



# Orchestrator Manager



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## Overview

As RPA implementations scales, there are situations that require the manipulation of a large number of Orchestrator entities. Although Orchestrator's web interface provides a user-friendly way to see, create, edit and delete such entities, it can become a limiting factor if many operations need to be done in a short amount of time.

Orchestrator Manager is a tool that leverages Orchestrator's API to manipulate entities (Assets, Environments, Machines, Processes, Users, Robots, Organization Units, Folders, Queues and Packages) with data defined in Excel workbooks. It provides flexible and easy bulk operations on entities, enabling efficient solutions for situations that include:

- Registering a large quantity of users that obtain access to Orchestrator, including the specification of different roles and assignment to different Classic Folders (Organization Units).
- Migration from development environment to test environment or production environment.
- Setting temporary passwords for a group of users according to security policies.
- Provisioning of a large number of recently robots purchased for a particular company department.

In addition, since Orchestrator Manager is offered as a UiPath Studio project, it can be customized and extended according to needs other than the ones above.

The target users of Orchestrator Manager are Orchestrator administrators with the required permissions and familiar with an Orchestrator instance's features, settings and data. By leveraging this tool, it is expected that Orchestrator administrators can decrease the time spent in regular data manipulation tasks and increase their overall efficiency.

The remaining of this guide is structured as follows: Section How to Use contains usage instructions, and the Architecture section details the main components of Orchestrator Manager. Limitations of the current version are listed in section Restrictions. Lastly, section Distribution and Support provides information about distribution, licensing and support.

## How to Use

The current version of Orchestrator Manager can be used with Orchestrator 2018.4, Orchestrator 2019.4, Orchestrator 2019.10, Orchestrator 2020.4 and Orchestrator instances hosted on UiPath Automation Cloud. In the cases of Orchestrator 2018.4 and Orchestrator 2019.4, it is necessary to have Organization Units<sup>1</sup> enabled, even if only one Organization Unit is defined (usually named *Default*).

To use Orchestrator Manager, execute it from UiPath Studio by running the **Main.xaml** file in Normal mode<sup>2</sup>. Alternatively, it can also be published to Orchestrator to be deployed to attended robots. Since Orchestrator Manager expects user interaction to be used, unattended execution is not possible.

Once the process starts executing, the user is prompted to enter information to log into an Orchestrator Instance (Figure 1). More information about this authentication step can be found in section Authentication.

If the authentication is successful, Orchestrator Manager's main control panel (Figure 2) is shown and the user can select an Orchestrator entity and an operation to perform (e.g., Asset creation, Machine deletion and User retrieval).

After confirming the entity and the operation, Orchestrator Manager opens the Excel workbook corresponding to the selected entity and updates it as it performs the selected operation. This workbook can also be used to input data in sheets that create, edit and delete entities.

In cases of operations other than **Get**, each row is processed independently, and the outcome of the operation is written to the column *Result*. If the processing of a row fails, it is necessary to clear the corresponding *Result* column before trying it again, as Orchestrator Manager skips rows that already have a *Result* specified.

Note that the columns of the workbooks have different colors that represent cells that can be modified by the user (white cells) and cells that are reserved for Orchestrator Manager (gray cells). Refer to section Entities Workbooks for more details about workbooks.

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<sup>1</sup> From Orchestrator 2019.10, *Organization Units* have been referred to as *Classic Folders*.

<sup>2</sup> Execution in Debug mode is not supported.



## Orchestrator Manager

☒ On-Premises ☐ Cloud

**Version** 2020.4

**Username\***

**Password\***

**Orchestrator URL\*** https://myOrchestratorURL

**Tenant Name\*** Default

**Workbooks Path\*** C:\Users\User\Desktop\OrchestratorManagerWorkbooks

☐ Use credential stored in Windows's Credential Manager.

☐ Save credential in Windows's Credential Manager.

Please mind that many unsuccessful login attempts can temporarily lock the account, as specified in the Security settings of the tenant.

Figure 1 - Authentication Panel



## Orchestrator Manager

**Entity** Asset

**Operation** Get

Figure 2 - Control Panel

In addition, different operations require different permissions to be set on Orchestrator. For instance, to create an Asset, it is necessary to have the *Assets.Create* permission. Consult Orchestrator's online documentation for more details about permissions<sup>3</sup>. For this reason, it is recommended for users of Orchestrator Manager to have the Administrator role, since it usually has all permissions in an Orchestrator tenant.

