

RPA Design and Development V3.0

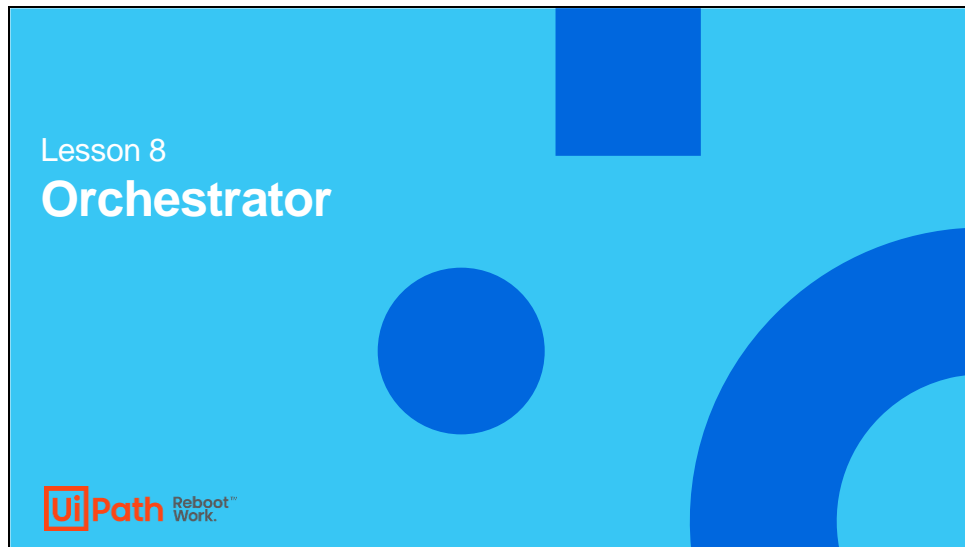
STUDENT MANUAL – Lesson 8

Slide 1



Welcome to 'RPA Design and Development Course'.

Slide 2



The eighth lesson of this course is Orchestrator.

Slide 3



Agenda


- 01** Orchestrator Overview
- 02** Publishing a Project to Orchestrator
- 03** Orchestrator Functionalities

The agenda of this lesson is:

- Orchestrator Overview
- Publishing a Project to Orchestrator
- Orchestrator Functionalities

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Learning Objectives

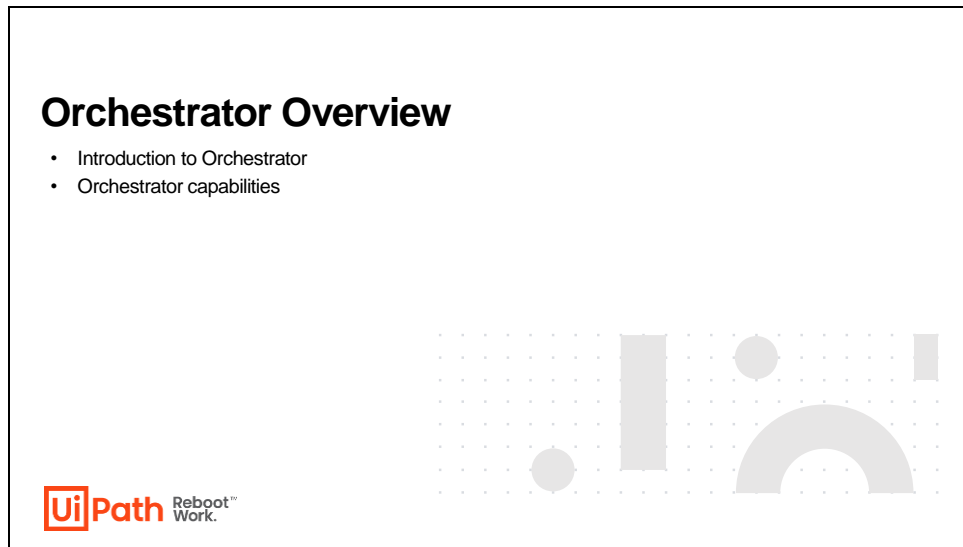


- 01 Describe Orchestrator
- 02 Publish a Project to Orchestrator
- 03 Explain the functionalities of Orchestrator

By the end of this lesson, you will be able to:

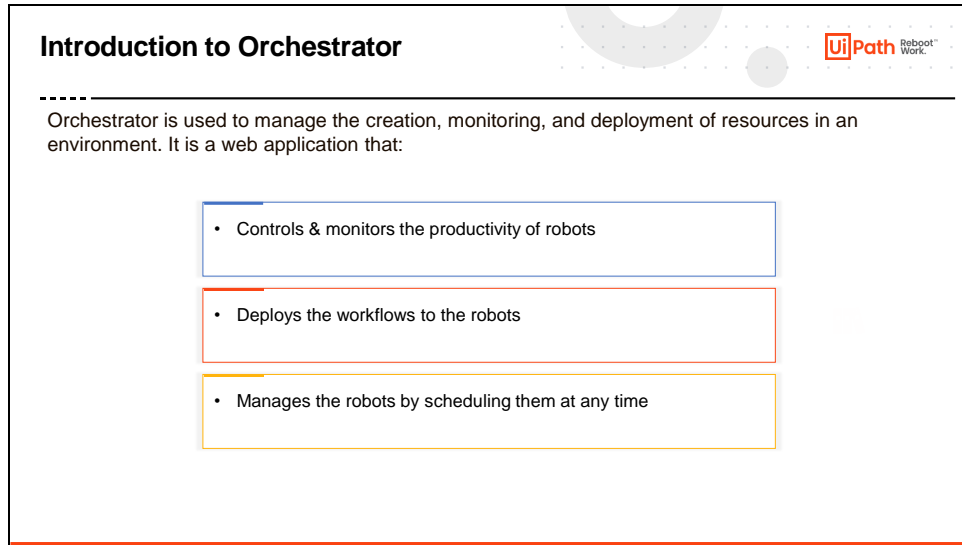
- Describe Orchestrator
- Publish a Project to Orchestrator
- Explain the functionalities of Orchestrator

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This section gives an overview of Orchestrator which was briefly discussed in Lesson 2 of this course.

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Introduction to Orchestrator

Orchestrator is used to manage the creation, monitoring, and deployment of resources in an environment. It is a web application that:

- Controls & monitors the productivity of robots
- Deploys the workflows to the robots
- Manages the robots by scheduling them at any time

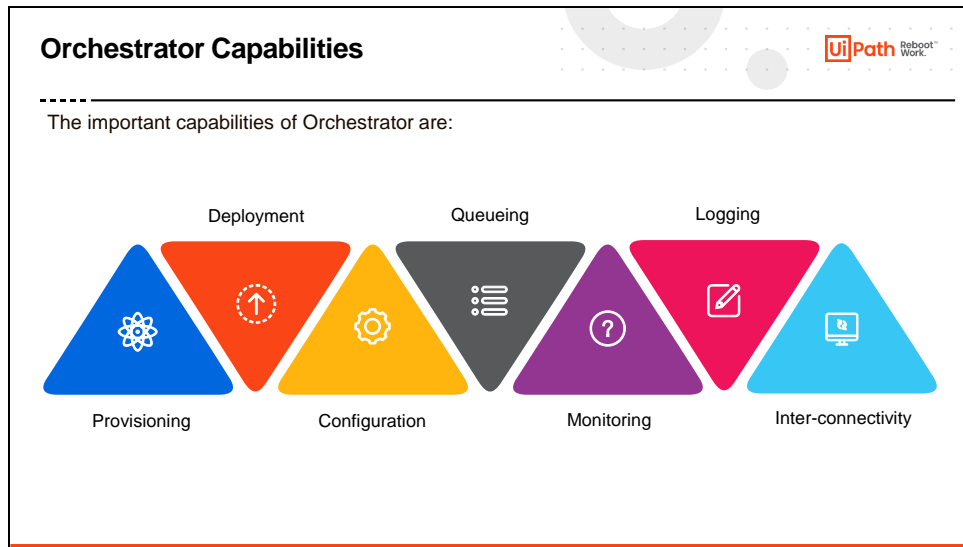
The slide features a decorative background with a large grey smiley face and a dotted pattern. The UiPath logo is in the top right corner.

Orchestrator is used to manage the creation, monitoring, and deployment of resources in an environment. It is a web application that enables the management of robots, activity packages, data to be processed, execution schedules, and other assets.

