



Southbound Cloud Adapter Framework

- [Creating Custom Cloud Adapters, page 1](#)
- [Custom Cloud Adapter Programming Model , page 1](#)
- [Installing or Upgrading an Adapter, page 5](#)
- [Validating an Adapter, page 6](#)

Creating Custom Cloud Adapters

Service developers and service provider customers can create their own custom cloud adapters for use with Cisco ICFPP by using the Cisco ICFPP developer guidelines. These guidelines ensure that any custom cloud adapter will work seamlessly with Cisco ICFPP. To obtain a copy of the guidelines, contact your Cisco representative.

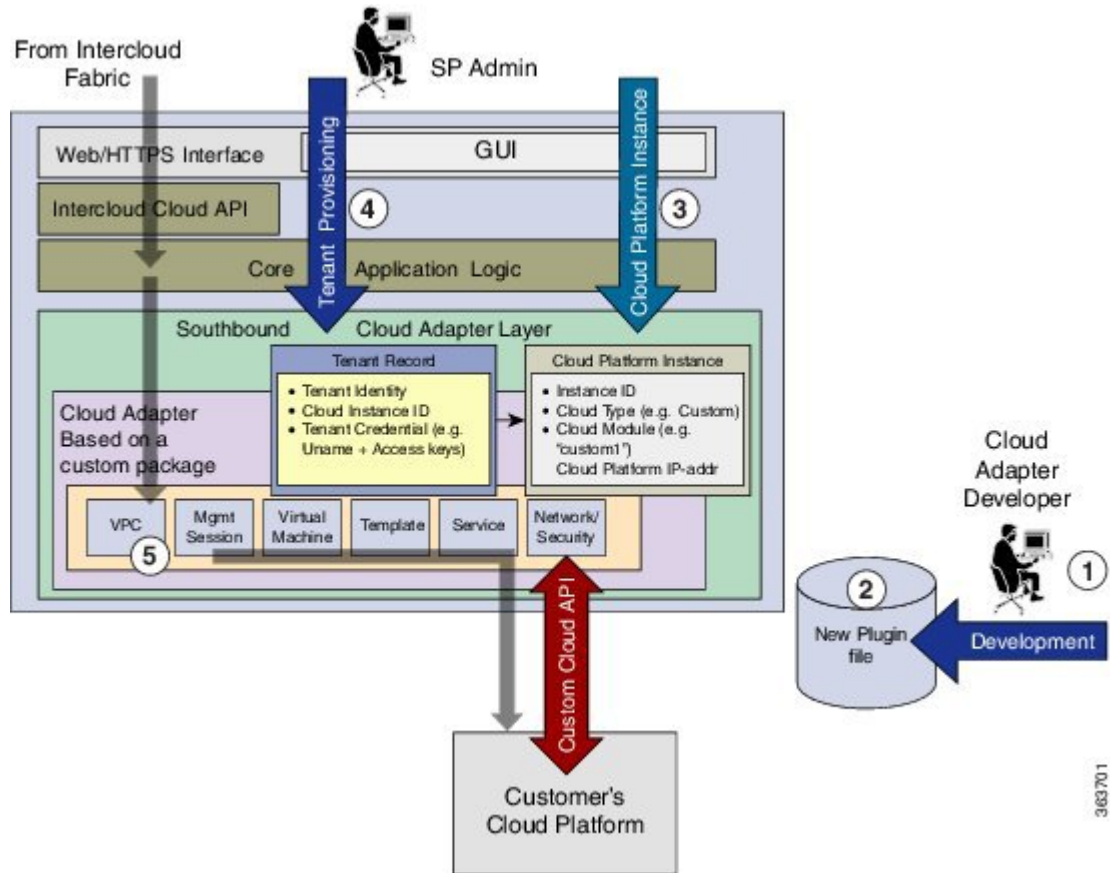
Custom Cloud Adapter Programming Model

After a custom cloud adapter is developed, customers can load the adapter code into Cisco ICFPP and enable the cloud adapter functions for the targeted tenants as described in the following workflow:

- 1 Service provider developers download the cloud adapter SDK from www.cisco.com to develop a custom cloud adapter. For assistance, contact your Cisco representative.
- 2 When the customer cloud adapter code is ready to use, the developer loads the adapter package using the Cisco ICFPP GUI.
- 3 The service provider administrator uses the cloudinstances API to create a new instance for the custom adapter. In the Cloud Instance Provision API request, the service provider administrator enters the name of the southbound adapter in the **Cloud Module** field. The name must be the same name that is used in the service interface API implementation. The API binds the adapter code with the cloud instance to be added.
- 4 When a service provider administrator provisions a tenant on the Cisco ICFPP platform using the tenant management API, the service provider administrator can bind the tenant with the cloud instance created in the previous step.
- 5 When the tenant issues Cisco Intercloud Fabric cloud API requests with a Cisco Intercloud Fabric Director instance, the API requests are handled by the newly added cloud adapter code.

The following figure illustrates how custom cloud adapter code can be loaded into Cisco ICFPP and be used to process incoming Cisco Intercloud Fabric cloud API requests that are issued by a tenant.

Figure 1: Cisco ICFPP Programming Model Overview



The following tables summarize the current southbound API stub functions that are supported in the cloud adapter classes.