Other than the Authentication Panel and Control Panel, when it is necessary to choose Folders (Organization Units), Orchestrator Manager shows the Folders (Organization Units) Panel for user selection (Figure 3). Folders<sup>4</sup>, formerly known as Organization Units<sup>5</sup>, are used to segregate entities into different groups that can be mapped to groups across an organization.

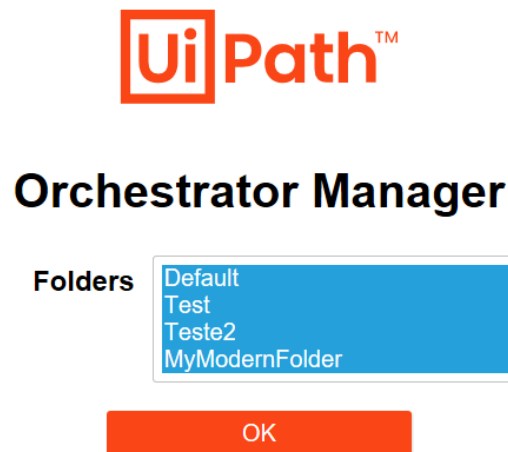


Figure 3 – Folders (Organization Units) Panel

## Configuration

The configuration file, **Config.xlsx**, stores settings used throughout Orchestrator Manager and it is divided in three sheets: **Settings**, **Advanced Settings** and **Localization**.

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<sup>3</sup> <https://docs.uipath.com/orchestrator/reference/permissions-per-endpoint>

<sup>4</sup> <https://docs.uipath.com/orchestrator/docs/about-folders>

<sup>5</sup> <https://docs.uipath.com/orchestrator/v2018.4/docs/about-installation>

## Settings

The first sheet, **Settings**, contains parameters used to connect to Orchestrator instances. They are divided according to the deployment type of Orchestrator (i.e., on-premises or UiPath Automation Cloud), except *EntitiesWorkbooksFolderPath*, which are used in both cases.

The values of these parameters are used as default values of fields in the Authentication Panel, and they are replaced by new values specified during execution. For this reason, it is not mandatory to make any changes to the **Settings** sheet, as all values can be specified directly in the Authentication Panel.

## Advanced Settings

The **Advanced Settings** sheet contains parameters that usually do not require modification, but that can be changed to adapt Orchestrator Manager to specific situations.

The first parameters can be used to control the throughput of HTTP requests by Orchestrator Manager and reduce its impact on Orchestrator's infrastructure. For example, increasing the interval between requests can be helpful when there is a large number of requests done in a short period.

Other than those, the **Advanced Settings** sheets also define coordinates of columns in entities workbooks. Changing these usually requires additional modifications to the workflows themselves.

## Localization

The **Localization** sheet contains localization strings that are used in different parts of Orchestrator Manager, such as input forms, paths for workbooks, error messages and warnings.

A new language can be included according to the following steps:

1. Add a new column to the **Localization** sheet and insert the translated strings into the appropriate rows. The header of the new column must be the two-letter representation of the language, according to ISO 639. This header is used by Orchestrator Manager when initializing the *Config* dictionary in the Initialization step.

2. Create a new set of workbooks referring to the new language and place them in a new subfolder of **Workbooks** folder. The name of the new subfolder must be the same two-letter language ISO 639 code used in the first step.
3. Modify the *Switch* activity called *Switch System's Language* in the **Core\InitializeConfigurations.xaml** file by adding a case for the new language. The case *Key* must match the two-letter code that was specified before.

Lastly, note that some strings have placeholders that are used by the *String.Format()* method, so, although their position may vary, they must be present in the translated string as well.

## Architecture

Figure 4 shows the main steps of Orchestrator Manager, which are detailed in the following subsections.

