Oracle Field Service Cloud Configurations

for

Oracle Work And Asset Cloud Service Integration to Oracle Field Service Cloud

(Also applicable to Oracle Utilities Work and Asset Management)

Setup Guide

21A

Disclaimer

Oracle Field Service Cloud Configurations for Oracle Work and Asset Cloud Service Integration to Oracle Field Service Cloud, Setup Guide 21A

April 2021 (Updated February 2022)

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Preface

Welcome to the Oracle Field Service Cloud Setup Guide for Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service Cloud 21A.

This document focuses on the Oracle Field Service Cloud configurations and administration information required for this integration. The preface includes the following:

Audience

This document is intended for anyone implementing the Oracle Utilities Integration for Work and Asset Cloud Service and Oracle Field Service Cloud.

Documentation and Accessibility

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http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or
http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs

Abbreviations

Term	Expanded Form
OFSC	Oracle Field Service Cloud
WAM	Oracle Utilities Work and Asset Management
OIC	Oracle Integration Cloud Service
WACS	Oracle Utilities Work and Asset Cloud Service

Chapter 1: Accelerator Overview

This chapter focuses on the software requirements for Oracle Field Service Cloud and provides an overview of the configuration. It includes the following sections:

Configuration Overview

This section covers basic Oracle Field Service Cloud configurations, such as Activity Types, User Types, Properties, UI screens, validations for these UIs, plugins, and resource configurations.

Accelerator Package

The accelerator package includes various user types, properties, and plugins. This document explains the configurations for other elements such as activity types, work zones, work skills, work conditions and outbound channel.

The package helps customers to configure and set up Oracle Field Service Cloud to be used in the Oracle Utilities Work and Asset Cloud Service integration to Oracle Field Service Cloud as the package contains only Oracle Utilities Work and Asset Cloud Service and Oracle Integration Cloud configuration files and instructions. It is used in addition to the integration package that provides a complete end-to-end set up for the integration.

The contents of the package are:

- **User Types** – Define layouts and UI screens. Refer to the User Types section for more details.
- **Properties** – Create layouts and mapping. Refer to the Properties section for more information.
- **Plugins** – The plugins that are part of this integration are measurements, service history, planned service history, resource usage, assetComponentInstallExchangeUndo, pick up work, lock unlock, materials and validate completion. Refer to the Forms and Plugins section for more information.

Accelerator Activity Types

This accelerator is a sample and supports a few Activity Types in this release. More activity types can be added based on the requirement.

Chapter 2: Installing the Basic Accelerator Package

This chapter focuses on importing the files that come as a part of the package and configuring them in the Oracle Field Service Cloud environment for the integration to run successfully. Make sure to follow the same sequence for successful configuration.

Order of Importing the Package

Make sure to follow the order mentioned below during the package import.

- Properties
- Glossary
- Measurements Plugin
- ResourceUsage Plugin
- ServiceHistory Plugin
- ValidateCompletion Plugin
- PlannedServiceHistory Plugin
- Asset Component Install Exchange Undo Plugin
- Lock Unlock Activity Plugin
- Pick Up Work Plugin
- Materials Plugin
- WACS OFSC User Type
- WACS OFSC Dispatcher User Type

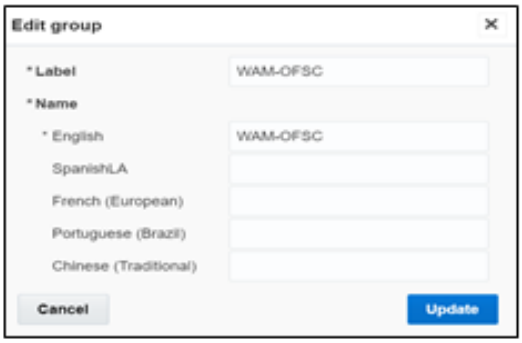
Activity Types

Activity types define the categories of the activity supported by Oracle Field Service Cloud (in this case, Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service Cloud). Activity types are synced part of admin data from Oracle Utilities Work and Asset Cloud Service to Oracle Field Service Cloud. As a pre-requisite before running the Admin Sync, perform the following.

To create an Activity Type Group:

1. Login to Oracle Field Service Cloud with valid credentials.
2. Click the icon on left of the Home screen.
3. Navigate to **Configuration > Resources, Activities, Inventories > Activity Types**.

4. Click **Add Group**.
5. Enter the “WAM-OFSC” group.



6. Click **Update**.

Properties

Properties enable the integration specific UIs created and map the Oracle Field Service Cloud UI element with a property. Each property is classified into types such as field, integer, enumeration, string on the basis of requirements and should be addressed using this property.

To import the property file included in the accelerator package:

1. On the **Configuration** page, select **Resources, Activities, Inventories > Properites**.
2. Click **Import**.
3. Browse to the location of the file to be imported and click **Import**.
4. Verify the successful import of the file. The **Successfully Imported** message with number of properties imported is displayed. Make sure the **Imported with warnings** and **Not imported** count is 0.

Glossary

Glossary is used for cosmetic changes in label names. This function provides the flexibility to change labels based on the business needs.

To use the glossary function:

1. On the **Configuration** page, click **Glossary** in the **Displays** section.
2. Click **Import** to import the file provided as part of the package.
3. Click **Browse** and select the file. Click **Import**.
   Make sure the file imports successfully.
4. As part of the package, the following labels are changed. Change the labels based on the preference.

Example: To change the **Asset** label, change the Asset in the given file. You can add more values to the existing values.

Category (ctg)	Identifier (id)	Type (tp)	ID/Label (lbl)	User Types (ut)	English (en-US)
Glossary: mobile_shared, wap_inventory	glossary	translation	10109		Assets/Equipment
Glossary: mobile_shared	glossary	translation	10865		Assets/Equipment
Glossary: mobile_shared	glossary	translation	10767		Asset/Equipment Details
Glossary: wap_inventory	glossary	translation	10111		Existing
Glossary: mobile_shared, reports_gps_alerts, wap_inventory	glossary	translation	10114		Resource Inventory
Screen Configuration - Mobility: Edit/View activity	fae3e1febea180ba048eb3f1b0c011f029fdfd5e	layout	list_inventories	C2M OFSC	Equipment
Screen Configuration - Mobility: Edit/View activity	9bcdc924764e5ac57bfb15c4e166282c8a3189de	layout	list_inventories	WAM OFSC	Assets

Forms and Plugins

Plugins are used to make changes to screen and data, based on their type and status of target and parent object. They are also used to enter measurements, record time/materials/equipment used while completing an activity, populate service history information, install/replace/remove/attach/exchange of assets, using truck inventories and validate completion information before actually sending the information to verify if the message is accepted by Oracle Utilities Work and Asset Cloud Service.

Plug-ins in Oracle Field Service Cloud perform actions not found in the standard solution. They appear as selectable links on the application. They open a new window, tab, or frame in a browser where an external HTML5 application is executed.

For more information on Oracle Field Service Cloud plugin framework refer to latest Oracle Field Service Cloud documentation at:

https://docs.oracle.com/en/cloud/saas/field-service/21a/fapcf/overview-of-the-plug-in-api.html#overview-of-the-plug-in-api

Each plugin contains a JavaScript file that has the main business logic required for functionality of the plugin. The data required for each plugin is available through the properties that are added for the plugin. XML data obtained through properties is parsed and appropriate XSL is applied to it to render each UI.

Measurement Plugin

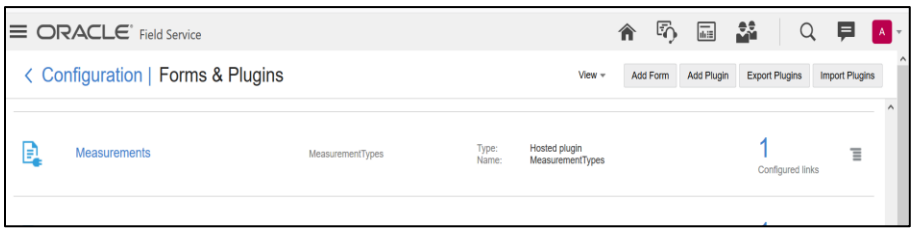
Measurements manage the asset operational and runtime data collected and tracked for assets. Asset measurements include mileage, hours of uptime, number of start-stops, and more.

Since they almost entirely depend on the usage of the related asset, readings cannot be calculated or predicted accurately by the system. Instead, readings must be collected and entered into the system, either manually by a user or imported as the result of activity completion.

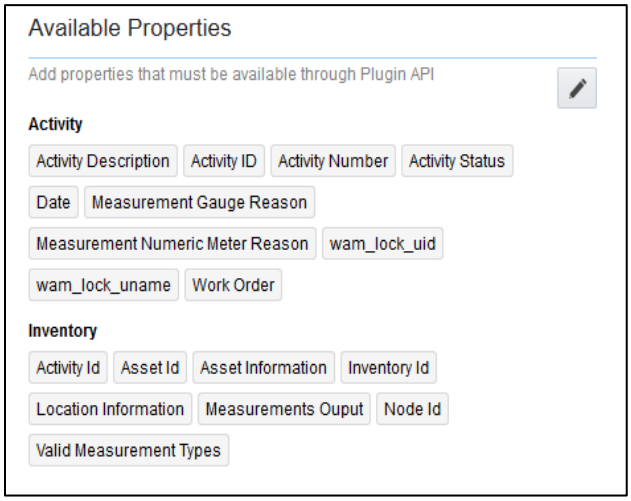
To import plugins:

1. Login to Oracle Field Service Cloud with valid credentials.
2. Click the icon on left of the Home screen.
3. Navigate to **Configuration** > **Displays > Forms and Plugins**.
4. Click **Import Plugins**.

5. On the **Choose file** field, click **Browse** to select measurement plugin. Click **Validate**.
   Oracle Field Service Cloud validates the plugin and the number of valid items should be 1.
6. Click **Import**. Ensure the “Number of valid items” is 1 and “Number of not valid items” is 0.
   After the successful import of plugin, Oracle Field Service Cloud displays the details as shown below.



7. Make sure the **Available Properties** tab is populated with all properties.

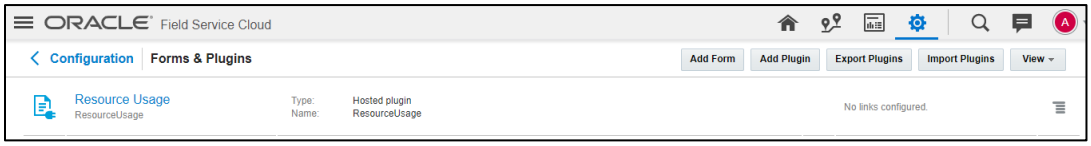


Resource Usage Plugin

Timesheets are used to record the amount of time that workers (labor resources) spend on activities or work orders. Once charges are entered, processing allows employees to receive proper compensation for their work and labor charges are applied to the appropriate cost buckets.

Generally, only each individual and the person is designated as the supervisor on that individual's crew can access timesheet information for that person.
To import the plugin:

1. Repeat steps 1 to 5 from Measurement Plugin.
2. Click **Import Plugins** to import the resource usage plugin provided in the package.

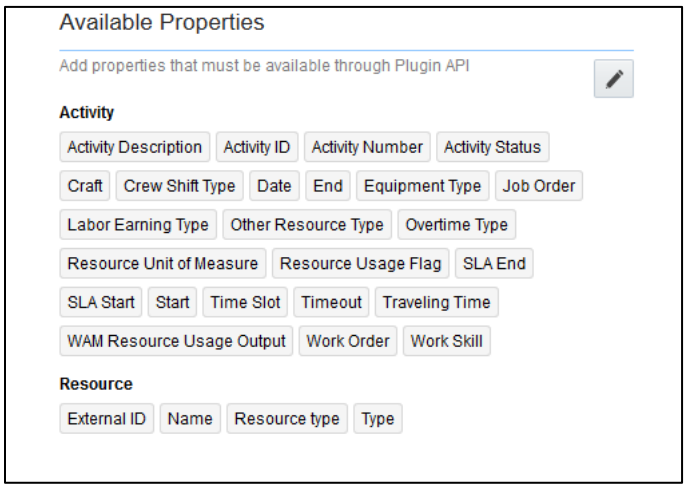


3. Select the resource plugin and enter the details:
   - oic_url: https://OIC_host:OIC_port/ic/api/integration/v1/flows/rest/OUTL-BA-OFSC_WACS_RES_USAGE_SEND/1.0/resourceUsage
   - oic_uname/oic_password: OIC username/password

   Oracle Field Service Cloud users should configure the following:

   - ofsc_uname: clientID@instance ID
   - ofsc_password: client secret key
   - ofsc_siteAddress : instance ID
   - ofsc_bucket: External ID of bucket configured in your environment

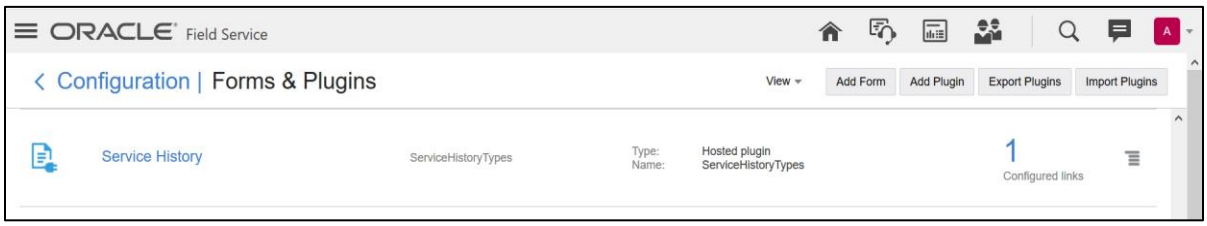
4. Make sure the **Available Properties** tab is populated with properties shown below.



Service History Plugin

Service history is information about some type of service or maintenance performed on an asset. Information typically associated with service history include record inspection feedback, pass/fail details, downtime, parts failure information, maintenance or service logs, or other information regarding service on the asset.

1. Repeat steps 1 to 5 from Measurement Plugin.
2. Click **Import Plugins** to import the service history plugin provided in the package.

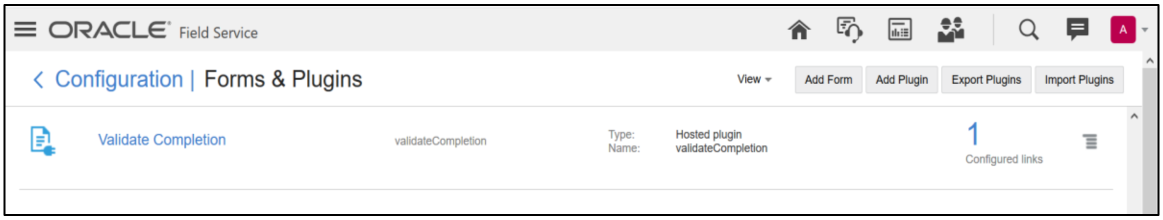


3. Make sure the **Available Properties** tab is populated with the properties shown below.

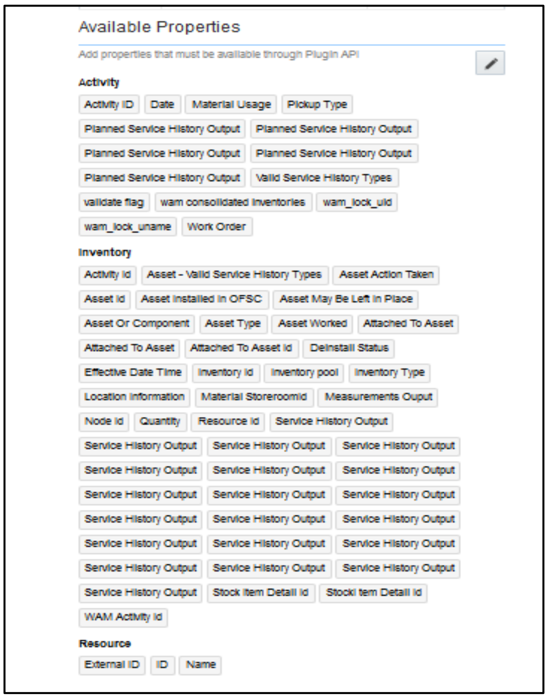
Validate Completion Plugin

This plugin helps crew to validate the eligibility to the activity to complete. If the activity is not yet eligible, the plugin displays corresponding error message if the eligibility is success crew navigates to end activity screen to complete the activity.

1. Repeat steps 1 to 5 from the [Measurement Plugin](#) section.
2. Click **Import Validate Completion Plugin** to import the validate completion plugin provided in the package.



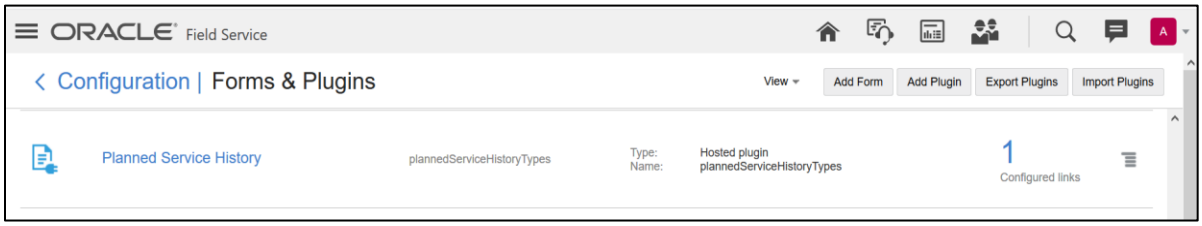
3. Make sure that the **Available Properties** tab is populated with the properties shown below.



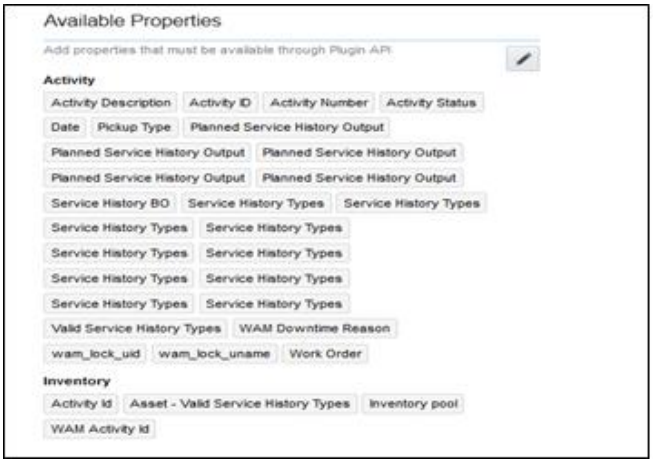
Planned Service History Plugin

Planned Service history is information regarding some type of service or maintenance performed on an asset. Information typically associated with service history include record inspection feedback, pass/fail details, downtime, parts failure information, maintenance or service logs, or other information regarding service on the asset.

1. Repeat steps 1 to 5 from the [Measurement Plugin](#) section.
2. Click **Import Plugins** to import the Planned Service History plugin provided in the package.



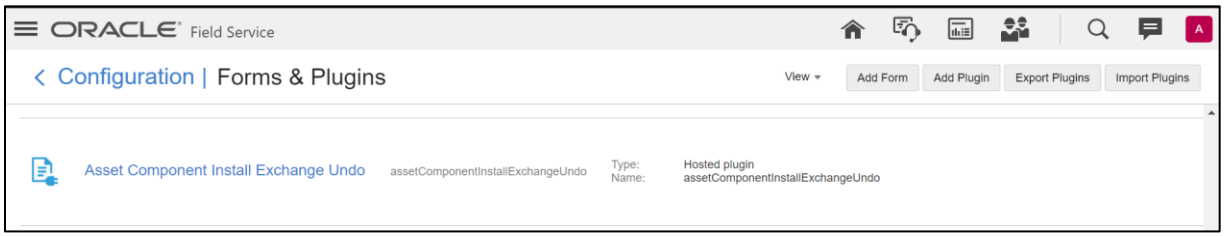
3. Make sure the **Available Properties** tab is populated with the properties shown below.



Asset Component Install Exchange Undo Plugin

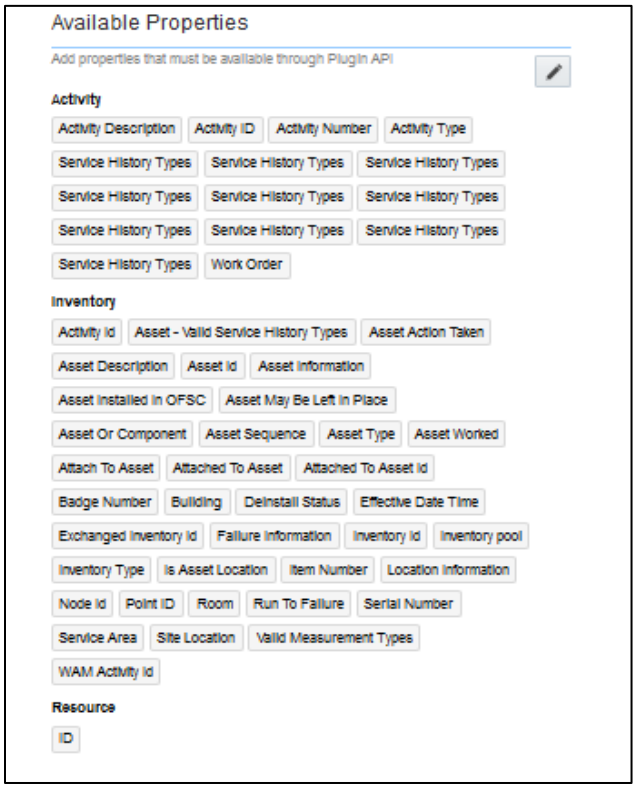
Handle operations on Install, Uninstall and replace actions for the assets and components in a work activity. Information associated with the components used for the assets on completion of the activity is handled.

1. Repeat steps 1 to 5 from the Measurement Plugin section.
2. Click **Import Plugins** to import the Asset Component Install Exchange Undo plugin provided in the package.



3. Select the **Asset Component Install Exchange Undo** plugin and enter the details:
   - oic_url: https://OIC_host:OIC_port/ic/api/integration/v1/flows/rest/OUTL-BA-OFSC_WACS_ASSET_QUERY/1.0/assetQueryDetails
   - oic_uname/oic_password: OIC username/password
   - ofsc_multiDay_act_lbls: The Activity type of the Multi-Day activity created in OFSC. If there are more than one use '|' separator. Example: Act1|Act2|Act3

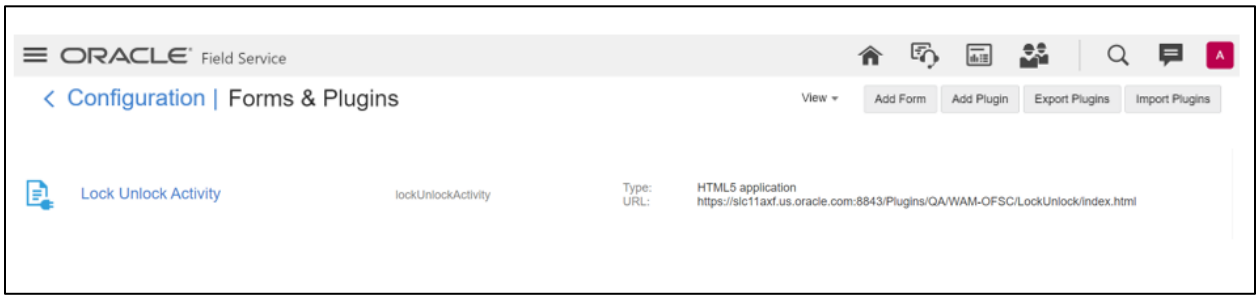
4. Make sure the **Available Properties** tab is populated with the properties shown below.



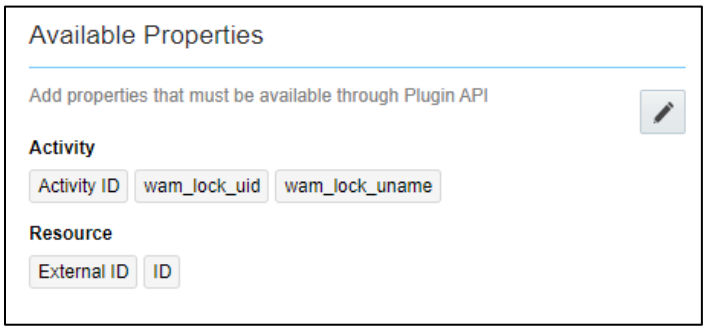
Lock Unlock Activity Plugin

Handle operations lock or unlocking of an activity for a crew so that he can work on it.

1. Repeat steps 1 to 5 from the Measurement Plugin section.



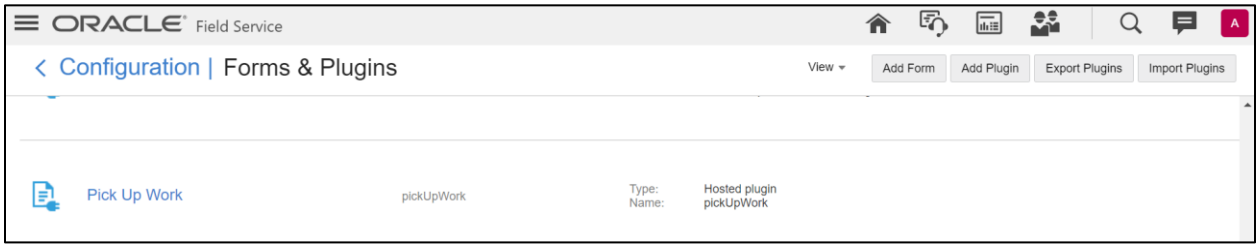
2. Click **Import Plugins** to import the Lock Unlock Activity Plugin provided in the package.



Pick Up Work Plugin

This plugins helps the crew to create Work order, Work request of types Asset related or non-Asset related from OFSC application itself. It can be a follow up to existing activity or a new work which is unrelated pickup.

1. Repeat steps 1 to 5 from the Measurement Plugin section.



2. Select the **Pick Up Work** plugin and enter the following details:
   - oic_url: https://OIC_host:OIC_port/ic/api/integration/v1/flows/rest/OUTL-BA-OFSC_WACS_ASSET_QUERY/1.0/assetQuery
   - oic_url1 : https://OIC_host:OIC_port/ic/api/integration/v1/flows/rest/OUTL-BA-OFSC_WACS_ASSET_QUERY/1.0/assetQueryDetailsPickup
   - oic_uname/oic_password: OIC username/password
   - ofsc_uname: clientID@instance ID
   - ofsc_password: client secret key
   - ofsc_siteAddress : instance ID
   - groupLabel : OFSC group label
   - bucket_for_nonScheduled : External ID of the bucket

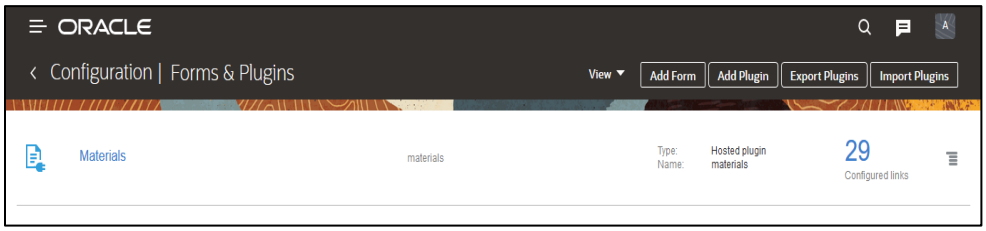
3. Click **Import Plugins** to import the Pick Up Work Plugin provided in the package.

Materials Plugin

This plugin handles the operations related to mobile storerooms in Oracle Field Service Cloud including reporting the use of materials. The operations includes Use/Undo Use Item, Install/Undo Install Asset, and Attach/Undo Attach component from truck inventories. Oracle Field Service Cloud can request an update of a mobile storeroom passing date/time of the last snapshot.

To import plugin:

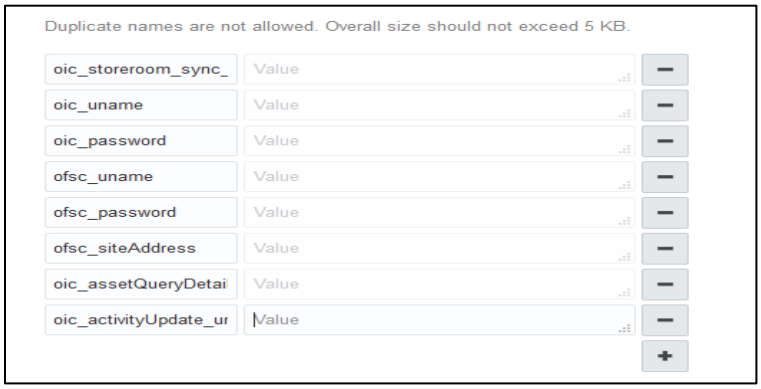
1. Repeat steps 1 to 5 from the Measurement Plugin section.
2. After the successful import of plugin, Oracle Field Service Cloud displays the details as shown below.



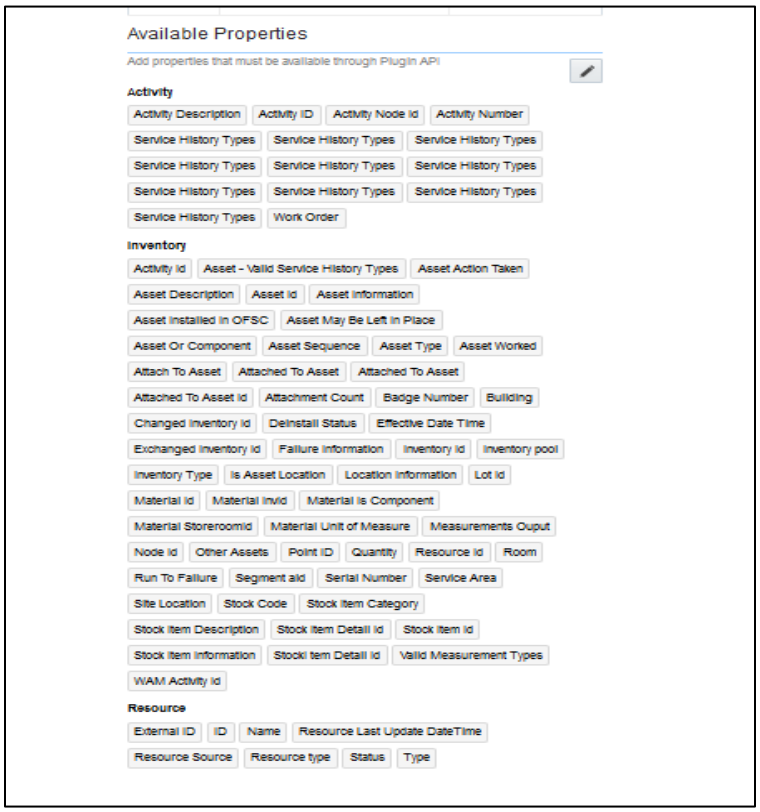
3. Select the **Materials** plugin and enter the details:
    - oic_storeroom_sync_url: https://OIC_host:OIC_port/ic/api/integration/v1/flows/rest/OUTL-BA-OFSC_WACS_STOREROOM_SYNC/1.0/syncStoreroom
    - oic_uname/oic_password: OIC username/password
    - oic_assetQueryDetails_url: https://OIC_host:OIC_port/ic/api/integration/v1/flows/rest/OUTL-BA-OFSC_WACS_ASSET_QUERY/1.0/assetQueryDetails
    - oic_activityUpdate_url: https://OIC_host:OIC_port/ic/api/integration/v1/flows/rest/OUTL-BA-OFSC_WACS_ACTV_UPDT_PULL/1.0/retrieveUpdates

    Oracle Field Service Cloud users should to configure the following:

    - ofsc_uname: clientID@instance ID
    - ofsc_password: client secret key
    - ofsc_siteAddress: instance ID



4. Make sure the **Available Properties** tab is populated with all properties.



User Types

The user types are used to manage permissions for all the users. Each user type has a profile that defines security and display permissions, such as the user's login method, the ability to use certain functions, and access to menu items and properties. Screen-configuration settings define the screens, windows, pop-up windows and other elements visible to a certain user type. They also support the context layout editor, in which the content, arrangement, and visibilities of each context are set.

Use the user types to create custom screen context layouts for Oracle Work and Asset Cloud Service integration to Oracle Field Service Cloud for utilities by accessing the screen configuration settings in specific user types created.

The user types that are part of this integration are:

- WACS_OFSC_Dispatcher_User_Type
- WACS_OFSC_User_Type

To setup user types:

Important! Make sure to load the Properties, Activity Types, and Plugins before proceeding.

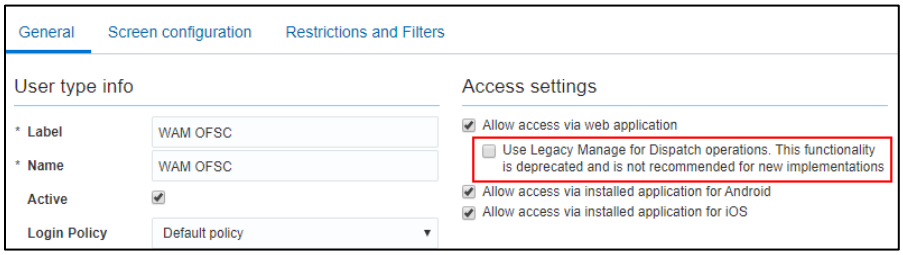
1. Login to Oracle Field Service Cloud.
2. Click ☰ on the **Home** page.
3. Navigate to **Configuration** page **> Users, Security, Integrations** > **User Types**.

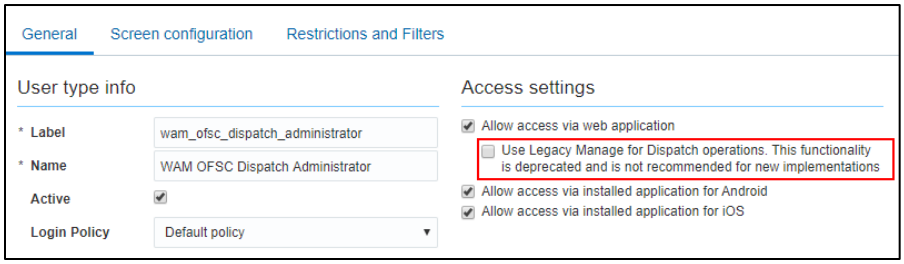
4. Click **Import** to import the user types.
5. On the **Choose file** field, click **Browse** to select WACS_OFSC_User_Type.
6. Click **Import** and verify the import is successful. Ensure that there are no “Imported with warnings” and “Not Imported”.
7. Click Import ‘WACS_OFSC_Dispatcher_User_Type’. Ensure that there are no “Imported with warnings” and “Not Imported”.

After the Dispatcher user type is set up, perform the following:

1. Make sure the Dispatcher user type import is successful without warnings.
2. Navigate to resources search for admin user. Note the user type configured in your environment.
3. Navigate to **Configuration > User types** > **WAM OFSC Dispatch Administrator**.
4. On the **General** tab, configure the display profile as ‘WAM OFSC Dispatch Administrator’ and the profile that was configured to admin user.
5. Navigate to **Resources search** for admin and click **Edit**.
6. Set the user type as ‘WAM OFSC Dispatch Administrator’.
7. Enter the password and click **Submit**.

Make sure that the **Access** settings are selected for both the user types.





Chapter 3: Additional OFSC Configurations

This chapter elaborates on the additional configuration of organization, work zones, outbound channel and UI validations in user types. It includes the following:

Sync Mobile Control Data Information from WACS to OFSC

Information from Oracle Utilities Work and Asset Cloud Service has to be replicated to Oracle Field Service Cloud to provide the drop-down information used in the Oracle Field Service Cloud mobile application. Create work skills, work skill properties, and work skill conditions in Oracle Field Service Cloud to match activities with resources and for crew tracking.

As part of this accelerator, Oracle Utilities WACS OFSC Admin Data Sync deployed on Oracle Integration Cloud (OIC) is provided to create these configurations automatically making migration of data easier and get rid of tedious manual work.

Oracle Utilities WACS OFSC Admin Data Sync needs to be run on initial installation or on a need to basis when new control data from Oracle Utilities Work and Asset Cloud Service or work skill related configurations needs to be created or updated in Oracle Field Service Cloud.

This sync integration process is manually run in OIC by scheduling the integration process to run on a scheduled date or selecting **Submit Now** from the menu of the activated sync integration process to initiate an instance of the integration. An optional language parameter can be entered, it should be an ISO 2 letter language code, to determine the description to retrieve from Oracle Utilities Work and Asset Cloud Service and in what language code the property name should be created in Oracle Field Service Cloud. If the language is not populated or blank, it is defaulted to English (en).

