

mRounds Integration and Configuration Guide

Connected Worker Solutions



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Integration and Configuration Guide for **mRounds**, a *Connected Office Worker Solution*.

Release Version: 2609

Release Date: 22 Sep 2026

Published Date: 22 Sep 2026

Document Version: 1.0

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Primary Author: Innovapptive Inc.

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Preface

Understand audience, know related documents and products and conventions followed in this document.

Intended Audience

This guide is for administrators and implementation teams who set up mRounds: external system integrations, tenants, master data, users and roles, and APIs.

Document Conventions

Table 0-1 Conventions followed in the document

Convention	Meaning
boldface	Indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Indicates book titles, emphasis, or placeholder variables for which you supply values.
<code>monospace</code>	Indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter

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1. What's New for mRounds Configurators

Find new and expanded configuration guidance for Maximo, Dozuki, AVEVA PI, iMES, Gensuite and Shift Handover Reports.

- [New and Expanded Integration Documentation in Release 2609 \(on page 6\)](#)
- [New Features and Enhancements in Release 2603 \(on page 8\)](#)
- [New Features and Enhancements in Release 2601 \(on page 8\)](#)
- [New Features and Enhancements in Release 2512 \(on page 9\)](#)
- [Table 1-5: New Features and Enhancements in Release 2504.02 \(on page 9\)](#)
- [New Features and Enhancements in Release 2501 \(on page 9\)](#)
- [New Features and Enhancements in Release 2408 \(on page 10\)](#)
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- [New Features and Enhancements in Release 2311 \(on page 11\)](#)
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- [New Features and Enhancements in Release 2309 SP02 \(on page 12\)](#)
- [New Features and Enhancements in Release 2309 \(on page 12\)](#)
- [New Features and Enhancements in Release 2306 \(on page 12\)](#)
- [New Features and Enhancements in Release 2304 \(on page 13\)](#)

New and Expanded Integration Documentation in Release 2609

This edition adds or expands documentation for the following integrations. Some of these capabilities were available before 2609; what is new is their documentation in this guide.

Table 1-1 New and Expanded Integration Documentation in Release 2609

IBM Maximo Integration

This edition documents three separate Maximo flows: the master-data connection that synchronizes Locations and Assets, with its API Key, Basic and OAuth Token authorization options; outbound Work Orders created in Maximo from mRounds Issues with field and value mappings; and incoming Work Order events published from Maximo through the INNO_WO_mRounds publish channel.

For more information, see [Establish a Connection with Maximo for Master Data Integration \(on page 31\)](#), [Configure Outbound Work Orders to Maximo \(on page 37\)](#), [Configure Maximo Work Order Events for mRounds \(on page 42\)](#).

Table 1-1 New and Expanded Integration Documentation in Release 2609 (continued)**Dozuki Integration**

New documentation for turning on the Dozuki integration for a tenant and setting its API path, site URL and administrator account.

For more information, see [Configure the Dozuki Integration \(on page 63\)](#).

AVEVA PI Integration

New and expanded documentation for receiving PI event frames by polling or by webhook, acknowledging each received alert in PI, and writing operator round readings back to PI attributes, with the PI Web API calls, payloads and sign-in for each direction.

For more information, see [Integrate mRounds with AVEVA PI \(on page 64\)](#), [Poll AVEVA PI for Event Frames \(on page 67\)](#), [Receive AVEVA PI Event Frames by Webhook \(on page 70\)](#), [Write Acknowledgements and Round Readings to AVEVA PI \(on page 74\)](#).

iMES Data in Shift Handover Reports

New documentation for the iMES data sets used in shift handover (Order Details, Machine Time, In Loads and Waste), the TaskOrchestration database and Kafka settings, task graphs and schedules, the results message on Kafka, and an end-to-end verification.

For more information, see [iMES Prerequisites for Shift Handover Reports \(on page 78\)](#), [iMES Data Sets for Shift Handover \(on page 79\)](#), [TaskOrchestration Connection Settings for iMES \(on page 82\)](#), [iMES Task Graphs and Schedules \(on page 83\)](#), [iMES Results Message on Kafka \(on page 84\)](#), [Verify That iMES Results Reach Shift Handover Reports \(on page 89\)](#).

Benchmark Gensuite Integration

New documentation for sending mRounds Issues to Gensuite as Concern Reports: enabling the integration and preparing plants, preparing the Issue form, creating the connection, and mapping each plant's Issues.

For more information, see [Send mRounds Issues to Benchmark Gensuite \(on page 53\)](#), [Enable Gensuite and Prepare Existing Plants \(on page 53\)](#), [Prepare the Issue Form for Gensuite \(on page 54\)](#), [Create a Benchmark Gensuite Connection \(on page 57\)](#), [Map Plant Issues to Gensuite Concern Reports \(on page 59\)](#).

Shift Handover Reports with Platform Alerts and iMES

New documentation for showing platform Alerts and iMES results in Shift Handover Reports: how the data arrives, the tenant feature flags and settings, custom sections and widgets, and how report data refreshes and works offline on mobile.

For more information, see [Connect Shift Handover Reports to Platform Alerts and iMES \(on page 76\)](#), [Configure Shift Handover Alerts and iMES Settings \(on page 86\)](#), [Add Alerts and iMES Widgets to Shift Handover Reports \(on page 88\)](#).

New Features and Enhancements in Release 2603

Table 1-2 New Features and Enhancements in Release 2603

Establish a Connection with Maximo for Master Data Integration Supervisors can now connect mRounds to IBM Maximo and automatically sync Locations and Assets into mRounds master data. Once configured, master data stays current with the Maximo system of record—eliminating manual exports and ensuring operators always work with accurate plant and asset information. For more information, see Establish a Connection with Maximo for Master Data Integration (on page 31).
Export Attachment Links to SQL Server via ODBC Admins can now export attachment links from Rounds, Issues, and Actions to SQL Server through the existing ODBC connector, making attachment references available to reporting tools alongside operational records.
Automated Alerts for ODBC Data Ingestion Failures Admins now receive automated alerts when ODBC data ingestion fails, enabling faster detection and resolution of sync outages without manual monitoring.

New Features and Enhancements in Release 2601

Table 1-3 New Features and Enhancements in Release 2601

Functional Location ID Masking for Master Data Sync Admins can now enable masking of Functional Location IDs synced from SAP, allowing location identifiers to be displayed in a simplified format for operators without altering the underlying SAP data. For more information, see Create Locations (on page 108).
--

New Features and Enhancements in Release 2512

Table 1-4 New Features and Enhancements in Release 2512

Coordinates and Address for Assets & Locations

Supervisors can now configure GPS-enabled mapping for assets and locations. Once enabled, operators can view inspection sites on maps, navigate to checkpoints, and perform rounds with location accuracy—improving efficiency, safety, and compliance.

For more information, see [Create Locations \(on page 108\)](#).

New Features and Enhancements in Release 2504.02

Table 1-5 New Features and Enhancements in Release 2504.02

Custom Configuration for Consistent and Relevant Shift Transitions

Supervisors can now configure Shift Handover Report formats based on specific plant requirements. With flexible field settings and formats, each site can tailor the shift handover process to local workflows—ensuring consistent and meaningful shift change documentation.

For more information, see [Create Plants \(on page 102\)](#).

New Features and Enhancements in Release 2501

Table 1-6 New Features and Enhancements in Release 2501

Smart Workflow Features

- **Plant-Level Asset Scanning:** Control Asset Scan functionality at the plant level by enabling or disabling it during plant creation or modification.

For more information, see [Create Plants \(on page 102\)](#).

Administrative & Data Management Enhancements

- **Enhanced SFTP Integration:** Added "Units" and "Positions" columns to the SFTP file for task management. For more information, see [Establish a Connection with FTP Server for Data Export \(on page 15\)](#).
- **Plant-Level Asset Scanning:** Granular control over asset scan functionality at the plant level, allowing customization per facility. For more information, see [Create Plants \(on page 102\)](#).
- **Bulk User Creation:** Tenant Admins can now upload CSV or Excel files to create multiple users at once, saving time. For more information, see [Create Tenant/Super Admin role \(on page 94\)](#).

New Features and Enhancements in Release 2408

Table 1-7 New Features and Enhancements in Release 2408

SFTP Server Downtime Notifications Stay ahead of potential disruptions with SFTP Server Downtime Notifications. This feature sends instant alerts when the SFTP server experiences downtime, enabling the super admin to take immediate action and restore operations without delay. How it benefits: • Proactive Issue Management: Super admins are promptly informed of any server issues, allowing for quick resolution. • Minimized Impact: Faster responses help reduce the negative effects of server downtime on daily operations. For more information, see Establish a Connection with FTP Server for Data Export (on page 15).
Plant-Specific Filters in Master Data, Reports and Dashboard The Plant-Specific Filters feature allows operators to filter and view data, reports, and dashboards specific to individual plants within an organization. How it benefits: • Enhanced Decision-Making: Plant-specific filters enable managers and operators to make more informed decisions based on precise data from their specific operational unit, avoiding irrelevant information from other plants. • Operational Focus: Operators and staff can focus on their specific plant's performance, driving productivity improvements and targeted troubleshooting without distraction from other operational areas. For more information, see Create and Manage Master Data (on page 102).

New Features and Enhancements in Release 2401

Table 1-8 New Features and Enhancements in Release 2401

Configure Priorities for Issues and Actions at Tenant Level Set Priority dropdowns with color codes for Issues and Actions at the Tenant Level. For more information, see Create Tenant/Super Admin role (on page 94).
Configure to control notification creation for "Incident" and "Near Miss" categories Configure to control notification creation for "Incident" and "Near Miss" categories at the tenant level, with the option to individually enable or disable SAP Notifications for each category. For more information, see Create Tenant/Super Admin role (on page 94).

New Features and Enhancements in Release 2312

Table 1-9 New Features and Enhancements in Release 2312

Download User List for a Plant

Download the user list from the User Management module and view their assigned roles.

For more information, see [Onboard Users and Assign Roles \(on page 131\)](#).

New Features and Enhancements in Release 2311

Table 1-10 New Features and Enhancements in Release 2311

Mark Functional Locations as Units

Mark or flag Functional Locations as units. This helps assign users to units, create user groups based on units, select a unit while creating a round plan, schedule rounds by unit, and filter handover reports.

For more information, see [Create Locations \(on page 108\)](#).

Add Position Master Data

- Add positions and assign them to users.
- Create user groups and schedule rounds based on positions.

For more information, see [Create Positions \(on page 131\)](#).

New Features and Enhancements in Release 2309 SP03

Table 1-11 New Features and Enhancements in Release 2309 SP03

Create Master Data with Unique ID and avoid duplication

- Create master data such as plants, assets, and locations with a unique id and avoid duplication.
- Manually enter ids when copying to prevent duplicates in assets, locations, and plants.
- Receive error messages for duplicate IDs and records while bulk uploading master data.

For more information, see [Create and Manage Master Data \(on page 102\)](#).

New Features and Enhancements in Release 2309 SP02

Table 1-12 New Features and Enhancements in Release 2309 SP02

Sort Global Response Set by Ascending to Descending Order

Create a Global Response Set by sorting the Global Pick List in both ascending order ("A to Z") and descending order ("Z to A").

For more information, see [Create Global Response Set \(on page 125\)](#).

New Features and Enhancements in Release 2309

Table 1-13 New Features and Enhancements in Release 2309

Introduced User Groups

- Create a user group and add users to the group.
- Modify the user list in the user group.
- Remove a user from the user group.
- Copy an existing user group to quickly create new user groups.
- Delete a user group and assign rounds to another group.

For more information, see [Create User Groups and Add Users \(on page 138\)](#).

Assign users to multiple plants

Assign users to multiple plants. Users can access plant specific data and execute maintenance for assets in the plant.

For more information, see [Create Users and Assign Roles \(on page 135\)](#).

New Features and Enhancements in Release 2306

Table 1-14 New Features and Enhancements in Release 2306

Setup Timezone at Plant Level

- Assign country codes to plant masters.
- Enable time zone selection based on the plant's country.

For more information, see [Create Plants \(on page 102\)](#).

New Features and Enhancements in Release 2304

Table 1-15 New Features and Enhancements in Release 2304

Add, Search, View, and Edit Plants Data

- Add, edit / modify plants' data.
- Search plants and view details.

For more information, see [Create Plants \(on page 102\)](#).

Add, Search, View, and Edit Asset Data

- Add, edit / modify assets data.
- Search assets and view details.
- Bulk upload assets data through excel files.

For more information, see [Create Plants \(on page 102\)](#).

Add, Search, View, and Edit Location Data

- Add, edit / modify locations' data for assets.
- Search locations and view details.
- Bulk upload locations data through excel files.

For more information, see [Create Locations \(on page 108\)](#).

Add, Search, View, and Edit Unit of Measurement (UOM) Data

- Add, edit / modify units of measurement.
- Search the list of UOMs and view details.
- Bulk upload UOM through excel files.

For more information, see [Create Unit of Measurement \(on page 119\)](#).

Add, Search, View, and Edit Global Response Set Data

- Add, edit / modify Global Response Set data.
- Search Global Response Set data and view details.
- Bulk upload Global Response Set data through excel files.

For more information, see [Create Global Response Set \(on page 125\)](#).

Table 1-15 New Features and Enhancements in Release 2304 (continued)**Onboard New Customers**

- Onboard customers as a tenant/super admin.
- View and edit the tenant details such as primary, ERP, protected resources, database configuration, collaboration, configuration, and assets.
- Provide access to modules in the CBO application.
- Add a customer logo in the application for tenant users to identify the instance of the connected worker platform.

For information, [Onboard Tenants/Super Admins \(on page 94\)](#).

Onboard Users

- Create roles and assign permissions to the modules in the application.
- Create users and assign roles. Provide access to the right modules to execute their tasks.
- View and edit user details and deactivate users who are no longer required.

For information, [Create Users and Assign Roles \(on page 135\)](#).

2. Integrate mRounds with External Systems

Configure external-system connections for master data synchronization, data export, email, and maintenance integrations.

mRounds connects to FTP servers and ODBC databases to export data, to an SMTP server to send email, to SAP and IBM Maximo to synchronize master data, to Enablon for EHS incidents, and to Benchmark Gensuite to send Issues as Concern Reports. Tenant settings turn on the Dozuki integration and outbound values to AVEVA PI. Shift Handover Reports can show platform Alerts and IMES results.

- [Establish a Connection with FTP Server for Data Export \(on page 15\)](#)
- [Establish a Connection with ODBC for Database Integration \(on page 19\)](#)
- [Configure an SMTP Server for Automated Email Notifications \(on page 23\)](#)
- [Establish a Connection with SAP for Master Data Integration \(on page 27\)](#)
- [Establish a Connection with Maximo for Master Data Integration \(on page 31\)](#)
- [Establish a Connection with Enablon for EHS Incident Management \(on page 49\)](#)
- [Send mRounds Issues to Benchmark Gensuite \(on page 53\)](#)
- [Configure the Dozuki Integration \(on page 63\)](#)
- [Integrate mRounds with AVEVA PI \(on page 64\)](#)
- [Connect Shift Handover Reports to Platform Alerts and IMES \(on page 76\)](#)

2.1. Establish a Connection with FTP Server for Data Export

An FTP (File Transfer Protocol) server connection allows mRounds to transfer large volumes of data to external systems for reporting, backup, or further processing. Establishing this connection enables the export of rounds data and reports to FTP servers without manual intervention, ensuring a smooth and automated process for data storage and sharing.

- **Automate Data Exports:** Reduces the need for manual transfers by automating the process of exporting rounds data to an external FTP server.
- **Centralized Data Storage:** Ensures that all exported rounds data is available in a secure, centralized location for backup, audits, or further analysis.

To create a connection for FTP server:

1. Click the **Integrations Manager** module on the left side pane.
2. Click the Add button in the **Connections** section on the left side.

Figure 2-1 Create FTP Connection

Add Connection

Select Connector

FTP Server

Connection Alias

Hostname

Port

☐ Secure (SFTP)

Recommended port for FTP is 21

Username

Password

Path

Test Connection

Cancel

Save Connection

3. In the **Add Connection** window, do the following:

- a. Select **FTP Server** from the **Select Connector** drop-down.
- b. Enter the connection alias name in the **Connection Alias** field.
- c. Enter the host address in the **Hostname** field.
- d. Enter the port number in the **Port** field.
- e. Enter the username in the **Username** field.
- f. Enter the password in the **Password** field.
- g. Enter the path or location of FTP in the **Path** field.
- h. Click **Test Connection** to test the connection.
- i. Click **Save Connection** if the connection is successful.

The Connection is created successfully and you can see it in the Connections section.

In this section, you can,

- Click the More icon next to the connection and select **View Details** to see the connection details.
- Click the More icon next to the connection and select **Edit Connection** to edit the connection details.
- Click the More icon next to the connection and select **Delete Connection** to delete the connection.

Configure Data Export to FTP for Automated Transfer

Once a connection is established, the next step is to configure mRounds to export data to the FTP server. This setup allows specific types of data such as rounds results, reports, and issues to be automatically exported to the FTP server.

- **Automate Reporting:** Automatically transfer critical data, such as maintenance results and issue logs, to the FTP server for long-term storage.
- **Facilitate Data Sharing:** Enable seamless data sharing between mRounds and other systems that may pull data from the FTP server.

To add an integration to FTP server

1. Click the **Integrations Manager** module on the left side pane.
2. Select the **FTP Server** in the **Connections** section.
3. Click **Add Integration** on the right side.

Figure 2-2 Add Integration Point

Add Integration Point

Select Integration Point

Rounds

Data Sync Time

☒ End of the Day ⓘ

☐ End of the Week ⓘ

Start Date

Feb 20, 2025 ⓘ

Round Status

Select Round Statuses

Overdue, Submitted, Skipped, Approved, Rejected

Filter Tasks with Tags

Disabled

Enable this to send only tasks with tags

Send Attachments

Disabled

Enable this to include attachments in the SFTP Server

Column Configuration

Main Columns

Reset to Default View

Cancel

Save

4. In the **Add Integration Point** window, do the following:

- a. Select the integration point (Rounds) from the **Select Integration Point** drop-down.
- b. Choose **End of the Day** or **End of the Week** in the **Data Sync Time** field to create a new .CSV file for each day or week.
- c. Select date from the **Start Date**.
- d. Enter the number of hours in the **Modify Every <> Hour** field to modify the .CSV file at the end of every day/week based on the selected hours.
- e. Enable/Disable the **Filter Tasks with Tags** to send only tasks with/specific tags or with not tags.
- f. Expand **Column Configuration** and configure or select the columns such as, Round Plan ID, Round Plan Name, Plant ID, Plant Name, Location ID, Asset ID, Unit, Position, and so on that should be displayed in .CSV file.
- g. Click **Save**.

The Integration Point is created and you can view it in the **Integrations** section.

The .CSV file is generated based on data synchronization schedule and stored in the configured FTP location.

2.2. Establish a Connection with ODBC for Database Integration

The ODBC (Open Database Connectivity) connector allows mRounds to directly interface with external databases. This connection is crucial for exporting rounds data to an organization's internal databases, enabling further analysis and integration with other systems like reporting tools or custom dashboards.

- **Direct Database Integration:** Streamlines the process of transferring rounds data from mRounds to external databases.
- **Support for Custom Analytics:** Facilitates integration with custom reporting tools and dashboards by allowing direct access to mRounds data.

To create a connection for ODBC connector:

1. Click the **Integrations Manager** module on the left side pane.
2. Click the Add button in the **Connections** section on the left side.

Figure 2-3 Add ODBC Connection

Add Connection ✕

Select Connector
ODBC Connector ▼

Connection Alias

DB Hostname

Username

Password 🔒

Database Name

Database Port

Database Dialect
Select ▼

Test Connection Cancel Save Connection

3. In the **Add Connection** window, do the following:

- a. Select **ODBC Connector** from the **Select Connector** drop-down.
- b. Enter the connection alias name in the **Connection Alias** field.
- c. Enter the host address in the **DB Hostname** field.
- d. Enter the username in the **Username** field.
- e. Enter the password in the **Password** field.
- f. Enter the database name in the **Database Name** field.
- g. Enter the port number in the **Database Port** field.
- h. Select the database type from the **Database Dialect** drop-down.
- i. Click **Test Connection** to test the connection.
- j. Click **Save Connection** if the connection is successful.

The Connection is created successfully and you can see it in the Connections section.

In this section, you can,

- Click the More icon next to the connection and select **View Details** to see the connection details.
- Click the More icon next to the connection and select **Edit Connection** to edit the connection details.
- Click the More icon next to the connection and select **Delete Connection** to delete the connection.

Configure Data Export to ODBC for Database Storage

Once the ODBC connection is established, you can configure mRounds to export data directly into your organization's external database. This allows for real-time synchronization between mRounds and your database for further analysis or reporting.

- **Automated Data Synchronization:** Keep your internal database up to date with real-time rounds data from mRounds.
- **Enable Advanced Analytics:** Export data to external databases where advanced analytics can be performed.

To add an integration to ODBC connection:

1. Click the **Integrations Manager** module on the left side pane.
2. Select the **ODBC Connector** in the **Connections** section.
3. Click **Add Integration** on the right side.

Figure 2-4 Add Integration Point

Add Integration Point

Select Integration Point

Round Submission

Data Synchronization

☒ Real-time
 ☐ Scheduled

Data Mapping

CBO(Source) Data Attribute	Destination Data Attribute
Round Plan ID ROUND_PLAN_ID	ROUND_PLAN_ID
Round Plan Name ROUND_PLAN_NAME	ROUND_PLAN_NAME
Round Plan Description ROUND_PLAN_DESC	ROUND_PLAN_DESC
Plant ID PLANT_ID	PLANT_ID
Plant Name PLANT_NAME	PLANT_NAME
Shift Name SHIFT_NAME	SHIFT_NAME

Cancel

Save

4. In the **Add Integration Point** window, do the following:
 - a. Select the integration point (Round Submission) from the **Select Integration Point** drop-down.
 - b. Select **Data Synchronization** as **Real-time** or **Scheduled**.
 - c. In the **Data Mapping** section, map the CBO (Source) Attributes to Destination Data Attributes.
 - d. Click **Save**.

The Integration Point is created and you can view it in the **Integrations** section.

The .CSV file is generated based on data synchronization schedule and stored in the configured ODBC location.

2.3. Configure an SMTP Server for Automated Email Notifications

Configuring an SMTP (Simple Mail Transfer Protocol) server allows mRounds to send automated email notifications to stakeholders about task completions, issues, and important updates. This connection ensures timely communication about maintenance operations.

- **Automated Alerts:** Ensure that stakeholders receive real-time notifications regarding critical issues or task completions.
- **Enhance Communication:** Automate the process of sending alerts and updates, reducing manual follow-up.

To create a connection for SMTP server:

1. Click the **Integrations Manager** module on the left side pane.
2. Click the Add button in the **Connections** section on the left side.

Figure 2-5 Add SMTP Connection

Add Connection

Select Connector

Alerts/Notifications

Connection Alias

SMTP Hostname

SMTP Port

SMTP Username

SMTP Password

Test Connection

Cancel

Save Connection

3. In the **Add Connection** window, do the following:

- a. Select **Alerts/Notifications** from the **Select Connector** drop-down.
- b. Enter the connection alias name in the **Connection Alias** field.
- c. Enter the host address in the **SMTP Hostname** field.
- d. Enter the port number in the **SMTP Port** field.
- e. Enter the username in the **Username** field.
- f. Enter the password in the **Password** field.
- g. Click **Test Connection** to test the connection.
- h. Click **Save Connection** if the connection is successful.

The Connection is created successfully and you can see it in the Connections section.

In this section, you can,

- Click the More icon next to the connection and select **View Details** to see the connection details.
- Click the More icon next to the connection and select **Edit Connection** to edit the connection details.
- Click the More icon next to the connection and select **Delete Connection** to delete the connection.

Configure Email Notifications with SMTP

Once the SMTP connection is configured, you can set up automated email notifications to be triggered based on specific events in mRounds, such as issue creation, task completion, or round updates. This ensures timely communication with stakeholders.

1. **Real-Time Notifications:** Automatically notify supervisors, operators, or managers about important updates or issues.
2. **Event-Driven Alerts:** Configure email alerts to trigger when specific events occur, such as task completion or new issues.

To add an integration to SMTP server:

1. Click the **Integrations Manager** module on the left side pane.
2. Select the **SMTP Server** in the **Connections** section.
3. Click **Add Integration** on the right side.

Figure 2-6 Add Integration Point

Add Integration Point ✕

Select Integration Point
Round Submission ▼

Data Synchronization ☒ Real-time ☐ Scheduled

Data Mapping

CBO(Source) Data Attribute	Destination Data Attribute
Round Plan ID ROUND_PLAN_ID	ROUND_PLAN_ID
Round Plan Name ROUND_PLAN_NAME	ROUND_PLAN_NAME
Round Plan Description ROUND_PLAN_DESC	ROUND_PLAN_DESC
Plant ID PLANT_ID	PLANT_ID
Plant Name PLANT_NAME	PLANT_NAME
Shift Name SHIFT_NAME	SHIFT_NAME

Cancel **Save**

4. In the **Add Integration Point** window, do the following:
 - a. Select the integration point (Round Submission) from the **Select Integration Point** drop-down.
 - b. Select **Data Synchronization** as **Real-time** or **Scheduled**.
 - c. In the **Data Mapping** section, map the CBO (Source) Attributes to Destination Data Attributes.
 - d. Click **Save**.

The Integration Point is created and you can view it in the **Integrations** section.

The .CSV file is generated based on data synchronization schedule and stored in the configured SMTP location.

2.4. Establish a Connection with SAP for Master Data Integration

Connect mRounds to SAP and synchronize master data from SAP.

This connection synchronizes master data from SAP into mRounds.

To create a connection for SAP server:

1. Click the **Integrations Manager** module on the left side pane.
2. Click the Add button in the **Connections** section on the left side.

Figure 2-7 Add SAP Connection

Add Connection

Select Connector

SAP Server

Connection Alias

Username

Password

Base URL

Test Connection

Cancel

Save Connection

3. In the **Add Connection** window, do the following:

- a. Select **SAP Sever** from the **Select Connector** drop-down.
- b. Enter the connection alias name in the **Connection Alias** field.
- c. Select the value from the **Authorization** drop-down such as, Basic, Certificate, and API Key.

**Note:**

Fill the remaining fields that are displayed based on the selected value in the Authorization drop-down.

- d. Click **Test Connection** to test the connection.
- e. Click **Save Connection** if the connection is successful.

**Note:**

The connection will be successful only if there is no existing master data in the application.

The Connection is created successfully and you can see it in the Connections section.

In this section, you can,

- Click the More icon next to the connection and select **View Details** to see the connection details.
- Click the More icon next to the connection and select **Edit Connection** to edit the connection details.
- Click the More icon next to the connection and select **Delete Connection** to delete the connection.

Configure Master Data Synchronization with SAP

Add an inbound Master Data integration point that synchronizes SAP data on a schedule.

To add the Master Data integration point:

1. Click the **Integrations Manager** module on the left side pane.
2. Select the **SAP Server** in the **Connections** section.
3. Click **Add Integration** on the right side.

Figure 2-8 Add Integration Point

Add Integration Point

Select Integration Point

Integration Type

☒ Inbound

☐ Outbound

Data Sync Time

☐ Real-time

☒ Scheduled

Repeat Every

1

day

Start Date

3/12/2024

Plants

Location

Assets

Cancel

Save

4. In the **Add Integration Point** window, do the following:

- a. Select the integration point (Master Data) from the **Select Integration Point** drop-down.
- b. Select **Integration Type** as **Inbound**.
- c. Select **Data Synchronization** as **Scheduled**.
- d. Select **Repeat Every** <number> <day, week, month or year>.
- e. Select **Start Date**.
- f. Select plant from the **Plants** drop-down where the location or asset residing.
- g. In the **Location or Assets** tab, enter the collection in the **URL** field.
- h. In the **Column Configuration** section, map the CBO data columns to SAP data columns.
- i. Click **Save**.

The Integration Point is created and you can view it in the **Integrations** section.

The master data synchronization in the application occurs based on the configured schedule. You can also sync the data manually.

2.5. Establish a Connection with Maximo for Master Data Integration

Connect mRounds to Maximo to synchronize Locations and Assets, and configure Maximo work order events when required.

- **Automated Master Data Sync:** Keeps mRounds Locations and Assets aligned with Maximo without manual intervention
- **Full Load and Incremental Updates:** Performs a complete data load on first sync; subsequent runs retrieve only changed records, making ongoing syncs fast and resource-efficient.
- **Location Hierarchy Preservation:** Imports parent-child location relationships so round plans and assignments reflect the actual physical plant structure.
- **Graceful Asset Retirement:** Deactivates assets in mRounds when Maximo marks them inactive, preserving historical round data while excluding retired assets from new scheduling.

The Maximo integration has three separate flows:

- Master data synchronization from Maximo to mRounds: this topic.
- Work Orders from mRounds to Maximo: [Configure Outbound Work Orders to Maximo \(on page 37\)](#).
- Work order change events from Maximo to mRounds (advanced backend setup): [Configure Maximo Work Order Events for mRounds \(on page 42\)](#).

To create a connection for Maximo:

1. Click the **Integrations Manager** module on the left side pane.
2. Click the Add button in the **Connections** section on the left side.

Configure Master Data Synchronization with Maximo

Once the Maximo connection is established, configure an integration point to define the sync schedule, plant mapping, and field mappings for Locations and Assets.

To add a Master Data integration point for Maximo:

1. Click the **Integrations Manager** module on the left side pane.
2. Select the **IBM Maximo** in the **Connections** section.
3. Click **Add Integration** on the right side.

Figure 2-11 Add Integration Point

Add Integration Point

Select Integration Point

Integration Type

☒ Inbound ☐ Outbound

Data Sync Time

☐ Real-time ☒ Scheduled

Repeat Every

1

day

Start Date

3/12/2024

Plants

Location

Assets

Cancel

Save

4. In the **Add Integration Point** window, do the following:

- Select the integration point (Master Data) from the **Select Integration Point** drop-down.
- Select **Integration Type** as **Inbound**.
- Select **Data Synchronization** as **Scheduled**.
- Select **Repeat Every** <number> <day, week, month or year>.
- Select **Start Date**.
- Select plant from the **Plants** drop-down where the location or asset residing.
- In the **Location or Assets** tab, enter the collection in the **URL** field.
- In the **Column Configuration** section, map the mRounds data columns to the Maximo data columns.
- Click **Save**.

Figure 2-12 Location Column Configuration

Maximo Data Column	mRounds Data Column
Location LOCATION_ID	location
Location Name LOCATION_NAME	description
Plant PLANT_ID	siteid
Parent Location PARENT_LOC_ID	lochierarchy.0.parent
Description DESCRIPTION	description_longdescription
Type TYPE	type
Status STATUS	status
Last Modified	changoedate

The Integration Point is created and you can view it in the **Integrations** section.

The master data synchronization in the application occurs based on the configured schedule. You can also sync the data manually.

2.5.1. Configure Outbound Work Orders to Maximo

Map mRounds Issue fields and plant-specific values to create Work Orders in Maximo.

Before you begin

A Maximo connection exists. See [Establish a Connection with Maximo for Master Data Integration \(on page 37\)](#).

The Issue template of the plant has the categories, priorities, and statuses to map.

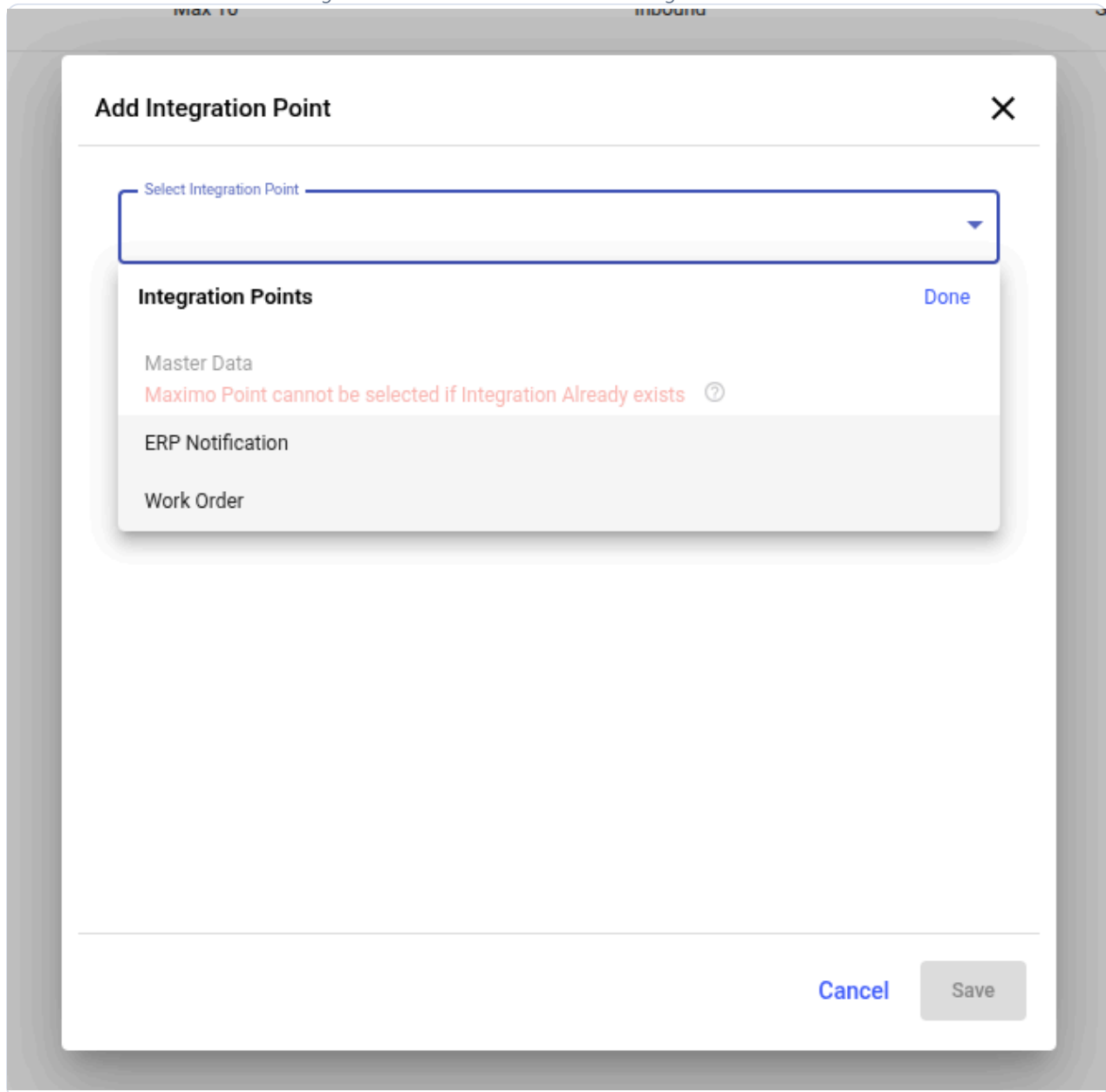
The Work Order integration creates Work Orders in Maximo from mRounds Issues through the Maximo API. This flow does not use the Kafka work order events in [Configure Maximo Work Order Events for mRounds \(on page 42\)](#).

1. Click the **Integrations Manager** module on the left side pane.
2. Select the Maximo connection in the **Connections** section.
3. Click **Add Integration**.

4. In the **Add Integration Point** window, select **Work Order** from the **Select Integration Point** drop-down.

The list also offers **Master Data** and **ERP Notification**. Master Data cannot be selected again if a Master Data integration already exists for the connection.