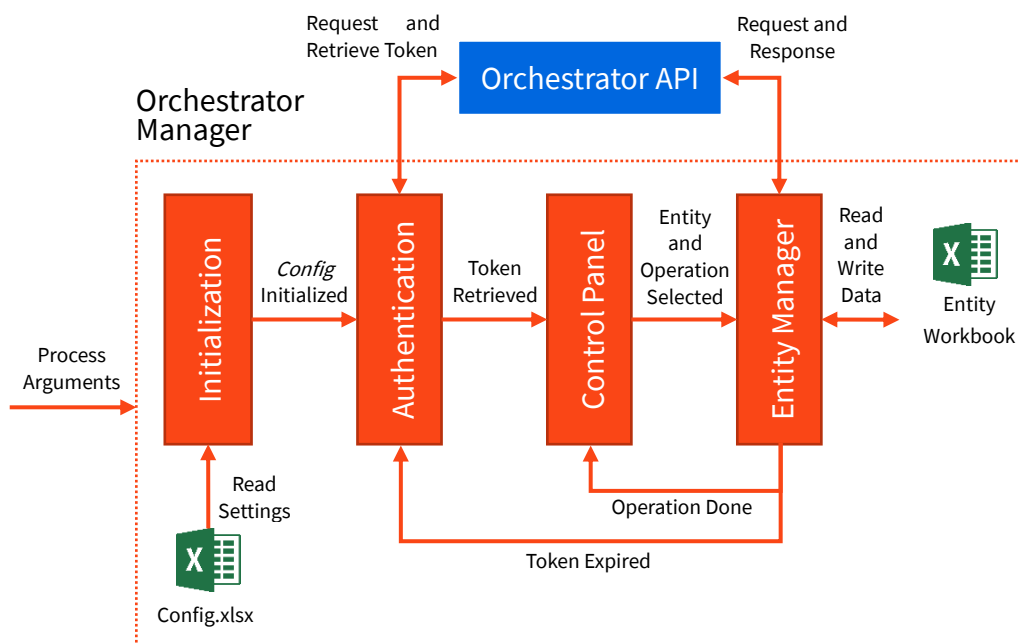


Figure 4 - Orchestrator Manager Architecture

## Process Arguments

Orchestrator Manager's entry point, **Main.xaml**, accepts two arguments: *in\_Language* and *in\_ConfigFilePath*.



The only mandatory argument is *in\_ConfigFilePath*, which determines the path to the configuration file.

*in\_Language* can be used to define the language to be used by Orchestrator Manager. It must be a two-letter language code according to ISO 639 of a supported language. For more details about localization of Orchestrator Manager, refer to Localization.

## Initialization

The Initialization step reads process arguments and settings from **Config.xlsx**, storing them in a *Dictionary(Of String, GenericValue)* object called *Config*, which is used throughout Orchestrator Manager's execution.

*Config* also stores localization strings, selected according to the *in\_Language* argument or, if this is empty, according to the system's locale settings.

## Authentication

The next step, Authentication, uses information about an Orchestrator instance and authentication credentials to perform an authentication request to Orchestrator's API. This request retrieves an authentication token that is necessary for all other subsequent requests.

The data necessary for authentication depends on whether Orchestrator Manager connects to an instance on-premises or an instance hosted on UiPath Automation Cloud (Figure 1). Refer to the UiPath Automation Cloud online documentation for instructions on how to obtain the parameters Client ID and User Key<sup>6</sup>.

Other than the authentication parameters, it is possible to set the path to a folder to which entities workbooks are copied. If the folder does not exist, Orchestrator Manager automatically creates it before copying the files.

The Authentication Panel is shown until a token is successfully retrieved or until the user interrupts the execution by pressing the Cancel button or by closing the panel. Note that multiple unsuccessful login attempts can cause an account lockout according to the tenant's security settings. For more information about account lockout, refer to Orchestrator's documentation<sup>7</sup>.

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<sup>6</sup> <https://docs.uipath.com/orchestrator/reference/consuming-cloud-api>

<sup>7</sup> <https://docs.uipath.com/orchestrator/docs/field-descriptions-tenant-settings#section-account-lockout>

## Control Panel

Once the authentication is successfully done, the user is prompted to choose an entity and an operation to be performed on it. The supported entities are Assets, Environments, Machines, Processes, Users, Robots, Organization Units (only for Orchestrator versions 2018.4 and 2019.4), Folders, Queues and Packages. The available operations depend on the entity and are listed in section Entities Workbooks.

Once the user confirms the selection, the appropriate entity manager is invoked based on the chosen entity. After the operation is performed, the execution flow goes back to the Control Panel for the user to choose another operation. This cycle is repeated until the user stops the execution of Orchestrator Manager by clicking on the Cancel button or by closing the Control Panel (Figure 2). When that happens, Orchestrator Manager automatically closes all entities workbooks opened during its execution.

