

Using the VMware vRealize Orchestrator Legacy Client

vRealize Orchestrator 7.6

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Using the VMware vRealize Orchestrator Legacy Client

Using the VMware vRealize Orchestrator Legacy Client provides information and instructions about performing tasks in the VMware® vRealize Orchestrator Legacy Client.

Intended Audience

This information is intended for advanced vSphere administrators and experienced system administrators who are familiar with virtual machine technology and data center operations.

Note Beginning with vRealize Orchestrator version 7.6, the Orchestrator Legacy Client is deprecated and scheduled for removal from future versions of vRealize Orchestrator. For information using the new HTML5-based vRealize Orchestrator Client, see *Using the VMware vRealize Orchestrator Client*.

The vRealize Orchestrator Legacy Client

1

The vRealize Orchestrator Legacy Client is an easy-to-use desktop application. By using the Orchestrator Legacy Client, you can import packages, run workflows, and schedule workflows.

In addition, by using the Orchestrator Legacy Client, you can also develop workflows, actions, create packages, and resource elements. For more information, see *Developing with VMware vRealize Orchestrator*.

This chapter includes the following topics:

- [Log In to the Orchestrator Legacy Client from the Orchestrator Appliance Web Console](#)
- [Orchestrator Legacy Client Perspectives](#)
- [User Preferences](#)
- [Access the Orchestrator API Explorer](#)

Log In to the Orchestrator Legacy Client from the Orchestrator Appliance Web Console

To perform general administration tasks or to edit and create workflows, you must log in to the Orchestrator Legacy Client interface.

The Orchestrator Legacy Client interface is designed for developers with administrative rights who want to develop workflows, actions, and other custom elements.

Important Ensure that the clocks of the Orchestrator Appliance and the Orchestrator Legacy Client machine are synchronized.

Prerequisites

- Download and deploy the Orchestrator Appliance.
- Verify that the appliance is up and running.
- Install 64-bit Java on the workstation, on which you run the Orchestrator Legacy Client.

Note 32-bit Java is not supported

Procedure

- 1 In a Web browser, go to the IP address of your Orchestrator Appliance virtual machine.

`http://orchestrator_appliance_ip`

- 2 Click **Start Orchestrator Client**.

- 3 Enter the IP or the domain name of the Orchestrator Appliance in the **Host name** text box.

The IP address of the Orchestrator Appliance is displayed by default.

- 4 Log in by using the Orchestrator Legacy Client user name and password.

Depending on whether you use vRealize Automation or vSphere as an authentication provider, enter the respective credentials to log in to the Orchestrator Legacy Client.

If multi tenancy is enabled on your Orchestrator environment, enter the respective system administrator or tenant administrator user name, password, and tenant ID.

- 5 In the **Security Warning** window, select an option to handle the certificate warning.

The Orchestrator Legacy Client communicates with the Orchestrator server by using an SSL certificate. A trusted CA does not sign the certificate during installation. You receive a certificate warning each time you connect to the Orchestrator server.

Option	Description
Ignore	Continue using the current SSL certificate. The warning message appears again when you reconnect to the same Orchestrator server, or when you try to synchronize a workflow with a remote Orchestrator server.
Cancel	Close the window and stop the login process.
Install this certificate and do not display any security warnings for it anymore.	Select this check box and click Ignore to install the certificate and stop receiving security warnings.

You can change the default SSL certificate with a certificate signed by a CA. For more information about changing SSL certificates, see *Installing and Configuring VMware vRealize Orchestrator*.

What to do next

You can import a package, start a workflow, or set root access rights on the system.

Orchestrator Legacy Client Perspectives

You can access different views in the Orchestrator Legacy Client selecting one of three perspectives. Each perspective offers specific functionality.

You can select a perspective by using the drop-down list on the main menu in the Orchestrator Legacy Client. The default view is **Run**.

Perspective	Description
Run	You can schedule tasks, manage policies, run workflows, and access the inventory, from the My Orchestrator view. This perspective also gives you an overview of recent activities.
Design	You can create and modify workflows and actions. You can also manage resources, configuration elements, and policy templates.
Administer	You can access the inventory and manage packages.

Orchestrator Views in the Run Perspective

From the **Run** perspective in the Orchestrator Legacy Client, you can schedule tasks, manage policies, run workflows, and access the inventory.