Figure 2-13 Work Order in the Select Integration Point list



5. Select the plant from the **Plants** drop-down.
6. In the **URL Path** field, enter the Maximo API path for Work Orders.

Example: `/maximo/api/os/MXAPIWODETAIL` . Use the path configured for your Maximo deployment.

7. Select **Integration Type** as **Outbound** and **Data Sync Time** as **Real-time**.

Figure 2-14 Example Work Order integration settings (demo plant; your plant and values differ)

Edit Integration

Select Integration Point
Work Order

Plants
Bedford MA Site of EAGLE Inc. North America

URL Path
/maximo/api/os/MXAPIWODETAIL

Integration Type ☐ Inbound ☒ Outbound

Data Sync Time ☒ Real-time ☐ Scheduled (undefined)

▼ **Data Mapping**

Source Data Attribute	Destination Data Attribute
Title TITLE	description
Description DESCRIPTION	description_longdescription

Cancel **Save**

8. Under **Data Mapping**, enter the Maximo attribute for each mRounds Issue field.

Source Data Attribute (mRounds Issue)	Destination Data Attribute (Maximo)
Title	description
Description	description_longdescription
Task	(leave blank)
Round	(leave blank)
Attachments	doclinks
Category	worktype
Priority	wopriority
Plant	siteid
Location	location
Asset	assetnum
Assign to	(leave blank)
Start Date and Time	schedstart
Due Date and Time	schedfinish
Status	status

The labels under each field (for example **WERKS** under Plant) are the source identifiers shown in the application.

Figure 2-15 Example field mapping, part 1. Use the mapping table above.

Edit Integration

Source Data Attribute	Destination Data Attribute
Title TITLE	description
Description DESCRIPTION	description_longdescription
Task TASK	
Round Round	
Attachments PHOTO	doclinks
Category CATEGORY	worktype
Category Value	

9. Map the category, priority, and status values of the plant to the Maximo values.

The values listed come from the Issue template of the selected plant. Enter the Maximo code for each value.
Examples:

Mapping	mRounds value (example)	Maximo value (example)
Category	Preventive Maintenance	PM
Priority	Urgent / High / Medium / Low	1 / 2 / 3 / 4
Status	In-Progress	INPRG
Status	Completed	COMP

Figure 2-17 Example category value mapping

Edit Integration

Attachments
PHOTO

Category
CATEGORY

Category Value

Calibration-CAL	CAL
Corrective Manitenance-C	CM
Calibration-CMCAL	CMCAL
Calibration-EMCAL	EMCAL
Calibration-PMCAL	PMCAL

Cancel **Save**

Figure 2-18 Example priority value mapping

Edit Integration

Emergency Maintenance-I

10. Click **Save**.

2.5.2. Configure Maximo Work Order Events for mRounds

Publish Maximo work order events through INNO_WO_mRounds to the mRounds Kafka endpoint.

Before you begin

The Maximo integration components are set up as described in Connect to Maximo in the *iMaintenance Deployment & Setup Guide*. This task uses:

- The `INNO_GETWO` object structure, with its custom attributes and relationships
- The integration controls `INNOSKIPSITE`, `MAINT_LOC_EXCLUDE`, and `MAINT_LOC_EXCLUDE1`
- The Kafka certificate, the `KAFKA` message provider, and the queues `CQIN`, `CQOUT`, and `SQOUT`
- The Maximo Kafka cron tasks

The Innovapptive infrastructure team has supplied the Kafka bootstrap server, port, user name, and password for mRounds.

This is advanced backend setup in Maximo. It is separate from outbound Work Orders, which you configure in Integrations Manager.

Maximo publishes work order changes through `INNO_WO_mRounds` to the Kafka topic `WOTopicMROUNDS`, which mRounds reads. The direction is Maximo to mRounds. Values in angle brackets are deployment inputs.

1. In the **Publish Channels** application, create a publish channel with the following values.

Field	Value
Publish Channel	INNO_WO_mRounds
Description	Custom Publish channel to push out the WO change to mRounds
Operation	Publish
Object Structure	INNO_GETWO
Processing Class	
Event Filter Class	
Adapter	Maximo
Interface Table	
XSL Map	
User Exit Class	
Template Name	
Retain Mbo's	1
Enable Listener	1
Skip Different Object Types	0
Publish JSON	1

Figure 2-20 INNO_WO_mRounds publish channel

The screenshot shows the 'Publish Channel' configuration interface. The 'Publish Channel' field is set to 'INNO_WO_mRounds' with a description 'Custom Publish channel to push out the WO change to mRounds'. The 'Operation' is 'Publish'. The 'Object Structure' is 'INNO_GETWO'. The 'Adapter' is 'MAXIMO'. The 'Interface Table', 'XSL Map', 'User Exit Class', and 'Template Name' fields are empty. The 'Processing Class' and 'Event Filter Class' fields are also empty. On the right, the 'User Defined?' checkbox is checked. The 'Retain Mbo's?' checkbox is checked. The 'Enable Listener?' checkbox is checked. The 'Skip Different Object Types?' checkbox is unchecked. The 'Publish JSON?' checkbox is checked. Below the configuration fields, there is a table titled 'Object Structure Sub-Records (1 - 5 of 30)' showing the following data:

Object	Object Location Path	Processing Order
WORKORDER	WORKORDER	1
WPLABOR	WORKORDER/WPLABOR	2
WPMATERIAL	WORKORDER/WPMATERIAL	3
WPTOOL	WORKORDER/WPTOOL	4
WPSERVICE	WORKORDER/WPSERVICE	5

The table shows 1 - 5 of 30 records. Navigation buttons for the table are visible at the bottom right.

2. Associate the integration controls **INNOSKIPSITE** , **MAINT_LOC_EXCLUDE** , **MAINT_LOC_EXCLUDE1** with the publish channel.
3. For every processing rule below, select **Apply on Primary Object Insert**, **Apply on Primary Object Update**, and **Apply on Primary Object Delete**. Configure each rule on the primary object of the object structure.
4. Create the processing rule **INNO_SKIP2** .

Rule	Description	Sequence	Action	Enabled
INNO_SKIP2	Skip outbound integration events for transactions inbound from Maximo Mobile. - Innovapptive	1	SKIP	Y

Add/Modified Conditions

Condition	XML Field Evaluation	Object Field Evaluation	Object Set Evaluation	Control Evaluation
10	Y	N	N	N
20	Y	N	N	N

XML Field Evaluations for Condition 10

Field	Evaluation Type	Evaluate When	Integration Control	Value
CHANGEBY	EQUALS	ALWAYS		MROUNDS

XML Field Evaluations for Condition 20

Field	Evaluation Type	Evaluate When	Integration Control	Value
SITEID	NOTEQUALS	ALWAYS	INNOSKIPSITE	

5. Create the processing rule **INNO_SKIP3**.

Rule	Description	Sequence	Action	Enabled
INNO_SKIP3	Skip the Transactions when WOCLASS != "WORKORDER" - Innovapptive.	2	SKIP	Y

Add/Modified Conditions

Condition	XML Field Evaluation	Object Field Evaluation	Object Set Evaluation	Control Evaluation
10	Y	N	N	N

XML Field Evaluations for Condition 10

Field	Evaluation Type	Evaluate When	Integration Control	Value
WOCLASS	NOTEQUALS	ALWAYS		WORKORDER

6. Create the processing rule **INNO_3M_SKIP2**.

Rule	Description	Sequence	Action	Enabled
INNO_3M_SKIP2	Skip Transactions of some business lines -3M – Innovapptive	3	SKIP	Y

Add/Modified Conditions

Condition	XML Field Evaluation	Object Field Evaluation	Object Set Evaluation	Control Evaluation
10	Y	N	N	N
20	Y	N	N	N

XML Field Evaluations for Condition 10

Field	Evaluation Type	Evaluate When	Integration Control	Value
SITEID	EQUALS	ALWAYS		<site-id>
LOCATION	ISNOTNULL	ALWAYS		
LOCATION	EQUALS	ALWAYS	MAINT_LOC_EX- CLUDE	

XML Field Evaluations for Condition 20

Field	Evaluation Type	Evaluate When	Integration Control	Value
SITEID	EQUALS	ALWAYS		<site-id>
LOCATION	ISNOTNULL	ALWAYS		
LOCATION	LIKE	ALWAYS	MAINT_LOC_EX- CLUDE1	

7. In the **End Points** application, create the endpoint **INNO_WO_MROUNDS**.

End Point	Description	Handler	Consumed By
INNO_WO_MROUNDS	Custom Kafka topic for WO transactions to mRounds	KAFKA	INTEGRATION

Property	Value	Encrypted Value	Allow Override
BOOTSTRAPSERVERS	<bootstrap-server>:<port>		N
ISTEXT			N
KERBEROS_SERVICE			N
KEYTABFILE			N
KEYTABPRINCIPAL			N
PASSWORD		<kafka-password>	N
SASL_MECHANISM	SCRAM-SHA-512		N
SECURITY_PROTOCOL	SASL_SSL		N
TOPIC	WOTopicMROUNDS		N
USERNAME	<kafka-username>		N

8. In the **External Systems** application, create the following external system.

System	Description	End Point	Enabled
mRounds	Custom External system to sync the MAS data with mRounds		Y

9. Set the queues.

Field	Value
Outbound sequential queue	SQOUT
Outbound continuous queue	CQOUT
Inbound continuous queue	CQIN

Figure 2-21 Queues of the mRounds external system

The screenshot displays the 'System' configuration page for mRounds. The left sidebar shows the 'System' tab selected. The main area is divided into two columns. The left column contains fields for 'End Point', 'Bidi Configuration', and 'Text Message Encoding'. The right column contains an 'Enabled?' toggle switch and five queue configuration fields: 'Outbound Sequential Queue' (SQOUT), 'Outbound Continuous Queue' (CQOUT), 'Inbound Sequential Queue', and 'Inbound Continuous Queue' (CQIN). Below these fields is a section titled 'Properties for End Point' with a table header: 'Property', 'Value', and 'Encrypted Value'. The table is currently empty, displaying a message 'There are no rows to display.'

10. On the **Publish Channels** tab, add the following publish channel.

Publish Channel	Description	Adapter	End Point	User Defined	Use Continuous Queue	Enabled
INNO_WO_mRounds	Custom Publish channel to push out the WO change to mRounds	MAXIMO	INNO_WO_M-ROUNDS	Y	Y	Y

Figure 2-22 Publish channel of the mRounds external system

The screenshot shows the 'Publish Channels' configuration page for the 'mRounds' system. The 'System' dropdown is set to 'mRounds'. The 'Enabled?' toggle is turned on. The 'End Point' field is empty. Below the configuration fields is a table titled 'Publish Channels (1 - 1 of 1)' with the following data:

Publish Channel	Description	Adapter	End Point	User Defined?	Use Continuous Queue?	Enabled?
INNO_WO_mRounds	Custom Publish channel to push out the WO ch	MAXIMO	INNO_WO_MROUNDS	☒	☒	☒

11. Save the external system.

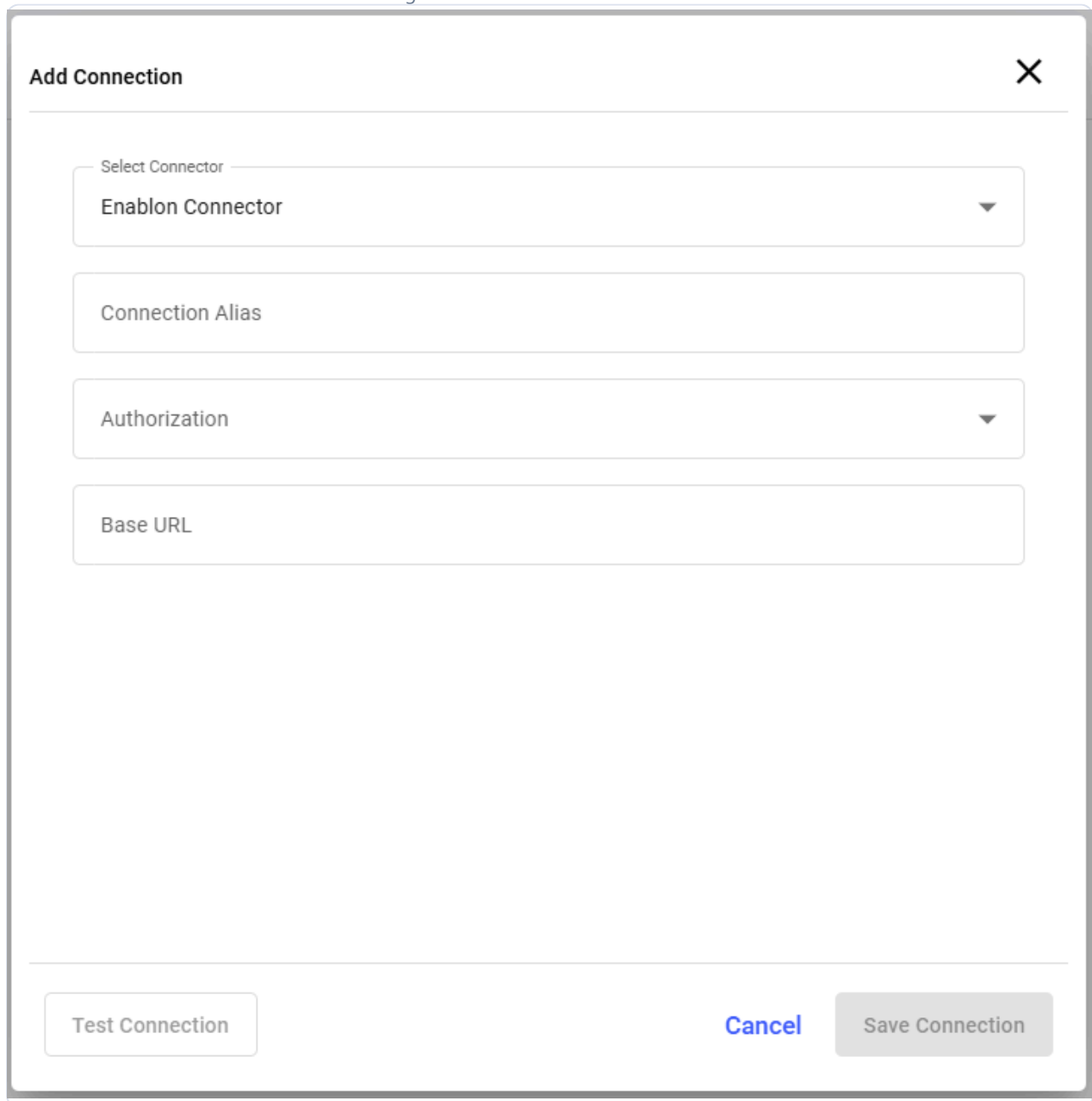
2.6. Establish a Connection with Enablon for EHS Incident Management

If an Environment, Health, and Safety (EHS) issue is raised in the mRounds application, the details are automatically transferred to the Enablon incident management tool, creating a corresponding event. Additionally, if an SAP notification is generated for the same issue, mRounds sends the notification number along with the issue details to Enablon.

To create a connection for Enablon connector:

1. Click the **Integrations Manager** module on the left side pane.
2. Click the Add button in the **Connections** section on the left side.

Figure 2-23 Add Enablon Connection



The image shows a modal dialog box titled "Add Connection" with a close button (X) in the top right corner. The dialog contains four input fields: "Select Connector" (a dropdown menu with "Enablon Connector" selected), "Connection Alias" (a text input field), "Authorization" (a dropdown menu), and "Base URL" (a text input field). At the bottom of the dialog, there are three buttons: "Test Connection" (disabled), "Cancel" (blue text), and "Save Connection" (disabled).

Add Connection ✕

Select Connector
Enablon Connector ▼

Connection Alias

Authorization ▼

Base URL

Test Connection Cancel Save Connection

3. In the **Add Connection** window, do the following:

- a. Select **Enablon Connector** from the **Select Connector** drop-down.
- b. Enter the connection alias name in the **Connection Alias** field.
- c. Select the value from the **Authorization** drop-down such as, Basic, Certificate, and API Key.

**Note:**

Fill the remaining fields that are displayed based on the selected value in the Authorization drop-down.

- d. Click **Test Connection** to test the connection.
- e. Click **Save Connection** if the connection is successful.

**Note:**

The connection will be successful only if there is no existing master data in the application.

The Connection is created successfully and you can see it in the Connections section.

In this section, you can,

- Click the More icon next to the connection and select **View Details** to see the connection details.
- Click the More icon next to the connection and select **Edit Connection** to edit the connection details.
- Click the More icon next to the connection and select **Delete Connection** to delete the connection.

Configure EHS Notifications with Enablon

Configure mRounds to send EHS incidents to the Enablon incident management tool.

To add an integration to Enablon:

1. Click the **Integrations Manager** module on the left side pane.
2. Select the **EHS Connection** in the **Connections** section.
3. Click **Add Integration** on the right side.

Figure 2-24 Add Integration Point

Add Integration Point

Select Integration Point
Master Data

Integration Type
☒ Inbound
☐ Outbound

Data Sync Time
☐ Real-time
☒ Scheduled

Repeat Every
1
day

Start Date
2/20/2025

Plants

☒ Maintenance Plant
☐ Planning Plant

Location
Assets

URL

Cancel
Save

4. In the **Add Integration Point** window, set up the integration point that sends EHS incidents to Enablon, and click **Save**.

2.7. Send mRounds Issues to Benchmark Gensuite

Connect mRounds to Benchmark Gensuite to send Issue data as Concern Reports.

When a plant has a Gensuite integration, mRounds sends its Issues to Benchmark Gensuite as Concern Reports in real time through Integrations Manager. For each new or updated Issue, the Gensuite connector gets a token from the authentication endpoint and posts the mapped fields to the Concern Reports endpoint.

Before you start

- Administrator access to the mRounds web app, with the Integrations Manager module enabled for the tenant.
- The Gensuite Client ID and Client Secret, issued by the customer's Gensuite administrator.
- The customer's Gensuite tenant base URL, for example <https://<customer-host>/apiv1>.
- The Gensuite field names for Concern Reports, and the exact picklist values Gensuite accepts for Type, Department, and Status.
- The mRounds plants that send Issues to Gensuite, and the matching Gensuite Site ID for each.
- Network allowlisting, if the customer restricts inbound API calls to Gensuite.

Setup order

1. [Enable Gensuite and Prepare Existing Plants \(on page 53\)](#)
2. [Prepare the Issue Form for Gensuite \(on page 54\)](#)
3. [Create a Benchmark Gensuite Connection \(on page 57\)](#)
4. [Map Plant Issues to Gensuite Concern Reports \(on page 59\)](#)

2.7.1. Enable Gensuite and Prepare Existing Plants

Enable the tenant connector and prepare existing plant Issue templates for Gensuite integration.

1. Go to **Configurations > Feature Flags** and enable `enableGensuite` for the tenant.
2. For plants created before Gensuite was enabled, ask the implementation team to run the migration below for those plants.

Item	Value
Migration	2608-add-gensuite-id-to-issue-template
What it does	Adds gensuite_id to the existing Issue configuration (template) of the plant
When to run	For plants created before Gensuite was enabled
Input	PLANT_IDS environment variable (the target plants)

Plants set up after the flag is on do not need the migration.

2.7.2. Prepare the Issue Form for Gensuite

Add the ROC fields and Generate Gensuite Report switch to the plant's Issue form.

The Issue form of each plant must hold every field the integration sends. The example below shows one plant's form; your form can have other fields.

1. Open **Report Issue Configuration** for the plant.
2. In the **General** section, make sure the form has the fields the integration sends, including the custom ROC fields.

General section field	Type
Title	Text Answer
Description	Text Answer
Task	Text Answer
Round	Text Answer
Attachments	Attachments
Category	Category
Priority	Priority
Type of ROC	Dropdown
ROC - Unit	Dropdown
ROC - Status	Dropdown
ROC - Closure Comment	Text Answer
ROC - Closure Date	Date & Time

Fields with a lock icon are standard mRounds fields. The ROC fields are custom fields added for Gensuite.

Figure 2-25 General section of the Issue form, with the phone preview (plant masked)

The screenshot displays the 'Report Issue Configuration' interface. On the left, a list of fields is shown with their respective types and lock icons. The fields are: Title (Text Answer), Description (Text Answer), Task (Text Answer), Round (Text Answer), Attachments (Attachments), Category (Category), Priority (Priority), Type of ROC (Type of ROC), ROC - Unit (ROC Unit), ROC - Status (ROC - Status), ROC - Closure Comment (Text Answer), and ROC - Closure Date (Date & Time). A 'Reset' button is visible at the top right. On the right, a mobile phone preview shows the 'Create Issue' form with the same fields, including a 'Cancel' button and a 'Create' button.

- In the **More Details** section, add the **Generate Gensuite Report** field as a **Switch**.

More Details section field	Type
Plant	Plant
Unit	Unit
Location	Location
Asset	Asset
Assign to	Assign to
Start Date and Time	Date & Time
Due Date and Time	Date & Time
Status	Status
Work Order	Read Only Field
Generate Gensuite Report	Switch

Leave **Required** cleared and set **Field Permissions** to **None**. To show the switch only for certain Categories or ROC types, use **Add Logic**.

Figure 2-26 More Details section with the Generate Gensuite Report switch (plant masked)

The screenshot displays the 'Report Issue Configuration' interface. The 'More Details' section is expanded, showing a list of fields: Plant, Unit, Location, Asset, Assign to, Start Date and Time, Due Date and Time, Status, and Work Order. Each field has a corresponding type (e.g., Plant, Unit, Location, Asset, Assign to, Date & Time, Date & Time, Status, Read Only Field). The 'Generate Gensuite Report' field is highlighted with a blue border and is set to 'Switch'. Below the field list, there are options for 'Add Logic', 'Required' (unchecked), and 'Field Permissions' (set to 'None'). On the right side, there is a phone preview showing the form layout, including fields for Title, Description, Task, Round, and Attachments.

- Enter the dropdown options for **Type of ROC**, **ROC - Unit**, and **ROC - Status**.

The options must match the mRounds values in the integration value mappings exactly, including case. Otherwise the value mapping does not pick them up. See [Map Plant Issues to Gensuite Concern Reports \(on page 59\)](#).

- Check the form in the phone preview, and click **Save & Publish**.

Next action

Description is required on the form; it is a separate field from Title, which maps to the Gensuite Description field.

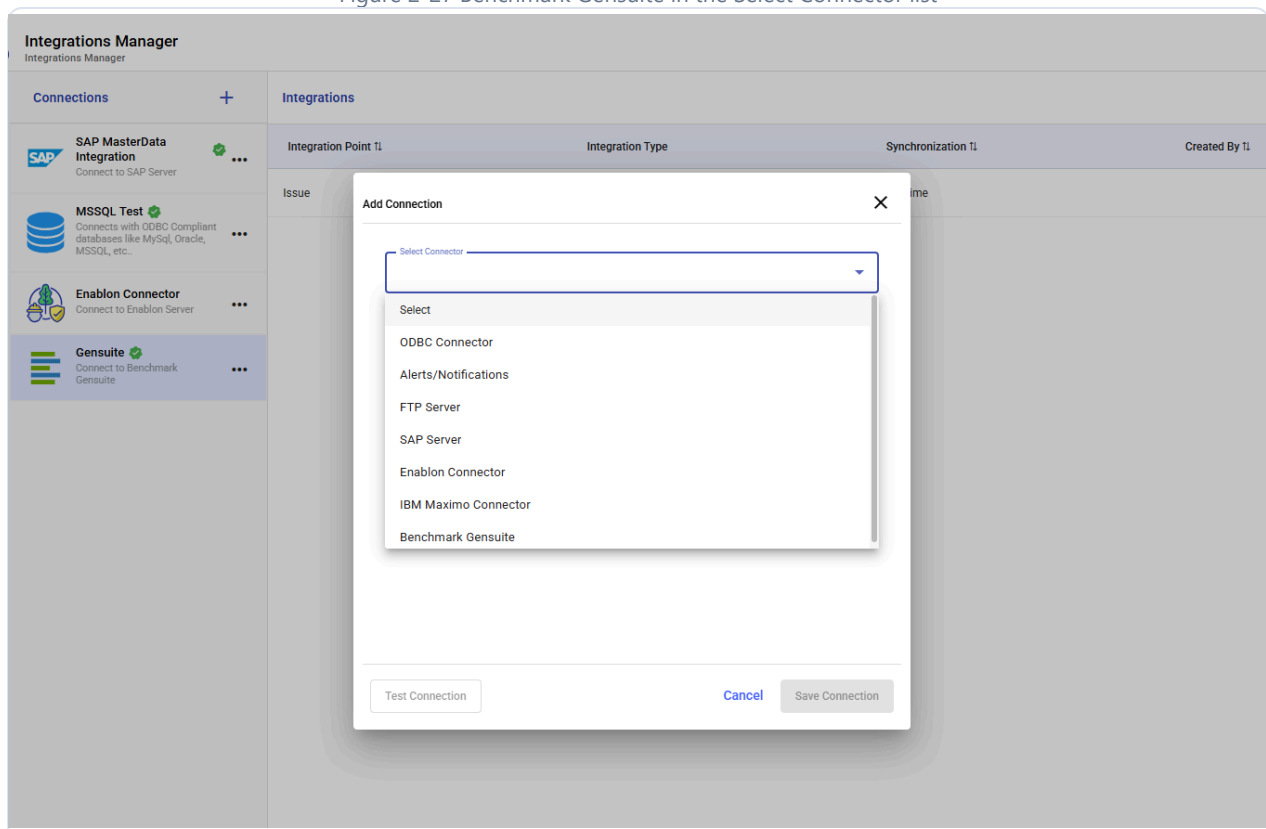
2.7.3. Create a Benchmark Gensuite Connection

Save the customer's Gensuite credentials and API endpoints in a reusable tenant connection.

The connection stores the Gensuite credentials once. Every Gensuite integration on the tenant uses it; you do not need a connection for each plant.

1. Click **Integrations Manager** in the left navigation.
2. In the **Connections** panel, click +.
3. In **Add Connection**, select **Benchmark Gensuite** from **Select Connector**.

Figure 2-27 Benchmark Gensuite in the Select Connector list



4. Fill in the connection fields.

Field	Value
Select Connector	Benchmark Gensuite
Connection Alias	A display name for the Connections list, for example Gensuite
Authorization	Basic
Client ID	Customer-issued ID
Client Secret	Customer-issued secret (masked; use the eye icon to check it)
Base URL	Customer tenant API base URL, with no trailing slash, for example https://<customer-host>/apiv1
Auth Token Endpoint	/AuthToken (appended to the Base URL)

Keep the Client ID and Client Secret within the project team.

5. Click **Test Connection**. Continue only when the test succeeds.6. Click **Save Connection**.

The connection appears in the Connections list (for example, Gensuite – Connect to Benchmark Gensuite) with a green check.

Next action

To review a saved connection, click the More icon (...) on the Gensuite card and select **View**. **View Connection Details** shows the fields read-only.

Figure 2-28 View Connection Details for a Gensuite connection (Client ID and Base URL masked)

View Connection Details

Select Connector

Benchmark Gensuite

Connection Alias

Gensuite

Authorization

Basic

Client ID

XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX (masked)

Client Secret

.....

Base URL

Auth Token Endpoint

/AuthToken

2.7.4. Map Plant Issues to Gensuite Concern Reports

Configure a real-time outbound Issues integration and map its fields and picklist values for a plant.

Add one Issues integration for each plant that sends Issues to Gensuite. Field-name mapping (step 4) and value translation (step 5) are separate settings.

1. In Integrations Manager, select the Gensuite card in the **Connections** panel.
2. Click **Add Integration**.
3. Set the header fields.

Field	Value
Select Integration Point	Issues
Data Synchronization	Real-time
URL Path	/concern/reports (appended to the Base URL)
Plant	The plant whose Issues are sent

Figure 2-29 Issues integration header fields (plant masked)

Edit Integration X

Select Integration Point ▼
Issues

Data Synchronization ☒ Real-time ☐ Scheduled

URL Path
/concern/reports

Plant ▼

4. Under **Data Mapping**, select each mRounds field to send and enter its Gensuite field name in **Destination Data Attribute**.

CBO(Source) Data Attribute (mRounds)	Destination Data Attribute (Gensuite)	Note
Title	Description	Required by Gensuite (greyed, pre-selected)
Type of ROC	Type	Required by Gensuite (greyed, pre-selected)
ROC - Unit	Department	
ROC - Closure Comment	CloseComment	
ROC - Closure Date	CloseDate	
Plant	SiteID	Must match the Gensuite Site ID
Assign to	Assignedto	Required by Gensuite (greyed, pre-selected)
Issue ID	ExtID	
Created By	SubmittedBy	

The table lists the nine field mappings confirmed for this integration. Use the Concern Report field names of your Gensuite tenant; the names above are from one configuration. Greyed, preselected rows are required by Gensuite and cannot be cleared. Any other selected row needs a Gensuite destination; if it has none, clear the row.

Figure 2-30 Partial view: confirmed mappings ROC - Closure Comment, ROC - Closure Date and Plant, with the ROC - Status values

roc - status Value

Open

Open

Closed

Closed

☒

ROC - Closure Comment
ROC - Closure Comment

CloseComment

☒

ROC - Closure Date
ROC - Closure Date

CloseDate

☒

Plant
WERKS

SiteID

5. For each picklist field, open its value panel and enter the Gensuite value for each mRounds value.

Field	mRounds value (example)	Gensuite value (example)
Type of ROC → Type	Psip - 52 Weeks Of Ehs	Psip - 52 Weeks Of Ehs
Type of ROC → Type	Psip - Gelled Reactor	Psip - Gelled Reactor
Type of ROC → Type	Ehs - Recognition	Ehs - Recognition
ROC - Unit → Department	Leading Indicators	Leading Indicators
ROC - Unit → Department	Lxf	LXF
ROC - Unit → Department	Test Unit 1	Test Unit 1
ROC - Status	Open	Open
ROC - Status	Closed	Closed

Values are case-sensitive (for example, Lxf maps to LXF). The values above are examples from one plant. Map the standard **Status** values (Open, In-progress, Resolved) as agreed for the deployment.

Figure 2-31 Example value mappings for Type of ROC and ROC - Unit

The screenshot shows the 'Edit Integration' dialog box with two sections. The first section, 'Type of ROC', has a checked checkbox and a 'Type' field. Below it, a 'type of roc Value' panel lists three mRounds values: 'Psip - 52 Weeks Of Ehs', 'Psip - Gelled Reactor', and 'Ehs - Recognition'. Each value has a corresponding input field to its right, all containing the same text. The second section, 'ROC - Unit', has a checked checkbox and a 'Department' field. Below it, a 'roc - unit Value' panel lists three mRounds values: 'Leading Indicators', 'Lxf', and 'Test Unit 1'. Each value has a corresponding input field to its right, containing 'Leading Indicators', 'LXF', and 'Test Unit 1' respectively. At the bottom right are 'Cancel' and 'Save' buttons.

6. Click **Save**.

The integration appears as Issue, Outbound, Real-time.

Figure 2-32 Saved integration: Issue, Outbound, Real-time

Connections		Integrations				Add Integration
 SAP MasterData Integration Connect to SAP Server  ...		Integration Point T1	Integration Type	Synchronization T1	Created By T1	Actions
 MSSQL Test  Connects with ODBC Compliant databases like MySQL, Oracle, MSSQL, etc... ...		Issue	Outbound	Real-time		...
 Enablon Connector Connect to Enablon Server ...						
 Gensuite  Connect to Benchmark Gensuite ...						

Next action

To change an integration, click the More icon (...) in the **Actions** column and select **Edit**.

The green check on the connection confirms the connection test only. Confirm that a test Issue creates a Concern Report in Gensuite before go-live.

2.8. Configure the Dozuki Integration

Enable the Dozuki integration and set its API endpoint and administrator credentials for the tenant.

The Dozuki integration is configured for the tenant through Tenant Manager.

Key	Value
enableDozuki	Turns the Dozuki integration on (true) or off.
dozukiConfig.apiPath	Dozuki API path. Use /api/2.0.
dozukiConfig.baseUrl	URL of your Dozuki site.
dozukiConfig.adminEmail	Email of the Dozuki administrator account used by the integration.
dozukiConfig.adminPassword	Password of that account. Handle it through your approved credential process.

```
enableDozuki": true,  
dozukiConfig": {  
  "apiPath": "/api/2.0",  
  "baseUrl": "<dozuki-base-url>",  
  "adminEmail": "<dozuki-admin-email>",  
  "adminPassword": "<dozuki-admin-password>"
```

Values in angle brackets are tenant-specific inputs.

2.9. Integrate mRounds with AVEVA PI

mRounds can receive PI event frames, acknowledge them in PI, and write round readings back to PI attributes.

Four separate actions

Action	Who calls whom	Topic
Innovapptive polls PI for event frames	Innovapptive calls your PI Web API on a schedule	Poll AVEVA PI for Event Frames (on page 67)
A customer connector pushes event frames to Innovapptive	Your system calls the Innovapptive webhook	Receive AVEVA PI Event Frames by Webhook (on page 70)
Innovapptive acknowledges receipt in PI	Innovapptive writes the acknowledgement attribute	Write Acknowledgements and Round Readings to AVEVA PI (on page 74)
Innovapptive writes an operator's round reading to PI	Innovapptive writes the measurement attribute mapped to the round task	Write Acknowledgements and Round Readings to AVEVA PI (on page 74)

Polling and the webhook are alternatives for receiving event frames; most customers use one of them. Both use the event-frame WebId as the unique ID, so a frame delivered twice does not create a second event. The acknowledgement and the round-reading write are separate writes, each to its own attribute.

Four kinds of WebId

PI Web API generates a WebId for every object. These four are not interchangeable:

WebId	Identifies	Example	Used for
AF database WebId	The AF database that holds the event frames	F1RDbgZy4oKQ9kiBi-ZJTW7eugwvgV_Y00G	Scoping the polling search
Event-frame WebId	One event frame	F1FmbgZy4oKQ9kiBi-ZJTW7eugwqF...	The unique event ID (<code>externalId</code> , <code>item.WebId</code>)
Element WebId	An AF element, such as Pump-01	F1EmbgZy4oKQ9kiBi-ZJTW7eugwPV...	Polled frames return it in <code>RefElementWebIds</code>
Attribute (stream) WebId	One attribute, such as Acknowledged or Bearing-Temp	F1Ab-EA18QAAAAAAAAAAAAAAAAAAAAA-TRTMP01	The target of each write. Element and event-frame WebIds cannot be used here.

WebIds in this guide are examples. Your PI Web API generates your own.

Prerequisites

Collect these from the team that owns the PI AF system.

Item	Polling	Webhook	Writeback
PI Web API base URL, for example <code>https://pi.example-customer.com/piwebapi</code>	Required		Required
AF asset server and AF database that hold the event frames, and the database WebId	Required		
Account that can search event frames and read their attributes and values in that database	Required		
Account that can write the acknowledgement attribute and every measurement attribute a round can update			Required
WebId of the acknowledgement attribute, and the WebId of each measurement attribute a round can update			Required
HTTPS access from Innovapptive to the PI Web API	Required		Required
How the customer system authenticates when calling Innovapptive		Required	
How Innovapptive authenticates when calling the PI Web API	Required		Required

The read account and the write account can be the same if your security policy allows it. The credentials your system uses to call Innovapptive are separate from both.

Innovapptive configures the database WebId, polling interval, lookback, acknowledgement attribute and PI credentials for the tenant during onboarding. Send them to your Innovapptive implementation team.

