Using the Plugin

This chapter includes the following sections:

Overview

To start using the Cisco UCS Manager plugin you need to log in to vRealize Orchestrator client. vRealize Orchestrator client is an easy to use desktop application. By using the vRealize Orchestrator client you can import packages, run and schedule workflows, and manage user permissions. For more information about using vRealize Orchestrator Client, refer: Using the VMware vRealize Orchestrator Client

Additionally, the vRealize Orchestrator client enables you to develop workflows and actions, as well as create packages and resource elements. vRealize Orchestrator client has three views or perspectives:

- Run — Provides features that enable you to run and schedule workflows.

- Design — Provides features that enable you to develop actions and workflows.

- Administer — Provides features that enable you to manage users, packages and so on.

For more information on using these features, refer to, Developing with VMware vRealize Orchestrator

This sections describes the following capabilities of the plugin:

- UCS Manager Inventory

- UCS Manager Actions

- UCS Manager Workflows

UCS Manager Inventory

vRealize Orchestrator Inventory is available in all three perspectives. Inventory displays the objects of the plugins that are enabled on orchestrator. You can use the inventory view to run workflows on an inventory object.

Managed objects available under the **Equipment** and **Servers** categories on the UCS Manager user interface are enabled to be available as vRealize Orchestrator inventory objects on the plugin.

UCS Manager Actions

About UCS Manager Actions

Actions represent individual functions that can be used as building blocks in workflows, web views, and scripts. They can have multiple input parameters and have a single return value. These are either predefined, or come as part of the plugin installation. The UCS Manager plugin provides around 1800 actions to enable you perform all the operations using the orchestrator that are currently available on the UCS Manager User interface.

UCS Manager plugin provides the following actions:

- **get, set, add,** and **remove** actions for all the UCS managed objects that are exposed by the XML API.
- **export** and **import** UCS backup.
- **get** UCS technical support data.
- **get** all registered UCS domains.
- **get** the possible values for an attribute in a managed object.
- **get** the class IDs or types of all the managed objects in the UCS Manager.
- Associate and disassociate service profiles.
- Create service profile from service profile templates.
- Rename service profiles.

When a workflow runs, an action derives its input parameters from the workflow's attributes. These attributes can either be the workflow's initial input parameters, or attributes which other actions within the workflow set when they are run.

Note   Although plugin installation from vRealize Orchestrator web configuration tool installs all the actions and workflows, you can install the actions and workflows separately (in case workflows/actions are deleted accidentally) by importing the **"com.cisco.ucs.mgr.package"** that is available in the distribution zip file.

Utility Actions

The plug-in provides utility actions that provide various functionalities. The following sections describe these actions.

getComputeNodes

This action allows you to search managed objects for UcsmComputeRackUnit and UcsmComputeBlade. Also, you can search the rack units and blade (compute nodes) in a single action.

Input

- **ucsDomain**—UcsDomain: UCS Manager connection handle.

- **Blade or RackUnit Properties**—<type of property>: Other inputs are the common properties of rack units and blade, you can search using these properties as keywords or strings. Refer UcsmComputeRackUnit, UcsmComputeBlade scripting object for more details.

- **showMos** —Boolean: Print searched rack unit or blade objects to System.log.

Output

Array/Any: Array of all searched UcsmComputeRackUnit and UcsmComputeBlade.

addUcsDomain

This action enables you to add a UCS domain Instance. This action is supported on vCO5.5.x version and higher and vRO 6.0.x version and higher.

Input

- **UcsHost**—String: UCS Hostname/IP

- **userId**—String: User name

- **password**—SecureString: Password

- **noSsl**—boolean: Use unsecure connection (HTTP)

- **port**—String: Connection port

Output

UcsDomain : Added UCS domain.

modifyUcsDomain

This action enables you to modify the details of a UCS domain Instance. This action is supported on vCO5.5.x version and higher and vRO 6.0.x version and higher.

- **UcsDomain**—UcsDomain: UcsDomain to be modified

- **userId**—String: User name

- **password** —SecureString: Password

- **noSsl**—boolean: Use unsecure connection (HTTP)

- **port**—String: Connection port

Output

UcsDomain: Modified UCS domain.

removeUcsDomain

This action enables you to remove a UCS domain instance. This action is supported on vCO5.5.x version and higher and vRO 6.0.x version and higher.

Input

ucsDomain—UcsDomain: UcsDomain to be removed

Output

boolean: Indicates if the UcsDomain was successfully removed

getAllUcsDomains

This action enables you to retrieve a list of all registered UCS Domains in the vRealize Orchestrator inventory.

Inputs

No input required.