To recall, Orchestrator:

- Controls and monitors the productivity of robots
- Deploys the workflows to the robots
- Manages the robots by scheduling them at any time

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Orchestrator is used to perform several functions related to automation workflows. Some of the important capabilities of Orchestrator are:

- **Provisioning:** Creates and maintains the connection between Robots and web application
- **Deployment:** Assures the correct delivery of the package versions to the assigned Robots for execution
- **Configuration:** Maintains and delivers Robot environments and processes configuration
- **Queueing:** Stores transactions and ensures their automatic distribution across Robots
- **Monitoring:** Keeps track of Robot identification data and maintains user permissions
- **Logging:** Stores and indexes the logs to an SQL database and/or Elasticsearch (depending on your architecture and configuration)
- **Inter-connectivity:** Acts as the centralized point of communication for third party solutions or applications

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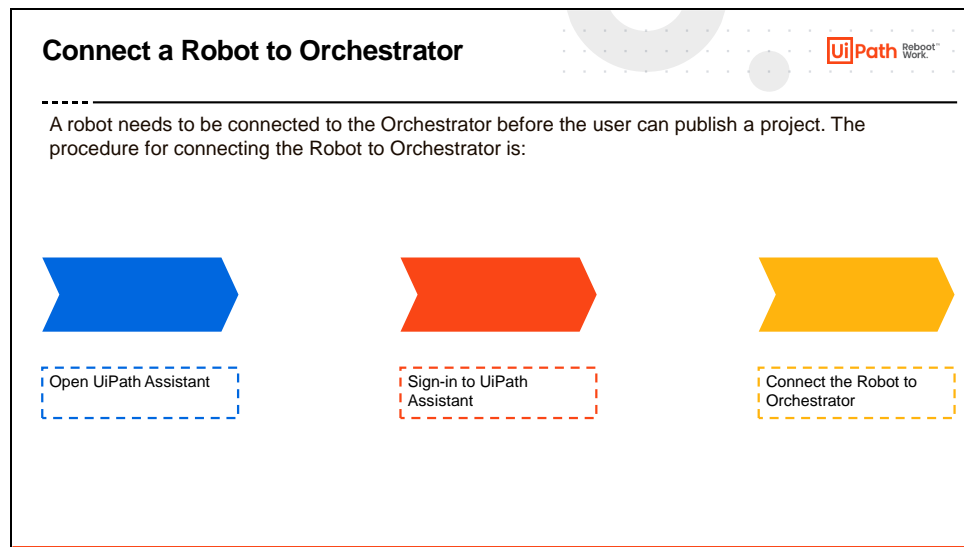
Publishing a Project to Orchestrator

- Connect a Robot to Orchestrator
- Publish a Project to Orchestrator



This section explains how to connect a robot and publish a project to the Orchestrator.

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A robot needs to be connected to the Orchestrator before the user can publish a project. The procedure for connecting the Robot to Orchestrator is:

- Open UiPath Assistant on your computer.
- Sign-in to UiPath Assistant.
- Connect the Robot to Orchestrator.

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Classroom Exercise

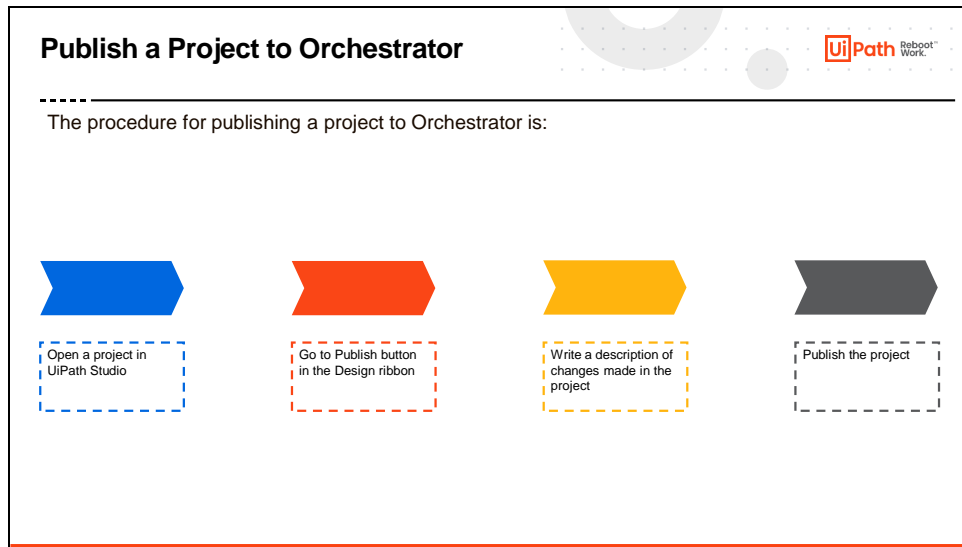


Demonstrate how to connect the Robot to Orchestrator.

Demonstrate how to connect the Robot to Orchestrator.

- Open UiPath Assistant on your computer or search for UiPath Assistant in Windows Search and click the application icon to open it.
- Open Orchestrator Settings under Preferences in UiPath Assistant and select Connection Type as Service URL and enter URL for on-premise Orchestrator in Service URL.
- Click the Sign-in button to open the Orchestrator login screen in your browser.
- Enter your login credentials here and click Sign-In. It gives a prompt.
- Click open on the prompt.
- A green icon at the top of the UiPath Assistant window becomes visible. It means that the Robot is connected to Orchestrator.

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The procedure for publishing a project to Orchestrator is:

- Open a project in UiPath Studio.
- Go to **Publish** button in the **Design** ribbon tab. The Publish Project window will appear.
- In the **Release Notes** section, write a short description of any changes made in the project.
- Publish the project.

When the project is published successfully, the Info dialog will appear displaying “**Project Updated Successfully**”. The Orchestrator is updated accordingly as the name of the project and its version name are sent to Orchestrator.

Slide 12

Classroom Exercise

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Demonstrate how to publish a project to Orchestrator.


Demonstrate how to publish a project to Orchestrator.

- Open or create a project in UiPath Studio.
- From the Design ribbon click the Publish button. It opens the Publish Process window.
- In the Package Properties tab, enter the Package name and Release Notes as required.
- In the Publish options tab, select the Orchestrator Personal Workspace feed option from the drop-down menu.
- In the Certificate Signing tab, you can enter the certificate details, if required.
- After making the necessary changes, click Publish to publish the project.
- The published project can be viewed in UiPath Assistant and under the Automations page in Orchestrator.

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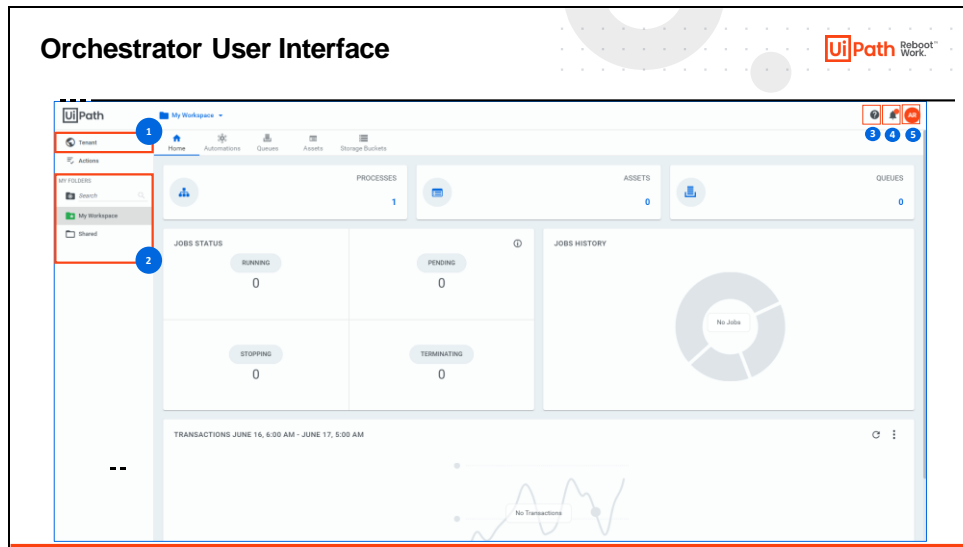
Orchestrator Functionalities

- Orchestrator User Interface
- Contexts of Orchestrator
 - Tenant
 - Folder



This section explains the Orchestrator User Interface and contexts in detail.

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The homepage of Orchestrator is divided into two contexts:

- Tenant
- Folder

The users can switch between these contexts from the sidebar menu. There is also an Actions page below Tenant.

Also, multiple options are available in Orchestrator for easier access to its functionalities.