Refer to the Business Flows chapter in *Oracle Utilities Work and Asset Management Integration to Oracle Field Service Cloud Configuration Guide* at https://docs.oracle.com/cd/F41046_01/index.htm.

The following configurations are created/updated by the Sync Process:

- Create/update the enumeration values of the Oracle Field Service Cloud properties.

OFSC Property label	Synced WACS Information
wam_craft	Craft
wam_crew_shift_type	Crew Shift Type
wam_downtime_reason	Downtime Reason
wam_equipment_type	Equipment Type
wam_labor_earning_type	Labor Earning Type
wam_measurement_gauge_reason	Measurement Gauge Reason
wam_measurement_meter_reason	Measurement Meter Reason
wam_other_resource_type	Other Resource Type
wam_overtime_type	Overtime Type
wam_resource_uom	Unit of Measure-Resource
wam_material_uom	Material Unit of Measure
wam_material_stockitemCategory	Stock Item Category
wam_pickup_location_type	Pickup Location Type
wam_work_priority	Pickup Work Priority
wam_work_type	Pickup Work Type
wam_work_category	Pickup Work Category
wam_work_class	Pickup work class
wam_actType_psh	Activity Type To PSH

To verify the information synced from Oracle Utilities Work and Asset Cloud Service to Oracle Field Service Cloud, navigate to the respective property and check the enumeration values. Click **Modify**.

NOTE:

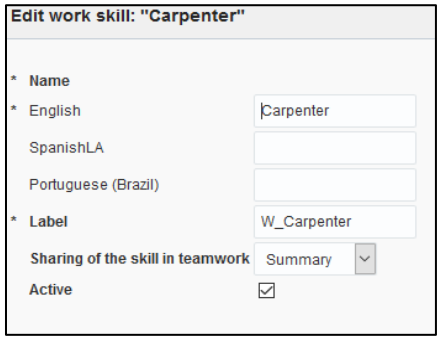
- After a resource is created in Oracle Utilities Work and Asset Cloud Service, the resource code (craft code, equipment code and other resource code) cannot be changed. The sync integration process uses these resource codes to create the enumeration values for equipment type, craft and other resource type property in Oracle Field Service Cloud. Slash (/) should not be included in the resource code.

- The sync integration process cannot delete enumeration values added to a property in Oracle Field Service Cloud; the OFSC REST API that updates the enumeration values of a property does not allow it. The only way to delete an enumeration value(s) in a property is by deleting the property, recreate the property and run the sync to get the latest values.

- Work Skill Related Configurations
  - A work skill is created in Oracle Field Service Cloud for each craft synced from Oracle Utilities Work and Asset Cloud Service. Work skill is a job-specific skill and is used as a criteria to match

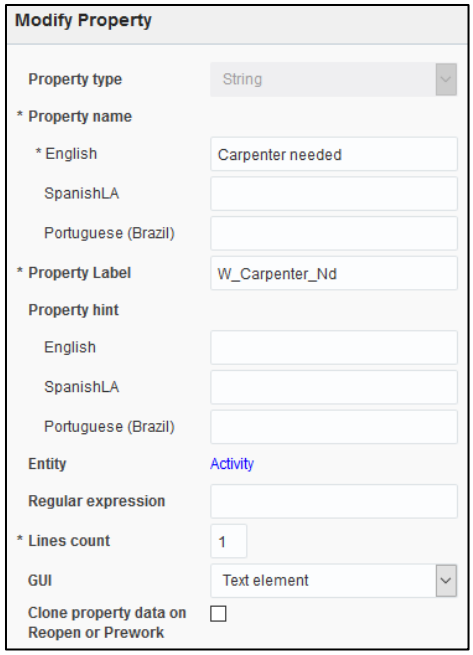
activities with the resources. The label format for Work Skill created in Oracle Field Service Cloud is:

- **W_** + WACS craftcode
  Example: Work Skill created in Oracle Field Service Cloud



- A work skill property on the activity level is created in Oracle Field Service Cloud for each craft synced from Oracle Utilities Work and Asset Cloud Service. This property will contain information about how many people with the particular work skill is needed for the activity. The label format for Work Skill property created in Oracle Field Service Cloud is:
  - **W_** + WAM craftcode + **_Nd**

  Example: Work Skill Property created in OFSC

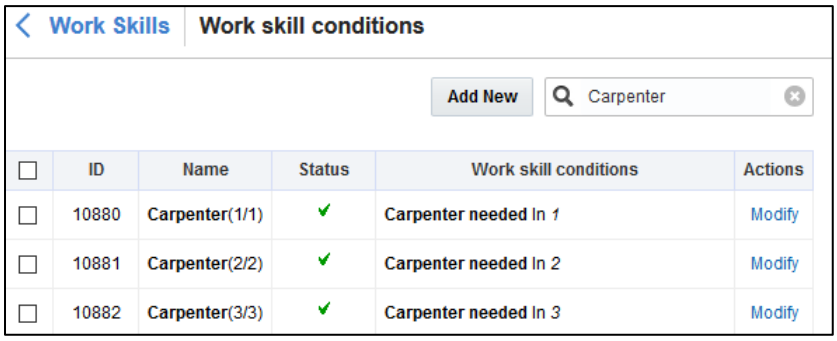


- Work Skill Conditions are created in Oracle Field Service Cloud based on the craft and the configuration property value of workSkillCond.actvtySameSkillMaxWorker.default obtained from WAMOFSC_ConfigProps lookup defined in Oracle Integration Cloud. This configuration

property value contains the maximum number of people with the same work skill allowed to work simultaneously in an activity.

In this example: For work skill = Carpenter and workSkillCond.actvtySameSkillMaxWorker.default = 3, these are the work skill conditions created.

Example: Work Skill Conditions created for Work Skill Carpenter in OFSC



These configuration are used to track teams (crews) consisting of people with different work skills and make sure that activities that require several people simultaneously is assigned to the right team.

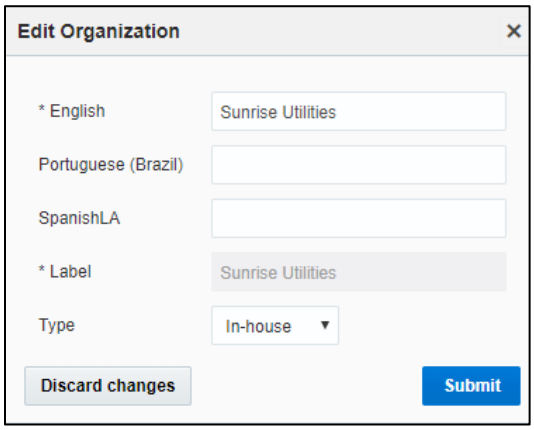
Organization

An organization can have buckets, organization units (Org Units), field resources, tools or vehicle associations. Create an organization before adding any type of resource.

To create an organization:

1. Navigate to the **Configuration** page and click **Organization**.
2. Click **Add New** to add a new organization.

3. Enter the name of the organization and click **Submit** to save the details.

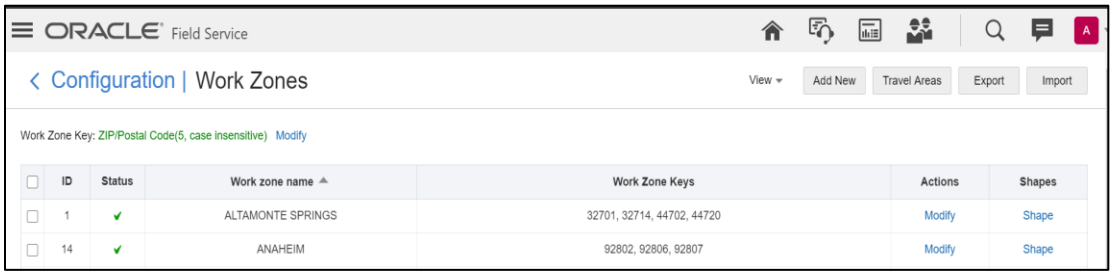


Work Zones

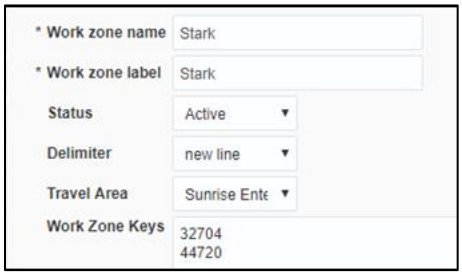
Work zones are used to divide area in different zones for better scheduling of crews. Use the work zone keys to provide the ZIP/postal code to facilitate the division through the Service Point information that comes from Oracle Utilities Work and Asset Cloud Service.

To add a work zone:

1. Navigate to the **Configuration** page and click **Work Zone**.
2. Make sure the **Work Zone Key** (top left corner) is ZIP/Postal Code.



3. On the **Work Zone** page, click **Add new** to add the required postal codes in the Work Zone Keys field.



4. Click **Add** to save the new work zone.

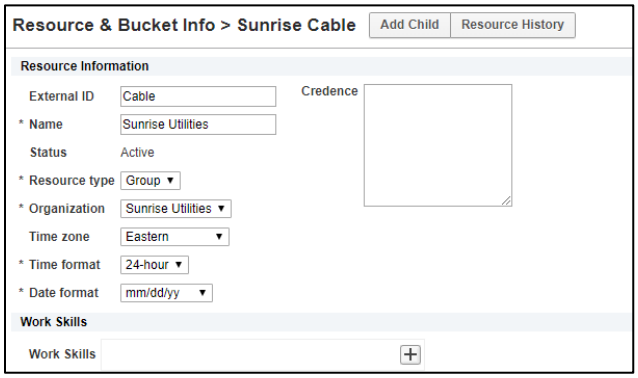
Resource and Bucket Info

Oracle Field Service Cloud uses bucket and resources to categorize the resources. In this integration, use the bucket as a resource type to route the entire meter service tasks to workers. In the bucket, create two resources (field workers) who are assigned field activities coming from Oracle Utilities Work and Asset Cloud Service.

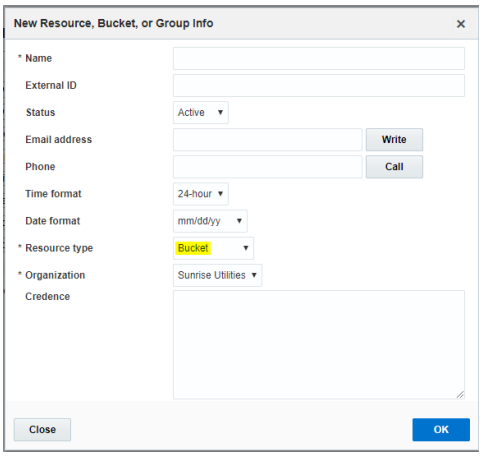
To create resources in the bucket:

1. On the Oracle Field Service Cloud Home page, click the three lines on the top left corner.

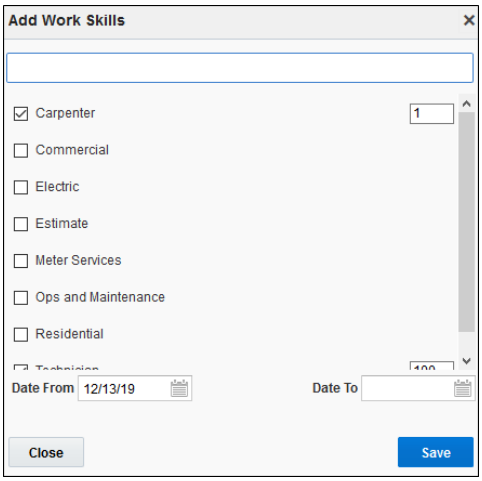
2. Click **Resource & Bucket Info**.
3. Click **Add Child**.



4. Select **Bucket** to add a new bucket in the **Resource type**.
5. Enter the required details and click **OK**.
6. Click **Add Child** and select **Technician** from the **Resource type** drop-down list. Click **OK**.



7. Select the required work skills to this Technician. Click **Save**.

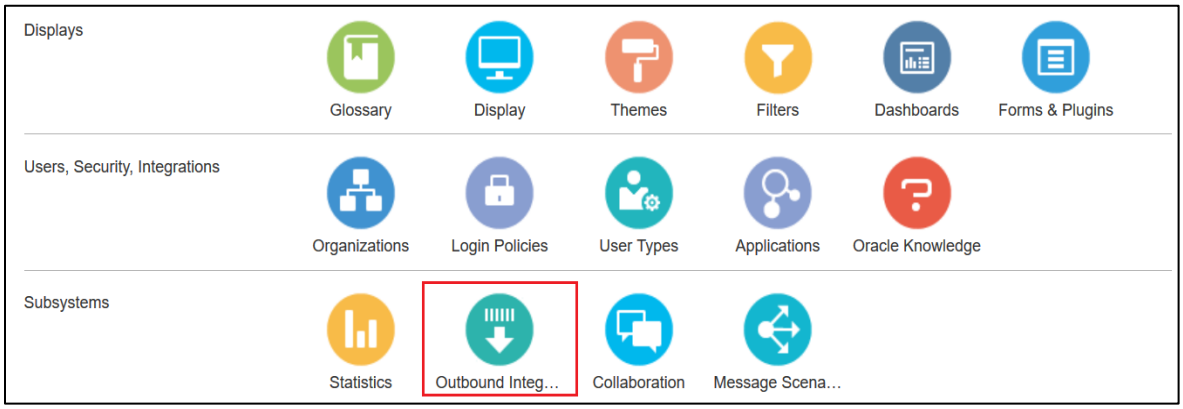


Outbound Channel

This element is used to create a channel to communicate with Oracle Utilities Work and Asset Cloud Service through Oracle Integration Cloud. Various channel types can be chosen, but since Oracle Work and Asset Cloud Service integration to Oracle Field Service Cloud is through Oracle Integration Cloud, it is used as the channel type.

To add a communication channel:

1. Navigate to the **Configuration** page **> Subsystems > Outbound Integration** icon.

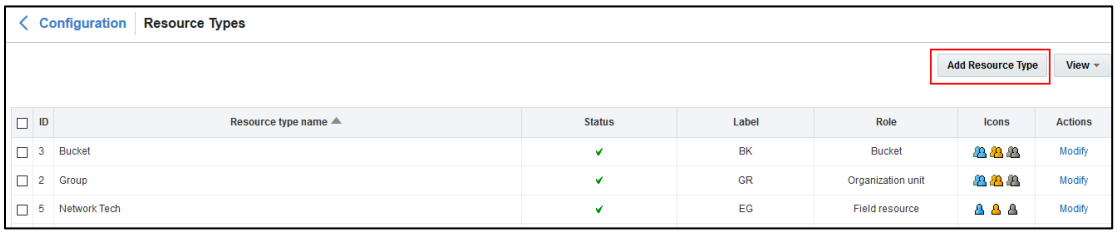


2. Click **Add channel**. Enter the required details and click **OK**.
   Name: Name of your choice (Ex: OIC)
   Host: your OIC host name
   User Name: OIC user name
   Password: OIC password
   Confirm Password: OIC password

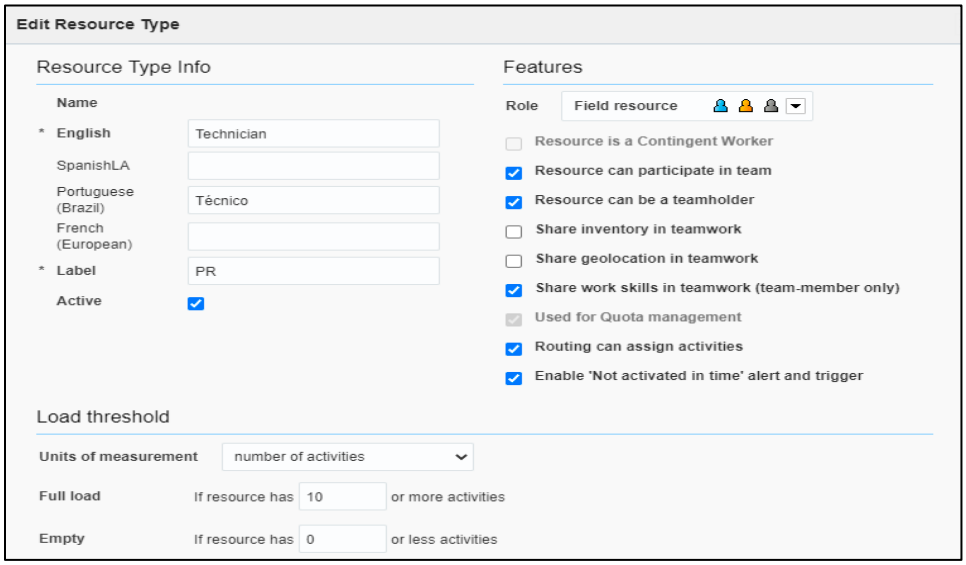
Crew Configuration

To configure a crew:

1. Navigate to **Configuration** page and click **Resource Types**.
2. Click **Add Resource Type**.



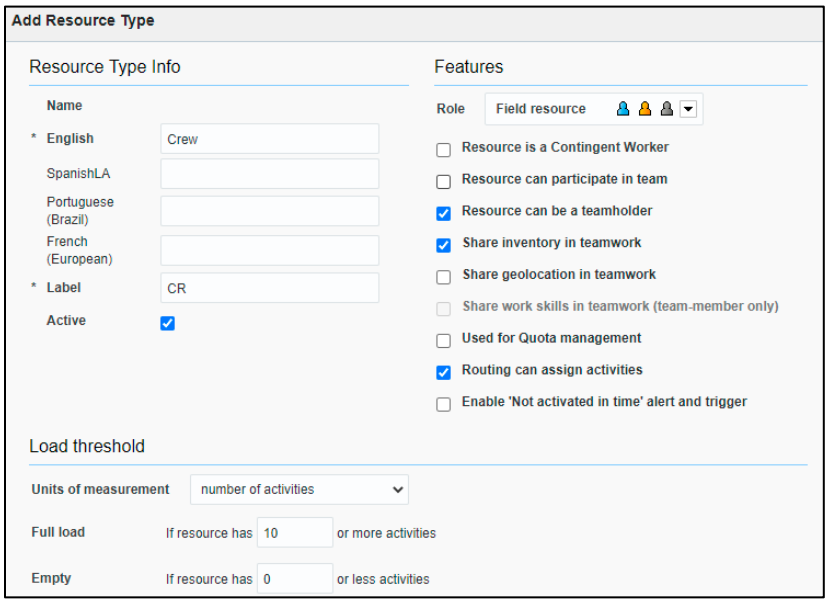
3. Enter the required details and make sure the crew has 'PR' as the label. Save the record.

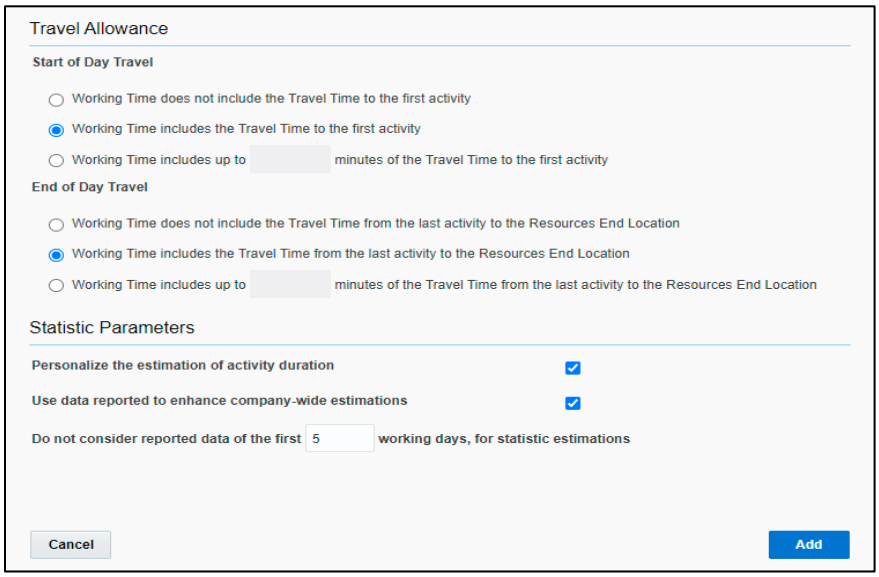


Adding Crew and Crew Member

To create resources for the crew member and crew itself:

1. Navigate to the **Configuration** page **> Resources, Activities, Inventories > Resources Types**.
2. Click **Add Resource Type**.
3. Populate the required information and click **Add**.



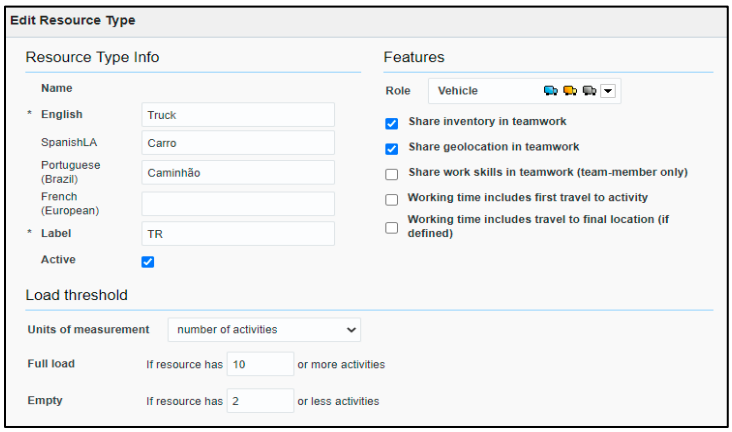


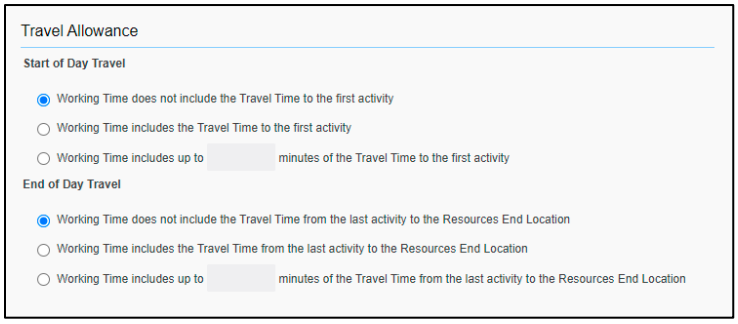
4. Repeat steps 2 and 3 to create resource types for crew members.

Adding Truck Resource Type

To add a truck resource type:

1. Repeat steps 1 and 2 in the Crew Configuration section.
2. Populate the required information and make sure the Truck has 'TR' in the label. Click **Add**.

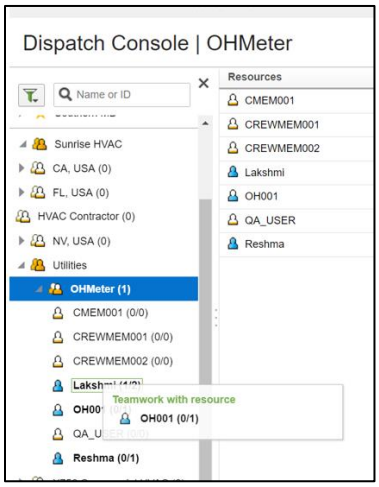




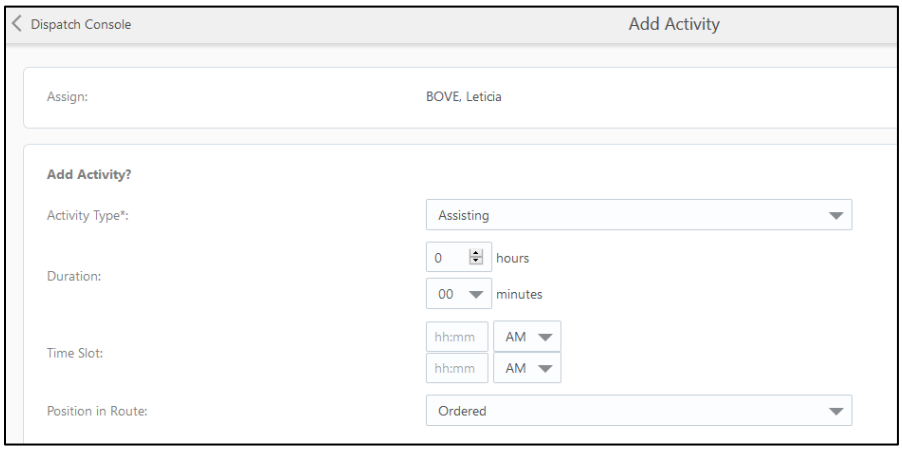
Assigning Resources

To add multiple resources to a crew so that they can assist it in the completion of work:

1. Navigate to the **Activities** page and observe various resources.
2. Drag and drop the resources to the crew so as they can assist.



3. On successful drag and drop, add activities to the crew.



4. Populate the required information and click **Submit**.

Offline vs Online Mode

When the crew is enroute to perform an activity in the field there is a possibility that the location does not have network (offline mode); if the network exists, the mode is online. When online, crew can perform the work, validate the completion of the activity, and submit the activity for completion. But, when offline, though the crew can validate and complete the activity, this completion information will be synched to server and message is sent out of Oracle Field Service Cloud only when it comes online.

Note: No offline support is currently provided when adding attachments to a service history. If crew time is entered offline, supervisor has to open the **Resource Usage** page when online before going offline. This make sure all relevant crew member information needed is available on local storage before going offline.

Timesheets/equipment/others can be entered in offline mode, but cannot be completed. All individual **Complete** buttons and **CompleteAll** button will be disabled in offline mode.

The crew should open all plugins once when online before starting the work in offline mode to sync required information in local storage.

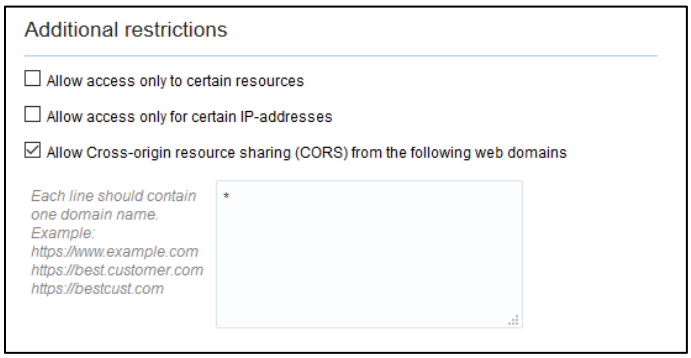
Crew Time

As part of the crew time sheet functionality, from the plugin, there is an invocation call to OFSC REST API to configure the crew members under Crew.

To call OFSC REST API from the plugin, set up cross-origin resource sharing (CORS) in Oracle Field Service Cloud as follows:

1. Navigate to **Configuration** > **Application** > **Additional Resources**.
2. Select **Allow Cross-origin resource sharing (CORS) from the following web domains** and provide the Oracle Field Service Cloud domain.

   If the domain details are unknown, enter '*'. For the actual Oracle Field Service Cloud domain contact the Oracle Field Service Cloud support team.

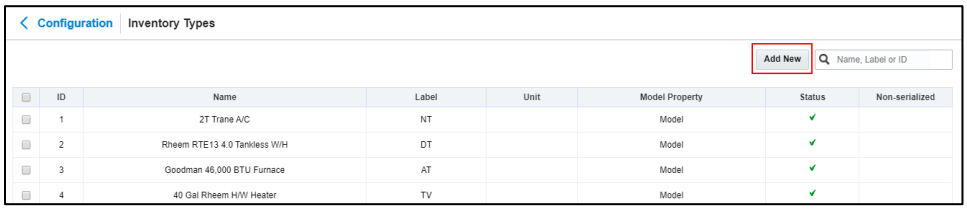


Inventory Types

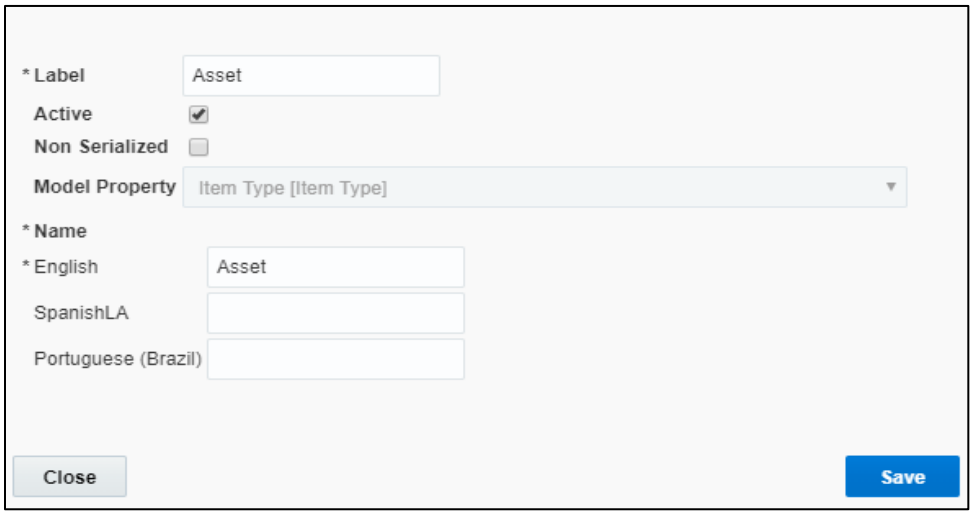
The inventory types (such as asset, material, etc) are stored in Oracle Field Service Cloud.

To add an inventory type:

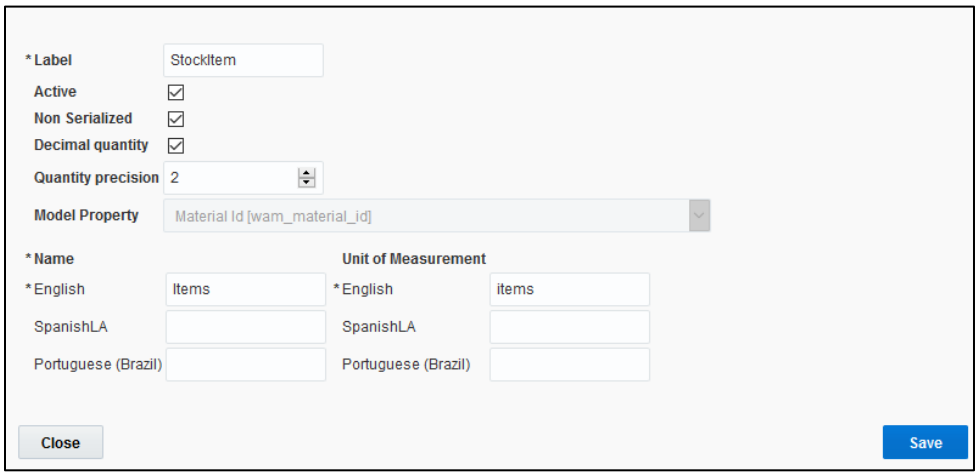
1. Navigate to **Configuration** > **Inventory Types**. Click **Add New**.



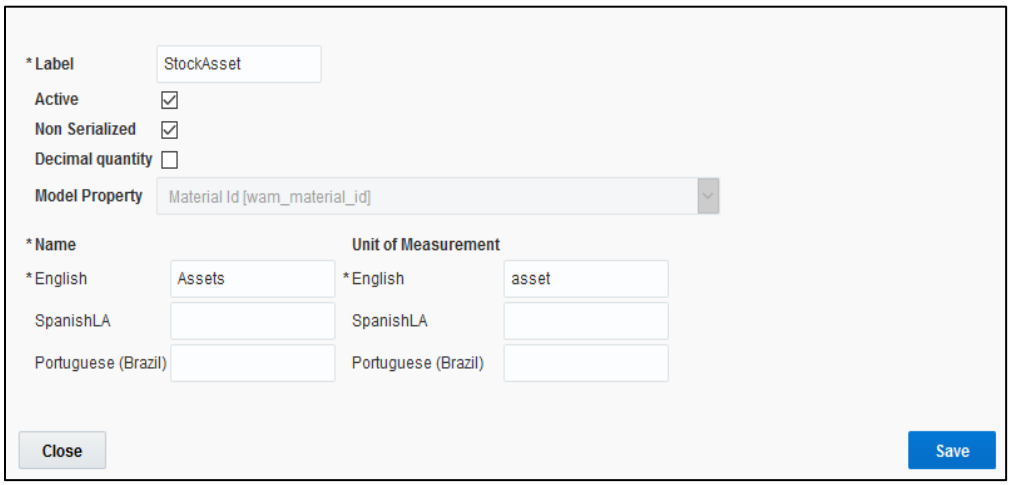
2. Enter the details as shown below and click **Save**.

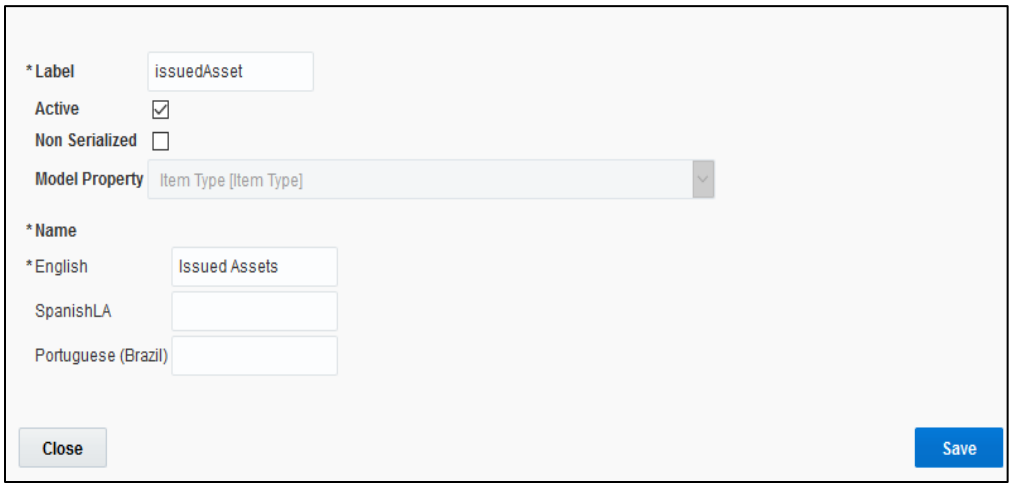


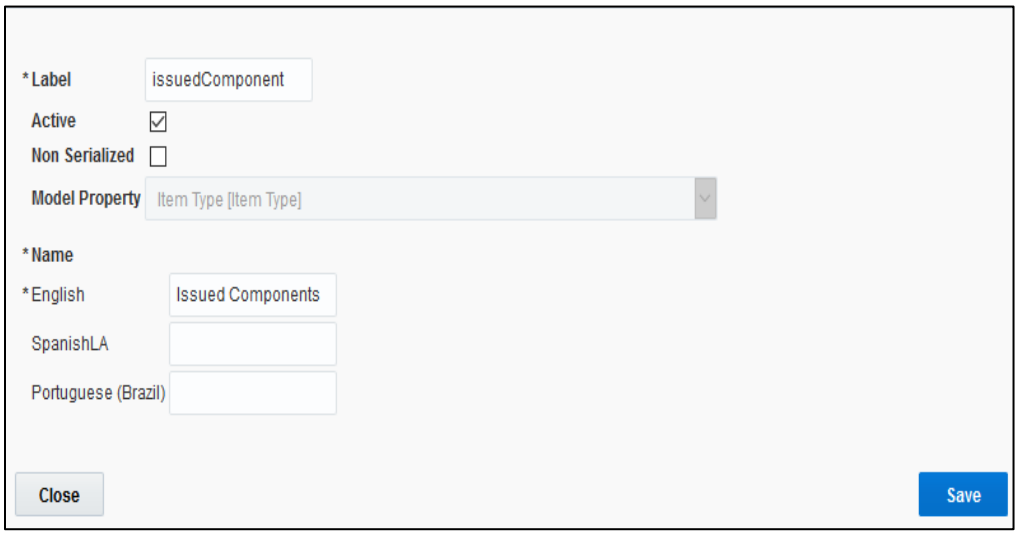
3. Repeat step 2 for StockItem, StockAsset, issuedAsset and issuedComponent.



Note: Default Quantity precision is set to 2. User can configure it as per their need.





