

Using the vRealize Orchestrator Operations Client

vRealize Orchestrator 7.5



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Using the VMware vRealize Orchestrator Operations Client

1

Using the VMware vRealize Orchestrator Operations Client provides information about the workflow automation features and functionality of the new Orchestrator HTML5 client.

Intended Audience

This information is intended for experienced system administrators who are looking for a tool that can help them to run and manage Orchestrator workflows.

Note The Operations Client does not replace the existing Java Client.

The VMware vRealize Orchestrator Operations Client

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Use the new HTML5 user interface to manage Orchestrator services.

You can monitor, troubleshoot, and run workflows by using the Orchestrator Operations Client. The Operations Client supplements the functionality of the existing Orchestrator Java Client and does not replace it. You can find the Operations Client at https://your_orchestrator_server_ip_or_dns_address:8283

REST API communication

The Orchestrator Operations client runs on the Orchestrator Control Center server. The client communicates with the Orchestrator REST API through a REST proxy.

Run and manage workflows

Run Orchestrator workflows and view recent workflow runs.

Note The Operations Client cannot be used to create or edit workflows. Create and edit workflows by using the Orchestrator Java Client. For information on the Orchestrator Java Client, see *Using the VMware vRealize Orchestrator Client*.

Scheduling workflows

Automate workflow operations by creating and editing scheduled workflow tasks in the Operations Client.

Optimize workflows by using metric data

Use the profiling feature of the Operations Client to gather useful metric data about your workflow runs.

Package management

Export and import packages containing workflow elements through the Operations Client.

Note Creating and deleting packages is done by using the Orchestrator Java Client.

Roles management

Users with administrator rights can assign roles to users in the Operations Client.

Workflow element management	View workflow action elements, the plug-in inventory, and workflow tags available in your Orchestrator deployment. Import resource and configuration elements.
API Explorer	Explore the API commands available in Orchestrator.

This chapter includes the following topics:

- [Log In to the vRealize Orchestrator Operations Client](#)
- [User Responsibilities in the vRealize Orchestrator Operations Client](#)
- [API Explorer in the vRealize Orchestrator Operations Client](#)

Log In to the vRealize Orchestrator Operations Client

You can run, monitor, and troubleshoot workflows by using the Operations Client.

The Operations Client can be used to help you manage and troubleshoot Orchestrator operations.

Prerequisites

- Deploy and configure VMware vRealize™ Orchestrator™ server by using vSphere or vRealize Automation authentication. For more information, see *Installing and Configuring VMware vRealize Orchestrator*.
- Verify that the Orchestrator server is running properly. Click **Validate Configuration** in the Orchestrator Control Center.

Procedure

- 1 Go to the landing page of Orchestrator.
- 2 Click **Open the Operations Client**.
- 3 To log in to the client, enter your user credentials.

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

- 4 Click **Log in**.

User Responsibilities in the vRealize Orchestrator Operations Client

Feature access and functionality in the Operations Client are based on your user permissions.

User permissions in the Operations Client are set by users with administrator rights.

User permissions	Description
Administrator	Has access rights to all functions in the Operations Client.
Tenant Admin	vRealize Automation tenant admin. Has the same rights as administrators.
Consumer	Has read-only rights in the Operations Client. Can view workflow runs, workflows in the Waiting for Input state, and workflow tags.

Add and Manage User Responsibilities in the vRealize Orchestrator Operations Client

You need administrator rights to add and manage user responsibilities in the Operations Client.

Prerequisites

Configure a vRealize Orchestrator server with vRealize Automation authentication. For more information, see *Installing and Configuring vRealize Orchestrator*.

Procedure

- 1 Log in to the vRealize Orchestrator Operations Client as a user with administrator rights.
- 2 Add new users or groups.
 - a Click **Roles Management**.
 - b To add users and groups, click **Add**.
 - c Select user responsibilities for the user or group and click **Save**.
- 3 Manage existing user responsibilities.
 - a Click **Roles Management**.
 - b Click on the menu to the left of the user details.
 - c To edit user responsibilities, click **Edit**.
 - d To remove users or groups from the Operations Client, click **Delete**.

API Explorer in the vRealize Orchestrator Operations Client

You can browse the Orchestrator API Explorer to view the documentation for the JavaScript objects that you can use in scripted workflow elements.