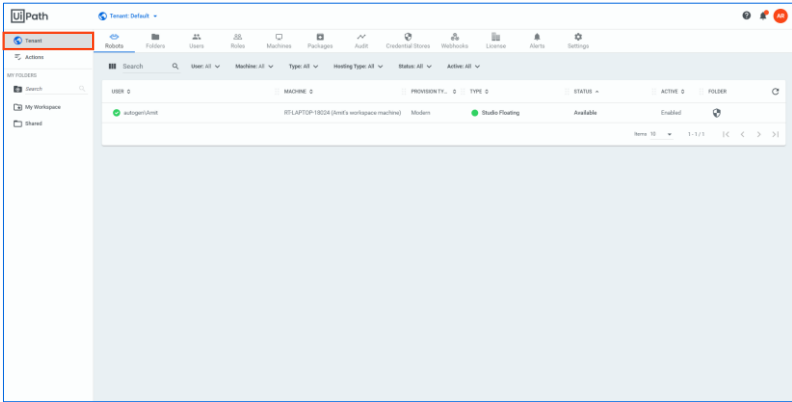
- Help button opens the Orchestrator documentation in a new tab.
- Alerts button displays notifications for robots, queue items, triggers, jobs, processes, and tasks.
- Through the User Menu, the user can access profile options.

These contexts and the Actions page are discussed in detail in the subsequent slides.

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Tenant

The Tenant context is used to manage tenant-level entities of Orchestrator deployment.



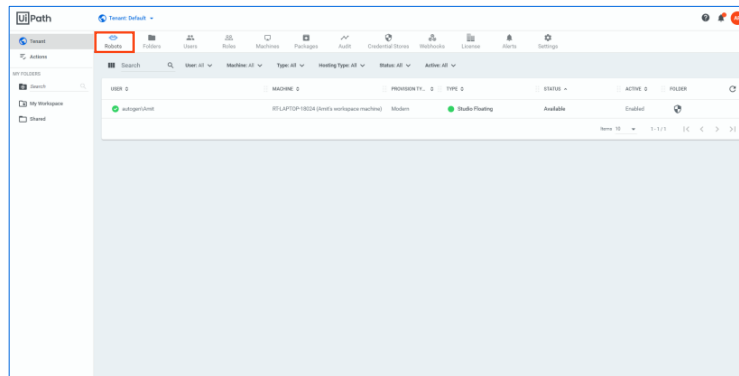
NAME	MACHINE	PROVISIONING	TYPE	STATUS	ACTION
autogen@localhost	BTUAPTOP18024 (host's workspace machine)	Modems	Studio-Floating	Available	Enabled

The **Tenant** context is used to manage tenant-level entities of Orchestrator deployment and Orchestrator settings and licenses.

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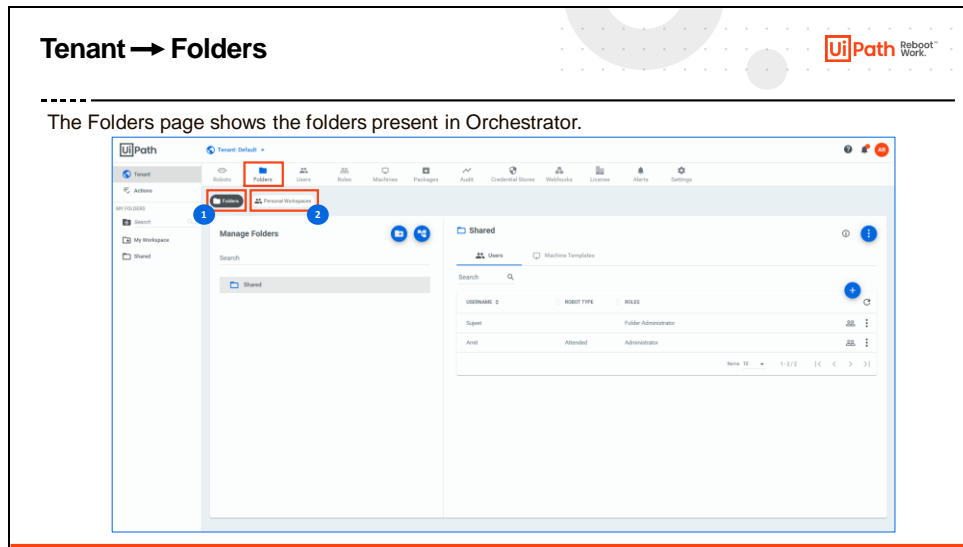
Tenant → Robots

The Robots page shows the robot configuration and how this maps to attended and unattended scenarios.



The **Robots** page shows the robot configuration and how this maps to attended and unattended scenarios.

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The **Folders** page shows the folders present in Orchestrator. A folder is a storage area that helps keep the projects separate. There are two tabs on this page. They are:

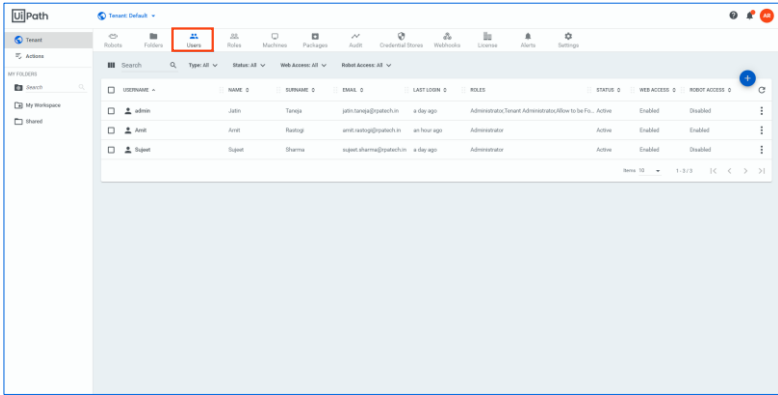
- **Folders:** This tab can be used to create and manage folders in the tenant. Here, existing folders can be deleted or updated, and new folders can be added.
- **Personal Workspaces:** This tab allows to explore and manage the personal workspaces. A workspace is a modern folder available for the dedicated use of a particular attended user.

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Tenant → Users

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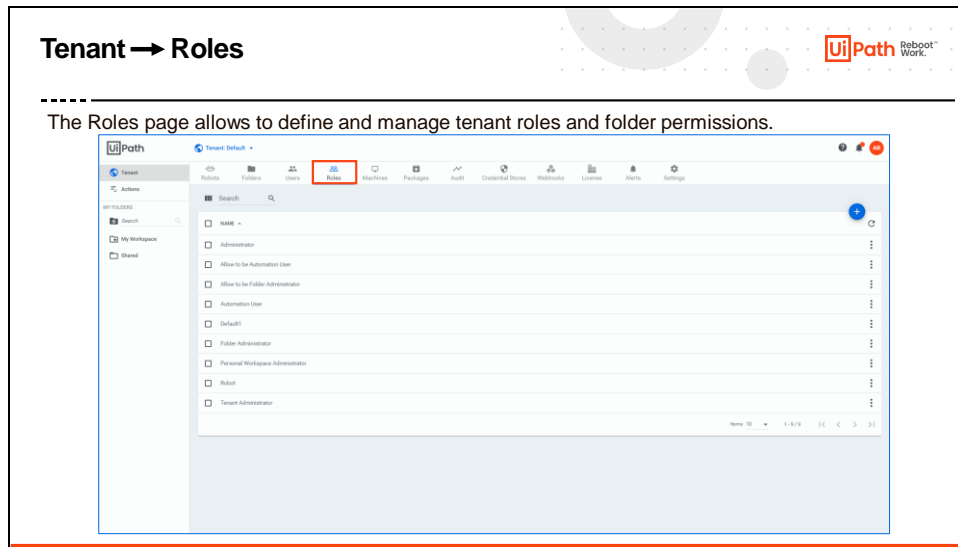
The Users page allows to view and configure the Orchestrator users and groups.



	NAME	USERNAME	EMAIL	LAST LOGIN	ROLE	STATUS	WEB ACCESS	ROBOT ACCESS	
<input type="checkbox"/>	admin	John	Tanaka	john.tanaka@upath.ch	4 day ago	Administrator Tenant Administrator, Allow to be F...	Active	Enabled	Disabled
<input type="checkbox"/>	Admin	Admin	Admin	Admin	an hour ago	Administrator	Active	Enabled	Enabled
<input type="checkbox"/>	Support	Support	Support	Support	4 day ago	Administrator	Active	Enabled	Disabled

The **Users** page allows to view and configure the Orchestrator users and groups.

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The **Roles** page allows to define and manage tenant roles and folder permissions. This page offers options such as configuring tenant and folder permissions for a role and adding or removing a role.

There are two categories of permissions::

- **Tenant permissions:** Define a user's access to resources at the tenant level.
- **Folder permissions:** Define the user's access and ability within each folder they are assigned to.