## Entity Manager

The entity manager of a given entity invokes the workflow that implements the selected operation. This workflow contains all actions necessary to complete the operation, including communication with Orchestrator's API and data input and output using entities workbooks.

If a request fails due to an expired token, Orchestrator Manager prompts the user for credentials to perform the authentication step again. After that, it retries the failed request and resume its regular execution.

## Entities Workbooks

Operations make use of entities workbooks, which are Excel workbooks used to input and output data related to the chosen entities. These workbooks are automatically open by Orchestrator Manager when the corresponding entity is selected in the Control Panel.

Each sheet of an entity workbook represents an operation that can be performed on that entity. As mentioned in section How to Use and shown in Figure 5, cells of each sheet have different colors that indicate their use:

- White cells can receive input from the user, such as data about Assets to be created.

- Gray cells are used by Orchestrator Manager to write data retrieved from Orchestrator, such as IDs of created Assets. Data input into gray columns is overwritten by Orchestrator Manager.

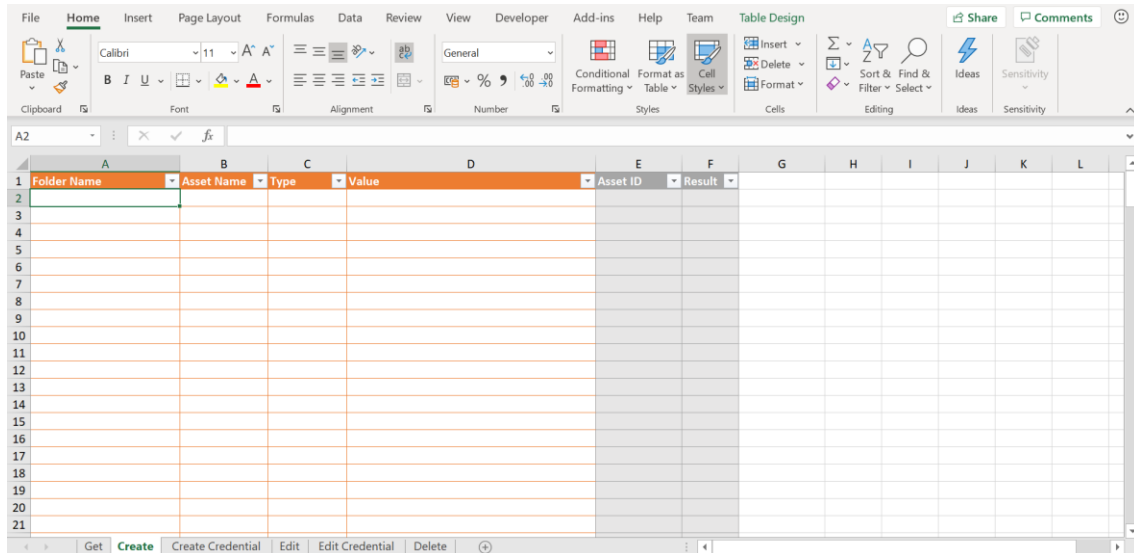


Figure 5 - Entity Workbook

The following tables provide more details about workbooks representing each entity: Table 1 - Assets, Table 2 - Environments, Table 3 - Machines, Table 4 - Processes, Table 5 - Robots, Table 6 - Users, Table 7 - Organization Units, Table 8 - Folders, Table 9 - Queues, Table 10 - Packages.

Although all workbooks refer to Folders, if Orchestrator's version is 2018.4 or 2019.4, the operations are done using Organization Units.

In addition, some operations are only allowed in the case of Classic Folders (Organization Units), such as the manipulation of Robots and Environments. Similarly, due to its unique User management system, the manipulation of Users is not available when connecting to UiPath Automation Cloud.

Finally, note that Orchestrator Manager also considers Excel table filters applied to operation sheets. For example, if data about Assets are input into the Create sheet of **Assets.xlsx** and then the table is filtered to show only *Text* Assets, Orchestrator Manager makes requests to create only *Text* Assets.