The API Explorer includes a list of the Orchestrator complaint RESTful objects. The API explorer includes information about the attributes, constructors, and HTTP methods associated with a specific object.

Procedure

- 1 Log in to the vRealize Orchestrator Operations Client as a user with administrator rights.

- 2 Select the settings icon located in the upper-right corner of the UI. Click **API Explorer**.

What to do next

Use the API explorer as a reference when writing script for workflow elements.

Managing Workflows

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 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:

- [The vRealize Orchestrator Operations Client Dashboard](#)
- [Standard Workflows in the Workflow Library](#)

The vRealize Orchestrator Operations Client Dashboard

The Orchestrator Operations Client dashboard provides a useful tool for monitoring Orchestrator workflows.

The Operations Client dashboard is a tool to help you monitor, manage, and troubleshoot workflows. Information on the dashboard is spread between five panels.

Window	Description
Workflow runs	Provides visual data about the number of running, waiting, and failed workflow runs.
Favorite workflows	Displays workflows added to favorites. Add a Favorite tag to workflows in the Java Client to have the display in the panel.
Waiting for input	Displays pending workflow runs that require further user interaction. These workflows are also displayed in the notifications menu in the upper-right corner of the UI.
Recent workflow runs	Manage recent workflow runs. Shows the name, state, start date, and end date of the workflow run.
Last failed workflow runs	Helps identify failing workflow runs. Shows the start date and end date of the failed run. If workflow profiling is enabled, failing workflow elements are displayed in the workflow schema. For more information, see Profile Workflows in the vRealize Orchestrator Operations Client .

Standard Workflows in the Workflow Library

Orchestrator provides a standard library of workflows that you can use to automate operations in the virtual infrastructure. The workflows in the standard library are locked in the read-only state. To customize a standard workflow, you must create a duplicate of that workflow. Duplicate workflows or custom workflows that you create are fully editable.

For information about the different access rights that you can have when you work with the Orchestrator server depending on the type of vCenter Server license, see *Installing and Configuring VMware vRealize Orchestrator*.

The contents of the workflow library is accessible through the **Workflows** view in the Orchestrator client. The standard workflow library provides workflows in the following folders.

Configuration	Configure authentication settings, database, certificates, licences, and troubleshoot Orchestrator.
JDBC	Test the communication between a workflow and a database by using the SQL plug-in shipped with Orchestrator.
Locking	Demonstrates the locking mechanism for automated processes, that allows workflows to lock the resources they use.
Mail	Send and receive emails from workflows.
Orchestrator	Automate certain common Orchestrator operations.
SQL	Manage databases and database tables, as well as run SQL operations.

SSH	Implement the Secure Shell v2 (SSH-2) protocol. These workflows allow you to run remote command and file transfer sessions with password and public key-based authentication. The SSH configuration allows you to specify paths to objects to expose in the Orchestrator inventory through secure connections.
Troubleshooting	Export application settings and log files to a ZIP archive that you can send to VMware support for troubleshooting.
vCenter Server	Access the functions of the vCenter Server API, so that you can incorporate all of the vCenter Server functions into the management processes that you automate by using Orchestrator.
Workflow documentation	Export information about workflows or workflow categories as PDF files.
XML	A Document Object Model (DOM) XML parser that you can use to process XML files in workflows.

Run Workflows in the vRealize Orchestrator Operations Client

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You can automate operations by running workflows in the Orchestrator Operations Client.

Prerequisites

Verify that you have configured the vCenter Server Plug-in. For more information, see *Installing and Configuring VMware vRealize Orchestrator*.

Procedure

- 1 Log in to the vRealize Orchestrator Operations Client as a user with administrator rights.
- 2 Select **Workflows > Library**.
- 3 Enter the name of the workflow you want to run in the search box.
- 4 On the bottom menu of the workflow panel, click **Run**.
- 5 (Optional) Enter the input parameters required by the workflow and click **Run**.

Note Workflows can require further input while running. For more information, see [Requests for User Interaction in the vRealize Orchestrator Operations Client](#).

What to do next

You can run the same workflow using Orchestrator Profiling. Use profiling to troubleshoot workflows and optimize your automation operations. For more information, see [Profile Workflows in the vRealize Orchestrator Operations Client](#).

This chapter includes the following topics:

- [Requests for User Interaction in the vRealize Orchestrator Operations Client](#)
- [Schedule Workflows in the vRealize Orchestrator Operations Client](#)

Requests for User Interaction in the vRealize Orchestrator Operations Client

Workflows can request additional user input before they can finish.

