Installing Cisco ICFPP on OpenStack

Workflow for OpenStack Environments

Cisco ICFPP should be implemented by all service providers that interface with Cisco Cisco Intercloud Fabric Director platforms. The only exceptions to this are Amazon EC2 and Windows Azure, which are available to Cisco Intercloud Fabric through their native public cloud APIs.

The high-level tasks involved in installing and configuring Cisco ICFPP in an OpenStack environment are:

1. Confirm that you have met the installation requirements—See Installation Requirements.

2. Gather the required information—See Information Required for Configuration and Installation.

3. Configure OpenStack for Cisco ICFPP and launch a Cisco ICFPP instance—See Installing Cisco ICFPP on OpenStack, on page 1.

4. Configure Cisco ICFPP for use with Cisco Intercloud Fabric Director—See Configuring Cisco ICFPP for Cisco Intercloud Fabric Director, on page 3.

5. (Optional) Configure Cisco ICFPP virtual appliances for a multiple-node cluster—See Configuring Cisco ICFPP for Clusters.

6. Configure Cisco Intercloud Fabric Director for use with Cisco ICFPP—See the *Cisco Intercloud Fabric Getting Started Guide*.

Installing Cisco ICFPP on OpenStack

To install Cisco ICFPP on OpenStack, you must import an image, create a flavor, and launch an instance. This procedure describes how to complete these tasks.

The amount of time required for this procedure depends on the platform:

- If the platform does not support QCOW2, the procedure can take up to two hours to complete, depending on the amount of time it takes to upload the image and convert it from QCOW2 format to RAW.

- If the platform supports QCOW2, no conversion is required, and the procedure takes less time.

Before You Begin

- Download the Cisco ICFPP software package from cisco.com. For assistance, contact your Cisco representative.

- Unzip the downloaded file to obtain the QCOW2 file and the README file. For more information, see Cisco ICFPP Software.

- Review the README file for information related to installing and using Cisco ICFPP with OpenStack.

- Confirm that you have met the requirements in System Requirements.

- Gather the information identified in Information Required for Configuration and Installation.

- In OpenStack:

  ◦ Confirm that you have admin privileges.

  ◦ Create an OpenSource RC file (*name*-openrc.sh) in which you define your environmental variables and login credentials.

  ◦ Create a project on which to install Cisco ICFPP.

  ◦ Confirm that the Cinder service is up and running.

  ◦ Configure a security group that allows traffic on ports 22, 80, 443, and 3306.

  For more information about performing these operations in OpenStack, see docs.openstack.org.

Procedure

Step 1　In the shell from which you will enter **glance** commands, enter the following command:

```
source name-openrc.sh
```

Step 2　Copy the Cisco ICFPP image to the system running the **glance** CLI.

Step 3　Using the **glance** CLI, upload an image to the OpenStack server by entering the following command:

```
glance image-create --name icfpp-n.n.n --disk-format qcow2 --container-format bare --file
./icfpp-n.n.n.qcow2
```

where *icfpp-n.n.n* is the name of the Cisco ICFPP image, such as icfpp-2.3.1.

After the image has been uploaded, it appears in the OpenStack Dashboard Images table at **Admin > Images** or **Project >** *project* **> Manage Compute > Images & Snapshots**.

Step 4　In the OpenStack Dashboard, choose **Admin > Flavors**, and click **Create Flavor**.

Step 5　In the **Create Flavor** dialog box, enter the following information, and click **Create Flavor**:

- Name—Enter a flavor name.

> - vCPUs—Enter **4**.
>
> - RAM MB—Enter **8192**.
>
> - Root Disk—Enter the desired disk size in gigabytes.
>
> - Ephemeral Disk—Enter **0**.
>
> - Swap Disk—Enter **0**.

Step 6   Choose **Project >** *project* **> Manage Compute > Volumes**, and click **Create Volume**.

Step 7   In the **Create Volume** dialog box, add a volume with the size 100 GB, and click **Create Volume**.

Step 8   In OpenStack, obtain the following information:

> - Flavor ID
>
> - Image ID
>
> - Network ID

Step 9   At the command line, enter the following command to launch Cisco ICFPP:

```
nova boot --image image-id --flavor flavor-id
--nic net-id=network-id --block-device-mapping vdb=volume-id
icfpp-instance-name
```

A Cisco ICFPP instance is launched.

Configuring Cisco ICFPP for Cisco Intercloud Fabric Director

After you have installed Cisco ICFPP on an OpenStack server and launched a Cisco ICFPP instance, you can configure Cisco ICFPP for use with Cisco Intercloud Fabric Director.

Before You Begin

Confirm the following:

- Cisco ICFPP has been installed on an OpenStack server and an instance has been launched.

- You know the Cisco ICFPP public IP address.

Procedure

Step 1   In a browser, enter the public IP address assigned to the Cisco ICFPP instance and log in to the Cisco ICFPP GUI. The default credentials are:

- Username: admin

- Password: admin

Step 2 In the OpenStack dashboard, choose **Project** > *project* > **Access & Security**, and click the **API Access** tab.

Step 3 In the **API Endpoints** table, locate and make a note of the service endpoint Uniform Resource Identifier (URI) for the **Identity** service.

Step 4 In the Cisco ICFPP GUI, choose **Cloud Instances**, and click **Add**.

Step 5 In the **Add Cloud Instance** dialog box, provide the following information, and click **Add**:

Field	Description
Cloud Instance Name	The name of the cloud instance.
Type	The cloud instance type: Cisco or Custom.
Module Name	For a Cisco cloud instance type, choose the module name, such as OSP for OpenStack Platform. For a custom cloud instance type, enter the custom module name.
Image Conversion Support on Cloud	For OSP modules, indicate whether or not image conversion on the cloud is required.
First Boot Image Conversion Support	For OSP modules, indicate whether or not image conversion during VM boot on the cloud is required.
FTP Server Name	For Cisco Intercloud Services — V modules, the name of the FTP server.
Endpoint URI	The endpoint URI for the cloud instance.

Step 6 In the Cisco ICFPP GUI, choose **Tenants** > **All Tenants**, and click the **Accounts** tab.

Step 7 Click **Add**.

Step 8 In the **Add Tenant** dialog box, provide the following information, and click **Add**:

Field	Description
Tenant Name	Enter the tenant name. You cannot change the name after adding the tenant.
Cloud Instance Name	Choose the name of the cloud instance. You cannot change the cloud instance name after adding the tenant.
Enable Tenant Account	
Enabled	(Read-only) Indicates whether or not the tenant account is enabled. The account is enabled by default.
Org Name	For VMware vCloud Director clouds, enter the name of the organization to which the tenant belongs.

Field	Description
Resource Limits	
Max Servers	Enter the maximum number of servers provisioned for the tenant, including stopped VMs.
User Account	
Username	Enter the account username.
Email	Enter the account email address.
API Key	For CloudStack clouds, enter the API key for the tenant.
Secret Key	For CloudStack clouds, enter the Secret key for the tenant.

For information about configuring Cisco ICFPP for a multiple-node cluster, see Configuring Cisco ICFPP for Clusters.