Table 1 - Assets

Operation	Details
<b>Get</b>	<p>Retrieves data about the existing Assets.</p> <p>This sheet is populated by Orchestrator Manager, and the user is not required to input any data. The retrieved data can be copied for use in other sheets.</p> <p>For security reasons, passwords of credential Assets are not retrieved.</p>
<b>Create</b>	<p>Creates Assets with the provided data.</p> <p>The field <i>Type</i> has a fixed number of possible values, according to Asset types available in Orchestrator: <i>Text</i>, <i>Bool</i> and <i>Integer</i>.</p> <p>Assets per Robot are not supported.</p>
<b>Create Credential</b>	<p>Creates credential Assets with the provided data.</p> <p>Although credentials are also classified as Assets, they have two values instead of one: <i>Username</i> and <i>Password</i>.</p> <p>Assets per Robot are not supported by Orchestrator Manager.</p>
<b>Edit</b>	<p>Edits Assets using the provided data.</p> <p>It is necessary to specify <i>Folder Name</i> and <i>Asset ID</i> of the Asset to be edited, and both can be retrieved by the <b>Get</b> operation. The other fields are optional, and fields left blank are not modified.</p> <p>Note that it is not possible to change the type of the Asset, and the new value must be compatible with the current Asset type.</p>
<b>Edit Credential</b>	<p>Edits credential Assets with the provided data.</p> <p>It is necessary to specify <i>Folder Name</i> and <i>Asset ID</i> of the credential Asset to be edited, and both can be retrieved by the <b>Get</b> operation. The other fields are optional, and fields left blank are not modified.</p>

	If <i>Username</i> is to be updated, a new password must also be provided. On the other hand, it is possible to update only <i>Password</i> by not inputting a new <i>Username</i> .
<b>Delete</b>	<p>Deletes the specified Assets.</p> <p>To prevent accidental deletion, it is necessary to provide both ID and name of the Folder containing the Asset, as well as ID and name of each Asset to be deleted. This data can be retrieved by the <b>Get</b> operation.</p>

Table 2 - Environments

Operation	Details
<b>Get</b>	<p>Retrieves data about the existing Environments.</p> <p>This sheet is populated by Orchestrator Manager, and the user is not required to input any data. The retrieved data can be copied for use in other sheets.</p> <p>Note that Environments are only available in Classic Folders<sup>8</sup>.</p>
<b>Create</b>	Creates Environments with the provided data.
<b>Delete</b>	<p>Deletes the specified Environments.</p> <p>To prevent accidental deletion, it is necessary to provide both ID and name of the Classic Folder (Organization Unit) containing the Environment, as well as ID and name of each Environment to be deleted. This data can be retrieved by the <b>Get</b> operation.</p>
<b>Add or Remove Robots</b>	<p>Adds Robots to or remove Robots from the specified Environment.</p> <p>The names of Robots must be provided as comma-separated values (e.g., <i>Robot1, Robot2, Robot3</i>).</p>

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<sup>8</sup> <https://docs.uipath.com/orchestrator/docs/about-environments>

Table 3 - Machines

Operation	Details
<b>Get</b>	<p>Retrieves data about the existing Machines.</p> <p>This sheet is populated by Orchestrator Manager, and the user is not required to input any data. The retrieved data can be copied for use in other sheets.</p>
<b>Create</b>	<p>Creates Machines with the provided data.</p> <p>The field <i>Type</i> has a fixed number of possible values, according to Machine types available in Orchestrator: <i>Standard</i> and <i>Template</i>.</p> <p>A Machine key is automatically generated when a machine is created, and it is written to the <b>Create</b> sheet by Orchestrator Manager.</p>
<b>Delete</b>	<p>Deletes the specified Machines.</p> <p>To prevent accidental deletion, it is necessary to provide both ID and name of each Machine to be deleted. This data can be retrieved by the <b>Get</b> operation.</p>

Table 4 - Processes

Operation	Details
<b>Get</b>	<p>Retrieves data about the existing Processes.</p> <p>This sheet is populated by Orchestrator Manager, and the user is not required to input any data. The retrieved data can be copied for use in other sheets.</p>
<b>Create</b>	<p>Creates Processes with the provided data.</p> <p>Note that <i>Environments</i> should not be specified for Processes in Modern Folders.</p>

	<i>Package Name</i> and <i>Package Version</i> can be retrieved from the Packages page in Orchestrator's web interface or by the <b>Get</b> operation on the Package entity.
<b>Delete</b>	Deletes the specified Processes.  To prevent accidental deletion, it is necessary to provide both ID and name of each Process to be deleted. This data can be retrieved by the <b>Get</b> operation.
<b>Update to Latest Package</b>	Updates the specified Process to use the latest version of the Package.
<b>Rollback to Previous Package</b>	Updates the specified Process to use the previously used version of the Package.