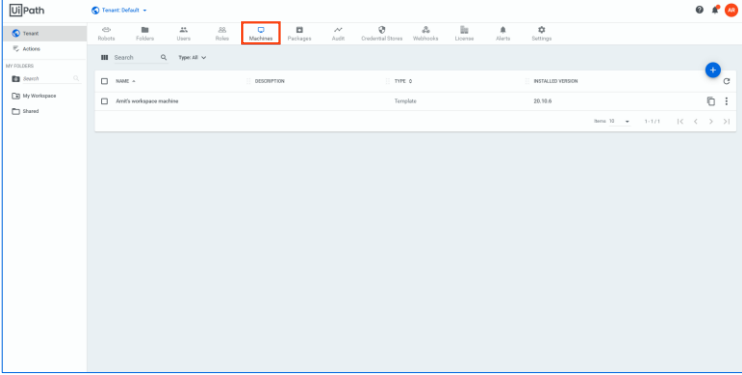
Based on the permissions included, there are three types of roles:

- **Tenant roles:** This includes tenant permissions and are required for working at the tenant level.
- **Folder roles:** This includes permissions for working within a folder.
- **Mixed roles:** This includes both types of permissions.

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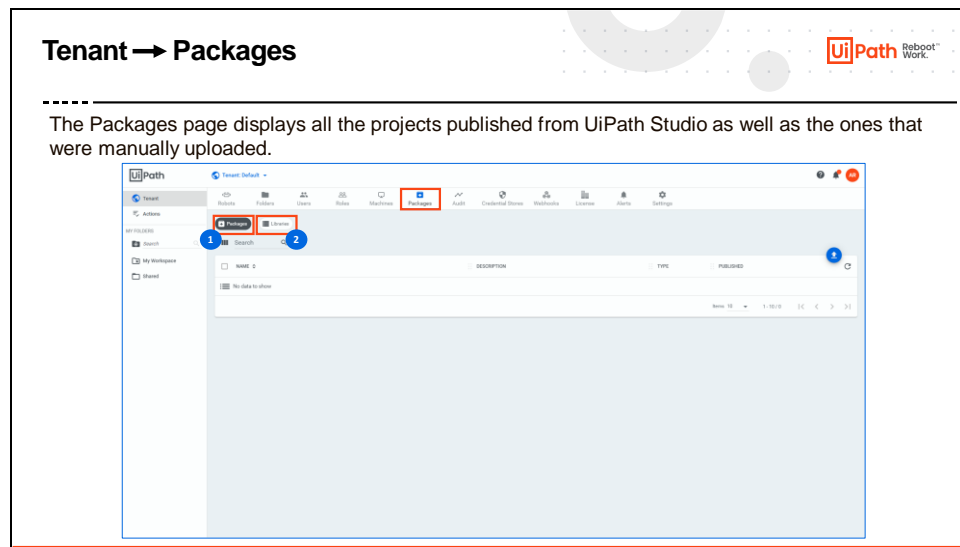
Tenant → Machines

The Machines page allows to provision and manage machine entities to further use them to connect Robots to Orchestrator.



The **Machines** page allows to provision and manages machine entities to further use them to connect Robots to Orchestrator. This page offers options to add, remove, and edit machines.

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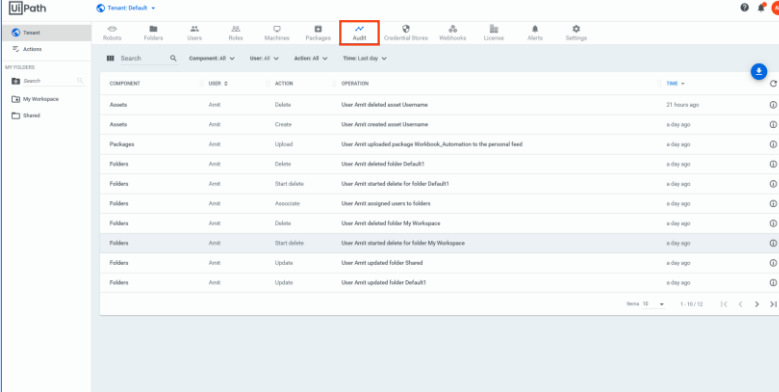
The **Packages** page displays all the projects published from UiPath Studio as well as the ones that were manually uploaded. It allows to centrally manage packages across folders. There are two tabs in this page. They are:

- **Packages:** This tab allows to view and manage packages. It also offers an upload button to add a new package to Orchestrator.
- **Libraries:** This tab shows the libraries that had been published from UiPath Studio.

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Tenant → Audit

The Audit page displays the audit trail for actions performed by the Orchestrator users.



The screenshot shows the UiPath Audit page. The 'Audit' tab is selected in the top navigation bar. The table displays the following data:

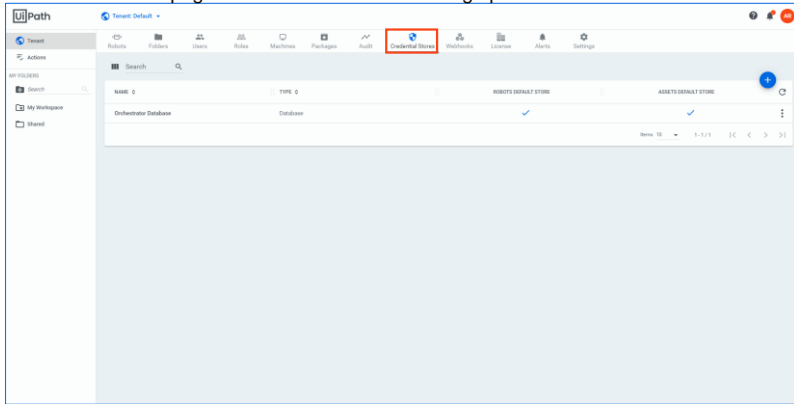
COMPONENT	USER ID	ACTION	OPERATION	TIME
Assets	Arnt	Delete	User Arnt deleted asset Username	21 hours ago
Assets	Arnt	Create	User Arnt created asset Username	a day ago
Packages	Arnt	Upload	User Arnt uploaded package Workbook_Automation to the personal feed	a day ago
Folders	Arnt	Delete	User Arnt deleted folder Default1	a day ago
Folders	Arnt	Start delete	User Arnt started delete for folder Default1	a day ago
Folders	Arnt	Associate	User Arnt assigned users to folders	a day ago
Folders	Arnt	Delete	User Arnt deleted folder My Workspace	a day ago
Folders	Arnt	Start delete	User Arnt started delete for folder My Workspace	a day ago
Folders	Arnt	Update	User Arnt updated folder Shared	a day ago
Folders	Arnt	Update	User Arnt updated folder Default1	a day ago

The **Audit** page displays the audit trail for actions performed by the Orchestrator users.

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Tenant → Credential Stores

The Credential Stores page allows to access and manage per tenant credential stores.



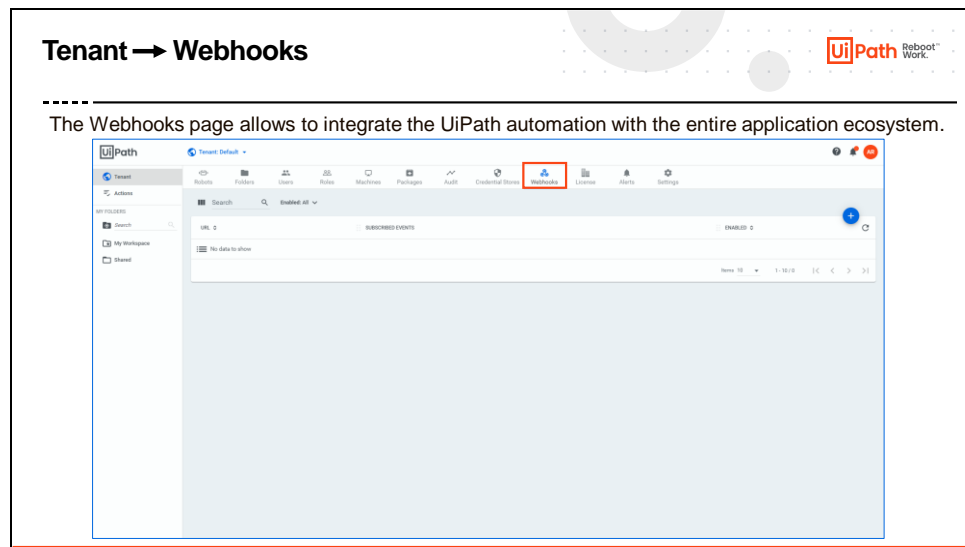
The screenshot shows the UiPath web interface. The 'Credential Stores' tab is highlighted in the top navigation bar. The main content area displays a table with the following data:

NAME	TYPE	ROBOTS CREDENTIAL STORE	ASSETS CREDENTIAL STORE
OrderExtractor Database	Database	✓	✓

At the bottom of the table, there is a pagination bar showing 'Items 1/1', '1-1/1', and navigation icons.

The **Credential Stores** page allows to access and manage per tenant credential stores. You can create new stores, view existing stores and their properties, and delete any current credential store.