Output Type

Array/UcsDomain: List of all the registered UCS Manager connection handles.

cloneServiceProfile

This action enables you to create a clone of a service profile in the selected organization.

Input

- **serviceProfile**—ServiceProfile: Service profile that you want to clone.

- **newName**—String: New name of the cloned service profile.

- **destOrg**—OrganizationHierarchy: Destination organization where cloned service profile must be placed.

Output Type

ServiceProfile: Cloned service profile.

createServiceProfileFromTemplate

This action allows you to create service profiles from service profile templates.

Note This option is available for UCS Manager 2.1(2a) version and higher.

Input

- **template**—ServiceProfileTemplate: Service profile template that the service profiles are based on.

- **newName**—Array/string: New name(s) of service profile(s) to be created.

- **destOrg**—OrganizationHierarchy: Destination organization for the newly created service profiles.

- **prefix**—String: Prefix of the name of service profile that you want to create.

- **count**—Number: Number of service profiles that you want to create.

Output Type

Array/ServiceProfile: List of created service profiles.

renameServiceProfile

This action allows you to rename an existing service profile.

Note This option is available for UCS Manager 2.1(1a) version and higher.

Input

- **serviceProfile**—ServiceProfile: Service profile that you want to rename.
- **newName**—String: New name of the service profile.

Output Type

ServiceProfile: Renamed service profile.

associateServiceProfile

This action enables you to associate a service profile with a blade server or a rack server.

Input

- **serviceProfile**—ServiceProfile: Service profile that you want to associate with a server.
- **computeObj**—Any: Blade or rack server object to which you want to associate a service profile.
- **restrictMigration**—Boolean: Restrict Migration while associating.

Output Type

Void: No object is returned.

disassociateServiceProfile

This action enables you to disassociate a service profile from a blade or a rack server.

Input

serviceProfile—ServiceProfile: Service profile that you want to disassociate from a server.

Output Type

void: No object is returned.

getUcsTechSupport

This action enables you to create and download various of technical support files. You can create and download technical support data for the following:

- **ucsManager**—For the UCS Manager.
- **ucsMgmt**—The UCS Manager management services excluding fabric interconnects.

- **Chassis Id**—Chassis I/O module or Cisco IMC.

- **Rack Server Id**—Rack Server and Adaptor.

- **Fex id**— Fabric Interconnect.

Input

- **ucsDomain**—UcsDomain: UCS Domain for which you want to create and download the technical support files.

- **pathPattern**—String: Absolute path of the file where you want save the technical support files. File must be of tar or in a zipped file format.

> **Note** Path may contain a few special sequences which are replaced with actual values. Refer Appendix B for a list of special sequences which can be used in the **pathPattern** values.

- **ucsManager**— Boolean: UCS Manager option.

- **ucsMgmt**— Boolean: UCS management option.

- **chassisId**— Number: Chassis Id.

- **cimcId**— String: Cisco IMC ID.

- **adapterId**—String: Cisco IMC Adapter ID.

- **iomId**—String: Iom ID.

- **rackServerId**—Number: Rack server ID.

- **rackAdapterId**—String: Rack adapter ID.

- **fexId**—Number: Fabric Interconnect ID.

- **timeoutSec**— Number: Time in milliseconds allowed for the successful generation of the technical support file. If the file is not generated within the set time interval the operation fails.

- **removeFromUcs**—Boolean: Boolean flag for remove from UCS.

Output Type

void: No object is returned.

exportUcsBackup

This action enables you to export the current backup of the specified UCS Manager. The action allows you to create the following types of backups:

- full-state—This creates an XML file that includes a snapshot of the entire system. You can use the file generated from this backup to restore the system during disaster recovery.

- config-logical—This creates an XML file that includes all logical configuration settings such as service profiles, VLANs, VSANs, pools, and policies.

- config-system—This creates an XML file that includes all system configuration settings, such as username, roles, and locales.

- config-all—This creates an XML file that includes all system and logical configuration settings.

Input

- **ucsDomain**—UcsDomain: UCS Domain for which you want to create a backup and download the backup.

- **pathPattern**— String: Absolute path of the file where you want save the backup. File must be in the XML format.

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> **Note**   Path may contain a few special sequences which are replaced with actual values. Refer Appendix B for a list of special sequences which can be used in the **pathPattern** values.

- **type**— String: Type of backup, this can be one of the following values: config-all, config-logical, config-system, full-state.

- **preservePooledValues**— Boolean: Flag to preserve pooled values.

- **timeoutSec**— Number: Time allowed to backup the data. If the backup is not generated within the set time interval the operation fails.