Table 5 - Robots

Operation	Details
<b>Get</b>	Retrieves data about the existing Robots.  This sheet is populated by Orchestrator Manager, and the user is not required to input any data. The retrieved data can be copied for use in other sheets.  Note that Robots can only be retrieved from Classic Folders. In the case of Modern Folders, Robots are associated with Users and do not represent independent entities.
<b>Create</b>	Creates Robots with the provided data.  The field <i>Hosting Type</i> has a fixed number of possible values, according to hosting types available in Orchestrator: <i>Standard</i> and <i>Floating</i> .  The field <i>Robot Type</i> also has a fixed number of possible values, but that can change depending on Orchestrator's version.

	<p>The possible values for each Orchestrator version supported by Orchestrator Manager are:</p> <ul style="list-style-type: none"> <li>• 2018.4: <i>NonProduction, Attended, Unattended</i> and <i>Development</i></li> <li>• 2019.4: <i>NonProduction, Attended, Unattended</i> and <i>Development</i></li> <li>• 2019.10: <i>NonProduction, Attended, Unattended, Development</i> and <i>StudioX</i></li> <li>• 2020.4: <i>NonProduction, Attended, Unattended, Studio, Development, StudioX, Headless, StudioPro</i> and <i>TestAutomation</i></li> <li>• UiPath Automation Cloud as of June 2020: <i>NonProduction, Attended, Unattended, Studio, Development, StudioX, Headless, StudioPro</i> and <i>TestAutomation</i></li> </ul> <p>The possible values for each Orchestrator version can also be confirmed on Orchestrator's Swagger page.</p>
<b>Edit</b>	<p>Edits Robots using the provided data.</p> <p>It is necessary to specify <i>Classic Folder Name</i> and <i>Robot ID</i> of the Robot to be edited, and both can be retrieved by the <b>Get</b> operation. The other fields are optional, and fields left blank are not modified.</p> <p>It is not possible to change the <i>Hosting Type</i> of the Robot.</p>
<b>Delete</b>	<p>Deletes the specified Robots.</p> <p>To prevent accidental deletion, it is necessary to provide both ID and name of the Classic Folder containing the Robot, as well as ID and name of each Robot to be deleted. This data can be retrieved by the <b>Get</b> operation.</p>



Table 6 - Users

Operation	Details
<b>Get</b>	<p>Retrieves data about the existing Users.</p> <p>This sheet is populated by Orchestrator Manager, and the user is not required to input any data. The retrieved data can be copied for use in other sheets.</p> <p>Note that only Users of type Local User are retrieved. Users of type Robot are not obtained by this operation, but they can be fetched via the <b>Get</b> operation on the Robot entity.</p> <p>This operation is not available when connecting to UiPath Cloud Platform.</p>
<b>Create</b>	<p>Creates Users with the provided data.</p> <p>The names of the Organization Units and of Roles must be provided as comma-separated values (e.g., <i>Default, Finance, HR</i> and <i>Administrator, Queue Watcher, Robot Creator</i>). Additionally, it is only possible to specify Organization Units for Users when using on-premises Orchestrator versions 2018.4 and 2019.4. The specification of Folders when creating Users is not supported.</p> <p>The field <i>Password</i> must follow the security rules for passwords defined in the tenant's settings page on Orchestrator.</p> <p>This operation is not available when connecting to UiPath Cloud Platform.</p>
<b>Edit</b>	<p>Edits Users using the provided data.</p> <p>It is necessary to specify the <i>ID</i> of the User to be edited, which can be retrieved by the <b>Get</b> operation. The other fields are optional, and fields left blank are not modified.</p> <p>Note that it is not possible to change the <i>Username</i> of the User.</p> <p>The field <i>Status</i> has a fixed number of possible values, according to hosting types available in Orchestrator: <i>Active</i> and <i>Inactive</i>.</p>

