Oracle Utilities Digital Asset Cloud Service Integration to Oracle Field Service

User's Guide

Release 23C

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Oracle Utilities Digital Asset Cloud Service Integration to Oracle Field Service User's Guide, Release 23C

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Preface

Welcome to the Oracle Utilities Digital Asset Cloud Service Integration to Oracle Field Service User's Guide for release 23C.

This user's guide includes the information required for the integration to work effectively. It describes how to use the features in Oracle Utilities Digital Asset Cloud Service. It provides instructions for completing common tasks and provides descriptions of the fields, windows, buttons, and menus used to perform those tasks. The instructions and descriptions in this guide are based on the default product configuration for a user with full authority to use all functionality.

> **Note:** The screenshots and images provided in this document are sample references based on the current release of Oracle Utilities Digital Asset Cloud Service Integration to Oracle Field Service. They may change based on changes to UI in the future releases.

The preface includes the following:

- Audience
- Documentation and Resources
- Updates to Documentation
- Documentation Accessibility
- Conventions
- Acronyms

Audience

This document is intended for anyone implementing the integration between Oracle Utilities Digital Asset Cloud Service and Oracle Field Service.

Documentation and Resources

For more information regarding this integration, foundation technology and the edge applications, refer to the following documents:

Product Documentation

Resource	Location
Oracle Utilities Digital Asset Cloud Service Integration to Oracle Field Service documentation	https://docs.oracle.com/en/industries/energy-water/integrations-index.html
Oracle Utilities Digital Asset Cloud Service documentation	https://docs.oracle.com/en/industries/energy-water/digital-asset-cloud-service/index.html
Oracle Field Service documentation	https://docs.oracle.com/en/cloud/saas/field-service/index.html

Additional Documentation

Resource	Location
Oracle Integration Cloud Service documentation	Refer to the OIC documentation at: https://docs.oracle.com/en/cloud/paas/integration-cloud/index.html
Oracle Support	Visit My Oracle Support at https://support.oracle.com regularly to stay informed about updates and patches. Refer to the *Certification Matrix for Oracle Utilities Products (Doc ID 1454143.1)* on My Oracle Support to determine if support for newer versions of the listed products is included. For more information, refer to the Oracle Utilities Integrations page at http://my.oracle.com/site/tugbu/productsindustry/productinfo/utilities/integration/index.htm
Oracle University for training opportunities	http://education.oracle.com/

Updates to Documentation

The complete Oracle Utilities Digital Asset Cloud Service Integration to Oracle Field Service documentation set is available from Oracle Help Center at https://docs.oracle.com/en/industries/energy-water/index.html.

Visit My Oracle Support for additional and updated information about the product.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customers have access to electronic support for the hearing impaired. Visit: http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Acronyms

The following terms are used in this document:

Term	Expanded Form
OUDACS/DACS	Oracle Utilities Digital Asset Cloud Service
OFS	Oracle Field Service
OIC	Oracle Integration Cloud
DVM	Domain Value Map (Lookup)

Chapter 1

Overview

This chapter provides an overview about Oracle Utilities Digital Asset Cloud Service, Oracle Field Service, and Oracle Integration Cloud. It focuses on the functionality and business standpoint of each part and in the integration.

The chapter provides detailed information about the following:

- Background
- Integration Overview

Background

The pandemic has forced utilities to rethink their digital transformation strategy to meet ever-changing customer expectations.

No other industry has placed the same level of burden on its operations personnel, as the utility industry has. Utilities around the world continue to navigate disruption - from new asset types across a smarter grid, to record breaking weather events. Layer in unpredictable hurdles, like keeping crews safe amidst a pandemic, and meeting increasingly challenging regulatory and financial demand, and its clear utility operations personnel are under growing pressure to adapt and perform under increasingly extreme conditions.

Customer expectations are higher than ever now with real-time access to services being the norm (food delivery, parcel services, ride sharing, and so on). Utilities need to keep their customers informed on appointments and other crew activity, and across the board need to be as efficient as possible getting their crews to their jobs throughout the day. Extreme weather events continue increase in both frequency and magnitude, so utilities need to adapt operations accordingly. During, and after, any large outage scenario, such as an extreme weather event, it is critical to be able to adapt quickly, have total visibility of your crews, and get them to the right location fast to restore service for your customers.

Legacy providers and legacy systems that simply were not designed for today's complexities, have left utilities to address these challenges in silos. Data sets become isolated, processes become disconnected, and cost overruns become a certainty, with utility operations left even further behind.

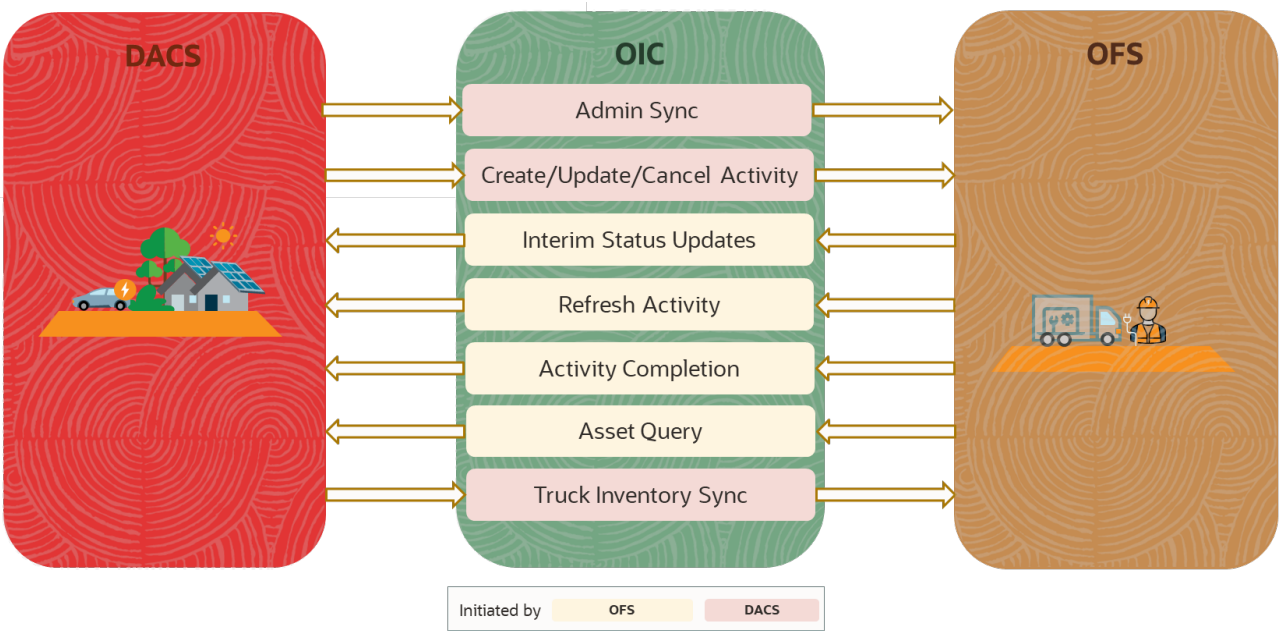
Our out-of-the-box integrated solution between Oracle Utilities Digital Asset Cloud Service and Oracle Field Service addresses these challenges by providing advanced activity and crew management, comprehensive collaboration, and other tools for efficient utility operations.

Integration Overview

The Oracle Utilities Digital Asset Cloud Service integration to Oracle Field Service facilitates the exchange of information related to a utility owned controllable device(s) during program enrollment or unenrollment.

Oracle Utilities Digital Asset Cloud Service integration to Oracle Field Service helps to manage a fieldwork originated in the Oracle Utilities Digital Asset Cloud Service solution in Oracle Field Service. The integration can be leveraged to create /update/ cancel and complete activities in the field using the Oracle Field Service solution.

The major business flows revolve around activities and usage reporting. The activities are created in Oracle Utilities Digital Asset Cloud Service and sent to Oracle Field Service for the mobile worker to perform the activity. The field activity completion information along with additional details are sent from Oracle Field Service to Oracle Utilities Digital Asset Cloud Service. In addition, the integration supports admin sync from Oracle Utilities Digital Asset Cloud Service to Oracle Field Service.



The three major components in this implementation are:

- Oracle Utilities Digital Asset Cloud Service
- Oracle Field Service
- Oracle Integration Cloud

Oracle Utilities Digital Asset Cloud Service

Oracle Utilities Digital Asset Cloud Service provides the core functionality for utilities to create, run, and maintain demand response and distributed energy resource programs.

It comprises the following functional areas:

- **Asset and Device Management**: Maintenance of controllable assets, such as "smart" thermostats, electric vehicle chargers, storage batteries, and other types of devices.
- **Program Enrollment/Unenrollment**: Identifying specific customers that are eligible for particular programs, and establishing relationships between the customers, the programs, and if appropriate, device locations where one or more controllable devices are (or have been) installed.
- **Program Management**: Creation and maintenance of Demand Response Programs to which customers can subscribe and which allows utilities to temporarily alter the settings of specific devices in their homes as a response to periods of high demand.
- **Program Subscriptions**: Maintenance of a customer's program subscriptions that represent the customer's enrollment in a program and device registration. Program subscriptions link the customer to a program and device location where controllable devices are installed.

- **Demand Response Event Management**: Identification and reservation of a customer's controllable devices in response to usage demand.

Oracle Field Service

Oracle Field Service is built on time-based, self-learning, and predictive technology, empowering to solve business problems while evolving the field service organization. It has various modules to choose, such as forecasting, routing, capacity, mobility, collaboration, core manage, smart location, customer communication, and more. It leverages the performance pattern profiles to create optimal daily routes and schedules and continues to learn as employee work patterns change over time.

The Oracle Field Service functionality is based on user privileges to support the business case. There are two primary types of users:

- Users who use the manage aspect, for example, dispatchers and field managers.
- Field service resources who use the mobile application. Example: field service personnel

The screens are different for administrator, dispatcher, crew, etc. For more information, refer to Appendix B: Additional Information - Integration Concepts.

Oracle Integration Cloud

Oracle Integration Cloud is a business accelerator package with pre-build interactions to facilitate Oracle Utilities Digital Asset Cloud Service and Oracle Field Service communications.

Oracle Integration Cloud ensures that the Oracle Utilities Digital Asset Cloud Service requests are being forwarded to Oracle Field Service and vice versa. Oracle Utilities Digital Asset Cloud Service are sending direct requests when the operator makes changes on the user interface. On the other hand, Oracle Field Service is an event-based applications and Oracle Integration Cloud is listening to incoming event changes.

To implement certain business logic, Oracle Integration Cloud is using properties stored configuration files named lookups to:

- Translate Oracle Utilities Digital Asset Cloud Service into Oracle Field Service understandable values
- Preset default values
- Pre-defined field names

Chapter 2

Supported Features

Oracle Utilities Digital Asset Cloud Service integration to Oracle Field Service helps to manage a fieldwork originated in Oracle Utilities Digital Asset Cloud Service using Oracle Field Service. This pre-built integration represents significant business value for utilities that need to manage their field operations.

For more information about the functionality, refer to the *Oracle Utilities Digital Asset Cloud Service Integration to Oracle Field Service Configuration Guide* included in this release. The documentation is available on Oracle Help Center at: https://docs.oracle.com/en/industries/energy-water/integrations-index.html

The following topics are included in this chapter:

- Business Terms
- Business Flows
- Business Processes
- Functional Overview
- Use Cases

Business Terms

The following terms are used throughout this document:

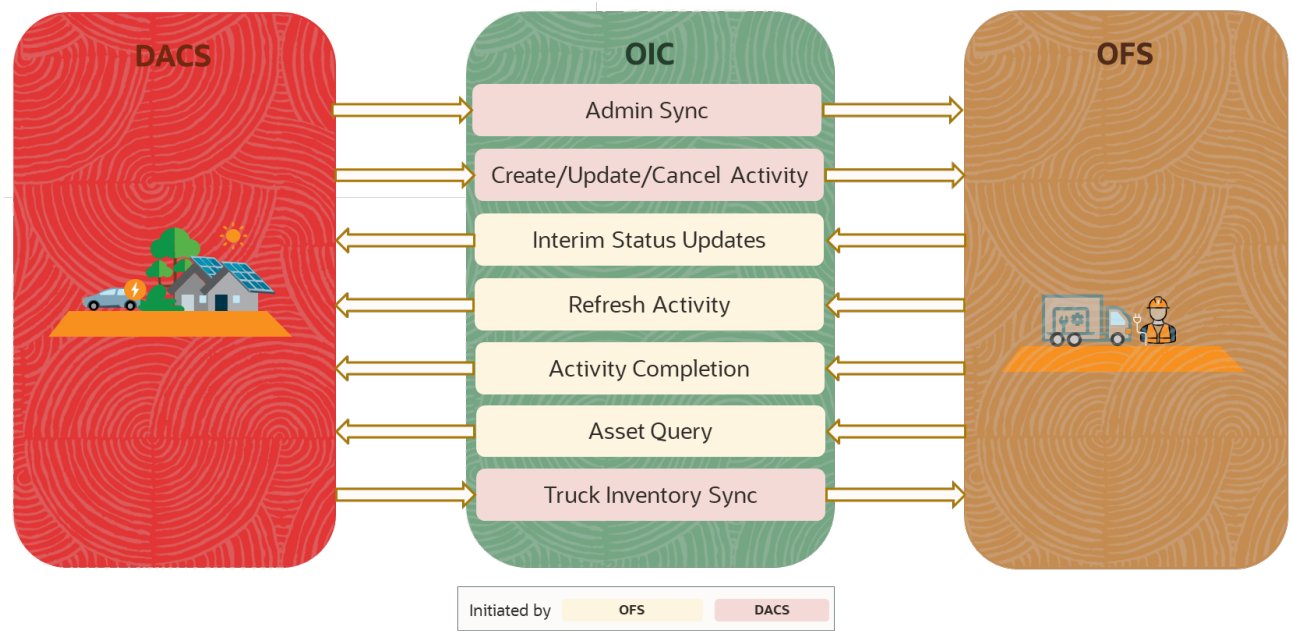
Business Term	Description
Activities	Work activities are work tasks that need to be completed and originate from a work order or a work order template. Example: Activities may be created for maintenance and inspection of assets, to create service history, and to install or exchange devices.
Asset	An asset describes such objects as meters, poles, pipes, transformers, components, or any other material item owned or managed by an organization.
Asset Location	The physical location where the asset is installed. Some examples of asset locations are service points, underground connections, poles, and so on.
Buckets	Use organization units to sort and organize the items in the Resource Tree. Buckets hold the activities that are not yet assigned to the field resources.
Component	Components are devices or other objects that are attached to an asset.
Control Zones	Discrete, hierarchical sections of a utility's distribution system. The control zone configuration requires defining zones, assigning devices to zones and, optionally, creating zone sets (or groups) that assist in assigning crews to multiple zones and to filter crews.
Crews	A collection of one or more resources in Oracle Field Service and can include field resources, vehicles, and so on.
Inventory	Inventory is tracked, ordered, and received from vendors and allocated in the inventory system. As inventory is allocated to work, the system passes this information back to the work management system so that maintenance managers and crews know that their parts are available.
Organization Units	Organization units are typically used to group resources by location. They cannot be route owners and you cannot assign activities to them. Buckets can have activities. However, dispatchers can assign activities to buckets manually and routing can assign activities to buckets automatically.
Stock Item	Stock items are defined as material resources that are held in storerooms and issued to activities that require the materials to be completed. The stock item record determines whether or not the type of stock can be purchased, repaired, tracked, and so on.