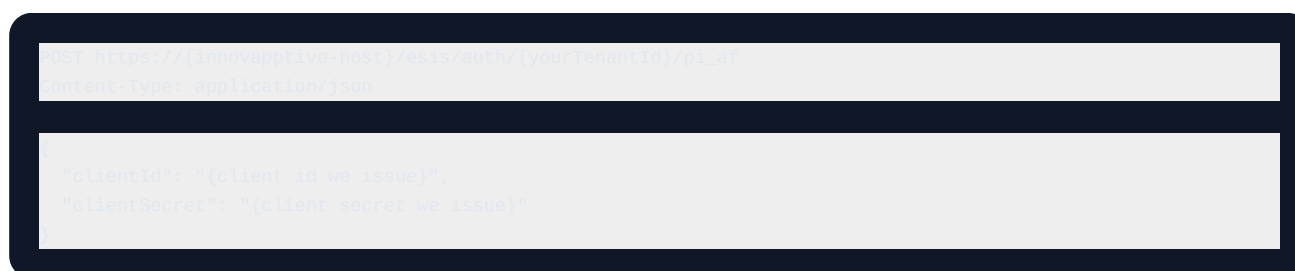
Authentication

The two directions do not share credentials.

Your system to Innovapptive (webhook only). Innovapptive issues the secret during onboarding. Choose one method:

Method	What you send
API key	Header <code>x-api-key: {key we issue}</code>
HMAC	Header <code>x-signature: {HMAC-SHA256 hex of the raw request body}</code> , using the shared secret Innovapptive issues
OAuth	Request a token first, then send <code>Authorization: Bearer {token}</code>

OAuth token request, only if you choose OAuth:



Innovapptive to your PI Web API (polling reads and both writes).

Call	Sign-in
Polling reads	HTTP Basic
Acknowledgement write and round-reading write	Basic, API key, or none. Both writes use the same choice.

Method	What you give Innovapptive	Header Innovapptive sends
Basic	Username and password	<code>Authorization: Basic {base64(username:password)}</code>
API key	The key, and the header name if it is not <code>x-api-key</code>	That header. Writes only.
None	Confirmation that the PI Web API allows the call with no credential on your network	No credential header. Writes only.

Basic is the usual choice for reads and writes. This is not Windows integrated authentication (Kerberos or NTLM). A Windows account works only if the PI Web API accepts it as a Basic username and password; it does not have to be the account the PI services run under. Reads and writes also send `Accept: application/json`.

PI Web API paths to allow

Allow HTTPS from Innovapptive to these paths and grant the matching permission.

Method	Path	When	Permission
GET	/piwebapi/event-frames/search	Every poll	Read event frames in the AF database
GET	/piwebapi/event-frames/{eventFrameWebId}/attributes	Once per frame found	Read event-frame attributes
GET	/piwebapi/stream-sets/{eventFrameWebId}/value	Once per frame found	Read attribute values
POST	/piwebapi/streams/{attributeWebId}/value	Each acknowledgement and each round reading	Write the designated attributes

2.9.1. Poll AVEVA PI for Event Frames

Innovapptive searches one AF database on a schedule for event frames that ended recently, then reads their attributes and values.

What is searched

- One AF database on one AF asset server, which you choose. The search is scoped by that database's WebId; frames in other databases or on other asset servers are not read.
- Every poll (default every 30 seconds) asks for frames whose end time falls in the lookback window. The default lookback is 60 seconds: the 30-second poll plus a 30-second overlap, so a frame that ends just as a poll runs is not missed. A longer window, such as 5m, can be agreed on request.
- The search expression is `End:>*-60s End:<=*`, where `*` is the current time on your PI server. It reads: frames in the database that ended in the last 60 seconds.
- A frame that is still open (no end time) is not returned. If Innovapptive should receive open frames, use the webhook, or agree a different search before go-live.
- The overlap can return one frame in two neighboring polls. Innovapptive keeps the first copy, identified by the event-frame WebId, and ignores the second.
- No template, category or element filter is applied. Every frame in the database that matches the window is returned. If only some frames should reach Innovapptive, keep them in a dedicated AF database or agree a filter with Innovapptive.

Polling uses HTTP Basic (see [Authentication \(on page 65\)](#)). The account needs permission in the chosen database to search event frames, read their attributes, and read their attribute values.

Innovapptive sets the database, interval and lookback for the tenant during onboarding.

Find the AF database WebId (onboarding)

These standard PI Web API calls are for onboarding only. Innovapptive does not run them while polling. Send the resulting database WebId to Innovapptive.

Option A: look up the database by its path

```
ET https://pi.example-customer.com/piwebapi/assetdatabases?path=\\PIAF01\\PlantA

URL-encoded:
ET https://pi.example-customer.com/piwebapi/assetdatabases?path=%5C%5CP\IAF01%5CP\lantA
```

Response (trimmed):

```
"WebId": "F1RDbgZy4oKQ9kiB1ZJTW7eugwvgV_Y00G",
"Name": "PlantA",
"Path": "\\PIAF01\\PlantA"
```

Option B: list asset servers, then the databases on one server

```
ET https://pi.example-customer.com/piwebapi/assetservers
ET https://pi.example-customer.com/piwebapi/assetservers/F1RSbgZy4oKQ9kiB1ZJTW7eugwUE1BRjAx/assetdatabases
```

The first call returns each asset server's WebId (here F1RSbgZy4oKQ9kiB1ZJTW7eugwUE1BRjAx for PIAF01). The second returns the databases on that server, each with its WebId (here F1RDbgZy4oKQ9kiB1ZJTW7eugwvgV_Y00G for PlantA).

Request sequence on every poll

1. Search event frames. Readable form:

```
ET https://pi.example-customer.com/piwebapi/eventframes/search
databaseWebId=F1RDbgZy4oKQ9kiB1ZJTW7eugwvgV_Y00G
query=End:>=-60s End:<=*
selectedFields=Items.WebId;Items.Name;Items.StartTime;Items.EndTime;Items.Links.Attributes;Items.Links.Value;Items.Links.Template;Items.Links.Path
```

Exact URL sent (single line, URL-encoded):

```
https://pi.example-customer.com/piwebapi/eventframes/search?databaseWebId=F1RDbgZy4oKQ9kiB1ZJTW7eugwvgV_Y00G&query=End:%3E%3D*-60s%20End:%3C%3D*%20selectedFields=Items.WebId;Items.Name;Items.StartTime;Items.EndTime;Items.Links.Attributes;Items.Links.Value;Items.Links.Template;Items.Links.Path
```

Parameter	Meaning
databaseWebId	Your AF database. Only frames in this database are returned.
query	End:>=-60s End:<=*. The 60s changes if a different lookback is agreed.
selectedFields	Limits the response to the fields Innovapptive uses.

Example response (trimmed to one frame):

```
"Items": [
  {
    "WebId": "F1FmbgZy4oKQ9kiB1ZJTW7eugwqF1nZ4vD7xGoYvuP1UXqzgUElBRjAxXFBMQUSUQVxPVkv0VEZSQU1FU1tIUC6wMV0",
    "Name": "HP-01 High Discharge Pressure",
    "Path": "\\\PIAF01\\PlantA\\EventFrames[HP-01]",
    "StartTime": "2026-10-06T16:14:16Z",
    "EndTime": "2026-10-06T16:15:00Z",
    "RefElementWebIds": [
      "F1EmbgZy4oKQ9kiB1ZJTW7eugwPVA1y2Hm7xGoYvuP1UXqzgUElBRjAxXFBMQUSUQVxQVU1QLTAX"
    ],
    "Links": {
      "Attributes":
        "https://pi.example-customer.com/piwebapi/eventframes/F1FmbgZy4oKQ9kiB1ZJTW7eugwqF1nZ4vD7xGoYvuP1UXqzgUElBRjAxXFBMQUSUQVxPVkv0VEZSQU1FU1tIUC6wMV0/attributes",
      "Value":
        "https://pi.example-customer.com/piwebapi/streamsets/F1FmbgZy4oKQ9kiB1ZJTW7eugwqF1nZ4vD7xGoYvuP1UXqzgUElBRjAxXFBMQUSUQVxPVkv0VEZSQU1FU1tIUC6wMV0/value",
      "Template": "https://pi.example-customer.com/piwebapi/eventframetemplates/..."
    }
  }
]
```

Innovapptive follows `Links.Attributes` and `Links.Value` for the next two calls. It does not follow `Links.Template`.

2. Read the attributes of each frame (the `Links.Attributes` URL):

```
ET
https://pi.example-customer.com/piwebapi/eventframes/F1FmbgZy4oKQ9kiB1ZJTW7eugwqF1nZ4vD7xGoYvuP1UXqzgUElBRjAxXFBMQUSUQVxPVkv0VEZSQU1FU1tIUC6wMV0/attributes
```

```
"Items": [
  {
    "WebId": "F1AbEbgZy4oKQ9kiB1ZJTW7eugwqF1nZ4vD7xGoYvuP1UXqzgPressure",
    "Name": "DischargePressure",
    "Path": "\\\PIAF01\\PlantA\\EventFrames[HP-01]|DischargePressure",
    "DefaultUnitsNameAbbreviation": "psi"
  }
]
```

3. Read the values of each frame (the `Links.Value` URL):

```
ET
https://pi.example-customer.com/piwebapi/streamsets/F1FmbgZy4oKQ9kiB1ZJTW7eugwqF1nZ4vD7xGoYvuP1UXqzgUElBRjAxXFBMQUSUQVxPVkv0VEZSQU1FU1tIUC6wMV0/value
```

```
"Items": [
  {
    "WebId": "F1AbEbgZy4oKQ9k1B1Z3TW7eugwqF1nZ4v07x6oYvuP1UXqzgPressure",
    "Name": "DischargePressure",
    "Path": "\\\PIAF01\\PlantA\\EventFrames[HP-01]|DischargePressure",
    "Value": {
      "Timestamp": "2026-10-06T16:15:00Z",
      "Value": 142.5,
      "UnitsAbbreviation": "psi",
      "Good": true
    }
  }
]
```

What Innovapptive keeps from each frame

From the event frame	Use
WebId	Unique ID of the event
Name	Title
Path	Location in AF. Also used to build a tag path when a value has no path of its own.
StartTime	When the event started
EndTime	When it ended. A frame with an end time is treated as closed.
RefElementWebIds	The first entry is matched to externalIds.id on the TaxonomyNode.
values (name, time, value, units, quality)	The tag readings

A separate attributes object is not required; the reading comes from the values. If the same tag name is in both the attributes list and the values, the attributes list supplies the tag path and units, and the values still supply the reading.

2.9.2. Receive AVEVA PI Event Frames by Webhook

Your PI integration can push each event frame to the Innovapptive webhook instead of being polled.

Endpoint

Your PI integration (PI Notifications, a custom service, or another connector in front of PI) calls Innovapptive. Innovapptive gives you the full URL for your tenant:

```
POST https://{innovapptive-host}/es1s/webhook/{yourtenantid}/pi_af
Content-Type: application/json
```

Sign in with one of the methods in [Authentication \(on page 65\)](#). These credentials are only for calling Innovapptive; they are not the account Innovapptive uses to call your PI Web API.

Responses

Response	Meaning
HTTP 401	The credential is missing or invalid. The event is not accepted.
HTTP 200 with <code>{ "success": true }</code>	Innovapptive has stored the event frame.

HTTP 200 does not change anything in PI, and it does not prove that the later acknowledgement write succeeded. After storing the event, Innovapptive writes the acknowledgement attribute as a separate call. See [Write Acknowledgements and Round Readings to AVEVA PI \(on page 74\)](#).

Payload

Tag readings come from `values` only. `values` can be `{ "Items": [ ... ] }` or a plain array. The reading must be nested at `Value.Value`; a single flat value in `Value` is not read. The timestamp used is `values.Items[].Timestamp`, not `Value.Timestamp`.

Field	Required	Purpose
<code>eventType</code>	Yes	Send <code>event_frame</code>
<code>externalId</code>	Yes	Event-frame WebId. Same value as <code>item.WebId</code> . A retry with the same ID does not create a second event.
<code>emittedAt</code>	Yes	ISO-8601 time of the event
<code>item.WebId</code>	Yes	Same event-frame ID as <code>externalId</code>
<code>item.Name</code>	Yes	Event title
<code>item.Path</code>	Yes	AF path of the event frame. A tag path is <code>{item.Path} {Name}</code> when the value has no path of its own.
<code>item.StartTime</code>	Yes	When the event started
<code>item.EndTime</code>	No	Omit it while the frame is open. If sent, the event is treated as closed.
<code>item.Severity</code>	Yes	For example <code>Critical</code>
<code>item.RefElementWebIds</code>	Yes	Only the first entry is used. It must equal <code>externalIds.id</code> on the TaxonomyNode (system <code>pi_af</code>).

Field	Required	Purpose
<code>item.TemplateName</code> , <code>item.CategoryNames</code> , <code>item.referencedAsset</code>	No	Not used. Do not send.
<code>attributes</code>	No	Not used. Do not send.
<code>values.Items[].Name</code>	Yes	Tag name. This is how the reading is identified.
<code>values.Items[].WebId</code>	No	Not used during ingestion
<code>values.Items[].Timestamp</code>	Yes	Time of the reading
<code>values.Items[].Value.Value</code>	Yes	The reading: number, string or boolean
<code>values.Items[].Value.UnitsAbbreviation</code>	Yes	Units of the reading
<code>values.Items[].Value.Good</code>	Yes	Quality. <code>true</code> means a good value.
<code>values.Items[].Value.Timestamp</code>	No	Not read

Sample payload. Replace `{{eventId}}` with the event-frame WebId, in both `externalId` and `item.WebId` .

```
"eventType": "event_frame",
"externalId": "{[eventId]}",
"emittedAt": "2026-10-06T23:15:00Z",
"item": {
  "WebId": "{[eventId]}",
  "Name": "Test",
  "Path": "\\PIISRV01\\Innovapptive\\Plant1\\PUMP-101\\EventFrames[High Vibration]",
  "StartTime": "2026-10-06T23:15:00Z",
  "Severity": "Critical",
  "RefElementWebIds": [
    "10143959"
  ]
},
"values": {
  "Items": [
    {
      "WebId": "FIAbEAI8QAAAAAAAAAAAAAAAAAAAAATTRVIB01",
      "Name": "Discharge Pressure",
      "Timestamp": "2026-09-10T06:15:00Z",
      "Value": {
        "Timestamp": "2026-09-10T06:15:00Z",
        "Value": 1100,
        "UnitsAbbreviation": "psi",
        "Good": true
      }
    },
    {
      "WebId": "FIAbEAI8QAAAAAAAAAAAAAAAAAAAAATTRTMP01",
      "Name": "BearingTemp",
      "Timestamp": "2026-09-10T06:15:00Z",
      "Value": {
        "Timestamp": "2026-09-10T06:15:00Z",
        "Value": 87.2,
        "UnitsAbbreviation": "degC",
        "Good": true
      }
    },
    {
      "WebId": "FIAbEAI8QAAAAAAAAAAAAAAAAAAAAATTRTMP01",
      "Name": "Alarm",
      "Timestamp": "2026-09-10T06:15:00Z",
      "Value": {
        "Timestamp": "2026-09-10T06:15:00Z",
        "Value": true,
        "UnitsAbbreviation": "degC",
        "Good": true
      }
    }
  ]
}
```

In this sample, `10143959` is the value looked up as `externalIds.id` on the `TaxonomyNode`. The Alarm entry repeats the BearingTemp WebId and shows the unit `degC` for a boolean; these are sample artifacts, and `values.Items[].WebId` is not used during ingestion.

2.9.3. Write Acknowledgements and Round Readings to AVEVA PI

Enable mRounds to write to AVEVA PI, and understand the two separate writes: the alert acknowledgement and the operator's round reading.

Tenant settings

Outbound posting to AVEVA PI is configured for the tenant through Tenant Manager.

Key	Value
enableRoundsPiOutbound	Turns posting of mRounds values to AVEVA PI on (true) or off.
piOutboundIntegration.eventType	Event type. Use pi_outbound.
piOutboundIntegration.identifierLevel	Identifier level. Use element.
piOutboundIntegration.unifiedEnvMapping.development	Unified environment name for the development environment (example: dev-cwp-maximo).

```
enableRoundsPiOutbound: true,  
piOutboundIntegration: {  
  "eventType": "pi_outbound",  
  "identifierLevel": "element",  
  "unifiedEnvMapping": {  
    "development": "<unified-environment-name>"  
  }  
}
```

Values in angle brackets are tenant-specific inputs.

Two separate writes

Write	When Innovapptive sends it	Attribute	Value written	Timestamp
Alert acknowledgement	After the event frame is stored. For a web-hook, after the HTTP 200; for a poll, after the polled frame is stored.	The acknowledgement attribute you name, for example Acknowledged (Boolean)	true	When Innovapptive received the alert

Write	When Innovapptive sends it	Attribute	Value written	Timestamp
Round reading	After an operator records a reading on a round	The measurement attribute mapped to that round task, for example Bearing-Temp	The value the operator recorded, not the value read earlier from the event frame	When the operator recorded the reading

Both writes use the same request, the same sign-in (see [Authentication \(on page 65\)](#)), and `"Good": true`.

Request

```
POST https://pi.example-customer.com/piwebapi/streams/{attributeWebId}/value
Content-Type: application/json
Accept: application/json
```

- One request updates one attribute. A round that records three tags sends three requests.
- The URL uses the attribute's stream WebId. Innovapptive does not look it up, and element or event-frame WebIds cannot be used.
- `Value` must match the attribute type: a JSON boolean, number or string.
- Units are not sent; PI already has them on the attribute.
- A successful write returns HTTP 202 or 204 with no body.

Acknowledge the alert (Acknowledged attribute):

```
POST https://pi.example-customer.com/piwebapi/streams/F1ABEbgZy4okQ9k1B1ZJTW7eugwPVA1y2Hm7xGoYvuP1UXqzg1h3z6Ld8YUmK1DQwX3w4bQ/value
Content-Type: application/json

{"Timestamp": "2026-10-06T17:09:32.551Z",
  "Value": true,
  "Good": true}
```

Write a round reading (the operator records bearing temperature as 86.4 on the BearingTemp attribute):

```
POST https://pi.example-customer.com/piwebapi/streams/F1ABEA18QAAAAAAAAAAAAAAAAAAAAAAAAATTR1MPQ1/value
Content-Type: application/json

{"Timestamp": "2026-10-06T18:22:00Z",
  "Value": 86.4,
  "Good": true}
```

A string attribute is written the same way, with `Value` as a JSON string. A boolean round task is written with `Value` as `true` or `false`.

Confirm for each attribute

	Acknowledgement attribute	Each round measurement attribute
Name and AF path	For example Acknowledged on <code>\PIAF01\PlantA\Area1\Pump-01</code>	For example BearingTemp on the same element
Attribute WebId	The attribute's stream WebId	The attribute's stream WebId
Data type	Boolean	Number, string or boolean, matching the attribute
Value written	<code>true</code>	The reading the operator recorded
Where it sits	On the element or on the event frame	On the element or on the event frame

The write account needs write permission on the acknowledgement attribute and on every measurement attribute a round can update.

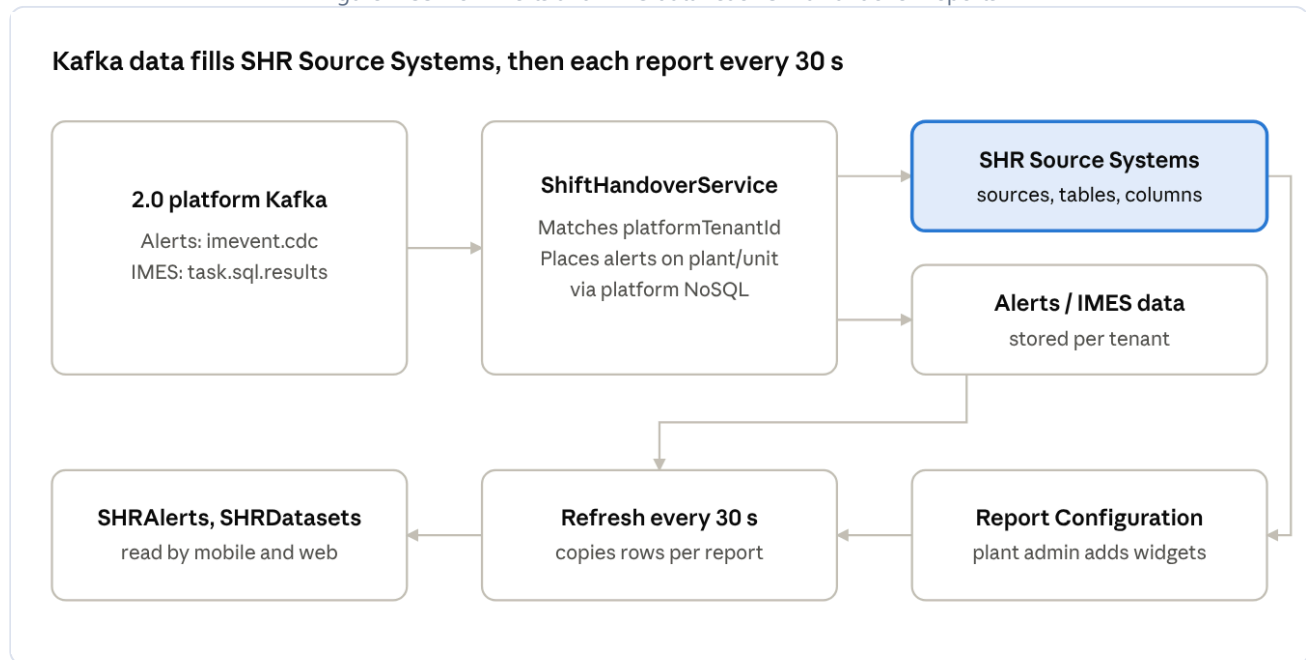
2.10. Connect Shift Handover Reports to Platform Alerts and IMES

Show platform Alerts and IMES query results in mRounds Shift Handover Reports.

If your deployment uses Shift Handover Reports with platform Alerts or IMES, Shift Handover Reports can show platform Alerts and IMES query results on web and mobile. Both arrive over Kafka from the 2.0 platform. The Shift Handover service stores them and refreshes open reports about every 30 seconds.

- Alerts appear in the built-in **Alerts** section, and in custom widgets limited to one source system (for example, only Seeq).
- IMES results appear in custom widgets as tables (for example, IMES Material).

Figure 2-33 How Alerts and IMES data reach Shift Handover Reports



Source systems

The **Source** and **Collection** lists in **Create Widget** fill themselves from Kafka. Nobody enters them by hand.

- The first alert from a system (for example Seeq) adds that system, in lowercase, with one collection, **alerts**, and its 12 fixed columns. Seeq and seeq stay one entry.
- Each IMES query result adds or updates the IMES entry with that result's table name and columns.

A source or collection appears in the lists only after data for it has arrived at least once.

Report data and offline use

Each new alert or IMES result marks the reports for that shift. Within about 30 seconds, the report data is updated: **SHRAlerts** holds one row for each report, and **SHRDatasets** one row for each custom widget. Mobile synchronizes this data and can then show it offline.

The built-in Alerts section shows alerts from every source system. A widget for one source, such as Seeq, shows only that source's alerts.

An alert reaches a report only when the platform maps it to a plant: its platform taxonomy node must carry a DYNAMO external ID that matches a CWP asset, location, or plant.

Who sets it up

1. The DevOps team runs the catalog migration, turns on the feature flags, fills the tenant configurations, links the tenant to the platform, and sets the Kafka consumers. See [Set Up Platform Alerts and IMES for Shift Handover](#) in the *iMaintenance Deployment & Setup Guide*.
2. For IMES, the implementation team runs the iMES services that publish IMES results. See [IMES Prerequisites for Shift Handover Reports \(on page 78\)](#).
3. A plant admin adds the Alerts and IMES sections and widgets to each plant's report configuration. See [Add Alerts and IMES Widgets to Shift Handover Reports \(on page 88\)](#).
4. The implementation team and a plant admin confirm that IMES results reach reports. See [Verify That IMES Results Reach Shift Handover Reports \(on page 89\)](#).

2.10.1. IMES Prerequisites for Shift Handover Reports

IMES data reaches Shift Handover Reports from the iMES database through TaskOrchestration and Kafka. The implementation team sets up everything before the Shift Handover settings.

How IMES data reaches Shift Handover Reports

The shift-handover use case pulls four iMES data sets into Shift Handover Reports:

1. **Read.** TaskOrchestration reads the iMES MySQL database with a read-only account.
2. **Execute SQL.** One task graph per data set and work center runs the data set's SQL (task `execute_sql`), on a schedule.
3. **Publish.** The graph's `publish_kafka` task publishes the result to the Kafka topic `task.sql.results`.
4. **Consume.** The mRounds Shift Handover service consumes the topic and adds the result's table and columns as an IMES source and collection.
5. **Present.** Plant admins add IMES widgets, and reports refresh about every 30 seconds. See [Add Alerts and IMES Widgets to Shift Handover Reports \(on page 88\)](#).

Topic	Covers
iMES Data Sets for Shift Handover (on page 79)	The four data sets, their columns and SQL
TaskOrchestration Connection Settings for iMES (on page 82)	iMES database and Kafka connection settings
iMES Task Graphs and Schedules (on page 83)	Task graphs, parameters and schedules
iMES Results Message on Kafka (on page 84)	The Kafka message that mRounds consumes
Verify That IMES Results Reach Shift Handover Reports (on page 89)	End-to-end verification

Checking that TaskOrchestration publishes results and checking that Shift Handover consumes them for your tenant are separate checks.

Implementation team handoff

The implementation team sets up and confirms these items. Plant admins do not configure them.

Item	What must be true
iMES database	The data-set tables and views hold current data. TaskOrchestration reads them with an account that is read-only on those objects.
TaskOrchestration	Running with the iMES database and Kafka settings issued for the deployment. Its startup log shows the resolved host, port, database and brokers.
Task graphs and schedules	A graph exists for each data set and work center the plant needs, with a schedule that matches how often shift handover needs fresh data.
Kafka topic	<code>task.sql.results</code> exists. The Kafka listener requires TLS and SASL/SCRAM. The Shift Handover IMES consumer reads the same topic.
Temporal	TaskOrchestration and its worker use the same Temporal namespace (<code>TEMPORAL_NAMESPACE=default</code>) and task queue (<code>TEMPORAL_TASK_QUEUE=default-workers</code>), and the Temporal namespace <code>default</code> is registered. It is a Temporal grouping, not the Kubernetes namespace named default. The API can run the temporal CLI in the admintools pod (<code>TEMPORAL_KUBECTL_NAMESPACE</code> , <code>TEMPORAL_ADMINTOOLS_DEPLOYMENT</code> , and RBAC in that Kubernetes namespace); without it, the API fails at startup.
Task graphs in MongoDB	The API loads task graphs into MongoDB when it starts. It adds missing graphs but never replaces existing ones, so a changed graph does not reach MongoDB on redeploy until it is re-seeded.
TaskOrchestration API URL	The implementation team gives DevOps the URL to enter in <code>imesConfig.baseUrl</code> . See Configure Shift Handover Alerts and IMES Settings (on page 86) .

2.10.1.1. iMES Data Sets for Shift Handover

Four iMES data sets reach Shift Handover. Each Kafka message carries its queryId and tableName so the consumer can tell them apart.

Data sets

Data set	queryId	tableName	Parameters	Work centers
Order Details	mfg-order-details	t_Mfg_Order_Output	None (top 5 by status, then planned start)	B4, C7, PM02, PM04 (fixed list)
Machine Time	machine-time	v_Mfg_Machine_Time_All	burdenCenter , lookbackHours	For example PM02, B4
In Loads	material-load	v_Material_In_Load	workCenterCode , mmmFacilityCode , lookbackHours (or analyticalFamilyCode)	For example PM04, or family B4
Waste	material-waste	v_Material_Waste	Same as In Loads	Same as In Loads

Columns returned

The column aliases are the field names in each message row and the columns offered for IMES widgets.

Data set	Columns
Order Details	Order Number, Order Status, Desc, Product Process Spec, Order Qty, Produced Qty, In Load Qty, Waste Qty, Hrs Remaining, Planned Start
Machine Time	Order Number, MMM Number, Order Status, Start Time, End Time, Description, Actual Hours. End Time is NULL for an open entry, and its Actual Hours is measured against now.
In Loads	Order Number, MMM Number, Description, Created, Load ID, QC Status, Qty, UofM
Waste	Order Number, MMM Number, Created, Waste Code, Waste Desc, Qty, UofM

SQL

MySQL. Bound parameters are shown as `?`, in the order listed in each graph's `parameterOrder`.

Machine Time, parameters `burdenCenter` , `lookbackHours` :

```

SELECT
  Order_Nbr AS "Order Number", mmm_id_nbr AS "MMM Number", Status AS "Order Status",
  start_datetime AS "Start Time", end_datetime AS "End Time", Action_Desc AS "Description",
  CASE WHEN end_datetime IS NULL
    THEN ROUND(TIMESTAMPDIFF(SECOND, start_datetime, NOW()) / 3600, 1)
    ELSE ROUND(Actual_Hrs, 1) END AS "Actual Hours"
FROM v_Mfg_Machine_Time_All
WHERE Burden_Center = ?
  AND COALESCE(end_datetime, NOW()) >= NOW() - INTERVAL ? HOUR

```

In Loads, parameters `workCenterCode`, `mmmFacilityCode`, `lookbackHours`:

```

SELECT m.Mfg_Order_Nbr AS "Order Number", im.MMM_id_Nbr AS "MMM Number", im.Item_Desc AS "Description",
  mil.create_datetime AS "Created", mil.load_id AS "Load ID", mil.qc_status_desc AS "QC Status",
  mil.material_in_load_qty AS "Qty", mil.reporting_uom AS "UoM"
FROM v_Material_In_Load mil
JOIN t_Material m ON m.Material_Id = mil.material_id
JOIN t_Item_Master im ON im.MMM_Id_Nbr = m.MMM_Id_Nbr
WHERE m.Work_Center_Code = ? AND im.MMM_Facility_Code = ?
  AND mil.create_datetime >= NOW() - INTERVAL ? HOUR
-- family variant (B4/C7): WHERE im.Analytical_Family_Code = ? (parameters: analyticalFamilyCode,
  lookbackHours)

```

Waste (partial description; full SQL not supplied): the same joins and filters as In Loads, from `v_Material_Waste`, selecting `mw.mfg_order_nbr`, `mw.mmm_id_nbr`, `m.Row_Insert_Datetime`, `mw.waste_cause_code`, `mw.waste_cause_desc`, `mw.waste_qty` and `mw.reporting_uom`, filtered on `m.Row_Insert_Datetime >= NOW() - INTERVAL ? HOUR`.

Order Details (partial description; full SQL not supplied): the SQL is built for each work center, and the work-center value is looked up from a fixed allow-list (B4, C7, PM02, PM04), never taken from input. Hours remaining is derived as follows:

Work center	Derived from
B4	Product spec Width property, fixed line speed
C7	Product spec Width and process variable LINE_SPEED_SP
PM02, PM04	Process variable ROTOFORMER SPEED

Tables and views the read-only account needs

`t_Mfg_Order_Output`, `t_Mfg_Order_Operation`, `t_Item_Master`, `t_Material`, `t_Product_Specification`, `t_Property_Specification`, `t_Property`, `t_Process_Specification`, `t_Process_Variable_Spec`, `t_Process_Variable_Name`, `t_Proc_Spec_Item_Master_Xref`, `v_Material_In_Load`, `v_Material_Waste`, `v_Mfg_Machine_Time_All`

2.10.1.2. TaskOrchestration Connection Settings for iMES

TaskOrchestration needs the iMES database connection and the Kafka connection issued for your deployment.

iMES database (MySQL)

Use an account that is read-only on the data-set tables and views. Keep the user and password in a Kubernetes Secret, not in the manifest.

Variable	Reference default	Meaning
<code>SQL_CLIENT</code>	<code>mysql2</code>	Database client: <code>mysql2</code> , <code>pg</code> or <code>mssql</code> . iMES uses <code>mysql2</code> .
<code>MYSQL_HOST</code>	<code>localhost</code>	iMES database host
<code>MYSQL_PORT</code>	Dialect default (3306)	Database port
<code>MYSQL_DATABASE</code>	<code>app</code>	Database name, for example <code>manufacturing</code>
<code>MYSQL_USER</code> , <code>MYSQL_PASSWORD</code>	—	The read-only account issued for the deployment

The defaults are the code's fallbacks, shown for reference. Set every value from the connection details issued for the deployment. Do not rely on the fallback account (`root` with an empty password).

Kafka

Broker addresses alone are not enough. The Kafka listener requires TLS and SASL/SCRAM.

Variable	Meaning
<code>Q_KAFKA_BROKERS</code>	Comma-separated bootstrap servers
<code>Q_KAFKA_SSL</code> , <code>Q_KAFKA_SECURITY_PROTOCOL</code>	Enable TLS
<code>Q_KAFKA_CA</code>	CA certificate
<code>Q_KAFKA_USERNAME</code> , <code>Q_KAFKA_PASSWORD</code> , <code>Q_KAFKA_MECHANISM</code>	SASL/SCRAM credentials
<code>KAFKA_CLIENT_ID</code>	Client ID. Default <code>task-orchestration</code> .

Check the settings

At startup, TaskOrchestration logs the resolved host, port, database and brokers (never passwords). Check that log after deployment: a silently defaulted `MYSQL_HOST` or `Q_KAFKA_BROKERS` shows up there immediately.

2.10.1.3. iMES Task Graphs and Schedules

Each data set runs as a two-task graph, `execute_sql` followed by `publish_kafka`, on a schedule.

Graph structure

The `publish_kafka` task depends on the `execute_sql` task, so a result is published only after the query finishes. The supplied graphs cover Machine Time, In Loads, Waste and Order Details for the supplied work centers (`machine_time_*`, `material_load_*`, `waste` and `mfg_order_details_*`).

Example graph, abbreviated (`statement` stands for the Machine Time SQL in [iMES Data Sets for Shift Handover \(on page 79\)](#)):

```
{
  "slug": "machine_time_pm02_24h",
  "resourceSpec": {
    "sqlDb": {
      "adapterType": "MYSQL", "connectionRef": "manufacturing-mysql",
      "secretRef": "tenants/${context.tenantId}/resources/manufacturing-db",
      "requiredCapabilities": ["executeQuery"]
    },
    "kafkaBroker": {
      "adapterType": "KAFKA", "connectionRef": "workflow-messaging-kafka",
      "secretRef": "tenants/${context.tenantId}/resources/task-results",
      "requiredCapabilities": ["publish"]
    }
  },
  "allowedTriggers": ["API", "SCHEDULE", "DOMAIN_EVENT", "MESSAGE"],
  "graphPolicy": { "concurrency": "FORBID_OVERLAP", "timeoutMs": 300000 },
  "tasks": [
    {
      "slug": "query_machine_time", "taskDefinitionId": "execute_sql",
      "config": {
        "resource": "sqlDb",
        "queryId": "machine-time",
        "tableName": "v_Mfg_Machine_Time_All",
        "statement": "<machine-time SQL>",
        "parameters": { "burdenCenter": "PM02", "lookbackHours": 24 },
        "parameterOrder": ["burdenCenter", "lookbackHours"],
        "timeoutMs": 30000,
        "maxRows": 1000
      },
    },
    {
      "slug": "publish_machine_time", "taskDefinitionId": "publish_kafka",
      "dependsOn": ["query_machine_time"],
      "config": {
        "resource": "kafkaBroker",
        "topic": "task.sql.results",
        "sourceTask": "query_machine_time",
        "sourceAdapterType": "MYSQL",
        "sourceQueryId": "machine-time",
        "keyTemplate": "${context.tenantId}:${context.aggregateId}"
      }
    }
  ]
}
```

Setting	Meaning
<code>resourceSpec.sqlDb</code> , <code>resourceSpec.kafkaBroker</code>	The database and Kafka resources. Each names its connection (<code>connectionRef</code>), a per-tenant secret (<code>secretRef</code>) and the capability it needs (<code>executeQuery</code> or <code>publish</code>). Tasks refer to them by name in <code>config.resource</code> .