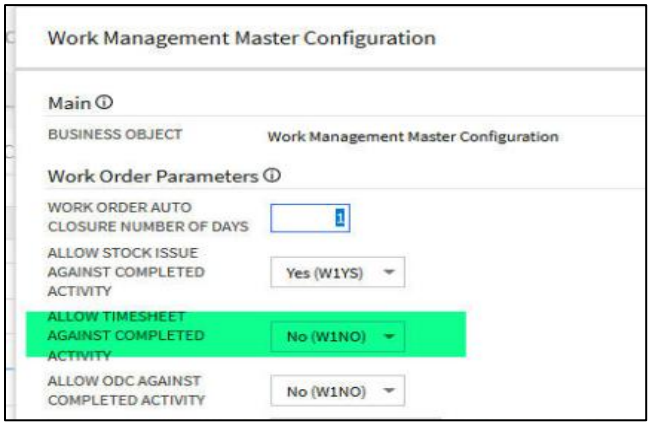


Timesheet/ Other Direct Charges Flag

This flag indicates whether mobile worker is allowed to add timesheet/other direct charges for completed activity.

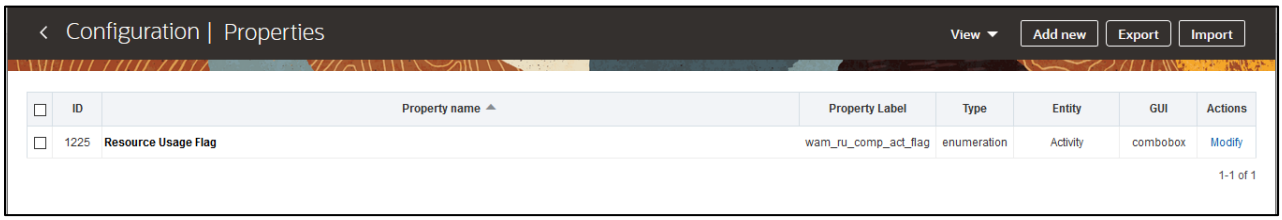
In the Oracle Utilities Work and Asset Management master configuration, the following properties accept values - Yes/No.

- Allow Timesheet against completed activity
- Allow ODC against completed activity

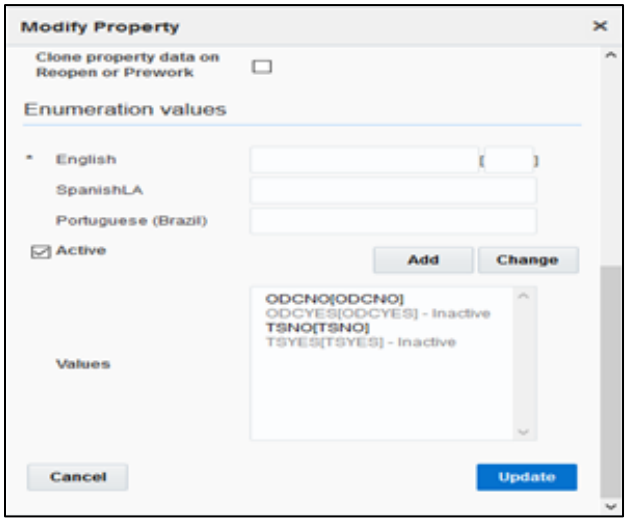


To set the value of these properties in Oracle Field Service Cloud:

- Navigate to **Configuration > Properties.** Search for **Resource Usage Flag**.



- Click **Modify**. Go to the **Enumeration values** section. TS and ODC indicate Timesheet and Other Direct Charges respectively. Default value for both flag is “NO”.



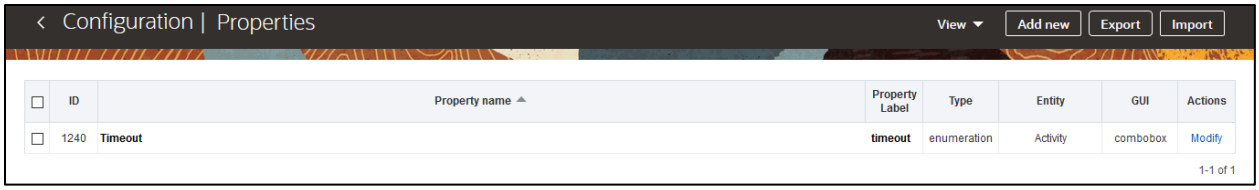
3. To change the value of flags, select or unselect the **Active** checkbox to make the corresponding enum values of YES/NO active or inactive respectively.
4. Click **Change > Update** to reflect the changes. Else, click **Cancel**.

Timeout Seconds

User can set the value of timeout variable in seconds that indicates a limit on how long they are willing to wait for a response from a service to come back on client side. This configuration is added to stop the loading spinner and display timeout message on UI if the request takes too long for response.

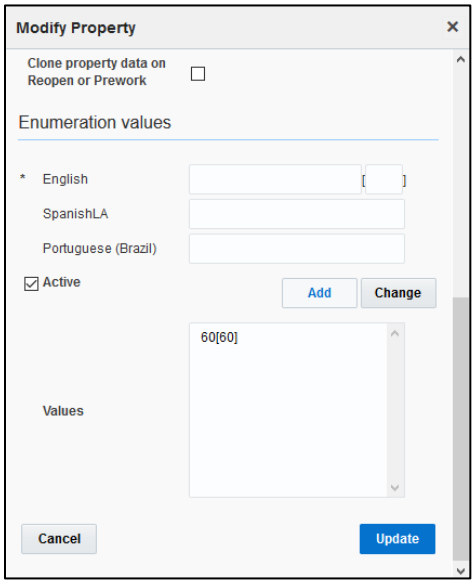
To set the value of this property in Oracle Field Service Cloud:

1. Navigate to **Configuration > Properties.** Search for “Timeout”.



2. To add new value for timeout, click **Modify** and go to the **Enumeration values** section.

a. Provide key and value in seconds.
b. Click **Add**.
c. Select or unselect the **Active** checkbox to make the corresponding enum values of timeout active or inactive respectively.
d. Click **Change > Update** to reflect the changes. Else, click **Cancel**.



Note: Default value of timeout is 60 seconds. There must be only one value active at a time.

Checklist

Before proceeding to Chapter 4: User Operations verify if the following activities are complete.

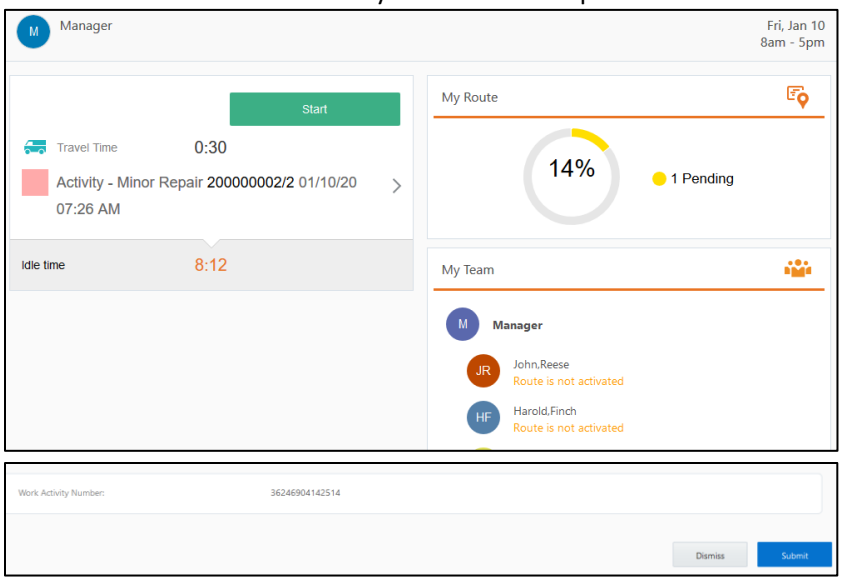
- All the Activity Types specific to customer are created
- Properties are imported
- User Types are imported
- Plugins are configured
- Make sure the quota is allocated and need not be configured
- Name of the organization
- Sync information from Oracle Utilities Work and Asset Cloud Service to Oracle Field Service Cloud
- Work Skills are created
- Name of the resources, work zones
- Inventory Types are created
- Details of Oracle Integration Cloud used to create the outbound channel

Chapter 4: User Operations

This chapter provides step-by-step instructions for user operations. It includes the following:

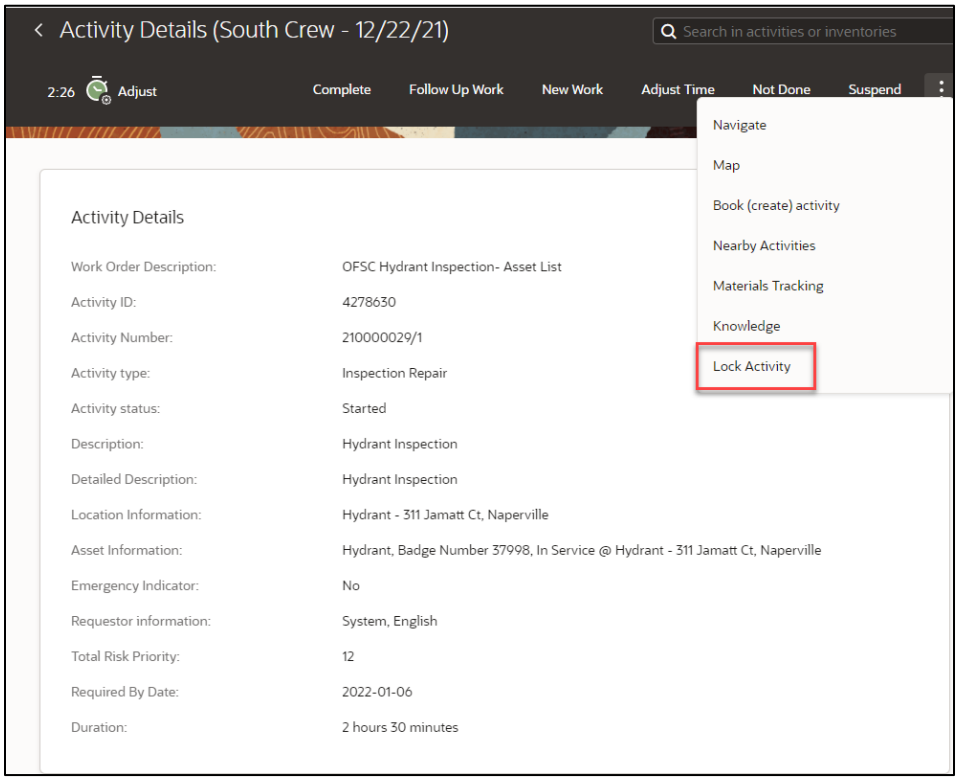
Starting Activity

1. Login to Oracle Field Service Cloud Mobility application.
2. Access the **Mobility** page using the worker/technician's credentials. The page shows the activities in the queue of the worker.
3. Click **Start** to start the activity in the worker's queue.



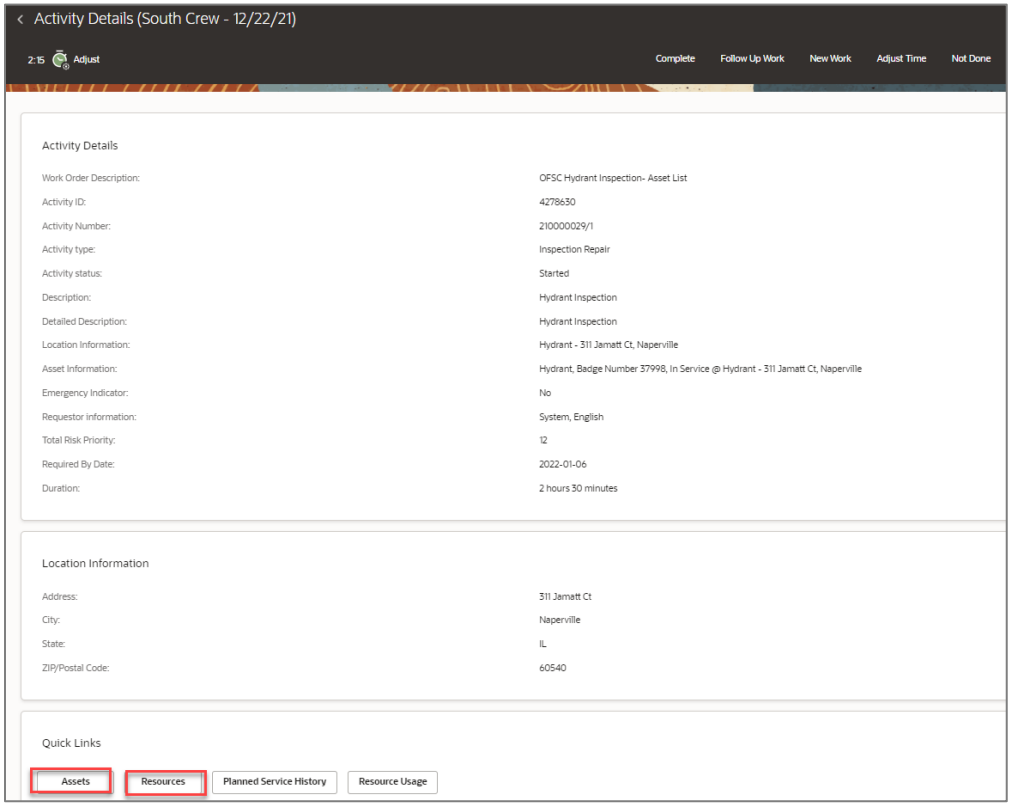
Locking Activity

Activity is presented to mobile user in read only mode. In order to make changes to the activity, enter completion information, service histories and resource usage user must lock the activity. Locking activity guarantee that only one member of the crew will be updating the activity. Once the work is done user should unlock the activity so other crew members can add their updates.

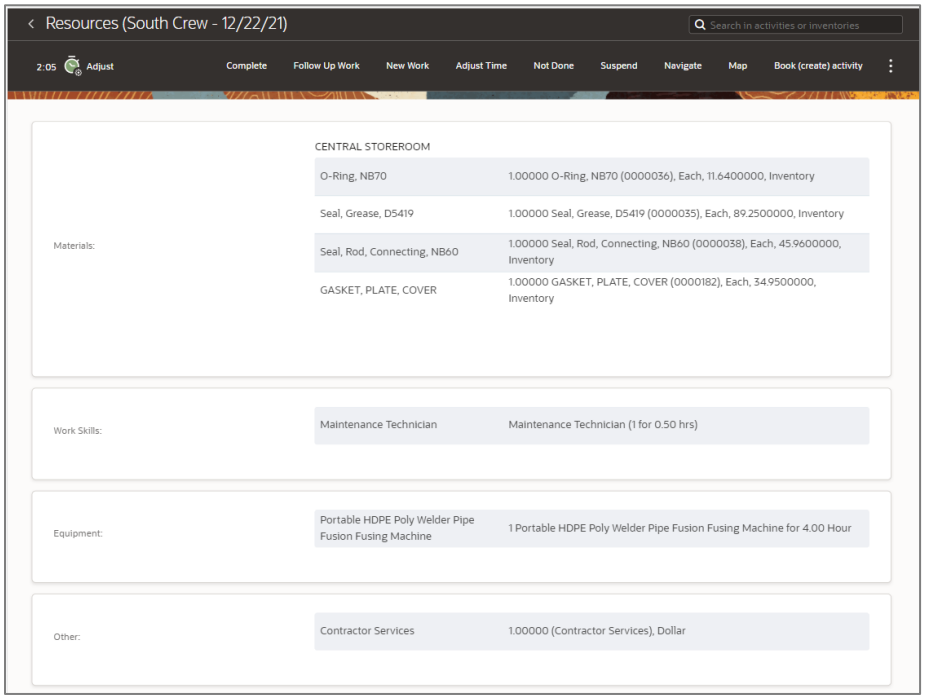


Activity Details

The crew can see various information about activity including resources required for the activity and assets to be serviced.

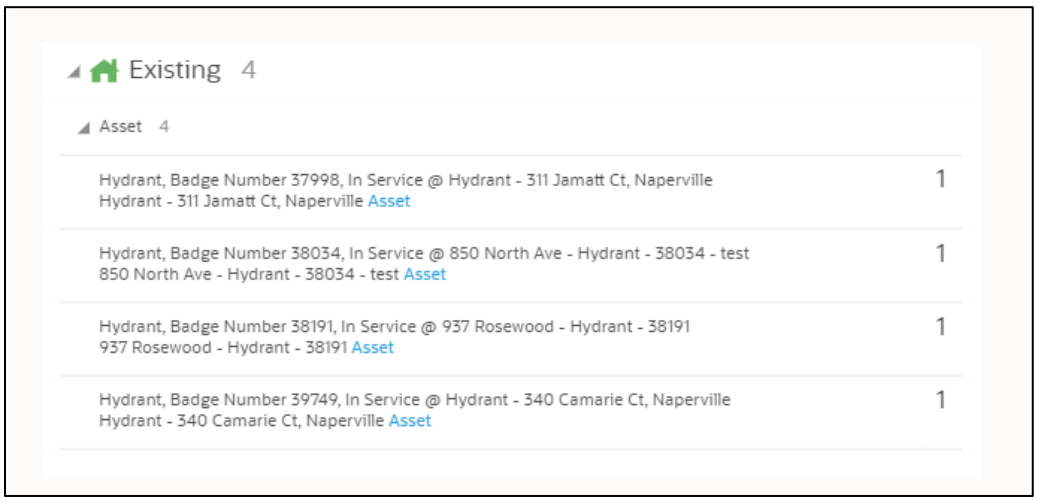


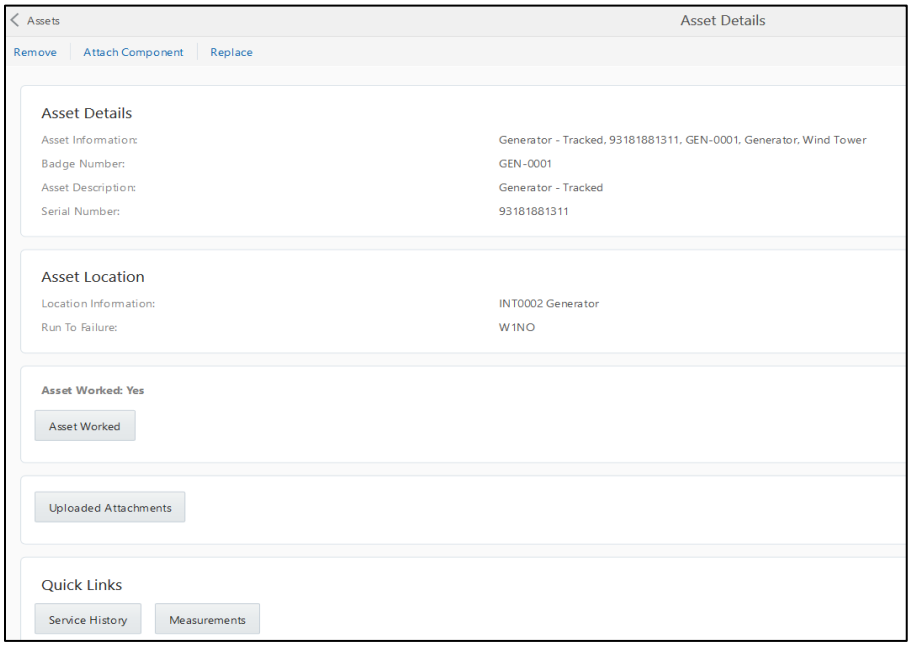
To view the resources, navigate to the **Activity Details** page and click **Resources**. Resources include planned materials, work skills, equipment and Other resources defined by activity planner.



To view the list of assets for an activity, navigate to the **Activity Details** page and click **Assets**.

Oracle Field Service Cloud displays all assets attached to this activity. Select the required asset to view the asset information.





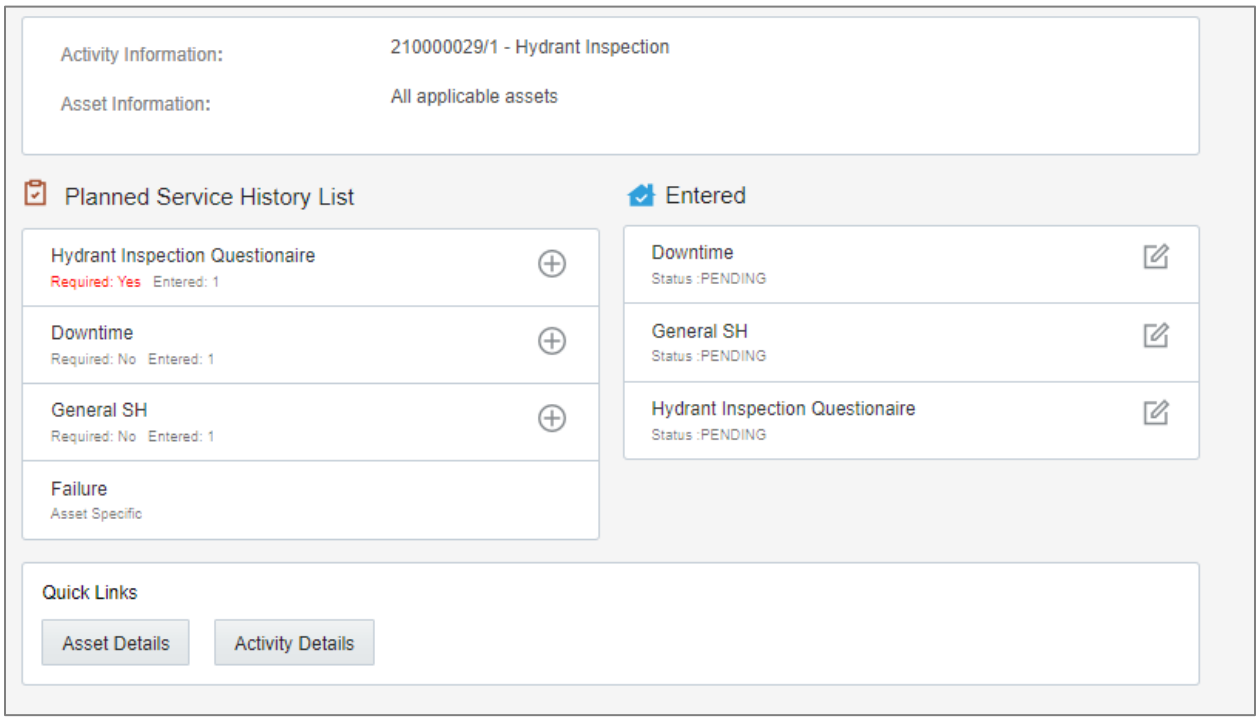
Service Histories

There are two types of Service Histories that can be entered for activity.

- **Planned Service Histories:** Planned service histories are requested by a person who plans an activity and must be entered by field crew. These service histories can be entered from the **Planned Service Histories** page. After creating a history, they will be displayed among Asset specific Service Histories.
- **Asset Service Histories**: Asset Service Histories are additional service histories valid for that asset. They are listed in the **Asset's Service Histories** page.

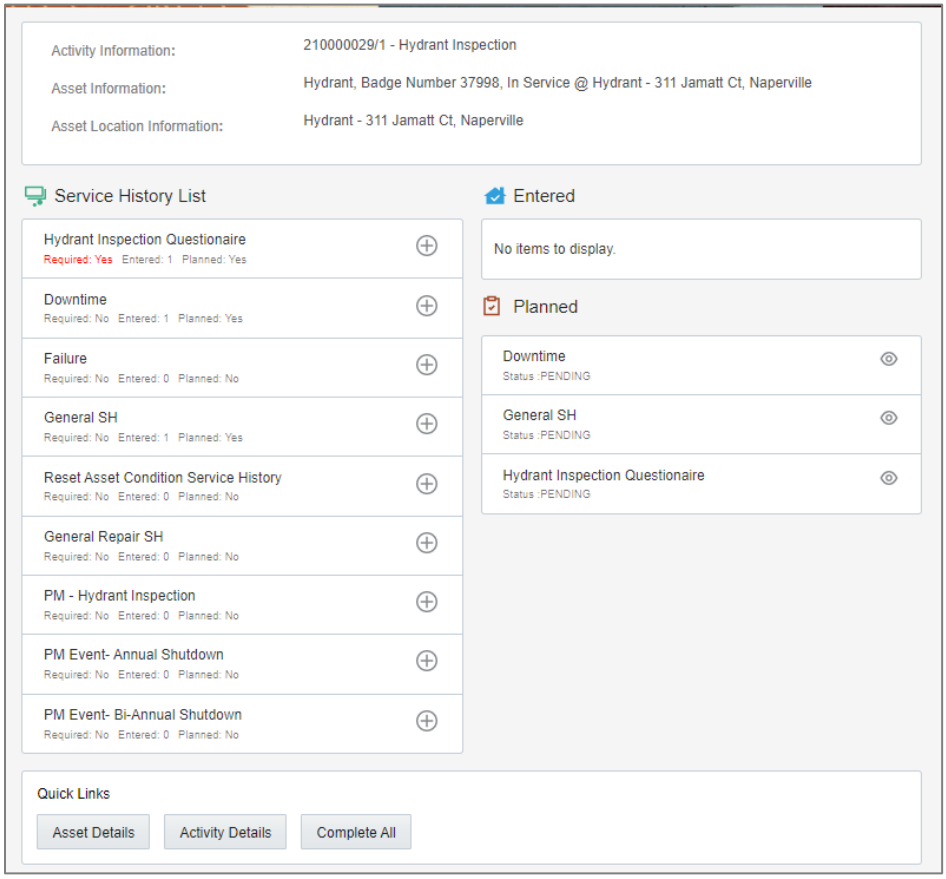
Planned Service Histories

To enter planned service histories, navigate to the **Activity Details** page and click **Planned Service History**. The **Planned Service Histories** page is displayed.



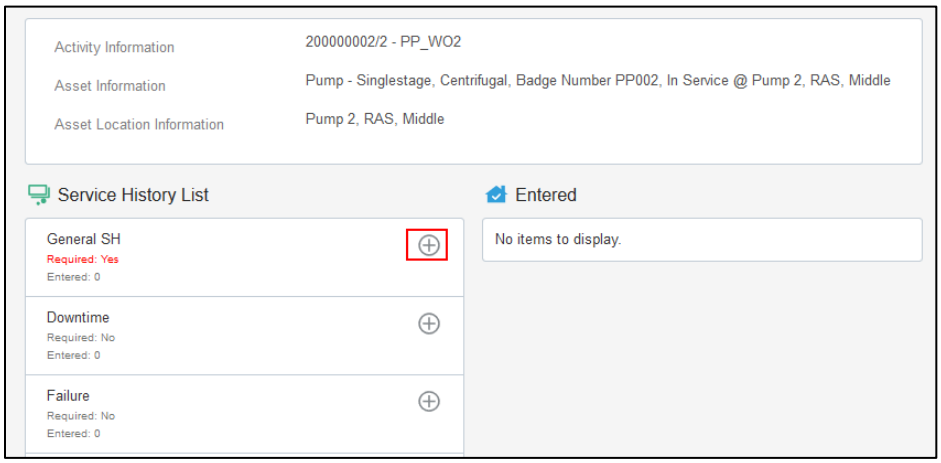
Asset Service Histories

To enter the asset's service histories, navigate to the **Asset** page and click **Service History**.

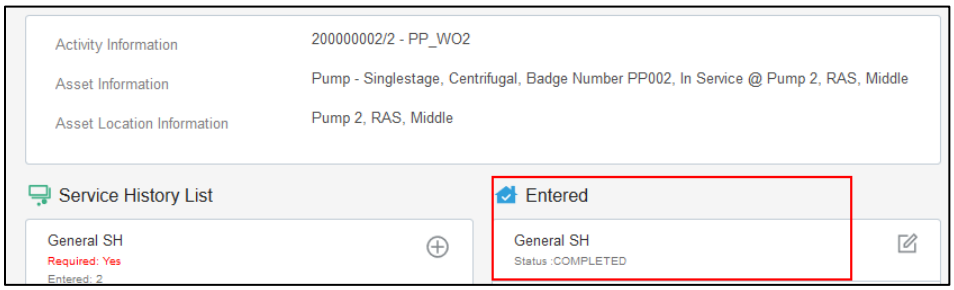


To enter the service history details:

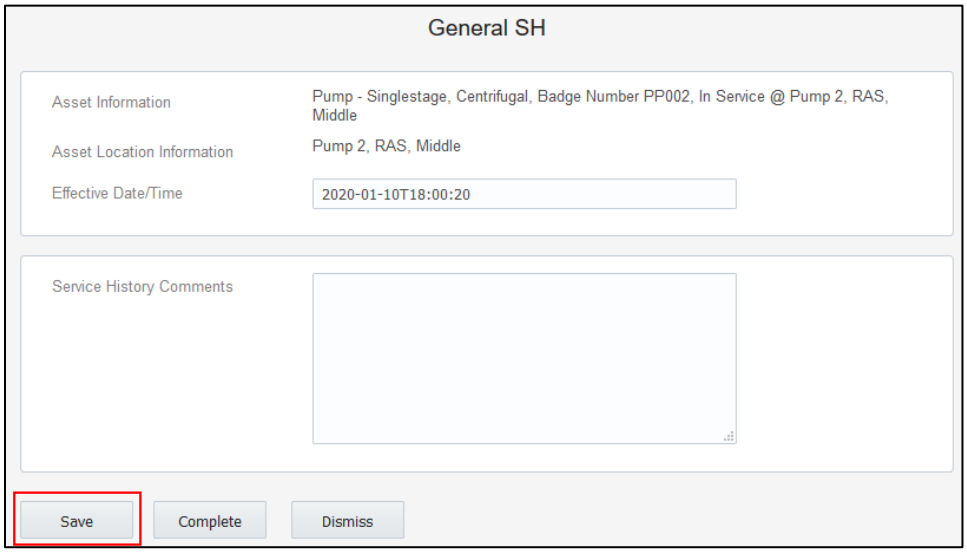
a. Click **Service History** on the **Assets** page.
b. From the list of service histories that are part of the activity, select '+' next to the specific service history to add the required details.

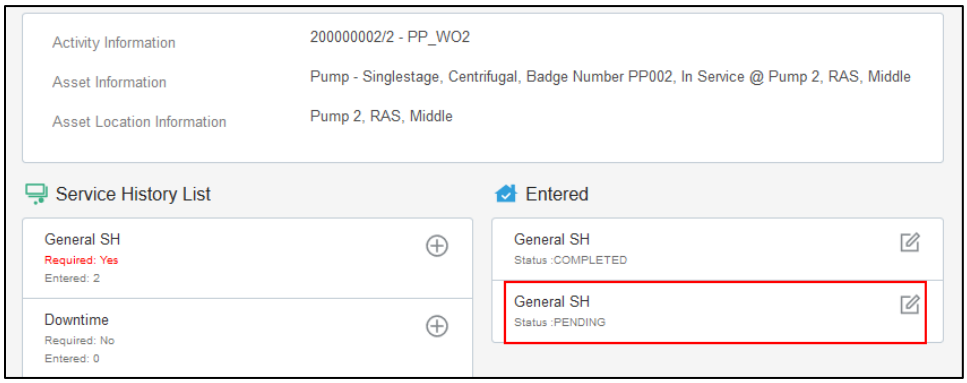


c. Click **Complete**. The service histories are displayed in the **Entered** pane.

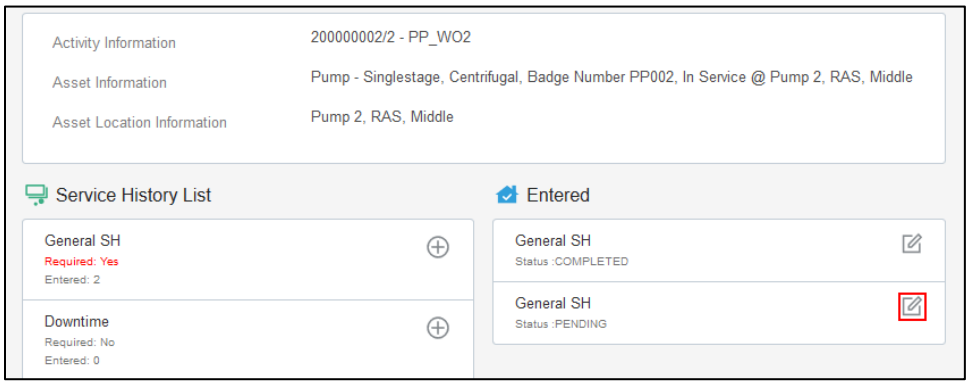


Note: Crew can also save the service history in 'pending' state. Click **Save**. The pending service histories are displayed in the **Entered** pane with the 'pending' status.

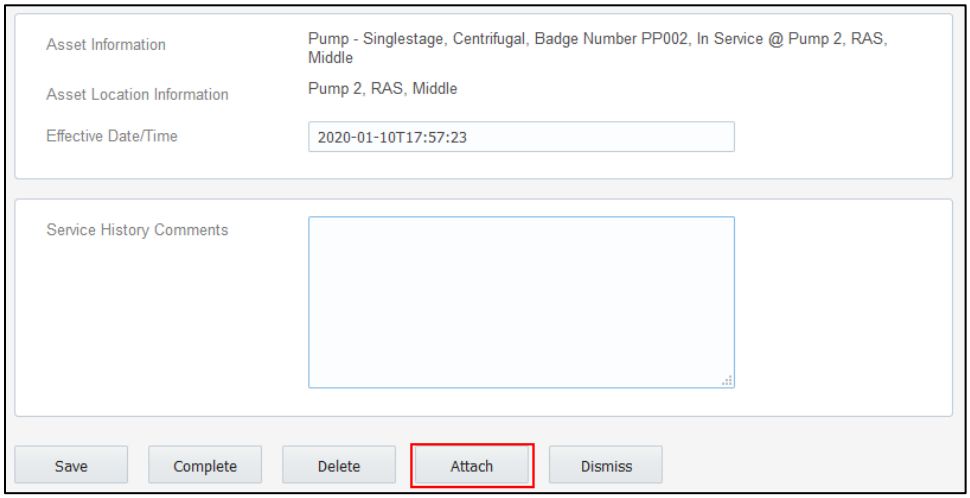




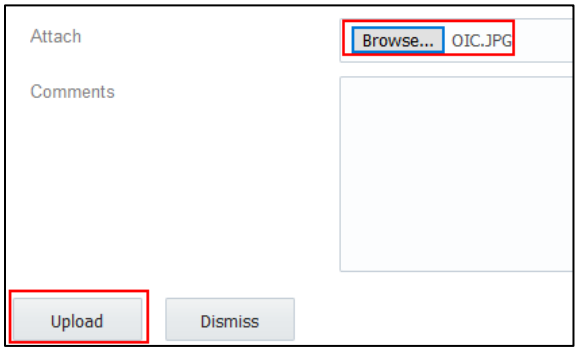
d. To complete a service history in 'pending' status:
   i. Click **Edit** to edit a specific service history.



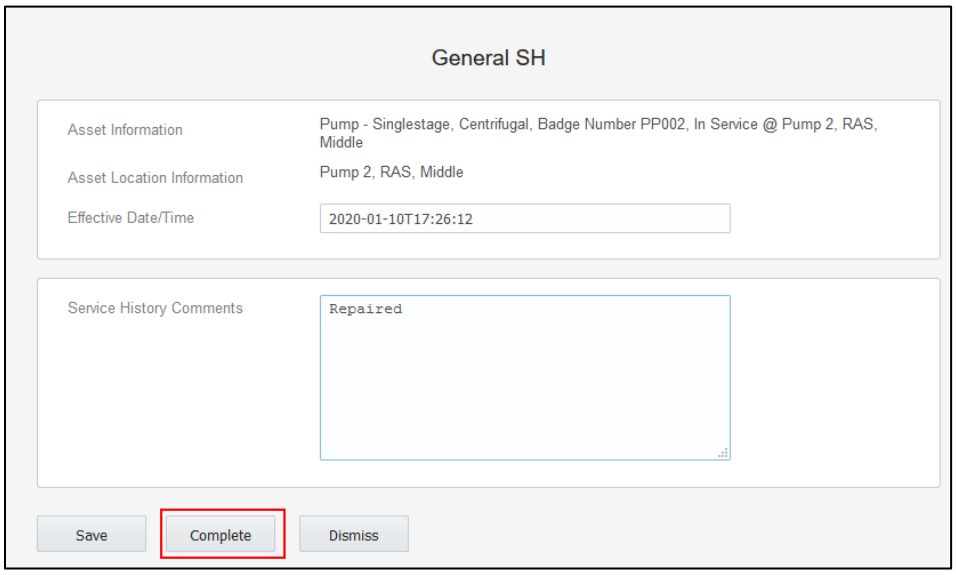
ii. Click **Attach** to attach images of various artifacts.