Business Term	Description
Storeroom	Storerooms define the physical location where stock items are stored.
Work Orders	Work orders group similar activities and are used to manage activities to perform any kind of work such as inspection, install, replacement, upgrade, and so on. They are mainly used to facilitate approval processing for work projects. Work orders might also be created to manage a set of activities where the activities are manually linked to the work order.
Work Skills	The job-specific skills necessary to perform an activity. These act as a defining criteria to match activities with the resources.
Work Queues	A queue is the collection of activities that are assigned and can be in different states of completion. Each workday the crew will activate, deactivate its queue according to its works schedule.
Work Zones	The defined geographical area within which a resource can perform activities. Work zones are defined within the work zone dictionary, and are then assigned to resource records.

Business Flows

This integration supports the following business flows:

- Mobile Control Data Sync (Oracle Utilities Digital Asset Cloud Service Initiated)
- Process Activity (Oracle Utilities Digital Asset Cloud Service initiated)
- Activity Completion (Oracle Field Service initiated)
- Resource Usage (Oracle Field Service initiated)
- Interim Status Updates (Oracle Field Service initiated)
- Asset Installs and Removals (Oracle Field Service initiated)
- Pickup Order (Oracle Field Service initiated)
- Truck Storeroom Admin Sync (Oracle Utilities Digital Asset Cloud Service initiated)
- Truck Storeroom Inventory Snapshot Sync/Update (Oracle Field Service initiated)
    - Oracle Utilities OFSC DACS Route Activation
    - Oracle Utilities OFSC DACS Storeroom Sync
    - Oracle Utilities DACS OFSC Schedule Storeroom Sync
- Activity Pull Update (Oracle Field Service initiated)



Business Processes

This integration supports the following business processes:

- Administration Sync
- Activity Management
- Asset Management
- Resource Usage Management
- Status Updates
- Truck Storeroom Management

Administration Sync

This feature is used to synchronize the control data from Oracle Utilities Digital Asset Cloud Service to Oracle Field Service. It also creates the work skill related configurations needed in Oracle Field Service to match activities with resources and for crew tracking. An integration process is run on initial installation or on a need only basis when new control data from Oracle Utilities Digital Asset Cloud Service or work skill related configurations needs to be created or updated in Oracle Field Service.

Activity Management

This feature accepts the send data request from Oracle Utilities Digital Asset Cloud Service and sends status updates from Oracle Field Service to Oracle Utilities Digital Asset Cloud Service. The following activity updates are supported in this flow:

- Activity Created
- Activity Updated
- Activity Cancelled
- Activity Completed

When an activity is created, updated, or cancelled, Oracle Utilities Digital Asset Cloud Service sends the activity details message to Oracle Field Service, which also includes the list of issued assets and attachments if any. The information is sent synchronously from Oracle Utilities Digital Asset Cloud Service, regardless of the activity type, and Oracle Field Service sends back a response.

When the activity is completed, Oracle Field Service sends the activity completion details, material usage details, service history details, and the attachment details attached at both activity and asset level along with the completion status, to complete the activity in Oracle Utilities Digital Asset Cloud Service.

Additionally, Oracle Field Service can send an "Activity Update" request to Oracle Utilities Digital Asset Cloud Service and this request can be initiated by the crew from Oracle Field Service to pull the latest activity details, including issued assets for which a material request was issued on the activity in Oracle Utilities Digital Asset Cloud Service.

Asset Management

This feature is used to perform various asset operations from Oracle Field Service to Oracle Utilities Digital Asset Cloud Service. Oracle Field Service sends the details either before the completion or after the completion of the activity.

These operations can be performed on Assets and Components using the "Asset Query Integration flow".

- Install Asset
- Attach Component
- Replace Asset
- Replace Component

Oracle Field Service sends the Asset Query details which include Asset ID, Badge Number, and location ID to Oracle Utilities Digital Asset Cloud Service. Oracle Utilities Digital Asset Cloud Service responds with all the asset details if the call is successful, else it responds with an error message.

There are 3 inventory pools in Oracle Field Service in which assets/components are maintained based on their status:

- Installed Pool
- DeInstalled Pool
- Customer Pool

The installed asset/attached component moves to the installed pool. The replaced asset or component, removed and Out of Service assets moves to the deinstalled pool. All the issued assets/components initially when not installed or removed will be in the customer pool. Also an empty asset location with no assets installed stays in the customer pool.

The following operations can be performed on Assets and Components from Oracle Field Service, independent of the Asset Query integration process.

- Asset Removal
- Asset Out of Service
- Component Removal
- Undo Install
- Undo Remove
- Undo Attach
- Undo Replace
- Back to Service

Resource Usage Management

This feature is used to send the resource usage details from Oracle Field Service to Oracle Utilities Digital Asset Cloud Service. Oracle Field Service sends the details either before the completion or after the completion of the activity.

The resource usage details that can include either the individual time sheet or crew time sheets by supervisor or equipment usage or other equipment usage to the Oracle Utilities OFSC DACS Resource Usage Details integration process deployed on Oracle Integration Cloud which further passes on the details to Oracle Utilities Digital Asset Cloud Service.

Status Updates

This feature is used to send the interim status details of the Work Activity from Oracle Field Service to Oracle Utilities Digital Asset Cloud Service. Oracle Field Service sends the details before the completion of the activity.

Truck Storeroom Management

This feature is used to synchronize storeroom data from Oracle Utilities Digital Asset Cloud Service to Oracle Field Service where the storeroom type is Truck.

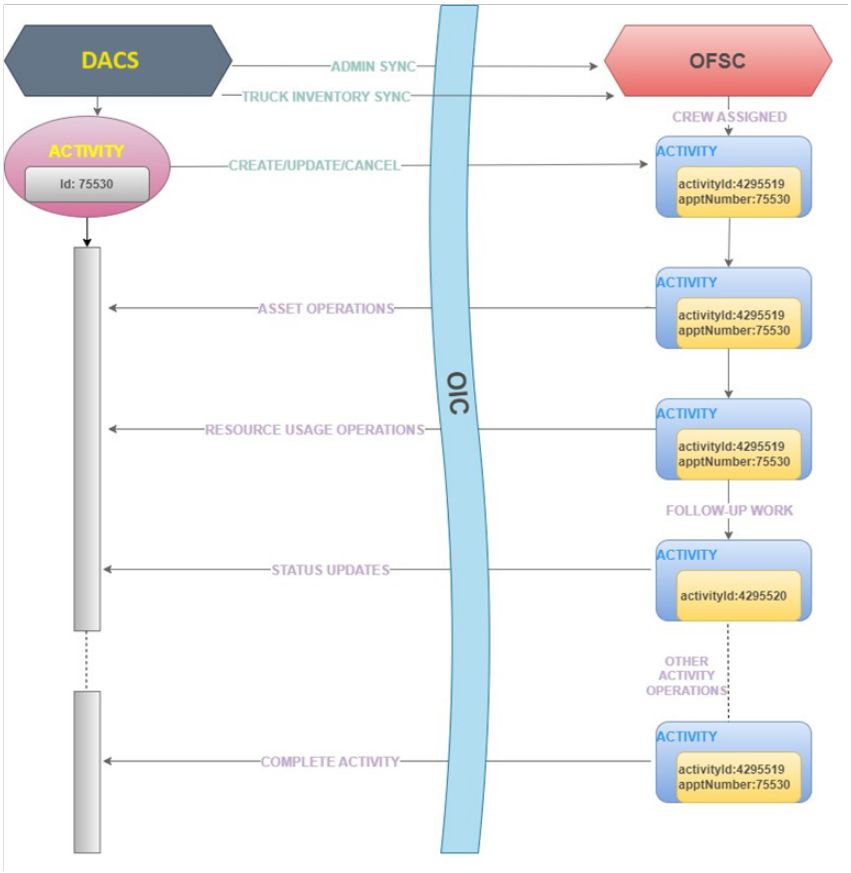
If the storeroom from Oracle Utilities Digital Asset Cloud Service does not exist in Oracle Field Service, a new record in Oracle Field Service is created. If the resource already exists, then the corresponding data in Oracle Field Service is updated. Otherwise, the respective resource's status is marked as 'inactive'.

Now, you can synchronize the inventory in each storeroom as follows:

- **Storeroom Sync on Route Activation:** On route activation of a crew or an individual, if there are any trucks associated with that crew or an individual is checked, and then the initial storeroom inventory is synchronized.
- **Scheduled Storeroom Sync:** Batch scheduled from Oracle Integration Cloud to run at a specific time of day/week/month to run snapshot synchronization of all trucks synchronized between Oracle Utilities Digital Asset Cloud Service and Oracle Field Service.

Functional Overview

This diagram illustrates the functionality of the business processes in this integration:



This section focuses on the functionality of the business processes in this integration.

- Activity Creation
- Activity Assigned to Crew
- Starting the Activity
- Asset/Component Operations
- Resource Usage
- Service Histories
- Attachments
- Complete Activity

Activity Creation

Work activities are work tasks that need to be completed and originate from a work order or a work order template. As examples, activities may be created for maintenance and inspection of assets, to create service history, and to install or exchange devices.

Two types of work activity can be created in Oracle Utilities Digital Asset Cloud Service:

- Normal activity type

- Segmentable activity type

A multi-day activity or segmentable activity requires several days to complete. The activity is split into segments that can be managed individually while remaining parts of a single entity. Multi-day activity segments appear in the activity list on Oracle Field Service mobile home screen, and are included in sections according to their statuses.

Refer to Working with Multi-day Activities for more information.

Refer to User Operations to find more information about "Activity Creation".

Activity Assigned to Crew

For the further processing work activity which is created in Oracle Utilities Digital Asset Cloud Service is sent to Oracle Field Service default bucket configured. In return, Oracle Field Service sends a success or failure acknowledgment to Oracle Utilities Digital Asset Cloud Service. After sending outbound message from Oracle Utilities Digital Asset Cloud Service to Oracle Field Service for each work activity ID a unique mobile activity ID is generated through which we can identify the activity in the Oracle Field Service dispatch console. The Dispatch Console is used to monitor the field and assign activities to technicians/crew based on their work skills.

In the Dispatch console, click the activity to view the **Activity Details** screen that displays the activity information, including activity type, activity duration, activity status, asset information, resources related to an activity and a location information which gives a clear picture about an activity.

The Resources assigned to the activity can be classified as:

- **Crafts:** Crafts, or labor, defines a skill or work specialty for crew members, such as mechanic, electrician, plumber, arborist, and so on. The actual number of labor hours required to work a task can be tracked using timesheets.
- **Equipment:** Equipment is another type of resource and considered to be machinery, tools, or vehicles that are required to work activities. Examples of equipment might include trucks, bulldozers, cranes, hammers, and drills. The actual number of equipment hours required for the task can be tracked using timesheets.
- **Materials:** Material is another type of resource and can be considered as the stock items required for the work. Costs are derived from the stock item when issued to the activity from a material request or from a purchase order's invoice of a direct stock item.
- **Miscellaneous Resources:** Miscellaneous or "other" resources are those resources that are not considered to be either craft, equipment, or material and which enable a crew member to work an activity. Some examples of resources that are considered "other" are meals, hotel stays, mileage, documents, attachments and so on.

Starting the Activity

After assigning the activity to the crew, the activity is presented to mobile user in read only mode in Oracle Field Service mobile screen. To make changes to the activity, enter completion information, service histories and resource usage, the crew needs to activate the route, start and lock the activity. Locking an activity guarantees that only one member

of the crew can update the activity. After the work is done, unlock the activity so that other crew members can make their updates. Not all activities require the lock functionality.

There are various functionalities enabled to the crew to perform the activity.

Asset/Component Operations

A work activity is always associated with an asset or component or with an empty asset location with no assets installed.

There can be multiple assets associated with the asset location or there can be none. To additionally install an asset on the location, crew can use the install asset functionality provided in asset screen. Similarly, to attach an component to the asset, crew can use the "Attach Component" functionality provided in Asset screen. The number of assets able to be installed at a location must be valid for the asset relationship defined for the "Number of Assets Allowed" parameter on the location type.

On the Oracle Field Service Mobility screen, for each asset there is an asset/equipment details screen in which the crew can view the asset details, asset location, other assets which are associated with the same asset location and a flag which defines if the asset is working or not.

To install an asset or to attach a component crew can use the resources either from truck or from Oracle Utilities Digital Asset Cloud Service inventory by providing the badge or serial number which is assigned to the asset/component when created in Oracle Utilities Digital Asset Cloud Service. While using any asset/component/item from the truck there is no need to provide badge or serial number. To get the latest inventory in the truck, crew can use the **Update Truck Inventory** option. This option is visible in the **Equipment** screen only if there is a truck assigned to the crew member. But, before using this feature, Oracle Field Service truck inventory needs to be in sync with Oracle Utilities Digital Asset Cloud Service, while this can be achieved by using the "Sync Truck Inventories" functionality available in the Oracle Field Service **Resources Info** screen. Whereas "Refresh Activity" is used to get the latest updates on the activity or if any asset/component is issued after assigning the activity. After refreshing the activity, these issued assets and components are displayed in the "issued assets" row.

In Oracle Field Service mobile screen, crew is provided the resource usage functionality to keep track of the resources used, number of hours spent on processing the activity and other miscellaneous resources.

Resource Usage

Resource Usage is calculated under three factors:

- **Timesheets:** Crew can enter the timesheets which are used to record the amount of time that workers (labor resources) spend on activities or work orders. Once charges are entered, processing allows these workers to receive proper compensation for their work and labor charges are applied to the appropriate cost buckets.

  Note: The ability to provide timesheets is given only to certain group of crew.

- **Equipment:** Equipment is referenced on activities as a material resource requirement. The system tracks usage and reports the costing associated with that usage against the total cost of completing the activity.
- **Other Direct Charges:** Other direct charges are incurred on activities as a material resource requirement from "miscellaneous resources". The system tracks usage and reports the costing associated with that usage against the total cost of completing the activity. Along with these features, crew also has the privilege to add, edit, or delete service histories.

Service Histories

Service history is used to capture and record relevant information regarding service or maintenance on assets/activity. Typically, it is used to record inspection feedback, pass/fail details, downtime, parts failure information, maintenance or service logs, or other information regarding service on the asset/activity.

Service history types that are linked to asset types and activity types while creating an activity in Oracle Utilities Digital Asset Cloud Service control which service history can be created for assets or activity.

There are dedicated service history types for each kind of service towards asset/activity. Generally, there are two levels of service histories:

- Activity Level/Planned Service Histories
- Asset Level/Asset Service Histories

For Planned Service Histories, the crew have an option to add service histories at Activity Level or at All Applicable Assets, if that particular service history type is not asset specific.

In the **Entered** section of the respective **Service Histories** page, crew can see the service history status in the Planned Service Histories the service history level. Example: Whether it is added at "Activity Level" or "Asset Level" additional to the service history status.

On top of the service history levels, there are 5 supported categories for service histories: Questionnaire, Inspection, Failure, Downtime, and General. Each service history type has a defined business object in Oracle Utilities Digital Asset Cloud Service. Additionally, customized service histories can also be created based on the requirements.

Crew can add multiple service histories at any level, but crew can complete the activity only after entering all of the required service histories. If any service history type has the required flag as 'yes' at both the levels, then crew can add it in any one of the asset or activity level.

Attachments

When crew needs to capture any images or files related to the asset/activity, they can use the attachment support functionality provided both at asset and planned service histories. Crew has the privilege to add, edit, and delete the attachments added at asset and activity level service histories before completing the activity. For any service history type, number of attachments at asset level and activity level together combined must be less than or equal to 15. An error pops up if tried otherwise.