View	Description
My Orchestrator	Summarizes the most recent activities on the Orchestrator server, such as recently modified elements, pending and running workflows, running policies, finished workflows, and workflows that are waiting for user interaction. You can use the My Orchestrator view to perform common administrative tasks, like running a workflow and importing a package.
Scheduler	Displays a list of all scheduled workflows. The workflows are sorted by name or date, together with their status. You can use the Scheduler view to create, edit, suspend, resume, and cancel scheduled workflows.
Policies	Displays existing policies. You can use the Policies view to create and apply policies.
Workflows	Provides access to the Orchestrator workflow library. You can use the Workflows view to view information about each workflow, create, edit, and run workflows, as well as to interact with the workflows.
Inventory	Displays the objects of the plug-ins that are enabled in Orchestrator. You can use the Inventory view to run workflows on an inventory object.

Orchestrator Views in the Design Perspective

From the **Design** perspective in the Orchestrator Legacy Client, you can create and modify workflows and actions. You can also manage resources, configuration elements, and policy templates.

View	Description
Workflows	Provides access to the Orchestrator workflow library. You can use the Workflows view to view information about each workflow, create, edit, and run workflows, and interact with the workflows.
Actions	Provides access to the libraries of predefined actions. You can use the Actions view to duplicate actions, export them to a file, or move them to a different module in the actions hierarchical list.
Resources	Provides access to the list of resource elements. You can use the Resources view to import external objects like images, sysprep files, HTML templates, XML templates, and custom scripts, and use them as resource elements in workflows.

View	Description
Configurations	Provides access to the available configuration elements. You can use the Actions view to create configuration elements to define common attributes across an Orchestrator server.
Packages	Displays a list of the available packages and where a selected package is used. You can use the Packages view to add, import, export, and synchronize packages.
Inventory	Displays the objects of the plug-ins that are enabled in Orchestrator. You can use the Inventory view to run workflows on an inventory object.

Orchestrator Views in the Administer Perspective

From the **Administer** perspective in the Orchestrator Legacy Client, you can access the inventory and manage packages.

View	Description
Inventory	Displays the objects of the plug-ins that are enabled in Orchestrator. You can use the Inventory view to run workflows on an inventory object.
Policy Templates	Displays a list of the available policy templates. You can use the Policy Templates view to create policy templates.
Packages	Displays a list of the available packages and where a selected package is used. You can use the Packages view to add, import, export, and synchronize packages.

User Preferences

By using the User preference tool, you can customize the options displayed to users of the Orchestrator Legacy Client.

Your preferences are saved on the client side in the `vmware-vmo.cfg` file.

To set preferences, select **Tools > User preferences** in the Orchestrator Legacy Client toolbar.

From the User preferences tool you can change the following preferences.

General Preferences

Table 1-1. Orchestrator Legacy Client Customization Options

Option	Description
Auto-edit new inserted	The new elements that you add open in an editor.
Script compilation delay [ms]	The frequency of the background task that compiles the scripts and reports errors in edit mode in milliseconds.
Show decision scripts	The option enables you to see the decision script of the implemented decision functions.
Delete non empty folder permitted	The option enables you to delete a folder together with its subfolders and contents.

Table 1-1. Orchestrator Legacy Client Customization Options (continued)

Option	Description
Size of run logs (number of lines)	<p>The maximum number of lines in the system log that Orchestrator displays when you select a workflow run in the Orchestrator Legacy Client and click</p> <p>Logs on the Schema tab.</p> <p>The value must be greater than 0.</p>
Server log fetch limit	<p>The maximum number of lines in the server logs that Orchestrator fetches from the database and displays when you click any of the Events tabs in the Orchestrator Legacy Client.</p> <p>The value must be greater than 0.</p>
Finder maximum size	<p>The maximum number of results that the searches return when you search for elements such as actions or workflows.</p> <p>The value must be greater than 0.</p>
Check usage when deleting an element (slow)	<p>Orchestrator checks whether the element you are trying to delete is referenced by other elements. If the element is used by another workflow, policy, or action, a warning message appears.</p>
Check OGNL expression	<p>Orchestrator validates the OGNL expressions in the workflow presentations.</p>

Workflows Preferences

Table 1-2. Workflow Editor Customization Options

Option	Description
Check task/decision IN/OUT parameters	<p>Orchestrator checks whether the input and output parameters of an activity are correctly bound to the corresponding input or output attribute of the workflow.</p>
Check error in task's scripts	<p>Orchestrator validates the script in scriptable task elements.</p>
Check workflow termination	<p>Orchestrator checks whether each terminal transition of a workflow with different possible outcomes is connected to an End Workflow schema element.</p>
Check unreachable items	<p>Orchestrator checks whether all activities are reachable.</p>
Check unused workflow's parameters/attributes	<p>Orchestrator checks whether all parameters and attributes of a workflow are used.</p>
Check for unknown types within plug-ins	<p>Orchestrator checks whether all parameters and attributes of a workflow are of a known type.</p>
Check for legacy actions scripting calls	<p>Orchestrator detects legacy actions calls and displays a warning message.</p>
Use direct lines as workflow diagram links	<p>The connector tool uses direct lines to link the workflow schema elements.</p>
Display workflows in a tree view	<p>The workflow selector displays a hierarchical tree viewer instead of the default list panel.</p>
Edit workflow items in a pop-up window	<p>Orchestrator opens a pop-up window in which you can edit the workflow items.</p>