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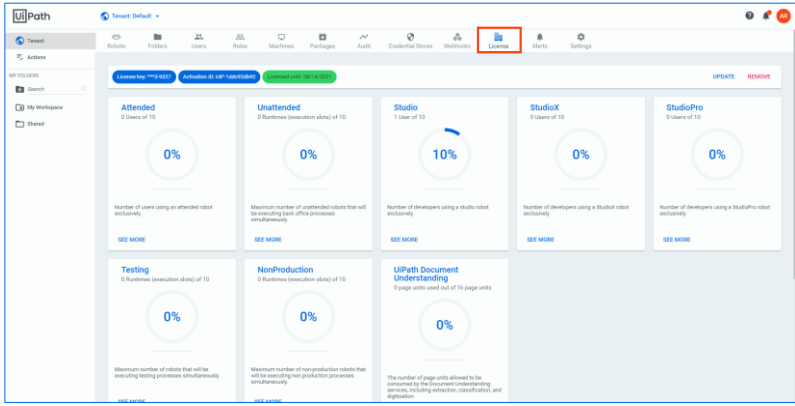
The **Webhooks** page helps integrate the UiPath automation with the entire application ecosystem. It also allows you to set webhooks to connect the Orchestrator events to the application. The Webhooks page enables you to easily set them up and view the ones that have been previously created.

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Tenant → License

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The License page allows to manage the licenses across the tenant.



The screenshot shows the UiPath License page within a tenant's management console. The page title is 'Tenant Default'. The left sidebar contains navigation links: 'Tenant', 'Robots', 'Folders', 'Users', 'Roles', 'Machines', 'Packages', 'Audit', 'Credential Stores', 'Webhooks', 'License' (highlighted with a red box), 'Alerts', and 'Settings'. The main content area displays a summary of license usage for various components. At the top, there are three status bars: 'License Key: 1111-1111' (green), 'License Key: 1111-1111' (green), and 'License Key: 1111-1111' (green). Below these are several cards showing usage percentages and limits. The 'Studio' card shows 10% usage (1 user of 10). The 'StudioX' card shows 0% usage (0 users of 10). The 'StudioPro' card shows 0% usage (0 users of 10). The 'Testing' card shows 0% usage (0 business execution slots of 10). The 'NonProduction' card shows 0% usage (0 business execution slots of 10). The 'UiPath Document Understanding' card shows 0% usage (0 page units used out of 10 page units). Each card includes a 'SEE MORE' link. The top right of the page has 'UPDATE' and 'REMOVE' buttons.

The **License** page allows to manage the licenses across the tenant. Here, you can activate, renew, remove, and allocate licenses.

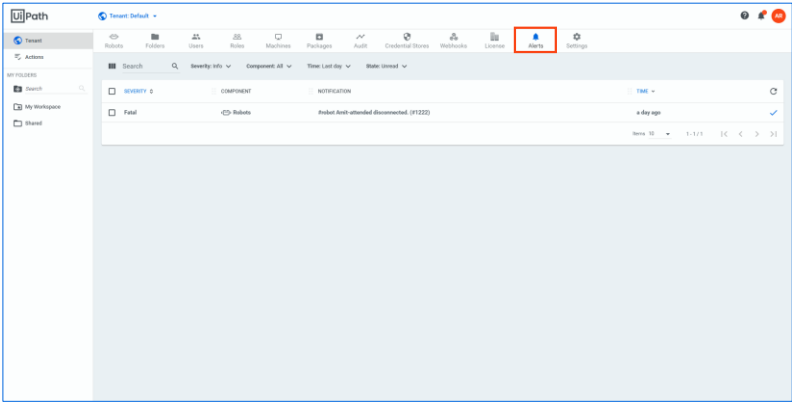
You have the possibility to either acquire:

- An individual license for one tenant
- An aggregated license for multiple

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Tenant → Alerts

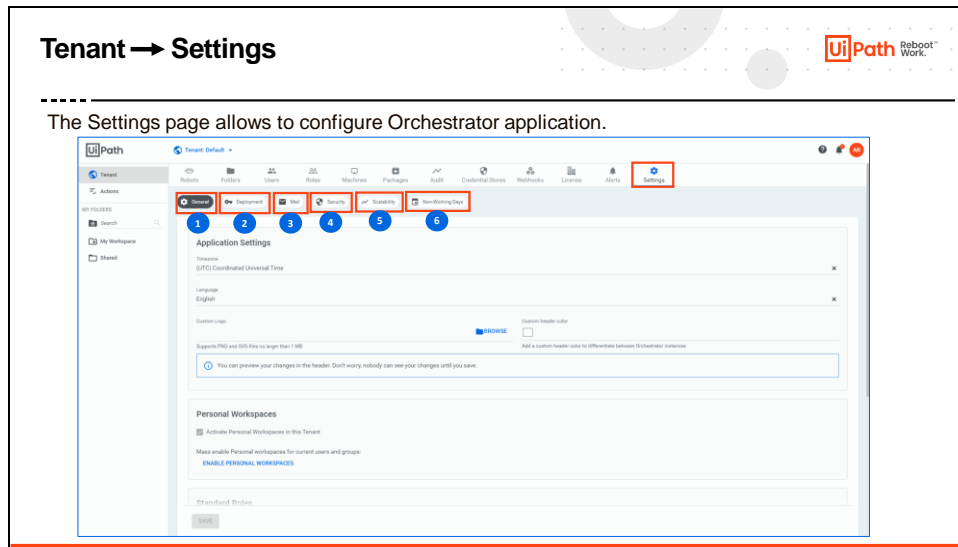
The Alerts page displays notifications for robots, queue items, triggers, jobs, processes, and actions.



SEVERITY	COMPONENT	NOTIFICATION	TIME
Fatal	Robot	Robot host attempted disconnected. (F1222)	x day ago

The **Alerts** page displays notifications for robots, queue items, triggers, jobs, processes, and actions. This page shows alerts from all the folders. Alerts are sent in real-time and can have one of the following severity levels: Info, Success, Warn, Error or Fatal, and can fit in one of the following components: Robots, Transactions, Triggers, Jobs, Process, Actions, Queues.

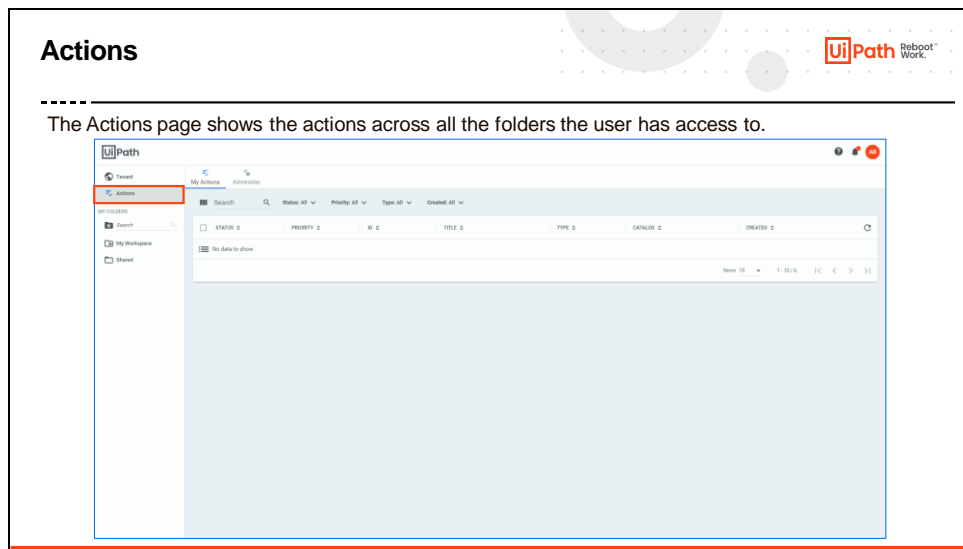
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The **Settings** page allows to configure Orchestrator application. There are six tabs on this page. They are:

- **General:** This tab allows to change the time zone and language of the Orchestrator.
- **Deployment:** This tab allows to change the time zone and language of the Orchestrator.
- **Mail:** This tab allows to configure email settings so that you can send email alerts to users with a provided email address.
- **Security:** This tab allows to configure email settings so that you can send email alerts to users with a provided email address.
- **Scalability:** This tab allows to specify if the Robot service should subscribe to SignalR channels of Orchestrator and configure the transport protocols that work best for you.
- **Non-Working Days:** This tab allows to configure calendars of non-working days in which triggers with non-working days restrictions are not launched.