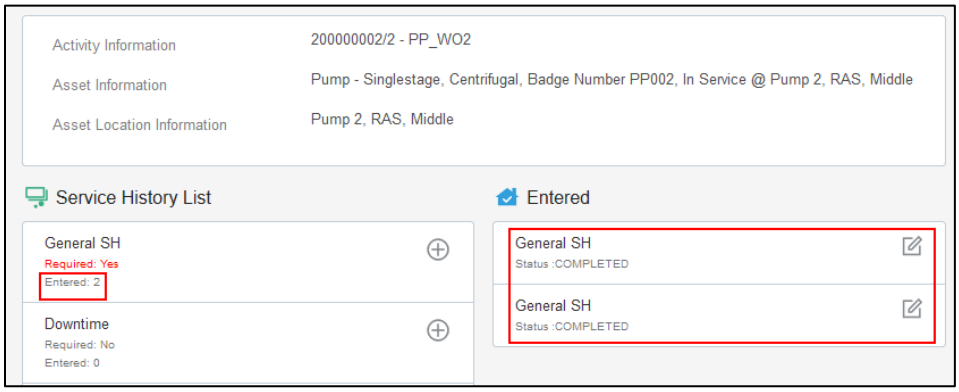
iii. Browse and select the file to attach. Click **Upload**.



iv. Click **Complete**.



The completed service histories are displayed in the **Entered** pane. The number of times the service history was edited is also shown.



e. Populate the details for required service histories.
f. Make sure the service histories that are marked as 'Required: Yes' have at least one entry.
g. Click **Asset Details** to navigate back to the **Asset Details** page.

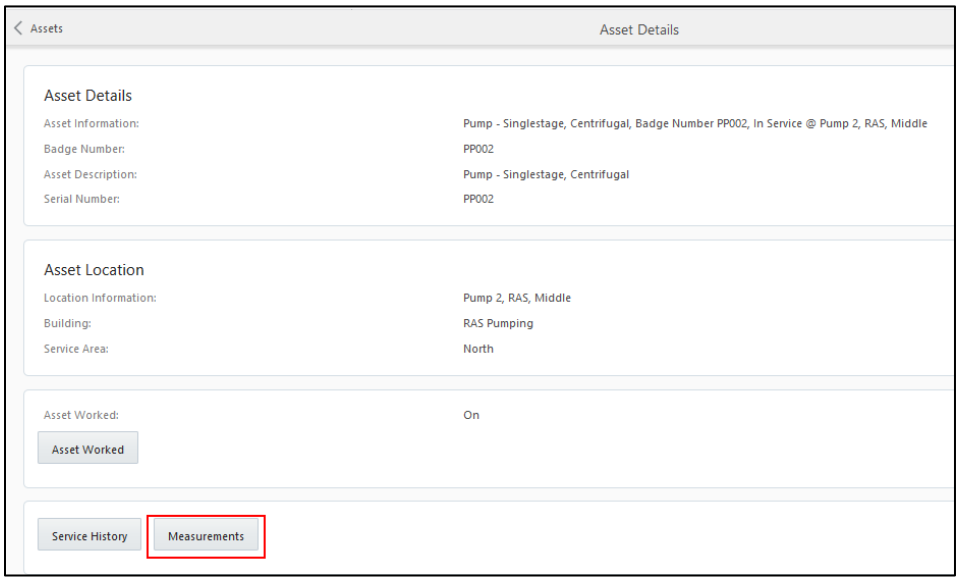
Supported Service Histories Types

There are 5 Service Histories categories supported out of box: Questionnaire, Inspection, Failure, Downtime and General. They correspond to business objects define in WAM. See Customization section to see how to create custom service history categories.

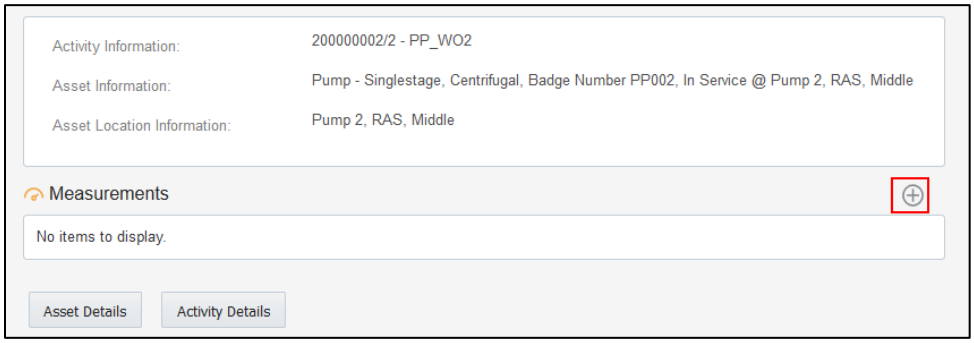
Measurements

To enter an asset's measurements:

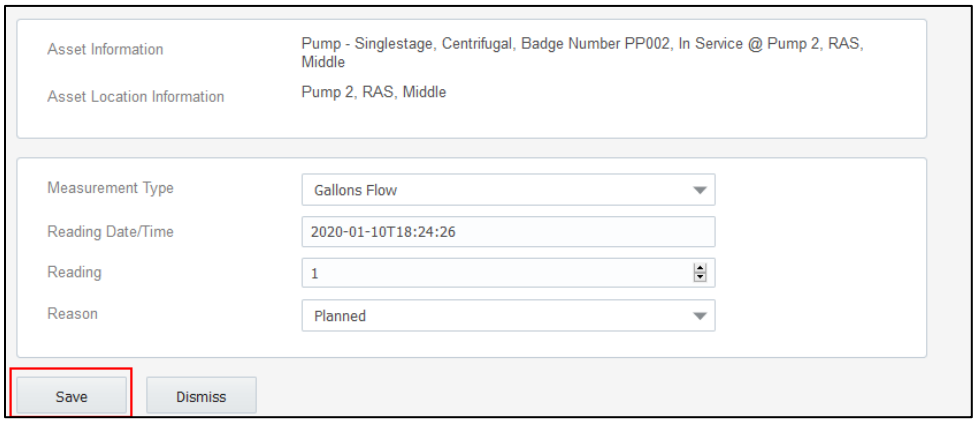
1. Navigate to the **Assets** page.
2. Click **Measurements**.



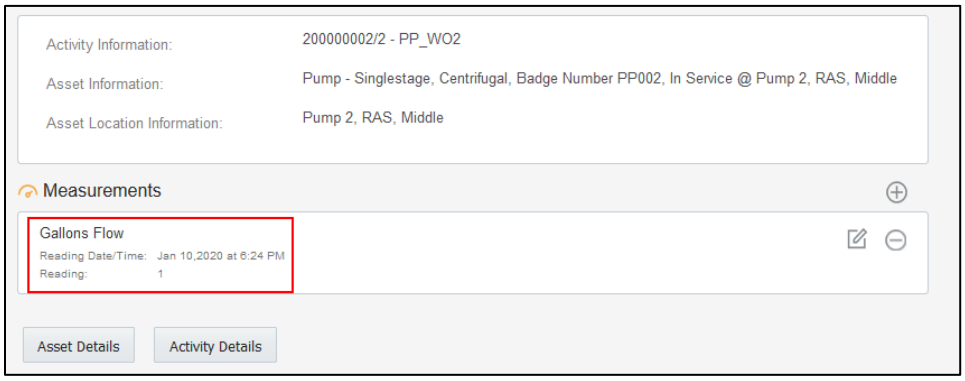
3. Click **+** on the **Measurement Mobility** page.



4. Enter the required measurement details and click **Save**.



The measurement is displayed in the list.

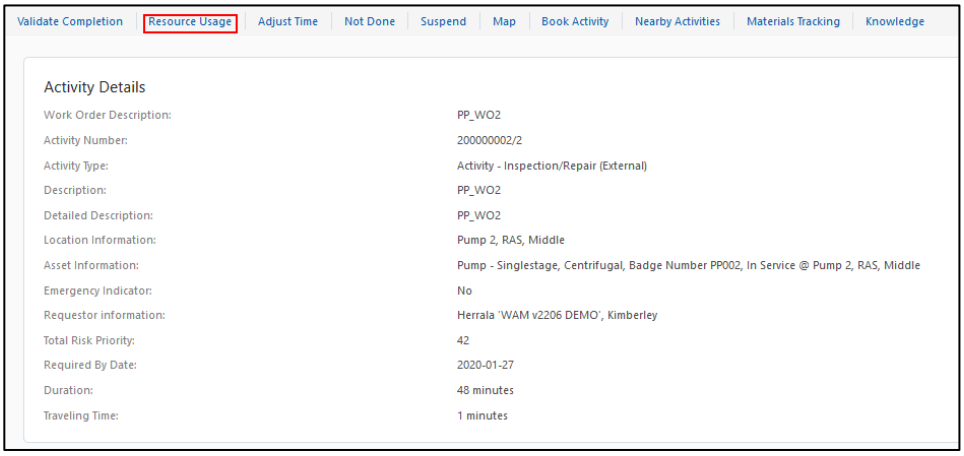


a. Click the edit icon to edit the measurement. You can enter multiple measurements.
b. Click **Activity Details** to navigate back to the **Activity Details** page.

Resource Usage

To enter resource usage details:

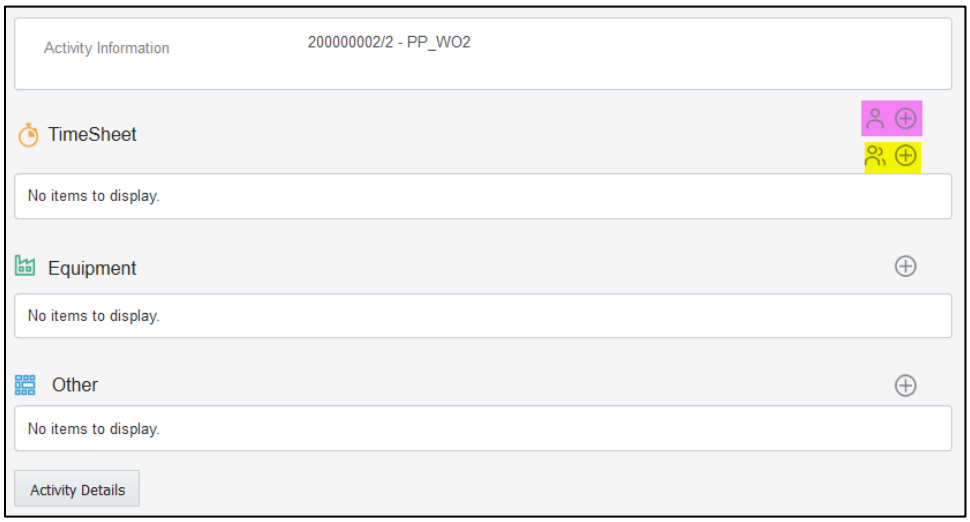
1. Click **Resource Usage** on the **Activity Details** page.



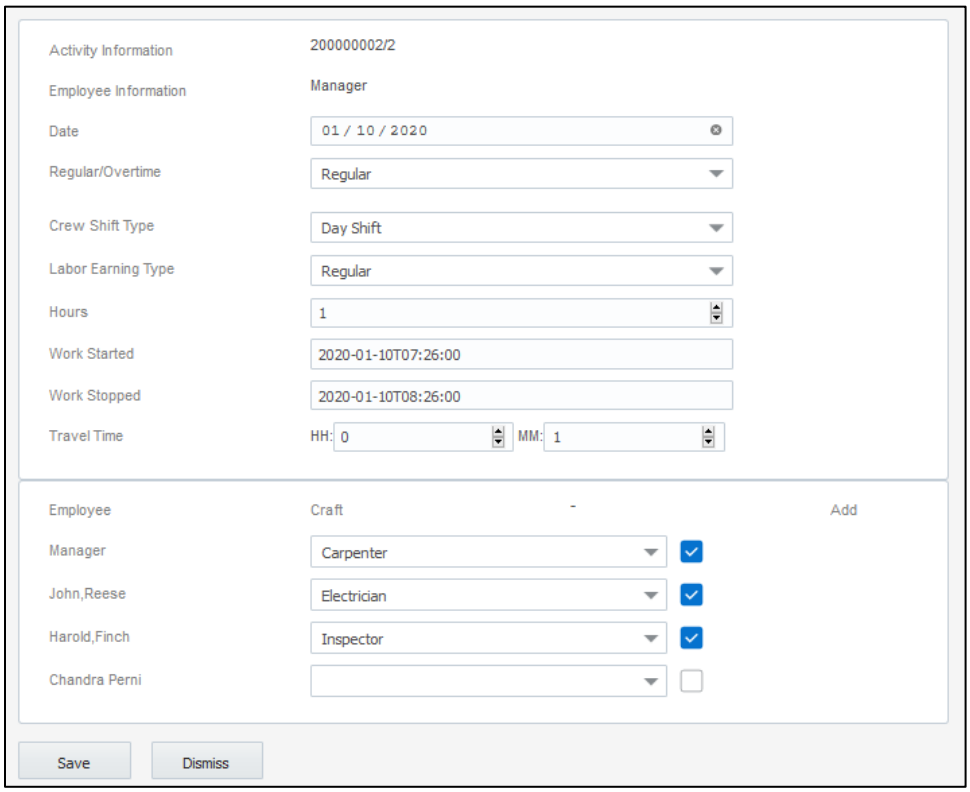
2. Enter the time sheets, equipment, and other details.

Time Sheets

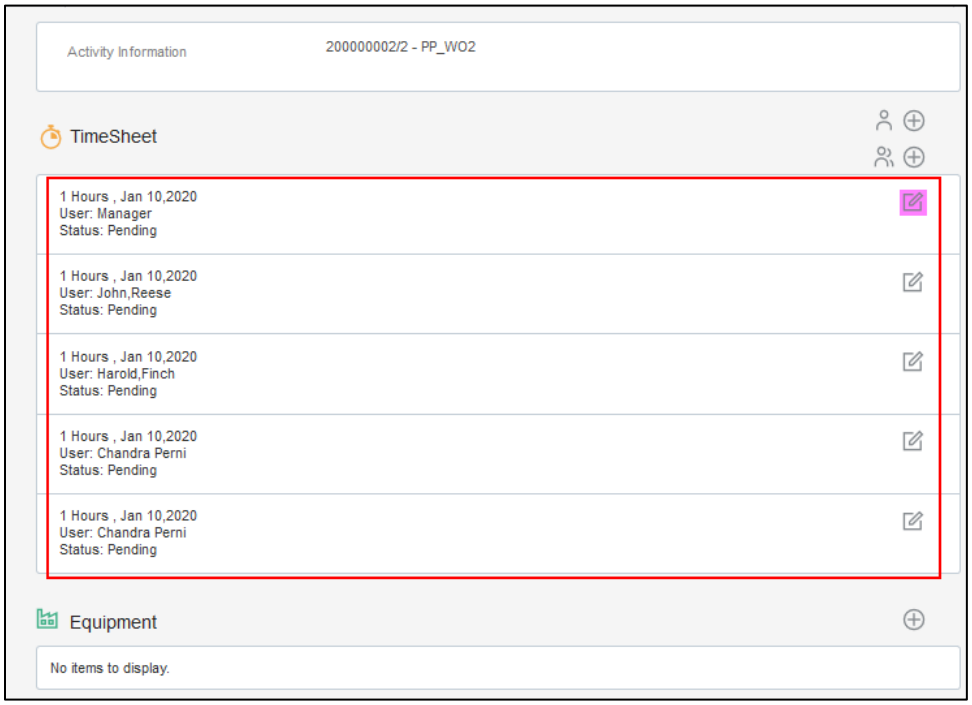
Crew can enter individual timesheets (highlighted in purple) or for team (highlighted in yellow).



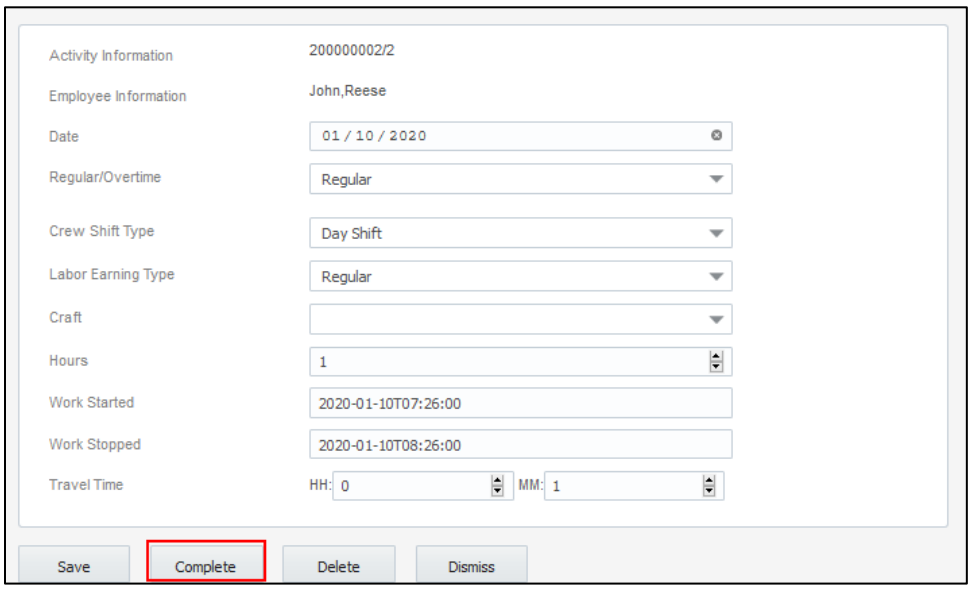
3. Click the '+' icon of multiple crew timesheet (highlighted in yellow above).
4. Enter the required information and click **Save**.



The timesheets for each crew member are created in 'pending' status.



5. Click the **Edit** icon and complete the timesheet.

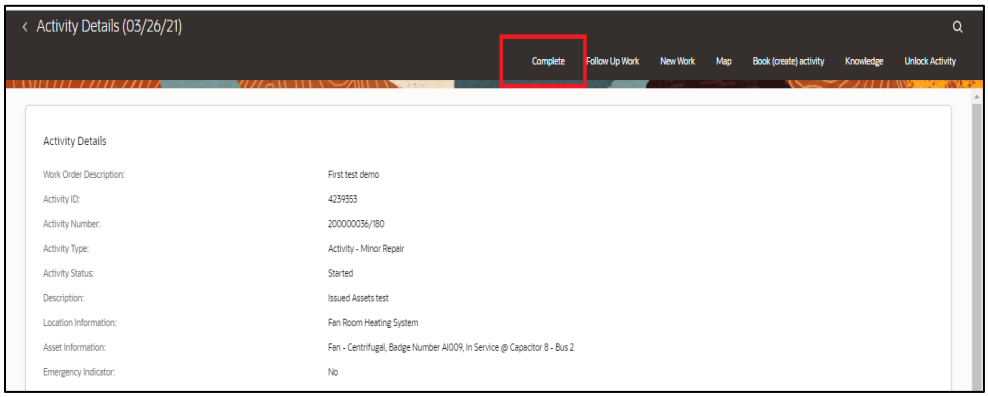


6. Complete the timesheets for all other crew members.

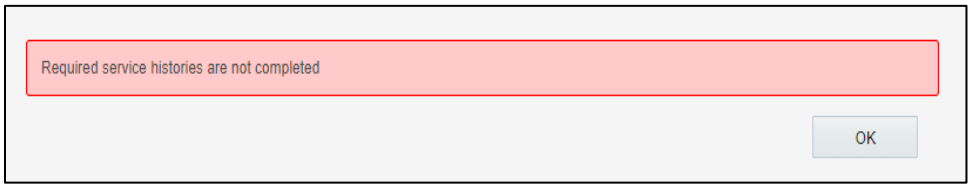
7. Populate entries for equipment and other.

Activity Completion

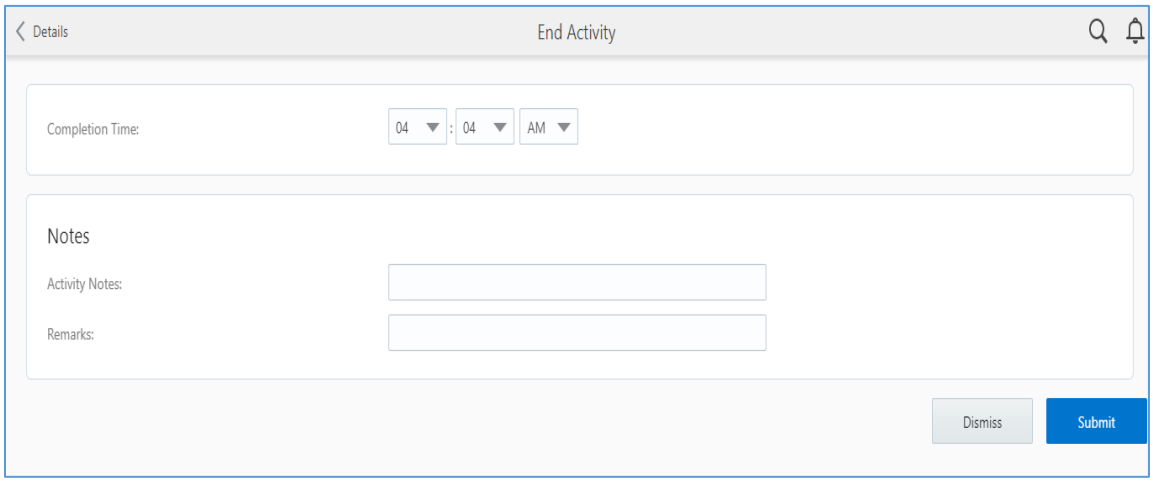
1. Navigate back to the **Activity Details** page after populating all the required resource details.
2. Click **Complete** to verify the eligibility of the activity to complete.



3. If all the activities are not eligible for activity completion, the following message is displayed. Click **OK**.



4. Else, it will navigate to the **End Activity** page. Click **Submit**.

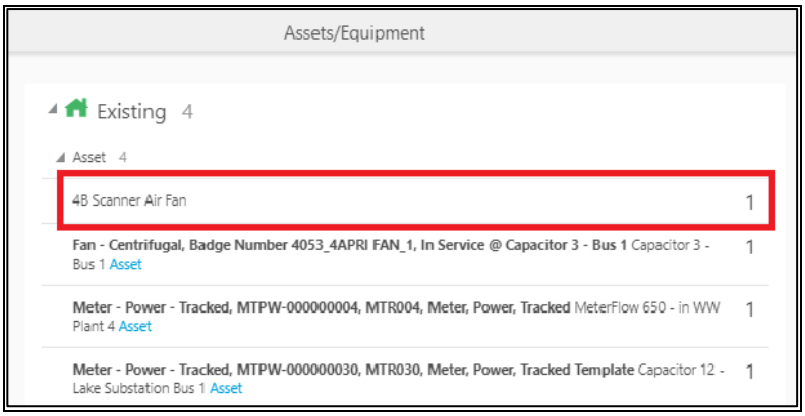


The completion information is sent to Oracle Utilities Work and Asset Cloud Service and the activity is completed.

Assets Installs and Removals

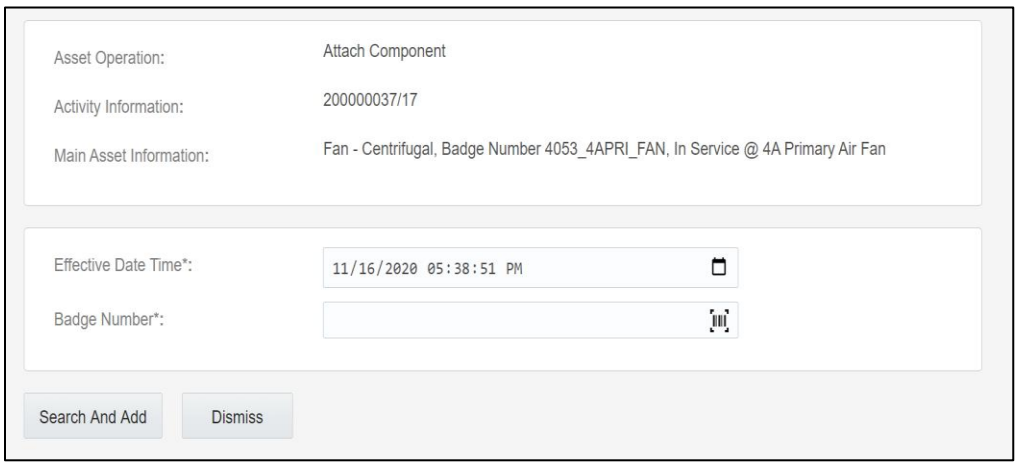
This section includes steps to perform asset installations and removals:
To install an asset:

1. Start the activity.
2. To install an asset, click the location.

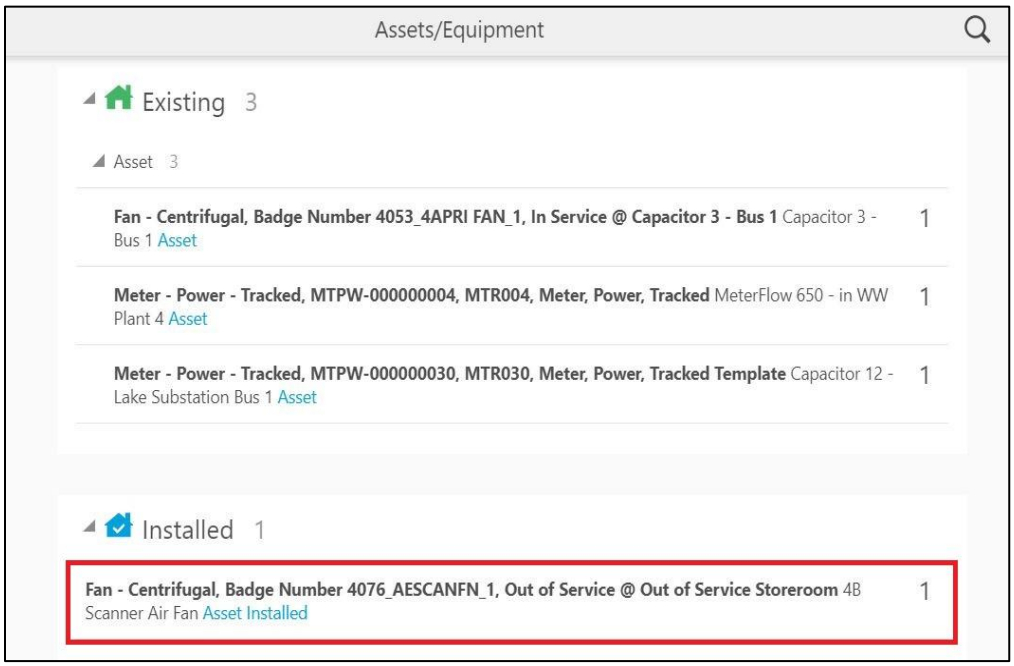


3. Click **Install Asset**.

4. Enter the **Badge Number** of the Asset to be installed on this location. Click **Search and Add.**

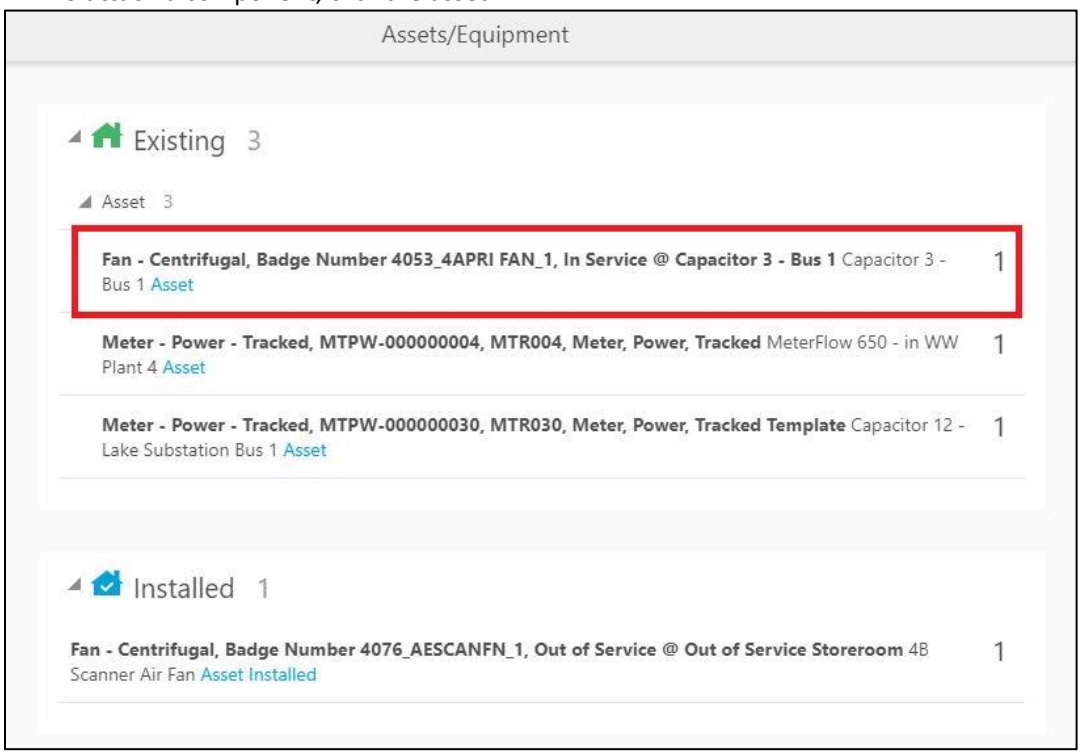


The newly installed asset is listed in the **Installed pool**.



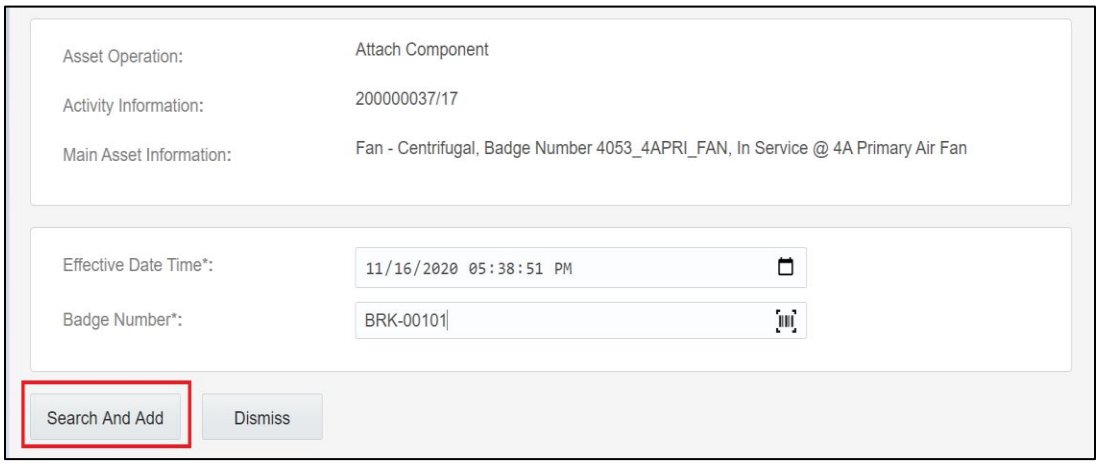
To attach a component:

1. Start the activity.
2. To **attach** a component, click the asset.

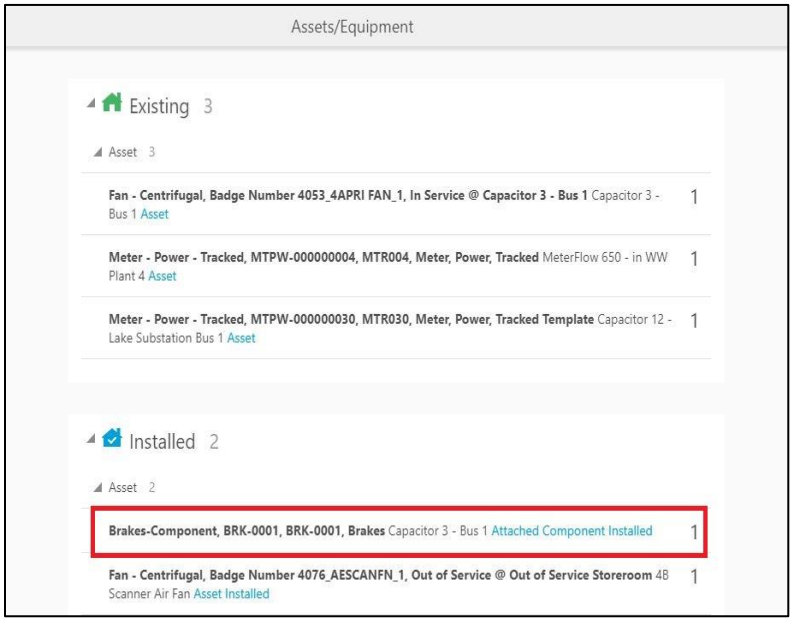


3. Click **Attach**.

4. Enter the **Badge Number** of the Component to be attached and click **Search and Add**.

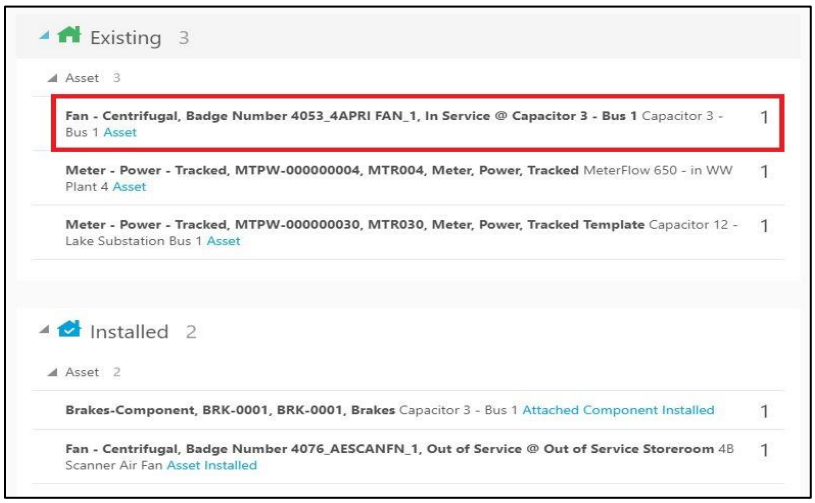


The attached component is shown in the **Installed Pool**.