Table 1-2. Workflow Editor Customization Options (continued)

Option	Description
Display grid in the schema editor	Orchestrator displays a grid in the schema editor.
Validate a workflow before running it	Orchestrator validates each workflow before running it.
Validate a workflow before saving it	Orchestrator validates each workflow before saving it.
Increase the workflow version when clicking save and close	Orchestrator increases the workflow version when clicking save and close.
Pop up a workflow user interaction form	Orchestrator pops up a workflow user interaction form.

Inventory Preferences

You can select the **Use contextual menu in inventory** option to display the workflows that are available for an inventory object. After the option is enabled, when you right-click an object in the Orchestrator inventory, all workflows applicable to the selected object type are displayed.

Script Editor Preferences

You can customize the scripting engine. For example, you can disable automatic completion of lines, highlight selected lines and brackets, and change the options for default color code formatting.

Access the Orchestrator API Explorer

Orchestrator provides an API Explorer that you can use to search the Orchestrator API and see the documentation for JavaScript objects that you can use in scripted elements.

You can consult an online version of the Scripting API for the vCenter Server plug-in on the Orchestrator documentation home page.

Procedure

- 1 Log in to the Orchestrator Legacy Client.
- 2 Select **Tools > API Explorer**.

Results

The API Explorer appears. You can use it to search all the objects and functions of the Orchestrator API.

What to do next

Use the API Explorer to write scripts for scriptable elements.

Managing Workflows

2

A workflow is a series of actions and decisions that you run sequentially. Orchestrator provides a library of workflows that perform common management tasks. Orchestrator also provides libraries of the individual actions that the workflows perform.

Workflows combine actions, decisions, and results that, when performed in a particular order, finish a specific task or a specific process in a virtual environment. Workflows perform tasks such as provisioning virtual machines, backing up, performing regular maintenance, sending emails, performing SSH operations, managing the physical infrastructure, and other general utility operations. Workflows accept inputs according to their function. You can create workflows that run according to defined schedules, or that run if certain anticipated events occur. Information can be provided by you, by other users, by another workflow or action, or by an external process such as a Web service call from an application. Workflows perform some validation and filtering of information before they run.

Workflows can call upon other workflows. For example, you can reuse in several different workflows a workflow that starts a virtual machine.

You create workflows by using the Orchestrator Legacy Client interface's integrated development environment (IDE), that provides access to the workflow library and the ability to run workflows on the workflow engine. The workflow engine can also take objects from external libraries that you plug in to Orchestrator. This ability allows you to customize processes or implement functions that third-party applications provide.

This chapter includes the following topics:

- [Key Concepts of Workflows](#)
- [Run a Workflow](#)
- [Respond to a Request for a User Interaction](#)
- [Scheduling Workflows](#)
- [Export a Workflow](#)
- [Import a Workflow](#)

Key Concepts of Workflows

Workflows consist of 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 that workflows use to transfer data. Orchestrator saves a workflow token every time a workflow runs, recording the details of that specific run of the workflow.

Workflow Parameters

Workflows receive input parameters and generate output parameters when they run.

Input Parameters

Most workflows require a certain set of input parameters to run. An input parameter is an argument that the workflow processes when it starts. The user, an application, another workflow, or an action passes input parameters to a workflow for the workflow to process when it starts.

For example, if a workflow resets a virtual machine, the workflow requires as an input parameter the name of the virtual machine.

Output Parameters

A workflow's output parameters represent the result from the workflow run. Output parameters can change when a workflow or a workflow element runs. While workflows run, they can receive the output parameters of other workflows as input parameters.

For example, if a workflow creates a snapshot of a virtual machine, the output parameter for the workflow is the resulting snapshot.

Workflow Attributes

Workflow elements process data that they receive as input parameters, and set the resulting data as workflow attributes or output parameters.

Read-only workflow attributes act as global constants for a workflow. Writable attributes act as a workflow's global variables.

You can use attributes to transfer data between the elements of a workflow. You can obtain attributes in the following ways:

- Define attributes when you create a workflow.
- Set the output parameter of a workflow element as a workflow attribute.
- Inherit attributes from a configuration element.