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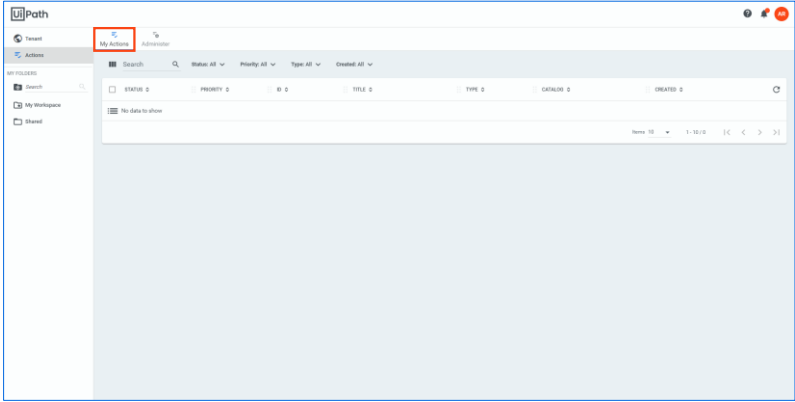


The **Actions** page shows the actions across all the folders the user has access to.

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Actions → My Actions

The My Actions tab shows form and document classification actions assigned to a user.



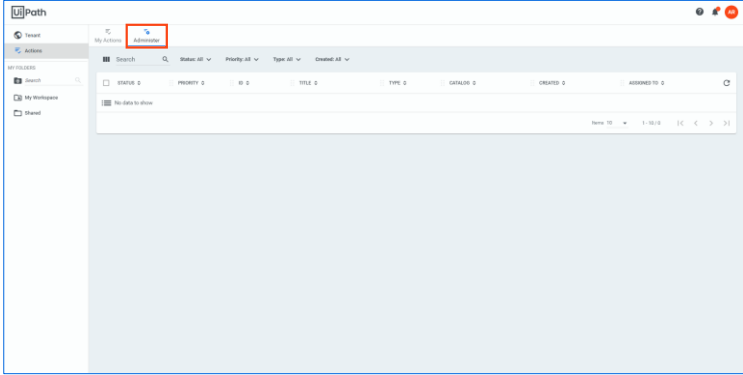
STATUS	PRIORITY	ID	TITLE	TYPE	CATALOG	CREATED
No data to show						

The **My Actions** tab shows form and document classification actions assigned to a user.

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Actions→Administer

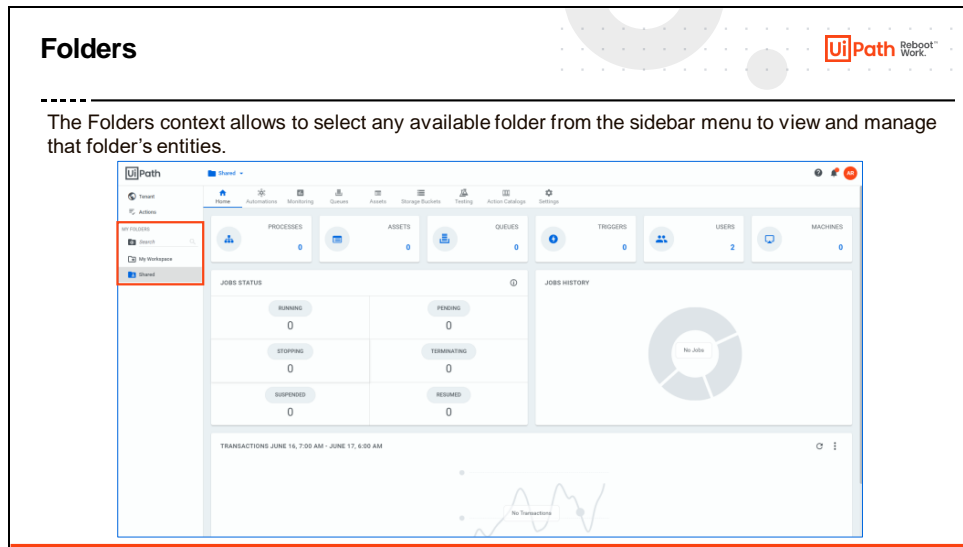
The Administer tab allows the admin to see all the generated form actions and handles having them assigned to users.



The screenshot shows the UiPath Administer tab interface. The left sidebar contains a navigation menu with 'My Actions' and 'Administer' (highlighted with a red box). The main content area displays a table with columns: STATUS, PRIORITY, ID, TITLE, TYPE, CATEGORY, CREATED, and ASSIGNED TO. The table is currently empty, showing 'No data to show'. The top of the interface includes a search bar and several filter dropdowns.

The **Administer** tab allows the admin to see all the generated form actions and handles having them assigned to users.

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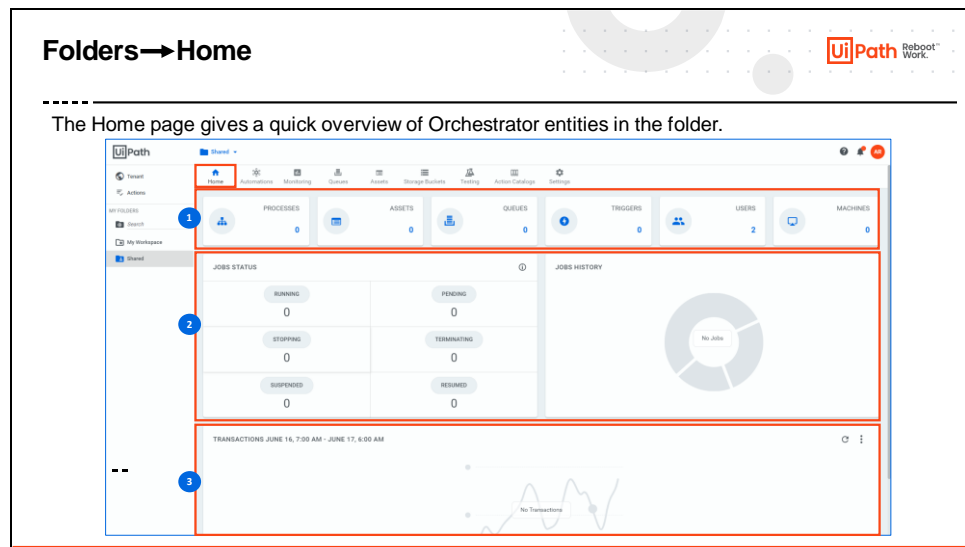


The **Folders** context allows to select any available folder from the sidebar menu to view and manage that folder's entities. The Folders context contains a Personal Workspace (renamed as My Workspace in the screenshot) folder and regular Orchestrator folders. The Shared folder in the screenshot is a regular Orchestrator folder.

The **regular Orchestrator folders** are used to collaborate across an organization. These folders are setup by admins with fine grained controls and are shared between multiple users.

On the other hand, **Personal Workspaces** are used by the owner to implement automation. Only the owner of the Orchestrator account can access it and use it at any time.

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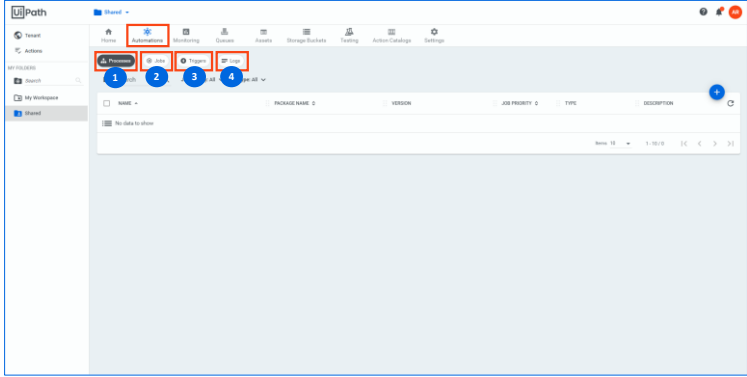
The **Home** page gives a quick overview of Orchestrator entities in the folder. It shows:

- The count of processes, assets, queues, triggers, users, and machines
- The job status, job history
- Transactions

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Folders → Automations

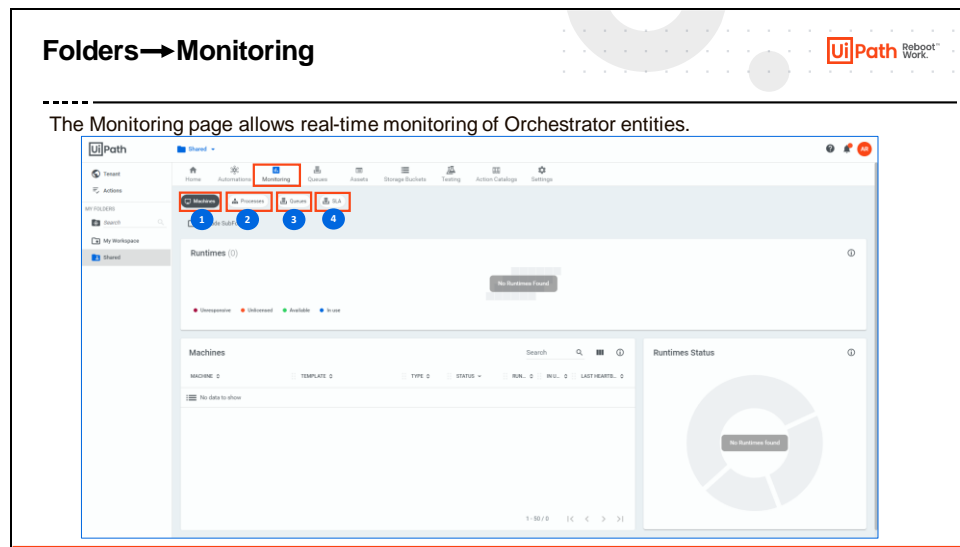
The Automations page allows to run processes, deploy packages, and manage jobs, triggers, and logs.