Setting	Meaning
<code>parameterOrder</code>	Lists the parameter names in the order the <code>?</code> placeholders appear in the SQL.
<code>timeoutMs</code> (task)	Cancels the server-side query after this time.
<code>maxRows</code>	Truncates the result to this many rows; the message then has <code>truncated: true</code> .
<code>graphPolicy.concurrency</code>	Whether runs of the graph may overlap. <code>FORBID_OVERLAP</code> stops a new run while one is in progress.
<code>graphPolicy.timeoutMs</code>	Time limit for the whole graph run.
<code>keyTemplate</code>	Kafka message key: <code>\${context.tenantId}:\${context.aggregateId}</code> .

Adding a work center

For Machine Time, In Loads and Waste, the work center is a parameter: copy the graph, change `parameters` and the `slug`. Order Details is different. Its work center comes from a fixed allow-list in the SQL builder (B4, C7, PM02, PM04), so copying a graph does not add support for another work center.

Schedules

- Each graph runs on a cron schedule managed through the schedules API (`PUT /schedules/:id` , with `pause` , `resume` and `run` actions). Temporal drives the schedule.
- A cron that is not "every N minutes" is read in the schedule's timezone.
- The schedule's `concurrencyPolicy` (`ALLOW` or `FORBID_OVERLAP`) controls whether scheduled runs may overlap. It is separate from the graph's `graphPolicy.concurrency`.
- Set the cadence to how often shift handover needs fresh data; hourly is typical. This is how often new IMES results are produced. It is separate from Shift Handover's refresh of open reports, about every 30 seconds, which copies results already received.

2.10.1.4. iMES Results Message on Kafka

Each graph run publishes one `TASK_RESULT` message to `task.sql.results`, which the mRounds Shift Handover service consumes.

Topic, key and headers

Item	Value
Topic	<code>task.sql.results</code>
Key	<code><tenantId>:<aggregateId></code>

Item	Value
Headers	<code>tenantId</code> , <code>aggregateType</code> , <code>aggregateId</code> , <code>eventId</code> , <code>causationId</code> , <code>correlationId</code> , plus trace headers
Delivery	At least once. The same message can arrive more than once; deduplicate on <code>messageId</code> .

Message body

Abbreviated example. It shows one of the two rows that `rowCount` reports and one of the columns.

```
{
  "messageId": "<taskGraphRunId>.publish_machine_time:task-result",
  "messageType": "TASK_RESULT",
  "context": { "tenantId": "<tenant>", "aggregateType": "...", "aggregateId": "...",
    "correlationId": "...", "causationId": "..." },
  "source": { "taskSlug": "query_machine_time", "adapterType": "MYSQL" },
  "query": { "queryId": "machine-time", "tableName": "v_Mfg_Machine_Time_All",
    "executedAt": "2026-07-23T11:30:00.000Z" },
  "result": {
    "rowCount": 2,
    "columns": [ { "name": "Order Number", "type": "STRING", "nullable": true } ],
    "rows": [
      { "Order Number": "NM000635", "MMM Number": "41640007765", "Order Status": "ACTIVE",
        "Start Time": "2026-07-23T11:00:00.000Z", "End Time": null,
        "Description": "RUNTIME", "Actual Hours": 4.6 }
    ],
    "truncated": false,
    "executedAt": "2026-07-23T11:30:00.000Z"
  }
}
```

Field	Meaning
<code>messageType</code>	Always <code>TASK_RESULT</code>
<code>query.queryId</code> , <code>query.tableName</code>	Identify the data set. See iMES Data Sets for Shift Handover (on page 79) .
<code>result.columns</code>	Name, type and nullability of each column
<code>result.rows</code>	One object per row, keyed by the column aliases
<code>result.truncated</code>	<code>true</code> when <code>maxRows</code> cut the result

How Shift Handover uses the message

Shift Handover adds or updates the IMES source from each result's table name and columns, then marks the reports for that shift; see [Connect Shift Handover Reports to Platform Alerts and IMES \(on page 76\)](#). Plant admins then pick the table and up to five columns in an IMES widget; see [Add Alerts and IMES Widgets to Shift Handover Reports \(on page 88\)](#).

Alternative publisher: SqlQueryExecutorService

A second, simpler publisher exists for generic customer databases. It is not the path used for the iMES shift-handover data sets above, and its messages are not interchangeable with TASK_RESULT messages.

- Endpoint: `POST /api/v1/sql-query-jobs/:id/execute`. It reads a `SqlQueryJob` document from MongoDB, runs the SQL (MySQL, PostgreSQL or SQL Server), and publishes to the job's `meta.kafkaTopic`, keyed by `meta.taxonomyNode`.
- Configuration: `DB_MONGODB_URI`, `INTERNAL_API_TOKEN` (required outside development), `KAFKA_BROKERS` with SASL/TLS variables, `SQL_QUERY_TIMEOUT_MS`, `SQL_MAX_ROWS`, `SQL_MAX_MESSAGE_BYTES`.
- BIGINT and DECIMAL values are published as strings; datetimes as ISO-8601 UTC.

Message example:

```
{
  "tenantId": "<tenant>",
  "taxonomyNode": "<objectid>",
  "data": [ { "equipment_id": "CMP881", "temperature": 82.4 } ],
  "metadata": { "executedAt": "2025-09-03T11:39:00.000Z", "queryJobId": "<id>" } }
```

2.10.2. Configure Shift Handover Alerts and IMES Settings

Control report visibility, badge colors, mobile row limits, and custom-section limits for the tenant.

Where it is configured

These settings are stored in the tenant catalog under `configurations`, not in the Configuration collection used by other settings. The catalog migration adds them with the defaults below and keeps values already set. The DevOps team applies changes.

Feature flags

The flags are under `configurations.featureFlags`. All default to `false`.

Flag	When true	When false
enableSHRAerts	Shows the Alerts section in plant report configuration, the Alerts tab in the report, and alert source systems (for example Seeq or Maximo) as widget sources.	Hides the Alerts section, tab, and alert widgets. Saved configuration is kept, so turning the flag back on restores it.
enableSHRIMES	Offers IMES as a widget source, processes IMES messages, and enables IMES refresh (refresh also needs <code>imesConfig.baseUrl</code>).	Skips IMES messages. Existing IMES widgets are hidden, not deleted.

Flag	When true	When false
enableSHRCustomSections	Shows the Add Section button in plant report configuration.	Hides the button. Sections already created stay listed and editable.
enableSHRAAlertsUnified	Clicking an alert row opens the unified alert view. Works only on the unified platform, not in standalone CWP.	Clicking a row does nothing. Keep this flag false until the unified view is available.

Alerts are stored whenever the Alerts consumer is enabled (`IMEVENT_KAFKA_ENABLED=true`), whatever the flag. `enableSHRAAlerts` controls only whether they are shown.

```
featureFlags: {
  "enableSHRAAlerts": true,
  "enableSHRIMES": true,
  "enableSHRCustomSections": true,
  "enableSHRAAlertsUnified": false
}
```

Tenant settings

These blocks sit next to `featureFlags` under `configurations`.

Key	What it does	Default
shrAlertConfig.severityColors	Badge color for each alert severity	critical #D92D20, major #FFAB40, medium #4DC7E7, minor #8F93A3
shrAlertConfig.statusColors	Badge color for each alert status	open #D92D20, in-progress #4F73FE, closed #12B76A
shrAlertConfig.topN	Maximum rows sent to mobile for each report and each widget, worst severity first	100 (maximum 500)
shrBuilderLimits.maxSections	Maximum custom sections for each plant	5 (maximum 20)
shrBuilderLimits.maxWidgetsPerSection	Maximum widgets in each custom section	5 (maximum 20)
imesConfig.baseUrl	TaskOrchestration API URL. When a report freezes, Shift Handover reruns the IMES queries tagged for the report units, so the frozen report has final data.	Empty: refresh is skipped and only streamed IMES data is shown

IMES widgets depend on the iMES services, which the implementation team sets up. See [IMES Prerequisites for Shift Handover Reports \(on page 78\)](#).

Keep `topN` at 100 unless a requirement calls for more. A larger list can exceed the 240 KB mobile sync limit, and devices then miss that report's updates.

Each widget shows up to five fields. This limit has no setting.

```
shrAlertConfig": {  
  "severityColors": { "critical": "#D92D28", "major": "#FFA848", "medium": "#4DC7E7", "minor": "#8F93A3" },  
  "statusColors": { "open": "#D92D28", "in-progress": "#4F73FE", "closed": "#12B76A" },  
  "topN": 100  
},  
shrBuilderLimits": {  
  "maxSections": 5,  
  "maxWidgetsPerSection": 5  
},  
imesConfig": {  
  "baseUrl": "https://<platform-host>/task-orchestration"}
```

2.10.3. Add Alerts and IMES Widgets to Shift Handover Reports

Add source-specific alert tables and IMES result tables to reports generated for a plant.

Before you begin

- The DevOps setup is complete. See [Connect Shift Handover Reports to Platform Alerts and IMES \(on page 76\)](#).
- The flags for the sources you want are on. See [Configure Shift Handover Alerts and IMES Settings \(on page 86\)](#).
- At least one message has arrived for each source and collection you want to select.

Changes apply to reports generated after you save. Reports already created keep their layout.

1. Check the report levels of the plant: in **Master Configurations > Plants**, edit the plant and check which levels are turned on (plant, unit, or position).

Alerts and IMES results reach only reports at the levels turned on.

2. Open **Shift Handover > Report Configuration** and select the plant.
3. To show all alerts from every source system, keep the built-in **Alerts** section selected.

This section is available when `enableSHRAAlerts` is on.

4. Click **Add Section**, and enter a **Section Name** (for example, Seeq Alerts) and a description.
5. In the new section, click **Add Widget**.
6. In **Create Widget**, enter the widget label and description (for example, Seeq Critical Alerts).
7. Set **Widget Type** to **Table**.

8. In **Source**, select an alert source system (for example, seeq) or IMES.
9. In **Collection**, select **alerts** for an alert source, or the IMES result table (for example, IMES Material).
10. In **Fields**, select up to five columns to show.

Widget	Source	Collection	Fields offered
Alerts from one system	seeq (or another listed alert source)	alerts	Title, Description, Severity, Status, Source System, Asset ID, Location ID, Unit ID, Position ID, Started At, Ended At, Plant ID
IMES table	IMES	Table name published by IMES	Columns of that IMES result

11. Check the preview, click **Create Widget**, and save the configuration.

Result

Reports generated after the change show the new sections and widgets. A widget added today does not appear on today's existing report; it appears on the next report generated.

Next action

If something is missing

- **Source missing in Create Widget:** no message from that source has arrived yet, or its flag (`enableSHRAalerts` or `enableSHRIMES`) is off.
- **Alerts tab missing:** `enableSHRAalerts` is off, or the Alerts section is not selected for the plant.
- **Widget empty on today's report:** the widget was added after the report was generated. Check the next shift's report.
- **No alerts for a plant:** the alert is not mapped to a plant on the platform, or the plant's report level is off. Ask the DevOps team to check the service logs.

2.10.4. Verify That IMES Results Reach Shift Handover Reports

Run a test IMES graph, confirm that its result reaches Kafka, and then confirm that IMES appears as a widget source in Shift Handover.

Before you begin

- The items in [IMES Prerequisites for Shift Handover Reports \(on page 78\)](#) are in place.
- `enableSHRIMES` is on for the tenant, and the DevOps team has set the Shift Handover IMES consumer.

The implementation team does steps 1 to 4 in a test environment. A plant admin does steps 5 and 6.



Important:

The graph, tenant, work centers and Kafka key in this topic are test examples from the supplied iMES test setup: graph `tg-waste_b4_24h`, tenant `dev-cwp-maximo`, work centers `B4`, `C7`, `PM02` and `PM04`, and Kafka key `dev-cwp-maximo:B4`. Do not copy them into a customer production configuration.

1. Make sure the test environment has recent iMES data.

A graph returns rows only when there is data inside its lookback window (its `lookbackHours` parameter) for the work center it queries.

Test example: IMES simulator. Where no real iMES database is available, the IMES simulator writes iMES-shaped synthetic data into MySQL. It creates the data-set tables if they do not exist and inserts coherent data on each run. It is a Kubernetes CronJob (`imes-simulator`, from `IMESSimulator/k8s/cronjob.yaml`, in the Kubernetes namespace `race`) that runs hourly (`0 * * * *`) with `concurrencyPolicy: Forbid` and `backoffLimit: 2`. Use it only in test environments, never against production data.

Variable	Default	Meaning
<code>MYSQL_HOST</code> , <code>MYSQL_PORT</code> , <code>MYSQL_DATABASE</code> , <code>MYSQL_USER</code> , <code>MYSQL_PASSWORD</code>	Required (port 3306)	Target test database. The user needs CREATE and INSERT, and DROP only if truncating.
<code>MYSQL_SSL</code>	<code>false</code>	TLS
<code>IMES_RECORDS</code>	<code>25</code>	Orders per run
<code>IMES_WORK_CENTERS</code>	<code>B4,C7,PM02,PM04</code>	Work centers generated (test values)
<code>IMES_TRUNCATE</code>	<code>false</code>	Empty the tables before inserting. Keep it <code>false</code> .

Deploy it in a test environment, then run one batch just before the test:

```
kubectl -n race create secret generic imes-mysql-credentials-secret \
  --from-literal=MYSQL_HOST=<host> \
  --from-literal=MYSQL_PORT=3306 \
  --from-literal=MYSQL_DATABASE=<db> \
  --from-literal=MYSQL_USER=<user> \
  --from-literal=MYSQL_PASSWORD=<password> \
  kubectl apply -f IMESSimulator/k8s/cronjob.yaml
kubectl -n race create job --from=cronjob/imes-simulator imes-simulator-manual
kubectl -n race wait --for=condition=complete job/imes-simulator-manual --timeout=10m
kubectl -n race logs job/imes-simulator-manual
```

The log shows inserts and the Job completes (1/1). To run it again, delete the old Job first: `kubectl -n race delete job imes-simulator-manual`. To check the secret, list its key names only; this command does not print values:

```
kubectl -n race get secret imes-mysql-credentials-secret \
  -o go-template='{{range $k, $v := .data}}{{ $k }}{{ "\n" }}{{ end }}
```

2. In a separate terminal, start a Kafka console consumer on `task.sql.results`, and keep it running while you run the graph.

Start it before you run the graph, without `--from-beginning`, so it shows only new messages. The Kafka listener requires TLS and SASL/SCRAM, so pass the client configuration file issued for your deployment (its TLS and SASL settings) with `--consumer.config`.

```
kafka-console-consumer.sh --bootstrap-server '<KAFKA_BOOTSTRAP>' --topic task.sql.results \
--consumer.config '<issued-client.properties>' \
--property print.key=true --property key.separator=' | ' \
--zookeeper '<dev-cwp-maximo:B4>'
```

Stop the consumer with Ctrl+C after you have checked the result.

3. Run the test graph synchronously.

```
curl -s -X POST '<API_BASE_URL>/task-orchestration-api/task-graphs/tg-waste_b4_24h/execute' \
-H 'Content-Type: application/json' \
-d '{"context":{"tenantId":"dev-cwp-maximo","aggregateType":"TAXONOMY","aggregateId":"B4"}}' \
| tee /tmp/e2e.json
```

Do not use the graph `tg-machine_time_kubernetes_job`. It depends on an execution path this deployment does not use, so it fails and proves nothing.

4. Check the result.

```
jq -r '.tableNames[] | select(. != empty)' /tmp/e2e.json
```

The response has a row count greater than 0, and the table name is `v_Material_Waste` (the Waste data set; see [iMES Data Sets for Shift Handover \(on page 79\)](#)). The consumer from step 2 shows a new message with the key `dev-cwp-maximo:B4`. This proves that the iMES services publish results.

5. Open **Shift Handover** > **Report Configuration**, select the plant, and start **Create Widget** in a custom section.

IMES appears in **Source**, and `v_Material_Waste` appears in **Collection**. Shift Handover adds them when an IMES result for the table first arrives, so they show that results have reached Shift Handover at some point. They do not prove that the result from this test arrived.

6. Make sure a current report shows an IMES widget for `v_Material_Waste`.

If the plant has no such widget, add one; see [Add Alerts and IMES Widgets to Shift Handover Reports \(on page 88\)](#). A new widget appears only on reports generated after you save, so wait for the next report before you continue.

7. With the consumer from step 2 still running, run the graph again (step 3), then open the report and check the widget.

Within about 30 seconds, the widget shows the rows from this run. Compare them with the rows in `/tmp/e2e.json`. This proves that the result from this test reached Shift Handover for your tenant.

Next action**If the test fails**

Symptom	Check
Row count is 0	The test data is older than the test window, or the work center is missing from <code>IMES_WORK_CENTERS</code> . Run a batch just before testing.
Table name is not <code>v_Material_Waste</code>	The graph in MongoDB is stale. Bootstrap never replaces an existing graph, so it must be re-seeded by the implementation team.
No Kafka message	The Kafka settings on the service running the graph, and that the topic exists.
Startup log shows <code>sql.configured: false</code> or <code>kafka.configured: false</code>	The MySQL or Kafka settings on the API or worker are missing or misnamed.
The API fails at startup with a kubectl or exec error	Access to Temporal admintools: the two settings and the RBAC in the admintools Kubernetes namespace.
The widget does not show the rows from this run	The report was generated before the widget was added, or the result is not mapped to this tenant.
Kafka message arrives, but IMES is missing in Create Widget	<code>enableSHRIMES</code> is off, the Shift Handover IMES consumer is not set, or the result is not mapped to this tenant.

3. Onboard Tenants/Super Admins

Use the **Tenant Management** module to create tenant or super admin roles for onboarded customers/user and provide access to the applications and modules.

As a CWP Admin, create a Tenant/Super Admin role for the user by collecting the details such as primary, ERP, resources, database configuration, collaboration, and configurations and assign all the required permissions to products and modules.



Note:

There should be only one Super Admin and the admin should have all the permissions to create, edit, delete, and so on.

In this module, you can,

- Select the relevant product such as mRounds using the **Product** drop-down.
- Search the admin roles using the **Search** bar.
- Create super admin roles using the **Add Tenant** button.
- Edit super admin roles using the More  icon > **Edit** option.
You can edit the admin details. Select the admin in the Tenant Management screen and then click the **Edit** button on the right side or clicking the More  icon > **Edit** option in the Tenant Management screen.



Note:

Some fields are disabled to edit once the Tenant/Customer is onboarded.

- Sort the values such as Tenant and Created On using the Sort  icon next to the respective columns.

Related information

[Configure the Dozuki Integration \(on page 63\)](#)

[Write Acknowledgements and Round Readings to AVEVA PI \(on page 74\)](#)

[Enable Gensuite and Prepare Existing Plants \(on page 53\)](#)

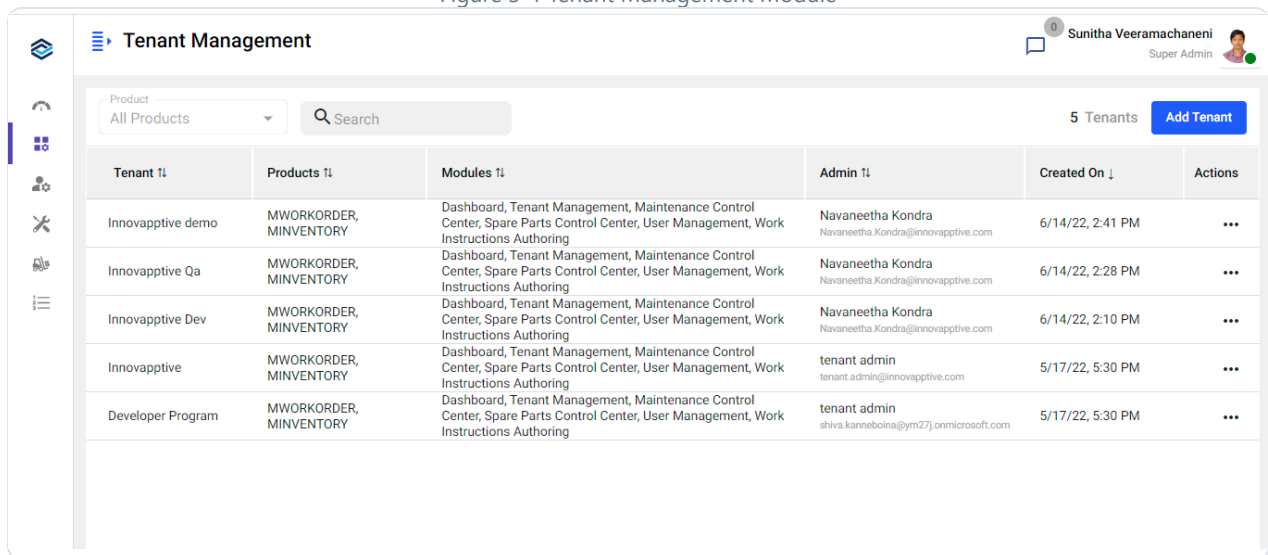
3.1. Create Tenant/Super Admin role

You can create a tenant/super admin role and provide access to relevant applications such as mRounds and the modules available in the application.

To create a tenant/super admin role:

1. Click the **Tenant Management** module on the left side pane.

Figure 3-1 Tenant Management Module



Tenant Management					
Product All Products		Search		5 Tenants	Add Tenant
Tenant ID	Products ID	Modules ID	Admin ID	Created On	Actions
Innovapptive demo	MWORKORDER, MINVENTORY	Dashboard, Tenant Management, Maintenance Control Center, Spare Parts Control Center, User Management, Work Instructions Authoring	Navaneetha Kondra Navaneetha.Kondra@innovapptive.com	6/14/22, 2:41 PM	...
Innovapptive Qa	MWORKORDER, MINVENTORY	Dashboard, Tenant Management, Maintenance Control Center, Spare Parts Control Center, User Management, Work Instructions Authoring	Navaneetha Kondra Navaneetha.Kondra@innovapptive.com	6/14/22, 2:28 PM	...
Innovapptive Dev	MWORKORDER, MINVENTORY	Dashboard, Tenant Management, Maintenance Control Center, Spare Parts Control Center, User Management, Work Instructions Authoring	Navaneetha Kondra Navaneetha.Kondra@innovapptive.com	6/14/22, 2:10 PM	...
Innovapptive	MWORKORDER, MINVENTORY	Dashboard, Tenant Management, Maintenance Control Center, Spare Parts Control Center, User Management, Work Instructions Authoring	tenant admin tenant.admin@innovapptive.com	5/17/22, 5:30 PM	...
Developer Program	MWORKORDER, MINVENTORY	Dashboard, Tenant Management, Maintenance Control Center, Spare Parts Control Center, User Management, Work Instructions Authoring	tenant admin shiva.kanneboina@ym27j.onmicrosoft.com	5/17/22, 5:30 PM	...

2. Click the **Add Tenant** button on the right-side.

3. In the **Primary** tab, enter the following details:

- a. **Tenant ID** – enter the customer id.
- b. **Tenant Name** – enter the customer's name.
- c. **Tenant IDP** – select the value from the drop down.
- d. **Client ID** – enter the client id.
- e. **Authority URL** – enter the URL to which you want to provide access (for example, CWP application).
- f. **Redirect URI** – enter the URL to redirect.
- g. **Tenant Domain Name** – enter the customer domain name.
- h. In the **Tenant Admin Details** section, enter **First Name**, **Last Name**, **Title**, and **Email**.



Note:

The email is valid based on the selected **Tenant IDP**.

Figure 3-2 Add Tenant Primary Details

The screenshot shows the 'Add Tenant Primary Details' form in the Innovapptive Dev interface. The form is titled 'Innovapptive Dev' and has a 'Cancel' and 'Save' button. It contains several input fields for tenant details: Tenant ID (f8e6f04b-2b9f-43ab-ba8a-b4c367088723dev), Tenant Name (Innovapptive Dev), Tenant IDP (azure), Client ID (06a96c09-45cc-4120-8f96-9c0a0d89d6bc), Authority URL (https://login.microsoftonline.com/f8e6f04b-2b9f-43ab-ba8a-b4c36), Redirect URI (https://cwpdev.innovapptive.com/), and Tenant Domain Name (innovapptivedev.com). Below these fields is a section for 'Tenant Admin Details'.

4. In the **ERPs** tab, do the following:

The SAP sections apply to SAP deployments.

a. In the **SAP Details** section, enter the following:

- i. **Base URL** – enter the relevant URL.
- ii. **OAuth2 URL** – enter the relevant URL.
- iii. **User Name** – enter the customer username.
- iv. **Password** – enter the customer password.
- v. **Grant Type** – enter the type.
- vi. **Client ID** – enter the client id.
- vii. **Scope** – enter the scope id.

b. In the **SAP SAML Details** section, enter the following:

- i. **OAuth2 URL** – enter the relevant URL.
- ii. **Grant Type** – enter the type.
- iii. **Client Secret** – enter the client secret code.
- iv. **Resource** – enter the resource link.
- v. **Token Use** – enter the token id.
- vi. **Token Type** – enter the type of the token.

Figure 3-3 Add Tenant ERP Details

The screenshot displays the 'Innovapptive Dev' Tenant Management interface. The top navigation bar includes a hamburger menu, the title 'Innovapptive Dev', and a 'Tenant Management' breadcrumb. A right-hand sidebar shows a user profile and the 'INNOVAPPTIVE' logo. The main content area features a tabbed interface with tabs for '1. PRIMARY', '2. ERPs' (selected), '3. PROTECTED RESOURCES', '4. DB CONFIGURATIONS', '5. COLLABORATION', '6. CONFIGURATIONS', and '7. ASSETS'. The '2. ERPs' tab is active, showing the 'SAP Details' section. This section contains several input fields: 'Base URL' (https://10.0.0.112/sap/opu/odata/INVCEC/RACE_SRV/), 'OAuth2 URL' (https://10.0.0.111/sap/bc/sec/oauth2/token), 'User Name' (cwpuser), 'Password' (masked with dots and a toggle icon), 'Grant Type' (urn:ietf:params:oauth:grant-type:saml2-bearer), 'Client ID' (cwpuser), and 'Scope' (a JSON object: {"race": "/INVCEC/RACE_SRV_0001"}). At the top right of the form area are 'Cancel' and 'Save' buttons.

5. In the **Protected Resources** tab, do the following:

The SAP sections apply to SAP deployments.

- a. In the **SAP Details** section, enter the following:
 - i. **Identity Metadata URL** – enter the metadata URL.
 - ii. **Issuer URL** – enter the issuer URL.
 - iii. **Client ID** – enter the client id.
 - iv. **Audience** – enter the audience id.
 - v. **Scope** – enter the scope id.
- b. In the **SAP URLs** section, enter the relevant URLs.
Click the **Add** icon to add extra fields.
- c. In the **Node Details** section, enter the following:
 - i. **Identity Metadata URL** – enter the metadata URL.
 - ii. **Issuer URL** – enter the issuer URL.
 - iii. **Client ID** – enter the client id.
 - iv. **Audience** – enter the audience id.
 - v. **Scope** – enter the scope id.
- d. In the **Node URLs** section, enter the relevant URLs.
Click the **Add** icon to add extra fields.

Figure 3-4 Add Tenant Resources Details

The screenshot displays the 'Innovapptive Dev' Tenant Management interface. The top navigation bar includes the 'Innovapptive Dev' logo, a 'Tenant Management' breadcrumb, and a user profile icon. The main content area is titled 'Innovapptive Dev' and features a tabbed interface with the following tabs: 1. PRIMARY, 2. ERPs, 3. PROTECTED RESOURCES (selected), 4. DB CONFIGURATIONS, 5. COLLABORATION, 6. CONFIGURATIONS, and 7. ASSETS. The 'PROTECTED RESOURCES' tab is active, showing two sections: 'SAP Details' and 'SAP URLs'. The 'SAP Details' section contains five input fields: 'Identity Metadata URL' (https://sts.windows.net/f8e6f04b-2b9f-43ab-ba8a-b4c367088723/), 'Issuer URL' (https://sts.windows.net/f8e6f04b-2b9f-43ab-ba8a-b4c367088723/), 'Client ID' (06a96c09-45cc-4120-8f96-9c0a0d89d6bc), 'Audience' (api://06a96c09-45cc-4120-8f96-9c0a0d89d6bc), and 'Scope' (api://06a96c09-45cc-4120-8f96-9c0a0d89d6bc/scp.access). The 'SAP URLs' section contains one input field: 'URL' (http://cwpdev.innovapptive.com/wiabapapi/). A trash icon and a plus sign are visible next to the URL input field.

6. In the **DB Configurations** tab, enter the following:

a. In the **RDBMS** section, enter the following:

- i. **Host** – enter the database host.
- ii. **Port** – enter the port number.
- iii. **User** – enter the username.
- iv. **Password** – enter the password.
- v. **Database** – fills automatically.
- vi. **Dialect** – select the value from the drop down.

b. In the **NoSQL** section, enter the following:

- i. **Host** – enter the database host.
- ii. **Port** – enter the port number.
- iii. **User** – enter the username.
- iv. **Password** – enter the password.
- v. **Database** – fills automatically.

Figure 3-5 Add Tenant Database Details

The screenshot shows the 'Innovapptive Dev' interface with the 'DB CONFIGURATIONS' tab selected. The interface includes a sidebar with navigation icons and a top navigation bar with tabs: 1. PRIMARY, 2. ERPs, 3. PROTECTED RESOURCES, 4. DB CONFIGURATIONS (active), 5. COLLABORATION, 6. CONFIGURATIONS, and 7. ASSETS. The 'RDBMS' section contains the following fields: Host (cwp-tenant.cq5h22u2n8lu.us-east-1.rds.amazonaws.com), Port (3306), User (admin), Password (masked with dots and an eye icon), Database (InnovapptiveDev), and Dialect (mysql). The 'NoSQL' section is partially visible with a Host field.

7. In the **Collaboration** tab, enter the following:

- a. **Collaboration Type** – select a collaboration type Slack or MS Teams to connect to the external chat application.
- b. If the **Collaboration Type** is **Slack**, enter the following:
 - i. **Slack Workspace/Team ID**: enter slack workspace or team id.
 - ii. **Client ID**: enter client id.
 - iii. **Client Secret**: enter client secret code.
 - iv. **Client Signing Secret**: enter client signing secret code.
 - v. **Client State Secret**: enter client state secret code.
- c. If the **Collaboration Type** is **MS Teams**, enter the following:
 - i. **Tenant ID**: enter onboard tenant id.
 - ii. **Client ID**: enter client id.
 - iii. **Client Secret**: enter client secret code.
 - iv. **Share Point Site ID**: enter share point site id.
 - v. **Private Key**: enter RSA private key.
 - vi. **Public Key**: enter RSA public key.

The screenshot displays the 'Innovapptive Dev' Tenant Management interface. The top navigation bar includes a hamburger menu, the tenant name 'Innovapptive Dev', and a breadcrumb trail 'Tenant Management > Innovapptive Dev'. On the right, there are user profile icons and a 'Powered by INNOVAPPTIVE' logo. A left sidebar contains various system icons. The main content area features a tabbed interface with tabs labeled '1. PRIMARY', '2. ERPs', '3. PROTECTED RESOURCES', '4. DB CONFIGURATIONS', '5. COLLABORATION' (which is active), '6. CONFIGURATIONS', and '7. ASSETS'. The '5. COLLABORATION' tab contains the following configuration fields:

- Collaboration Type**: A dropdown menu with 'Slack' selected.
- Slack Configuration**: A section containing five text input fields:
 - Slack Workspace/Team ID: T78857ZCK
 - Client ID: 246277271427.3457776076497
 - Client Secret: 4ee5ea193c851b30f0085e388c4ed162
 - Client Signing Secret: 9415017c609aec548a1d338ca1c5950e
 - Client State Secret: my-client-state-secret

At the top right of the configuration area, there are 'Cancel' and 'Save' buttons.

8. In the **Configurations** tab, enter the following:

- a. **License Count** – enter the count of the licenses that are provided to the tenant.
- b. **Products** – select the products that are assigned to the tenant from the drop down.
- c. **Modules** – select the modules that are assigned to the tenant from the drop down.
- d. **Log DB Type** – select the relevant database type from the drop down.
- e. **Log Level** – select the level from the drop down.

Figure 3-6 Add Tenant Configuration Details

The screenshot shows the 'Innovapptive Dev' configuration page. The '6. CONFIGURATIONS' tab is active. The fields are as follows:

Field	Value
License Count	25
Products	MWORKORDER, MINVENTORY
Modules	Dashboard, Tenant Management, Maintenance Control Center, ...
Log DB Type	rdbms
Log Level	off

9. In the **Assets** tab, use the **Browse Logo** button to change the logo on top right.

Figure 3-7 Add Logo

The screenshot shows the 'Innovapptive Dev' configuration page. The '7. ASSETS' tab is active. The page displays a 'Browse Logo' button and instructions: 'Ideal Dimension: 378px wide by 144px tall' and 'The App automatically shrinks the logo according to the aspect ratio'. Below this is a preview of the logo area on the website, labeled 'Appearance on the website', showing a placeholder 'LOGO COMES HERE'.

10. Click the **Save** button.

The tenant/super admin is created successfully, and you can access and edit it from the **Tenant Management** screen.

4. Create and Manage Master Data

Master Data forms the foundation of the system, providing essential information such as plants, shifts, locations, assets, units of measurement, and response sets. Properly setting up master data ensures seamless work order management, asset tracking, and operational efficiency.

Locations and assets can also be synchronized from SAP or Maximo. See [Integrate mRounds with External Systems \(on page 15\)](#).

You can add master data manually by entering details for each record individually or in bulk using an Excel upload. Bulk uploading allows you to efficiently import large datasets, reducing manual effort and ensuring data consistency.

By configuring master data correctly, you create a well-structured system that enhances workflow automation, reporting accuracy, and overall maintenance efficiency.

- [Create Plants \(on page 102\)](#)
- [Create Shifts \(on page 106\)](#)
- [Create Locations \(on page 108\)](#)
- [Create Assets \(on page 114\)](#)
- [Create Unit of Measurement \(on page 119\)](#)
- [Create Global Response Set \(on page 125\)](#)

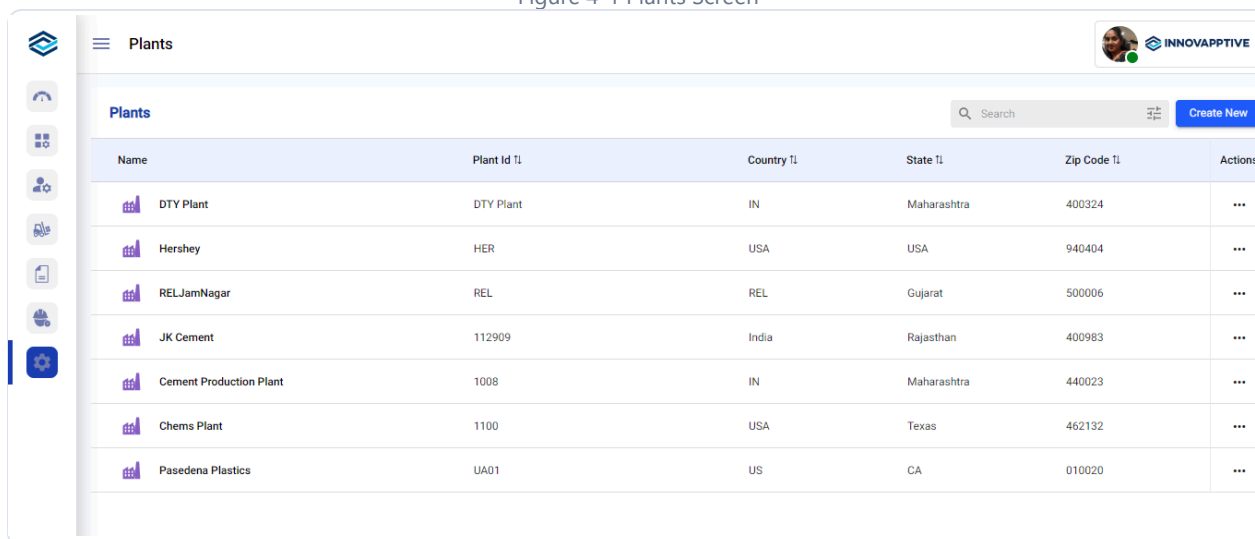
4.1. Create Plants

Creating plants allows you to define different facilities, **factories, or operational sites** within the system. Each plant represents a physical location where maintenance activities take place. By setting up plants, you can organize tasks, assets, and users based on specific sites, ensuring clear management and reporting.