Output Type

void: No object is returned.

importUcsBackup

This action imports the configuration backup XML file to the UCS Manager. The merge option merges the backup configuration with the current configuration. Or the current configuration is replaced with a new configuration.

Input

- **handle** — UcsSystem: UCS system to which you want to import the backup.

- **literalPath** — String: Absolute path to the UCS backup file from where configuration is imported.

- **type**— String: Type of backup, this can be one of the following values: config-all, config-logical, config-system, full-state.

- **merge** — Boolean: Flag to merge the imported backup with an existing configuration. If false then the existing configuration is replaced with a new configuration.

   Output Type

   void: No object is returned.

getMoFieldOptions

This action enables you to retrieve an array of field values of the Managed Objects in UCS Manager. You can use this action to fill drop-down lists for a Managed Object field that can contain limited set of values only.

Input

- **classId**—String: Class ID of the managed object.

- **fieldName**—String: Property name of the managed object for which you want to extract a set of field values.

Output Type

Array/string : List of field values for the specified managed object field.

getMoClassIds

This action enables you to retrieve the class IDs of all the Managed Objects in UCS Manager.

Input

No input required.

Output Type

Array/string : List of class IDs of all the Managed Objects in UCS Manager.

Get Actions for Managed Objects in UCS Manager

You can use these actions to retrieve any existing Managed Object (MO) from the UCS Manager. These actions return a list of Managed Objects matching the selected criteria.

Inputs

- **ucsDomain**—UcsDomain: UCS Manager connection handle.

- **parentMos**—Array/<Type of ParentMo>: List of UCS Manager parent MOs of the UCS Manager MOs that you want to search.

  Note This property is valid only if the searched Managed Object has a parent defined.

- **Managed Object Properties**—<type of property>: Multiple properties of MOs that you want to search.

- **limitScope**—boolean: Limits the scope search to parent only, child MOs are not searched.

  Note If **parentMos** property type has multiple levels of search, for example OrganizationHierarchy, only then this property exists.

- **showMos**—boolean: Prints the searched UCS Manager MOs to System.log.

Output Type:

Array/<Type of Searched MO>: List of searched UCS Manager Managed Objects (MO). If searched MO type is exposed in inventory then return type is array of that type, else array of Any.

Modify Actions for Managed Objects in UCS Manager

You can use these actions to modify the existing Managed Objects (MO) in UCS Manager. They return a list of modified MOs.

Inputs

- **ucsDomain**—UcsDomain: UCS Manager connection handle.

- **mosToModify** —Array/<Type of mosToModify>: List of UCS Manager MOs that you want to modify.

- **Managed Object Properties**—<type of property>: Multiple properties of the MOs that you to modify.

- **showMos**—boolean: Prints the modified UCS Manager MOs to the `System.log` file.

Output Type

Array/<Type of modified MO>: List of modified UCS Manager MOs. If the modified MO type is exposed in the inventory then return type is array of that type, else array of Any.

Add Actions for Managed Objects in UCS Manager

You can use these actions to add Managed Objects to the UCS Manager. They return a list of added Managed Object.

Inputs

- **ucsDomain**—UcsDomain: UCS Manager connection handle.

- **parentMos**—Array/<Type of ParentMo>: List of UCS Manager Managed Objects (MO) which are parents' of UCS Manager MOs that you want to add.

> **Note** This property is valid only if the added Managed Object has a defined parent.

- **Managed Object Properties**—<type of property>: Multiple properties of the MOs that you to add.

- **modifyPresent**—boolean: If the UCS Manager MO that you want to add to already exists on UCS Manager, then modify existing UCS Manager MO.

- **showMos**—boolean: Prints the added UCS Manager MOs to the `System.log` file.

Output Type

Array/<Type of modified MO>: List of added UCS Manager MOs. If the added MO type is exposed in the inventory then return type is array of that type, else array of Any.

Delete Actions for Managed Objects in UCS Manager

You can use these actions to remove Managed Objects (MO) from the UCS Manager. They return a list of removed Managed Objects.

Inputs

- **ucsDomain**—UcsDomain: UCS Manager connection handle.

- **mosToRemove** —Array/<Type of ParentMo>: List of UCS Manager Managed Objects (MO) that you want to delete.

- **dn - string**: Distinguished Name, dn property, of the Managed Object to be removed. dn is used in combination with the **ucsDomain**.

- **showMos**—boolean: Prints the deleted UCS Manager MOs to the `System.log` file.

Output Type

Array/<Type of removed MO>: List of deleted UCSM Managed Objects (MO). If removed MO type is exposed in inventory then return type is array of that type, else array of Any.

