fabric link.	
Reboot	Reboots the Intercloud Fabric link.	
Switchover	Changes the status of the Intercloud Fabric link from active to standby.	
Delete	Deletes the Intercloud Fabric link.	
	You cannot delete an Intercloud Fabric link if a VDC is associated with the Intercloud Fabric cloud.	

Step 6 To perform an operation on the Intercloud Fabric link, click the operation.

Step 7 To perform an action on the Intercloud Fabric cloud, select the Intercloud Fabric cloud, click the gear icon, and choose any of the following actions:

Action	Description	
Delete Cloud	Deletes an Intercloud Fabric cloud.	
	You cannot delete an Intercloud Fabric cloud that is associated with a VDC, VM, or Intercloud Fabric link.	
Create ICF Link	F Link Creates an Intercloud Fabric link. See Creating an Intercloud Fabric Cloud.	
Create VDC Creates a VDC. See Creating a Virtual Data Center.		

Action	Description		
Edit Cloud	Update	Updates an Intercloud Fabric cloud.	
	Note	If an Intercloud Fabric link is present, you can edit only the Name and Routing Services for an Intercloud Fabric cloud	

Managing Virtual Data Centers

Use this procedure to manage VDCs.

Procedure

- **Step 1** Log in to Intercloud Fabric.
- Step 2 Choose Manage > Cloud Resources > VDCs. The list of VDCs is displayed. See Icons Used in Intercloud Fabric for information regarding the icons used in Intercloud Fabric.
- **Step 3** Click the + icon to create a VDC. See Creating a Virtual Data Center.
- **Step 4** Click a VDC name to view the details of the VDC such as operational status, configuration details, and network details.
- Step 5 To perform an action on the VDC, select the VDC, click the gear icon, and choose any of the following actions:

Action	Description
Delete	Deletes a VDC.
	You cannot delete the following VDCs:
	• The default VDC.
	• VDCs associated with Intercloud Fabric clouds.
	• VDCs associated with virtual machines.

Managing Virtual Machines

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Use this procedure to manage virtual machines.

Before You Begin

- You have uploaded the image to Intercloud Fabric.
- You have created a catalog.
- You have created a VDC.

Procedure

- **Step 1** Log in to Intercloud Fabric.
- Step 2 Choose Manage > Cloud Resources > Virtual Machines. The list of VMs is displayed. See Icons Used in Intercloud Fabric for information regarding the icons used in Intercloud Fabric.
- **Step 3** Click the **Dashboard** icon to view the VM dashboard. See Viewing the Intercloud Fabric Dashboard.
- **Step 4** Click the + icon to create a new VM.
- **Step 5** Complete the following fields for **Create Virtual Machine**:

Name	Description	
Name	Enter the VM name. The VM name must be unique for all VDCs.	
Catalog	Choose the catalog.	
VDC	Choose the VDC for the catalog.	
СРИ	Enter a value to override the CPU specified in the catalog.	
Memory	Enter a value to override the memory specified in the catalog.	
Disk	Displays the disk information for the VM.	
Configure Network Interfaces	Choose a network for the VM. See About Networks in Intercloud Fabric, on page 3 for more information.	
Provider Services Access	Check the check box to enable Provider Services Access on the VM. Note This option is only available when Provider Services Access is enabled in the default VM policy and the VM policy is associated with the VDC. In this release, Provider Services Access is only supported for VDCs associated with Amazon VPC.	

Step 6 Click Submit.

- **Step 7** To view the status of the task, see Managing Service Requests, on page 18.
- **Step 8** To perform an action on the VM, select it, click the gear icon, and choose any of the following actions:

Action	Description
Start Starts a VM.	
Stop	Stops a VM.
Reboot	Reboots a VM.
Delete	Deletes a VM from the Intercloud Fabric cloud.

Managing Applications

Uploading an Image

An image uploaded to Intercloud Fabric will be used later to create a catalog in the Intercloud Fabric cloud. Use this procedure to upload an image to Intercloud Fabric.

Before You Begin

You know the location of the image to upload.