To create or add a plant:

1. Click the **Master Configuration** module on the left side pane and click **Plants**.

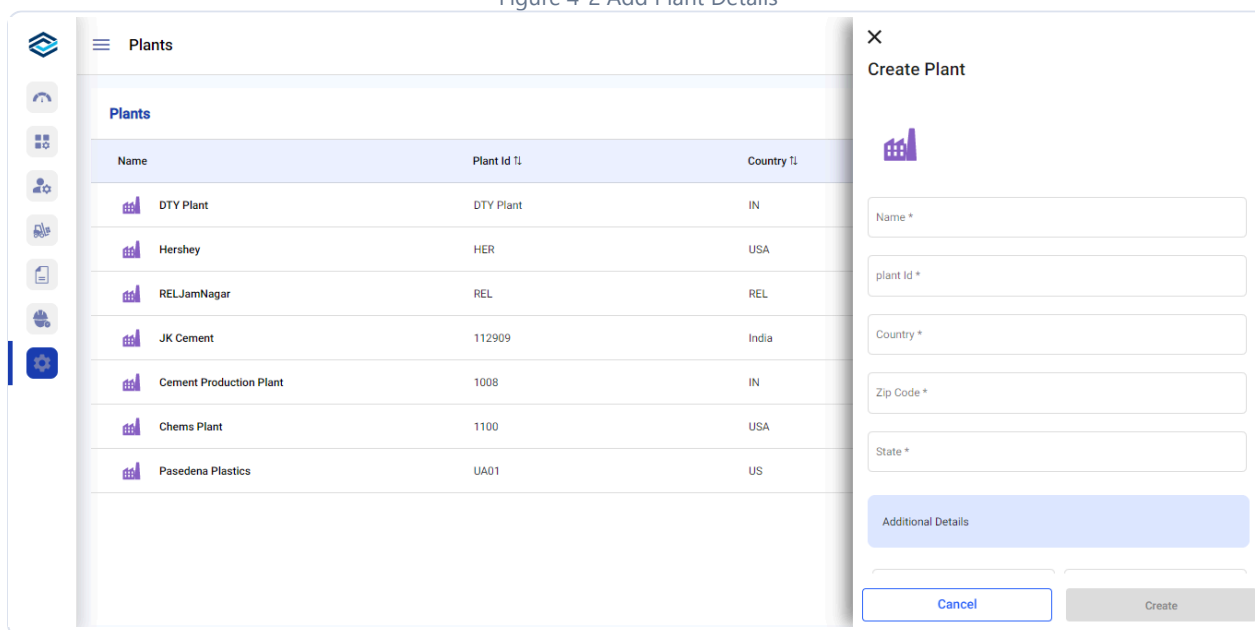
Figure 4-1 Plants Screen



Name	Plant Id Tl	Country Tl	State Tl	Zip Code Tl	Actions
DTY Plant	DTY Plant	IN	Maharashtra	400324	...
Hershey	HER	USA	USA	940404	...
RELJamNagar	REL	REL	Gujarat	500006	...
JK Cement	112909	India	Rajasthan	400983	...
Cement Production Plant	1008	IN	Maharashtra	440023	...
Chems Plant	1100	USA	Texas	462132	...
Pasedena Plastics	UA01	US	CA	010020	...

2. Click **Create New** and select **Add Manually**.

Figure 4-2 Add Plant Details



Create Plant

Name *

plant Id *

Country *

Zip Code *

State *

Additional Details

Cancel Create

3. In the **Create Plant** window, enter plant details like **Name**, **Plant Id**, **Country**, **Zip Code**, **State**, **Time Zone**, **Shifts**, **Report Type**, and **Additional Details**.

**Note:**

If the Plant ID already exists, an error message "Plant ID <> already exists" is displayed. Use another ID.

4. Enable the **Geo Location Tracking** toggle to enable geo-location tracking while executing rounds.
5. Enable the **Activate Location/Asset Scan** toggle to allow operators to scan the asset in the assigned plant using the Scan option. If the toggle is disabled, the operators cannot view the Scan option.
6. Click **Create**.

**Note:**

- To modify plant details, in the **Plants** screen, click the **More** icon next to the plant and select **Edit**.
- To delete a plant, in the **Plants** screen, click the **More** icon next to the plant and select **Delete**.

Related information

[Add Alerts and IMES Widgets to Shift Handover Reports \(on page 88\)](#)

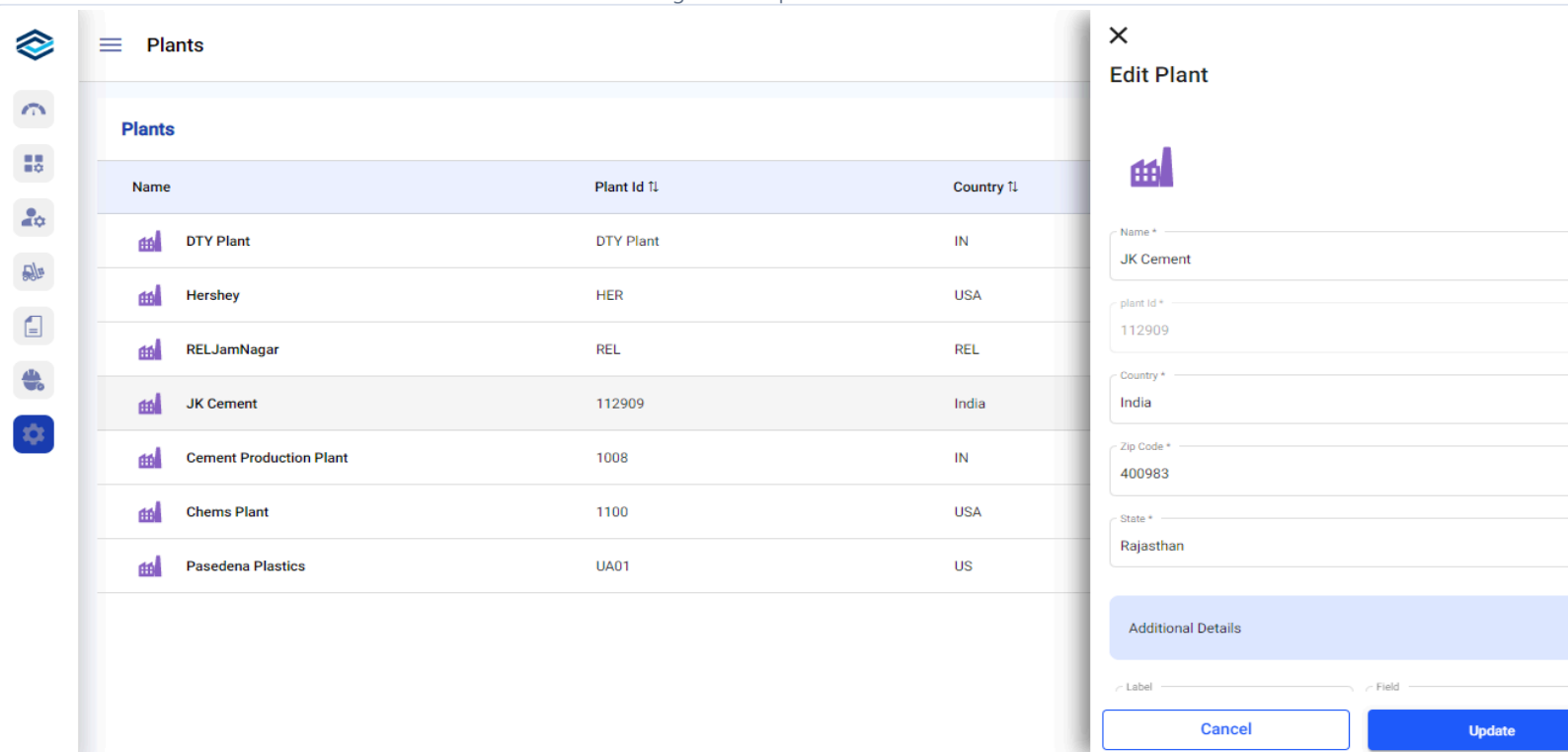
4.1.1. Modify Plants

Update the details of an existing plant.

To modify plant master data:

1. In the **Plans** screen, click the More  icon against the plant that you want to edit and select **Edit**.
2. In the **Edit Plan** window, update the details as required and click **Update**.

Figure 4-3 Update Plant Details



The screenshot shows the 'Plants' screen with a table of plants. The 'JK Cement' plant is selected. The 'Edit Plant' modal is open, showing the details for 'JK Cement'.

Name	Plant Id	Country
DTY Plant	DTY Plant	IN
Hershey	HER	USA
RELJamNagar	REL	REL
JK Cement	112909	India
Cement Production Plant	1008	IN
Chems Plant	1100	USA
Pasedena Plastics	UA01	US

The 'Edit Plant' modal shows the following details:

- Name: JK Cement
- Plant Id: 112909
- Country: India
- Zip Code: 400983
- State: Rajasthan

The 'Additional Details' section is also visible.

Plan details are updated successfully.

4.2. Create Zones

Create zones in a plant so that rounds can be assigned to a specific zone.

To create or add a zone data:

1. Click the **Master Configuration** module on the left side pane and click **Zones**.
2. Click **Create New** and select **Add Manually**.
3. In the **Create Zone** window, enter zone details like **Zone Name**, and **Plant**.

The map for the selected plant location is displayed with satellite view. You can zoom the map and mark or select the zone by selecting the boundary end points in the plant.

4. Click **Save**.

The zone in the plant is created successfully.

4.2.1. Edit Zones

Update the details of an existing zone.

To edit zone master data:

1. In the **Zones** screen, click the More  icon against the zone that you want to edit and select **Edit**.
2. In the **Edit Zone** window, update the details as required and click **Update**.

The zone details are updated.

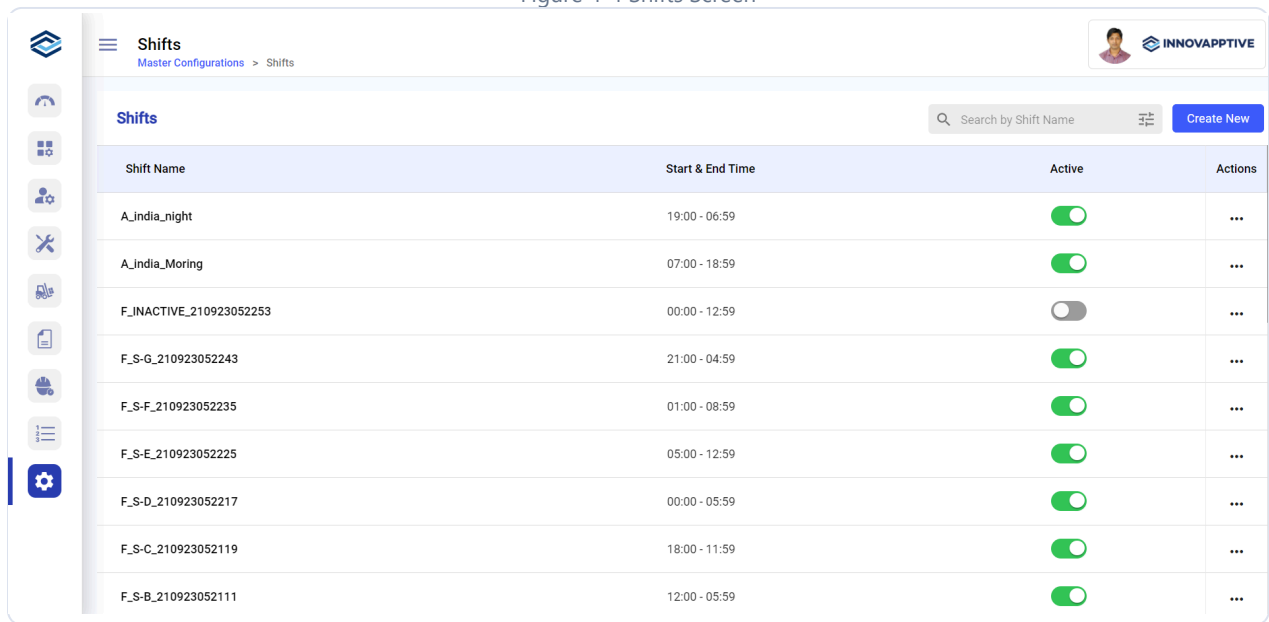
4.3. Create Shifts

Shifts help structure work schedules by defining specific time periods during which technicians and other personnel operate. Creating shifts ensures that work orders, tasks, and maintenance activities are assigned efficiently based on working hours, helping manage workload distribution and resource availability.

To create or add a shift:

1. Click the **Master Configuration** module on the left side pane and click **Shifts**.

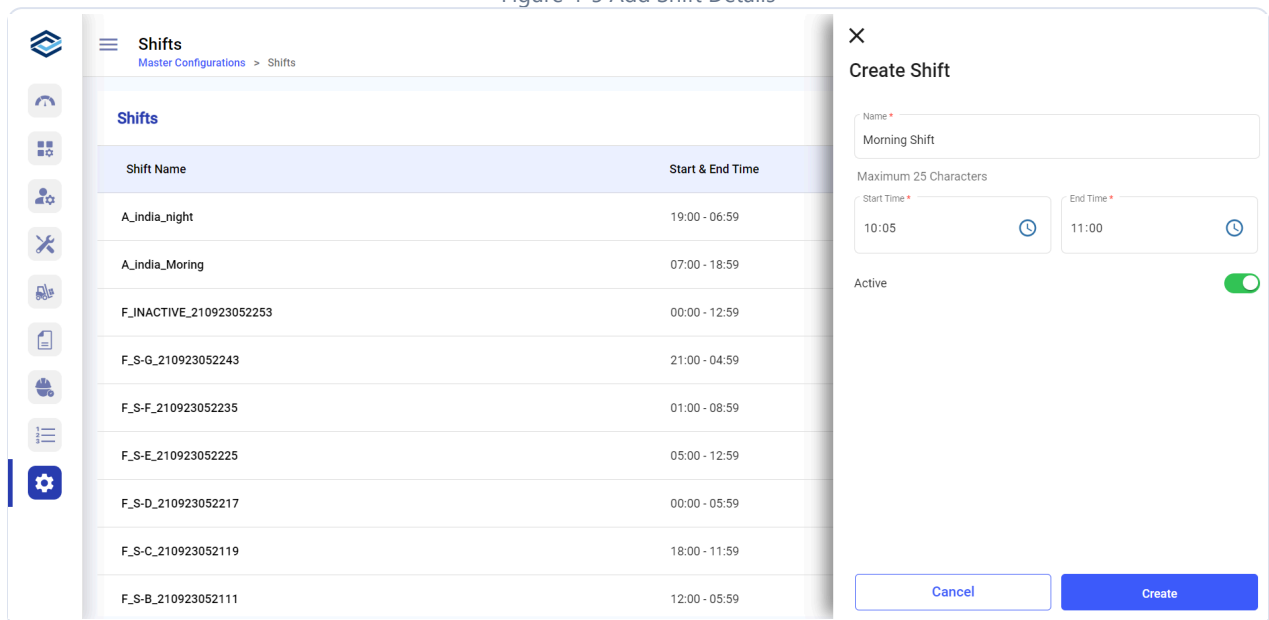
Figure 4-4 Shifts Screen



Shift Name	Start & End Time	Active	Actions
A_india_night	19:00 - 06:59	☒	...
A_india_Morning	07:00 - 18:59	☒	...
F_INACTIVE_210923052253	00:00 - 12:59	☐	...
F_S-G_210923052243	21:00 - 04:59	☒	...
F_S-F_210923052235	01:00 - 08:59	☒	...
F_S-E_210923052225	05:00 - 12:59	☒	...
F_S-D_210923052217	00:00 - 05:59	☒	...
F_S-C_210923052119	18:00 - 11:59	☒	...
F_S-B_210923052111	12:00 - 05:59	☒	...

2. Click **Create New** and select **Add Manually**.

Figure 4-5 Add Shift Details



Create Shift

Name *
Morning Shift

Maximum 25 Characters

Start Time *
10:05

End Time *
11:00

Active ☒

Cancel Create

3. In the **Create Shift** window, enter shift details like **Name**, **Start Time**, **End Time**, and toggle **Active** to make the shift active.

4. Click **Create**.

The new shift is created successfully.



Note:

- To modify shift details, in the **Shifts** screen, click the **More** icon next to the shift and select **Edit**.
- To delete a shift, in the **Shifts** screen, click the **More** icon next to the shift and select **Delete**.

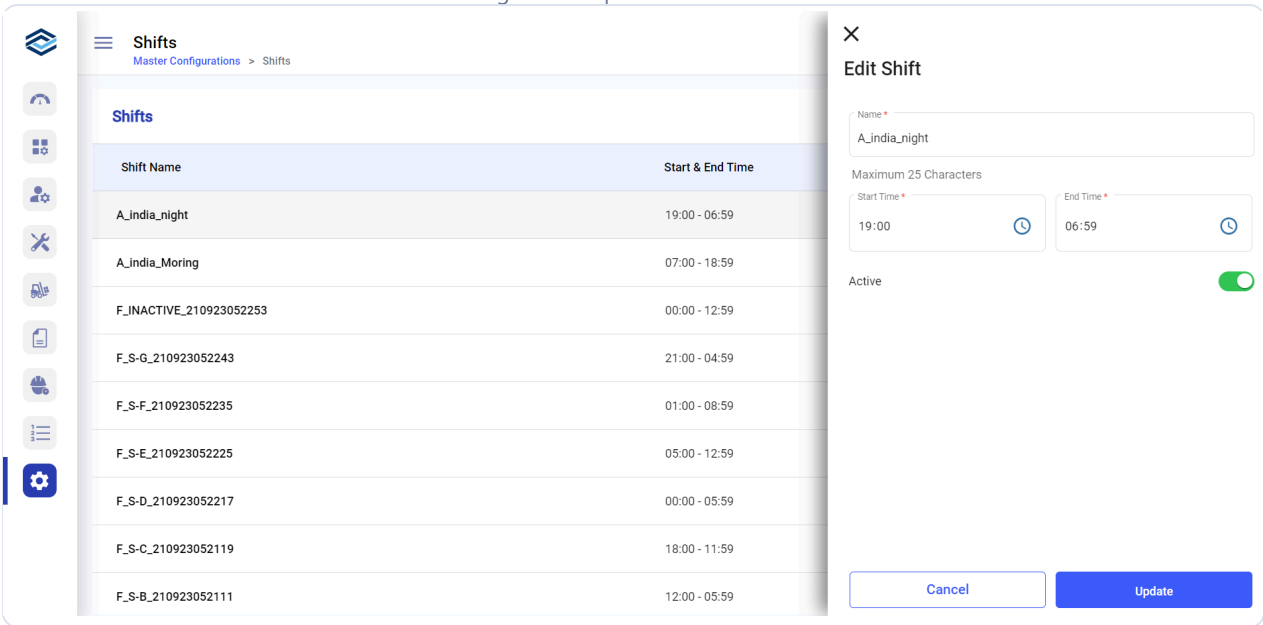
4.3.1. Modify Shifts

Update the details of an existing shift.

To modify shift master data:

1. In the **Shifts** screen, click the More  icon against the plant that you want to edit and select **Edit**.
2. In the **Edit Shift** window, update the details as required and click **Update**.

Figure 4-6 Update Shift Details



The screenshot shows the 'Shifts' screen with a table of shifts and an 'Edit Shift' modal open. The table lists shifts with their names and start/end times. The modal allows editing the shift name, start time, end time, and active status.

Shift Name	Start & End Time
A_india_night	19:00 - 06:59
A_india_Morning	07:00 - 18:59
F_INACTIVE_210923052253	00:00 - 12:59
F_S-G_210923052243	21:00 - 04:59
F_S-F_210923052235	01:00 - 08:59
F_S-E_210923052225	05:00 - 12:59
F_S-D_210923052217	00:00 - 05:59
F_S-C_210923052119	18:00 - 11:59
F_S-B_210923052111	12:00 - 05:59

Edit Shift

Name *
A_india_night
Maximum 25 Characters

Start Time *
19:00

End Time *
06:59

Active ☒

Cancel Update

Shift details are updated successfully.

4.4. Create Locations

Locations represent specific areas within a plant where assets and maintenance activities are managed. For example, a plant may have locations such as Production Floor, Warehouse, or Cooling Unit Area. Defining locations allows for better tracking of assets, and maintenance tasks in a structured manner.

**Note:**

If your tenant synchronizes locations and assets from SAP or Maximo, follow the data-ownership rules agreed for your implementation when you create records here. See [Establish a Connection with Maximo for Master Data Integration \(on page 31\)](#).

To create or add a location:

1. Click the **Master Configuration** module on the left side pane and click **Locations**.

Figure 4-7 Locations Screen

Master Configuration

Locations

Search

Create New

Name	Description %	Model %	Parent %	Actions
 Mine Site 1 10118513-1006B	N/A	GM	California Mine	...
 Mine Site 2 10118512-1005C	N/A	N/A	California Mine	...
 California Mine 8503-MIN-AA-AA	N/A	N/A		...
 Excavators 8503-MIN-AA	N/A	GE	California Mine	...
 Pump House FNPP-PH-1			Fukushima Nuclear Power Plant	...
 Reactor Room FNPP-RR-1			Turbine Room	...
 Turbine Room FNPP-TR-1			Fukushima Nuclear Power Plant	...
 Power Plant (Area_001) 1000-100	N/A	N/A		...
 Fukushima Nuclear Power Plant FNPP-1				...

2. Click **Create New** and select **Add Manually**.

Or

Click **Sync from SAP** to manually sync and export already created data from SAP server.

Or

The data synchronization can automatically occurs based on the configured schedule.



Note:

There should not be any existing master data to sync the data.

Figure 4-8 Add Location Details

Locations

Master Configurations > Locations

19 Locations

Name	Plant %	Marked as Unit %	Description %
 LOC-013 LOC-013		Yes	LOC-013
 LOC-012 LOC-012		Yes	LOC-012
 LOC-011 LOC-011		Yes	LOC-011
 LOC-010 LOC-010		No	LOC-010
 LOC-009 LOC-009		Yes	LOC-009
 LOC-008 LOC-008		Yes	LOC-008
 LOC-007 LOC-007		Yes	LOC-007
 LOC-006 LOC-006		Yes	LOC-006

Create Location



Name *

Location Id *

Model

Description

Plant *

Parent

☐ Mark this location as Unit

Cancel

Create

3. In the **Create Location** window, enter location details like **Name**, **Location Id**, **Model**, **Description**, **Plant**, and **Parent**.

**Note:**

If the Location ID already exists, an error message "Location ID <> already exists" is displayed. Use another ID.

4. Select the **Mark this location as Unit** to assign users, round plans, and shift handovers at unit level.
5. Under **Coordinates**, Enter **Latitude** (–90 to +90) and **Longitude** (–180 to +180) as numeric values, or enter an **Address**.
6. Entering an address auto-fills latitude and longitude, and entering latitude and longitude auto-fills the address.
7. Click **Create**.

The new location is created successfully.

**Note:**

- To download the location template, in the **Locations** screen, click the **More** icon (next to **Create New**) and select **Download Template**.
- To modify location details, in the **Locations** screen, click the **More** icon next to the location and select **Edit**.
- To delete a location, in the **Locations** screen, click the **More** icon next to the location and select **Delete**.
- To deactivate a location, in the **Locations** screen, click the **More** icon next to the location and select **Deactivate**. You can see the deactivated location in the **Inactive** module under the **Locations** tab.

Edit Location ID

Administrators can now update Functional Location (FLOC) display IDs and modify location hierarchy relationships without recreating locations or affecting existing records. Open rounds, findings, and issues automatically reflect updated Location IDs, while submitted records continue to display the original ID captured during execution.

When a location hierarchy changes, existing Round Plans are not automatically modified. Instead, impacted plans display a Hierarchy Changed indicator so supervisors can review and republish plans if required.

**Note:**

Before using this feature, the following feature flags must be enabled in the Integration Manager by your Tenant Administrator:

- enableLocationMasking = true
- enableMasterdatamasking = true

To edit a Location ID:

1. Click the Master Configuration module on the left-side pane and click Locations.
2. Click the More (•••) icon next to the location whose ID you want to change and select Edit ID.
3. In the Edit ID dialog, enter the New ID in the Location ID field.
4. Click Update.

The Location ID is updated. All open work items immediately reflect the new ID.

What happens when a Location ID changes:

- Open work items (status: Open, Assigned, or In Progress) automatically display the updated Location ID.
- Closed records (status: Submitted, Approved, or Rejected) continue to show the ID captured at the time of completion and are not changed.
- Searching by a historical (old) ID still resolves to the correct location. The system displays a banner indicating the ID is historical and shows the current ID alongside it.
- A full ID history is recorded for every change: old ID, new ID, changed by, date and time, and an optional reason.

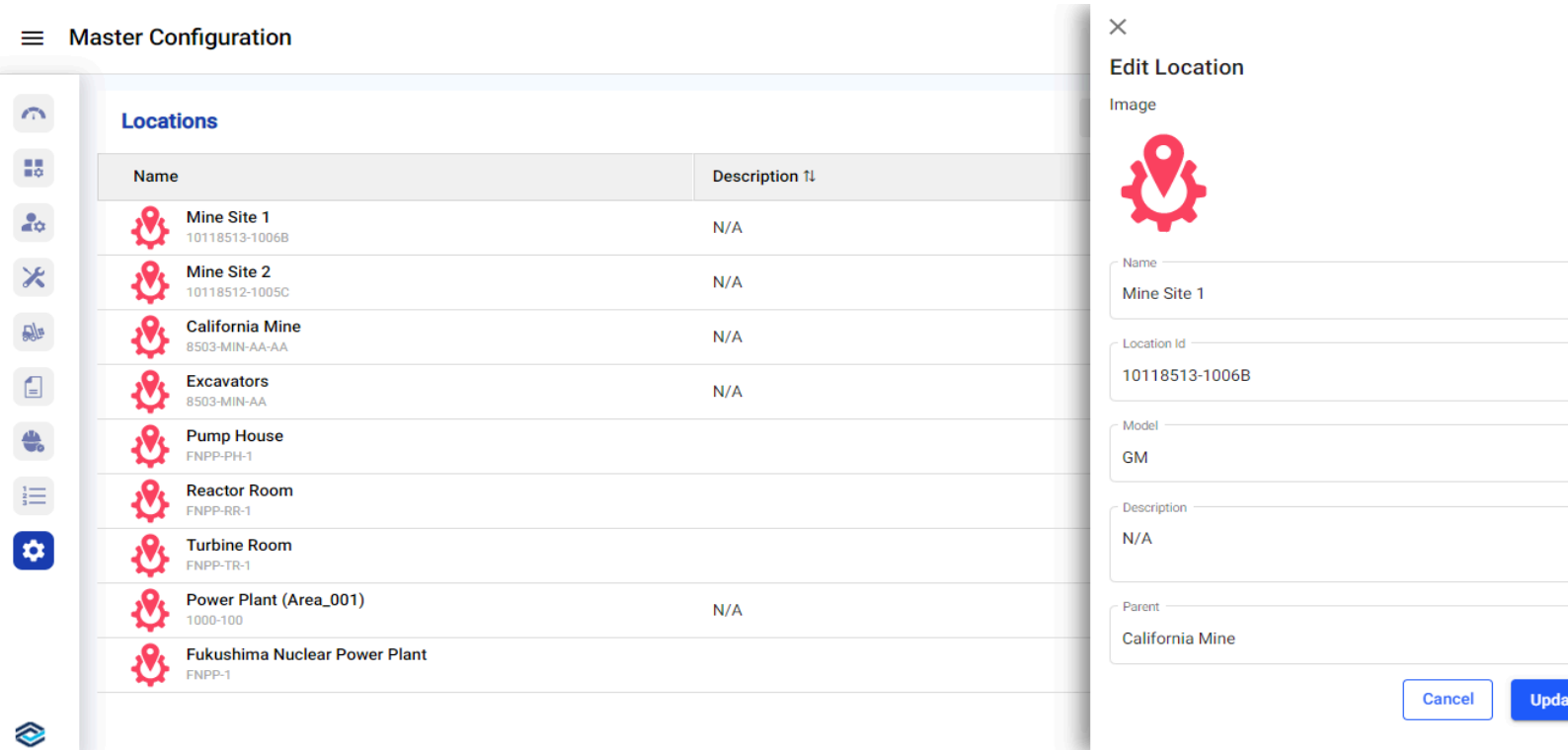
4.4.1. Modify Locations

Update the details of an existing location.

To modify location master data:

1. In the **Locations** screen, click the More  icon against the location that you want to edit and select **Edit**.
2. In the **Edit Location** window, update the details as required and click **Update**.

Figure 4-9 Update Location Details



Location details are updated successfully.

4.4.2. Deactivate Locations

Deactivate a location so that it is no longer available for new rounds.

To deactivate location master data:

1. In the **Locations** screen, click the More

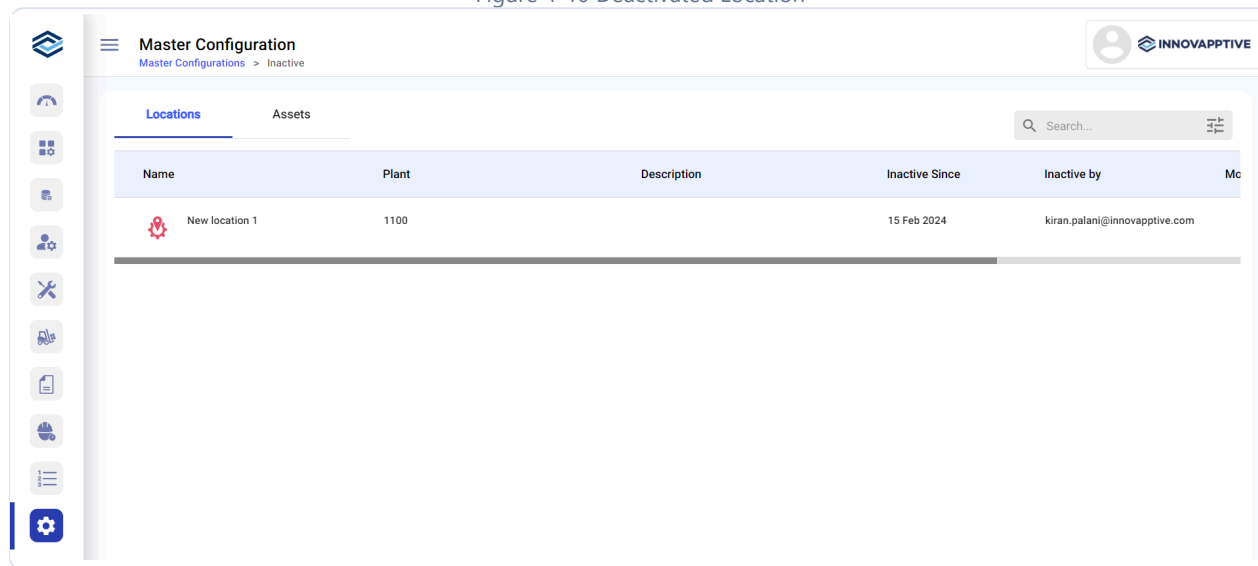


icon against the location that you want to deactivate and select **Deactivate**.

2. In the **Confirmation Deactivation** pop-up, click **Yes**.

The location is deactivated. You can see the deactivated location in the **Inactive** module under the **Locations** tab.

Figure 4-10 Deactivated Location



Master Configuration					
Master Configurations > Inactive					
Locations		Assets			
Name	Plant	Description	Inactive Since	Inactive by	Mc
 New location 1	1100		15 Feb 2024	kiran.palani@innovapptive.com	



Note:

- If the location has any child locations or assets, you cannot deactivate it until the child locations or assets are deactivated. Click the **Show** button on the pop-up to see the hierarchy.
- If the location is used in the rounds, issues, or actions, it is removed from the rounds, issues, or actions where it is currently used.

4.5. Create Assets

Assets refer to machines, equipment, or infrastructure that require maintenance and monitoring. By creating assets in the system, you can assign maintenance tasks, track maintenance history, and monitor performance. Each asset can be linked to a specific plant and location, ensuring organized asset management.



Note:

If your tenant synchronizes locations and assets from SAP or Maximo, follow the data-ownership rules agreed for your implementation when you create records here. See [Establish a Connection with Maximo for Master Data Integration \(on page 31\)](#).

To create or add an asset:

1. Click the **Master Configuration** module on the left-side pane and click **Assets**.

Or

Click **Sync from SAP** to manually sync and export already created data from SAP server.

Or

The data synchronization can automatically occurs based on the configured schedule.

**Note:**

There should not be any existing master data to sync the data.

Figure 4-11 Assets Screen

Name	Description	Model	Parent	Actions
High pressure water pump 1233443	High-pressure water pumps are used in a variety of applications where a high-pressure flow of water is needed	GE	Turbine Room	...
Dumping System 10117654		N/A	Engine Cat 3512E	...
Transmission 10117652	N/A	Ford	Mine Site 1	...
Hydraulic Braking System 10117651	N/A	Kirloskar	Mine Site 1	...
High voltage Switchgear 2344221		Orecco Electric	HVAC system	...
Engine Cat 3512E 10117650	N/A	GE	Mine Site 1	...
HVAC system 3224567		GE	Turbine Room	...
Air Compressor 143356		Mettler Toledo	Turbine Room	...
Feed Pump PH-P-1	N/A	GE	Pump House	...
Blade 3 T-B-3	vendor - Axis Tech	GM	Turbine	...

2. Click **Create New** and select **Add Manually**.

Figure 4-12 Add Asset Details

Create Asset

Name

Asset Id

Model

Description

Parent Type ☒ Location ☐ Asset

Parent

Cancel Create

3. In the **Create Asset** window, enter asset details like **Name**, **Asset Id**, **Model**, **Description**, **Parent Type**, and **Parent**.

**Note:**

If the Asset ID already exists, an error message "Asset ID <> already exists" is displayed. Use another ID.

4. Click **Create**.

The new asset is created successfully.

**Note:**

- To download the asset template, in the **Assets** screen, click the More icon (next to **Create New**) and select **Download Template**.
- To modify asset details, in the **Assets** screen, click the **More** icon next to the asset and select **Edit**.
- To delete an asset, in the **Assets** screen, click the **More** icon next to the asset and select **Delete**.
- To deactivate an asset, in the **Assets** screen, click the **More** icon next to the asset and select **Deactivate**. You can see the deactivated asset in the **Inactive** module under the **Assets** tab.