Workflow Schema

A workflow schema is a graphical representation that shows the workflow as a flow diagram of interconnected workflow elements. The workflow schema is the most important element of a workflow as it determines its logic.

Workflow Presentation

When users run a workflow, they provide the values for the input parameters of the workflow in the workflow presentation. When you organize the workflow presentation, consider the type and number of input parameters of the workflow.

Workflow Tokens

A workflow token represents a workflow that is running or has run.

A workflow is an abstract description of a process that defines a generic sequence of steps and a generic set of required input parameters. When you run a workflow with a set of real input parameters, you receive an instance of this abstract workflow that behaves according to the specific input parameters you give it. This specific instance of a completed or a running workflow is called a workflow token.

Workflow Token Attributes

Workflow token attributes are the specific parameters with which a workflow token runs. The workflow token attributes are an aggregation of the workflow's global attributes and the specific input and output parameters with which you run the workflow token.

Run a Workflow

You can perform automated operations in vCenter Server by running workflows from the standard library or workflows that you create.

For example, you can create a virtual machine by running the Create simple virtual machine workflow.

Prerequisites

Verify that you have configured the vCenter Server plug-in. For details, see *Installing and Configuring vRealize Orchestrator*.

Procedure

- 1 From the drop-down menu in the Orchestrator Legacy Client, select **Run**.
- 2 Click the **Workflows** view.
- 3 In the workflows hierarchical list, open **Library > vCenter > Virtual machine management > Basic** to navigate to the Create simple virtual machine workflow.
- 4 Right-click the Create simple virtual machine workflow and select **Start workflow**.

5 Provide the general parameters and click **Next**.

Option	Action
Virtual machine name	Name the virtual machine orchestrator-test .
Virtual machine folder	a Click Not set for the Virtual machine folder value. b Select a virtual machine folder from the inventory. The Select button is inactive until you select an object of the correct type, in this case, VC:VmFolder.
Size of the new disk in GB	Enter an appropriate numeric value.
Memory size in MB	Enter an appropriate numeric value.
Number of virtual CPUs	Select an appropriate number of CPUs from the Number of virtual CPUs drop-down menu.
Virtual machine guest OS	Click the Not set link and select a guest operating system from the list.
Make the disk thin provisioned	Select whether to make the disk thin or thick provisioned.

6 Provide the infrastructure parameters.

Option	Description
Host on which to create the virtual machine	Click Not set for the Host on which to create the virtual machine value and navigate through the vCenter Server infrastructure hierarchy to a host machine.
Resource pool	Click Not set for the Resource pool value and navigate through the vCenter Server infrastructure hierarchy to a resource pool.
The network to connect to	Click Not set for the The network to connect to value and select a network. To see all available networks, press Enter in the Filter text box.
Datastore in which to store the virtual machine files	Click Not set for the Datastore in which to store the virtual machine files value and navigate through the vCenter Server infrastructure hierarchy to a datastore.

7 To run the workflow, click **Submit**.

A workflow token appears under the Create simple virtual machine workflow, showing the workflow running icon.

8 Click the workflow token to view the status of the workflow as it runs.

9 Click the **Events** tab in the workflow token view to follow the progress of the workflow token until it completes.

10 Click the **Inventory** view.

11 Navigate through the vCenter Server infrastructure hierarchy to the resource pool you defined.

If the virtual machine does not appear in the list, click the refresh button to reload the inventory.

The orchestrator-test virtual machine is present in the resource pool.

- 12 (Optional) Right-click the orchestrator-test virtual machine in the **Inventory** view to see a contextual list of the workflows that you can run on the orchestrator-test virtual machine.

Results

The Create simple virtual machine workflow ran successfully.

What to do next

You can log in vSphere Client and manage the new virtual machine.

Respond to a Request for a User Interaction

Workflows that require interactions from users during their run suspend their run either until the user provides the required information or until the workflow times out.

Workflows that require user interactions define which users can provide the required information and direct the requests for interaction.

Prerequisites


Verify that at least one workflow is in the Waiting for User Interaction state.

Procedure

- 1 From the drop-down menu in the Orchestrator Legacy Client, select **Run**.
- 2 Click the **My Orchestrator** view in the Orchestrator Legacy Client.
- 3 Click the **Waiting for Input** tab.

The **Waiting for Input** tab lists the workflows that are waiting for user inputs.

- 4 Double-click a workflow that is waiting for input.

The workflow token that is waiting for input appears in the **Workflows** hierarchical list with the following symbol: .