Some implementations may require that attachments be available from the application; for example, activity level attachments which are displayed on **Activity Details** page. These are added to the activity while creating in Oracle Utilities Digital Asset Cloud Service and are sent to the Oracle Field Service through Oracle Utilities Digital Asset Cloud Service outbound messages. Crew is permitted to only download such types of attachments but not edit or delete it at the activity level.

If the crew thinks there is a need to create an additional activity to fix other issues observed while performing the existing activity in the field, then the crew can create a follow up work order request to the Oracle Utilities Digital Asset Cloud Service.

This follow up work order request is categorized into two:

- **Follow up work:** If the new identified issue is related to the asset of the existing activity then it is said to be follow up work.
- **New Work:** If the new identified issue is not related to the existing asset, then such request is categorized as New Work. After creating the follow up work order request, a unique mobile activity ID is assigned to the new activity created and is sent to Oracle Field Service dispatch console. Based on the requirement, crew can decide if this new activity must be recorded under work order in Oracle Utilities Digital Asset Cloud Service or not. The new activity created can be assigned to the responsible crew and all other features applies like any other normal activity.

Complete Activity

After reaching the requirement of the activity, the crew can complete the activity. But, certain validations have to be done before the crew can complete the activity and these may include:

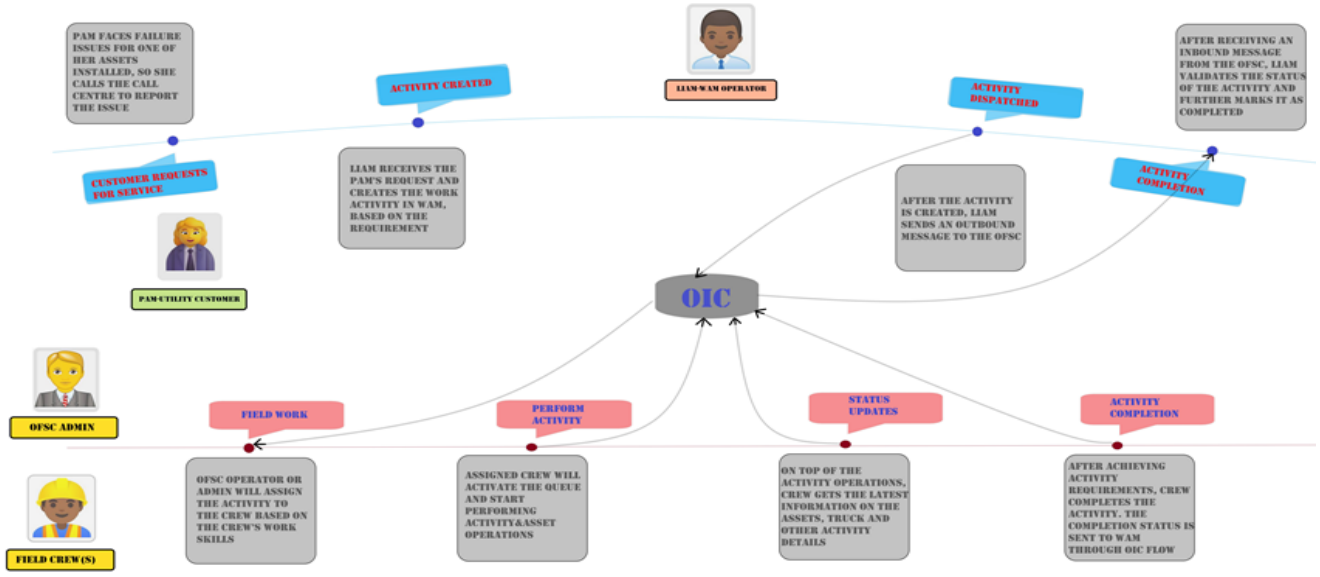
- Required service histories at both activity and asset level are entered or not.
- Saved service histories are completed or not.
- If there is an activity dependency between two activities, then their conditions are met or not.

Only after these validations are successful, crew is directed to the **End Activity** page to complete the activity. After completing the activity, the service history details are added at both activity and asset level. Resource usage and attachment details are also added, as well the completion status and activity durations.

All these details are sent to Oracle Utilities Digital Asset Cloud Service which triggers a completion event in Oracle Utilities Digital Asset Cloud Service. Completion events are used to capture closeout information against the activities received from an external application. To confirm if an activity process is successful or not, check the completion event status.

Use Cases

The following scenario illustrates a mix of use cases for this integration:



Chapter 3

User Operations

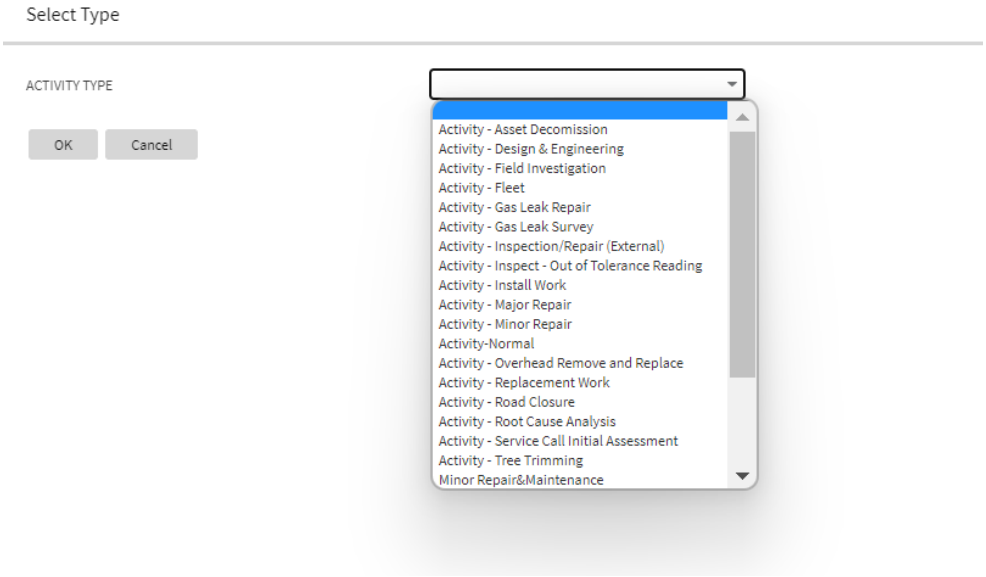
This chapter describes the various user operations and provides instructions to perform those operations. It focuses on the following:

- Creating an Activity
- Sending an Activity
- Assigning a Crew
- Starting the Activity
- Locking the Activity
- Activity Details
- Service Histories
- Measurements
- Resource Usage
- Activity Completion
- Asset Installs and Removals
- Customer Devices
- Mobile Inventory Management

Creating an Activity

To create an activity:

1. Login to Oracle Utilities Digital Asset Cloud Service and navigate to the **Work Order Details** page.
2. In the **Activity Info** section, click **Add Activity**.
3. Select the required **Activity Type** and click **OK**.

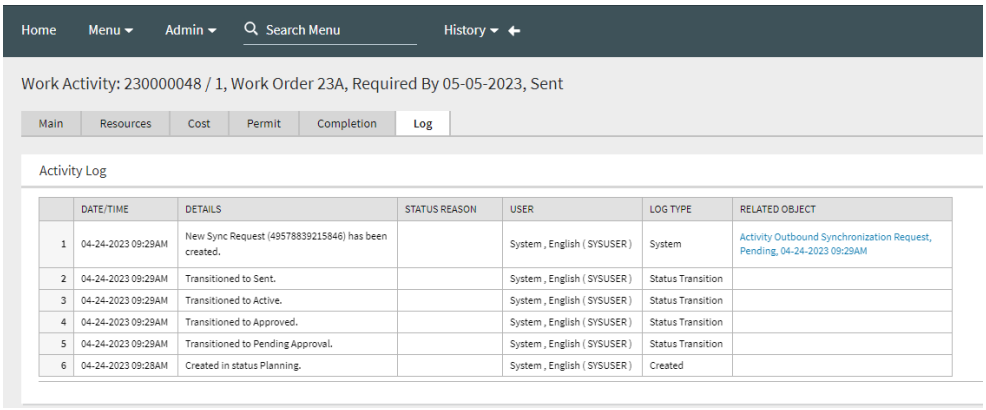


4. Enter the activity details and populate all the required fields.
5. Attach at least one asset or location to the activity.
6. Click **Save** to create the activity.

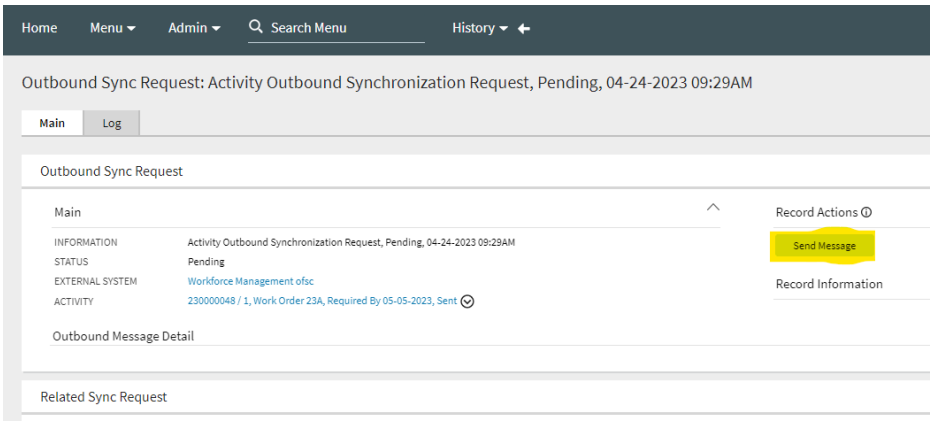
Sending an Activity

To send the activity from Oracle Utilities Digital Asset Cloud Service to Oracle Field Service:

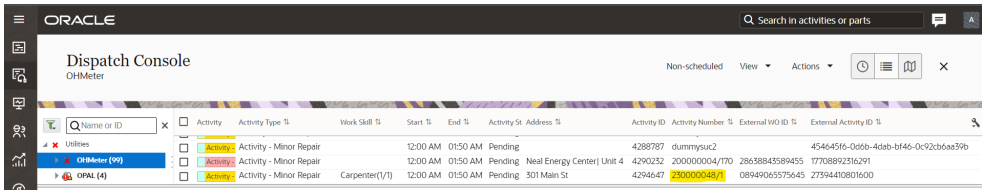
1. Navigate to the **Activity Log** page of the repective activity.
2. Click the **Outbound Synchronization Request** object to open the **Outbound Request Details** page.



3. Under **Record Actions**, click **Send Message** to initiate the request to Oracle Field Service.



4. Navigate to the **Administrator Dispatch Console** in Oracle Field Service to see the mobile activity created corresponding to the activity created in Oracle Utilities Digital Asset Cloud Service.



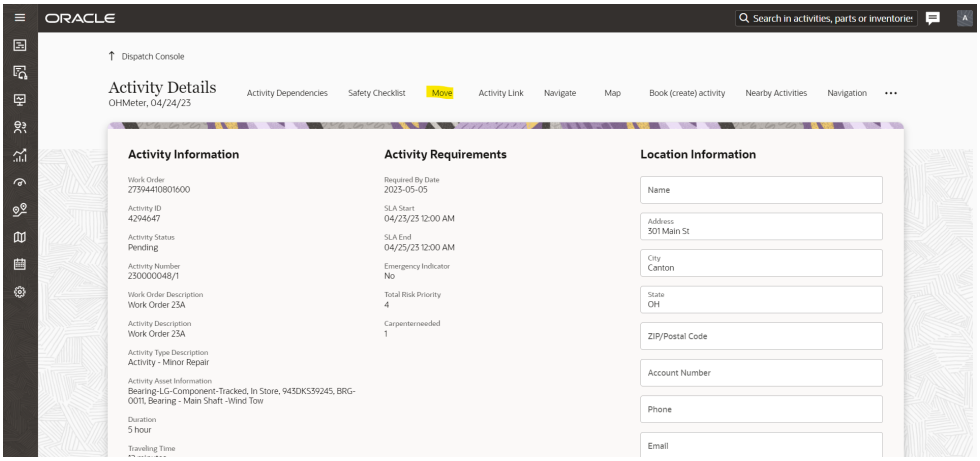
Make sure the required configurations are in place. If there is a configuration issue, Oracle Field Service returns an error message.

Example: Invalid activity type

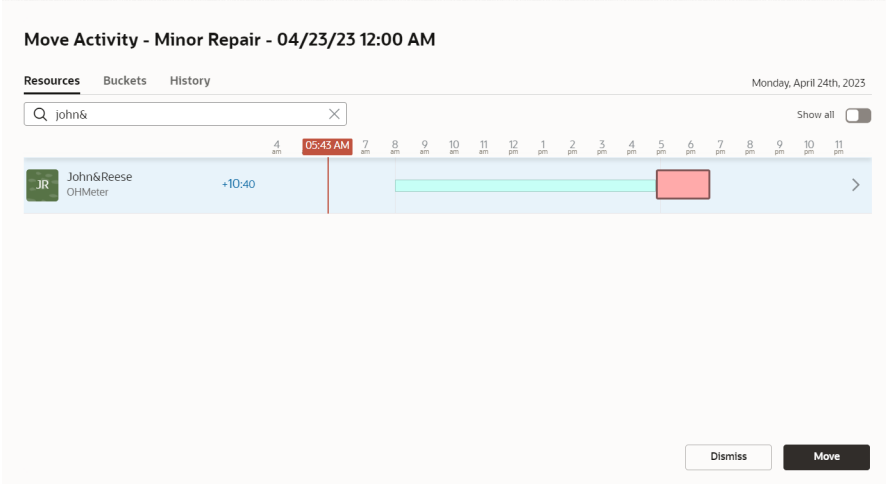
Assigning a Crew

To assign a crew:

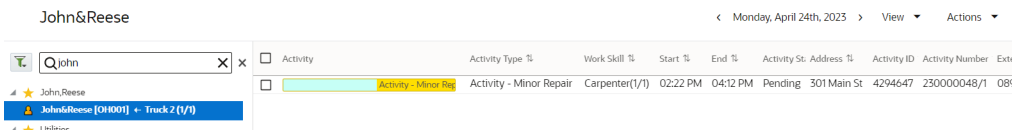
1. Navigate to the **Administrator Dispatch Console** in Oracle Field Service and open the mobile activity to view the **Activity Details** screen.



2. Click **Move** to navigate to the **Move Activity** page.
3. Search the crew member to be assigned to the activity and click **Move**.



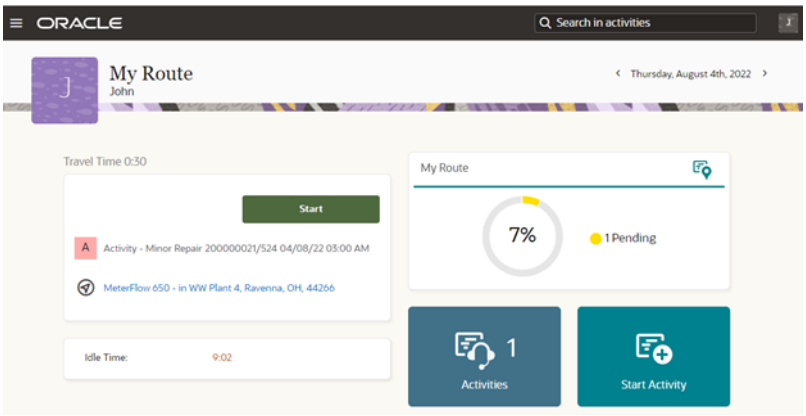
The activity is moved to the crew's queue.