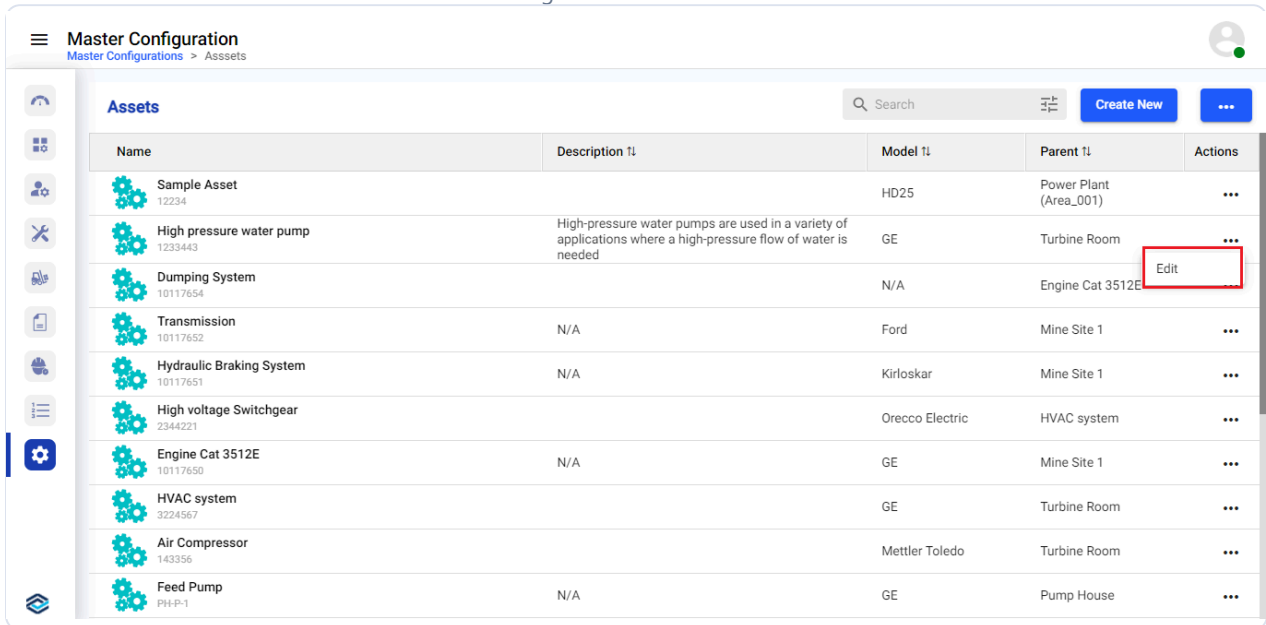
4.5.1. Modify Assets

Update the details of an existing asset.

To modify asset master data:

1. In the **Assets** screen, click the More  icon against the asset that you want to edit and select **Edit**.

Figure 4-13 Select Edit



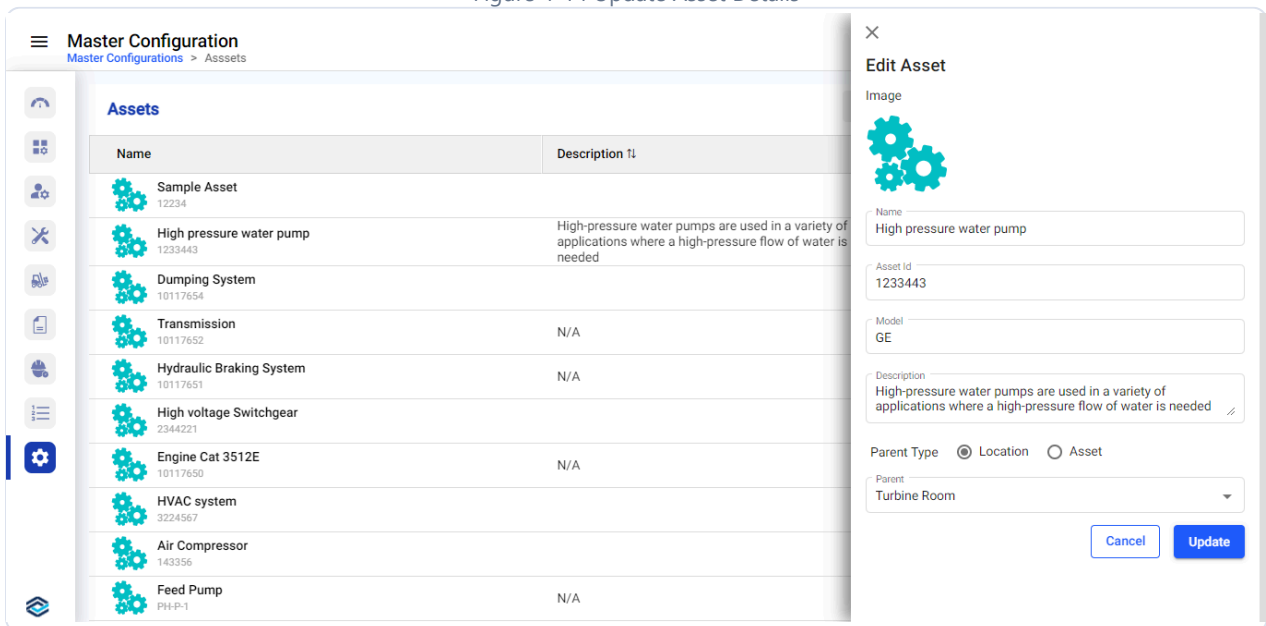
Name	Description ⓘ	Model ⓘ	Parent ⓘ	Actions
Sample Asset 12234		HD25	Power Plant (Area_001)	...
High pressure water pump 1233443	High-pressure water pumps are used in a variety of applications where a high-pressure flow of water is needed	GE	Turbine Room	... Edit
Dumping System 10117654		N/A	Engine Cat 3512E	...
Transmission 10117652	N/A	Ford	Mine Site 1	...
Hydraulic Braking System 10117651	N/A	Kirloskar	Mine Site 1	...
High voltage Switchgear 2344221		Orecco Electric	HVAC system	...
Engine Cat 3512E 10117650	N/A	GE	Mine Site 1	...
HVAC system 3224567		GE	Turbine Room	...
Air Compressor 143356		Mettler Toledo	Turbine Room	...
Feed Pump PH-P-1	N/A	GE	Pump House	...

**Note:**

You can just select the asset, the asset details are displayed on the right-side window, click **Edit** to update the details.

2. In the **Edit Asset** window, update the details as required and click **Update**.

Figure 4-14 Update Asset Details



Name	Description ⓘ
Sample Asset 12234	
High pressure water pump 1233443	High-pressure water pumps are used in a variety of applications where a high-pressure flow of water is needed
Dumping System 10117654	
Transmission 10117652	N/A
Hydraulic Braking System 10117651	N/A
High voltage Switchgear 2344221	
Engine Cat 3512E 10117650	N/A
HVAC system 3224567	
Air Compressor 143356	
Feed Pump PH-P-1	N/A

Edit Asset
Image

Name
High pressure water pump
Asset Id
1233443
Model
GE
Description
High-pressure water pumps are used in a variety of applications where a high-pressure flow of water is needed
Parent Type
☒ Location ☐ Asset
Parent
Turbine Room
Cancel **Update**

Asset details updated successfully.

4.5.2. Deactivate Assets

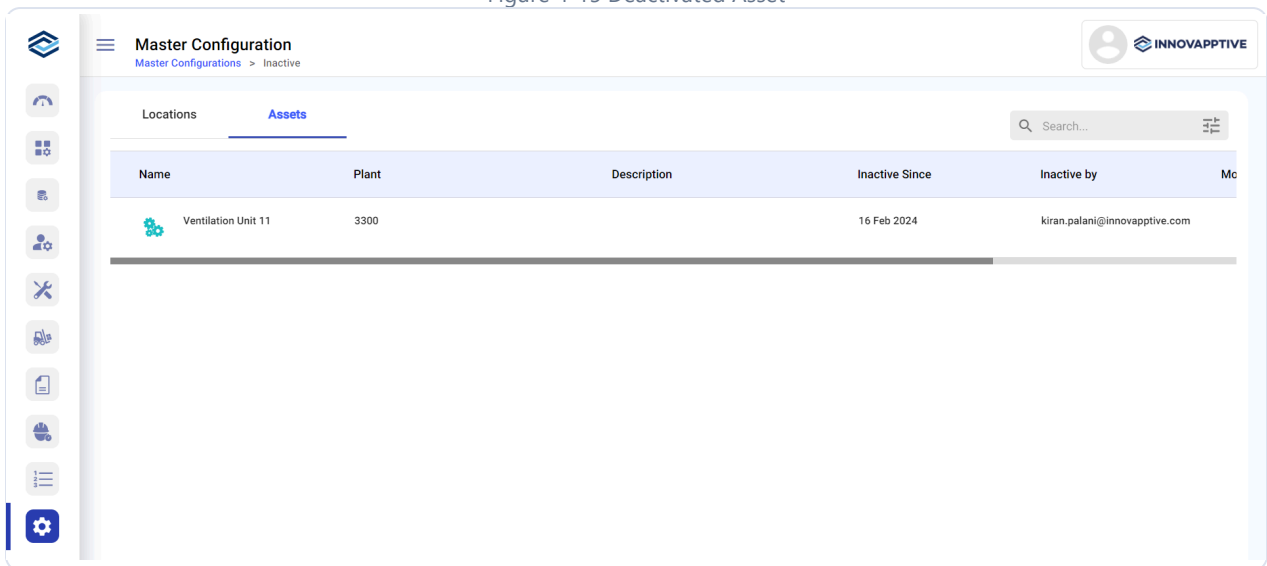
Deactivate an asset so that it is no longer available for new rounds.

To deactivate asset master data:

1. In the **Assets** screen, click the More  icon against the asset that you want to deactivate and select **Deactivate**.
2. In the **Confirmation Deactivation** pop-up, click **Yes**.

The asset is deactivated. You can see the deactivated asset in the **Inactive** module under the **Assets** tab.

Figure 4-15 Deactivated Asset



Name	Plant	Description	Inactive Since	Inactive by	Mo
 Ventilation Unit 11	3300		16 Feb 2024	kiran.palani@innovapptive.com	



Note:

- If the asset has any child assets, you cannot deactivate it until the child assets are deactivated. Click the **Show** button on the pop-up to see the hierarchy.
- If the asset is used in the rounds, issues, or actions, it is removed from the rounds, issues, or actions where it is currently used.

4.6. Create Unit of Measurement

Units of Measurement (UOM) define the quantities used for tracking materials, components, and measurements. For example, units like liters, kilograms, meters, or hours help standardize data entry and ensure consistency.

To add a unit of measurement:

1. Click the **Master Configuration** module on the left side pane and click **Unit of Measurement**.

Figure 4-16 UOM Screen

Unit Type	No. of Units	UOM	Symbol	Status	Actions
Length	7	Mile	mi	☒	...
		Feet	Ft	☒	...
		Decameter Default	dam	☒	...
		Meter	m	☒	...
		Kilometer	km	☒	...
		Milimeter	mm	☒	...
		Centimeter	cm	☒	...
Area	5	AAA Default	*	☒	...
		UUU	((	☐	...
		Kilometer Sq.	km*2	☒	...

2. Click **Create New** and select **Add Manually**.
3. In the **Create Unit** window, select the measurement in the **Unit of Measurement** drop-down for which you want to determine units.

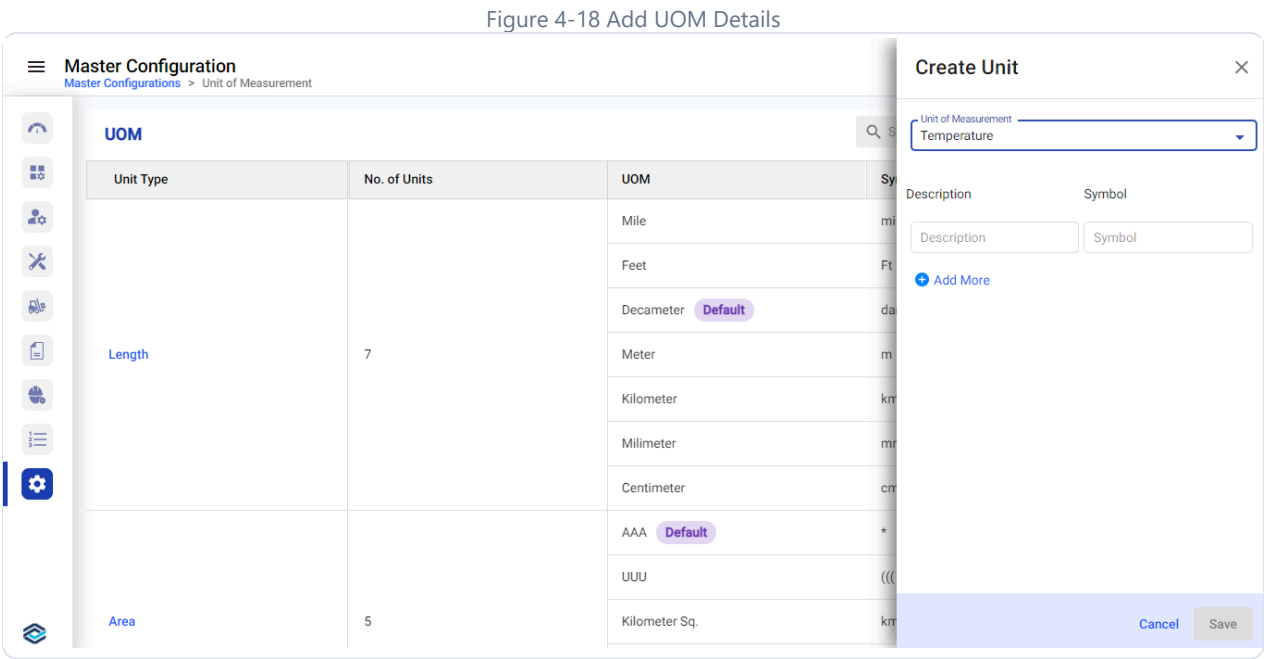
Figure 4-17 Create UOM

Unit Type	No. of Units	UOM	Symbol
Length	7	Mile	mi
		Feet	Ft
		Decameter Default	da
		Meter	m
		Kilometer	km
		Milimeter	mm
		Centimeter	cm
Area	5	AAA Default	*
		UUU	((
		Kilometer Sq.	km

**Note:**

If the measurement that you need is not present in the list, click **+Add New** and enter **Unit Type**.

4. Enter **Description**, and **Symbol**.



 **Note:**
Click **Add More** to add more descriptions and symbols.

5. Click **Save**.

The unit of measurement is created successfully.

-  **Note:**
- To download the UOM template, in the UOM screen, click the **More** icon (next to **Create New**) and select **Download Template**.
 - To edit Units of Measurement details, in the **UOM** screen, click the **More** icon next to the UOM and select **Edit**.
 - To delete Units of Measurement, in the **UOM** screen, click the **More** icon next to the UOM and select **Delete**.
 - To set a Unit of Measurement as default, in the **UOM** screen, click the **More** icon next to the UOM and select **Set as Default**.

4.6.1. Modify Units of Measurement

Update an existing unit of measurement and its units.

To modify unit of measurement:

1. In the **Unit of Measurement** screen, click the More  icon against the UOM that you want to edit and select **Edit**.

Figure 4-19 Select Edit

Master Configuration

Master Configurations > Unit of Measurement

UOM

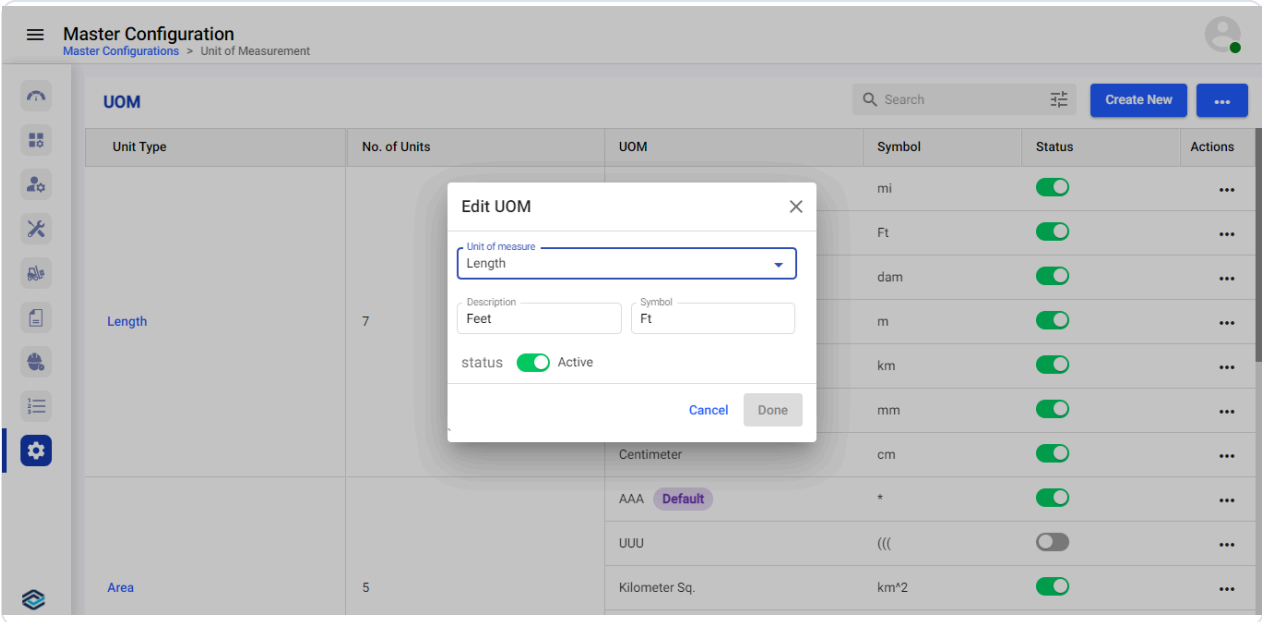
Search

Create New

Unit Type	No. of Units	UOM	Symbol	Status	Actions
Length	7	Mile	mi	☒	...
		Feet	Ft	☒	...
		Decameter Default	dcm	☒	Set as Default Edit
		Meter	m	☒	...
		Kilometer	km	☒	...
		Milimeter	mm	☒	...
		Centimeter	cm	☒	...
Area	5	AAA Default	*	☒	...
		UUU	((	☐	...
		Kilometer Sq.	km^2	☒	...

2. In the **Edit UOM** window, update the details as required and click **Done**.

Figure 4-20 Update UOM Details

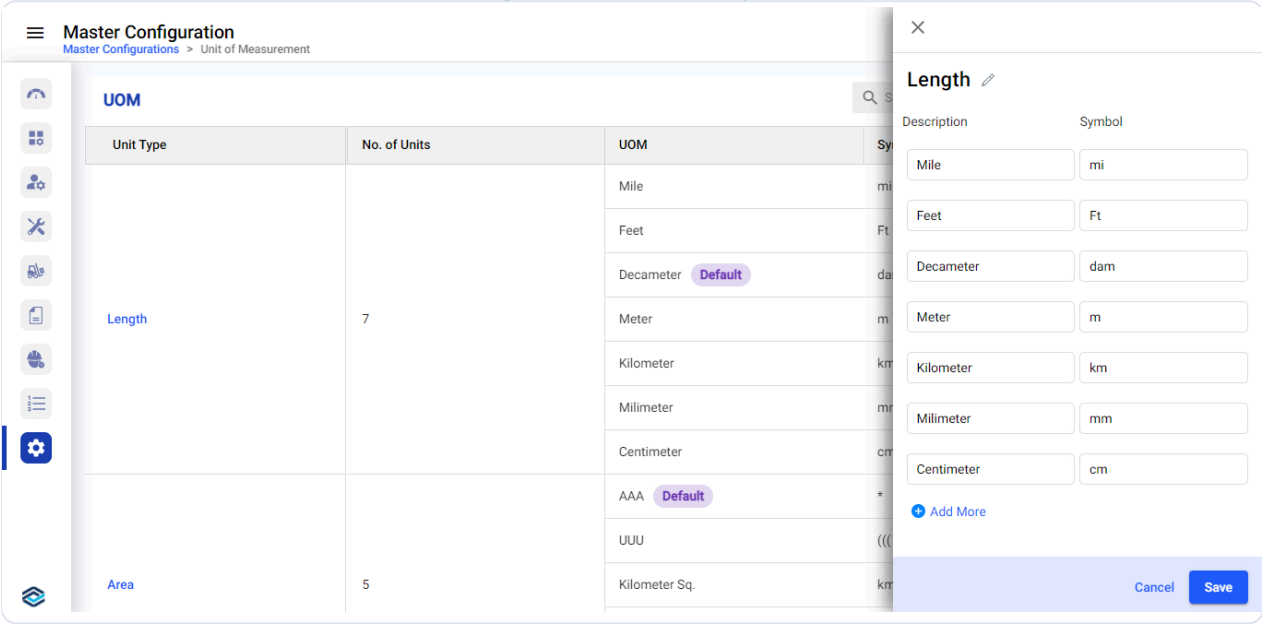


Unit of measurement details are updated successfully.

 **Note:**

To update **Unit Type**, click on the unit type, update the required details on the right-side window, and click **Save**.

Figure 4-21 Update Unit Type



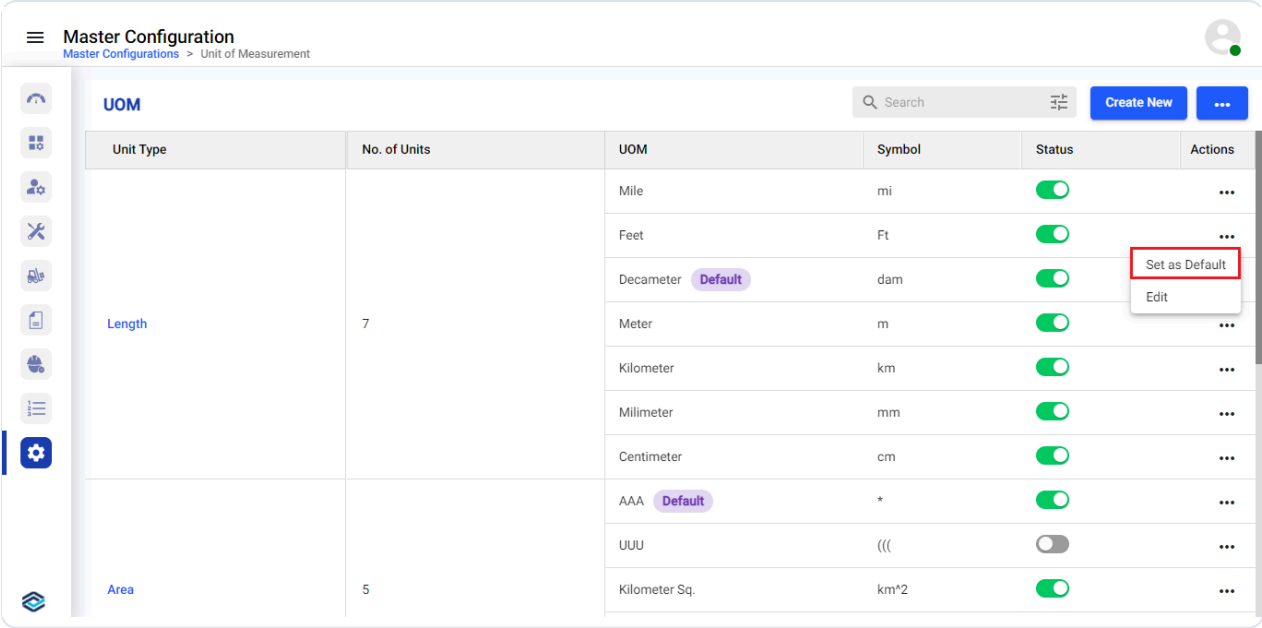
4.6.2. Set the Default Unit of Measurement

Set the unit of measurement that is selected by default.

To set a unit of measurement as default:

In the **UOM** screen, click the More  icon against the UOM that you want to set as default and select **Set as Default**.

Figure 4-22 Set UOM as Default



The selected UOM is set as default successfully.

4.6.3. Activate and Deactivate Unit of Measurement

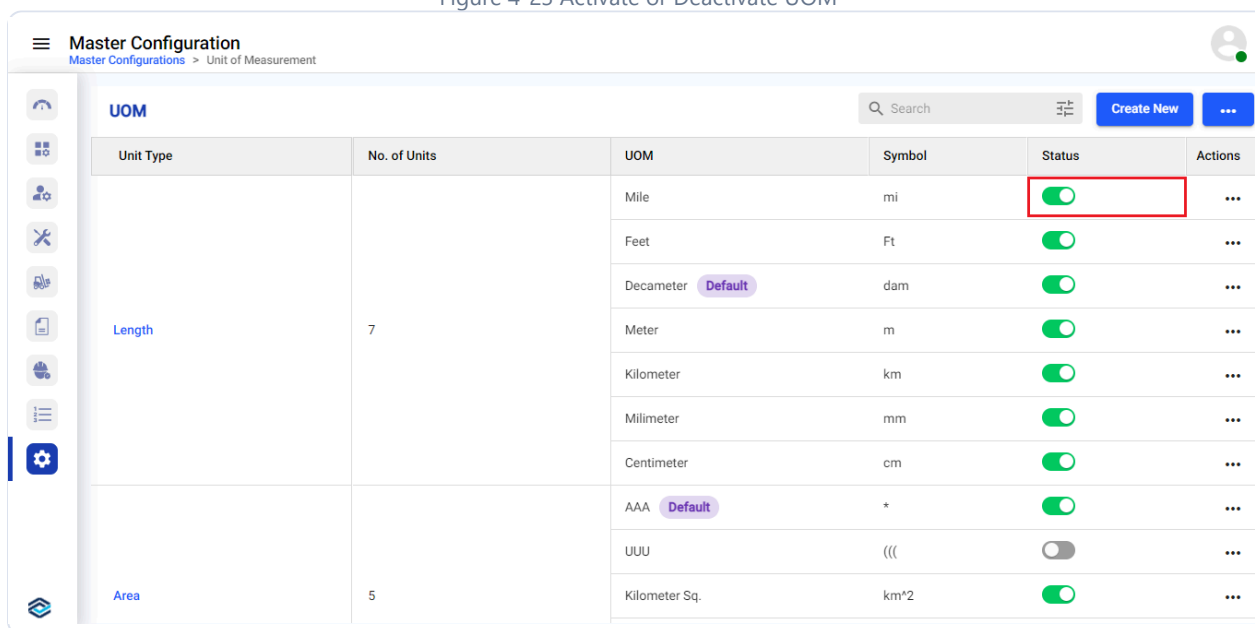
To activate/deactivate unit of measurement:

1. Enable the **Status** toggle to active for supervisors and form authors to include the unit of measurement while creating rounds and forms.

A message UOM status changed successfully appears.

2. Disable the **Status** toggle to deactivate the unit of measurement.

Figure 4-23 Activate or Deactivate UOM



Unit Type	No. of Units	UOM	Symbol	Status	Actions
Length	7	Mile	mi	☒	...
		Feet	Ft	☒	...
		Decameter Default	dam	☒	...
		Meter	m	☒	...
		Kilometer	km	☒	...
		Millimeter	mm	☒	...
		Centimeter	cm	☒	...
Area	5	AAA Default	*	☒	...
		UUU	((	☐	...
		Kilometer Sq.	km*2	☒	...

4.7. Create Global Response Set

Global Response Sets allow you to create predefined answer choices for forms, inspections, and work order documentation. Instead of manually entering responses, technicians and supervisors can select from standardized options, improving data accuracy and consistency in reporting and compliance checks. For example, if the Response Set is created for Country, then the responses are all the countries that can be selected from the drop-down.

To create or add global response set:

1. Click the **Master Configuration** module on the left-side pane and click **Global Response Set**.

Figure 4-24 Global Response Set Screen

Title	#Response	Created By	Last Modified	Actions
Asset Location	2	Sunitha Veeramachaneni	Yesterday	...
Asset	2	Sunitha Veeramachaneni	Yesterday	...
Country	243	Srinivas Mullapudi	3 days ago	...
City	201	Srinivas Mullapudi	Yesterday	...
State	9	Srinivas Mullapudi	Yesterday	...

2. Click **Create New** and select **Add Manually**.

Figure 4-25 Add Global Set Response Details

Create Responses

Untitled Response Set
Untitled description

Response

Response Title

[+ Add Response](#)

[Cancel](#) [create](#)

3. In the **Create Responses** window, enter the title for the response set and add response titles. Click **Add Response** to add more response sets.

**Note:**

You can sort Global Response values in both ascending order ("A to Z") and descending order ("Z to A").

4. Click **Apply**.

The response set is created successfully.

**Note:**

- To download the global response set template, in the **Global Response Set** screen, tap the **More** icon (next to **Create New**) and select **Download Template**.
- To edit Global Response Set, in the **Global Response Set** screen, click **More** next to the item and select **Edit**.
- To delete a Global Response Set, in the **Global Response Set** screen, click **More** next to the item and select **Delete**.

4.7.1. Modify Global Response Sets

Update the responses of an existing global response set.

To edit global response set master data:

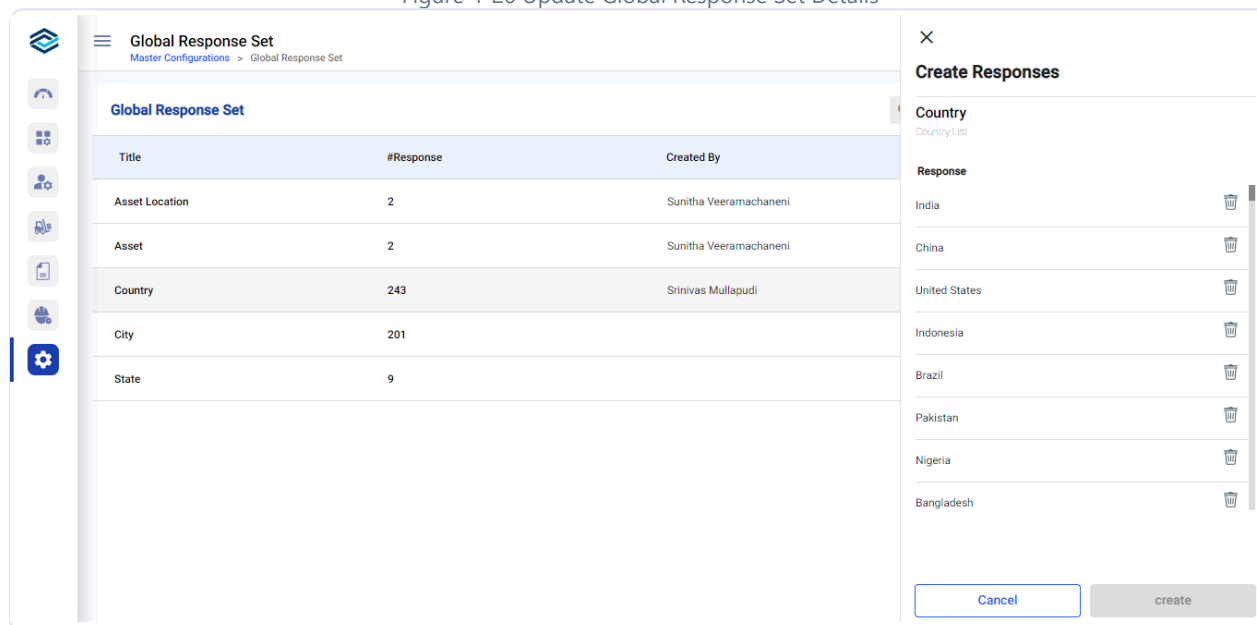
1. In the **Global Response Set** screen, click the More  icon against the response type that you want to edit and select **Edit**.

**Note:**

You can just select the response type, the response type details are displayed on the right-side window, click **Edit** to update the details.

2. In the **Edit Responses** window, update the details as required and click **Update**.

Figure 4-26 Update Global Response Set Details



The screenshot shows the 'Global Response Set' interface. On the left, a sidebar contains navigation icons. The main area displays a table with the following data:

Title	#Response	Created By
Asset Location	2	Sunitha Veeramachaneni
Asset	2	Sunitha Veeramachaneni
Country	243	Srinivas Mullapudi
City	201	
State	9	

On the right, a 'Create Responses' panel is open, showing a 'Country' list with the following entries and delete icons:

- India
- China
- United States
- Indonesia
- Brazil
- Pakistan
- Nigeria
- Bangladesh

At the bottom of the panel are 'Cancel' and 'create' buttons.

Response set details are updated successfully.

**Note:**

When you update global responses, the responses in all associated forms are automatically updated.

4.8. Bulk Upload Master Data

Bulk uploading allows you to efficiently add large sets of master data, such as **locations**, **assets**, **unit of measurement**, and **global response set** using an Excel template. Instead of manually entering data one by one, you can fill out the provided template and upload it in a few simple steps.

This process ensures accuracy, consistency, and faster data entry, making it easier to manage large datasets across the system. By following the bulk upload process, you can quickly set up and update master data, streamlining operations and reducing manual effort.

**Note:**

The name of the excel sheet must be *Bulk Upload - Name Template.xlsx*.

Location Master Data

To bulk upload locations:

1. Expand the **Master Configuration** module on the left side pane and click **Locations**.
2. Click the **More** icon next to the **Create New** button and click **Download Template**.

An excel sheet that contains sample location information is downloaded.
3. Open the excel sheet and delete sample data.
4. Add location data in the sheet.
5. Click **Create New** and select **Upload Excel**.
6. Select a file from the folder and click **Open** to upload the excel sheet.

The file is uploaded successfully. You can open it and update the details as required.

Asset Master Data

The asset template file is named *Bulk Upload - Asset Template.xlsx*.

To bulk upload assets:

1. Expand the **Master Configuration** module on the left side pane and click **Assets**.
2. Click the **More** icon next to the **Create New** button and click **Download Template**.

An excel sheet that contains sample asset information is downloaded.
3. Open the excel sheet and delete sample data.
4. Add asset data in the sheet.
5. Click **Create New** and select **Upload Excel**.
6. Select a file from the folder and click **Open** to upload the excel sheet.

The file is uploaded successfully. You can open it and update the details as required.

UOM Master Data

The UOM template file is named *Bulk Upload - UOM Template.xlsx*. Each row holds a unit of measurement, its unit of measurement type, and its symbol.

To bulk upload unit of measurement:

1. Expand the **Master Configuration** module on the left side pane and click **Unit of Measurement**.
2. Click the **More** icon next to the **Create New** button and click **Download Template**.

An excel sheet that contains sample UOM information is downloaded.

3. Open the excel sheet and delete sample data.
4. Add UOM data in the sheet.
5. Click **Create New** and select **Upload Excel**.

6. Select a file from the folder and click **Open** to upload the excel sheet.

The file is uploaded successfully. You can open it and update the details as required.

Global Response Set Master Data

The global response set template file is named *Bulk Upload - Global Response Set Template.xlsx*.

To bulk upload global response set master data:

1. Expand the **Master Configuration** module on the left side pane and click **Global Response Set**.
2. Click the **More** icon next to the **Create New** button and click **Download Template**.

An excel sheet that contains sample global response set information is downloaded.

3. Open the excel sheet and delete sample data.
4. Add global response set data in the sheet.
5. Click **Create New** and select **Upload Excel**.

6. Select a file from the folder and click **Open** to upload the excel sheet.

The file is uploaded successfully. You can open it and update the details as required.

5. Onboard Users and Assign Roles

Use the **User Management** module to create roles and so on, create users, and assign relevant roles to the users.