- 5 Right-click the workflow token and select **Answer**.
- 6 Follow the instructions in the input parameters dialog box and provide the information that the workflow requires.

Results

You provided information to a workflow that was waiting for user input during its run.

Scheduling Workflows

You can schedule a workflow to run once, or multiple times using a recurrence pattern.

Schedule a Workflow

You can schedule a workflow from the Orchestrator Legacy Client **Scheduler** or **Workflows** views. The user credential that starts the workflow is the same as the credential you use to schedule it.

Procedure

- 1 From the drop-down menu in the Orchestrator Legacy Client, select **Run**.
- 2 Click the **Scheduler** view.
- 3 Right-click within the left pane and select **Schedule task**.
- 4 (Optional) To use another user's credentials to schedule a workflow, select **Schedule task as**.
- 5 Search for the workflow to schedule by entering the name of the workflow, select it, and click **Select**.
- 6 Set the start date and time for the workflow.
- 7 (Optional) Select whether to start the workflow if the scheduled time is in the past.

Option	Description
Yes	The workflow starts immediately.
No	The workflow starts at the next set recurrence.

- 8 (Optional) Select a workflow recurrence pattern.
 - a From the **Recurrence** drop-down menu, select the workflow recurrence pattern.
 - b If you set the workflow to recur, you can specify an end time and date for the workflow.
- 9 If the workflow requires input parameters, click **Next** and provide the necessary information.
- 10 To schedule the workflow, click **Submit**.

Results

The scheduled workflow is listed in the **Scheduler** view. An R appears next to the scheduled workflow to denote that recurrence is set.

What to do next

You can monitor the workflow run and delete the scheduled task from the **Scheduler** view.

Edit the Workflow Recurrence Pattern

A recurrence pattern is used to specify how a given workflow is scheduled. You can edit the recurrence pattern of a workflow from the **Scheduler** view.

Prerequisites

A recurrent workflow that is scheduled.

Procedure

- 1 From the drop-down menu in the Orchestrator Legacy Client, select **Run**.
- 2 Click the **Scheduler** view.
- 3 Right-click the scheduled workflow whose recurrence pattern you want to edit and select **Edit**.
- 4 Click the **Recurrence** tab.
- 5 From the drop-down menu, select the recurrence pattern.

You can add an unlimited number of entries to the pattern. You can edit each entry.

The display changes according to the selected pattern.
- 6 Click **Save and close** to exit the editor.

Results

The new recurrence pattern for the scheduled workflow appears on the **Recurrence** tab.

What to do next

You can view details about the different runs of the scheduled workflow on the **Workflow Runs** tab.

Export a Workflow

You can export workflows to use them in another Orchestrator server instance.

Procedure

- 1 From the drop-down menu in the Orchestrator Legacy Client, select **Run**.
- 2 Click the **Workflows** view.
- 3 Browse to the workflow you want to export and right-click that workflow.
- 4 Select **Export workflow**.
- 5 Browse to locate the folder in which you want to save the workflow, and click **Save**.

Results

The workflow is saved as a `.workfLow` file.

Import a Workflow

If you have exported a workflow from one Orchestrator server, you can import it to another Orchestrator server.

Procedure

- 1 From the drop-down menu in the Orchestrator Legacy Client, select **Run**.

- 2 Click the **Workflows** view.
- 3 Browse to the workflow folder in which you want to import the workflow and right-click it.
- 4 Select **Import workflow**.
- 5 Browse to locate the workflow you want to import, and click **Open**.

If the workflow already exists in your workflow library, a dialog box with version information appears.

Note You cannot import a workflow with an earlier version number than the version number of the existing workflow.

Results

The imported workflow appears in the workflow folder that you selected.

Managing Policies

3

Policies are event triggers that monitor the activity of the system. Policies respond to predefined events issued by changes in the status or performance of certain defined objects.

Policies are a series of rules, gauges, thresholds, and event filters that run certain workflows or scripts when specific predefined events occur in Orchestrator or in the technologies that Orchestrator accesses through plug-ins. Orchestrator constantly evaluates the policy rules while the policy is running. For instance, you can implement policy gauges and thresholds that monitor the behavior of vCenter Server objects of the VC:HostSystem and VC:VirtualMachine types.

Orchestrator defines the following types of policy:

Policy Templates

Policy templates are not linked to real objects. They are abstract sets of rules that define the behavior to implement if a certain abstract event occurs. You can see existing policy templates and create templates in the **Policy Templates** view in the Orchestrator Legacy Client.

Policies

Policies are instances of a template or standalone event triggers that are linked to real objects, and that are triggered by real-life events. You can see existing policies and create policies in the **Policies** view in the Orchestrator Legacy Client.