Starting the Activity

To start an activity:

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

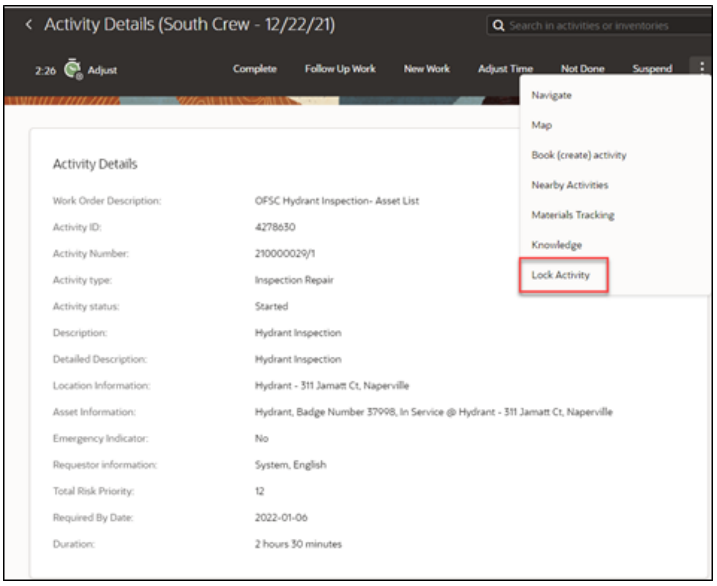


4. Populate the **Start Time** then the **Work Activity Number** and click **Submit**.

Locking the Activity

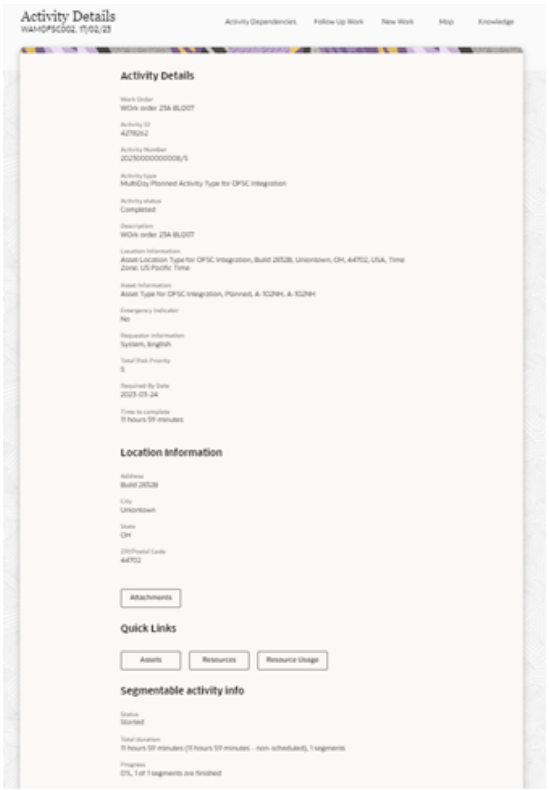
Activity is presented to mobile user in read only mode. To make changes to the activity, enter completion information, service histories and resource usage, you must lock the activity. Locking an activity guarantees that only one member of the crew can update the activity. After the work is done, unlock the activity so that other crew members can make their updates.

> **Note:** The Lock functionality can be enabled or disabled by setting the lock.functionality property in the DACSOFSC_ConfigProps lookup in Oracle Integration Cloud to "true" or "false". For more information, refer to the *Oracle Utilities Digital Asset Cloud Service Integration to Oracle Field Service Configuration Guide* included in this release.

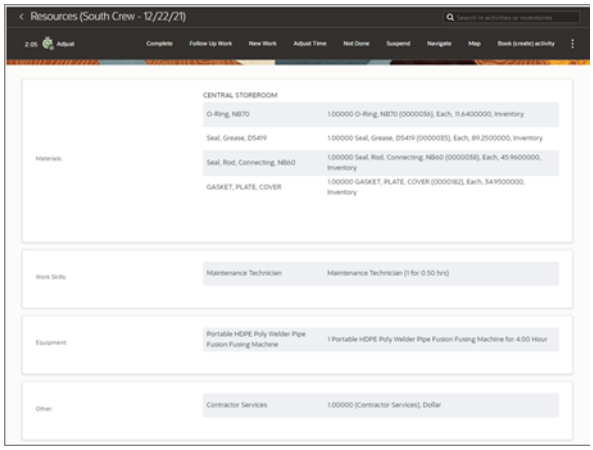


Activity Details

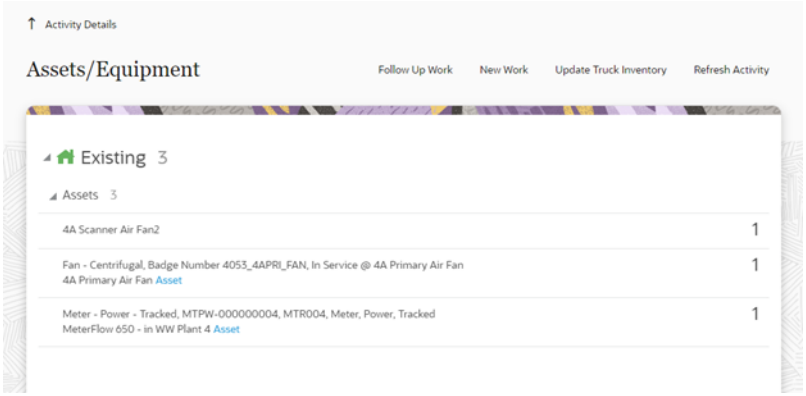
Crew can view information about an activity, including resources required for the activity and assets to be serviced.



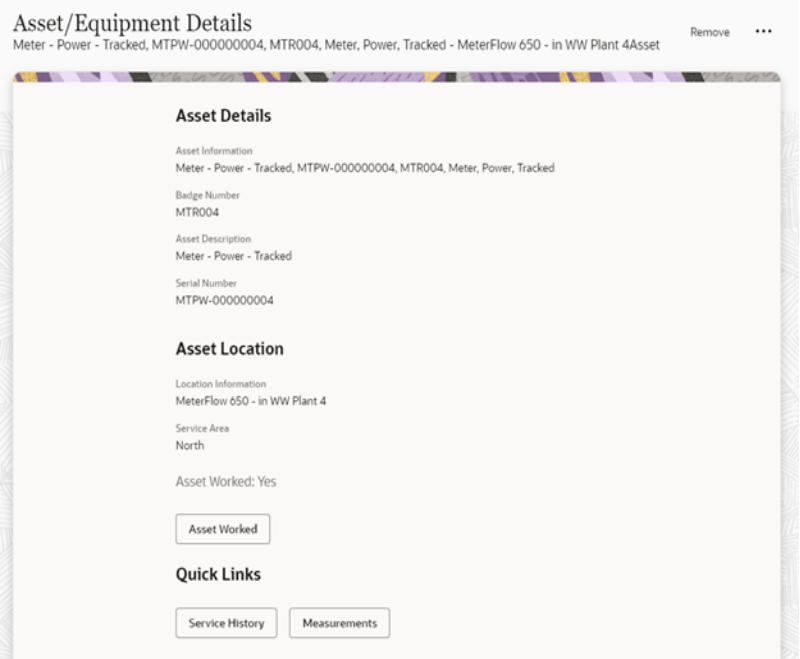
To view resources, navigate to the **Activity Details** page and click **Resources**. Resources include planned materials, work skills, equipment and other resources defined by activity planner.



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



The following figure shows Oracle Field Service displaying all assets attached to an activity. Select the required asset to view the asset information.



The crew can also view the details of attachments. In Oracle Field Service, click **Attachment** on the **Activity Details** page. These activity level attachments are added to Oracle Utilities Digital Asset Cloud Service while creating the activity and are sent to the Oracle Field Service through Oracle Utilities Digital Asset Cloud Service outbound messages. The user is permitted to only download the attachment, but not edit or delete it at the activity level.

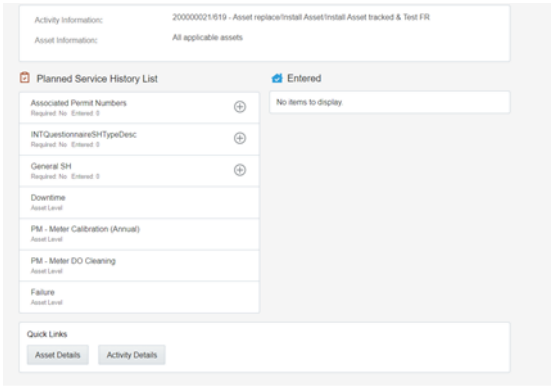
Service Histories

Two types of service histories 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 they are created, they will be displayed among the 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.

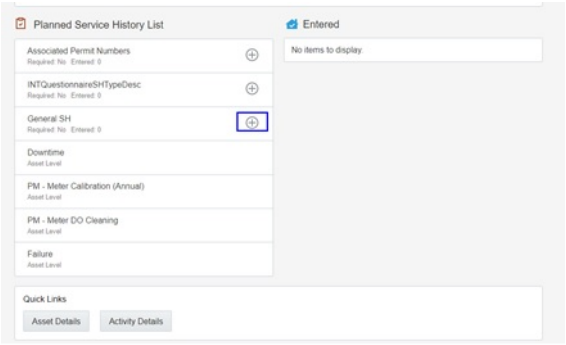
Planned Service Histories

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



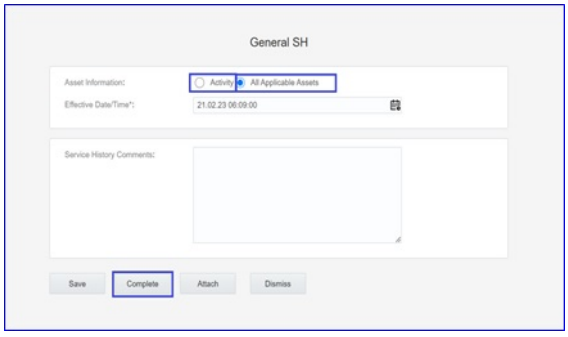
To enter the planned service history details:

1. From the list of planned service histories that are part of the activity, click **+** next to the specific service history, and add the necessary details.

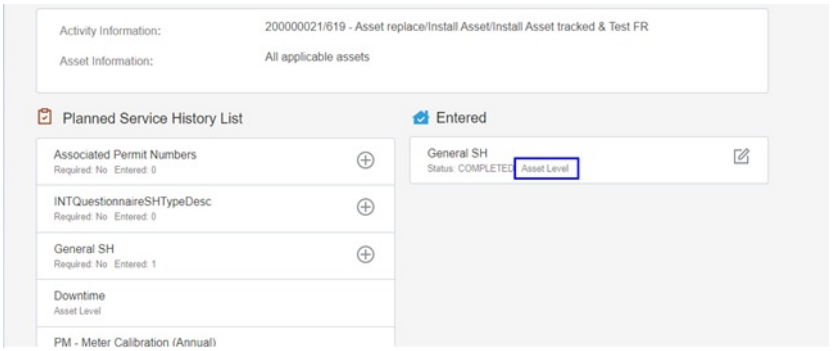


Users have an option to add service histories at Activity Level or at All Applicable Assets, if the service histories are not asset specific.

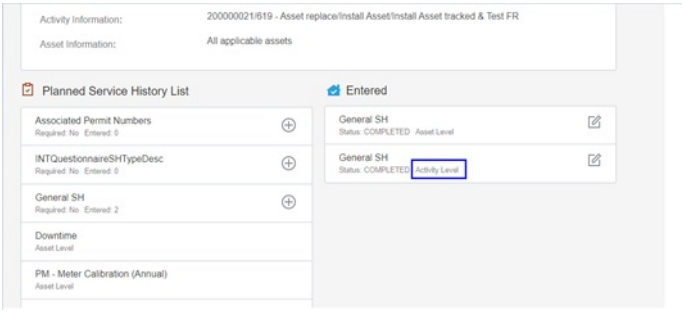
2. Click **Complete**. Service histories are displayed in the **Entered** pane.



If **All Applicable Assets** is selected, service histories will be added at all applicable assets and will also be displayed in the **Entered** section with an indication as **Asset Level**.

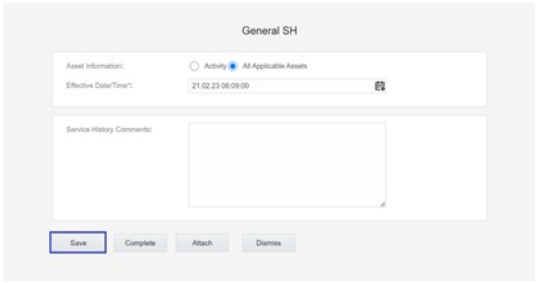


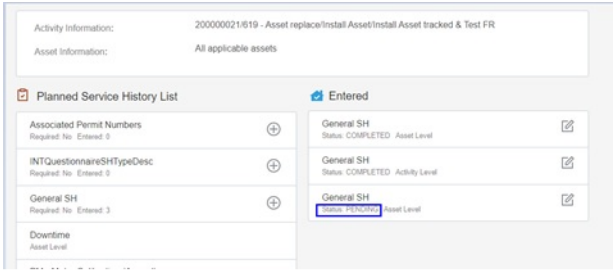
If Activity is selected while adding the service histories, they will be added at activity level and displayed in the **Entered** section with an indication **Activity Level**.



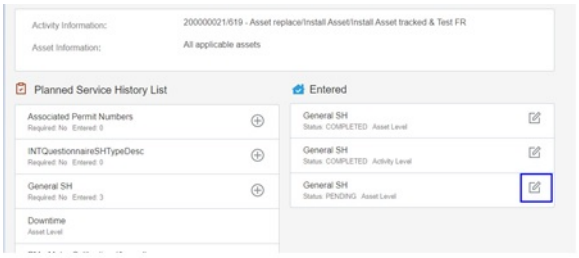
Note: Crew can also save the service history in 'pending' state.

3. Click **Save**. The pending service histories are displayed in the **Entered** pane with the 'pending' status.

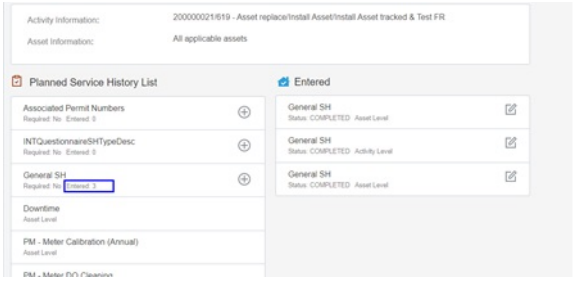




4. To complete a service history in 'pending' status:
    a. Click **Edit** to edit a specific service history.



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



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

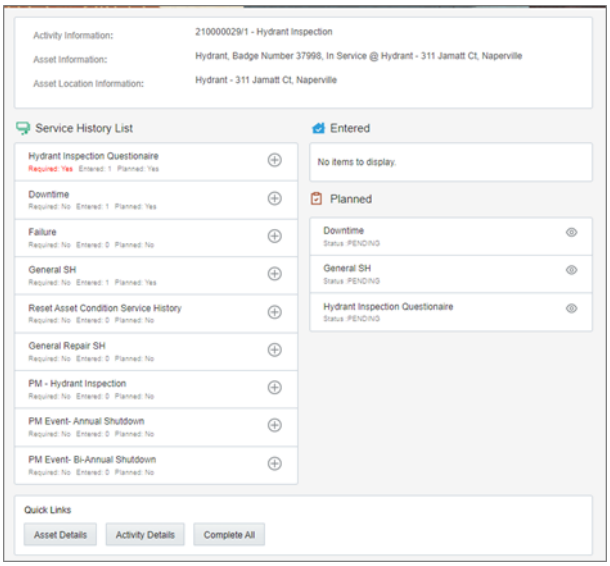
c. Browse and select the file to attach. Click **Upload**.

d. After the attachment is uploaded, a list of attachments (unsaved attachments) is shown. Click **Complete** to complete the service history.

e. Make sure the service histories that are marked as **Required: Yes** have at least one entry.