The **Automations** page allows to run processes, deploy packages, and manage jobs, triggers, and logs. There are four tabs on this page. They are:

- **Processes:** This tab allows you to deploy packages, manage processes, and run automation.
- **Jobs:** This tab allows you to execute and view process runs.
- **Triggers:** This tab allows to schedule automatic process runs.
- **Logs:** This tab shows the logs generated by process executions.

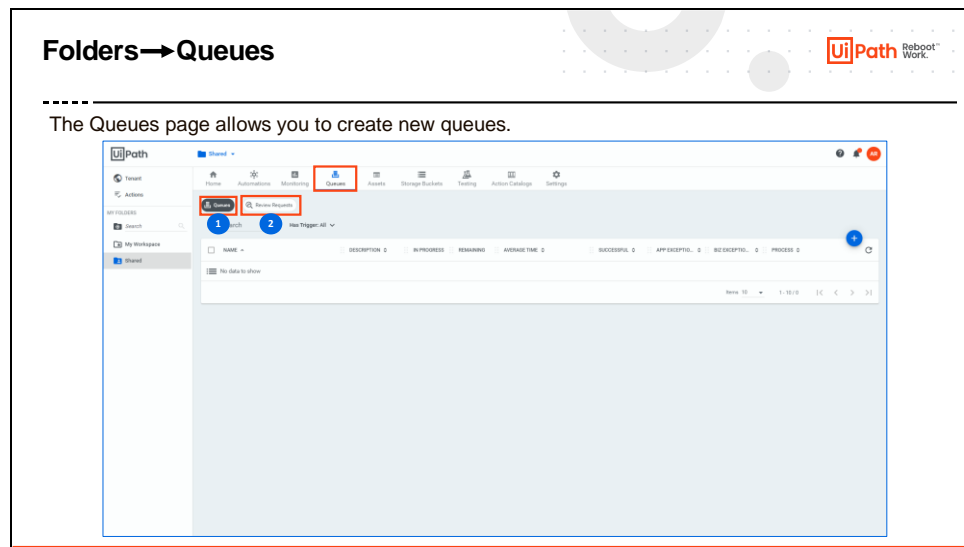
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The **Monitoring** page allows real-time monitoring of Orchestrator entities. There are four tabs on this page. They are:

- **Machines:** This tab gives an overview of machines' statuses.
- **Processes:** This tab gives an overview of process runs outcomes.
- **Queues:** This tab gives an overview of queue related details.
- **SLA:** This tab allows you to monitor the evolution of queues' SLA metrics.

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The **Queues** page allows you to create new queues. There are two tabs on this page. They are:

- **Queues:** This tab allows you to add queue items for processing.
- **Review Requests:** This tab shows processed queue items that need further review.

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Classroom Exercise

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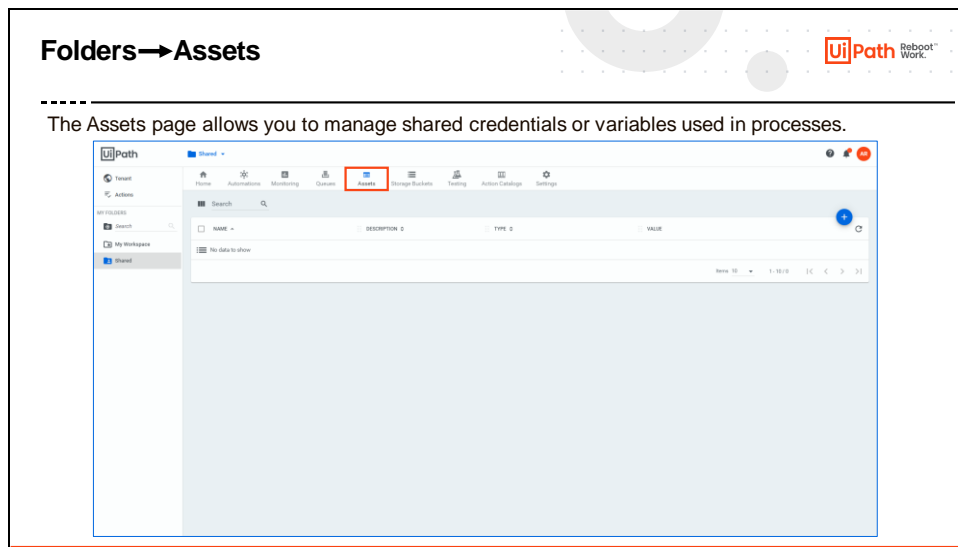


Demonstrate how to create a queue in Orchestrator.

Demonstrate how to create a queue in Orchestrator.

- Click the floating plus icon on the right to add a queue.
- Go to UiPath Studio.
- Open an existing project that will upload the data to the queue that has been created in Orchestrator.
 - The Project reads the data from the excel file using the Read Range activity.
 - The Project uses the Add Queue Item activity to push the data to Orchestrator.
- Execute this project.
- View all the uploaded data by clicking on the View Transactions option for the created queue in Orchestrator.
- Click View Details for each queue item to get a detailed view.
- Data is ready for further processing in the Orchestrator queue.

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The **Assets** page allows you to manage shared credentials or variables used in processes. They allow you to store specific information so that the Robots can easily access it. The Assets page enables you to create new assets. It also displays all previously created assets, which can be edited or deleted.


There are four types of assets:

- Text: stores only strings (it is not required to add quotation marks)
- Bool: supports true or false values
- Integer: stores only whole numbers
- Credential: contains usernames and passwords that the Robot requires to execute processes, such as login details for SAP or Salesforce.

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Classroom Exercise

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Demonstrate how to create an Asset in Orchestrator.

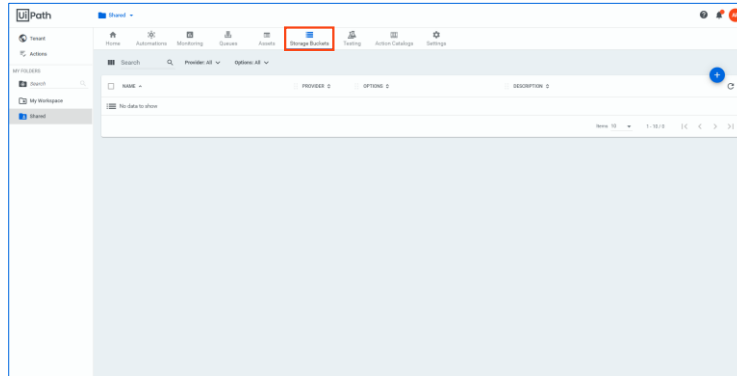
Demonstrate how to create an Asset in Orchestrator.

- Go to the Assets page in the My Workspace folder.
- Create a credential asset to store login details.
- In UiPath Studio, open an existing project.
 - The project uses two Type Into activities to enter login details in the UiPath website.
- Drag and drop the Get Credential activity in the project.
- Rename this activity and enter the Asset name in its Asset name property, a new string variable called Password in its Password property, and a new string variable called Username in its Username property. Login credentials from Orchestrator will be stored in these two variables and will be used as required.
- Replace the values from both the Type Into activities with their respective variables.
- Replace the Type Into activity of Password with the Type Secure Text activity to follow the best practices.
 - Indicate the password field and enter the Password variable in its Secure Text property.
- Execute the project to see that the login credentials are being entered in the login page of the UiPath website.