- **Step 1** Log in to Intercloud Fabric.
- Step 2 Choose Manage > Applications > Images.
- **Step 3** Click the + icon to upload an image or template.
- **Step 4** Complete the following fields for **Image Upload**:

Name	Description		
Name	Enter the name of the image you are uploading to Intercloud Fabric.		
	The name can contain from 1 to 64 alphanumeric characters, including hyphens, underscores, periods, and colons.		
Description	Enter a description of the image.		
SCP Server IP/Host	Enter the SCP server IP address.		
Username	Enter the username of the server.		
Password	Enter the password of the server.		

Name	Description	
Source Path	Enter the path to the image file on the server.	

Step 5 Click Submit.

Step 6 To view the status of the task, see Managing Service Requests, on page 18.

Step 7 To delete an image, select the image, click the gear icon, and choose **Delete**. You cannot delete an image if it is associated with a catalog.

Managing Catalogs

A catalog item is created by the system administrator from an uploaded image. It is associated with a public Intercloud Fabric cloud where the template is created and also has a set of user groups who can use it to deploy cloud virtual machines.

Use this procedure to manage a catalog item.

Before You Begin

You have uploaded the image to Intercloud Fabric.

Procedure

Step 1	I Log in ↑	to Interc	loud I	Fabric.
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Step 2 Choose Manage > Applications > Catalog.

- **Step 3** Click the + icon to create a catalog.
- **Step 4** Complete the following fields for **Create Catalog**:

Name	Description	
Name	The name of the catalog item.	
	The name can contain from 1 to 64 alphanumeric characters, including hyphens, underscores, periods, and colons.	
Description	The description of the catalog item.	
Image	Choose an existing image, or upload a new one.	
	See Uploading an Image, on page 13.	
Availability	Choose the Intercloud Fabric cloud to associate with the catalog item.	
Access Permission	Click to select the user groups who can access the catalog item.	

Name	Description	
User Groups	Choose the specific user group who can access the catalog item.	
	This option is only available if you choose Selected User Groups.	

Step 5 Click Submit.

- **Step 6** To view the status of the task, see Managing Service Requests, on page 18.
- Step 7 To perform an action on the catalog item, select the catalog item, click the gear icon, and choose any of the following actions:

Action	Description	
Delete	Deletes the catalog item.	
	You cannot delete a catalog item if:	
	• A VM is created using the catalog item.	
	• Deployment is in progress on a VM associated with the catalog item.	
Create VM	Creates a virtual machine from a catalog item. See Creating a Virtual Machine from a Catalog.	

Managing Policies

Managing Routing Policies

A routing policy defines the forwarding entries in the Intercloud Fabric solution. The routing policy is used by the routing service on the Intercloud Fabric cloud or VMs with Provider Services Access enabled. The routing policy is global to the system with one global policy for the routing service and another for the VMs with Provider Services Access. You can edit a routing policy to add additional prefixes.

Use this procedure to manage a routing policy.

- **Step 1** Log in to Intercloud Fabric.
- **Step 2** Choose Manage > Policies > Routing. The list of routing policies is displayed.
- Step 3 Select the routing policy, click the gear icon, and choose Edit to edit a routing policy.
 - **Note** For Provider Services Access, select the System default Routing Policy (system_default_vm_routing_policy).

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Name	Description		
Name	You cannot edit the name of the following default routing policies generated by Intercloud Fabric:		
	• system_default_routing_policy		
	• system_default_vm_routing_policy		
Description	The description of the routing policy.		
Destination Prefix	You can edit the destination prefix and the action.		
(Action)	A routing policy can have from 1 to 100 prefixes. The destination prefix must be unique for a routing policy and is sorted based on the longest prefix match.		
	Each entry in the routing policy is associated with one of the following actions:		
	• Forward: Packets that match the prefix are forwarded to the private cloud.		
	• Forward External: This action is specific to the VM routing policy. Packets that match the prefix are forwarded to the public cloud using the Provider Services Access.		
	Note For Provider Services Access, enter the Amazon VPC subnet CIDR (for example, 172.16.0.0) and choose Forward External.		
	• Drop: This action is specific to the Routing Service routing policy.		

Step 4	You can ec	lit some of the	following f	or Routi	ng Policy:
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Step 5 Click Save.

Managing Virtual Machine Policies

Use this procedure to manage a virtual machine (VM) policy.