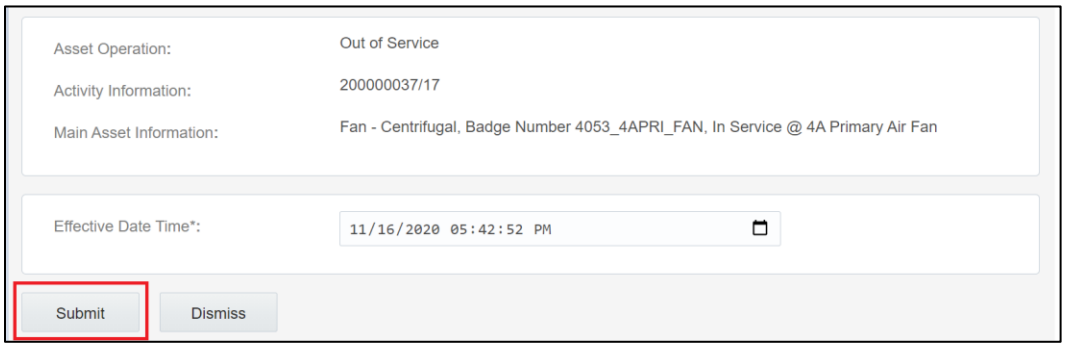
To move an asset out of service:

1. Start the activity.
2. Click the asset to move it out of service.

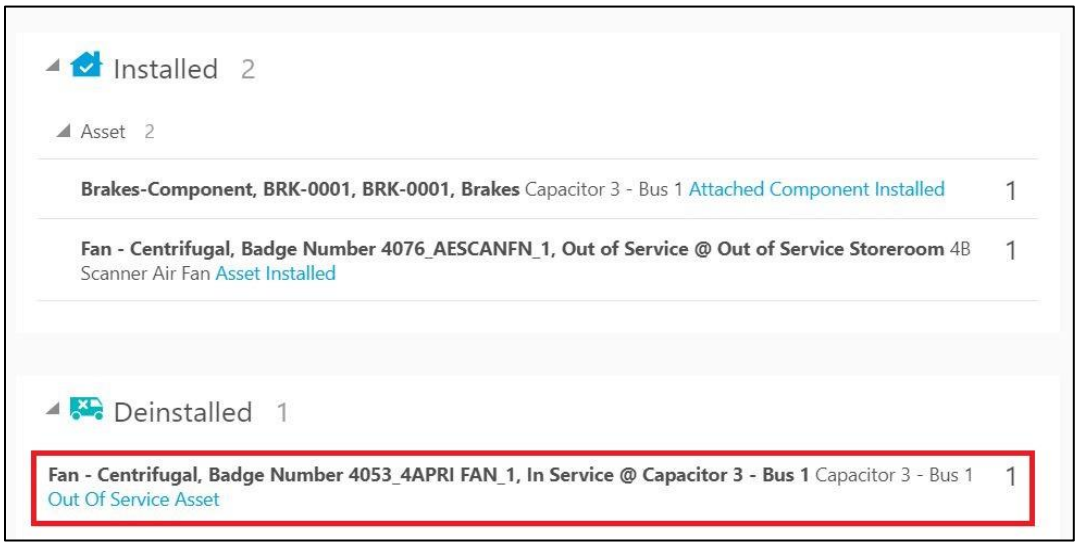


3. Click **Out of Service**.

4. Enter the **effective date/time** and click **Submit**.

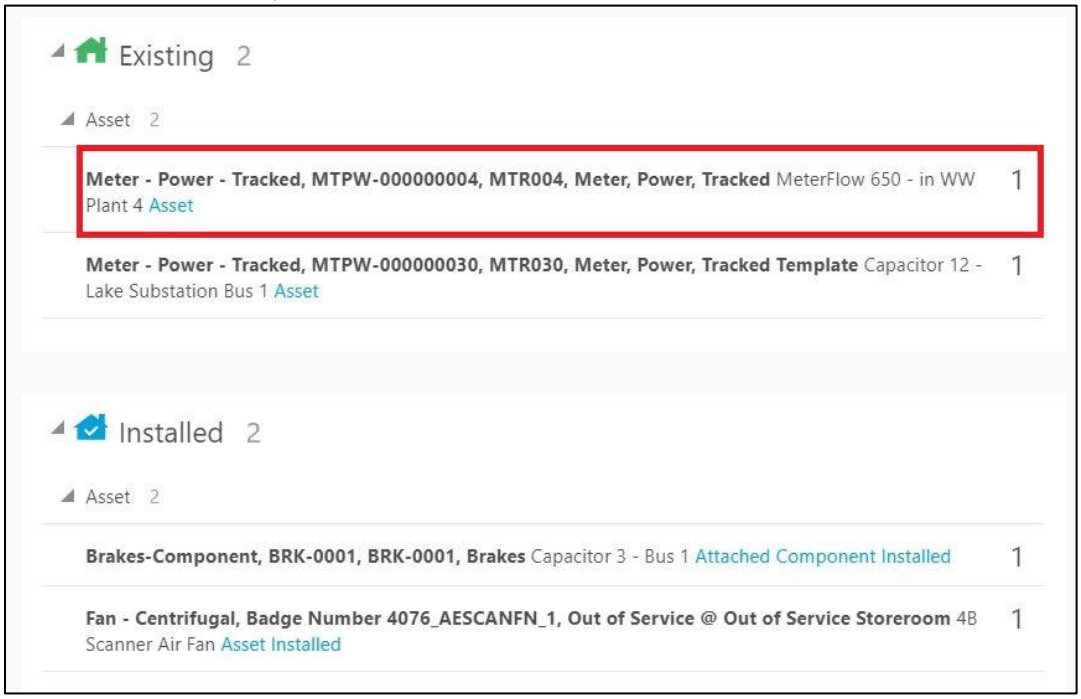


The asset moves to out of service status in **Deinstalled** pool.

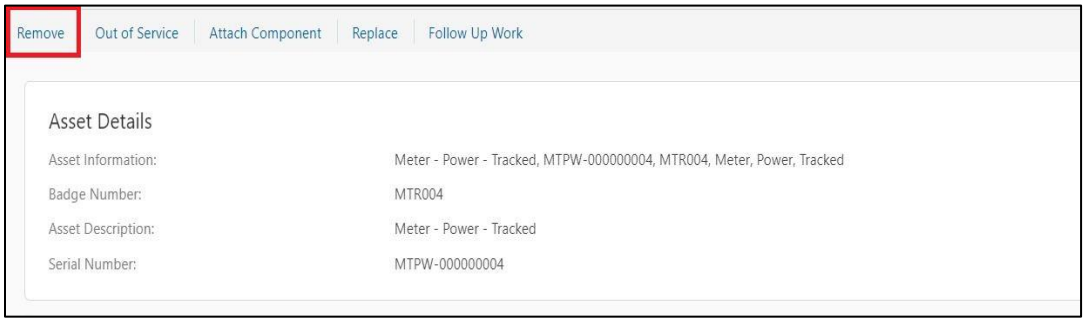


To remove an Asset/Component:

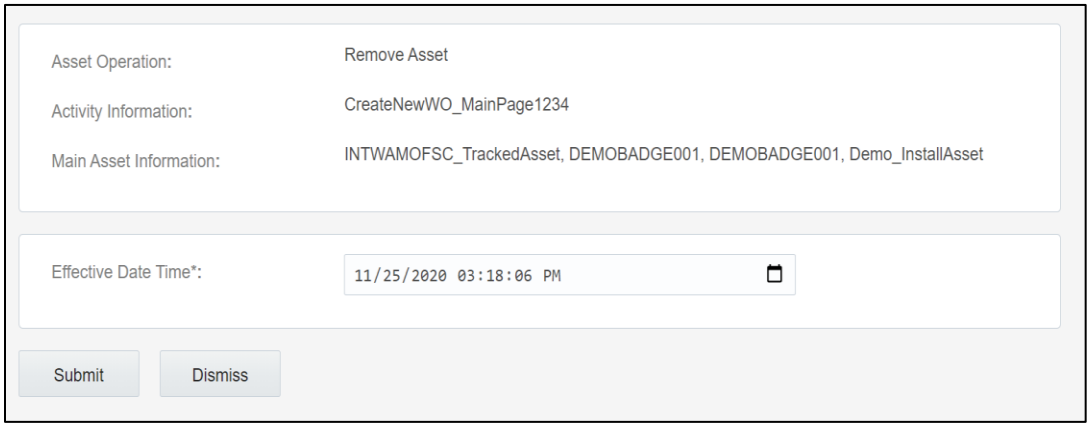
1. Start the activity.
2. Click the asset/component to be removed.



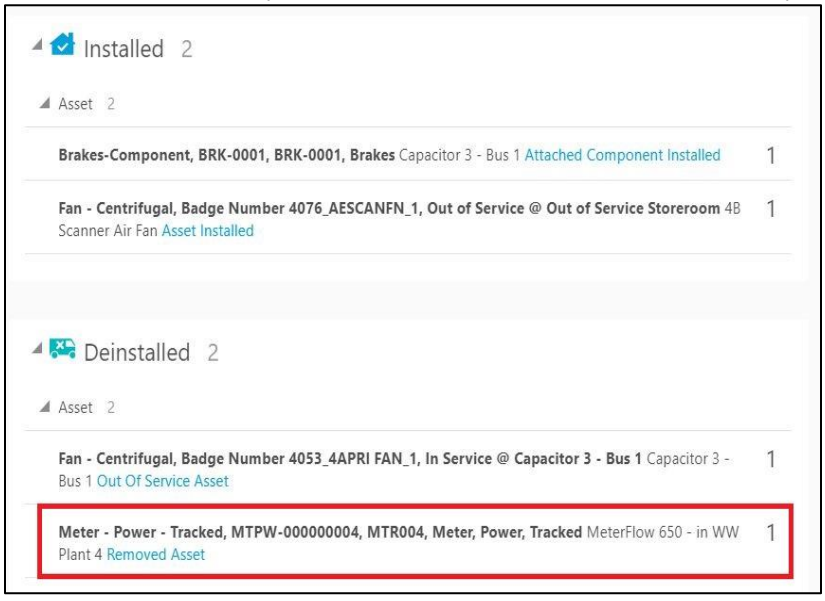
3. Click **Remove**.



4. Enter the **effective date/time** and click **submit**.

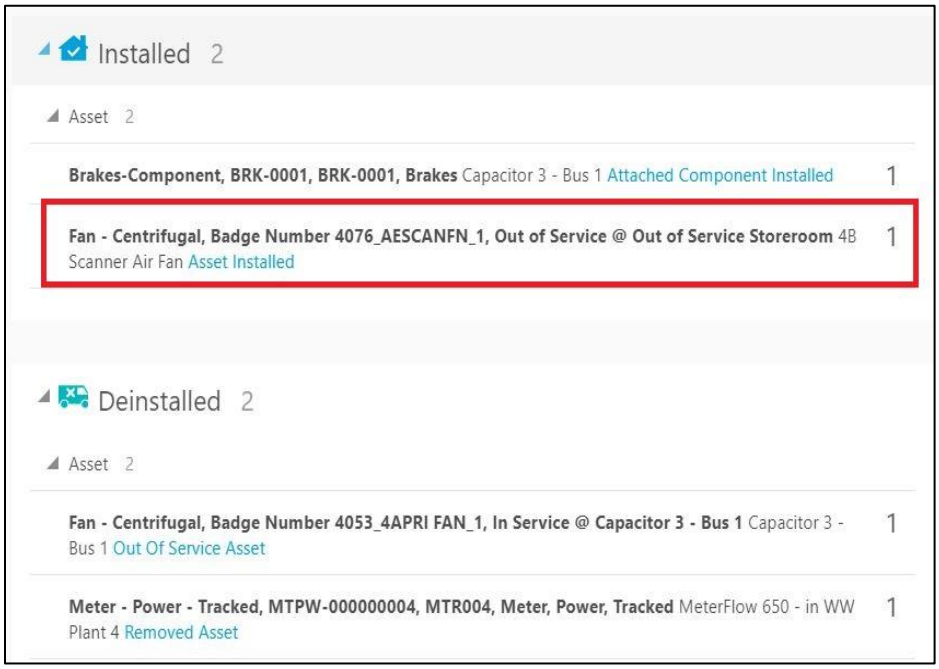


The asset/component is removed and moves to **Deinstalled** pool.

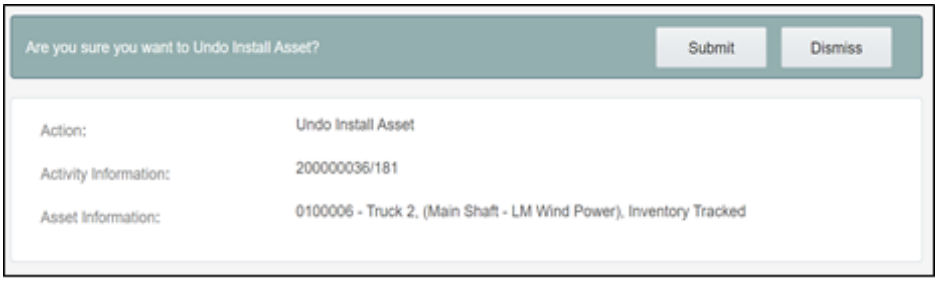


To undo the installation:

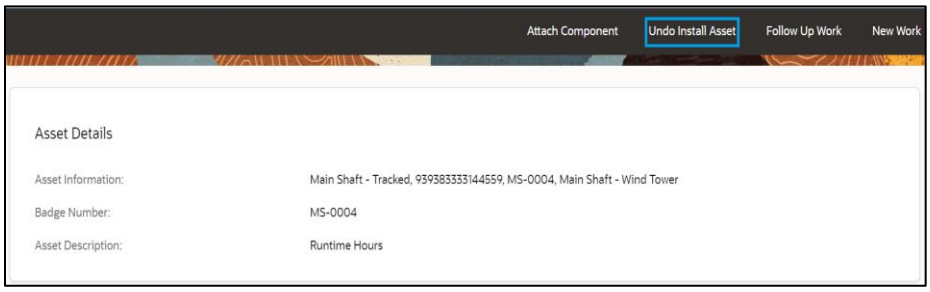
1. Click the newly installed asset in the Installed pool**.**



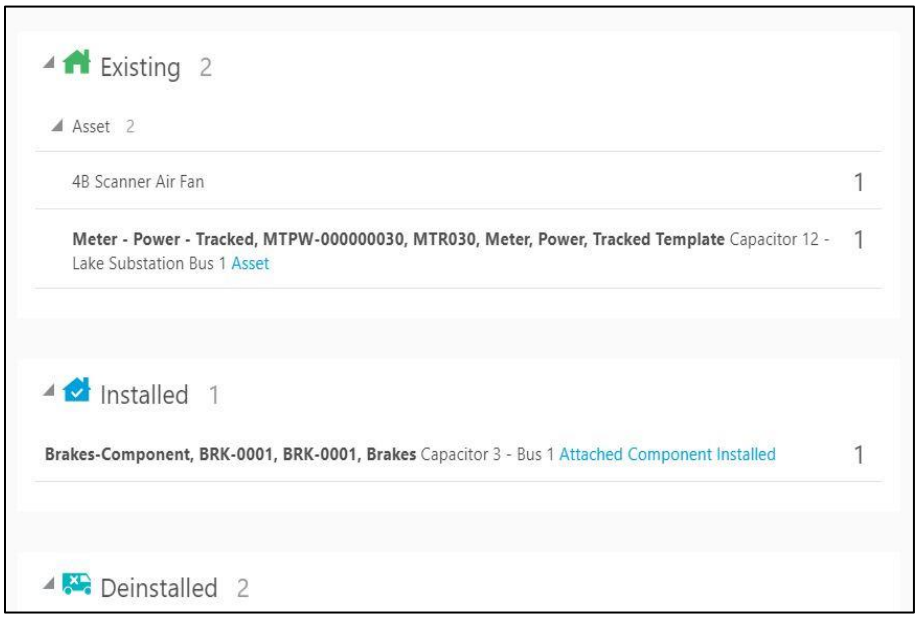
2. Click **Submit**.



3. Click **Undo Install Asset.**

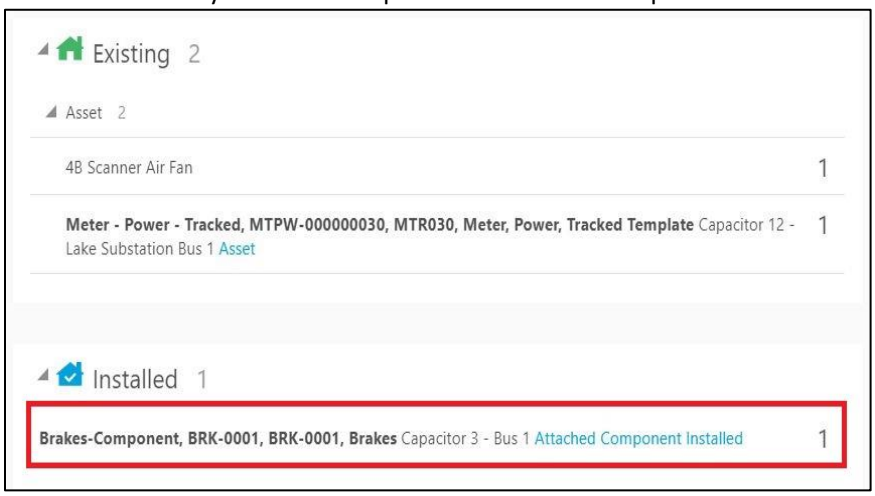


The Asset/Component installation is undone and it disappears from **Installed** pool.



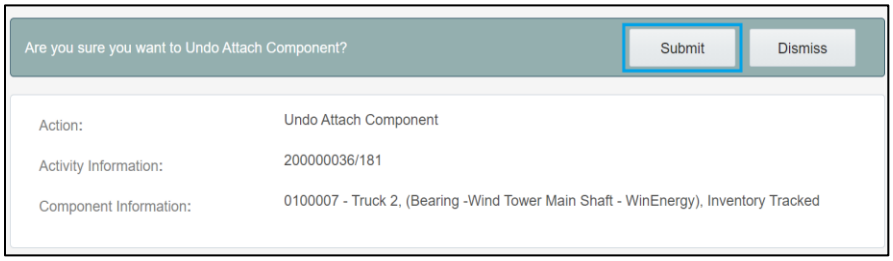
To undo a newly attached component:

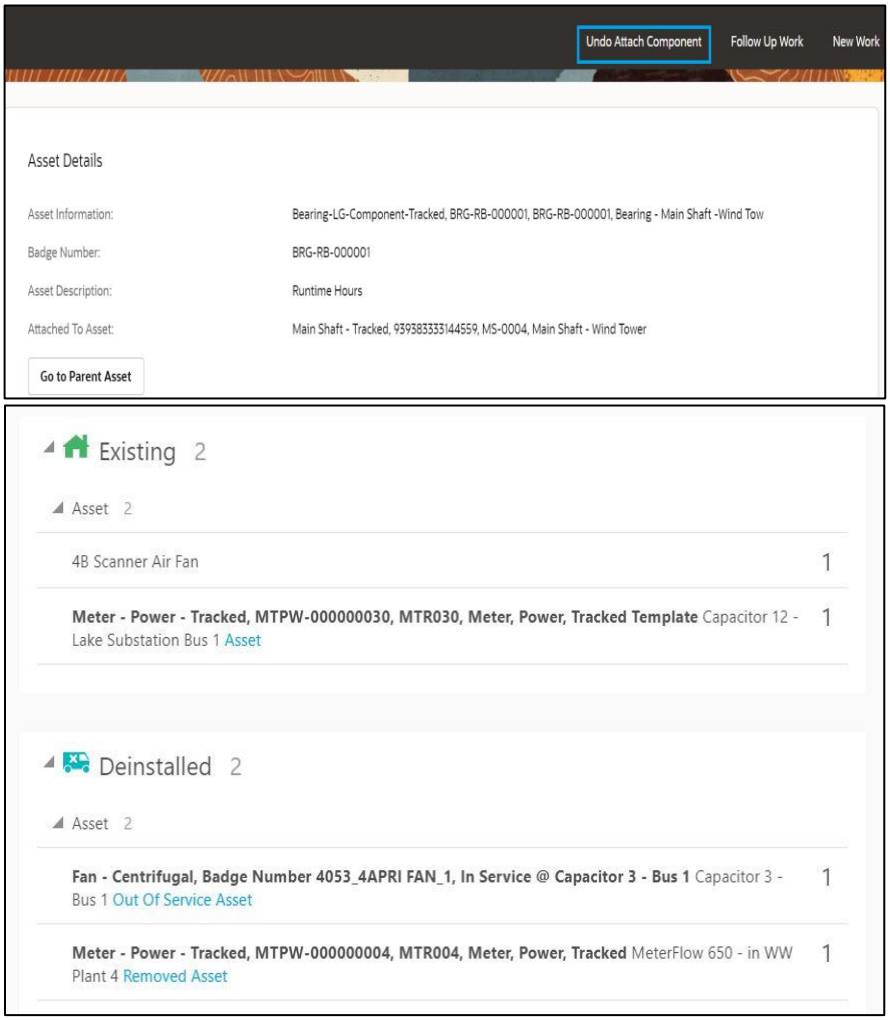
1. Click the newly attached component in the **Installed** pool**.**



2. Click **Undo Attach Component**.
3. Click **Submit**.

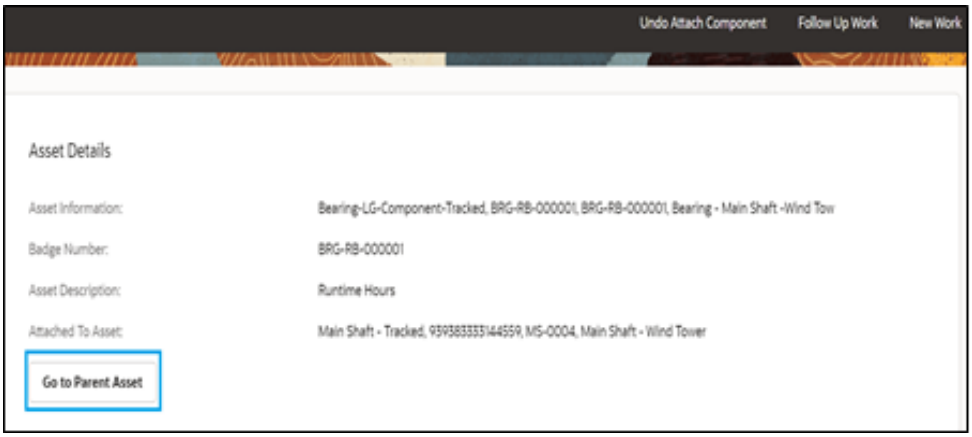
The attach operation is undone and the component disappears from **Installed** pool.



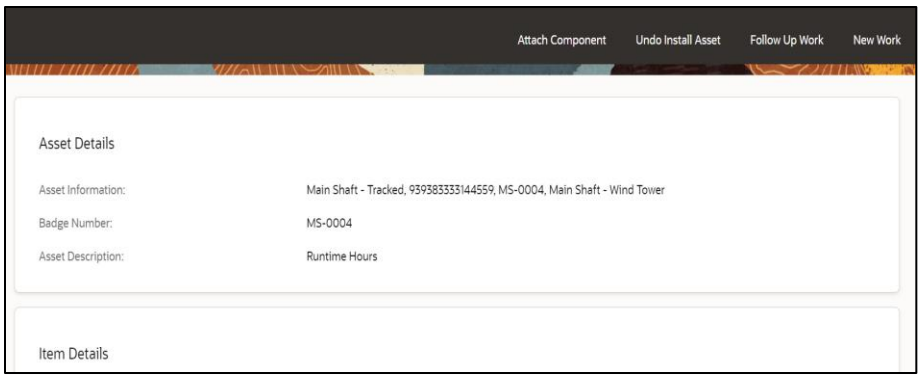


To navigate to the parent asset:

1. To navigate to the parent asset, click the newly attached component in the **Installed** pool**.**

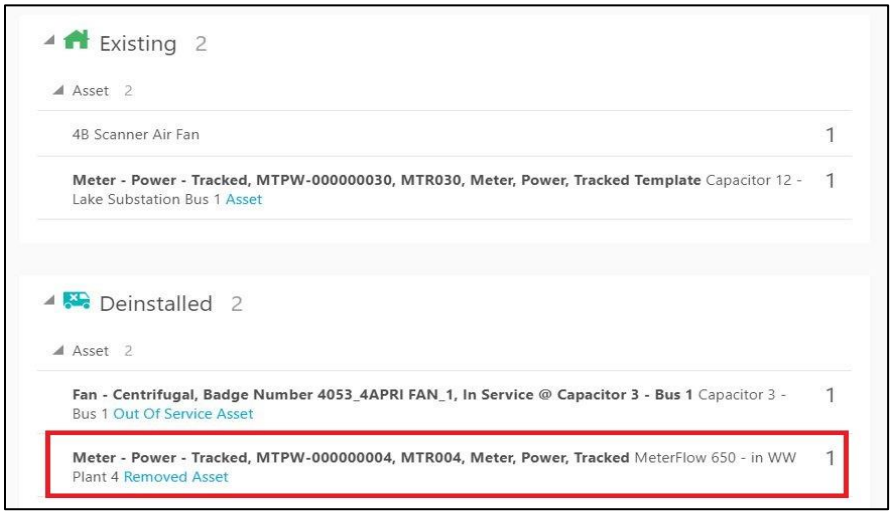


2. Click **Go to Parent Asset** to navigate to the parent asset to which the component is attached.

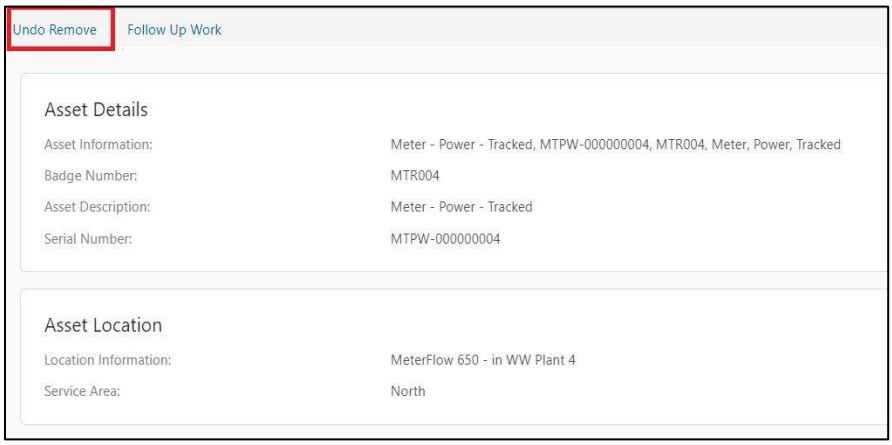


To undo an asset removal:

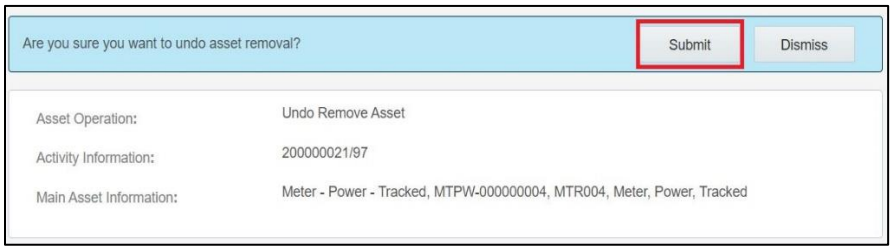
1. Click the removed asset.



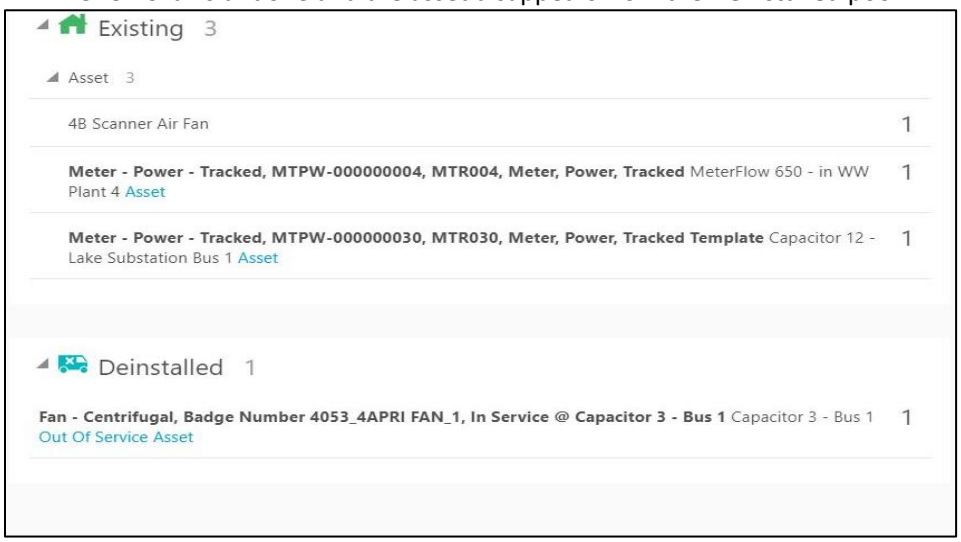
2. Click **Undo Remove**.



3. Click **Submit.**

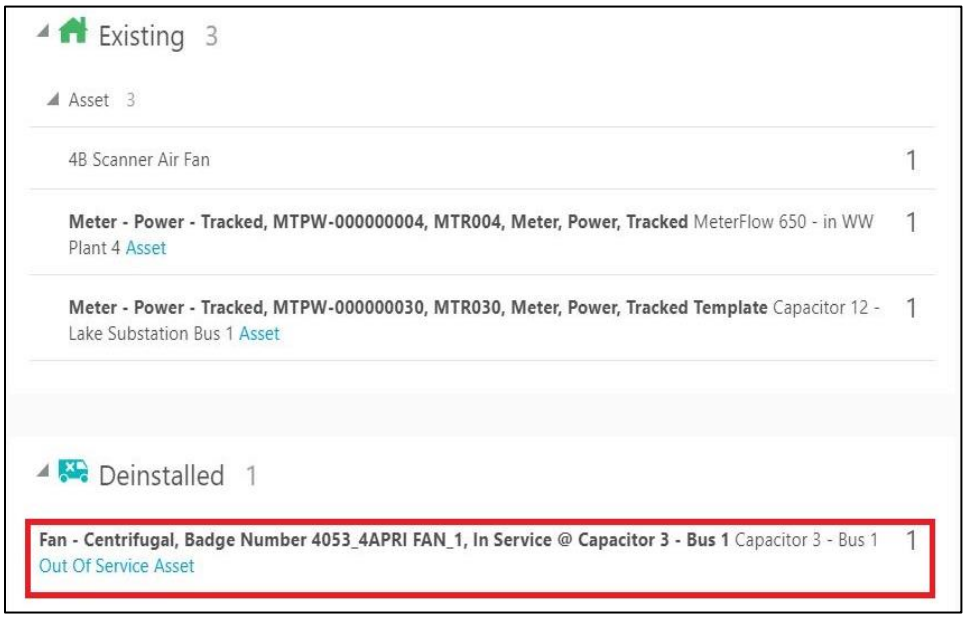


The removal is undone and the asset disappears from the **Deinstalled** pool.



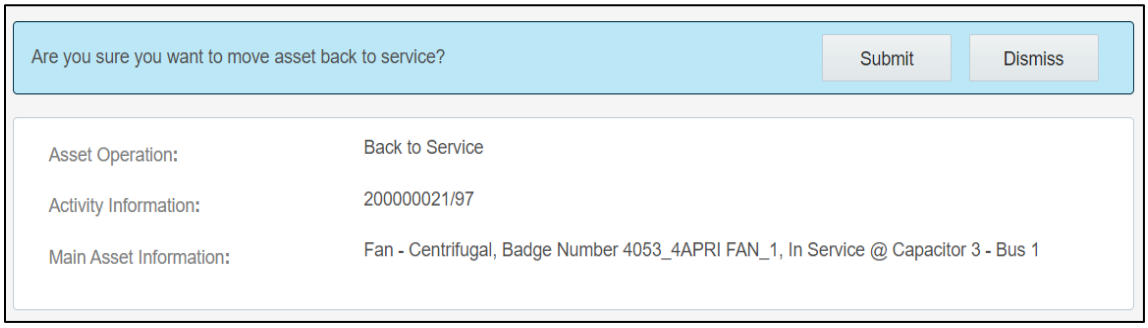
To move an asset back to service:

1. To move an asset back to service, click **Asset in Out of Service**.

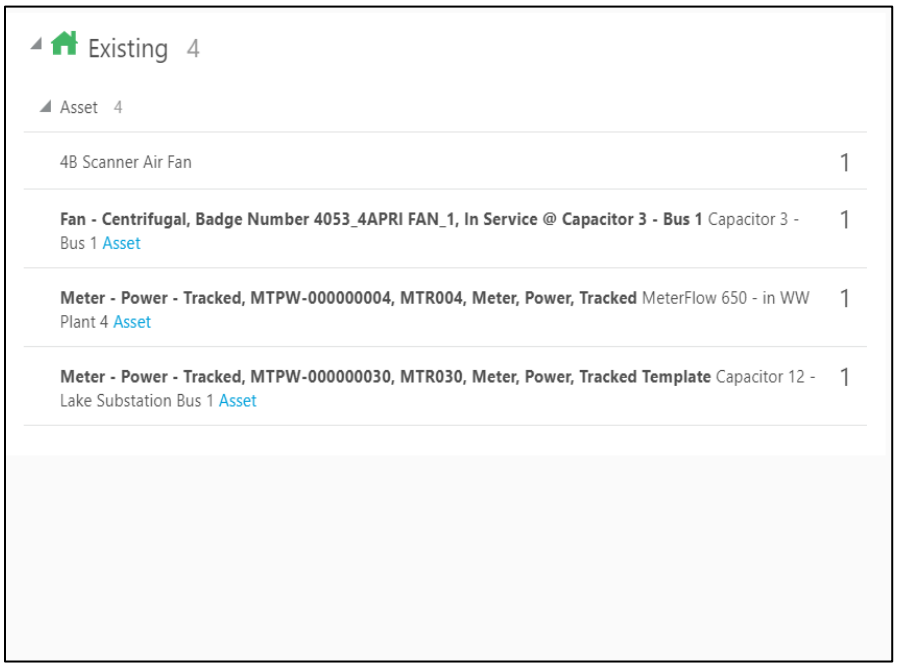


2. Click **Back to Service**.

3. Click **Submit**.

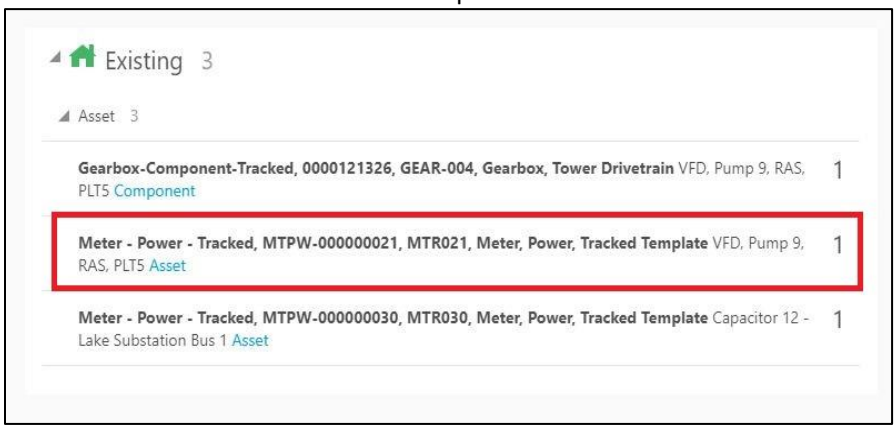


The asset moves out from the **Deinstalled** pool.

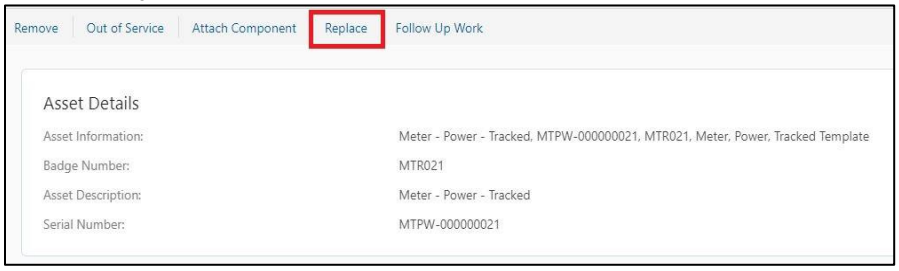


To replace an asset:

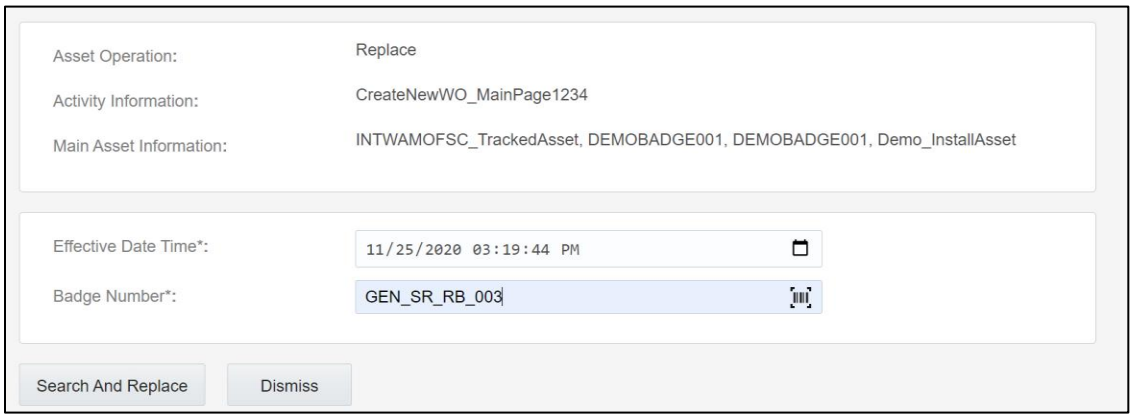
1. Click the asset which needs to be replaced.