You can organize policy templates into folders, for easier navigation. The maximum number of policies supported by Orchestrator is 50.

This chapter includes the following topics:

- [Create a Policy](#)
- [Apply a Policy](#)

Create a Policy

You can create a policy to monitor the activity of the system for specific events.

Procedure

- 1 From the drop-down menu in the Orchestrator Legacy Client, select **Run**.
- 2 Click the **Policies** view.
- 3 Right-click within the left pane and select **Create new policy**.
- 4 Enter a name for the policy and click **Ok**.
The policy appears in the list of policies.
- 5 Right-click the policy and select **Edit**.
The policy editor opens.
- 6 On the **General** tab, edit the startup settings, priority, startup user, and description of the policy.
- 7 On the **Scripting** tab, add and remove policy elements, periodic tasks, trigger events, and manage attributes.
- 8 On the **Events** and **Logs** tabs, view information about the policy.
- 9 Click **Save and close** to exit the editor.
- 10 In the **Policies** view, right-click the policy that you created and select **Start policy**.

Apply a Policy

You can apply a policy from an existing policy template.

Prerequisites

Verify that you have created a policy template.

Procedure

- 1 From the drop-down menu in the Orchestrator Legacy Client, select **Run**.
- 2 Click the **Policies** view.
- 3 Right-click within the left panel and select **Apply Policy**.
- 4 In the **Filter** text box, enter the name of the policy template.
- 5 Select the policy template and click **Select**.
- 6 Provide the required policy information and click **Submit**.
The policy appears in the list of policies.
- 7 In the **Policies** view, right-click the policy that you created and select **Start policy**.

Using Packages

4

You can use packages to transport content from one Orchestrator server to another. Packages can contain workflows, actions, policies, configurations, and resources.

When you add an element to a package, Orchestrator checks for dependencies and adds any dependent elements to the package. For example, if you add a workflow that uses actions or other workflows, Orchestrator adds those actions and workflows to the package.

When you import a package, the server compares the versions of the different elements of its content to matching local elements. The comparison shows the differences in versions between the local and imported elements. The administrator can decide whether to import the whole package, or choose specific elements to import.

Packages feature digital rights management to control how the receiving server can use the content of the package. Orchestrator signs packages and encrypts the packages for data protection. Packages use X509 certificates to monitor which users export and redistribute elements.

This chapter includes the following topics:

- [Create a Package](#)
- [Export a Package](#)
- [Import a Package](#)
- [Get a Remote Package](#)
- [Synchronize a Remote Package](#)
- [Remove a Package](#)

Create a Package

You can export workflows, policy templates, actions, plug-in references, resources, and configuration elements in packages. All elements that an element in a package implements are added to the package automatically, to ensure compatibility between versions. If you do not want to add the referenced elements, you can delete them in the package editor.

Prerequisites

Verify that the Orchestrator server contains elements such as workflows, actions, and policy templates that you can add to a package.

Procedure

- 1 From the drop-down menu in the Orchestrator Legacy Client, select **Administer**.
- 2 Click the **Packages** view.
- 3 Right-click in the left pane and select **Add package**.
- 4 Type the name of the new package and click **Ok**.

The syntax for package names is *domain.your_company.folder.package_name*.

For example, `com.vmware.myfolder.mypackage`.

- 5 Right-click the package and select **Edit**.

The package editor opens.

- 6 On the **General** tab, add a description for the package.
- 7 On the **Workflows** tab, add workflows to the package.
 - To search for and select workflows in a selection dialog box, click **Insert Workflows (list search)**.
 - To browse and select folders of workflows from the hierarchical list, click **Insert Workflows (tree browsing)**.
- 8 On the **Policy Templates**, **Actions**, **Configurations**, **Resources**, and **Used Plug-Ins** tabs, add policy templates, actions, configuration elements, resource elements, and plug-ins to the package.
- 9 To exit the editor, click **Save and close**.

Results

You created a package and added elements to it.

Export a Package

You can export a package with workflows, actions, policies, configurations, and resources from an Orchestrator server and import it to another Orchestrator server. An Orchestrator package includes the certificates for all the contents in it. When you import the package into another server, these certificates are also imported.

Prerequisites

Create a package and add the elements you want to export.

Procedure

- 1 From the drop-down menu in the Orchestrator Legacy Client, select **Administer**.
- 2 Click the **Packages** view.
- 3 Right-click the package to export and select **Export package**.
- 4 Browse to select a location to save the package.
- 5 (Optional) Sign the package.
 - a Click **Add target Certificate**.
 - b From the list of certificates, select the certificate to use for the exported package.
 - c Click **Select**.
- 6 (Optional) To apply permissions for the exported package, deselect the options as required.