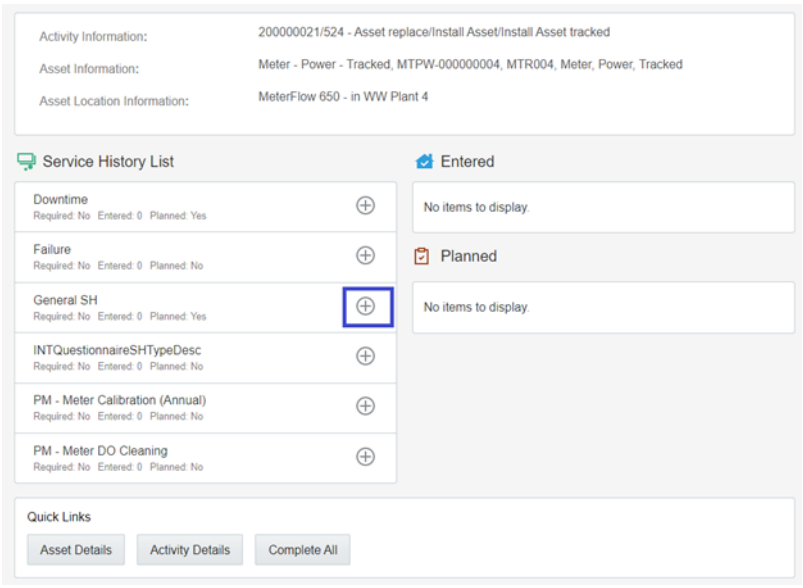
Asset Service Histories

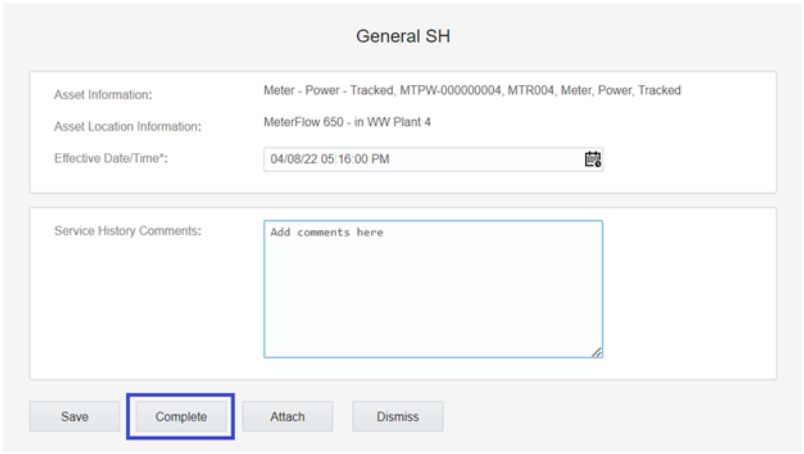
To enter an asset's service histories, navigate to the **Asset** page and click **Service History**.



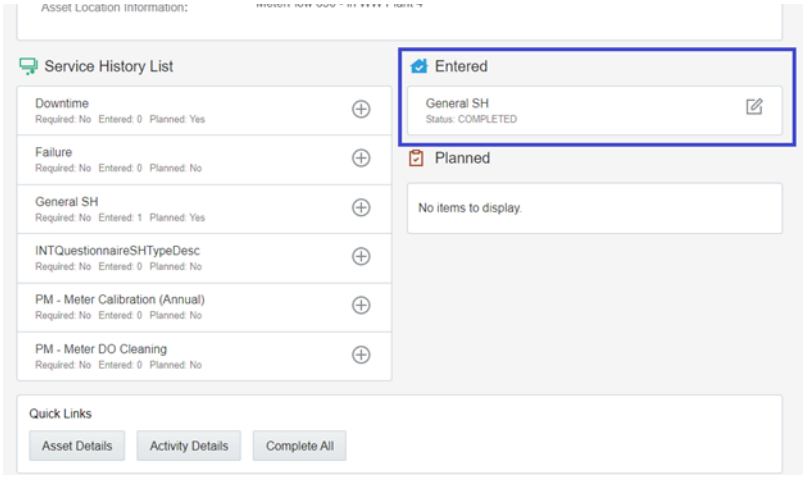
To enter the service history details:

1. Click **Service History** on the **Assets** page.
2. From the list of service histories that are part of the activity, click **+** next to the specific service history to add the required details.

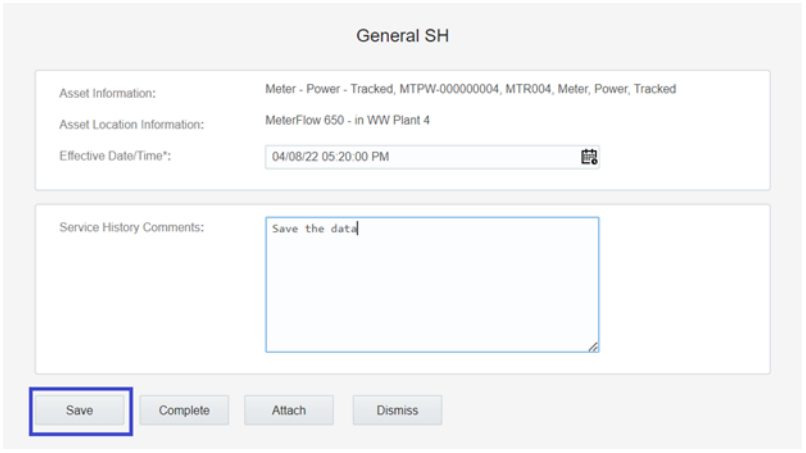


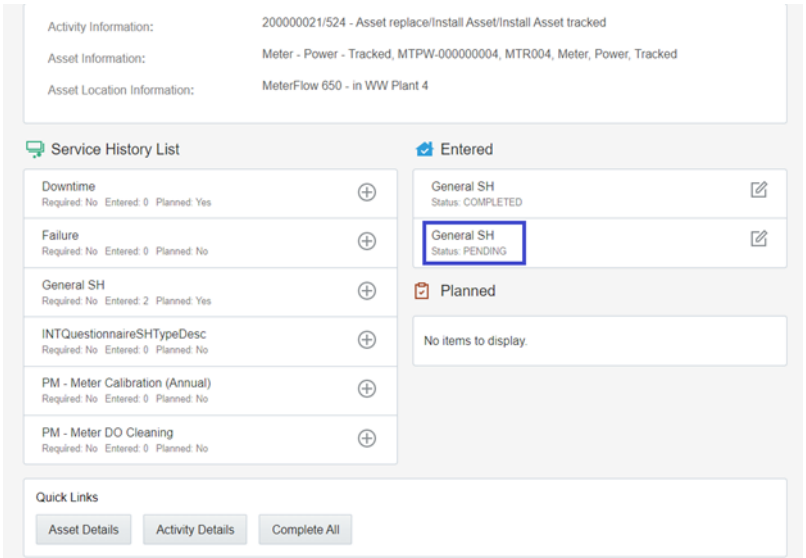


3. Click **Complete**. The service histories are displayed in the **Entered** pane.



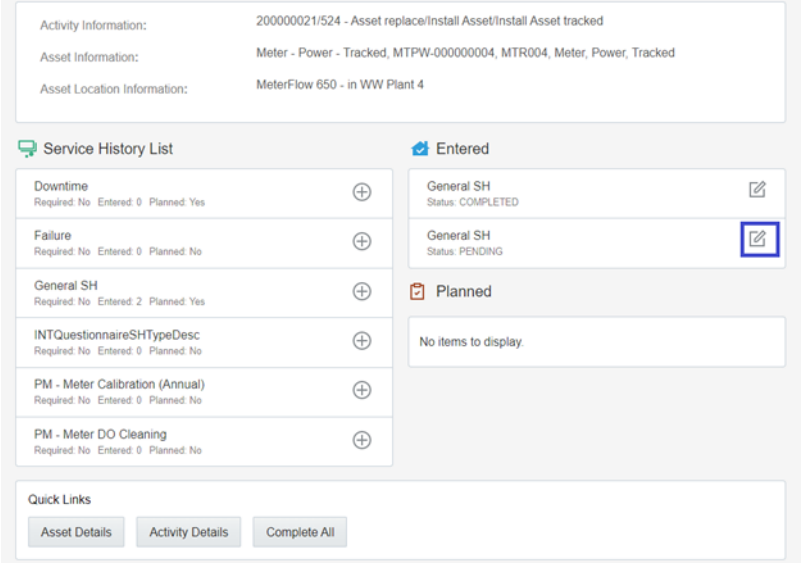
Note: Crew can also save the service history in 'pending' state. Click **Save**. The pending service histories are displayed in the **Entered** pane with the 'pending' status.



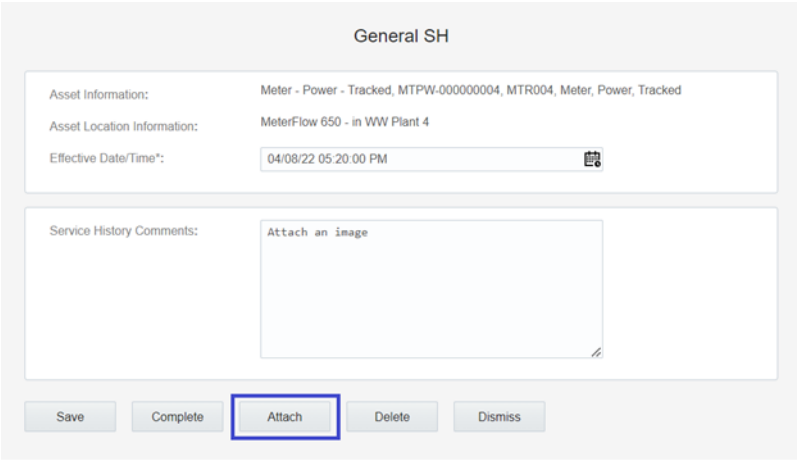


4. To complete a service history in 'pending' status:

   a. Click **Edit** to edit a specific service history.



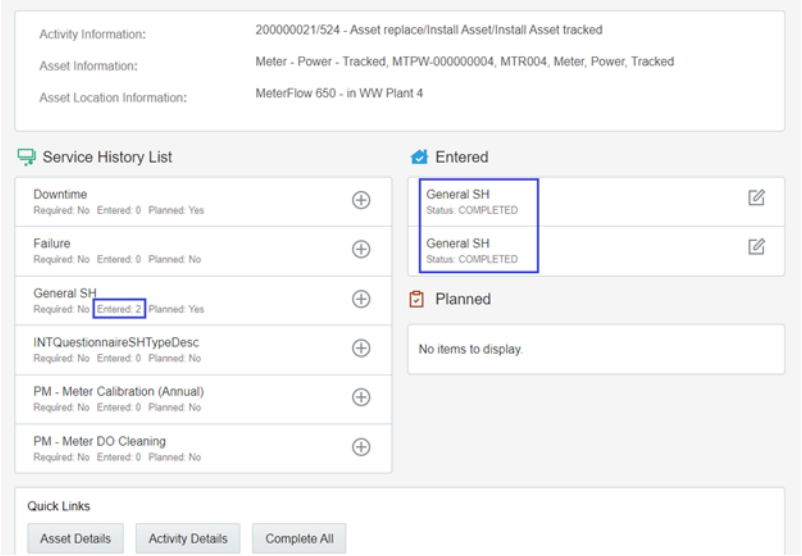
   b. Click **Attach** to attach images of various artifacts.



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

   d. After the attachment is uploaded, a list of attachments (unsaved attachments) is shown. Click **Complete** to complete the service history.

      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.

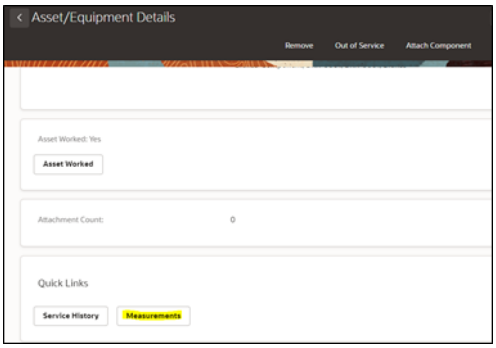
g. Click **Asset Details** to navigate back to the **Asset Details** page.

There are five service histories categories supported out of the box: Questionnaire, Inspection, Failure, Downtime and General. They correspond to business objects defined in Oracle Utilities Digital Asset Cloud Service.

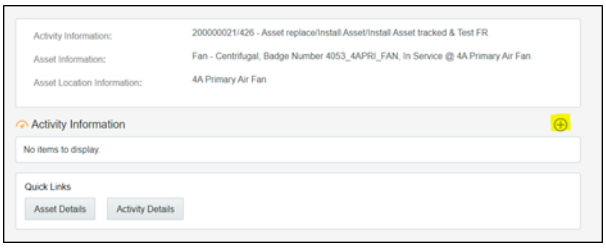
Measurements

To enter an asset's measurements:

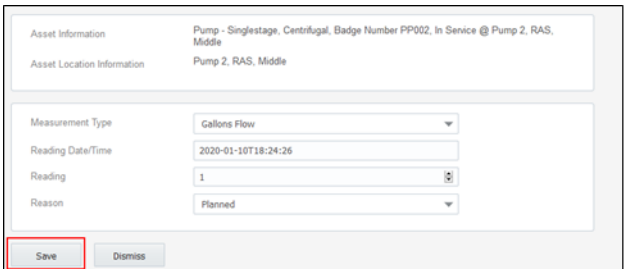
1. Navigate to the **Assets** page.
2. Click **Measurements**.



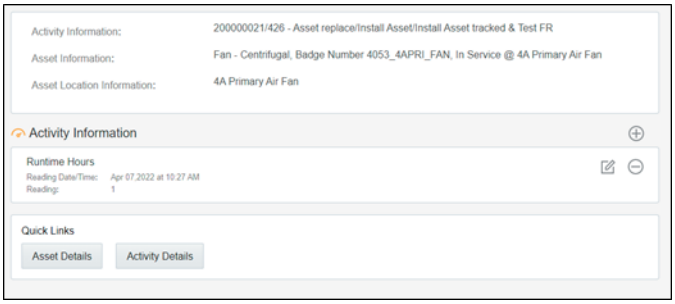
3. Click **+** on the **Measurement Mobility** page.



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



The measurement is displayed in the list.



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

Resource Usage

To enter resource usage details:

1. Click **Resource Usage** in the **Quick Links** section in the **Activity Details** page.
2. Enter time sheets, equipment, and other details.

   The user operations performed on the **Resource Usage** page are shown for both Individual Crew and Supervisor.