Once the Innovapptive Admin create the admin role and hand over it to you, as an onboarded tenant/super admin, you can create roles required for the mRounds application such as Manager, Supervisor, Developer, and so on, create users and assign the relevant roles and permissions to the modules available in the application.

In this module, you can,

- Search users using the **Search** bar.
- Create users using the **Add User** button.
- Sort the values such as User, Role, Email, and Created AT using the Sort  icon next to the columns.
- Group the roles using the More  icon > **Group Rows by this Column** option next to the Role column.
- Edit the users using the More  icon > **Edit** option.
- Deactivate users using the More  icon > **Deactivate** option or you can deactivate all the users at a time by selecting the check box and then selecting the More  icon > **Deactivate** option on the right.
- You can see the active users by accessing the **Active Users** sub-module and inactive users by accessing the **Inactive Users** sub-module on the left-side pane.



Note:

You cannot edit or deactivate the user if the role is Super Admin.

5.1. Create Positions

Create positions like manager, supervisor and so on and assign users to them.

To create a position:

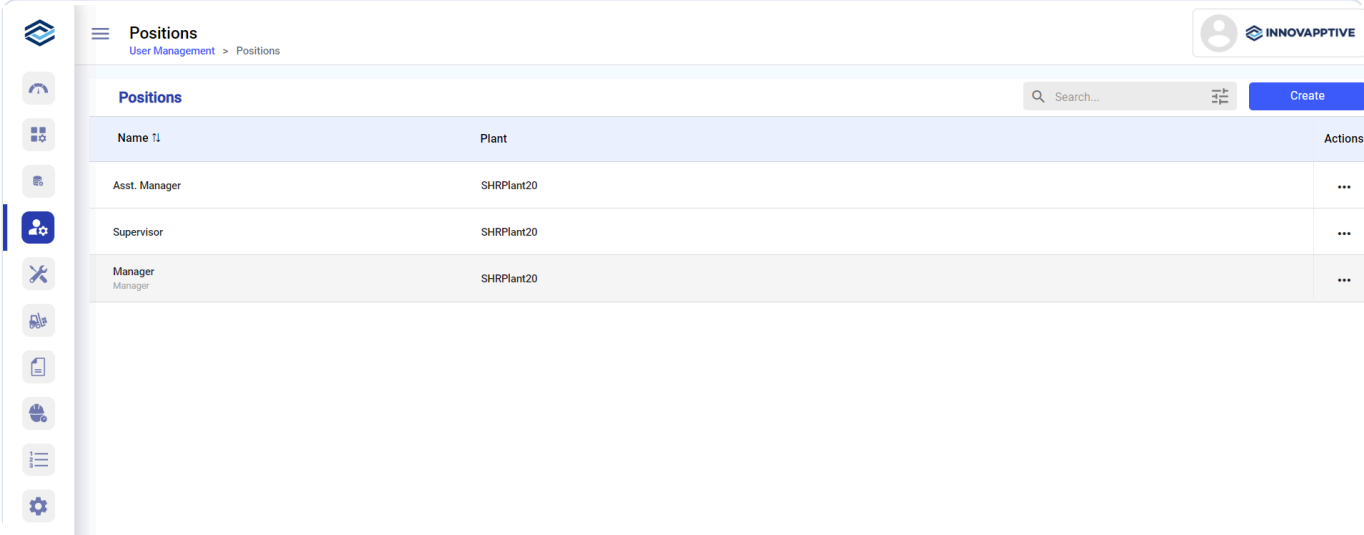
1. Expand the **User Management** module and select **Positions** on the left-side menu.



Note:

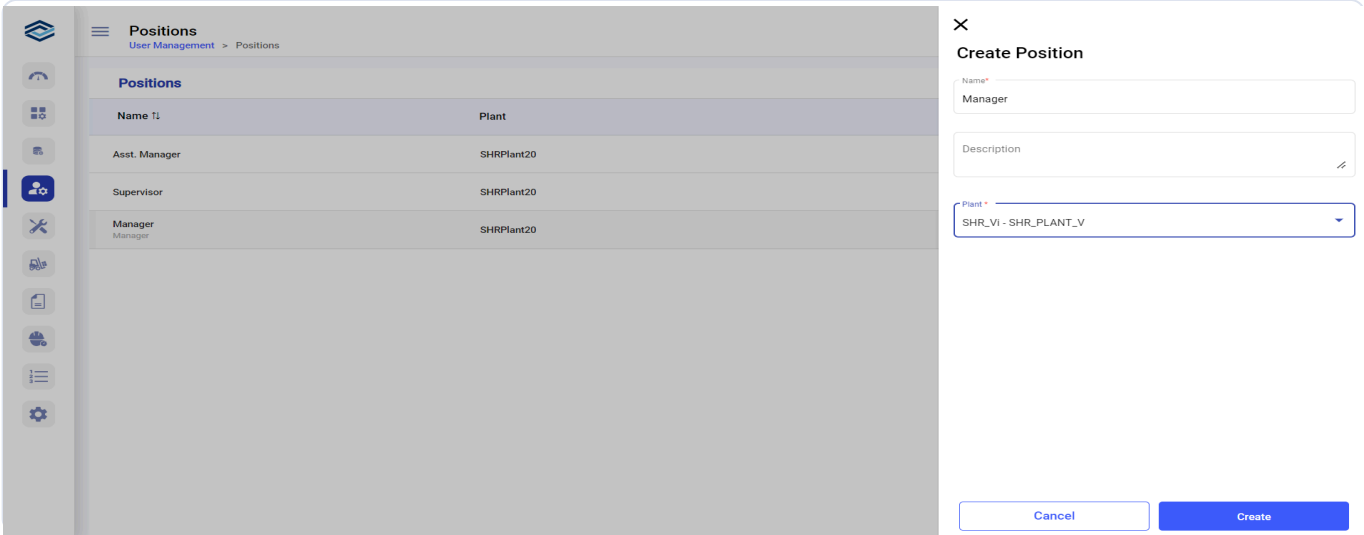
To see the Create Positions module, click the Hamburger  menu on the top left and then click the Expand  icon next to User Management.

Figure 5-1 Positions Screen



2. In the **Positions** screen, click the **Create** button on the top right.

Figure 5-2 Create Position



3. In the **Create Position** window, do the following:

- a. Enter the position name in the **Name** field.
- b. Enter the description of the position in the **Description** field.
- c. Select the plant from the **Plant** drop-down.
- d. Click the **Create** button.

The position is created and it is displayed in the **Positions** screen.

In this screen, you can,

- Search the positions using the Search bar.
- Filter the positions based on Plant.
- Edit the position using the **More** icon > **Edit** next to the position.
- Delete the position using the **More** icon > **Delete** next to the position.

5.2. Create Roles and Assign Permissions

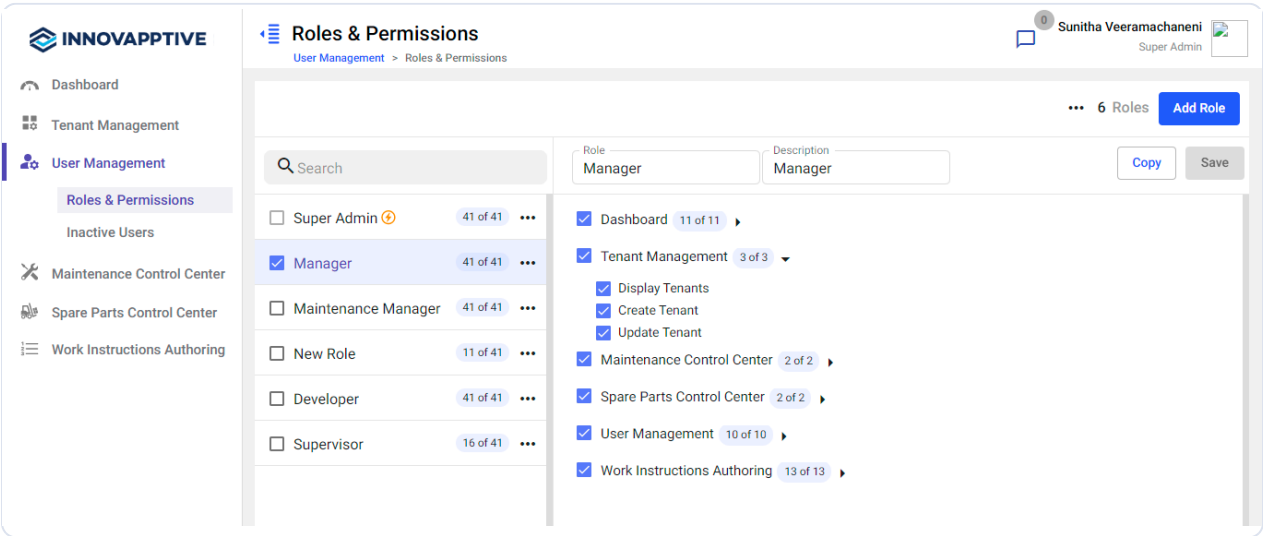
Roles and Permissions define **who can access what** within the system, ensuring secure and efficient workflow management. By assigning roles such as **Super Admin**, **Admin**, **Supervisor**, **Manager**, **Operator**, and **Technician**, you can control user access based on job responsibilities.

Each role is granted specific permissions, allowing access to relevant modules and functions. For example, a supervisor may have permissions to create and assign rounds, while an operator may only have access to view and execute assigned tasks. Configuring roles and permissions ensures that users have the right level of access, enhancing security and maintaining an organized workflow.

To create a role and assign permissions:

1. Expand the **User Management** module and select **Roles and Permissions** on the left-side menu.

Figure 5-3 Roles and Permissions Screen



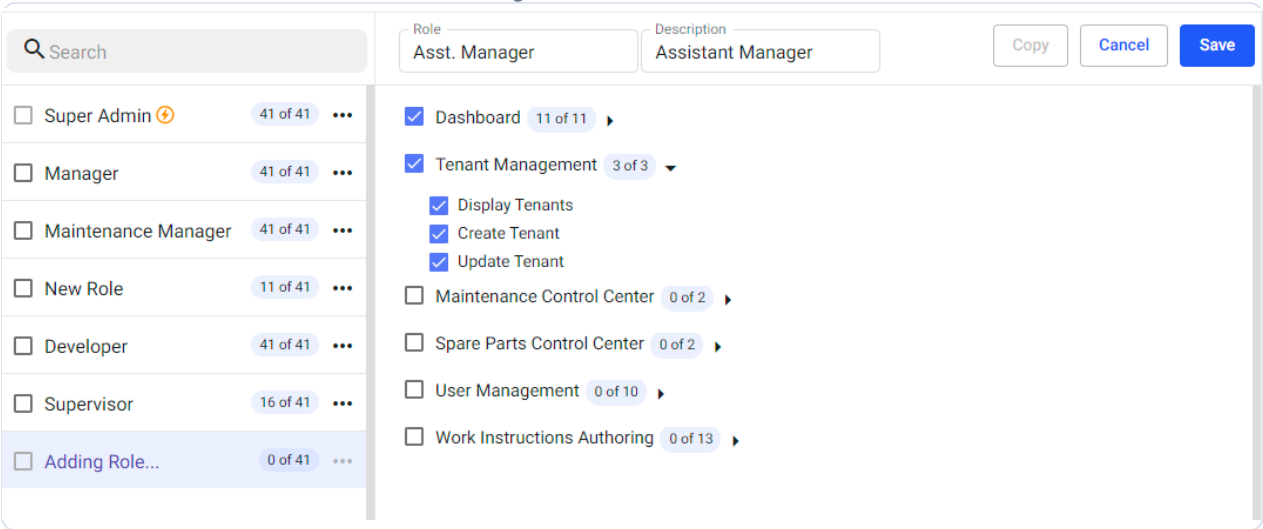
2. Click the **Add Role** button on the top right.
3. Do the following in the right section:

a. Enter the role name in the **Role** field.

b. Enter the description of the role in the **Description** field.

c. Select the modules that are required for the role.
Expand the down arrow icon to select the sub-modules.

Figure 5-4 Add Role Details



4. Click the **Save** button.

The role is created and you can see it on the left section.

In this sub module, you can,

- Search the roles using the **Search** bar on the left-side section.
- Copy the role using the More  icon > **Copy** option to create a new role from the existing role on the left-side section.

**Note:**

You can even select the **Copy** option on the right-side section to copy.

- Delete the role using the More  icon > **Delete** option on the left-side section or you can delete all the roles at a time by selecting the check boxes and then selecting the More  icon > **Delete** option on the right.

**Note:**

- You cannot edit or delete the Super Admin role. You can only copy.
- You cannot delete the role which is already assigned to the user.

- Add a role using the **Add Role** button on the right side.
- Edit the role details or permissions on the right side.

5.3. Create Users and Assign Roles

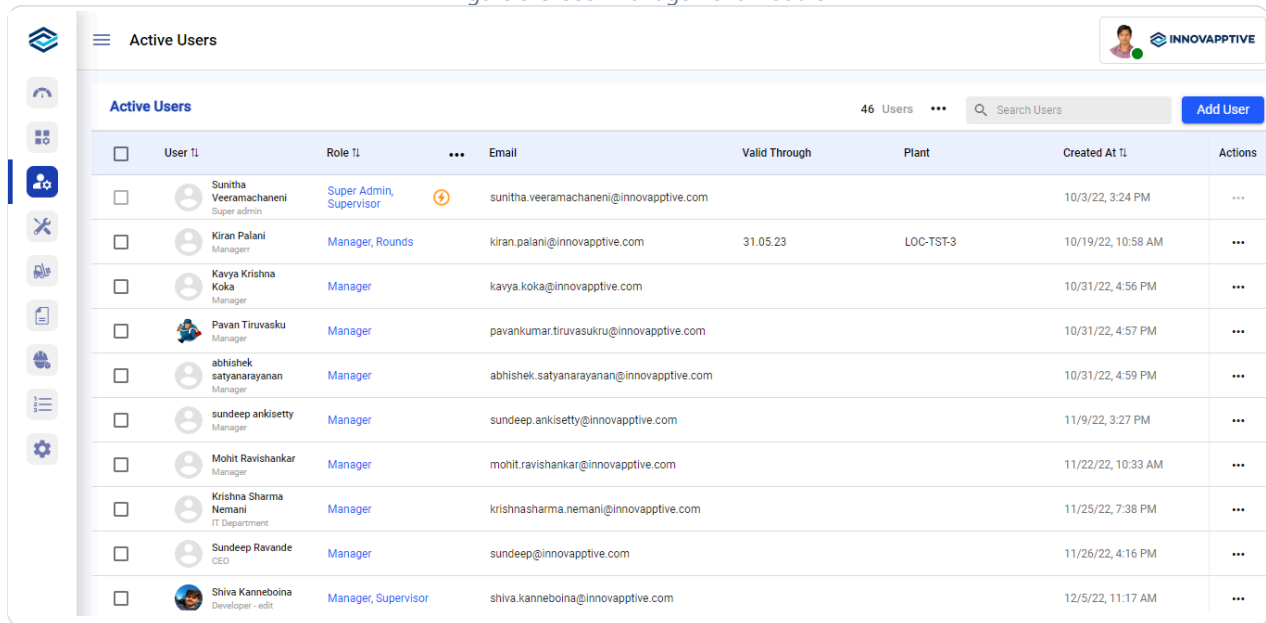
Creating users allows you to add personnel to the system and assign them appropriate roles and permissions. When adding a new user, you define their role (such as Supervisor, Technician, or Manager) and configure their access permissions based on the modules they need.

By setting up users correctly, you ensure that each team member has the right level of access to perform their tasks efficiently while maintaining system security and data integrity.

To create a user and assign a role:

1. Expand the **User Management** module and select **Active Users** on the left side menu.

Figure 5-5 User Management Module



☐	User TL	Role TL	...	Email	Valid Through	Plant	Created At TL	Actions
☐	Sunitha Veeramachaneni Super admin	Super Admin, Supervisor		sunitha.veeramachaneni@innovapptive.com			10/3/22, 3:24 PM	...
☐	Kiran Palani Manager	Manager, Rounds		kiran.palani@innovapptive.com	31.05.23	LOC-TST-3	10/19/22, 10:58 AM	...
☐	Kavya Krishna Koka Manager	Manager		kavya.koka@innovapptive.com			10/31/22, 4:56 PM	...
☐	Pavan Tiruvasku Manager	Manager		pavankumar.tiruvasku@innovapptive.com			10/31/22, 4:57 PM	...
☐	abhishek satyanarayanan Manager	Manager		abhishek.satyanarayanan@innovapptive.com			10/31/22, 4:59 PM	...
☐	sundeep ankisetty Manager	Manager		sundeeep.ankisetty@innovapptive.com			11/9/22, 3:27 PM	...
☐	Mohit Ravishankar Manager	Manager		mohit.ravishankar@innovapptive.com			11/22/22, 10:33 AM	...
☐	Krishna Sharma Nemani IT Department	Manager		krishnasharma.nemani@innovapptive.com			11/25/22, 7:38 PM	...
☐	Sundeeep Ravande CEO	Manager		sundeeep@innovapptive.com			11/26/22, 4:16 PM	...
☐	Shiva Kanneboina Developer - edit	Manager, Supervisor		shiva.kanneboina@innovapptive.com			12/5/22, 11:17 AM	...

2. In the **Active Users** screen, click the **Add User** button on top right.

3. In the **Add User** window, do the following:

- Add the photo of the user.
- Enter the first name of the user in the **First Name** field.
- Enter the last name of the user in the **Last Name** field.
- Enter the title of the user in the **Title** field.
- Enter the mail id of the user in the **Email** field.



Note:

You can maintain two separate email addresses to access both the Web and Mobile applications.

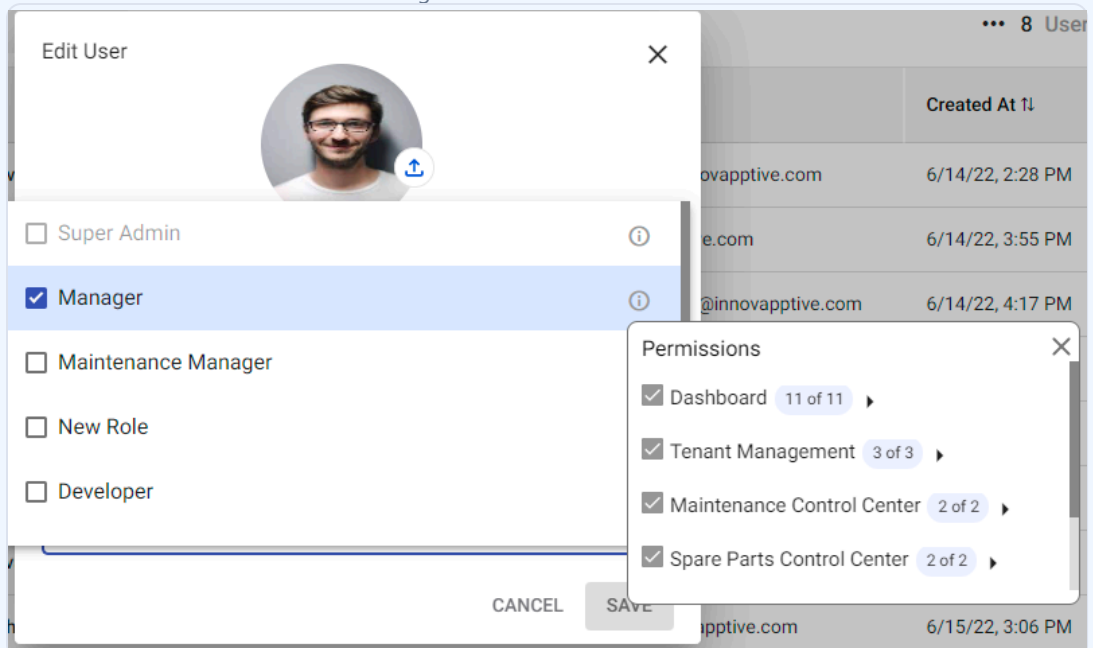
- Select the relevant role from the **Roles** drop-down.



Note:

You can click the More Info icon to check the permissions assigned to the particular role.

Figure 5-6 Check Permissions



- Select the user group from the **User Group** drop-down.
- Select the dates from the **Valid From** and **Valid Through** calendars.
- Select the plants from the **Plant** drop-down.



Note:

You can select more than one plant for a user. This enables the user to view rounds assigned to the user from multiple plants.

- Select the unit from the **Unit** drop-down.
- Select the position from the **Position** drop-down.
- Click the **Add User** button.

5.4. Create User Groups and Add Users

User Groups allow you to organize users with similar roles and responsibilities into a single group, making it easier to manage access and permissions. Instead of assigning permissions individually, you can assign them at the group level, ensuring consistency and reducing administrative effort.

For example, all Technicians in a plant can be part of a *Technician Group* with predefined access to Work Orders and Issue Reporting, while Supervisors in a *Supervisor Group* may have permissions to assign and monitor work orders.

By using User Groups, you can streamline user management, ensure role-based access control, and improve operational efficiency.

To create a user group and assign it to user:

1. Expand the **User Management** module and select **User Groups** on the left-side pane.

Figure 5-8 User Groups Screen

User Groups

User Management > User Groups

18 User Groups

Search...

2000 User Test2

Test User group 2015

Test User Group 11112

Test User Group1

1000 Plant User Group0

2000 Plant user group - 14

2000-plant User Group1

Test User Group 169

Test User group 201

Modify User List

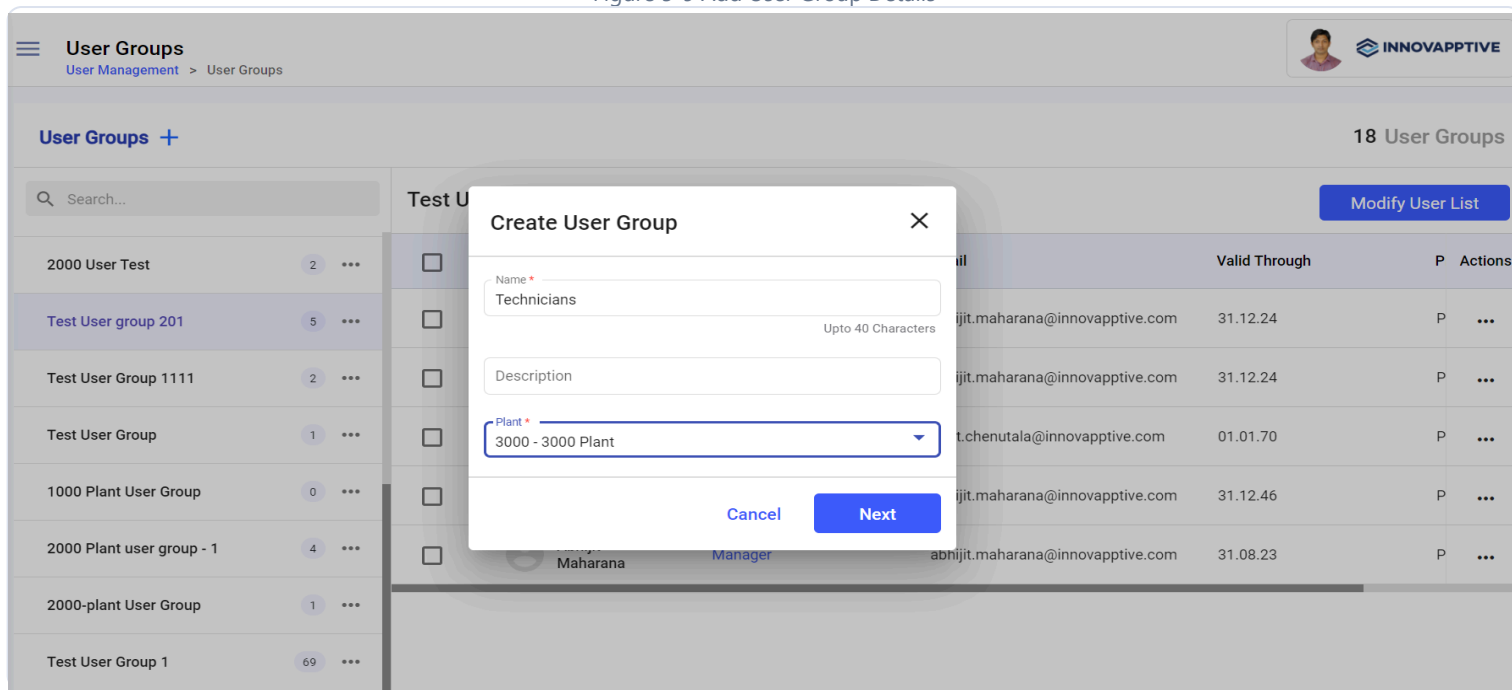
☐	User ID	Role ID	...	Email	Valid Through	P	Actions
☐	 Abhijit Maharana	Manager		abhijit.maharana@innovapptive.com	31.12.24	P	...
☐	 Abhijit Maharana	Manager		abhijit.maharana@innovapptive.com	31.12.24	P	...
☐	 Rohit Chenutala	Manager		rohit.chenutala@innovapptive.com	01.01.70	P	...
☐	 Abhijit Maharana	Manager		abhijit.maharana@innovapptive.com	31.12.46	P	...
☐	 Abhijit Maharana	Manager		abhijit.maharana@innovapptive.com	31.08.23	P	...

2. In the **User Groups** screen, click the **Add** icon next to the User Groups.
3. Select the **Position Based** or **User Based** option.

4. In the **Create User Group** window, fill in the following details:

- Enter the user group name in the **Name** field.
- Enter the description of the user group in the **Description** field.
- Select the plant from the **Plant** drop-down.
Expand the down arrow icon to select the sub-modules.
- Select the unit from the **Unit** drop-down.
- Click **Next**.

Figure 5-9 Add User Group Details



5. In the **Select Users** window, select relevant users and click **Create**.

The user group is created and you can see it on the left section.

In this screen, you can,

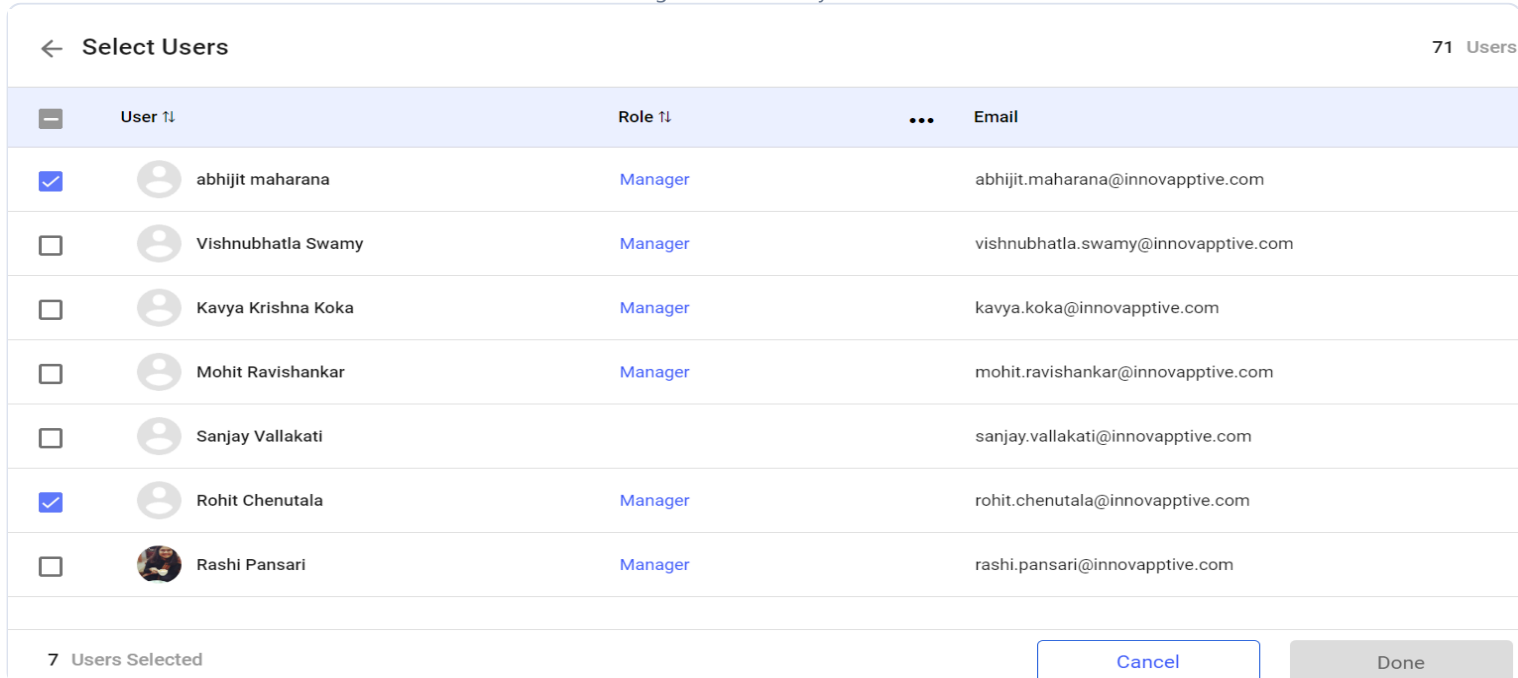
- Copy the user group using the More  icon > **Copy** option next to the user group on the left-side section.
- Delete the user group using the More  icon > **Delete** option next to the user group on the left-side section.
- Edit the user group using the More  icon > **Edit** option next to the user group on the left-side section.

Modify User List

To modify users list:

1. In the **User Groups** screen, select a user group from the left section.
The list of users associated with the selected user group is displayed on right section.
2. Click **Modify User List** on the right side.
3. In the **Select Users** window, deselect the checkboxes and click **Done**.

Figure 5-10 Modify Users



☐	User	Role	...	Email
☒	 abhijit maharana	Manager		abhijit.maharana@innovapptive.com
☐	 Vishnubhatla Swamy	Manager		vishnubhatla.swamy@innovapptive.com
☐	 Kavya Krishna Koka	Manager		kavya.koka@innovapptive.com
☐	 Mohit Ravishankar	Manager		mohit.ravishankar@innovapptive.com
☐	 Sanjay Vallakati			sanjay.vallakati@innovapptive.com
☒	 Rohit Chenutala	Manager		rohit.chenutala@innovapptive.com
☐	 Rashi Pansari	Manager		rashi.pansari@innovapptive.com

7 Users Selected Cancel Done

The users are removed from the user group.

**Note:**

You can also,

- Click the More  icon next to the each user and select **Remove User**.
- Select the check box in the **User** column and click **Remove User** at the bottom to remove all the users at once.

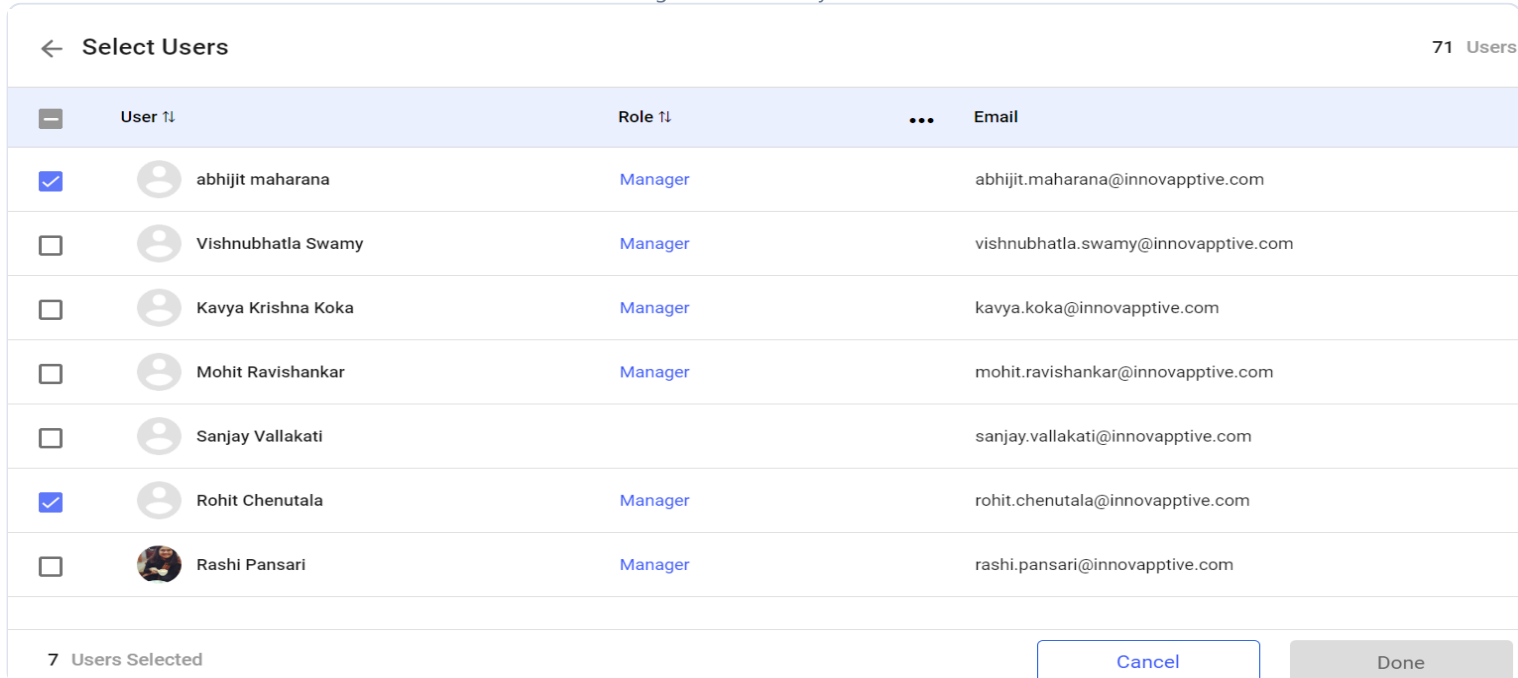
5.4.1. Modify the Users in a User Group

Add or remove users in a user group by changing its user list.

To modify a user list:

1. In the User Groups screen, select a user group from the left section.
The list of users associated with the selected user group is displayed on right section.
2. Click **Modify User List** on the right side.
3. In the **Select Users** window, deselect the checkboxes and click **Done**.

Figure 5-11 Modify Users



Select Users 71 Users				
☐	User	Role	...	Email
☒	 abhijit maharana	Manager		abhijit.maharana@innovapptive.com
☐	 Vishnubhatla Swamy	Manager		vishnubhatla.swamy@innovapptive.com
☐	 Kavya Krishna Koka	Manager		kavya.koka@innovapptive.com
☐	 Mohit Ravishankar	Manager		mohit.ravishankar@innovapptive.com
☐	 Sanjay Vallakati			sanjay.vallakati@innovapptive.com
☒	 Rohit Chenutala	Manager		rohit.chenutala@innovapptive.com
☐	 Rashi Pansari	Manager		rashi.pansari@innovapptive.com
7 Users Selected Cancel Done				

The users are removed from the user group.

5.4.2. Remove Users from a User Group

Remove a user from a user group.