Table 1: Management Session Interface API

Class API Category	API Name	Input Parameters	Output Parameters	Comments
Management Session Interface	createClientSession	CapITenantAccountVO <i>account</i>	Session ID	Creates a management session with a cloud platform instance.
	deleteClientSession	Session ID		Deletes a management session.
	validateClientSession	CapITenantAccountVO <i>account</i>		Validates a current management session.

Table 2: Service Management Interface API

Class API Category	API Name	Input Parameters	Output Parameters	Comments
Service Management Interface	listCapabilities		Provider Capability	Lists the cloud platform capabilities.
	listLocations		Location Details	Lists the locations or sites supported by the provider.

Table 3: Network Management Interface API

Class API Category	API Name	Input Parameters	Output Parameters	Comments
	listPublicIpAddress	CapiTenantAccountVO <i>account</i>	IP address List	Gets the list of public IP addresses.

Table 4: Template Management Interface API

Class API Category	API Name	Input Parameters	Output Parameters	Comments
Template Management Interface API	createTemplate	CapiTenantAccountVO <i>account</i> , capiTemplate <i>template</i>	Template ID	Creates a template based on an image.
	deleteTemplate	CapiTenantAccountVO <i>account</i> , Template ID		Deletes a template.

Table 5: VM Management Interface API

Class API Category	API Name	Input Parameters	Output Parameters	Comments
VM Management Interface API	deployVirtualMachine	CapiTenantAccountVO <i>account</i> , capiServer <i>server</i>	capiServer <i>server</i>	Deploys a virtual machine based on the template ID.
	destroyVirtualMachine	CapiTenantAccountVO <i>account</i> , Server ID		Destroys a virtual machine based on the server ID.
	downloadVirtualMachine	CapiTenantAccountVO <i>account</i> , capiServer <i>server</i> , string <i>diskId</i> , capiVMAction <i>vmAction</i>		Downloads the VM disk from the cloud provider catalog to Cisco ICFPP.
	listVirtualMachine	CapiTenantAccountVO <i>account</i> , capiServer <i>server</i>	capiServer <i>server</i>	Lists all of the virtual machines that were instantiated by the tenant.
	rebootVirtualMachine	CapiTenantAccountVO <i>account</i> , capiServer <i>server</i> , capiAction <i>actionType</i>		Reboots a virtual machine based on the server.
	startVirtualMachine	CapiTenantAccountVO <i>account</i> , capiServer <i>server</i> , capiAction <i>actionType</i>		Starts a virtual machine that was previously stopped.
	stopVirtualMachine	CapiTenantAccountVO <i>account</i> , capiServer <i>server</i> , capiAction <i>actionType</i>		Stops a virtual machine.
	updateVirtualMachine	CapiTenantAccountVO <i>account</i> , capiServer <i>server</i>		Updates attributes of a virtual machine, such as the IP address.

Table 6: Virtual Private Cloud (VPC) Management Interface API

Class API Category	API Name	Input Parameters	Output Parameters	Comments
VPC Management Interface API	createVpc	CapiTenantAccountVO <i>account</i> , capiProviderVpcDetail <i>model</i>	capiProviderVpcDetails <i>vpcdetails</i>	Creates a provider VPC.
	createVpcNetwork	CapiTenantAccountVO <i>account</i> , capiProviderVpcNetwork <i>networkModel</i> , capiProviderVpcDetails <i>model</i>	capiProviderVpcNetwork <i>networkModel</i>	Creates a VPC network.
	deleteVpc	CapiTenantAccountVO <i>account</i> , vpcId		Deletes a VPC.
	deleteVpcNetwork	CapiTenantAccountVO <i>account</i> , vpcId, networkId		Deletes a network from a VPC.
	listProviderVpc	CapiTenantAccountVO <i>account</i>		Lists the VPCs of a tenant.
	listVpcById	CapiTenantAccountVO <i>account</i> , vpcId		Lists the specified VPC of a tenant.
	listVpcNetworkById	CapiTenantAccountVO <i>account</i> , vpcId, networkId		Lists a network of a VPC from a tenant.
	updateVpc	CapiTenantAccountVO <i>account</i> , capiProviderVpcDetail <i>model</i>		Updates a VPC.

Installing or Upgrading an Adapter

You can install or upgrade an adapter by using this procedure.

Before You Begin

Confirm that the adapter file is:

- Accessible from the Cisco ICFPP virtual appliance.
- A `.tar.gz` file.

Procedure

- Step 1** Log in to the Cisco ICFPP GUI as an administrator.
 - Step 2** Choose **Install > Adapters** and click **Install**.
 - Step 3** In the **Install Adapter** dialog box, provide the required information and select the adapter file.
 - Step 4** Click **Upload**.
 - Step 5** After the file is uploaded, click **Submit**.
 - Step 6** Using SSH, log in to the ShellAdmin console for the virtual appliance as the shelladmin user.
 - Step 7** Choose the **Stop Services** option.
 - Step 8** Choose the **Start Services** option.
-

Validating an Adapter

You can validate whether an adapter was installed or upgraded successfully by choosing **Install > Adapters** in the Cisco ICFPP GUI. The **Adapters** table lists all installed adapters, the version currently installed, the creation date, and the date that the adapter was last updated.