Option	Description
View contents	The importer of the package is allowed to view the JavaScript code of the elements contained in the package.
Add to package	The importer of the package is allowed to redistribute the elements contained in the package.
Edit contents	The importer of the package is allowed to edit the code of the elements contained in the package.

- 7 (Optional) To apply restrictions for the contents of the exported package, deselect the options as required.

Option	Description
Export the values of the configuration settings	The attribute values of the configuration elements in the package are not exported.
Export global tags	The global tags in the package are not exported.

Note The **Export the values of the configuration SecureString settings** option is deselected by default. Export of these configuration settings can cause a security problem. Use with caution.

- 8 Click **Save**.

Results

You exported the package. You can use the workflows, actions, and policies from the exported package on another Orchestrator server.

Import a Package

To reuse workflows, actions, policies, and configuration elements from one Orchestrator server on another server, you can import them as a package.

Prerequisites

- Back up any standard Orchestrator elements that you have modified.
- On the remote server, create a package and add the elements you want to import.

Procedure

- 1 From the drop-down menu in the Orchestrator Legacy Client, select **Administer**.
- 2 Click the **Packages** view.
- 3 Right-click within the left pane and select **Import package**.
- 4 Browse to the package that you want to import and click **Open**.
Certificate information about the exporter appears.
- 5 Review the package import details and select **Import** or **Import and trust provider**.
The **Import package** view appears. If the version of an element in the package is later than the version on the server, the system selects the element for import.
- 6 (Optional) Deselect the elements that you do not want to import.
- 7 (Optional) Deselect **Import the values of the configuration settings** if you do not want to import the attribute values of the configuration elements from the package.
- 8 From the drop-down menu, select whether you want to import tags from the package.

Option	Description
Import tags but preserve existing values	Import tags from the package without overwriting existing tag values.
Import tags and overwrite existing values	Import tags from the package and overwrite existing values.
Do not import tags	Do not import tags from the package.

- 9 Click **Import selected elements**.

What to do next

You can use all the workflows, actions, policies, and configuration elements from the imported package as new building blocks on your Orchestrator server.

Get a Remote Package

You can retrieve a package from a remote Orchestrator server.

Procedure

- 1 From the drop-down menu in the Orchestrator Legacy Client, select **Administer**.
- 2 Click the **Packages** view.
- 3 Right-click within the left pane and select **Get remote package**.

4 Log in to the remote server.

The Orchestrator Synchronization dialog box opens. It displays the differences between the package elements. To view only elements that are different on the local and remote server, select **Hide identical** from the drop-down menu.

5 Select the package that you want and click **Import**.

6 View the remote package elements and select an option.

Option	Description
None	Does not import the element.
Update	The element is imported from the remote server to the local server.

Note If the remote server does not recognize your certificate, you cannot commit and overwrite the elements.

7 Click **Synchronize**.

Synchronize a Remote Package

The **Packages** view provides a way to synchronize a package on one Orchestrator server with an existing package on another server.

Synchronizing packages is the only way to obtain all the elements from the remote server. If you synchronize individual elements, Orchestrator only synchronizes elements that already exist on the local server. To obtain any new elements from the remote server, you must synchronize the package that contains those elements.

Procedure

1 From the drop-down menu in the Orchestrator Legacy Client, select **Administer**.

2 Click the **Packages** view.

3 Right-click the package that you want to synchronize and select **Synchronize**.

4 Log in to the remote server.

The Orchestrator Synchronization dialog box opens. It displays the differences between the package elements. To view only elements that are different on the local and remote server, select **Hide identical** from the drop-down menu.

5 View the comparison between the local and remote package elements and select an option.

Option	Description
None	The local and remote elements have the same version number. No synchronization is required.
Commit	The version of the local element is later. The remote element is overwritten.

Option	Description
Update	The version of the remote element is later. The local element is updated. If an element does not exist locally, it is imported from the remote server to the local server.
Merge	The local and remote packages are overwritten with a merged list of references. The referenced elements remain unchanged.

Note If the remote server does not recognize your certificate, you cannot commit elements.

6 Click **Synchronize**.

Results

The synchronized package is reloaded.

What to do next

You can use the updated package content in workflows, actions, and policies.

Remove a Package

Workflows, actions, and other resources, can be reused in multiple packages. Because of this reuse, before you remove a package, you must decide whether to delete the workflows, actions, policies, and other resources contained in the package.