Workflows requiring further user interaction suspend operations until the requested input parameters are provided by the user. Workflows define which users can provide the requested information and direct requests for interaction accordingly.

Prerequisites

- Verify that at least one workflow is in the **waiting** state. Information about the status of workflow runs is found in the **Recent workflow runs** panel of the Operations Client dashboard.

Procedure

- 1 Run the selected workflow.
- 2 Select the workflow from the **Waiting for input** panel of the Operations Client dashboard.

Note Workflows that require further input are also displayed within the notifications icon on the top-right corner of the dashboard.

- 3 Enter the requested input parameters and click **Answer**.

You provided the input parameters required for the workflow to continue its run.

Schedule Workflows in the vRealize Orchestrator Operations Client

You can use scheduling to automate your workflow runs.

When you schedule workflow runs, you set the date, time, and intervals at which the scheduled task runs.

Prerequisites

You must have **Execute** privileges to schedule workflows.

Procedure

- 1 Log in to the vRealize Orchestrator Operations Client as a user with administrator rights.
- 2 Select your workflow from the **Library** menu. On the workflow panel, click **Schedule**.
- 3 The **New scheduled task** page includes **General**, **Scheduling**, and **Workflow** parameter categories.

Note The **Workflow** parameter category is visible only for workflows that require input parameters.

Parameter	Description
Name	The name of the scheduled task.
Description	A short description detailing the purpose of the scheduled task.
Start date	The date and time of the first scheduled run of the workflow
End date	The date and time of when the scheduled task stops running.
Start if in the past	Select whether to start the workflow, if the scheduled time is in the past. Yes starts the scheduled workflow immediately. No starts the workflow at the next scheduled recurrence.

Parameter	Description
Repeat	Set the intervals at which the scheduled task runs.
Workflow	Enter the input parameters of the workflow.

4 Click **Create** .

You have created a scheduled task for the workflow. Scheduled workflows appear under **Workflows > Scheduled**. You can delete scheduled tasks by clicking **Delete** on the schedule panel.

Edit Scheduled Task in the vRealize Orchestrator Operations Client

Scheduled tasks can be edited to change parameters like date, time, and recurrence of the scheduled workflow.

Prerequisites

Create a scheduled workflow task.

Procedure

- 1 Log in to the vRealize Orchestrator Operations Client as a user with administrator rights.
- 2 Select your scheduled task from **Workflows > Scheduled**.
- 3 Click **Edit** on the workflow panel.
- 4 Edit the schedule parameters you want to change and click **Save**.

Note Input parameters set when creating the scheduled task are read-only and cannot be edited. To change these parameters, create a new scheduled task for this workflow.

Using vRealize Orchestrator Operations Client Packages

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Use the Orchestrator Operations Client to export and import packages. Packages can be used to back up workflow elements for use on other Orchestrator instances.

You can export and import packages on the Operations Client. Packages contain workflows and associated elements like actions, configurations, and resources. When a workflow is included into a package, all elements associated to that specific workflow are added automatically.

Note Operations Client can only be used to export and import packages. To create and delete packages, you must use the Java Client. For more information, see *Create a Package* in *Using the VMware vRealize Orchestrator Client*.

This chapter includes the following topics:

- [Export a Package Through the vRealize Orchestrator Operations Client](#)
- [Import a Package to the vRealize Orchestrator Operations Client](#)

Export a Package Through the vRealize Orchestrator Operations Client

You can use the Orchestrator Operations Client to export workflow packages.

Prerequisites

Create a package containing the elements you want to export. Packages are created in the Orchestrator Java Client. For more information, see *Create a Package* in *Using VMware vRealize Orchestrator*.

Procedure

- 1 Log in to the vRealize Orchestrator Operations Client as a user with administrator rights.
- 2 Select the **Packages** view.
- 3 Click **Export** on the workflow panel.

4 (Optional) Select additional export options.

Option	Description
Add version history to package	Export the version history of the package.
Add configuration attribute values to package	Export the attribute values of the configuration elements.
Add configuration SecureString attribute values to package	Export the SecureString configuration attribute values.
Add global tags to package	Export the global tags .

5 Click **Ok**.

Note Files with the .package extension are saved to a default folder on your local machine. To set a custom folder, change the settings in your browser.