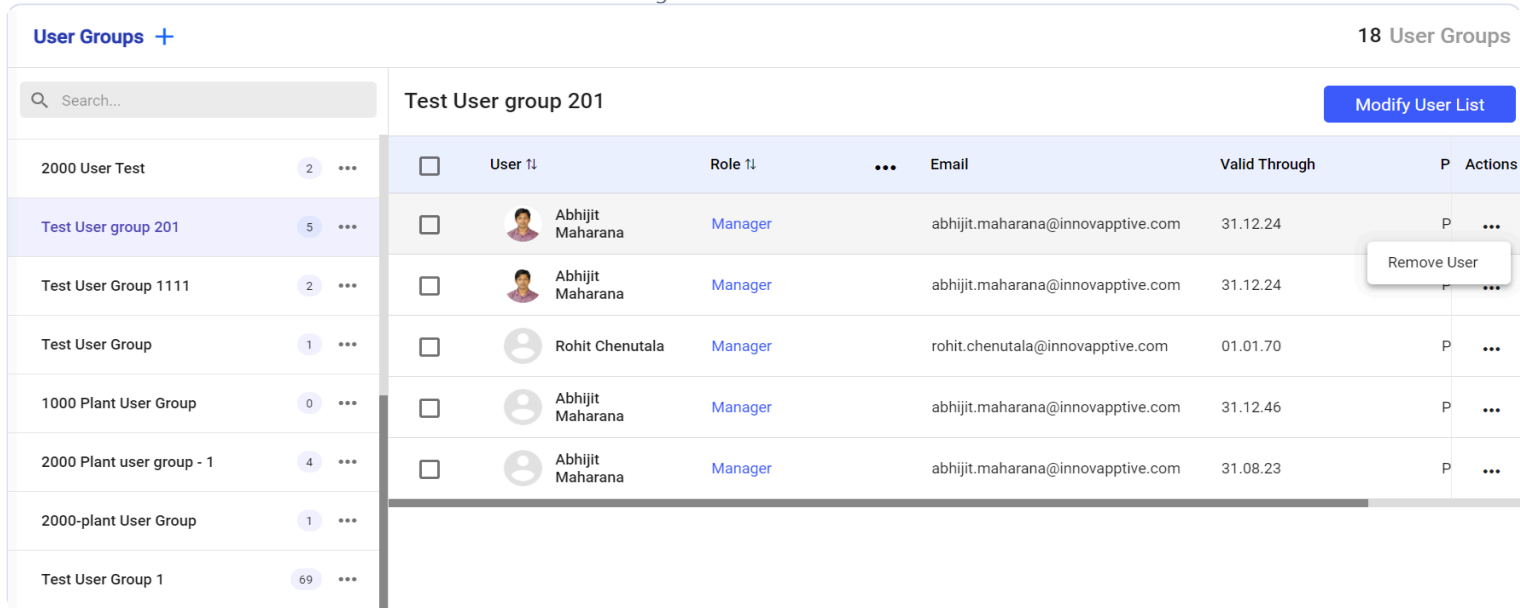
To remove a user from the user group:

1. In the User Groups screen, select a user group from the left section.

The list of users associated with the selected user group is displayed on right section.

2. Click the More  icon and select **Remove User** for the selected user.

Figure 5-12 Remove User



The screenshot shows the 'User Groups' management interface. On the left, a list of user groups is displayed, with 'Test User group 201' selected. On the right, the details for this group are shown, including a table of users. The table has columns for checkboxes, user names, roles, emails, valid through dates, and actions. A 'Remove User' button is visible in the actions column for the first user.

2000 User Test	2	...	☐	User ↑↓	Role ↑↓	...	Email	Valid Through	P	Actions
Test User group 201	5	...	☐	 Abhijit Maharana	Manager		abhijit.maharana@innovapptive.com	31.12.24	P	Remove User
Test User Group 1111	2	...	☐	 Abhijit Maharana	Manager		abhijit.maharana@innovapptive.com	31.12.24	P	...
Test User Group	1	...	☐	 Rohit Chenutala	Manager		rohit.chenutala@innovapptive.com	01.01.70	P	...
1000 Plant User Group	0	...	☐	 Abhijit Maharana	Manager		abhijit.maharana@innovapptive.com	31.12.46	P	...
2000 Plant user group - 1	4	...	☐	 Abhijit Maharana	Manager		abhijit.maharana@innovapptive.com	31.08.23	P	...
2000-plant User Group	1	...								
Test User Group 1	69	...								



Note:

To remove more than one user at a time, select the checkboxes and click **Remove User** at the bottom.

The selected user is removed from the user group.

6. Invoke mRounds Tasks Using APIs

Innovapptive exposes certain APIs that can be used by applications and create tasks like creating operator rounds, dynamically generate round plans, and so on.

To ensure security and control over API usage, API Key authentication is enforced. To access mRounds APIs, include a valid API key in requests. These keys ensure trusted connections are established with authorized users. This helps protect sensitive data and resources while promoting secure and controlled interactions between external applications and Innovapptive's services.

6.1. Generate API Keys for mRounds

Generate a tenant API key so that external applications can call mRounds APIs.

The API Key is generated during the tenant onboarding process or whenever a customer requests access to the API programmatically. The CWP administrator generates the key for the specific tenant or customer upon receiving a request.



Note:

API Key access is restricted to the set of API's identified as being programmatically accessed by a tenant. It cannot be used by any Innovapptive client application (web or mobile). If any application consumes the same API, they should follow the traditional token-based authentication mechanism.

This key is for calling mRounds APIs. A Maximo API key is issued by Maximo for calling Maximo. The two keys are not interchangeable.

6.1.1. API Prerequisites

Select the request URL and host for your environment before you call mRounds APIs.

Use the following Request URL: <https://cwpuat2.innovapptive.com/operatorroundsapi/external/api-docs/>.

Server variables

protocol

https ▾

host

cwpuat2.innovapptive.com ▾

basePath

/operatorroundsapi ▾

Host: Select the host based on the environment:

- **DEV** - cbodev.innovapptive.com
- **QA** - cboqa.innovapptive.com
- **PRD** - cbo.innovapptive.com

Authorize through API Key

Available authorizations ✕

ApiKeyAuth (apiKey)

Name: X-API-KEY

In: header

Value:

af7309e7b487629d59883ee8

Authorize

Close

6.1.2. Generate API Keys

Learn how to generate API keys

To generate the API key:

1. Open the CBO application.
2. Click the **Tenant Management** module.
3. Click the More icon > **Edit** button for the selected tenant.
4. Click the **API Keys** tab.
5. Enter the following details:
 - a. **Description:** Enter the relevant description.
 - b. **Expires:** Select the API Key expiration duration, such as 30 days, 90 days, 180 days, or 365 days, from the drop-down.
6. Click **Generate**.

The API Key is generated and ready to be shared with the customer.

Innovapptive
Tenant Management > Innovapptive

Innovapptive

Cancel Save

3. PROTECTED RESOURCES 4. DB CONFIGURATIONS 5. COLLABORATION 6. CONFIGURATIONS 7. ASSETS 8. API Keys

Description

Expires
180 days (6 months)

Generate

Description	Expires	API Key	Actions
API Key generated on Wed Jul 26 2023	2024-01-26	0bbeba3f51320f85515930635eabaa0c706da5b5d2763a0518674a7e351c5d13	...
Testing API Key	2023-08-27	7f5bc64812be804960016017be3b478bccdec4ce806afa597446bb0b838db4f2	...

**Note:**

To delete the API Key, click the More icon > **Delete** for the selected key.

6.2. Create Rounds Using APIs

Learn how to create rounds using APIs

To create round through an API:

1. Expand the Post method with `round-plans`.
2. Click **Try it out**.
3. Provide the following request parameters:

Field Name	Description
tenantid*	Enter the Tenant ID created by Tenant Management.
email*	Enter any email address that is already onboarded in the tenant.

POST /external/round-plans Create round plan

Creates round plan and publish the same based on the round plan information

Parameters Cancel Reset

Name	Description
tenantid * required (header)	tenantid
email * required (header)	email

4. In the **Request Body** section, enter the request parameter values (JSON).

Request body application/json

Round plan object

```
{
  "name": "API 2 Testing",
  "description": "All Response Types",
  "plantId": "1000",
  "locationId": "123-XL-BA39",
  "pages": [
    {
      "name": "page1",
      "sections": [
        {
          "name": "section1",
          "tasks": [
            {
              "name": "Read Only Field",
              "responseType": "LF",
              "value": "Read Only Field Testing"
            },
            {
              "name": "Instructions",
              "responseType": "TNST"
            }
          ]
        }
      ]
    }
  ]
}
```

**Note:**

Please refer to the [Round Plan Creation Request Body \(on page 147\)](#) section for more information.

6.2.1. Round Plan Creation Request Body

Build the JSON request body that creates a round plan.

Header Information Payload

- The Header Details contain the name of the Round Plan, and the Plant ID.
- Enter the LocationID & AssetID for respective locations and assets.
- Provide the name of the Page & Sections inside the page and create tasks.

Request structure (add tasks to the `tasks` array):

```
"name": "Daily Round Plan",
"plantId": "1000",
"locationId": "123-XL-BA39",
"pages": [
  {
    "name": "page1",
    "sections": [
      {
        "name": "section1",
        "tasks": []
      }
    ]
  }
]
```

Response Type Configuration Payload

Each example below is one entry in a `tasks` array, not a complete request. See the complete request at the end of this topic.

Read Only

- The "name" field must contain the name of the task.
- The response type must be given as "LF".
- The "value" field must contain the default value the user wants to see in the application.

```
{
  "name": "Read Only Field",
  "responseType": "LF",
  "value": "Default Value"
}
```

Instruction Response Type

- The "name" field must contain the name of the task.
- The response type must be given as "INST".
- The "value" field must contain the default value of the instructions the user wants to see in the application.

```
{
  "name": "Instructions",
  "responseType": "INST",
  "value": {}
}
```

Short Text Answer

- The "name" field must contain the name of the task.
- The response type must be given as "TF".
- If a Short Text Answer is required, then the "required" field should be either True or False.
- For True the name should be "Short Text Answer Required".

```
{
  {
    "name": "Short Text Answer",
    "responseType": "TF",
    "value": "",
    "required": false
  },
  {
    "name": "Short Text Answer Required",
    "responseType": "TF",
    "value": "",
    "required": true
  }
}
```

Long Text Answer

- The "name" field must contain the name of the task.
- The response type must be given as "LTV".
- If a Long Text Answer is required, then the "required" field should be either True or False.
- For True the name should be "Long Text Answer Required".

```
{
  {
    "name": "Long Text Answer",
    "responseType": "LTV",
    "value": "",
    "required": false
  },
  {
    "name": "Long Text Answer Required",
    "responseType": "LTV",
    "value": "",
    "required": true
  }
}
```

Number Response Type

- The "name" field must contain the name of the task.
- The Number Response Type has the following Configuration Options:
 1. Number without UOM & range
 2. Number without range
 3. Number Testing with None
- The response type field for all the configurations is the same and must be "NF".
- To enable tracking of History, the enableHistory field inside value must be true.
- To add Unit Of Measurement, the UnitOfMeasurement field must be followed by the UOM ID inside the value.
- To set up range, define the min and max values along with messages that must be displayed for values that are beyond the range. These Messages are categorized as Warning, Alert, Note & None.
 - You can enter the respective value inside the value field, for example `"rangeMetadata": {"min": 0, "max": 10, "minMsg": "Test message", "maxMsg": "", "minAction": "Warning", "maxAction": "None"}`

```

{
  "name": "Number without UOM & range",
  "responseType": "NF",
  "required": true,
  "value": { "enableHistory": false }
},
{
  "name": "Number without range",
  "responseType": "NF",
  "required": true,
  "value": { "enableHistory": false, "unitOfMeasurementId": "f0deec55-2481-41ab-b88d-37f8ced36e89" }
},
{
  "name": "Number Testing with None",
  "responseType": "NF",
  "required": true,
  "value": { "enableHistory": false, "unitOfMeasurementId": "f0deec55-2481-41ab-b88d-37f8ced36e89",
    "rangeMetadata": { "min": 0, "max": 10, "minMsg": "", "maxMsg": "", "minAction": "None", "maxAction": "None" } }
},
{
  "name": "Number Testing with None",
  "responseType": "NF",
  "required": true,
  "value": { "enableHistory": false, "unitOfMeasurementId": "f0deec55-2481-41ab-b88d-37f8ced36e89",
    "rangeMetadata": { "min": 0, "max": 10, "minMsg": "Test message", "maxMsg": "", "minAction": "Warning",
    "maxAction": "None" } }
},

```

Global Picklist Single Selection

- The "name" field must contain the name of the task.
- The Response type must be given as DD.
- The "value" must contain Response Set ID.
 - This fetches the necessary Picklist from the master data.

```
{
  "name": "Picklist Testing",
  "responseType": "DD",
  "required": true,
  "value": {"responseSetId" : "31c52245-c756-4bc8-ad82-8ee3c952fecc" }
}
```

Global Picklist Multiple Selection

- The "name" field must contain the name of the task.
- The Response type must be given as DDM.
- The "value" must contain Response Set ID.
 - This will fetch the necessary Multiple Select Choice from the master data.

```
{
  "name": "Multiple Select Choice answers Testing",
  "responseType": "DDM",
  "required": true,
  "value": {"responseSetId" : "31c52245-c756-4bc8-ad82-8ee3c952fecc" }
}
```

Scanner

- The "name" field must contain the name of the task.
- The Response type must be given as SF.

```
{
  "name": "Scan Testing",
  "responseType": "SF",
  "required": true,
  "value": ""
}
```

Date & Time

- The "name" field must contain the name of the task.
- The Response type must be given as DT.
- The user can choose the combination of True and False in "value" to show either date or time or both.

```
{
  "name": "Date & Time Testing",
  "responseType": "DT",
  "required": true,
  "value": {"date": false, "time": true}
}
```

Hyperlink

- The "name" field must contain the name of the task.
- The Response type must be given as HL.
- Enter the link under the "value" field.

```
{
  "name": "Hyperlink Testing",
  "responseType": "HL",
  "value": {"link": "https://google.com"}
}
```

Check box

- The "name" field must contain the name of the task.
- The Response type must be given as CB.

```
{
  "name": "Checkbox Testing",
  "responseType": "CB",
  "required": false,
  "value": ""
}
```

Signature

- The "name" field must contain the name of the task.
- The Response type must be given as SGF.

```
{
  "name": "Signature Testing",
  "responseType": "SGF",
  "required": false,
  "value": ""
}
```

Photo Response

- The "name" field must contain the name of the task.
- The Response type must be given as ATT.

```
{
  "name": "Photo Testing",
  "responseType": "ATT",
  "required": false,
  "value": ""
}
```

Geo Location Response

- The "name" field must contain the name of the task.
- The Response type must be given as GAL.

```
{
  "name": "Geo Location Testing",
  "responseType": "GAL",
  "required": false,
  "value": ""
}
```

Date Range

- The "name" field must contain the name of the task.
- The Response type must be given as DRF.

```
{
  "name": "Date range Testing",
  "responseType": "DRF",
  "required": false,
  "value": ""
}
```

Multiple Choice

- The "name" field must contain the name of the task.
- The Response type must be given as VI.

```
{
  "name": "Multiple Choice Answers Testing",
  "responseType": "VI",
  "required": false,
  "value": "yes,no"
}
```

Slider

- The "name" field must contain the name of the task.
- The Response type must be given as RT.
- The value field must contain the Minimum & the Maximum Value along with the Increment.

```
{
  "name": "Slider Testing",
  "responseType": "RT",
  "required": false,
  "value": {"min": 10, "max": 100, "enableHistory": true, "value": 20, "increment": 10}
}
```

Below is an example of a complete round plan with Round Name, Plant, Location, Pages Sections & Tasks.

```

{
  "name": "Daily Round Plan",
  "description": "All Response Types",
  "plantId": "1000",
  "locationId": "123-XL-BA39",
  "pages": [
    {
      "name": "page1",
      "sections": [
        {
          "name": "section1",
          "tasks": [
            {
              "name": "Read Only Field",
              "responseType": "LF",
              "value": "Read Only Field Testing"
            },
            {
              "name": "Instructions",
              "responseType": "INST",
              "value": {}
            },
            {
              "name": "Instructions with tag",
              "responseType": "INST",
              "value": { "tag": "Caution" }
            },
            {
              "name": "Short Text Answer",
              "responseType": "TF",
              "value": "",
              "required": false
            },
            {
              "name": "Short Text Answer Required",
              "responseType": "TF",
              "value": "",
              "required": true
            },
            {
              "name": "Long Text Answer",
              "responseType": "LTV",
              "value": "",
              "required": false
            },
            {
              "name": "Long Text Answer Required",
              "responseType": "LTV",
              "value": "",
              "required": true
            },
            {
              "name": "Number without UOM & range",
              "responseType": "NF",
              "required": true,
              "value": { "enableHistory": false }
            },
            {
              "name": "Number without range",
              "responseType": "NF",
              "required": true,
              "value": { "enableHistory": false, "unitOfMeasurementId":
"db5aaa7d-d13f-4e83-a3f1-e108c3f16e3f" }
            },
            {
              "name": "Number Testing with None",
              "responseType": "NF",
              "required": true,
              "value": { "enableHistory": false, "unitOfMeasurementId":
"db5aaa7d-d13f-4e83-a3f1-e108c3f16e3f", "rangeMetadata": { "min": 0, "max": 10, "minMsg": "", "maxMsg": "",
"minAction": "None", "maxAction": "None" } }
            }
          ]
        }
      ]
    }
  ]
}

```

6.3. Dynamically Generate and Partially Execute a Round

A round plan is a blueprint that outlines the structure and steps of a round. You must first create a round plan and then generate a round from the round plan.

Create and publish a round plan with tasks.

To create a round plan:

1. Open the **Operator Rounds** module.
2. Click **Create New**.
3. In the **Plan Details** screen, enter **Plan Name**, **Plan Description**, **Plant**, and **Tags**.
4. Click **Save & Next**.

5. Select **Location** and **Assets**.

6. Add required tasks for the round.



Note:

This Dynamic Rounds Generation using APIs process supports only five Response Types. They are Text Answer, Number, Date Range, Date & Time, and Photo.

7. Click **Next** and **Publish**.

The interested customer requires an API Key along with the Tenant ID to be able to dynamically generate and partially execute a round. When the Innovapptive security module receives an API request from the customer, the key is evaluated, a secure connection is established between the applications, and the customer gains access to the API and can expect the desired API response.

In a worst-case scenario, if the API receives a bad request or the API_Key fails to validate, it returns a response with the HTTP bad request status code.

Section	Task
Target/Plan Name	Text Answer
Target / Plan Value	Number
Target Actual	Number
Chart of throughput history	Photo
Event date & time	Date & Time
Resolution range	Date Range

To programmatically generate and partially execute a round, see, [Get the Round Plans List \(on page 158\)](#), [Get Round Plan Details \(on page 160\)](#), and [Dynamically Generate and Partially Execute a Round \(on page 155\)](#).

CWP - Operator Rounds

1.0.0 OAS 3.0

CWP - Operator Rounds

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Apache 2.0

Servers

Authorize

Round Plan

Method	Endpoint	Description
GET	/external/round-plans	Fetch round plans info
GET	/external/round-plan-details/{roundPlanId}	Fetch round plan details by roundPlanId

Round

Method	Endpoint	Description
POST	/external/rounds	Create a round and execute the round partially

6.3.1. Get the Round Plans List

The Get Round Plans List API service allows you to fetch the round plans list based on query parameters. If no query parameters are passed, by default, it fetches the published round plans list with a limit of 100.

To get the round plans list:

1. Expand the Get method with `round-plans`.
2. Click **Try it out**.

Round Plan

GET /external/round-plans Fetch round plans info

Fetch round plans info based on query parameters. In case of no query parameters are passed, by default it will fetch published round plans with limit 100

Parameters Cancel

Name	Description
tenantid * required (header)	tenantid
plantId (query)	plantId
formStatus (query)	formStatus
limit (query)	limit
searchTerm (query)	searchTerm
next (query)	next

Execute

3. Provide the following request parameters:

Field Name	Description
tenantid*	Enter the Tenant ID created by Tenant Management.
plantid	Enter Plant ID to filter the response based on plant id.
formStatus	Enter status to filter the response based on form status, such as Draft or Published.
limit	Enter the limit to display a specific number of records. If no value is entered, 100 records are displayed by default.
searchTerm	Enter a search term to filter the response by a particular term. For example, Demo partial submission round.
next	Enter the next value to display the next set of records. For example, if there are 100 records, the limit is set to 25, and if you want to get the next set of 25 records, you can provide the next value as 25.

4. Click **Execute**.

The following response is displayed.

Server response	
Code	Details
200	Response body <pre>{ "items": [{ "id": "add59d8-84ae-4221-a2ed-51a4a60a25a0", "name": "Demo partial submission round", "description": "Demo partial submission round", "plantId": "0bd8a352-da2f-40fb-95c9-ea9d57f12154", "formStatus": "Published", "author": "Kiran Palani", "lastPublishedBy": "Kiran Palani", "createdAt": "2023-07-28T08:35:32.084Z", "updatedAt": "2023-07-28T12:29:40.112Z" }], "next": null }</pre>

6.3.2. Get Round Plan Details

The Get Round Plan Details API service allows you to fetch specific round plan details with tasks based on the `roundPlanId` path parameter. It returns location or asset wise round plan details.

To get the specific round plan details:

1. Click **Authorize**.
2. In the **Available Authorizations** pop-up, enter the API Key value and click **Authorize**.
3. Click **Close**.
4. Expand the Get method with `roundPlanId`.

5. Click **Try it out**.

The image shows an API client interface for the endpoint `GET /external/round-plan-details/{roundPlanId}`. The description states: "Fetch round plan details based on roundPlanId path parameter (It returns location/asset wise round plan details)".

Parameters

Name	Description
<code>tenantid</code> * required (header)	tenantid
<code>roundPlanId</code> * required (path)	roundPlanId

Buttons: **Execute** (blue), **Cancel** (red)

6. Provide the following request parameters:

Field Name	Description
tenantid*	Enter the Tenant ID created by Tenant Management.
roundPlanId	Enter the Plan ID to display the specific round plan details. You can copy the ID value from the above response.

7. Click **Execute**.

The following response is displayed.

```
Server response
Code    Details
200     Response body
{
  "type": "location",
  "id": "01",
  "name": "Clarification plant",
  "tasks": [
    {
      "id": "Q1",
      "name": "Target/Plan Name"
    },
    {
      "id": "Q2",
      "name": "Target / Plan Value"
    },
    {
      "id": "Q3",
      "name": "Target Actual"
    },
    {
      "id": "Q4",
      "name": "Chart of throughput history"
    },
    {
      "id": "Q5",
      "name": "Event date & time"
    },
    {
      "id": "Q6",
      "name": "Resolution range"
    }
  ]
}
```

6.3.3. Create a Round and Partially Execute It

The Post Round Plan API service allows you to create a round and execute it partially based on the round plan details request.

To create and execute a round partially:

1. Click **Authorize**.
2. In the **Available Authorizations** pop-up, enter the API Key value and click **Authorize**.
3. Click **Close**.
4. Expand the Post method with **rounds**.
5. Click **Try it out**.

Round

POST /external/rounds Create a round and execute the round partially

Create a round and execute the round partially based on round plan detail request

Parameters Cancel

Name	Description
tenantid * required (header)	tenantid

Request body application/json

Round plan detail object

```
{
  "roundPlanId": "string",
  "assignedTo": "string",
  "tasks": [
    {
      "id": "string",
      "value": "string"
    }
  ]
}
```

Execute

6. Provide the following request parameters:

Field Name	Description
tenantid*	Enter the Tenant ID created by Tenant Management.

7. In the **Request Body** section, edit the code by adding pre-filled values as required.**Note:**

This Dynamic Rounds Generation using APIs process supports only five Response Types. They are Text Answer, Number, Date Range, Date & Time, and Photo. The format of the pre-filled response must be base 64 for images, ISO string for Date & Time, and Date Range response types.

For example,

```
{
  "roundPlanId": "add59d8-84ae-4221-a2ed-51a4a66a25a0",
  "assignedTo": "abc@innovapptive.com",
  "tasks": [
    {
      "id": "Q1",
      "value": "Tom Curran"
    },
    {
      "id": "Q2",
      "value": "289.89"
    },
    {
      "id": "Q3",
      "value": "2023-07-31T08:11:31.526Z"
    },
    {
      "id": "Q4",
      "value": "2023-07-31T08:11:31.526Z"
    },
    {
      "id": "Q5",
      "value": "2023-07-31T08:44:24.526Z;2023-07-30T08:44:24.526Z"
    },
    {
      "id": "Q6",
      "value": "<base64-encoded image>"
    }
  ]
}
```

Add the base 64 string (id: Q6) for the image response type.

Round plan detail object

```
{
  "roundPlanId": "c7d3ae7d-e828-43e6-97db-388b32fc580c",
  "assignedTo": "sachinkumar.venkatraman@innovapptive.com",
  "tasks": [
    {
      "id": "Q4",
      "value": "
        \"Uk1GRjR1aXN0RUZlQV1A4IC7iaucBidi5rKbuFPhki-jkUpjCp1KbMh3C U28Kv/ eznPSj+Kell+dcGUTv/483pf1ndot67/ aP4V5extfRft/nT/yf7YbK/qH+R/9PPh5Z/UP+X/ff815g/vf/x/zvukp+ff3n/ff5j44/5h/Uu+L/dvaZ/vc6q9F/s/3E+3+u/5z/3f630heh180/1nsA/0n/Hmn/Q/ul7Fn6h/s/VL/13/y+v/b/P/cf03/vf/E/bb3Q0hTq08/af6vu3Z/+n/c/u3/rP3f+bbj/vQ+bf1P9D/1f8p+6v2e/6P/x/vf3HuTzhetP/U/rf9h+3Hyd/8H/1f5fUd/k/D/+35+fBR+u3/Y/vx+u/cl6j/1H9+P1b/s/7f6SP8B/0f30y9v/1fux8kv55/1v3Q/73yffzX/1f/f/fdud6h37sf/b2YP/b+8f/P+Z19yv31/6nuhf67/9aoB8a/9n/6/8It+5+u/53/z/5f1j2ov6b6xv3ag/7vln8v/zvQ+0f7b6kT70HRn/ Ee31/f6mfpvuq/0r11v5PpL/8D1V+T0uF7HsbFxFuAf11nT8y7E0af1HhQhIotf+GqIx25LAgpyH2b1HhTv9HxZ1p41KzP50/Rzb576xdlv/y510IhKkH+Q+5Hpebj3Pm6G6zHj5KZj510PuraXn+uP1T6RH70Uyk81t+e077PEfy/X+KtVza2Qf1+5k9Ie3v3zr7Y4cru6u+0tGTnEpkh8mBZRLspqUUPGAlmFmRBLuPHKPSAfStc6k16140uafcqQ2bb8fuzq+5a4vTC1f+fH0e383907akuFuZb8uU8+dndAPSf8bo166qudJ3801K/qJ2cxun313gKkUtdYk5Z14v99fH07141X33MEvur+g5/5pqJ3PnirDcE8MD3gu60U210r+ch1euperC24pT11a05Z1slpftF1u0SE3jPpqJ2H2z15f+5ma008upTylLdIdTP5t69aT11683j5f6/s1uy3vff6CQvSmYfcm0E0DyGrIEY0+q68uikr80hIKZvfu30tob1X/ukdo1+Pe43//+HJF3hupKJStEYb+eooq89fHfllg+Vpfp017H9sy5d0810vHes11K4/OnCBDEDET+0oATJ8b7U/dKujz/L2+IngbkZqcodsKlUoPfl1+fLhqjfm8a/2ahvJD3quzNs/dT/1k0+3D0r156ghU24xTODLgEKub1zT8gZjYsoELCOPCLXlyU5fvd0f3xH6s+DPP/yuj2dsdE5fu7CvbbhM72vnl0K0YDP/FFtZAYsOCf62E8ZGpdc3jlynefT1q77HYb/+dP+pq1Dz02V4K2izYn9y7d1KkzUrfAogAgrBStD2K1Auzkm0boiucUMHr1r1U1+IdQy5Liu5+xiimlneSm/et5bdoUj58TRZ11Mddsgf05YH0A1ufTO/uaPjcn2L+u/ATC/m2uZehd/BauH6S724TF16fQ9gxbFz14F0+KavCyxw/MU7LJHK3/3Hh/D6G00hQKj219r8/fetH0597Hyysnu3/1B1cGr7b+Pbct00E4+Enk/19uT69uLnlhQ0K65rh1ZvkeII++5ocnir5SqhzKkC87Kb/19YHfFzv5USL1KdmoqUyHhH1eaggBrrnnf17+0v6allm05W/s84f/VF+0dEvd8g+ctH7D6B229n23++5ut1uW369D1f5v5C+ysqRKE9hK5/rvY1+h731+AvTuef3M0ICL7zTo8o7661bt2vov8uU43D1K2KAg40bnoT/G6gZCf3Bh19UBid1aP1uPm3Q06EdeFh11uHhJnlyJ0+Idv0U0JK0ayrQK6j606/L1p26Y1yQ6c3bh4KTPC5yQTe59mGryd/99Hk578rc1yEW2fsyRgPno1Z3g10Hq/GeL1fvuK7ba12oA269yP3vUqCt3D5q4sou3SenKLL1A1PLSpJuzBC2HSEGvy3Jdu5ykvTsaH1i3a1o1Xf0xv5Ph1d0H4uP9Vufm1t+eVPQvuvSzqU7Daz14tqcg+odfmpK+kiPb3FZanPsrav901s3fK80uAuKilpyvz9n0vFle7T934HXT/zYD31z5UQH31U8fGhNKevqFZHRxs5R5qrlb53XJuaD08e03eTCOR1FqoD28m2zfYEK+Ey1Ag/70FllqUBU53FL+EoQh7JYXvUtXcBU2D4e3pRhy+8HTGLQCn6kZNPu9BcrolK0hH8E0n01ed1o138e21ff/n3F181H6c3l6eUd1dSuzfcrB3K7ed0e0u7uzFV0EufUuef/HalHh0v0eUdV37+eBRvRk/0K1TjH88PToFolm1uVR31HvutFtoe3fuuVzD8R0uicEvYn0hcy16754DpmuF816e7d07V410h583a1o1u9
```

Execute

Clear

**Note:**

If you provide the email ID of the person who needs to work on the round in the Assign to field, then the round is assigned to the user and automatically appears in the My Rounds screen of the user with the In-progress state in the user's mobile application.

8. Click **Execute**.

The following response is displayed.

Code	Description
200	Responds with newly created round submission
Media type	
application/json	
Controls Accept header.	
Example Value Schema	
<pre>{ "id": "string", "inspectionslistID": "string", "plantId": "string", "assignedTo": "string", "previouslyAssignedTo": "string", "createdBy": "string", "flatHierarchy": {}, "formData": {}, "isDeleted": "string", "createdAt": "2023-07-28T13:42:12.301Z", "updatedAt": "2023-07-28T13:42:12.301Z" }</pre>	

6.3.4. View Updated Details in the mRounds Mobile App

You can view all the pre-filled responses on the mobile application.

To view partially executed round details:

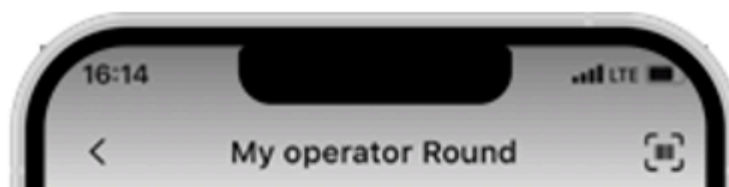
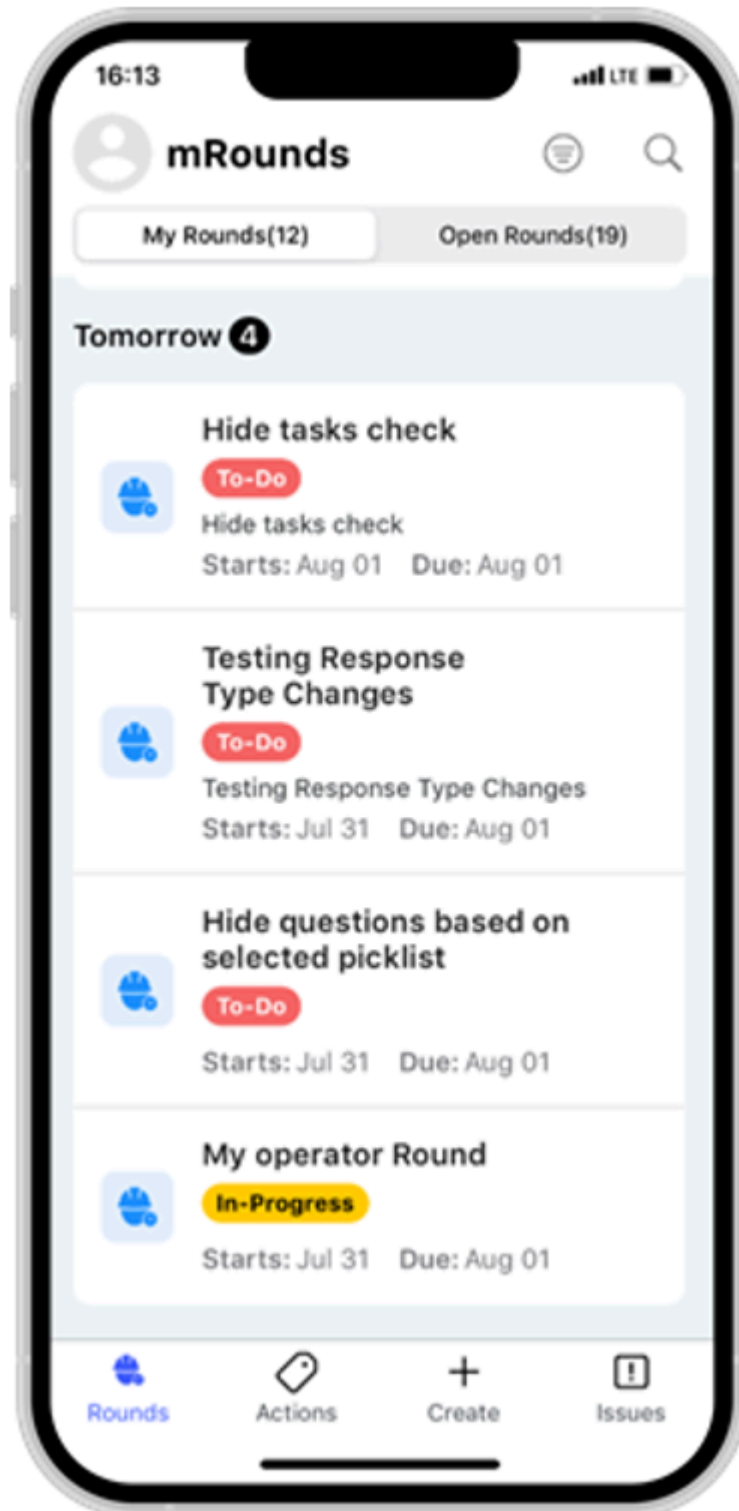
1. Open the mRounds mobile application.

2. Tap the **Open Rounds** tab.



Note:

If you provide the email ID of the person who needs to work on the round in the Assign to field, then the round is assigned to the user and automatically appears in the **My Rounds** screen of the user with the **In-progress** state in the user's mobile application.



3. Select the round, which is in Partially Open status, and tap **Add to My Rounds**.

4. Tap the **My Rounds** tab and select the assigned round to open it.

You can see that some fields or tasks are pre-filled with data. The image, which was given as base64 string is displayed as shown below.

6.4. API Error Codes

Identify the error codes that mRounds APIs return.

Following are the possible error codes:

Error Code/Status	Message	Scenario
200	NA	When the successful response received
401	Request header (x-api-key) is missing	When the authorized API Key is not provided
401	Invalid API Key	When the provided key is invalid or incorrect
401	API Key Expired	When the key is expired
401	TenantId Test not found in db or cache	When the tenatid value is not provided
404	Round plant id did not exist	When an incorrect roundPlantID is provided
500	Internal server error	When the server is not responded