Procedure

- 1 From the drop-down menu in the Orchestrator Legacy Client, select **Administer**.
- 2 Click the **Packages** view.
- 3 Right-click the package you want to delete and select an appropriate deletion option.

Option	Description
Delete	Removes the package only from the Packages view.
Delete element with content	Removes all workflows, actions, policies, configurations, plug-in settings, or resources that the package contains. Does not remove read-only elements and the plug-in .dar archive. Caution This action might delete elements that are referenced by other packages too. To avoid deleting an element that another package needs, remove any dependencies that you added to the package. To view a list of all the packages, workflows and policies that reference an element, use the Find elements that use this element function.

Tagging Objects

5

In vRealize Orchestrator, you can make workflows and other URI objects more searchable by attaching tags to them.

Tags are strings with length between 3 and 64 characters and must contain no white spaces. Global tags are visible to all Orchestrator users and private tags are visible only to the user who created them. Only users with administrative privileges can create and remove global tags.

You can assign values to the tags that you create. A tag value is an optional parameter which you can use to filter tags.

You can manage object tags by using the Orchestrator scripting API or by running the workflows in the Tagging package of the Library plug-in. For information about tagging through the Orchestrator scripting API and the Orchestrator REST API, see *Developing a Web Services Client for VMware vRealize Orchestrator*.

This chapter includes the following topics:

- [Tag a Workflow](#)
- [Untag a Workflow](#)
- [View the Tags Assigned to a Workflow](#)
- [Search Objects by Tag](#)

Tag a Workflow

To make workflows more searchable, you can assign tags to them.

You can tag workflows in the Orchestrator Legacy Client, by running the **Tag workflow** workflow in the Library plug-in.

Note To create global tags, you must be logged in as a user with administrative privileges.

Procedure

- 1 Log in to the Orchestrator Legacy Client
- 2 Click the **Workflows** view in the Orchestrator Legacy Client left pane.

- 3 In the workflows hierarchical list, expand **Library > Tagging** and select Tag workflow.
- 4 Right-click Tag workflow and select **Start workflow**.
- 5 To select the workflow you want to tag, click the **Not set** link under **Tagged workflow**.
- 6 In the **Tag** text box, enter the name of the tag you want to apply to the selected workflow.
- 7 (Optional) In the **Value** text box, enter a value for the tag.
- 8 In the **Global tag** section, click **Yes** if the tag is global.
- 9 Click **Submit** to run the workflow.

Untag a Workflow

You can delete a tag from a workflow when it is no more needed.

You can remove a tag from a workflow by running the **Untag workflow** workflow.

Note To remove global tags, you must be logged in as a user with administrative privileges.

Procedure

- 1 Log in to the Orchestrator Legacy Client.
- 2 Click the **Workflows** view in the Orchestrator Legacy Client left pane.
- 3 In the workflows hierarchical list, expand **Library > Tagging** and select Untag workflow.
- 4 Right-click Untag workflow and select **Start workflow**.
- 5 To select the workflow you want to untag, click the **Not set** link under **Workflow to untag**.
- 6 In the **Tag to remove** text box, enter the name of the tag you want to remove from the selected workflow.
- 7 In the **Global tag** section, click **Yes** if the tag you want to remove is global.
- 8 Click **Submit** to run the workflow.

View the Tags Assigned to a Workflow

You can see the tags that are assigned to a workflow.

Procedure

- 1 Log in to the Orchestrator Legacy Client.
- 2 Click the **Workflows** view in the Orchestrator Legacy Client left pane.
- 3 In the workflows hierarchical list, expand **Library > Tagging** and select List workflow tags.
- 4 Right-click List workflow tags and select **Start workflow**.
- 5 Click **Workflow** and select a workflow to view the tags assigned to it.

- 6 Click **Submit** to run the workflow.

Search Objects by Tag

You can search Orchestrator objects by specifying their tags.

Procedure

- 1 Log in to the Orchestrator Legacy Client.
- 2 Click the **Workflows** view in the Orchestrator Legacy Client left pane.
- 3 In the workflows hierarchical list, expand **Library > Tagging** and select Find objects by tag.
- 4 Right-click Find objects by tag and select **Start workflow**.
- 5 In the **Advanced** section, specify whether you want to perform search in Advanced mode.

Option	Action
Yes	In the Tag filters text box, type a query for multiple tags in JSON format by using the {tag: tag1_name, value: tag1_value}, {tag: tag2_name, value: tag2_value} syntax.
No	<ol style="list-style-type: none">a In the Tag name and the Tag value text boxes, type the name and the value of the tag you want to search.b In the Search in global tags section, click Yes if you want to search only global tags.

- 6 Click **Submit** to run the workflow.