You successfully exported the package. Import the package for use on another Orchestrator server.

Import a Package to the vRealize Orchestrator Operations Client

You can use the Orchestrator Operations Client to import workflow packages. By importing packages, you can reuse Orchestrator elements from one Orchestrator server on another server.

Prerequisites

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

Procedure

- 1 Log in to the vRealize Orchestrator Operations Client as a user with administrator rights.
- 2 Select the **Packages** view.
- 3 Click **Import** and browse to the location that .package file you want to import is stored. Click **Open**.
- 4 A new window with information about the import package appears.
 - a The **General** tab contains information about the imported package like the name, description, number of contained items, and certificate information.
 You might be prompted to indicate that you trust the publisher certificate of the source Orchestrator instance before you can import the file.
 - b The **Package elements** tab lists the items included in the import file. If the version of an element in the package is later than the version on the server, the system selects the element for import. Earlier versions of Orchestrator elements must be selected manually.

- c Deselect **Import Configuration Attribute Values** if you do not want to import the attribute values of the configuration elements from the package.
- d From the drop-down menu, select if you want to import tags.

5 Click **Import**.

Metric Data in the vRealize Orchestrator Operations Client

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Use Orchestrator profiling and performance view metrics to troubleshoot workflow runs and optimize performance.

The Operations Client includes two features that help you improve the performance of your workflow runs. The profiling feature gathers metric data while the workflow is running and displays it when the run is completed. Workflow profiling is enabled by default for all workflow runs done through the Operations Client. You can disable automatic profiling through **Control Center > Advanced Settings > Profile all workflow runs**. For the procedure used for manual profiling, see [Profile Workflows in the vRealize Orchestrator Operations Client](#).

The other source for metric data in the Operations Client is the Performance View option found in the **Workflow Runs** page. For more information, see [View Workflow Runs in Performance View](#).

This chapter includes the following topics:

- [Profile Workflows in the vRealize Orchestrator Operations Client](#)
- [View Workflow Runs in Performance View](#)

Profile Workflows in the vRealize Orchestrator Operations Client

You can profile workflow runs to troubleshoot and optimize your Orchestrator operations.

You can use the profiling feature of the Operations Client to gather useful metric data about your workflow runs. This data can be used to optimize the performance of your workflows.

Procedure

- 1 Log in to the vRealize Orchestrator Operations Client as a user with administrator rights.
- 2 Select your workflow from the **Library** menu. On the workflow panel, click **Actions > Profile**.

Note If workflow profiling is enabled by default, you can gather metric data by running the workflow normally.

- 3 The profiling feature gathers metric data while the workflow is running and when it completes. Profiling workflows provides two types of data: metrics about the workflow as a whole and metrics about the specific workflow elements. Displayed metrics can be filtered with the drop-down menu on the top-right corner of the workflow run screen.

Metric	Description
Total run duration	The total duration of the workflow run.
Total transitions	The total number of transitions between workflow elements.
Total duration	The total duration for the run of a specific workflow element.
Max duration	The slowest workflow element.
Item runs	The total number of runs for a specific workflow element.

What to do next

Use the data gathered from profiling to edit and optimize the workflow in the Orchestrator Java Client. For more information, see the *Using the VMware vRealize Orchestrator Client* documentation. For more metric data gathered in the Operations Client, see [View Workflow Runs in Performance View](#).

View Workflow Runs in Performance View

Viewing workflow runs in Performance View provides useful metric data.

Prerequisites

Run the workflow in either the Operations Client or the Java Client.

Procedure

- 1 Log in to the vRealize Orchestrator Operations Client as a user with administrator rights.
- 2 Go to **Workflows > Library > Runs**.
- 3 On the top-right corner of the **Workflow Runs** page, toggle on the **Performance view** option.
- 4 View the metric data shown on the workflow runs table.

Metric	Description
Duration	The total duration of the workflow run.
Size (Bytes)	The size of the workflow token stored on the database. This metric can be used to evaluate the resource price of checkpointing workflow runs.
CPU Times	Captures the runtime of the workflow run thread. Note If the workflow is suspended during the run, like when the workflow is waiting for further input, this metric only captures the runtime thread that occurs before completion.
Plugin Times	Displays the names and total runtime of the plug-ins used by the workflow run.

What to do next

Use the captured metrics to edit and optimize your workflows.