UCS Manager Plugin Workflows

Cisco UCS Manager Workflows

Cisco UCS Manager workflows combine actions, decisions, and results that when performed in a specific order complete a specific task or a specific process in a virtual environment.

The workflows comprise a schema, attributes, and parameters. The workflow schema is the main component of a workflow as it defines all the workflow elements and the logical connections between them. The workflow attributes and parameters are the variables used to transfer data. The vRealize Orchestrator saves a workflow token every time a workflow runs, recording the details of that specific run of the workflow. For more details, see the Using the VMware vRealize Orchestrator Client document.

The Cisco UCS Manager plugin provides the following set of generic workflows which can be used to manage the Cisco UCS Manager from the vRealize Orchestrator:

- Add a UCS Domain Instance - Adds a UCS domain instance to vRealize Orchestrator inventory. This workflow is supported on vCO5.5.x and above, and vRealize Orchestrator 6.0.x and higher.

- Modify a UCS Domain Instance - Modifies the connection details of a registered UCS domain instance in vRealize Orchestrator inventory. This workflow is supported on vCO5.5.x and above, and vRealize Orchestrator 6.0.x and higher.

- Remove a UCS Domain Instance - Removes a UCS domain instance from vRealize Orchestrator inventory. This workflow is supported on vCO5.5.x and above, and vRealize Orchestrator 6.0.x and higher.

- Add Service Profile - Adds a service profile in the selected organization in UCS Manager.

- Get Service Profile - Retrieves an existing service profile from the UCS Manager.

- Set Service Profile - Modifies the properties of a selected service profile.

- Remove Service Profile - Removes a selected service profile from UCS Manager.

- Rename Service Profile - Renames a selected service profile. However, this option is available only for Cisco UCS Manager Release 2.1(1a) and above.

- Clone Service Profile - Makes a copy of the selected service profile and stores it in the selected organization.

- Associate Service Profile to Blade- Associates a service profile to a blade server or rack server.

- Disassociate Service Profile - Removes the association of a service profile to a blade server or rack server.

- Set Service Profile Power State - This action takes an array of service profiles as input and sets their power state, which results in change in power state of the associated blade or rack server. Change has no effect until a blade or rack server is associated to selected service profile.

- Create Service Profile From Template - Selects a service profile template as an input and creates multiple service profiles. The service profiles are created in the selected organization based on an array of names or combinations of prefix and counter. This option is available only for Cisco UCS Manager Release 2.1(1a) and above.

- Configure BIOS Hyper Threading - Selects a host registered in the vRealize plugin. It determines the associated service profile from the selected UCS Manager and enables or disables hyper threading on the BIOS policy of that service profile.

- Configure BIOS Virtualization Technology - Selects a host registered in the vRealize plugin. It determines the associated service profile from the selected UCS Manager and enables or disables the virtualization technology on the BIOS policy of that service profile.

- Download UCS Manager Technical Support Files - Creates and downloads multiple types of technical Support files. Use the following options to create and download technical support data:

  - ucsManager - The entire UCS Manager instance.

  - ucsMgmt - The UCS Manager management services excluding fabric interconnects.

  - Chassis ID - Chassis I/O Module or Cisco IMC.

  - Rack Server ID - Rack Server and Adaptor.

  - Fex ID - Fabric Extender

- Export UCS Manager Backup - Exports the current backup of the specified UCS Manager. The following types of backup operations are supported:

  - full-state - Creates a binary file that includes a snapshot of the entire system. You can use the file generated from this backup to restore the system during disaster recovery.

  - config-logical - Creates an XML file that includes all logical configuration settings such as service profiles, VLANs, VSANs, pools, and policies.

  - config-system - Creates an XML file that includes all system configuration settings such as usernames, roles, and locales.

  - config-all - Creates an XML file that includes all system and logical configuration settings.

- Import UCS Manager Backup:- Imports the configuration backup XML file to UCS Manager. Use the **Merge** option to merge the configuration with the current configuration, otherwise the current configuration replaces with the new configuration.

- Get ESX Host from UCS Service Profile - Selects a Service Profile and searches for the ESX host installed on the Compute Object/UCS Server (Blade or Rack Unit) to which this service profile is associated.

- Get UCS Service Profile from ESX Host - Selects an ESX Host and searches for the service profile which is associated to a Compute Object/UCS Server (Blade or Rack Unit) on which this ESX Host is installed.

- Get UCS Server by UUID:- Used in the **Get UCS Service Profile from ESX Host** workflow. This workflow takes a UUID and searches the UCS Server or Compute Object (Blade or Rack Unit) having this UUID.