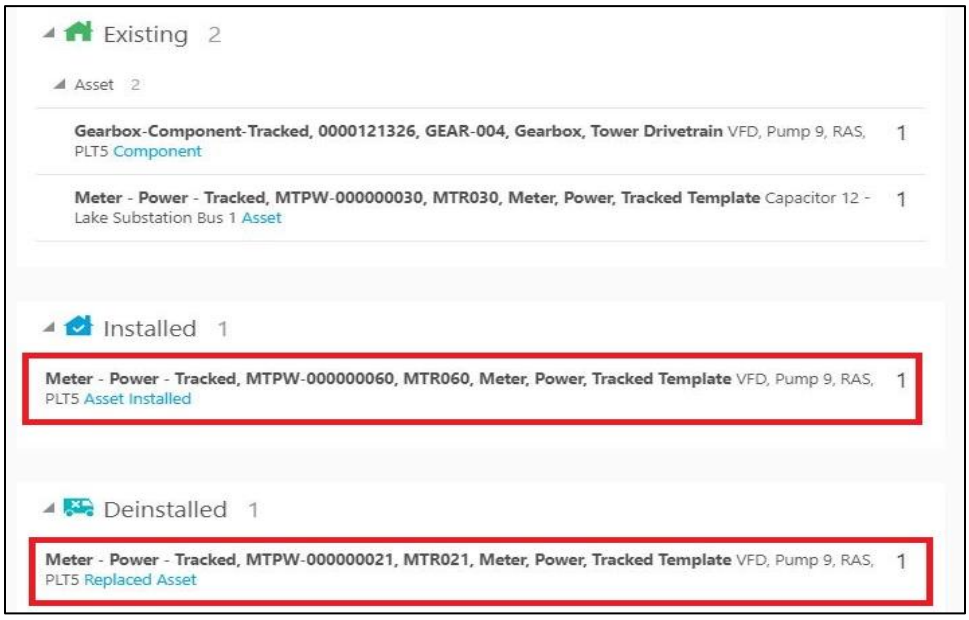
2. Click **Replace**.



3. Enter the badge number of the asset to be replaced with and click **Search and Replace**.

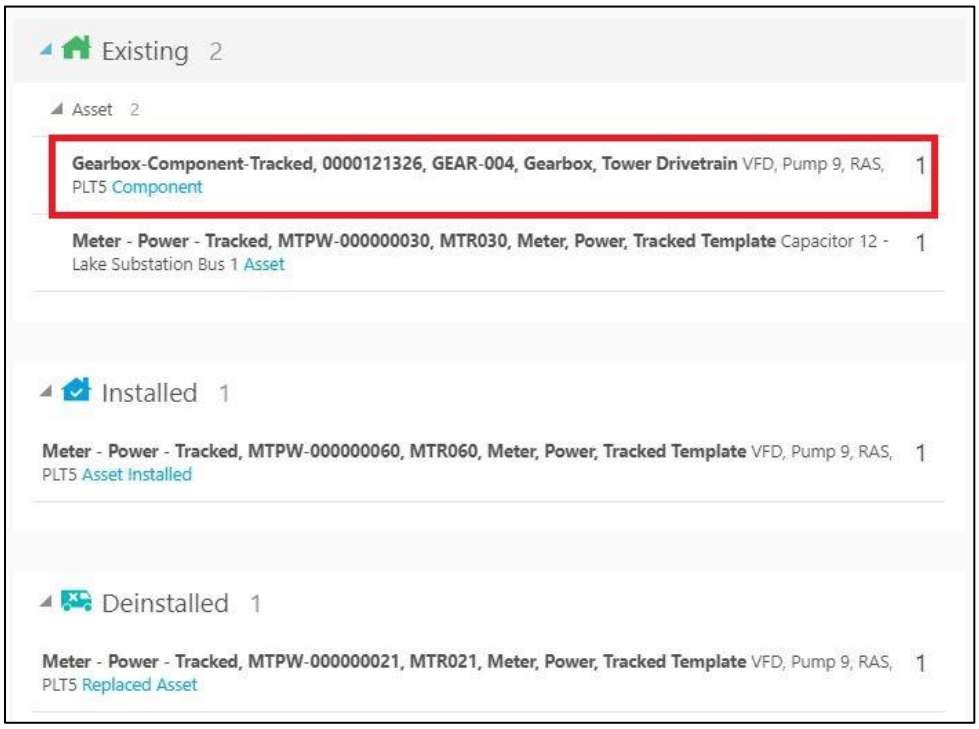


The new asset moves to the installed pool and the replaced asset moves to the **Deinstalled** pool.

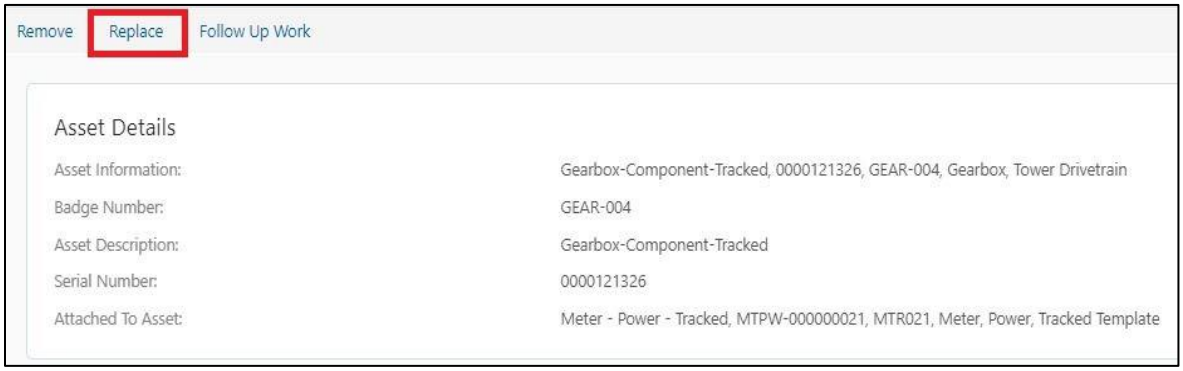


To replace a component:

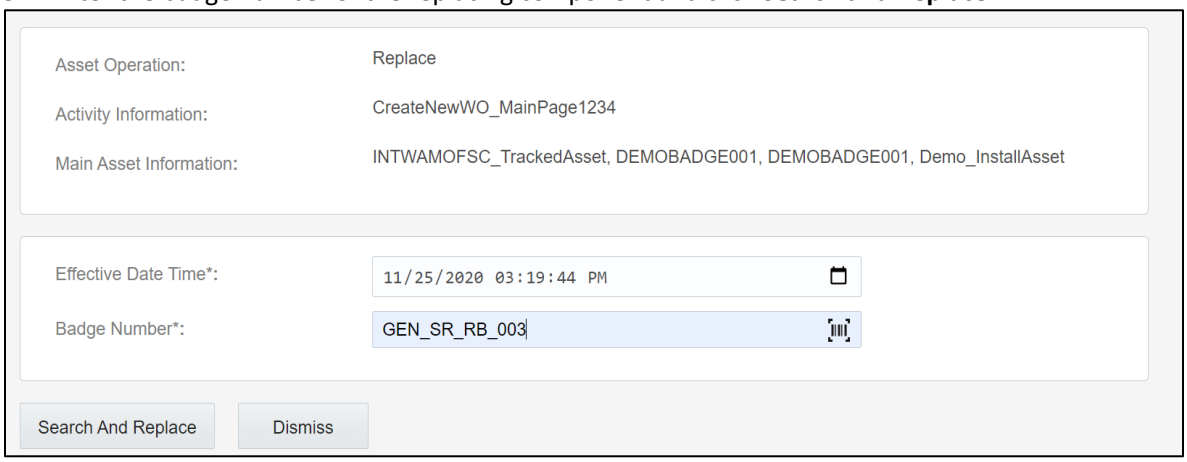
1. Click the component to be replaced.



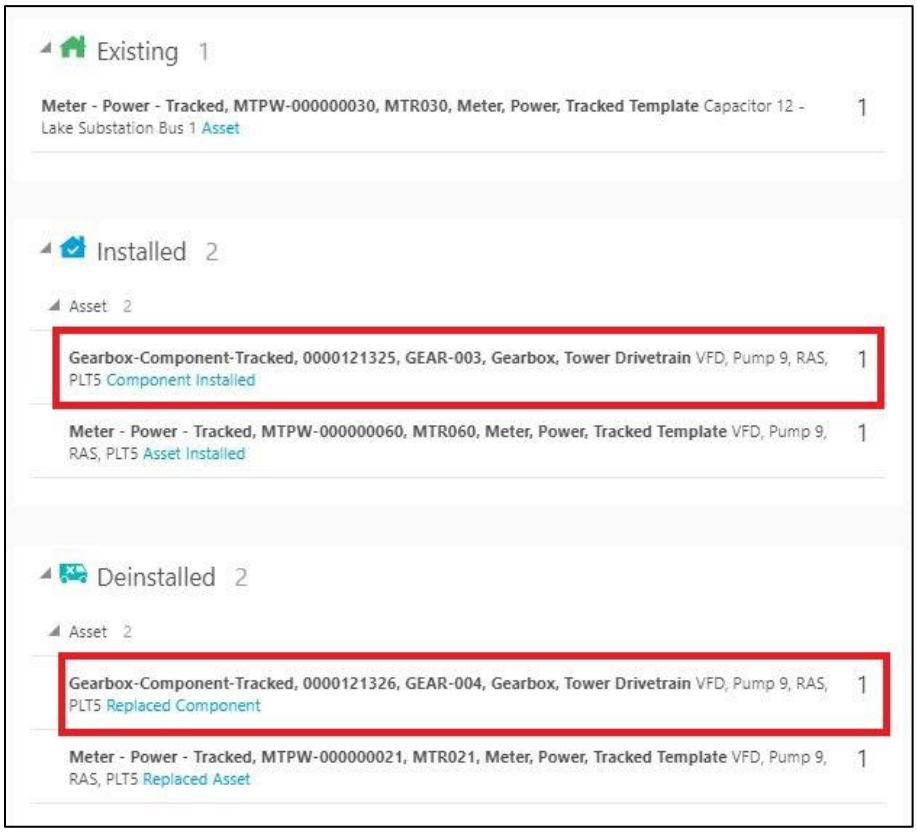
2. Click **Replace**.



3. Enter the badge number of the replacing component and click **Search and Replace.**

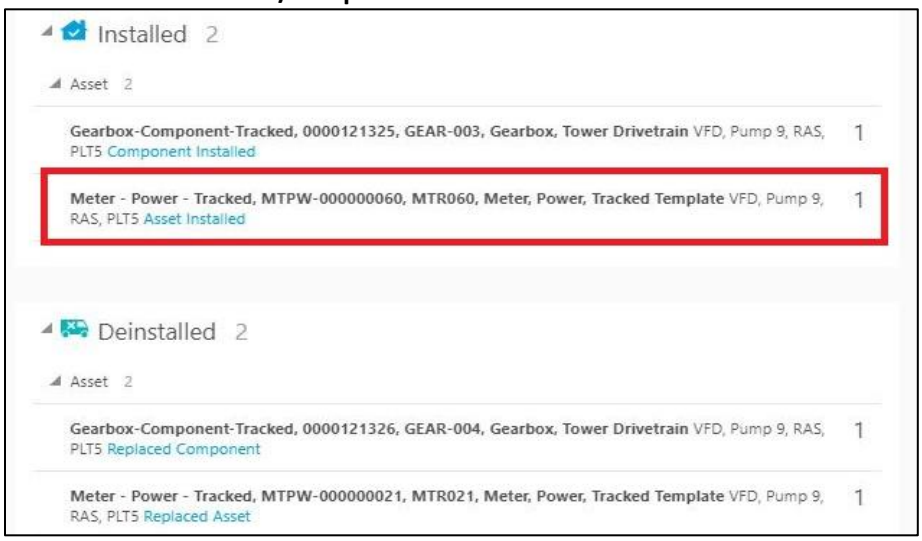


The replaced component moves to the **Deinstalled** pool and the newly attached component moves to the **Installed** pool.

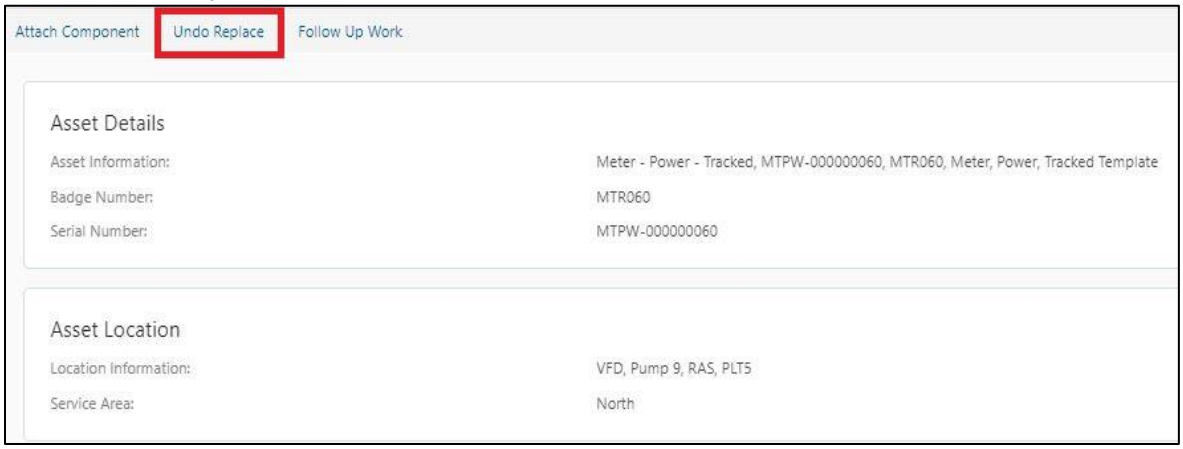


To undo replace an asset:

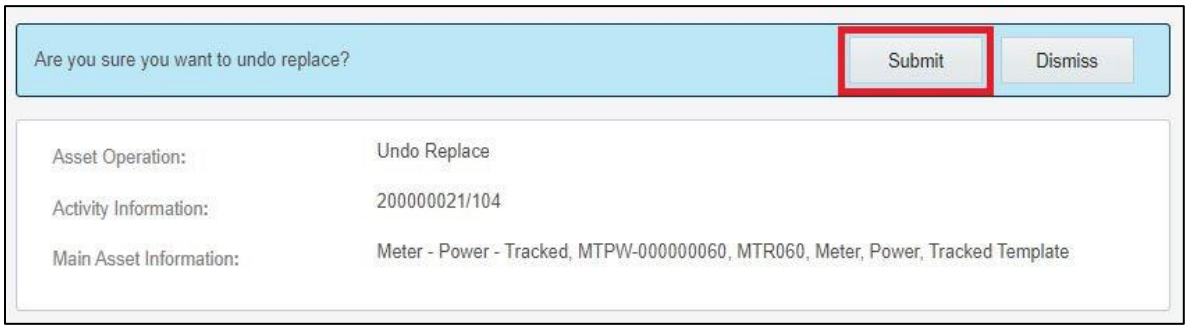
1. Click **Installed Asset/Component**.



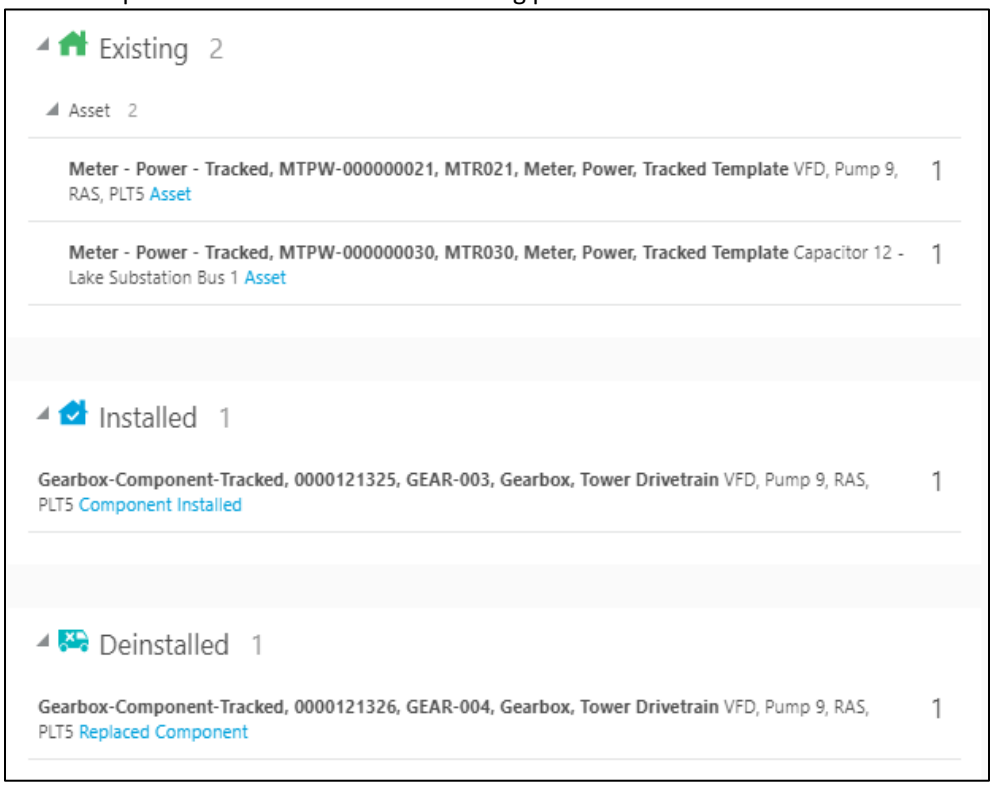
2. Click **Undo Replace**.



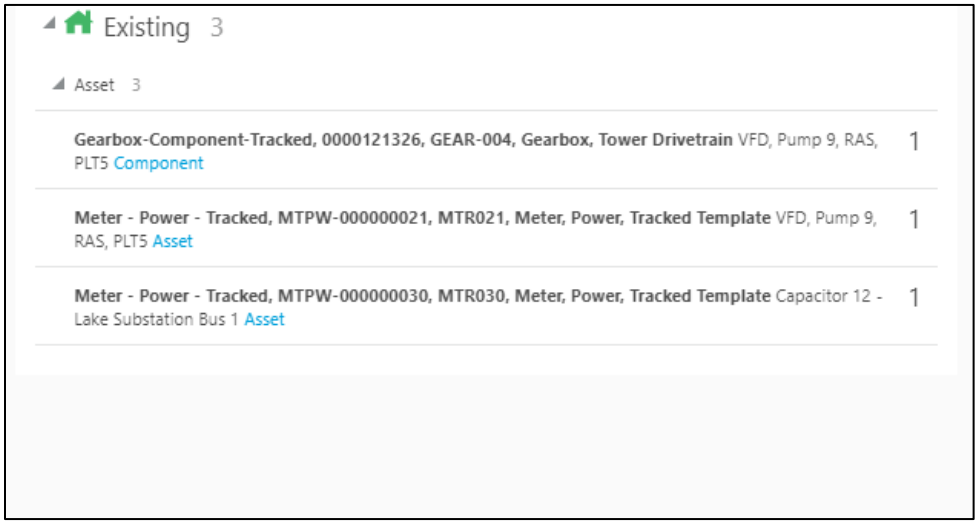
3. Click **Submit**.



The replaced asset moves back to existing pool.



4. Repeat the above steps to undo replace for a component.

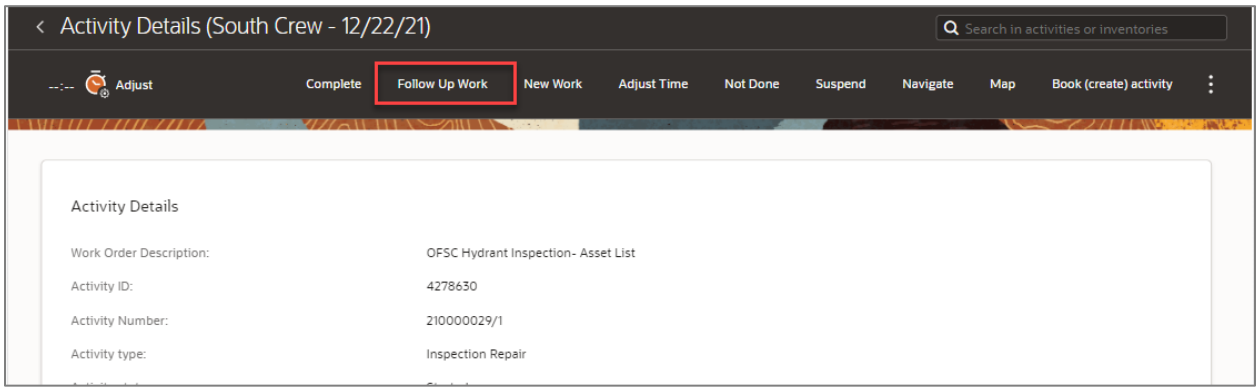


Pick Up and Follow Up Orders

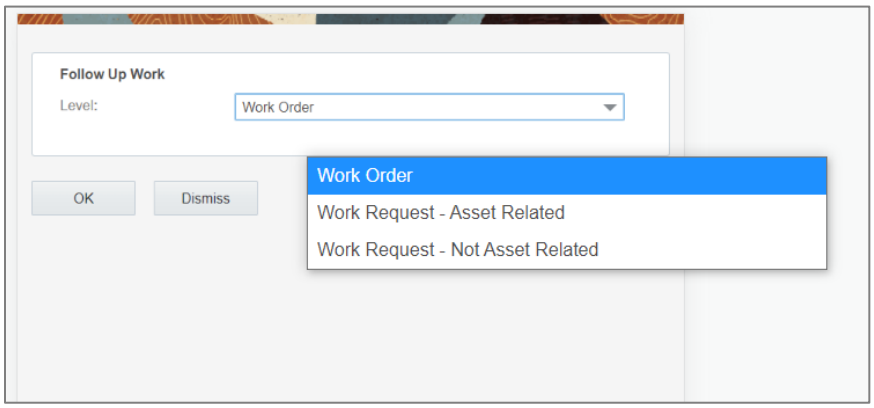
Follow Up orders are created for a new work related to the activity crew is working at. Follow up work can include Work Orders and Work Requests.

To create a Follow Up order:

1. Navigate to the **Activity Details** page and click **Follow Up Work**.



2. Select the type of Follow Up work to be created.



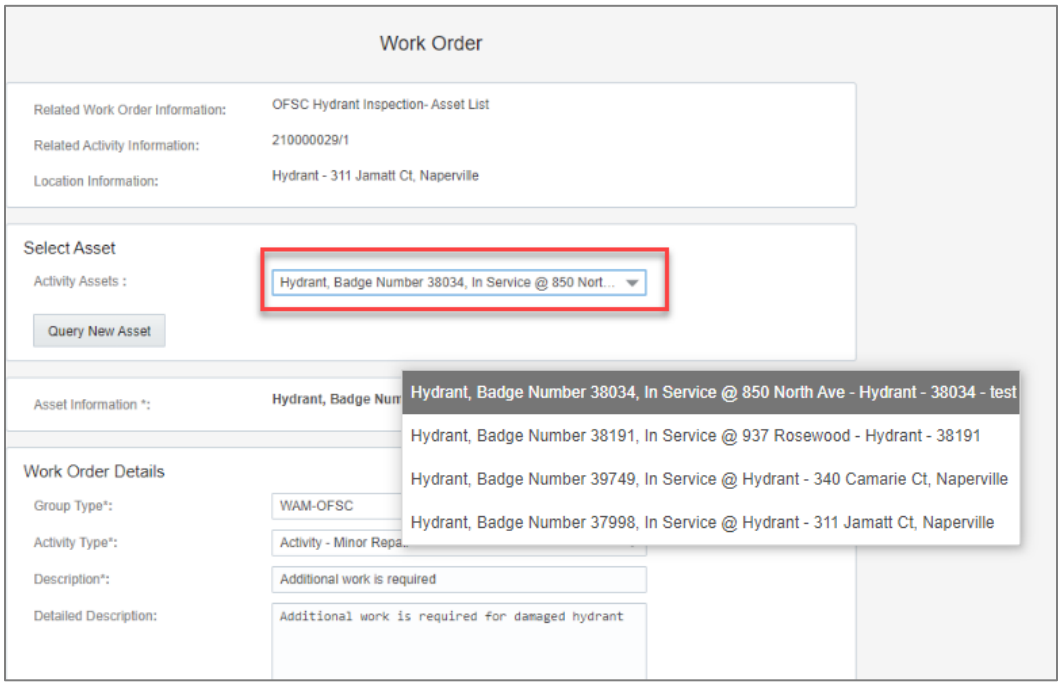
3. Click **OK**.

Follow Up Work Order

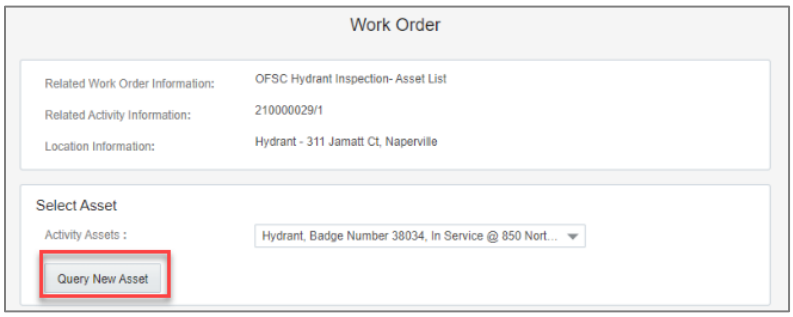
Creating a Follow Up Work Order will result in the creation of field activity in Oracle Field Service Cloud and the related work order in Asset Management solution.

To create a Follow Up Work Order for one of the assets related to activity or for a new asset:

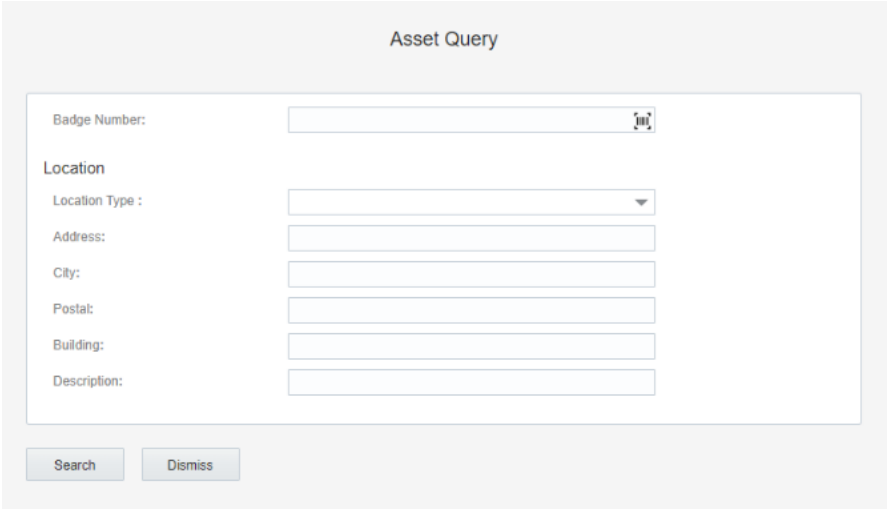
1. To select an asset linked to the existing activity, click the **Activity Asset** drop-down and select an asset from the list.



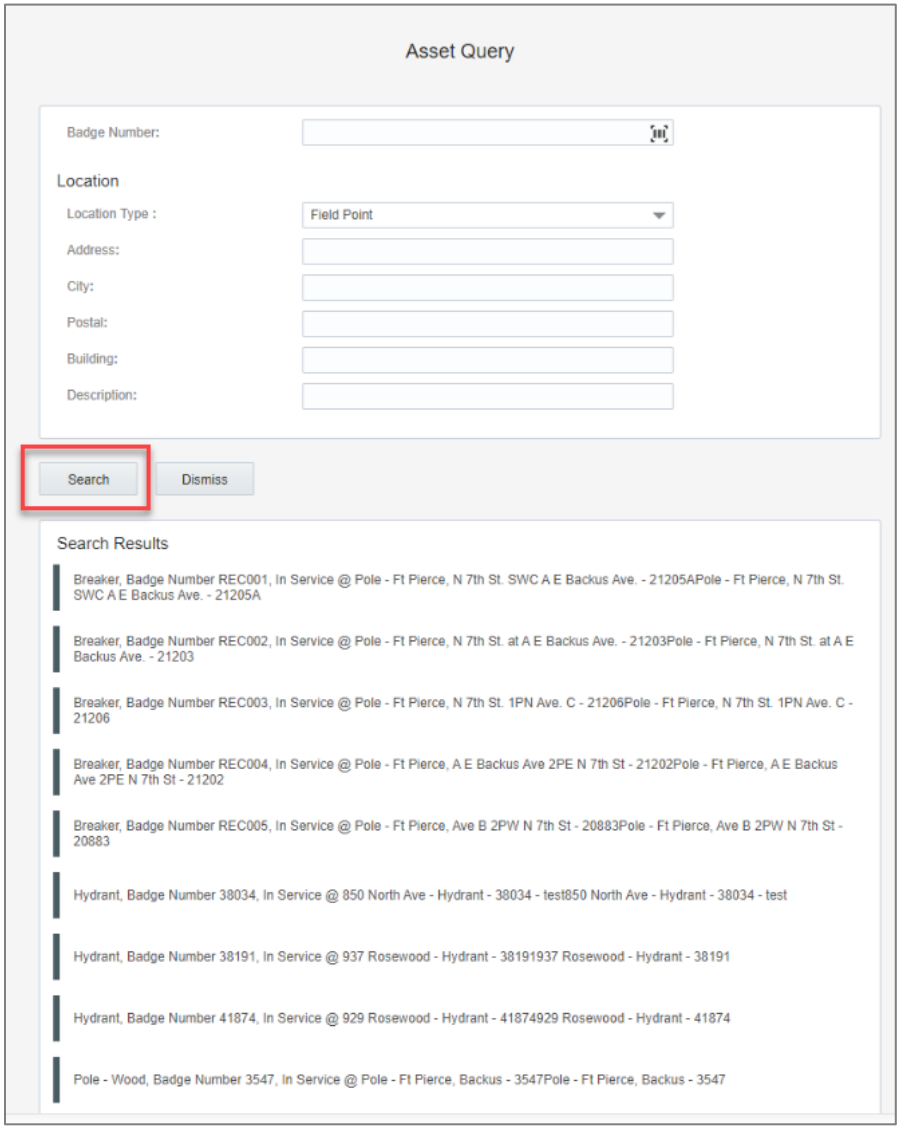
2. To select a different asset, click **Query New Asset**.



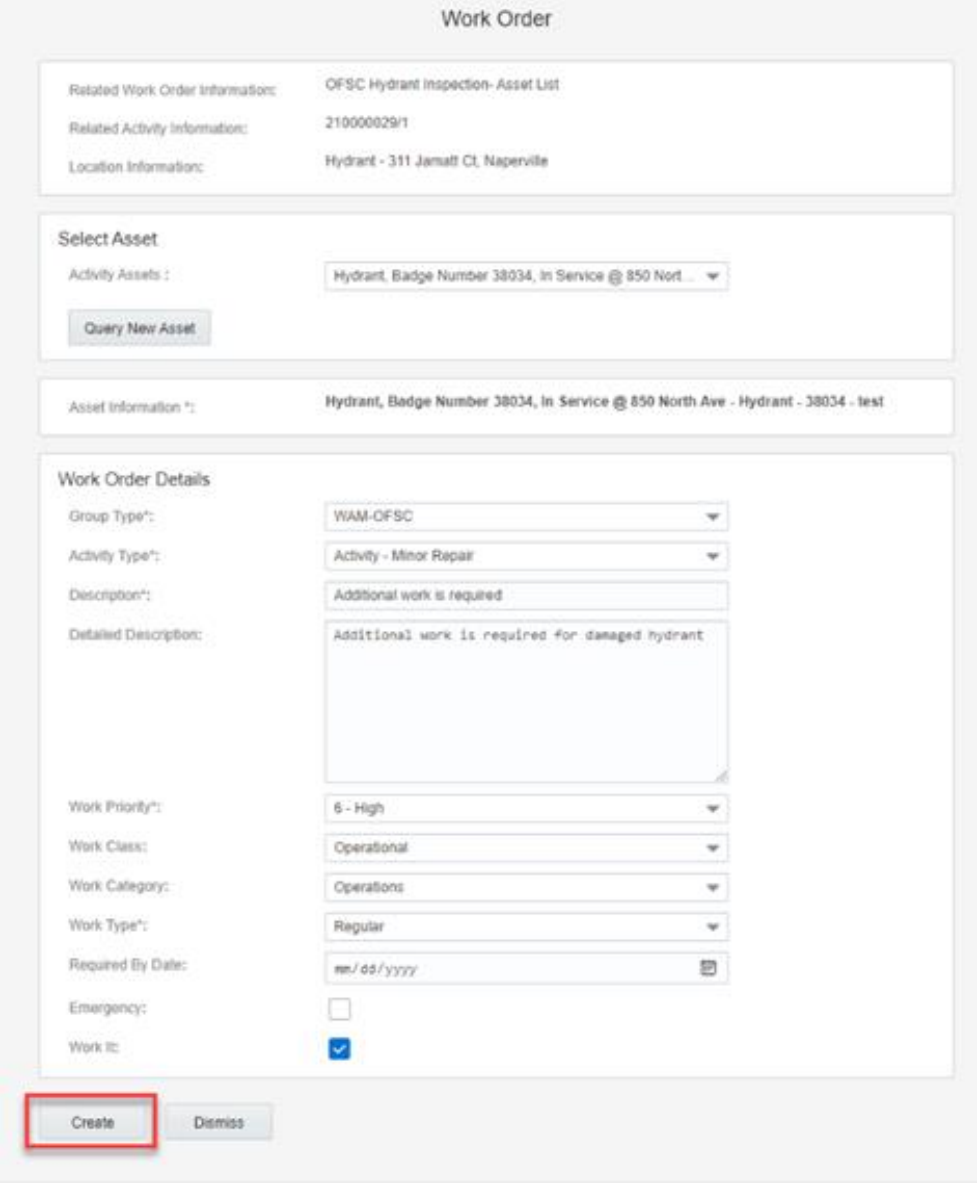
This will launch a search against Asset Management solution.



3. Enter search criteria and click **Search**.

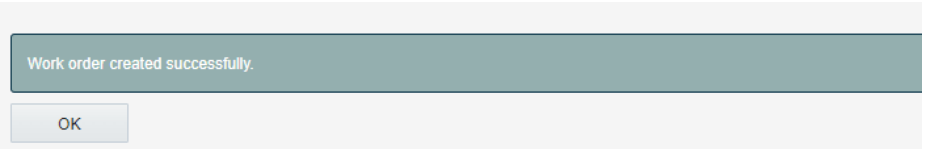


4. Select an asset for which the work order should be created.
5. Enter details related to the Follow Up Work Order and click **Create**.



A new activity is created in Oracle Field Service Cloud and a new related Work Order is created in the Asset Management solution.

6. Click **OK**.



You can select the **Work It** option to assign a new activity to the crew.

Follow Up Work Request

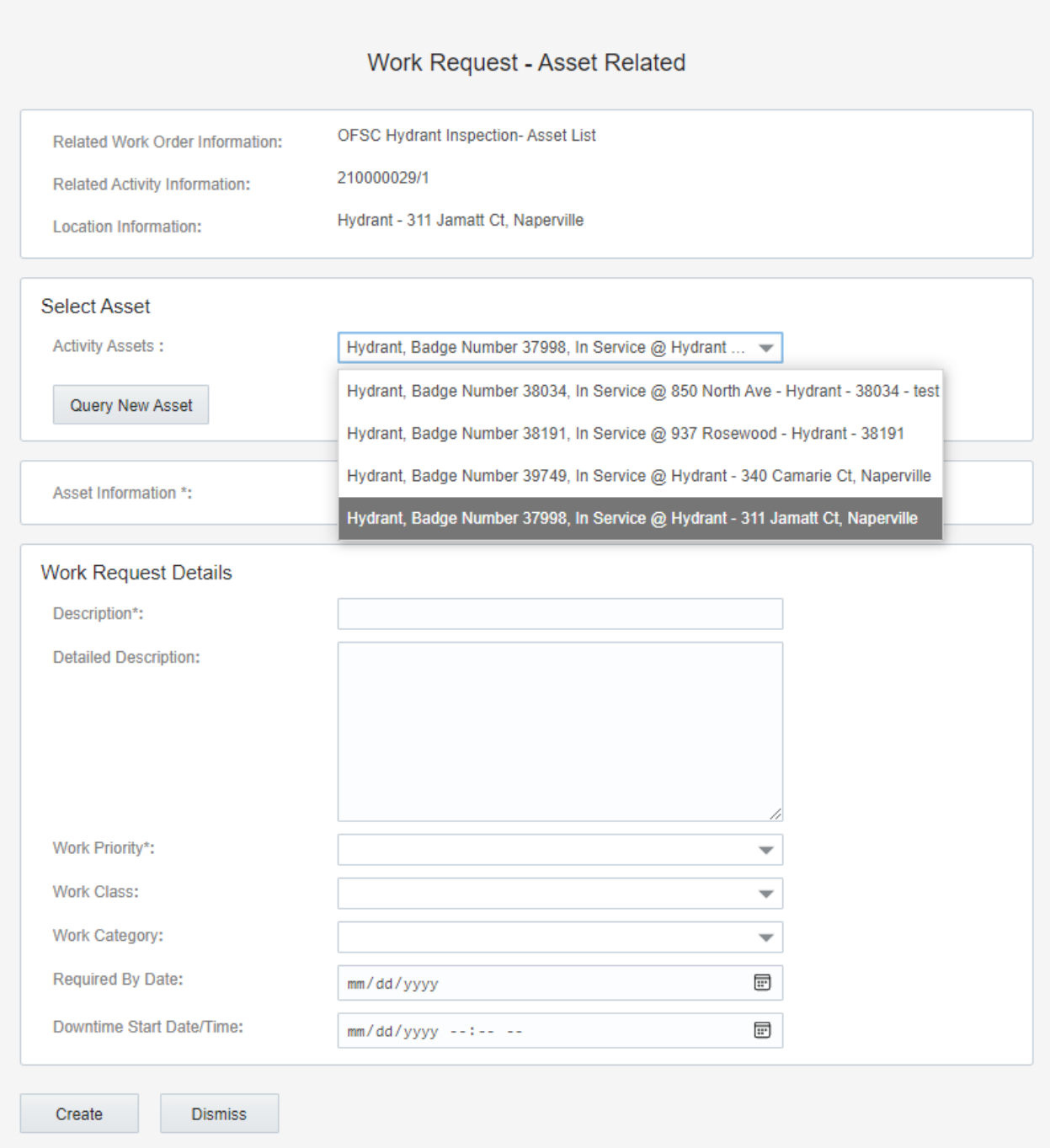
Creating a Follow Up Work Order will result in creation of a work request in the Asset Management solution.