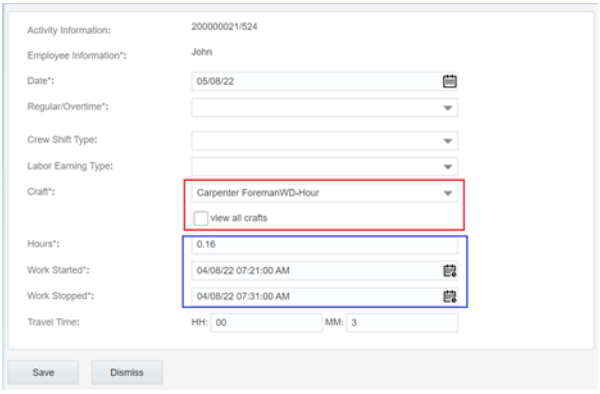
   Individual Crew

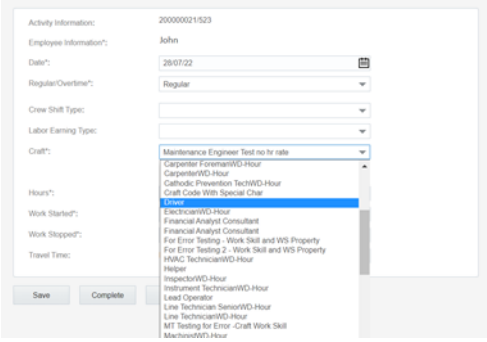
   a. Click **+** against the **TimeSheet** section for an individual crew to enter individual timesheets.

   - Actual time spent on the activity is defaulted in the time sheets to avoid manual entry. But, a crew can always change the time spend by manually selecting date time from the calendar.

- When the activity is in started state, the **Work Started** field defaults to the time the crew started the activity. **Work Stopped** defaults with the time derived from the activity's start time plus its duration.
- When the activity is completed by the crew, work started and work stopped are populated with the exact times that the activity was stared and completed.
- The **Hours** field is read-only and defaulted with the difference between **Work Stopped** and **Work Started**.

  The timesheet also auto populates the crew member's craft or work skills. Additionally, the user has an option to view all the craft skills. Select the **View All Crafts** checkbox to view the available craft skills.





b. After saving, the timesheet is created in 'pending' status.

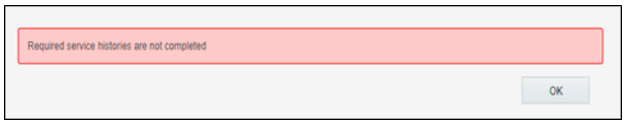
c. Click the **Edit** icon. Enter the necessary details and click **Complete** to complete the timesheet.

d. Populate the entries for equipment and other.

e. Navigate back to the **Activity Details** page after populating all the required resource details.

f. Click **Complete** to verify the eligibility of the activity to complete.

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

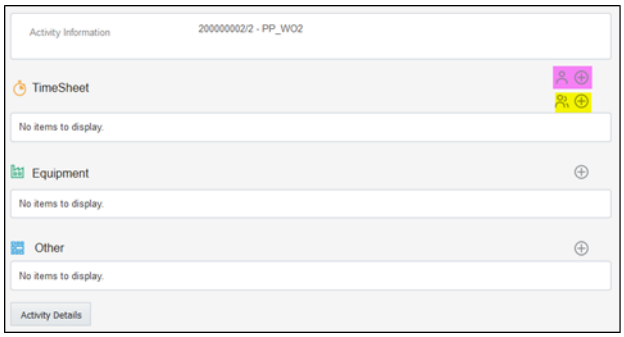


h. Else, it will navigate to the **End Activity** screen. Click **Submit**.

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

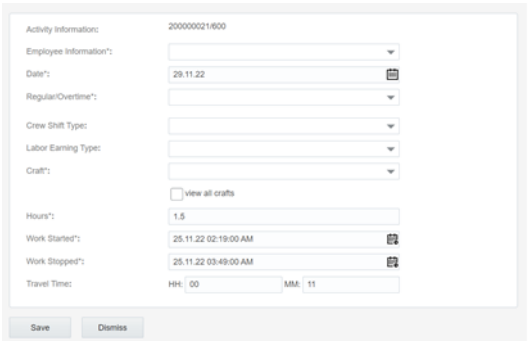
Supervisor

A supervisor can enter individual timesheets (highlighted in purple) or for team (highlighted in yellow). In addition, a supervisor can enter individual timesheet for himself if the secure parameter, "ofsc_sup_in_team" is set to true/yes in the plugin settings.



a. Click **+** against the **TimeSheet** section to add an individual timesheet (highlighted in purple in the figure above).

- Actual time spent on the activity is defaulted in the time sheets without manual entry. But, a supervisor can always change the time spent by manually selecting from the calendar.
- When the activity is in started state, the **Work Started** field defaults to the time the crew started the activity. Work Stopped defaults with the time derived from the activity's start time plus its duration.
- When the activity is completed by the crew, work started and work stopped are populated with the exact times that the activity was stared and completed.
- The **Hours** field is read-only and defaulted with the difference between **Work Stopped** and **Work Started**.
- The timesheet also auto populates the crew member's craft or work skills. Additionally, you can view all the craft skills. Select the **View All Crafts** checkbox to view the available craft skills.



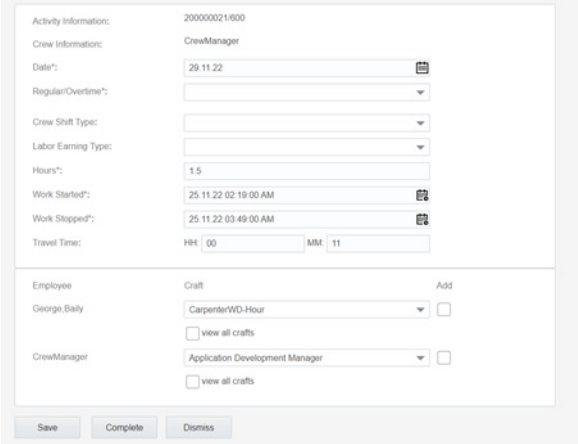
b. Enter the required information and click **Save**.

c. Click the **+** icon to add timesheet for the team (highlighted in yellow in the figure above).

d. After saving, the timesheets for each crew member are created in 'pending' status.

e. Click the **Edit** icon. Enter the necessary details and click **Complete** to complete the timesheet.

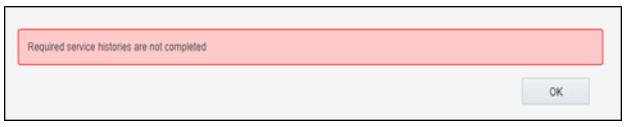
f. Populate the entries for equipment and other.



Activity Completion

To complete an activity:

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



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

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

Asset Installs and Removals

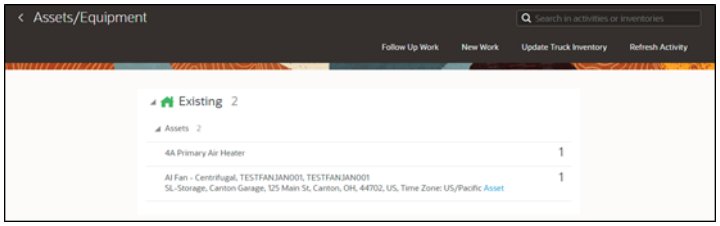
This section includes instructions to perform asset installs and removals.

- Installing Assets
- Attaching Components
- Moving Assets Out of Service
- Removing Assets or Components
- Undoing Installations
- Undoing Newly Attached Components
- Navigating to Parent Assets
- Undoing Asset Removals
- Moving Assets Back to Service
- Replacing Assets
- Replacing Components
- Undoing Asset Replacements

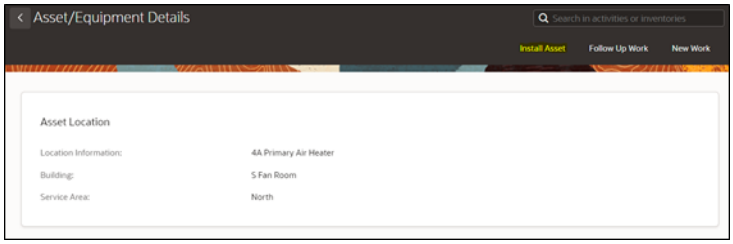
Installing Assets

To install an asset:

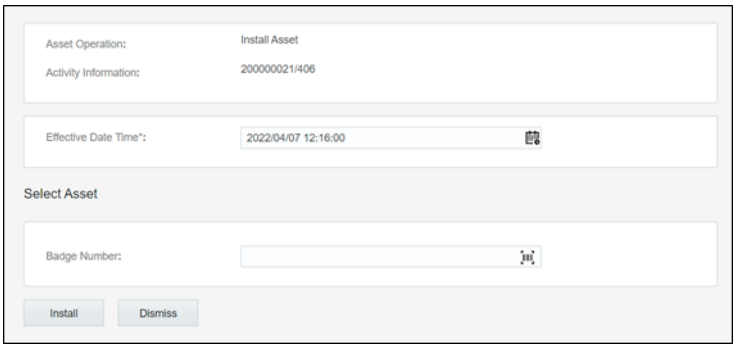
1. Start the activity.
2. To install an asset, click the location.



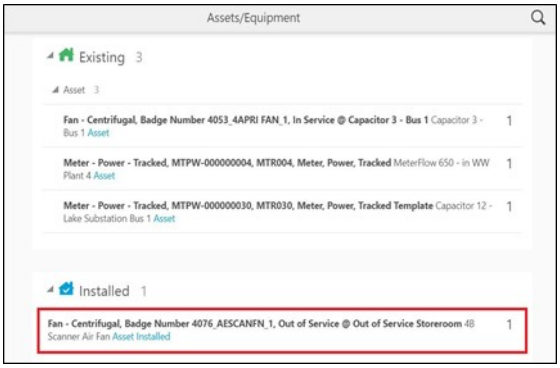
3. Click **Install Asset**.



4. Enter the **Badge Number** of the asset to be installed in this location and click **Install**.



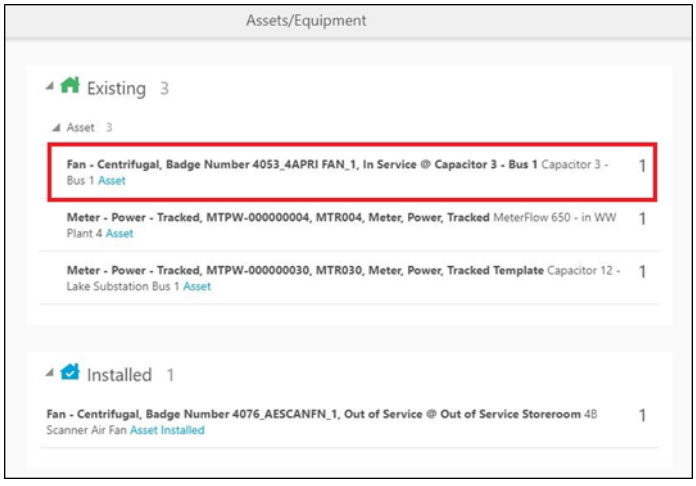
The newly installed asset is shown in the **Installed** pool.



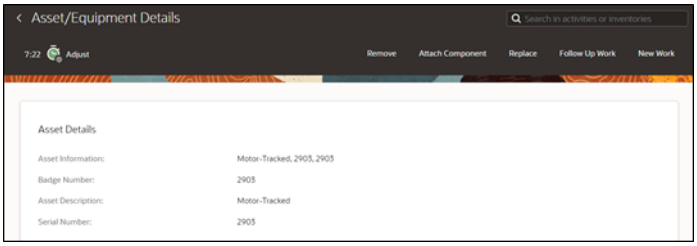
Attaching Components

To attach a component:

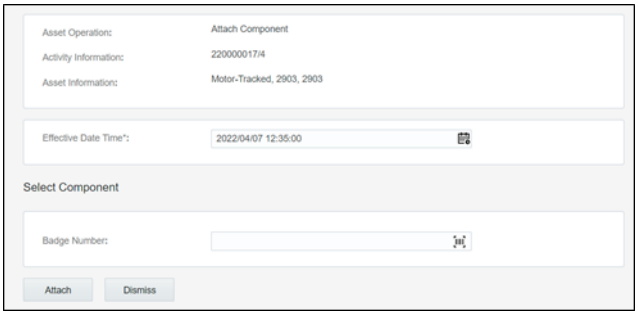
1. Start the activity.
2. To attach a component, click the asset.



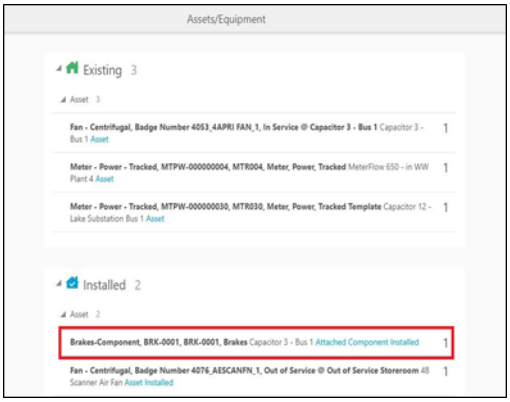
3. Click **Attach Component**.



4. Enter the **Badge Number** of the component to be attached and click **Attach**.



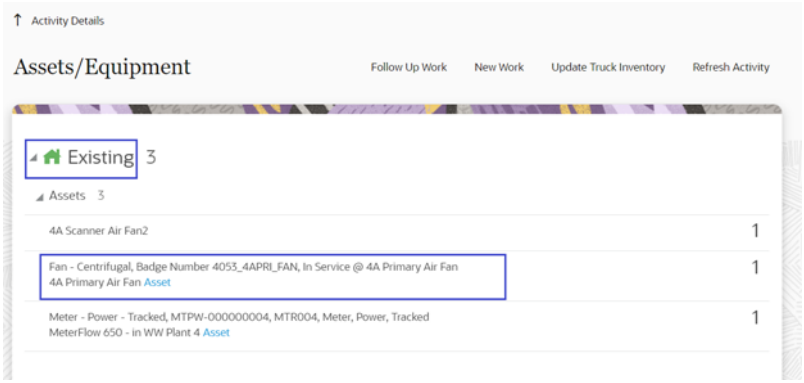
The attached component is shown in the **Installed** Pool.



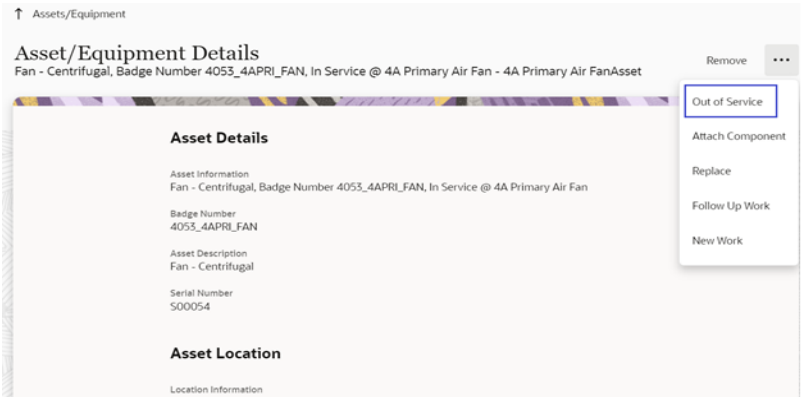
Moving Assets Out of Service

To move an asset out of service:

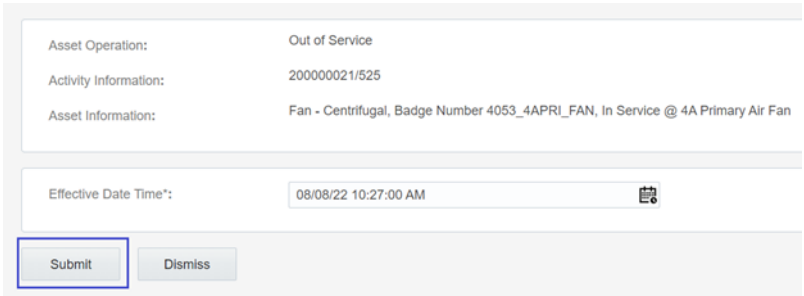
1. Start the activity.
2. To move an asset out of service, click the asset.