Step 1	Log in to Intercloud Fabric.		
Step 2Choose Manage > Policies > VM.The list of VM policies is displayed.			
Step 3	Select the VM, click the gear icon, and choose Edit to edit a VM policy.		
	Note	For Provider Services Access, select the System default VM Policy (system_default_vm_policy).	
Step 4	4 You can edit the following for VM Policy:		

Name	Description
Provider Services Access	Check the check box to enable Provider Services Access on the VM.

Step 5 Click Save.

Managing Security

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Managing Cloud Security Groups

A cloud security group is a collection of CIDRs that can access VM instances that are created in the public cloud. These are global groups and can be referenced from the public Intercloud Fabric cloud.

Use this procedure to manage a cloud security group.

- **Step 1** Log in to Intercloud Fabric.
- **Step 2** Choose Manage > Cloud Security Groups > Cloud Security Groups. The list of cloud security groups is displayed.
- **Step 3** Click the + icon to create a cloud security group.
- **Step 4** Complete the following fields for **Cloud Security Group**:

Name	Description
Name	Enter the name.
	The name can contain from 1 to 64 alphanumeric characters, including hyphens, underscores, periods, and colons.
Туре	Choose the type.
	There are two types of cloud security groups:
	• infra-access cloud security group contains the CIDRs that can access infrastructure components such as the ICF Switch (ICS). This enables the ICF Extender (ICX) to communicate with ICS on a set of predefined ports such as port 6644, 6646, 22, or 443.
	• Provider Services Access cloud security group is used for service networks and ICS to access cloud VMs that have Provider Network Access enabled.
	Default infra-access and Provider Services Access cloud security groups are configured with any CIDR (127.0.0.1/32).
	Note You can only create an infra-access cloud security group.

Name	Description	
Description	Enter the description.	
CIDR	Enter the CIDR. Click the + icon to configure additional CIDRs.	

Step 5 To perform an action on the cloud security group, select the cloud security group, click the gear icon, and choose any of the following actions:

Action	Description		
Delete	Deletes the cloud security group.		
	You cannot delete the following cloud security groups:		
	• The default infra-access cloud security group.		
	• The default Provider Services Access cloud security group.		
Edit	Updates the cloud security group.		
	You can edit the name, type, and CIDR for the cloud security group.		

- Step 6 Click Submit.
- **Step 7** To view the status of the task, see Managing Service Requests, on page 18.

Managing Service Requests

In Intercloud Fabric, operations that take longer to complete are performed asynchronously to improve performance. These asynchronous workflows are called service requests.

Use this procedure to manage service requests.

Procedure

 Step 1 Log in to Intercloud Fabric.
 Step 2 Choose Manage > Service Requests > Service Requests. The Service Requests page lists all of the active service requests. See the section *Icons used in Intercloud Fabric* for information regarding the icons used in Intercloud Fabric.
 Step 3 Click a service request to view detailed information such as workflow status and logs for the task.
 Step 4 Click a service request of the section of the section of the section of the task.

Click to delete service requests.

Step 5 Define the criteria to delete service requests.

By default, successfully completed service requests that are older than 6 days will be deleted if no value is provided in the **Complete Date** or **Status** fields.

Action	Description
Complete Date	Enter the number of days. Service requests older than the entered days will be used for the deletion criteria.
Status	Choose the status.

Step 6 Click Delete.

Manage Infrastructure

Managing Intercloud Fabric Components

Use this procedure to manage Intercloud Fabric components.

Before You Begin

You have installed Intercloud Fabric components.

Procedure

- **Step 1** Log in to Intercloud Fabric.
- **Step 2** Do one of the following.
 - Click Infrastructure Status
 - Click Infrastructure > Infrastructure Status

The status and details of the ICF infrastructure components are displayed. See Icons Used in Intercloud Fabric for information regarding the icons used in Intercloud Fabric.

Step 3 Click Delete to delete the ICF infrastructure components.You cannot delete the ICF infrastructure components if you already created an ICF link.

In an HA environment, the primary and secondary ICF components are deleted.

Step 4 Click **Reboot** to reboot the ICF infrastructure components. In an HA environment, you can reboot the primary host.