Note that a work request can be asset related and non-asset related.

Asset Related Work Request

Asset related work requests are created for assets.

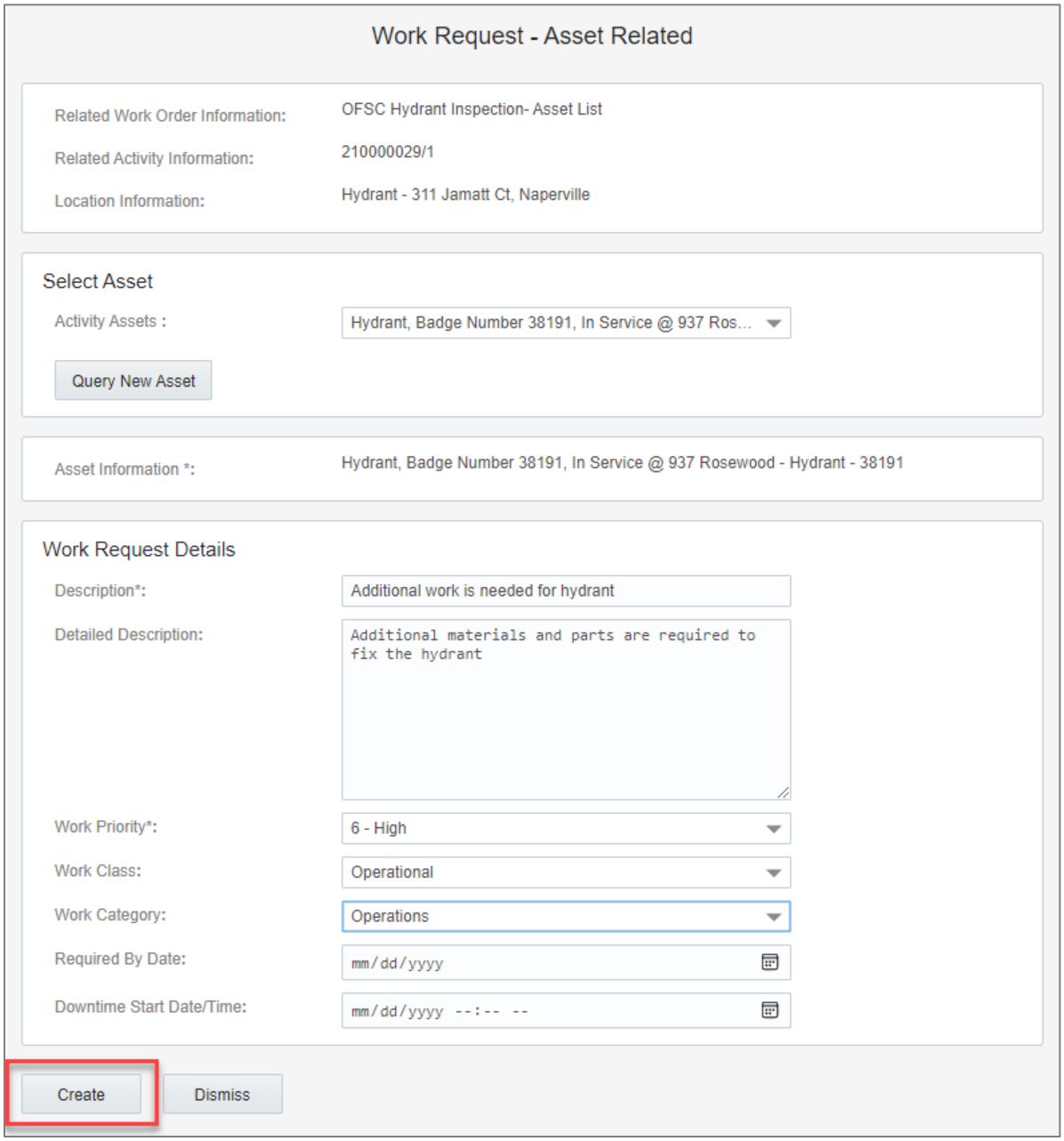
You can specify one of the assets linked to the activity or query asset from the Asset Management solution.

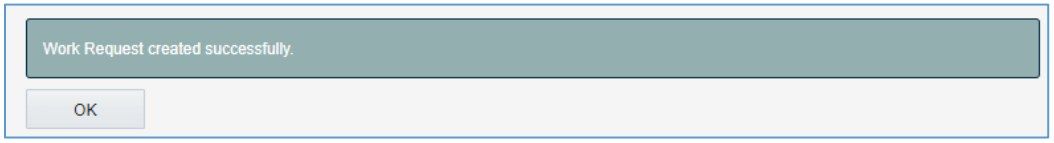


Enter the required information and click **Create**. A new work request will be created and sent to the Asset Management solution.

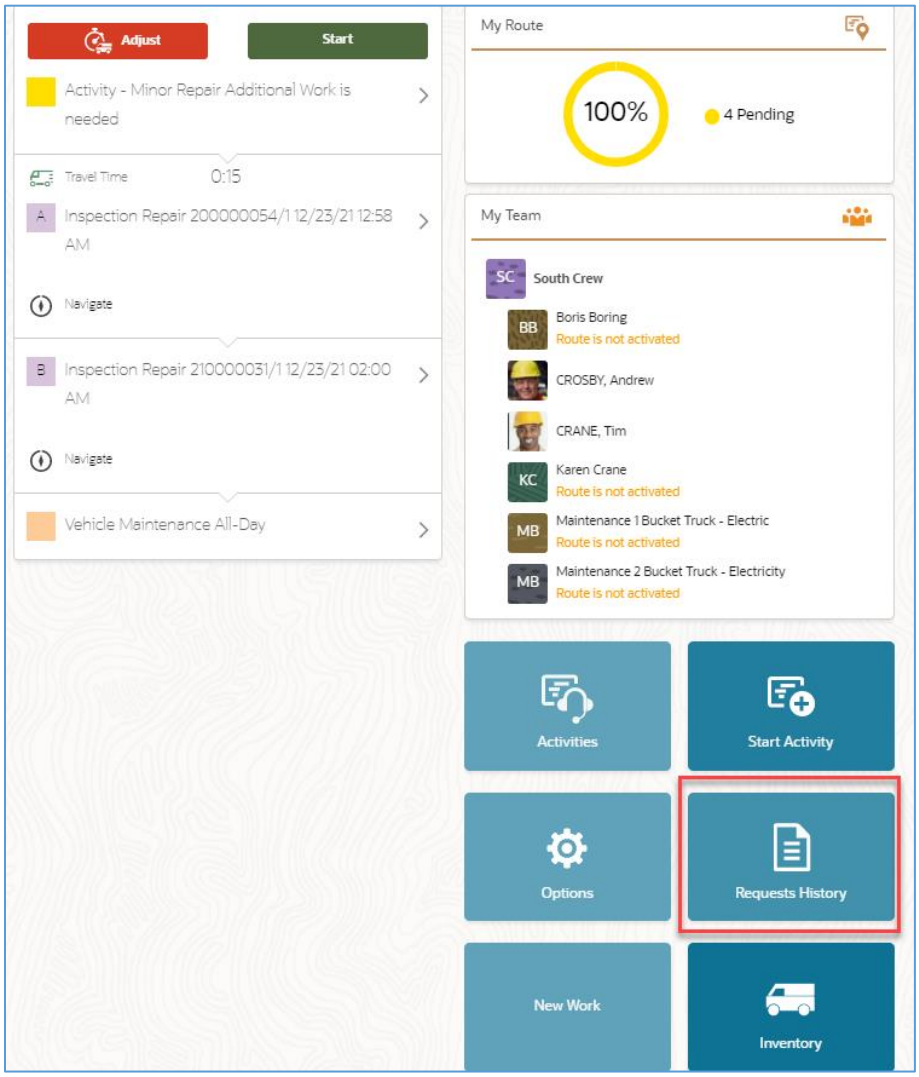
Non-Asset Related Request

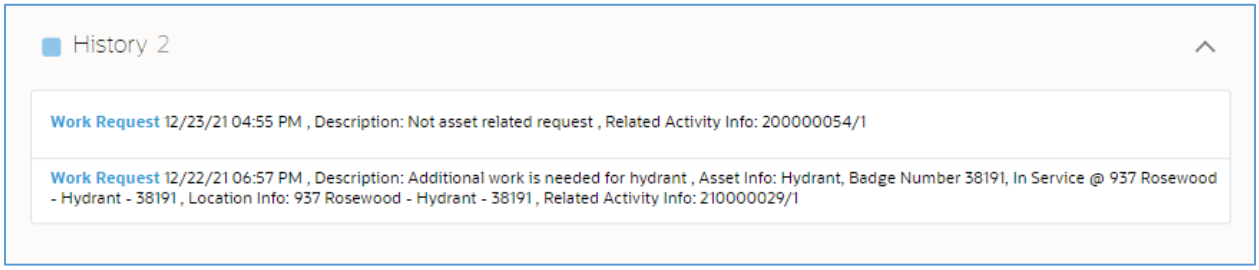
A non-asset related request is not linked to any asset and does not contain any asset information.





Work requests created by crew can be found on crew the **Request History**.





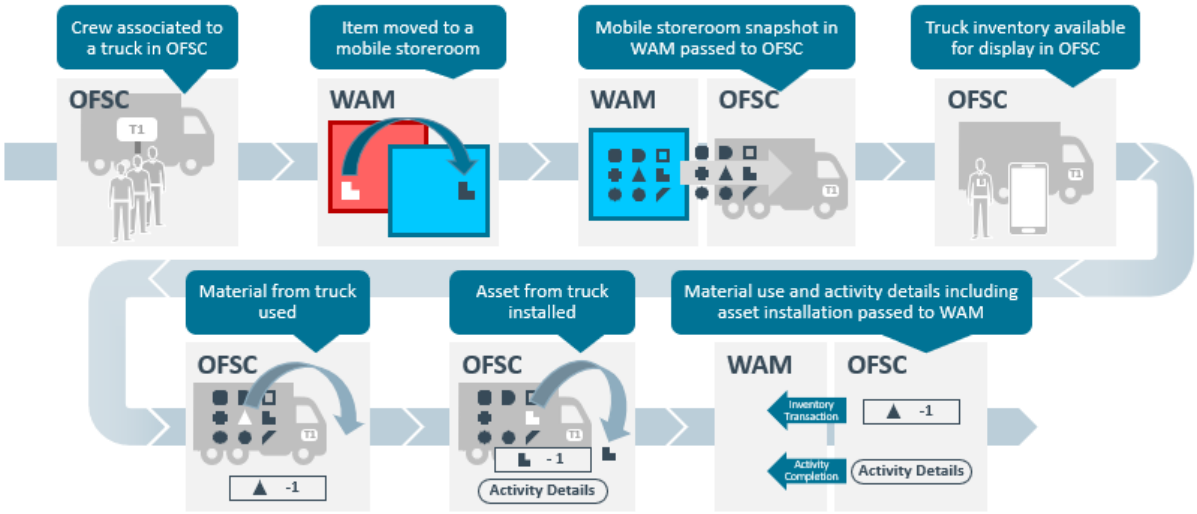
Mobile Inventory Management

Mobile inventory management supports truck storerooms that contain assets and materials.

Overview

The Mobile Inventory Management functionality includes:

- Sending mobile storeroom content details from Oracle Utilities Work and Asset Cloud Service to Oracle Field Service Cloud
- Viewing the contents of a truck in a handheld device
- Recording the use of an item for an activity in a handheld device
- Updating content of Oracle Field Service Cloud truck for additional inventory
- Passing the use of items from Oracle Field Service Cloud to Oracle Utilities Work and Asset Cloud Service



Mobile Inventory Management – Truck Inventory

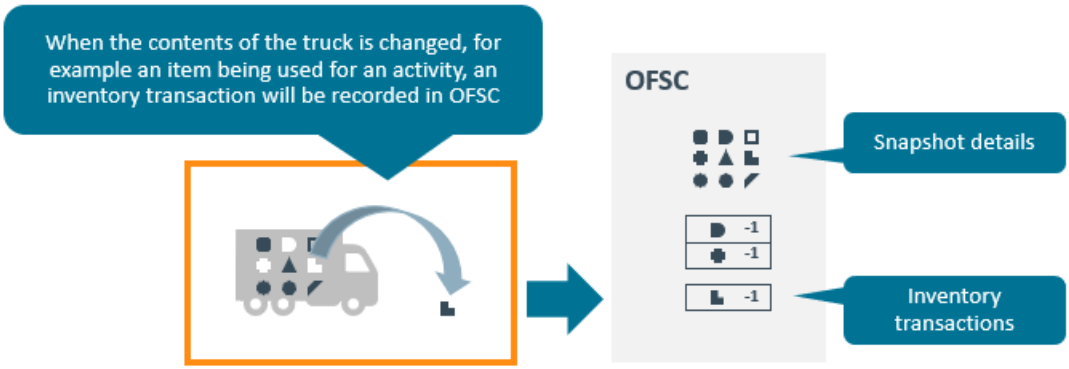
Mobile storerooms (trucks) and their inventories are managed in Oracle Utilities Work and Asset Cloud Service. A truck in Oracle Field Service Cloud is linked to a Oracle Utilities Work and Asset Cloud Service mobile storeroom.

On request, the contents of the Oracle Utilities Work and Asset Cloud Service mobile storeroom is passed to Oracle Field Service Cloud and the contents of the linked Oracle Field Service Cloud truck is updated.

Mobile Storeroom Snapshot - Passing mobile storeroom content to OFSC

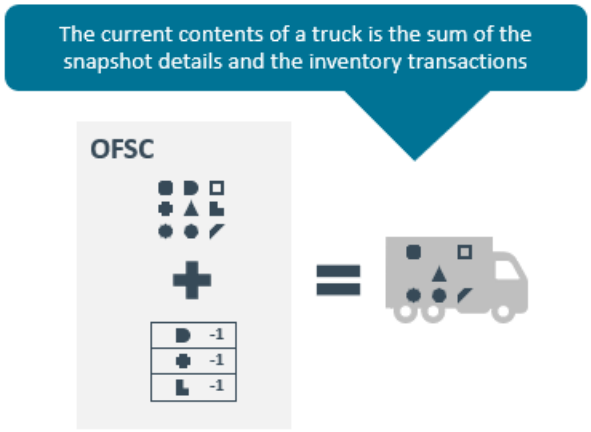
Loading the snapshot of the Oracle Utilities Work and Asset Cloud Service Mobile Storeroom linked to a truck should occur prior to or at the beginning of the relevant crew's shift. When a mobile storeroom snapshot is loaded into Oracle Field Service Cloud the contents of the linked Oracle Field Service Cloud truck is replaced with the details recorded in Oracle Utilities Work and Asset Cloud Service.

A crew can install assets and use material from their trucks for the activities they are working on. These truck inventory transitions are recorded in Oracle Field Service Cloud.



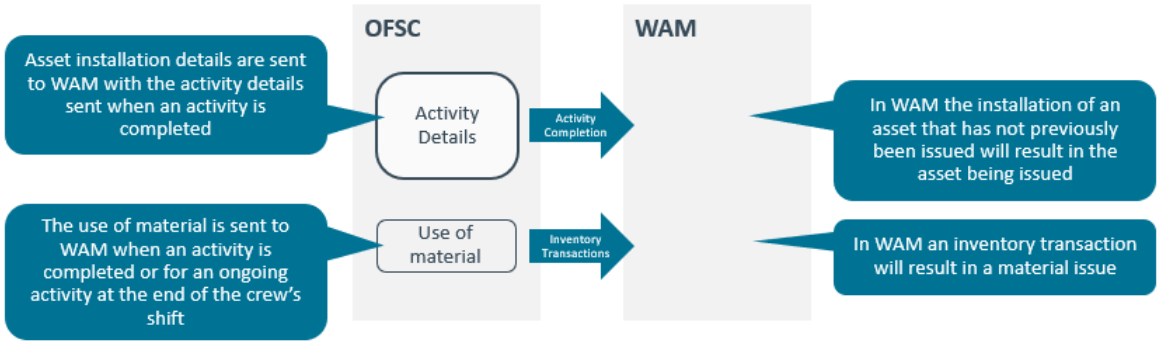
Truck Inventory in OFSC - Inventory transactions

The content of the truck is the combination of the last mobile storeroom snapshot and the inventory transactions that have occurred since the last snapshot.



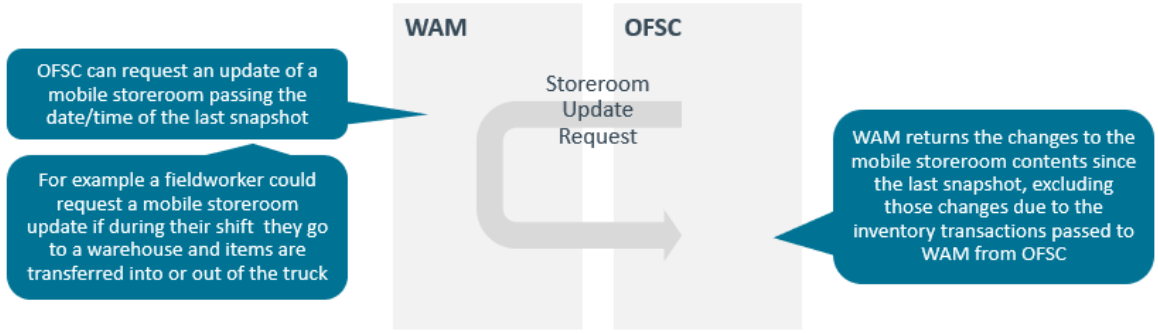
Truck Inventory in OFSC - Current truck contents

On activity completion and at the end of crew shift the use of assets and materials is sent to Oracle Utilities Work and Asset Management and the inventory of the mobile storeroom linked to the truck is updated.



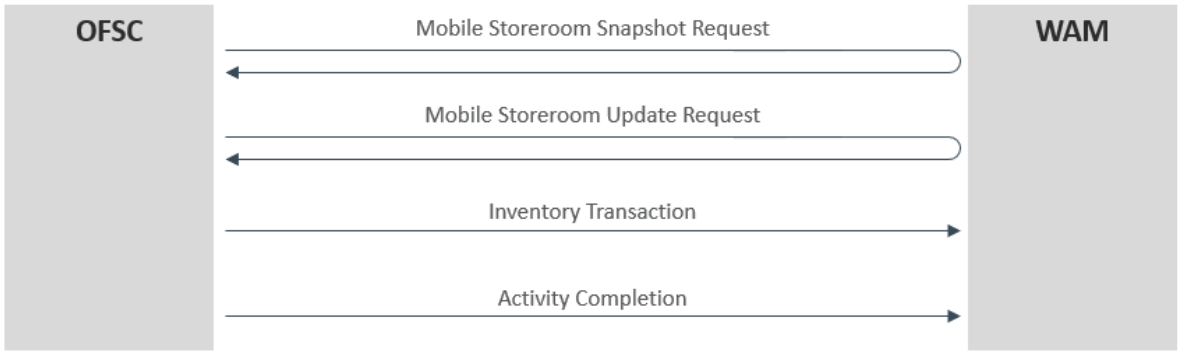
Updating WAM - Inventory transactions for material sent separately to the activity completion

During a crew's shift, the inventory of the crew's truck could get updated. For example, additional items required for an activity could be picked up from a storeroom. These updates will be recorded in Oracle Utilities Work and Asset Cloud Service. In order to update the truck's inventory in Oracle Field Service Cloud, the crew requests an update of the truck inventory.



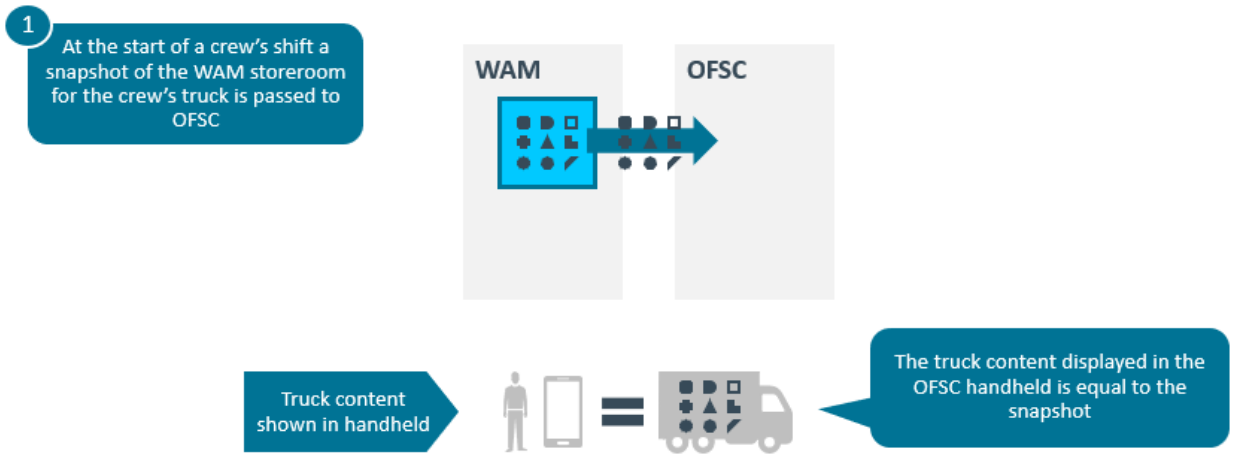
Mobile Storeroom Update - Passing an update of mobile storeroom content to OFSC

The following diagram represents integration flows for mobile inventories movement.

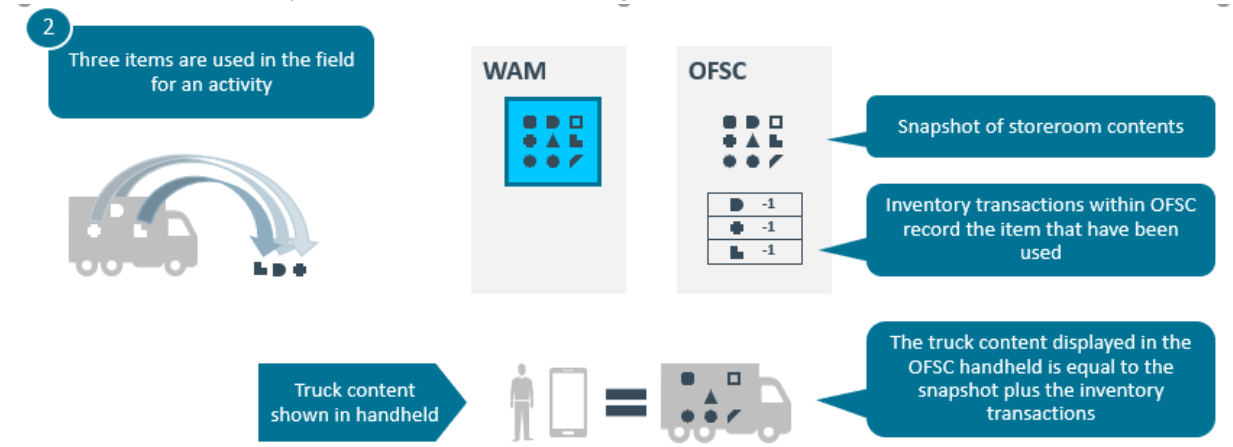


Truck Materials Lifecycle Examples

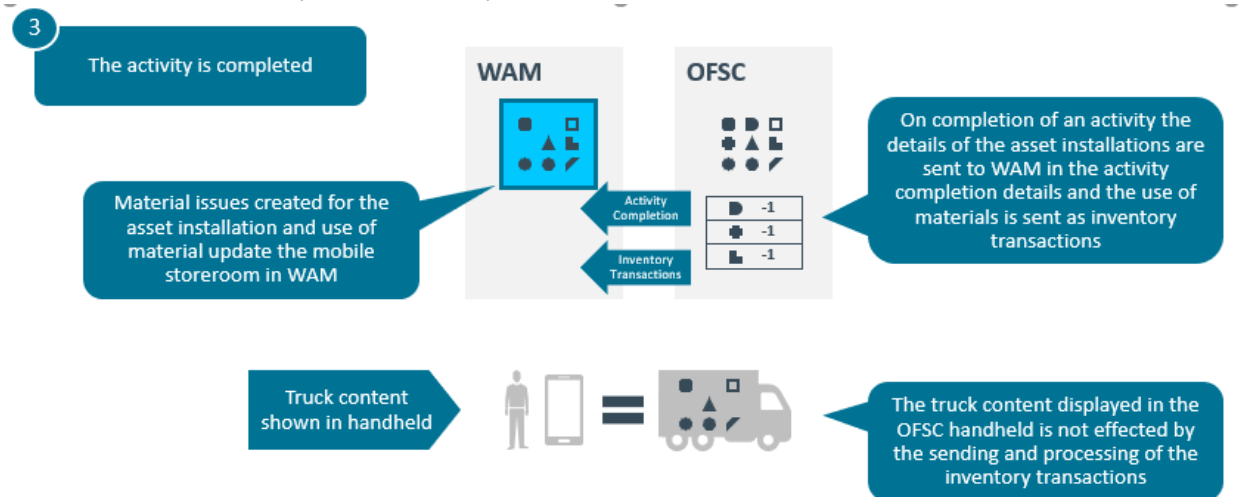
Truck Content Example - Snapshot at the start of the shift



Truck Content Example - Items used in the field

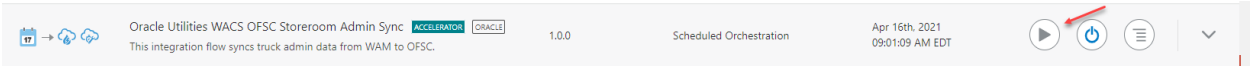


Truck Content Example - WAM updated with item use



Truck Storeroom Admin Sync

This integration process passes storeroom data from Oracle Utilities Work and Asset Cloud Service to Oracle Field Service Cloud for the storerooms with a storeroom type whose storeroom category is Truck.



Truck Storerooms in Oracle Utilities Work and Asset Cloud Service

	LOCATION	LOCATION TYPE	ADDRESS
1	Maintenance 1 Bucket Truck - Electric	Truck Storeroom	Maintenance 1 Bucket Truck
2	Maintenance 2 Bucket Truck - Electricity	Truck Storeroom	Maintenance 2 Bucket Truck
3	Maintenance 3 Crew Truck - Water	Truck Storeroom	Maintenance 3 Crew Truck
4	Maintenance 4 Crew Truck - Water	Truck Storeroom	Maintenance 4 Crew Truck

Trucks created by the integration in Oracle Field Service Cloud

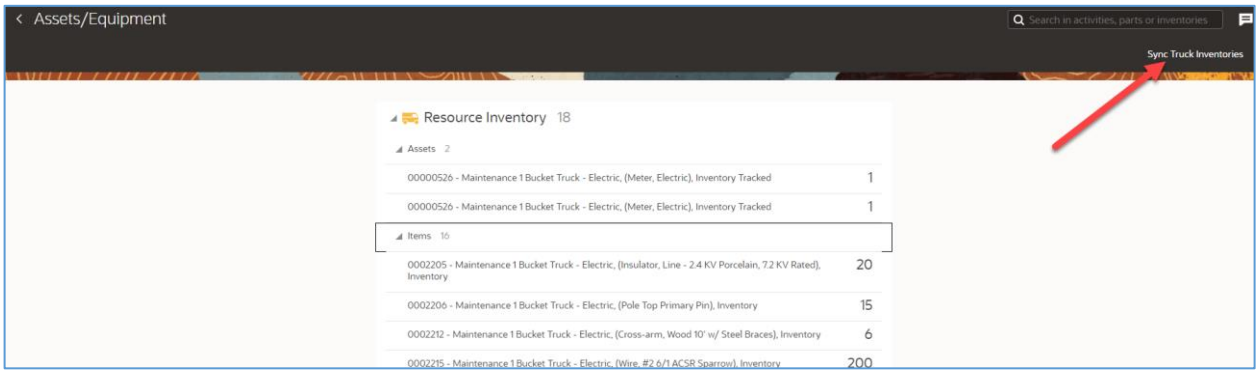
Truck Inventory Snapshot

This process passes the inventory of a truck storerooms from Oracle Utilities Work and Asset Cloud Service to Oracle Field Service Cloud updating the inventory of the Oracle Field Service Cloud truck that is linked to the Oracle Utilities Work and Asset Cloud Service storeroom.

Attention! This process will delete the content of the Oracle Field Service Cloud truck and replace it with the content of the linked storeroom in Oracle Utilities Work and Asset Cloud Service. Any unprocessed inventory transaction in Oracle Field Service Cloud, that is used assets or materials will be lost.

The Truck Inventory Snapshot can be performed using one of the following three options:

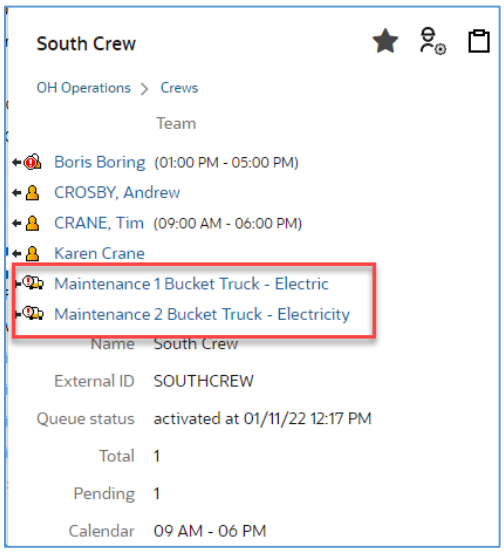
- Option 1: On Route Activation
    - On route activation of a crew or individual, Oracle Field Service Cloud checks if there are any trucks associated with that crew or individual. If there are any, it initiates the truck inventory snapshot process.
- Option 2: Scheduled Truck Inventory Snapshot
    - A batch scheduled in Oracle Integration Cloud to run at a specific time initiates the truck inventory snapshot process for all truck storerooms.
- Option 3: On Request
    - The truck inventory snapshot process can be initiated by a dispatcher from the Truck Resource Inventory. This option can be used for exceptional situations



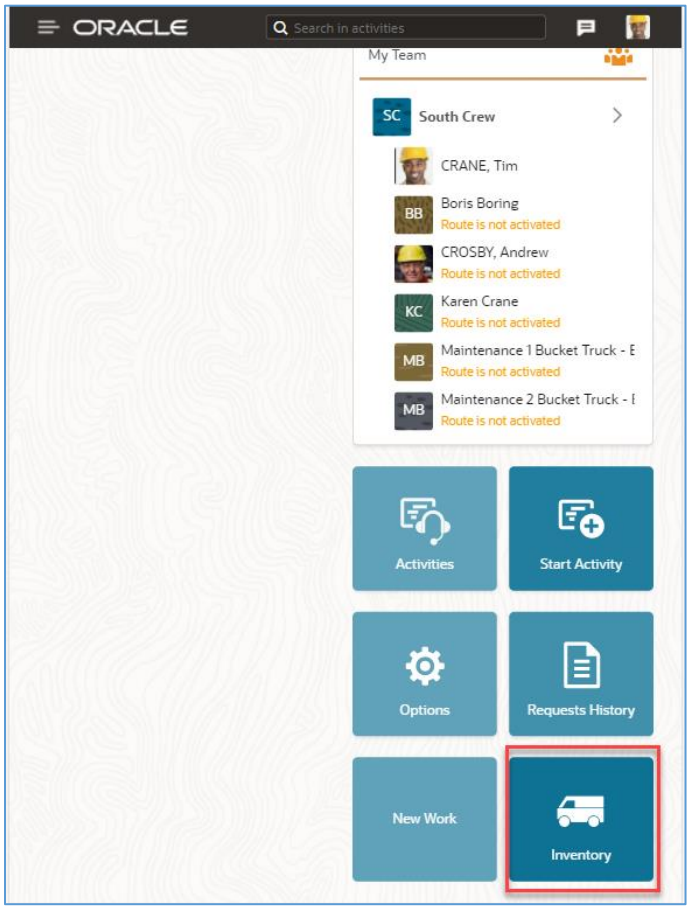
Assigning Truck to Crews

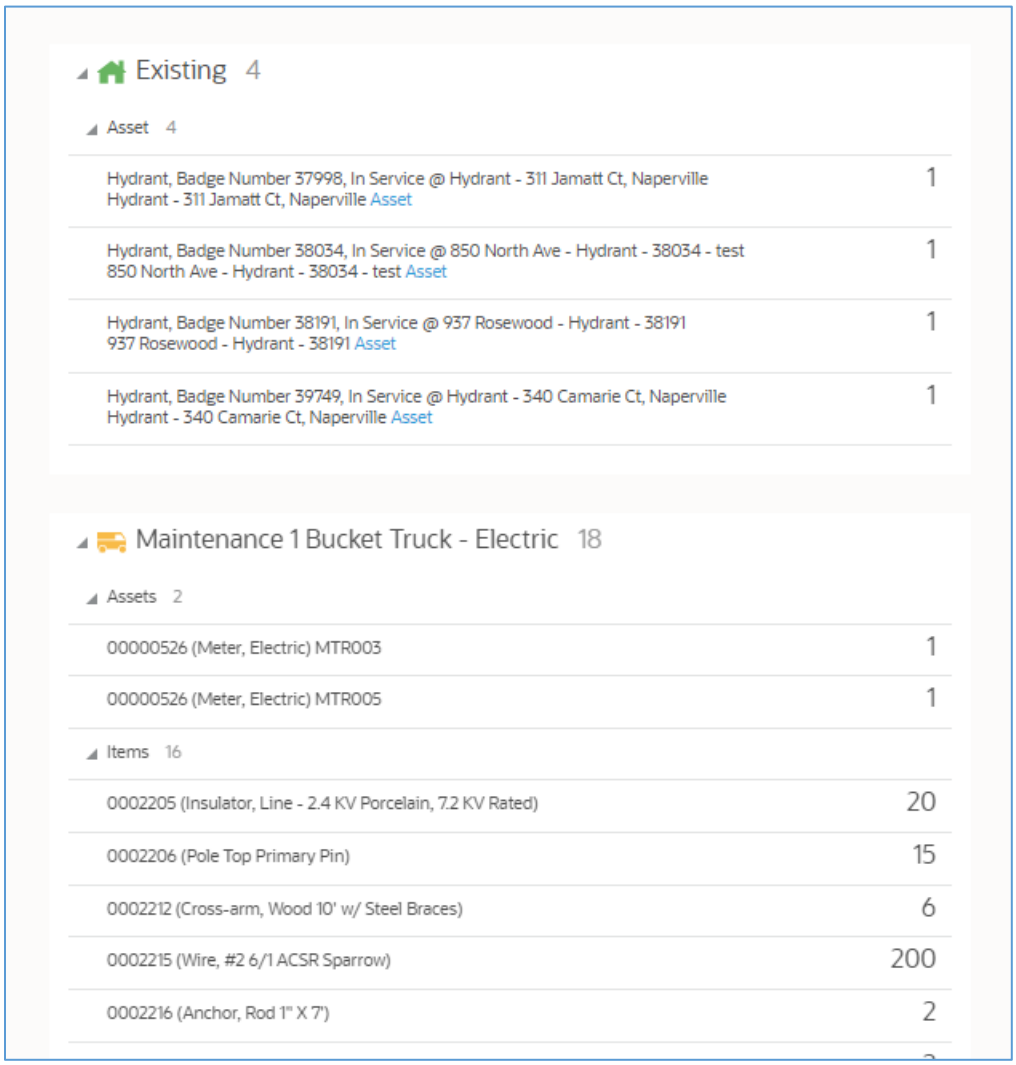
A truck is assigned to a crew or individual. Once a truck is assigned its contents is available to be used for the activities the crew or individual is working on.