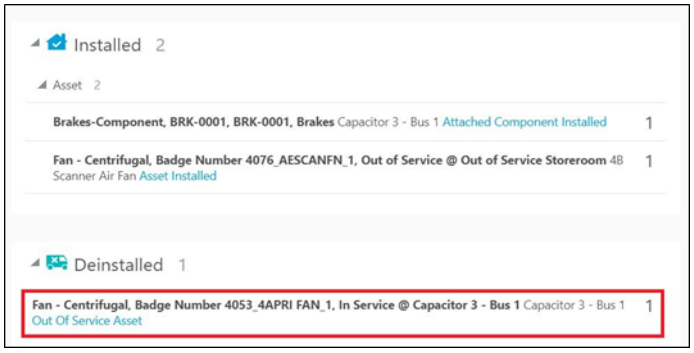
3. Click **Out of Service**.



4. Enter the **Effective Date/Time** and click **Submit**.



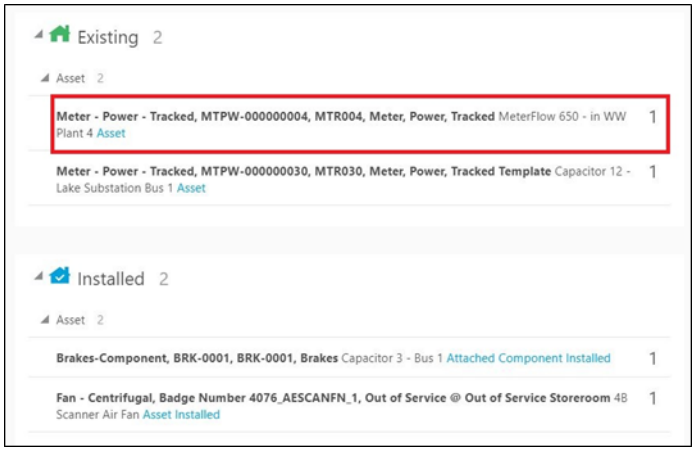
The asset moves to 'out of service' status in the **Deinstalled** pool.



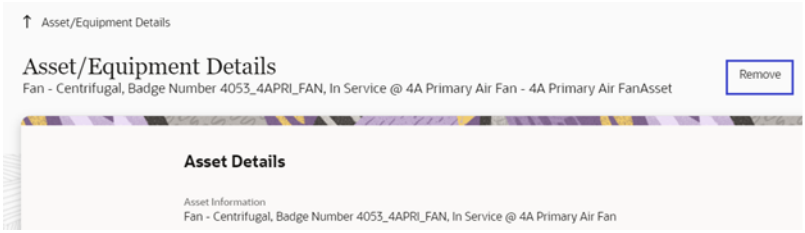
Removing Assets or Components

To remove an asset/component:

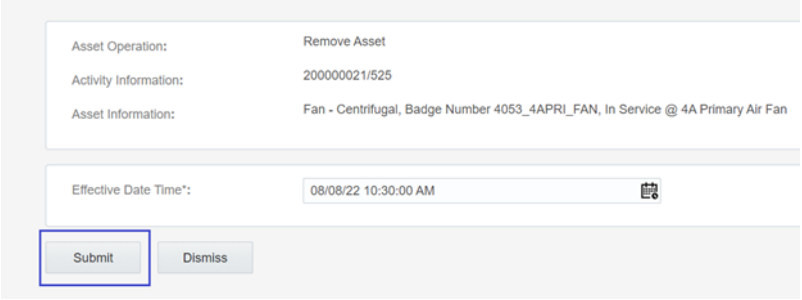
1. Start the activity.
2. Click the asset or component to be removed.



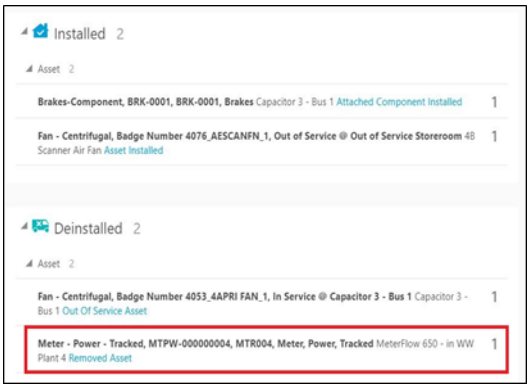
3. Click **Remove**.



4. Enter the **Effective Date/Time** and click **Submit**.



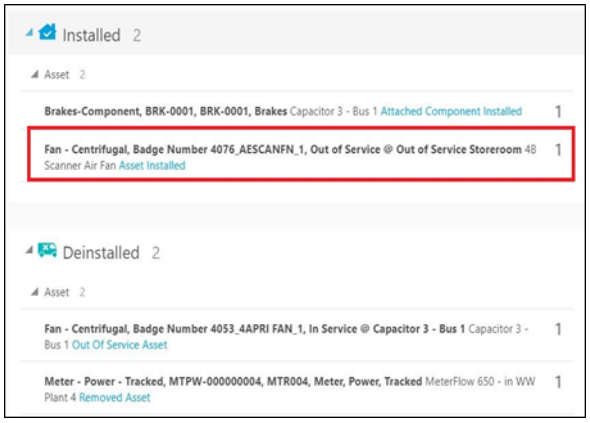
The asset or component is removed and moved to the **Deinstalled** pool.



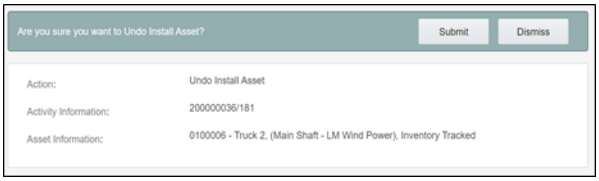
Undoing Installations

To undo the installation:

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



2. Click **Undo Install Asset**.
3. Click **Submit**.

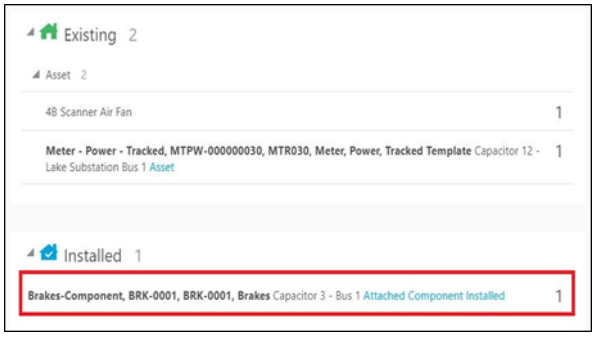


The asset or component installation is undone and it disappears from the **Installed** pool.

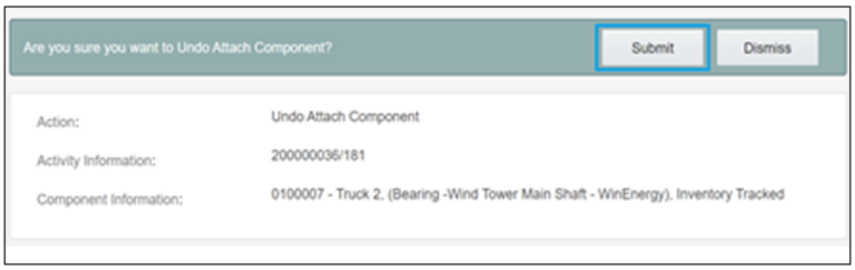
Undoing Newly Attached Components

To undo a newly attached component:

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



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

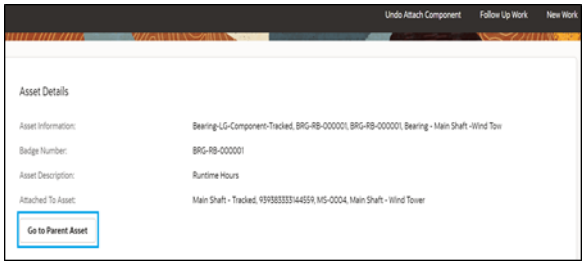


The attach operation is undone and the component disappears from the **Installed** pool.

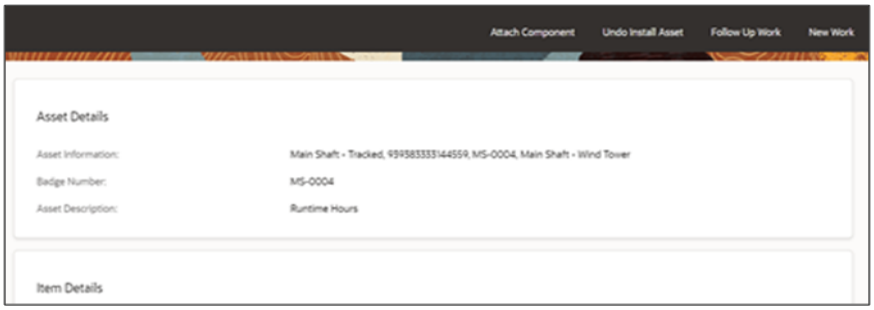
Navigating to Parent Assets

To navigate to the parent asset:

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



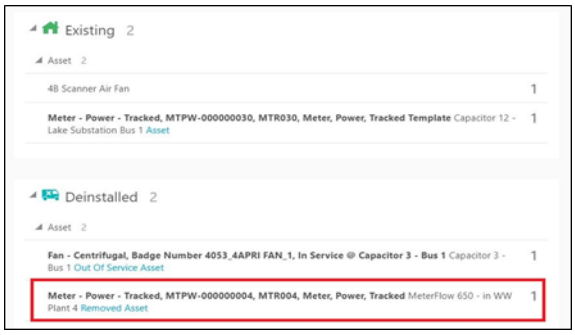
2. Click **Go to Parent Asset** and proceed to the parent asset to which the component is attached.



Undoing Asset Removals

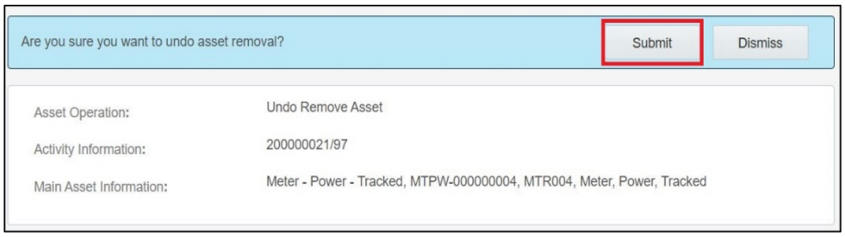
To undo an asset removal:

1. Select the removed asset.



2. Click **Undo Remove**.

3. Click **Submit**.

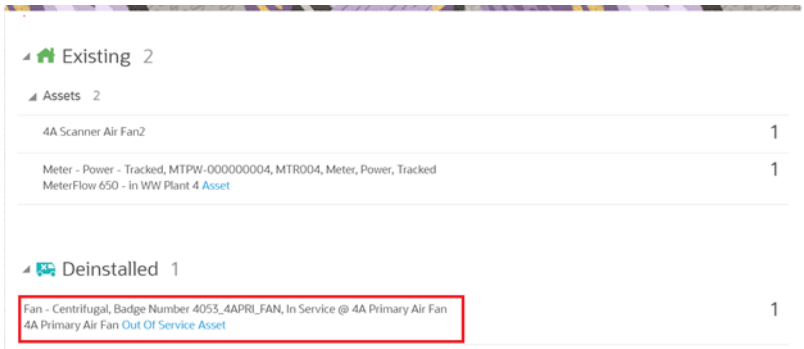


The removal is undone and asset disappears from the **Deinstalled** pool.

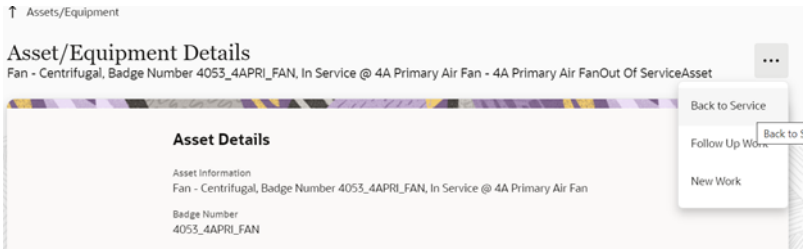
Moving Assets Back to Service

To move an asset back to service:

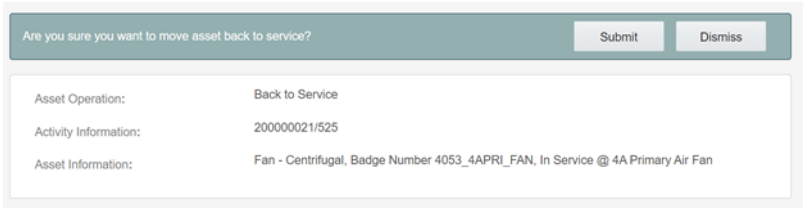
1. Click **Asset in Out of Service**.



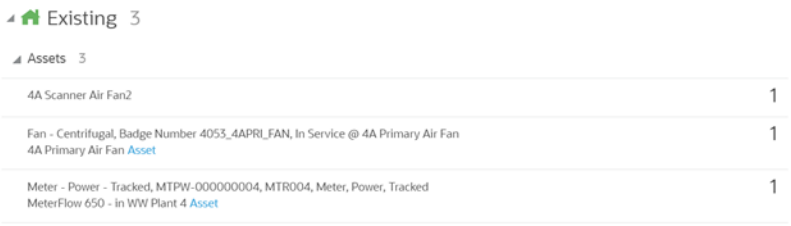
2. Click **Back to Service**.



3. Click **Submit**.



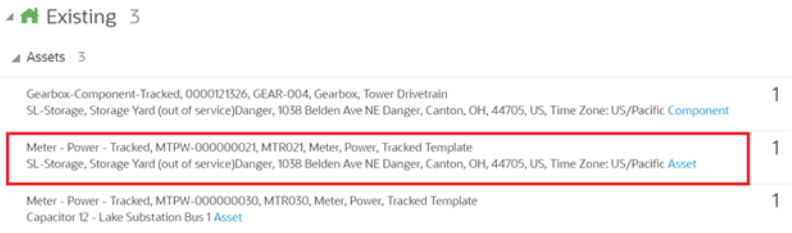
The asset moves to the **Existing** pool.



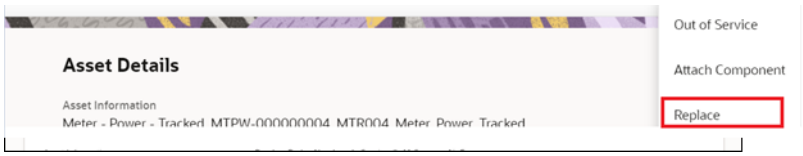
Replacing Assets

To replace an asset:

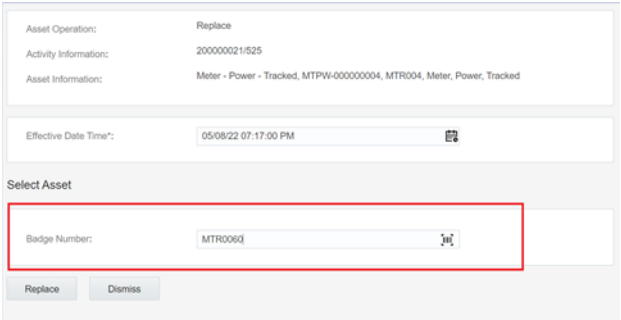
1. Select the asset that needs to be replaced.