	<p>For changes regarding Organization Units and Roles, refer to the operations <b>Add or Remove OUs</b> and <b>Add or Remove Roles</b>.</p> <p>This operation is not available when connecting to UiPath Cloud Platform.</p>
<b>Delete</b>	<p>Deletes the specified Users.</p> <p>To prevent accidental deletion, it is necessary to provide both ID and username of each User to be deleted. This data can be retrieved by the <b>Get</b> operation.</p> <p>This operation is not available when connecting to UiPath Cloud Platform.</p>
<b>Add or Remove Roles</b>	<p>Adds Roles to or remove Roles from the specified User.</p> <p>The names of the Roles must be provided as comma-separated values (e.g., <i>Administrator, Queue Watcher, Robot Creator</i>).</p> <p>When specifying multiple Roles, if one of them does not exist, the operation is cancelled, and no Roles are added or removed.</p> <p>This operation is not available when connecting to UiPath Cloud Platform.</p>
<b>Add or Remove OUs</b>	<p>Adds the user to or remove the user from the specified Organization Units.</p> <p>The names of the Organization Units must be provided as comma-separated values (e.g., <i>Default, Finance, HR</i>).</p> <p>When specifying multiple Organization Units, if one of them does not exist, the operation is cancelled, and no Organization Units are added or removed.</p> <p>This operation is not available when connecting to UiPath Cloud Platform or on-premises Orchestrator instances with version 2019.10 or newer.</p>

Table 7 - Organization Units

Operation	Details
<b>Get</b>	<p>Retrieves data about the existing Organization Units.</p> <p>This sheet is populated by Orchestrator Manager, and the user is not required to input any data. The retrieved data can be copied for use in other sheets.</p> <p>This operation is only available in the case of on-premises Orchestrator instances with version 2018.4 or 2019.4.</p>
<b>Create</b>	<p>Creates Organization Units with the provided data.</p> <p>This operation is only available in the case of on-premises Orchestrator instances with version 2018.4 or 2019.4.</p>
<b>Delete</b>	<p>Deletes the specified Organization Units.</p> <p>To prevent accidental deletion, it is necessary to provide both ID and name of each Organization Unit to be deleted. This data can be retrieved by the <b>Get</b> operation.</p> <p>This operation is only available in the case of on-premises Orchestrator instances with version 2018.4 or 2019.4.</p>

Table 8 - Folders

Operation	Details
<b>Get</b>	<p>Retrieves data about the existing Folders.</p> <p>This sheet is populated by Orchestrator Manager, and the user is not required to input any data. The retrieved data can be copied for use in other sheets.</p> <p>This operation is only available when connecting to UiPath Cloud Platform or on-premises Orchestrator instances with version 2019.10 or newer.</p>

	Note that Classic Folders or first level Modern Folders do not have parent Folders.
<b>Create</b>	<p>Creates Folders with the provided data.</p> <p>The field <i>Type</i> has a fixed number of possible values, according to Folder types available in Orchestrator: <i>Classic</i> and <i>Modern</i>.</p> <p>Likewise, the field <i>Role Assignment Model</i> has a fixed number of possible values, according to the options available in Orchestrator: <i>Custom Roles</i> and <i>Inherit from tenant</i>. Note that this option only applies for Modern Folders and that a Modern subfolder cannot have a model different than its parent.</p> <p>In addition, when specifying names of subfolders of Modern Folders, it is necessary to input the complete name of the parent Folder, including its ancestors, separated by the forward slash character (/). For example, if a Modern Folder called <i>WorkGroup1</i> is a subfolder of a Modern Folder called <i>DepartmentA</i>, then the complete name of <i>WorkGroup1</i> is <i>DepartmentA/WorkGroup1</i>. It is possible to retrieve the complete names of Folders in a tenant by performing the <b>Get</b> operation.</p> <p>Lastly, it is not possible to specify parents for Classic Folders.</p>
<b>Delete</b>	<p>Deletes the specified Folders.</p> <p>To prevent accidental deletion, it is necessary to provide both ID and name of each Folder to be deleted. This data can be retrieved by the <b>Get</b> operation.</p>

Table 9 - Queues

Operation	Details
<b>Get</b>	<p>Retrieves data about the existing Queues.</p> <p>This sheet is populated by Orchestrator Manager, and the user is not required to input any data. The retrieved data can be copied for use in other sheets.</p>