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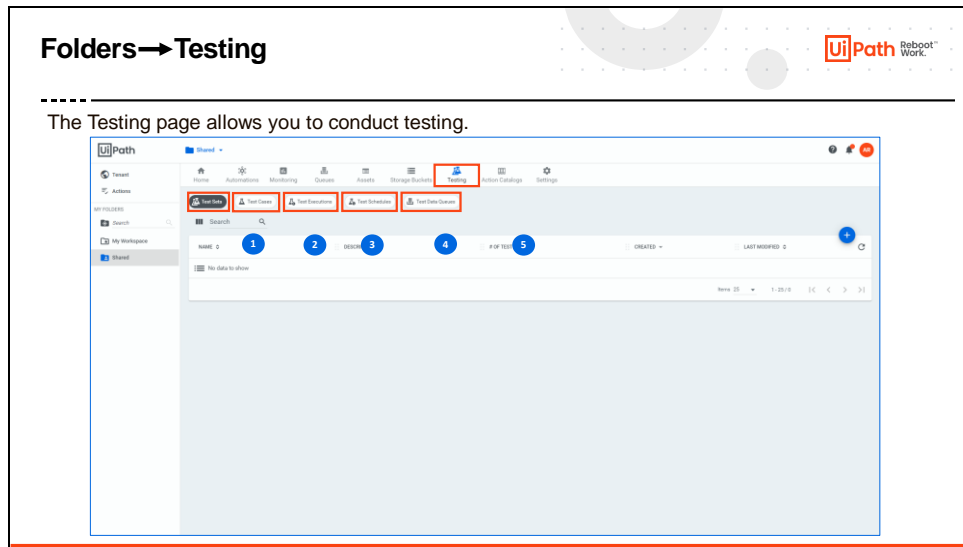
Folders → Storage Buckets

The Storage Buckets page allows you to manage different types of storage solutions integrated with automation.



The **Storage Buckets** page allows you to manage different types of storage solutions integrated with automation. These are used to provide a per-folder storage solution for RPA developers when creating automation projects.

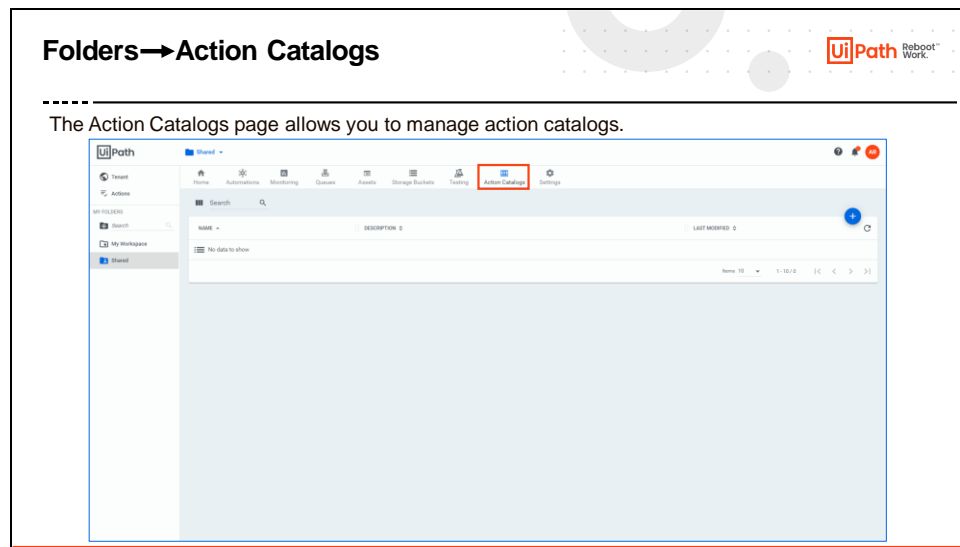
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The **Testing** page allows you to conduct testing. There are five tabs on this page. They are:

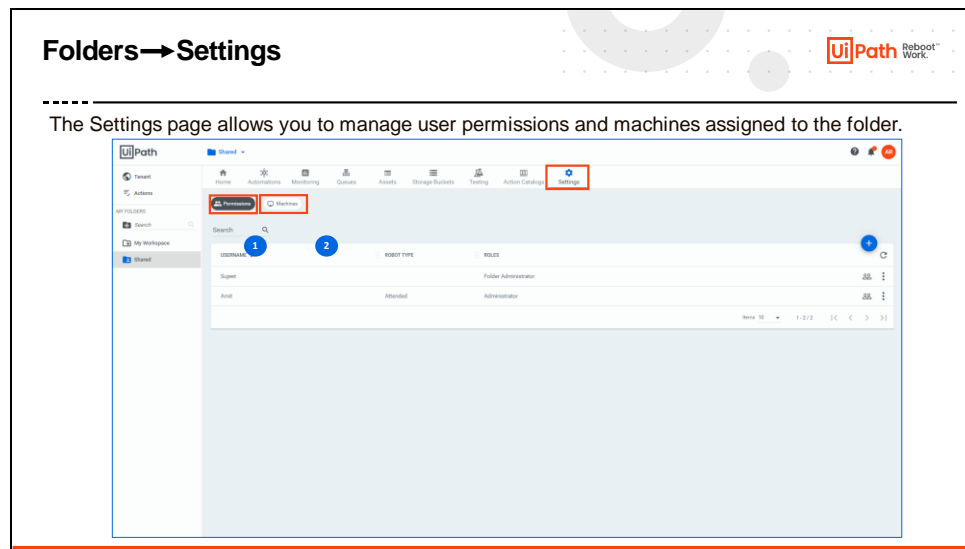
- **Test Sets:** This tab allows you to manage test sets. A test set represents a grouping of several individual test cases.
- **Test Cases:** This tab allows you to manage test cases across all the projects and application versions.
- **Test Executions:** This tab allows you to manage test executions. The test executions serve as an immutable record of the execution of any respective test set at a specific point in time.
- **Test Schedules:** This tab allows you to schedule tests. Here, you can plan and define test execution time intervals.
- **Test Data Queues:** This tab allows you to store and manage test data.

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The **Action Catalogs** page allows you to manage action catalogs. Action catalogs are action containers wherein actions can be categorized based on various criteria.

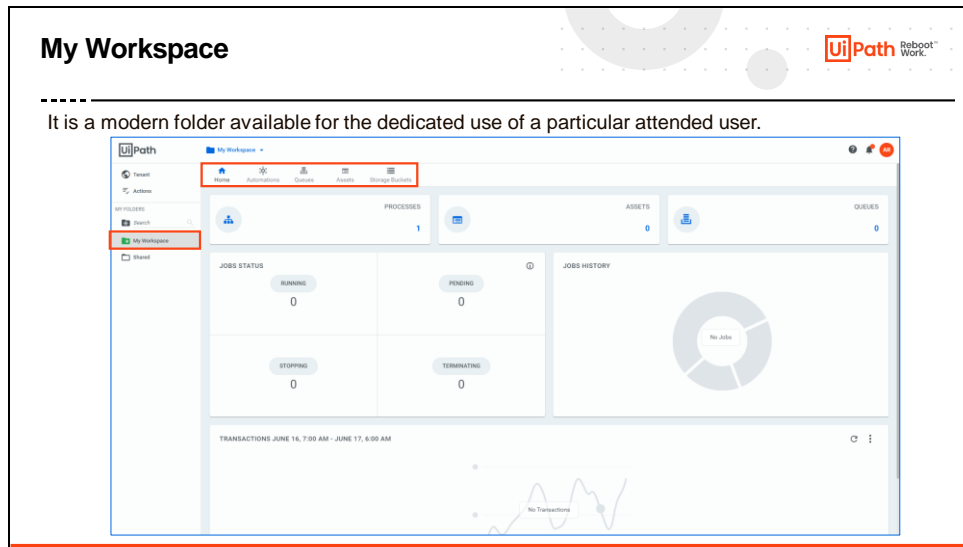
Slide 42



The **Settings** page allows you to manage user permissions and machines assigned to the folder. There are two tabs on this page. They are:

- **Permissions:** This tab allows you to view and manage the Orchestrator users assigned to this folder.
- **Machines:** This tab shows the machines assigned to this folder.

Slide 43



The **My Workspace** folder in the above screenshot is a modern folder available for the dedicated use of a particular attended user. As you can see, this folder also has Home, Automations, Queues, Assets, and Storage Buckets. These entities allow doing the same thing as the entities in the Shared folder. This folder is a **Personal Workspace** of the user. Any user with an attended (modern) robot assigned to them can be the owner of a Personal Workspace, provided this feature was made active by the Orchestrator admin on the respective tenant.

Slide 44

Summary

01

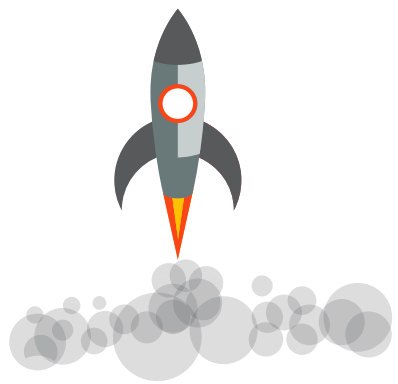
Orchestrator Overview

02

Publishing a Project to Orchestrator

03

Orchestrator Functionalities



To summarize, this lesson explained:

- Orchestrator Overview
- Publishing a Project to Orchestrator
- Orchestrator Functionalities