In the example below, two trucks have been assigned to South Crew.



The inventory of these trucks is available to the crew memmber in the mobile application.

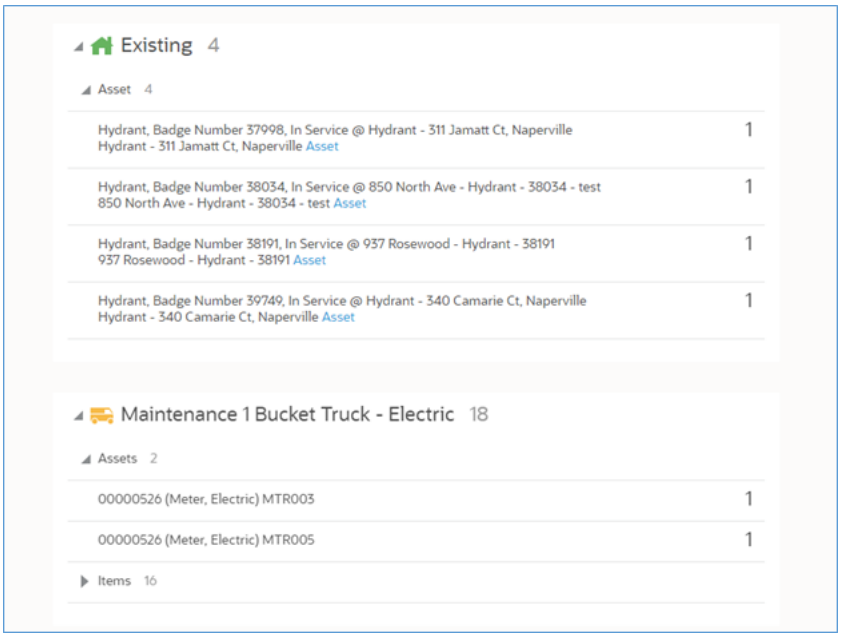



Existing 4
Asset 4
Hydrant, Badge Number 37998, In Service @ Hydrant - 311 Jamatt Ct, Naperville
Hydrant - 311 Jamatt Ct, Naperville Asset
1
Hydrant, Badge Number 38034, In Service @ 850 North Ave - Hydrant - 38034 - test
850 North Ave - Hydrant - 38034 - test Asset
1
Hydrant, Badge Number 38191, In Service @ 937 Rosewood - Hydrant - 38191
937 Rosewood - Hydrant - 38191 Asset
1
Hydrant, Badge Number 39749, In Service @ Hydrant - 340 Camarie Ct, Naperville
Hydrant - 340 Camarie Ct, Naperville Asset
1
Maintenance 1 Bucket Truck - Electric 18
Assets 2
00000526 (Meter, Electric) MTR003
1
00000526 (Meter, Electric) MTR005
1
Items 16
0002205 (Insulator, Line - 2.4 KV Porcelain, 7.2 KV Rated)
20
0002206 (Pole Top Primary Pin)
15
0002212 (Cross-arm, Wood 10' w/ Steel Braces)
6
0002215 (Wire, #2 6/1 ACSR Sparrow)
200
0002216 (Anchor, Rod 1" X 7')
2

Using Inventories for Activities

You can see truck inventories on the activity's **Asset** tab.

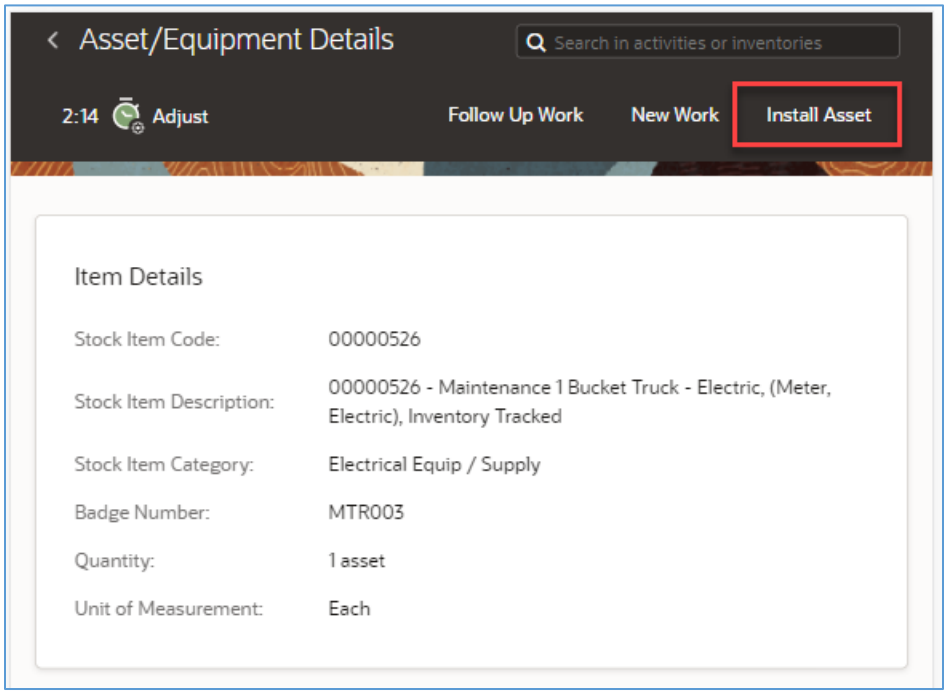
There are two types of items in a truck's inventory: assets and materials.



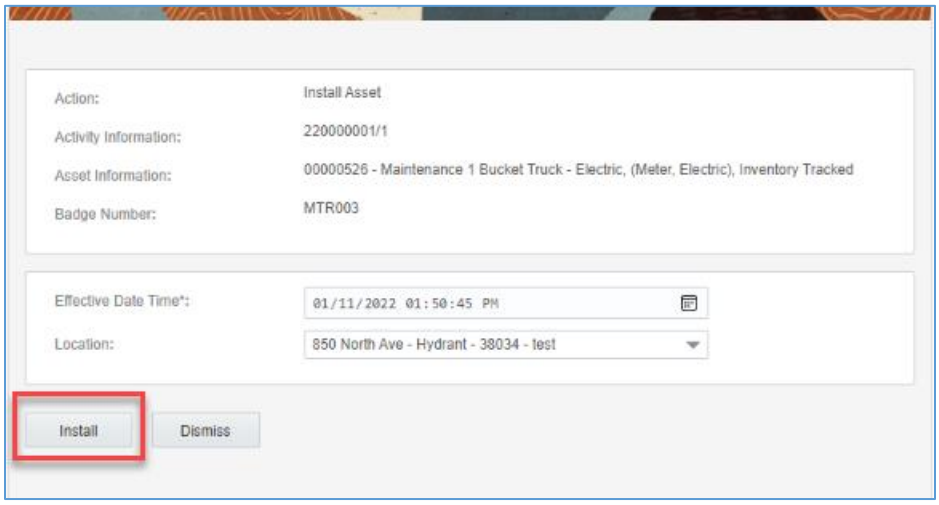
Assets

You can install an asset in a truck's inventory at a location associated with the activity being worked on.

1. Select the asset you want to install and click **Install Asset**.



2. If there is more than one location associated with the activity, select the location and if the necessary Adjust the installation date and time.

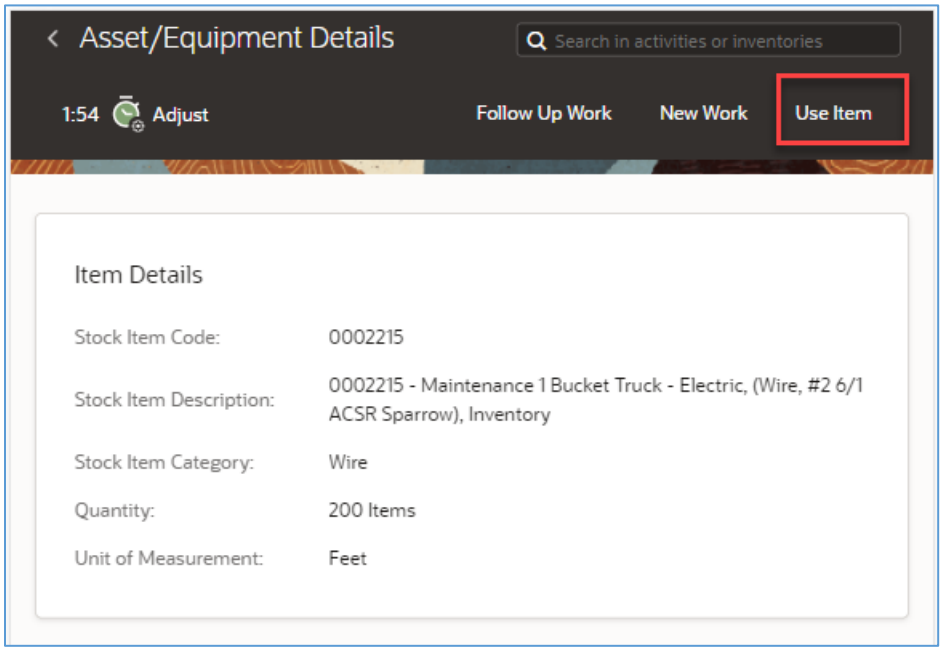


An asset will be installed at the location.

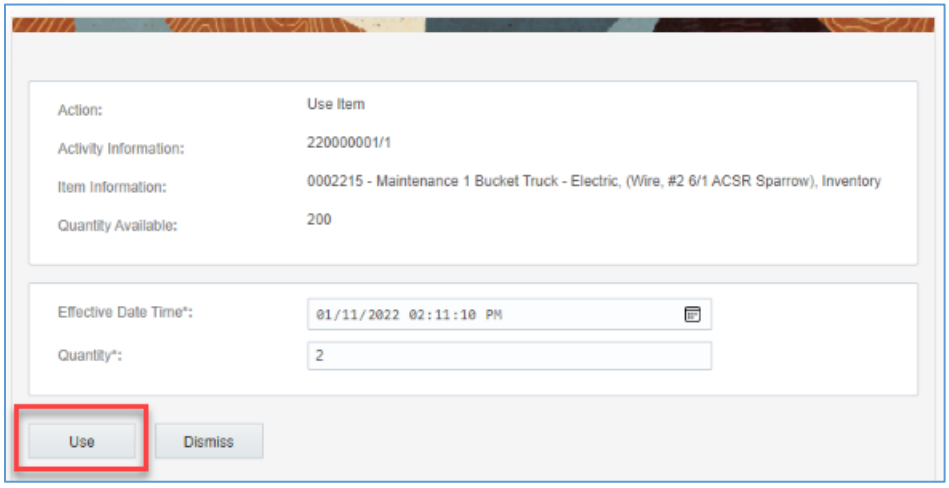
Materials

You can report material that have been used for an activity.

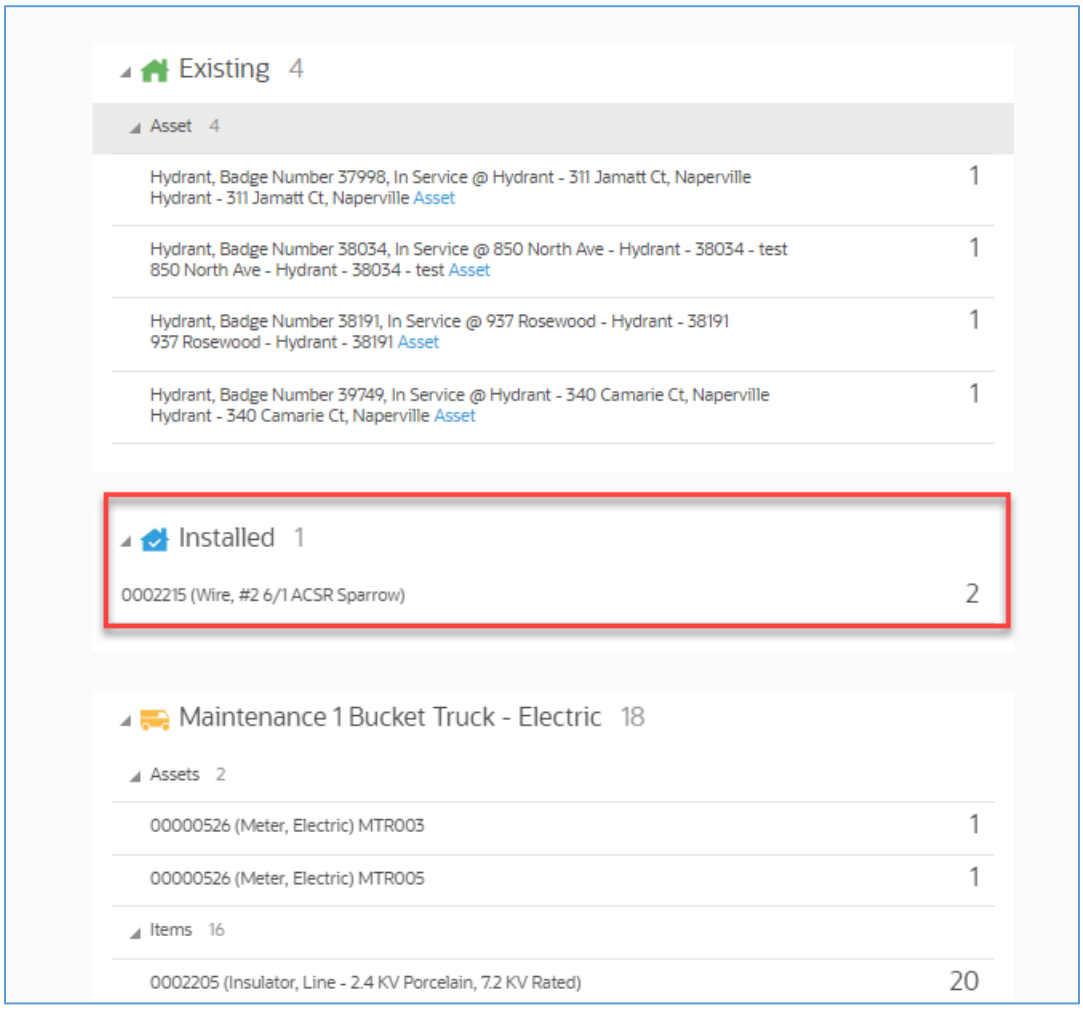
1. Select the item you want to use and click **Use Item**.



2. Specify the number of items used and click **Use**.



The used items will appear in the **Installed** section.

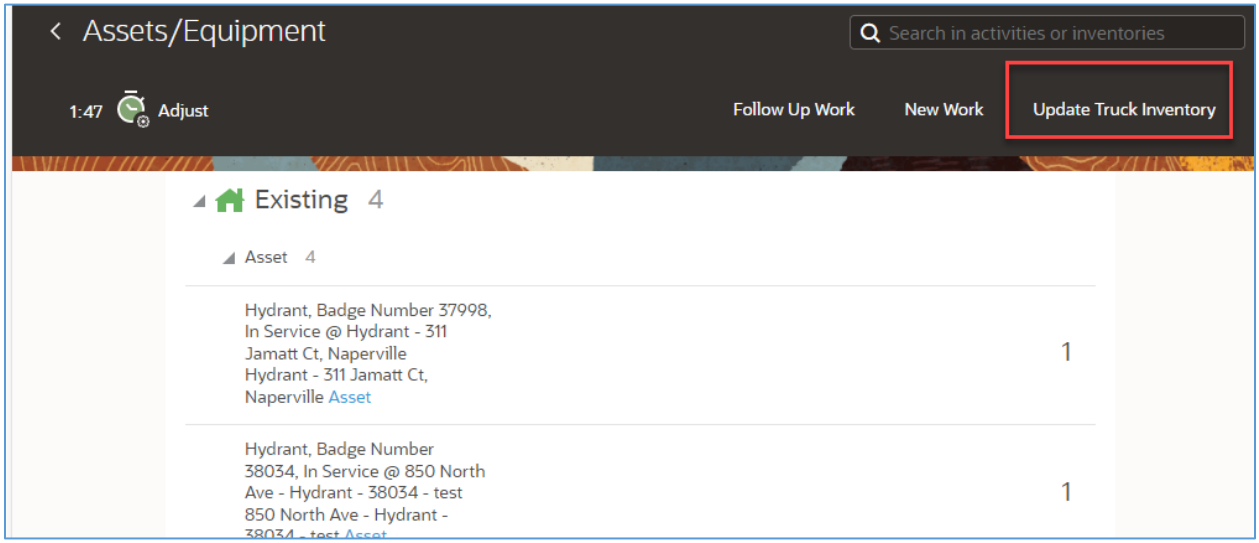


Update Truck Inventories

During a crew's shift the contents of a truck could be changed and the changes recorded in Oracle Utilities Work and Asset Cloud Service. For example: Items could be added to a truck from a standard storeroom. The inventory could be changed. In this situation, a truck inventory update should be requested from Oracle Field Service Cloud.

On receipt of a truck inventory update request, Oracle Utilities Work and Asset Cloud Service returns the inventory changes to the trucks storeroom contents since the last snapshot. Changes to the Oracle Utilities Work and Asset Cloud Service contents resulting from inventory transactions passed from Oracle Field Service Cloud are excluded.

To trigger a truck inventory update, click **Update Truck Inventory** on the **Asset** tab.


Assets/Equipment
Search in activities or inventories
1:47
Adjust
Follow Up Work
New Work
Update Truck Inventory
Existing 4
Asset 4
Hydrant, Badge Number 37998, In Service @ Hydrant - 311 Jamatt Ct, Naperville Hydrant - 311 Jamatt Ct, Naperville Asset
1
Hydrant, Badge Number 38034, In Service @ 850 North Ave - Hydrant - 38034 - test 850 North Ave - Hydrant -
1

Chapter 5: Customizations

Adding new properties according to the requirement and customizations help customers to enhance the functionality of the integration and increase the usability. The customizations are done in Oracle Integration Cloud, Oracle Field Service Cloud, and Oracle Utilities Customer Cloud Service depending on the fields, elements, or properties to be added and whether they are available.

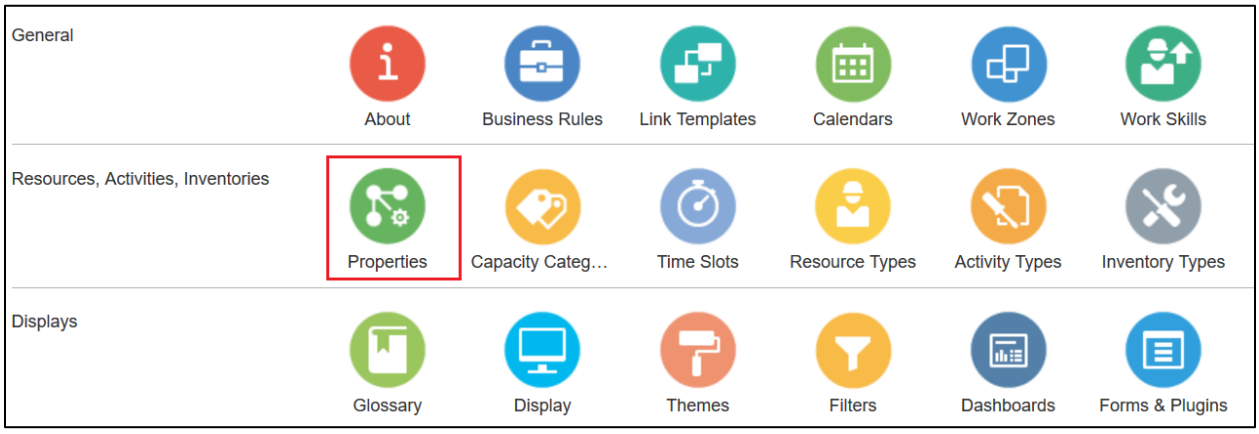
This chapter focuses on a few cases about customizations.

Adding New Fields to Field Activity

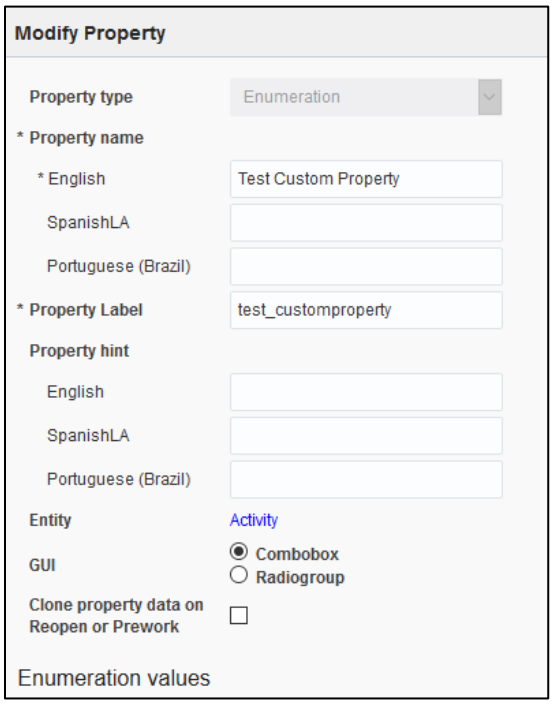
This section provides the steps to add a new field to the field activity already available but not present in the field activity.

Oracle Field Service Cloud Configurations

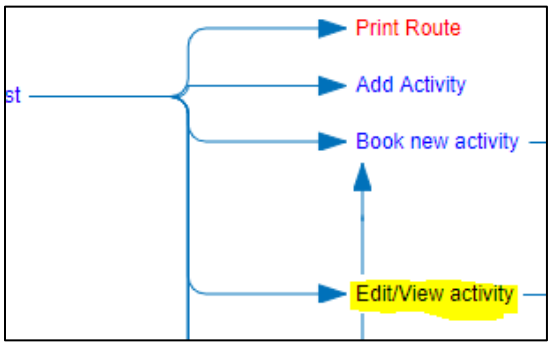
1. Login to Oracle Field Service Cloud.
2. Navigate to **Configuration** > **Resources, Activities, Inventories > Properties**.



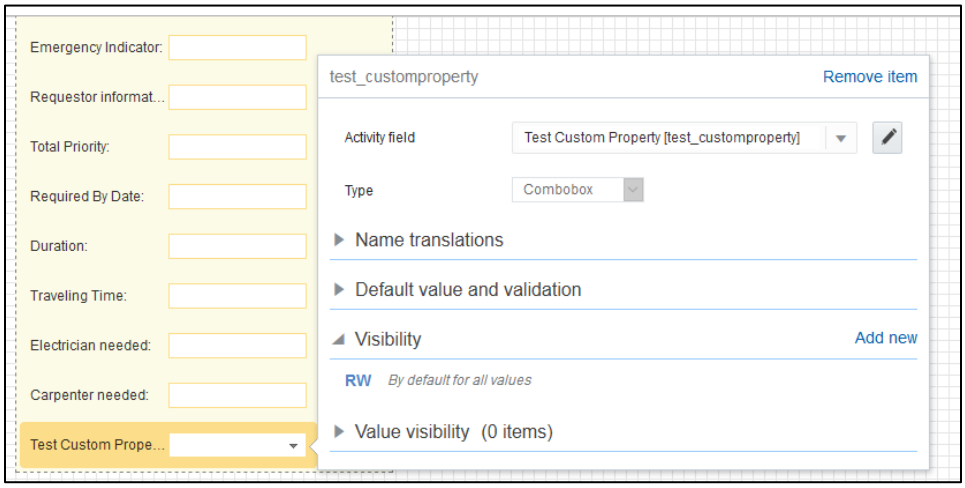
3. Enter the **Property name** and **Property Label**.
4. Select the entity, type of GUI, and add the enumeration values “customprop1” and “customprop2”.



5. Navigate to **Configuration > Users, Security, Integrations > User Types** and select the required user type.
6. Navigate to the Screen configurations for the select user type and open the **Edit/View activity** section.



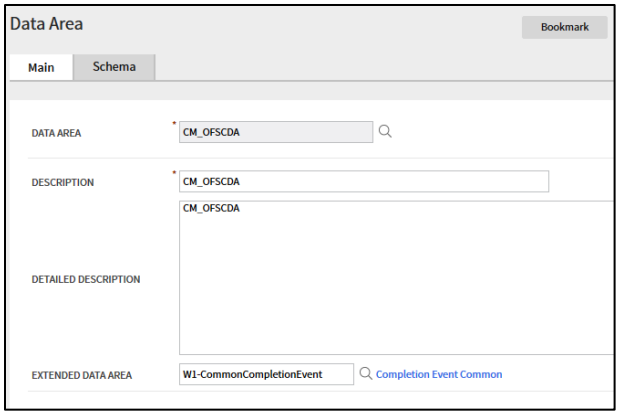
7. Add a new element by dragging and dropping a new 'Input' from the **Add New Element** section.
8. Map the element to the **Test Custom Property**. Save this configuration after mapping the field.

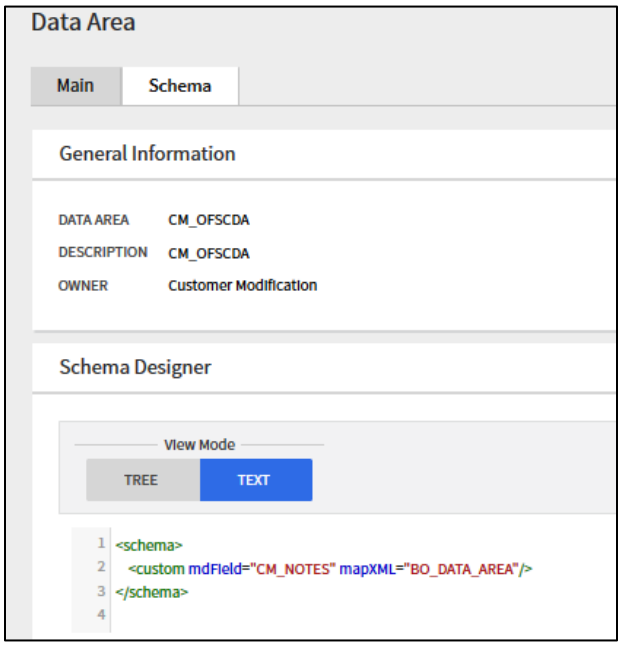


Oracle Utilities Work and Asset Cloud Service Configurations

1. Login to Oracle Utilities Work and Asset Cloud Service.
2. To configure with a new schema element:
    a. Navigate to the W1-ActivityComplInboundComm business object.
    b. Identify the data area to add the new schema element.

       Example: To make changes to the Completion Event Details section, the data area to be changed is the custom data area created for Oracle Field Service Cloud.
    c. Extend the data area. Add the completion event details data area in the **Extended Data Area** field.





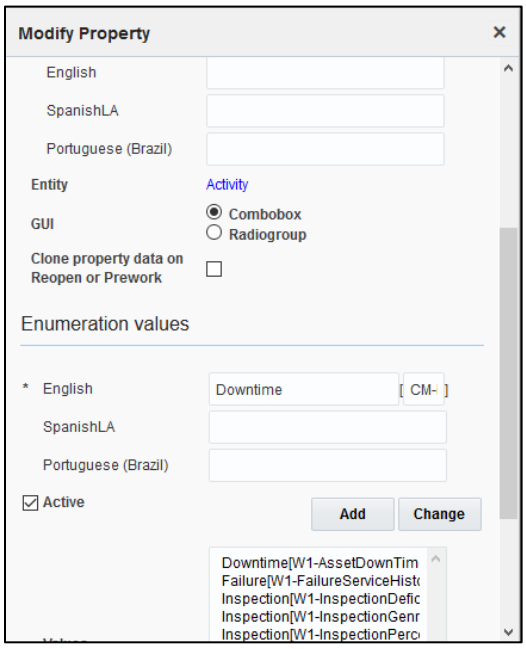
d. The new schema element is displayed in the business object schema.

Adding Custom Business Objects

After a custom business object for a service history is added in Oracle Utilities Work and Asset Management, the information is available to Service History plugin along with all other service histories as part of “wam_asset_valid_service_history_types” property.

In Oracle Field Service Cloud the new business object value is added as an enumeration value in “wam_service_history_bo” property.

If the new business object belongs to one of the predefined service history categories of Questionnaire, Inspection, Failure, Downtime and General, it is defined as such in the property. For example: A custom business object “CM_Downtime” is entered in the “wam_service_history_bo” property as shown below. The service history plugin will automatically handle the new business object.



If the new business object entered does not fall into any of the predefined service history categories, after the “wam_service_history_bo” property is updated, the service history plugin javascript should be updated to handle the new service history category. Create a new XSL that needed for the UI of the new service history category to be added.

Plugins Rendering Data

This section explains how each plugin renders the data.

Measurements

- Valid measurement types received from Oracle Utilities Work and Asset Clod Service are assigned to “wam_valid_measurement_types” property and are obtained in runtime as XML string and displayed in plugin.
- The individualMeasurementType-to-form.xsl and individualMeasurementTypeEdit-to-form.xsl are used to style the UI forms to add and update measurement information.
- The measurement information is consolidated into “wam_measurements_output” property and made available for validateCompletion plugin.
- Measurement reason types (wam_measurement_meter_reason, wam_measurement_gauge_reason) are populated based on the measurement type selected.

Resource Usage

- resourceUsage-to-form.xsl provides the summary of **Resource Usage Details** page from where crew can add timesheets, equipment, and other resource usage. It also displays the resource usage details entered.
- individualTimeUsage-to-form.xsl used to display add/update time sheet screens whereas crewTimeUsage-to-form.xsl is used to enter and update individual and crew timesheets.

- individualEquipmentUsage-to-form.xsl and individualOtherUsage-to-form.xsl are used to enter equipment and other resource usages.
- Upon completion of resource usage which calls Oracle Integration Cloud (Oracle Utilities OFSC WACS Resource Usage Details integration flow) and update the details in Oracle Utilities Work and Asset Cloud Service.

Service History

- The below XSL are applied to render the UI:
    - serviceHistoryTypes-to-form.xsl to show Service History List and the Entered Service histories
    - downtime-to-form.xsl for Downtime Service History form
    - failure-to-form.xsl for Failure Service History form
    - questionnaire-to-form.xsl for Questionnaire and Inspection Service History form
    - sh-to-form.xsl for General Service History form
    - entered-sht-count.xsl is used to count the entered service histories per each service history type
    - shAttachment-to-form.xsl to enter attachments
- The valid service histories are displayed based on the service histories hold by "wam_asset_valid_service_history_types" property.
- The asset failure information is displayed based on the values holds in "wam_failure_info" property.
- The asset downtime reason is displayed based on the values holds in "wam_downtime_reason property.
- The following BO categories are supported. (Questionnaire and Inspection are handled similarly)
    - Questionnaire
    - Inspection
    - Failure
    - Downtime
    - General
- Refer to Chapter 5: Customizations for information about adding a custom business object.
    - If the completion message for service histories is greater than 655360, the message is split into multiple wam_service_history_output(i) where i values ranges from 1 to 20 (ie size upto 640KB) properties and and made available for validateCompletion plugin.

Asset Component Install Exchange Undo

- The below XSL are applied to render the UI:
    - assetQuery-to-form.xsl to show Install, Attach, Replace, and Undo operation screens.
- Every operation will have have "wam_asset_effective_date_time" property on the screen defaulted to Current Date/Time which can be modified by the user.
- Upon clicking "Search and Add" or "Search and Replace" for Install, Attach, and Replace operations, it calls Oracle Integration Cloud (Oracle Utilities OFSC WACS Asset Query integration flow). If the response succeeds, the assets details are received and the operation is performed successfully. If the response fails, a valid error message is displayed on the screen.

Validate Completion

- This plugin is used to validate and construct the final completion message obtained from individual plugins that is sent out by Oracle Field Service Cloud to Oracle Utilities Work and Asset Management. Click **Complete**.
- The plugin validates to check if there are any pending service histories and all the required service histories are completed.

  If the validations are not successful, click **OK** and fix the issue. If the validations are successful, the completion message is written to a temporary file and navigated to the **End Activity** screen. Click **Submit** to send the completion message to Oracle Utilities Work and Asset Management.
- The plugin populates the “participation” node in the completion message with either "W1AW" or "W1AS" based on if the “Asset worked” was selected (checkbox selected) or not.

Lock Unlock

- index.html page provides the summary of **Lock/Unlock status** from where user can Lock or Unlock Activity.

Only on Locking an activity crew can start the operations such as Asset Install, replace, remove, adding timesheet, Equipment and other details. A crew member can lock the activity without starting it. Once activity is locked by any crew it can be unlocked by himself or from dispatch console.

Pick Up

- assetQuery-to-form.xsl displays the asset query screen to query assets from WAM using asset badge number or Location.
- pickupWork-to-form.xsl provides crew member with a dropdown option to choose the level from Work order,Work Request-Asset Related or Work Request- Non Asset Related.
- workOrderRequest-to-form.xsl displays a form where crew member can add details for Work order or Work Request created.
- Upon clicking “Query New Asset” crew gets navigated to Asset Query page which calls the OIC flow((Oracle Utilities OFSC WACS Asset Query). Crew member can clear the selected asset using “Clear Selection” button.

Materials

- materials-to-form.xsl display a dropdown containing list of trucks assisting the crew to Update the truck inventories of selected truck.
- moveMaterials-to-activity-form.xsl to display Use/Undo Use Item, Install/Undo Install Asset and Attach/Undo Attach component screens from truck inventories.
- Initial sync of truck inventories can be performed from dispatch console clicking “Sync Truck Inventories”.

Validation for Completion

Validation Rules

- Basic validation is to ensure that the activity has all the necessary information to be completed.
- All pending service histories must be completed when completing the activity (mandatory).
- Required service histories must be entered for worked assets.
- For each asset that worked, loop through the list of required service history types defined on the activity.
- Find all service histories in the list of activity service histories that its service history type = current service history type being processed and either asset ID = empty or equal current asset being processed.
- If not found, issue an error that "A service history of type %1 is missing for asset %2".

Chapter 6: Hosting Plug-Ins in OFSC

Plug-ins can be hosted within Oracle Field Service or externally.

Oracle Field Service cloud has plugins that can be hosted within Oracle Field Service cloud.

The steps to host a Plug-In within Oracle Field Service cloud is documented in https://docs.oracle.com/en/cloud/saas/field-service/21a/fapcf/configure-and-use-plug-ins.html#c_hostingPlugins

The plugins can be hosted externally on

1. Any webserver (Eg: Tomcat) running on a virtual machine either on premise or on cloud
2. It can be stored In Object Storage on a cloud instance by uploading the files either in a public bucket

Additionally if the plugins are hosted externally, then

1. Navigate to **Configuration** > **Application** > **Additional Resources**.
2. Select **Allow Cross-origin resource sharing (CORS) from the following web domains** and provide the domain of the server on which the plugins are hosted.

Hosting files on a webserver

Plugins can be hosted on a webserver running on a virtual machine either on premise or on cloud.
The mobile device or browser needs to be able to reach and communicate with the server hosting the plugin files.

Please refer to the documentation of the webserver of choice on how setup and host the static content. The unzipped files of the plugin is then hosted on the webserver. The path to the index.html or the directory containing the index.html is configured in the URL field of the plugin screen as defined in https://docs.oracle.com/en/cloud/saas/field-service/21a/fapcf/configure-and-use-plug-ins.html#configure-and-use-plug-ins

The externally hosted plugin can be secured and Oracle Field Service Cloud supports authentication mechanism as defined in https://docs.oracle.com/en/cloud/saas/field-service/21a/fapcf/configure-and-use-plug-ins.html#c_authentication

Storing files on Object Storage

Before storing files in Object Storage make sure that the basic administration tasks in Oracle Cloud Infrastructure related to Object Storage are completed properly, and that the compartments and buckets where the plugin files are stored are set up.

For more information on Oracle Cloud Object Storage setup for Oracle Utilities Cloud Services, refer to the latest Oracle Utilities Cloud Services Object Storage Setup Guide at:

https://docs.oracle.com/cd/F35460_01/PDF/UGBU_Cloud_Services_Object_Storage_Setup_21A.pdf

Using public bucket

The unzipped plugin files can be uploaded into a public bucket in which case the files are not protected and is open to public. The URL to index.html in the public bucket is configured in URL field in Oracle Field Service Cloud.