	<p>Note that only data about queues' definitions is retrieved. Use the <b>Download Queue Items</b> operation to retrieve Queue items.</p>
<b>Create</b>	<p>Creates Queues with the provided data.</p> <p>The fields <i>Unique Reference</i> and <i>Auto Retry</i> are mandatory and can have two values: <i>Yes</i> or <i>No</i>. If the field <i>Auto Retry</i> has the value <i>Yes</i>, the maximum number of retries must be specified as a non-negative integer via the field <i>Max # of Retries</i>.</p>
<b>Delete</b>	<p>Deletes the specified Queues.</p> <p>To prevent accidental deletion, it is necessary to provide both ID and name of the Folder containing the Queue, as well as ID and name of each Queue to be deleted. This data can be retrieved by the <b>Get</b> operation.</p> <p>Note that a Queue can be deleted even if it contains Queue items.</p>
<b>Download Queue Items</b>	<p>Downloads Queue items from the specified Queue.</p> <p>The field <i>Download Folder Path</i> indicates the full path to a folder to which Queue items should be saved.</p> <p>Items of each Queue is downloaded as a CSV file that follows the same format as the ones downloaded via Orchestrator's web interface. For this reason, it cannot be reused by the <b>Upload Queue Items</b> operation as it is.</p> <p>Downloaded CSV files are named based on the name of the corresponding Queue and on a timestamp of the moment of download.</p>
<b>Upload Queue Items</b>	<p>Uploads Queue items to the specified Queue.</p> <p>The values of the field <i>Queue Items File Path</i> must be full paths to CSV files containing data about Queue items to be uploaded.</p>

	<p>The field <i>Commit Type</i> has a fixed number of possible values, according to types available in Orchestrator<sup>9</sup>: <i>AllOrNothing</i>, <i>StopOnFirstFailure</i> and <i>ProcessAllIndependently</i>.</p> <p>This operation is not available in the case of on-premises Orchestrator instances with version 2018.4.</p>
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Table 10 - Packages

Operation	Details
<b>Get</b>	<p>Retrieves data about the existing Packages.</p> <p>This sheet is populated by Orchestrator Manager, and the user is not required to input any data. The retrieved data can be copied for use in other sheets.</p> <p>Note that each Package version is displayed in a separate row of get <b>Get</b> sheet.</p>
<b>Delete</b>	<p>Deletes the specified Packages.</p> <p>To prevent accidental deletion, it is necessary to provide <i>ID</i>, <i>Version</i> and <i>Key</i> of each Package to be deleted. This data can be retrieved by the <b>Get</b> operation.</p>
<b>Download</b>	<p>Downloads the specified Packages.</p> <p>The field <i>Download Folder Path</i> indicates the full path to a folder to which Packages should be saved. Packages are downloaded as .nupkg files, following the same format as the ones downloaded via Orchestrator's web interface.</p> <p>Full paths of successfully downloaded Packages are written to the field <i>Download Package File Path</i>, and they can be reused by the <b>Upload</b> operation when uploading Packages to a different tenant.</p>

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<sup>9</sup> <https://docs.uipath.com/orchestrator/docs/about-queues-and-transactions#section-upload-strategies>

	Package files are overwritten if they already exist in the specified folder.
<b>Upload</b>	<p>Uploads the specified Packages.</p> <p>The field <i>Package File Path</i> indicates the full path to a file of type .nupkg. The name and the version of the Package are automatically defined based on the metadata included in the Package file.</p>

## Restrictions

The current version of Orchestrator Manager has the following limitations:

- The minimum Orchestrator version supported is 2018.4. It is required for Organization Units to be enabled if connecting to Orchestrator 2018.4 or Orchestrator 2019.4, even if there is only a single Organization Unit defined.
- Entities other than Assets, Environments, Machines, Processes, Robots, Users, Organization Units, Folders, Queues and Packages are currently not supported.
- The manipulation of Assets per Robot is not supported.

Moreover, note that Orchestrator Manager is mainly intended to be used for bulk operations, and it is by no means a replacement for Orchestrator's web interface.

## Distribution and Support

Orchestrator Manager is available as a UiPath Studio project and it can be downloaded from UiPath Connect<sup>10</sup>.

This tool is offered under the UiPath Open Platform Activity License Agreement (available as the file **LICENSE.pdf** and also online<sup>11</sup>), and support is provided on a best-effort basis.

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<sup>10</sup> <https://connect.uipath.com/marketplace/components/orchestrator-manager>

<sup>11</sup> [https://www.uipath.com/hubfs/legalspot/UiPath\\_Activity\\_License\\_Agreement.pdf](https://www.uipath.com/hubfs/legalspot/UiPath_Activity_License_Agreement.pdf)