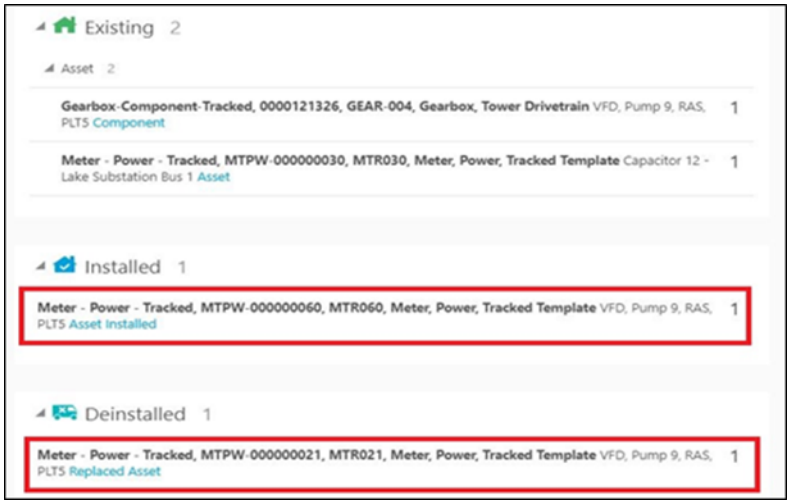
2. Click **Replace**.



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



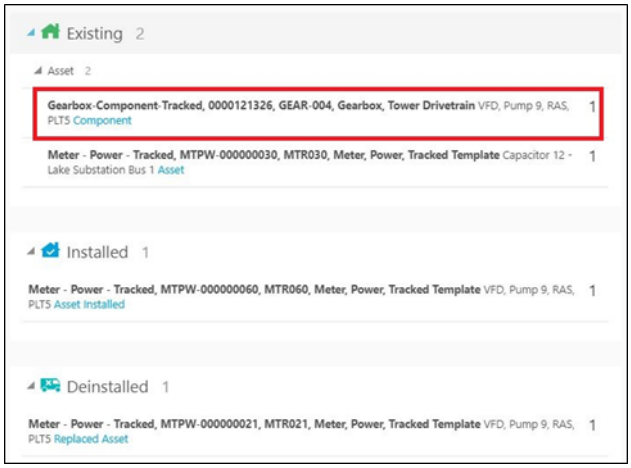
The new asset moves to the Installed pool and the replaced asset moves to the **Deinstalled** pool.



Replacing Components

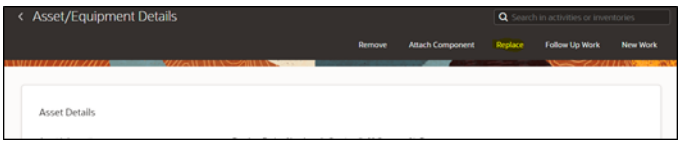
To replace a component:

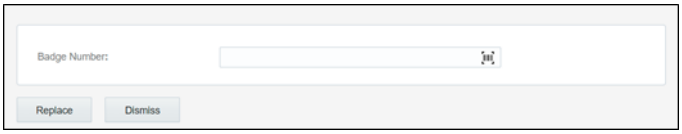
1. Select the component to be replaced.



2. Click **Replace**.

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



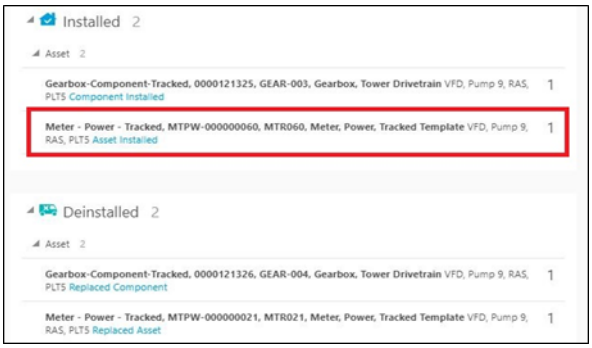


The replaced component moves to the **Deinstalled** pool and the newly attached component moves to the **Installed** pool.

Undoing Asset Replacements

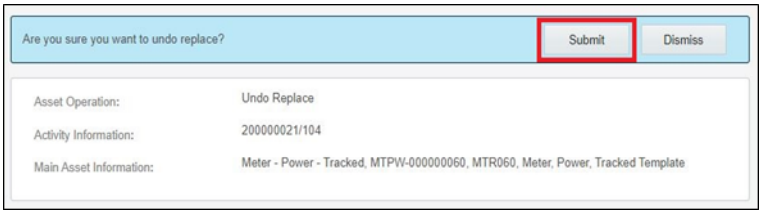
To undo replace an asset:

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

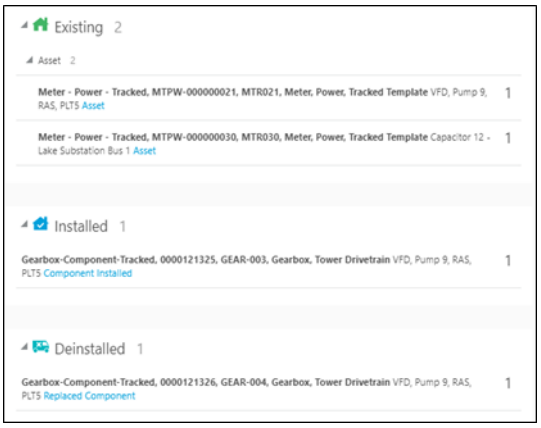


2. Click **Undo Replace**.

3. Click **Submit**.



The replaced asset moves back to **Existing** pool.

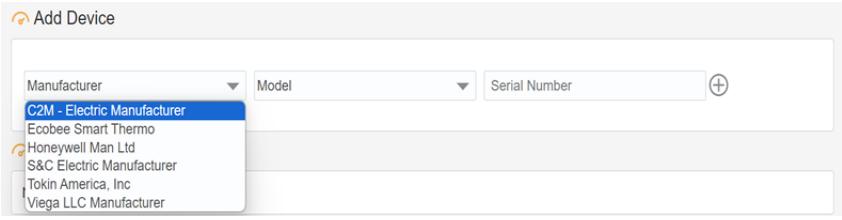


4. Repeat the above steps to undo replace for a component.

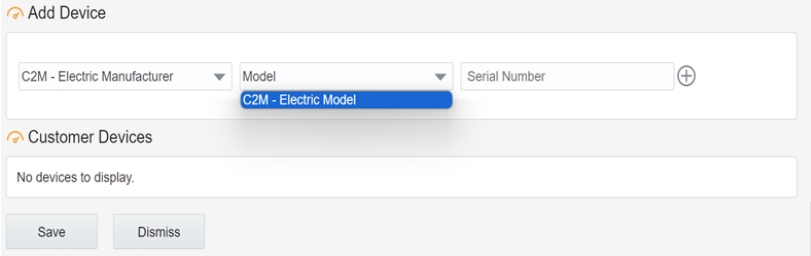
Customer Devices

To record customer devices, navigate to the **Activity Details** page and click **Customer Devices**. On the Customer Devices page:

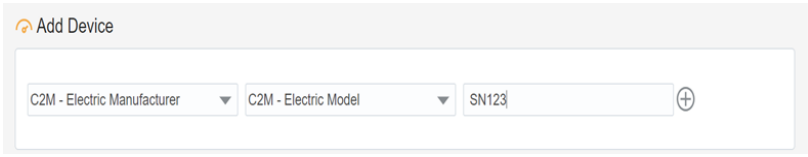
1. Select the manufacturer from the Manufacturer drop-down list.



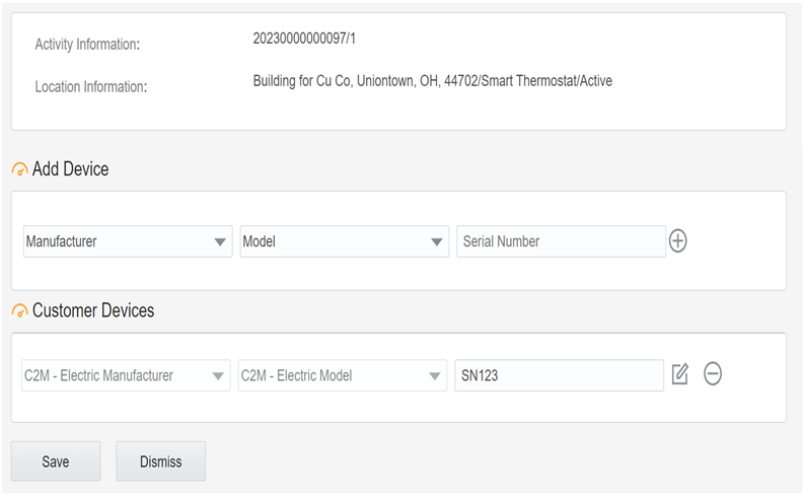
2. Select the model from the **Model** drop-down list. Note that the **Model** field is enabled only when the manufacturer is selected in the **Manufacturer** drop down list.



3. Enter the **Serial Number** for the customer device to be added.



4. Click **+** to add the device to the **Customer Devices** pool.



Click the **+** or **-** to add or remove a device.

5. Click **Save**.

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 Oracle Utilities Digital Asset Cloud Service solution.

Enter the required information and click Create. A new work request will be created and sent to the Oracle Utilities Digital Asset Cloud Service 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 the crew **Requests History**.

Mobile Inventory Management

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

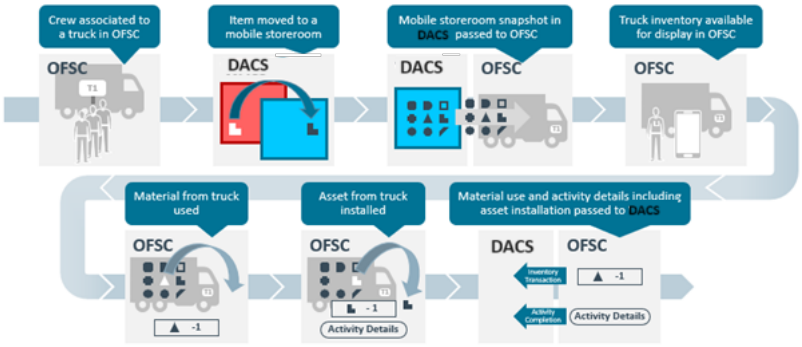
This section includes the following:

- Overview
- Truck Materials Lifecycle Examples
- Truck Storeroom Admin Sync
- Truck Inventory Snapshot
- Assigning Truck to Crews
- Using Inventories for Activities
- Update Truck Inventories

Overview

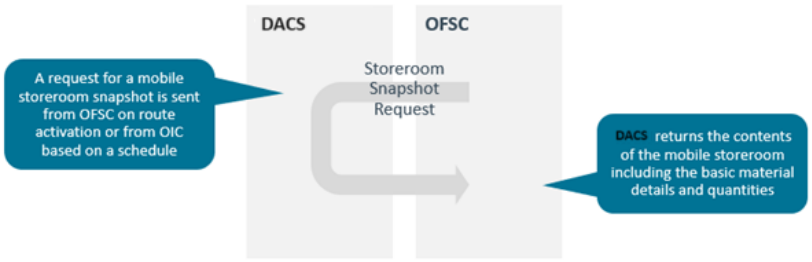
The Mobile Inventory Management functionality includes:

- Sending mobile storeroom content details from Oracle Utilities Digital Asset Cloud Service to Oracle Field Service.
- 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 truck for additional inventory.
- Passing the use of items from Oracle Field Service to Oracle Utilities Digital Asset Cloud Service.



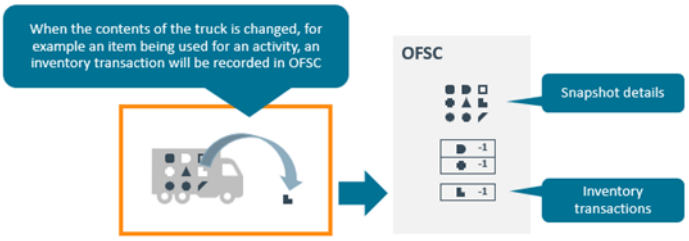
Mobile storerooms (trucks) and their inventories are managed in Oracle Utilities Digital Asset Cloud Service. A truck in Oracle Field Service is linked to a Oracle Utilities Digital Asset Cloud Service mobile storeroom.

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

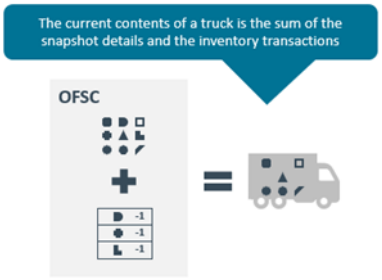


Loading the snapshot of the Oracle Utilities Digital Asset Cloud Service Mobile Storeroom linked to a truck should occur prior to or at the beginning of the relevant crew's shift. When a mobile storeroom snapshot is loaded into Oracle Field Service the contents of the linked Oracle Field Service truck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

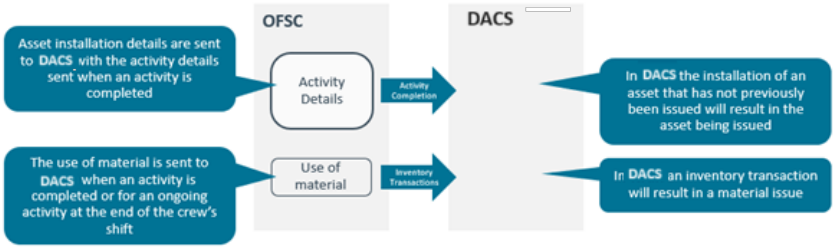
A crew can install assets and use material from their trucks for the activities they are working on. These truck inventory transitions are recorded in Oracle Field Service.



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.



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



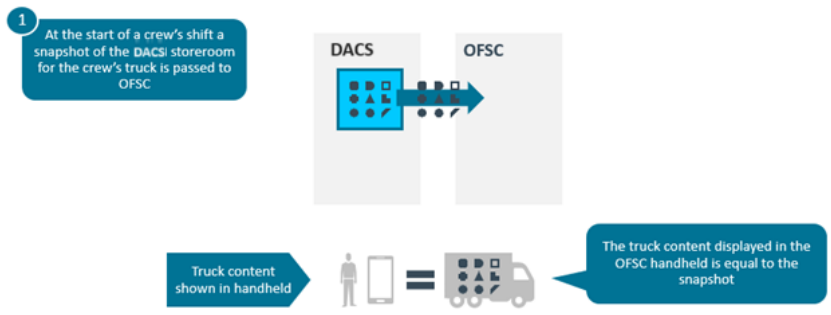
During a crew's shift, the inventory of the crew's truck could get updated. Example: Additional items required for an activity could be picked up from a storeroom. These updates will be recorded in Oracle Utilities Digital Asset Cloud Service. To update the truck's inventory in Oracle Field Service, the crew requests an update of the truck inventory.

The following diagram represents integration flows for mobile inventories movement:

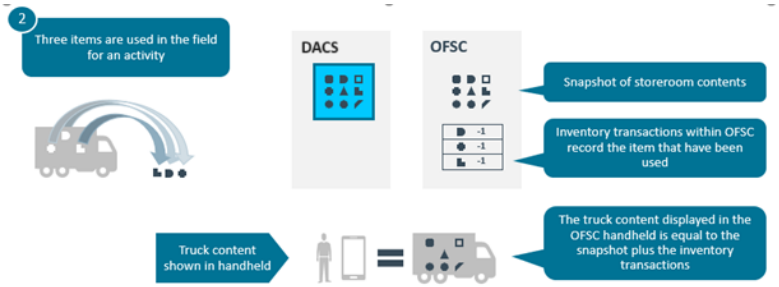
Truck Materials Lifecycle Examples

This section describes various truck materials lifecycle examples.

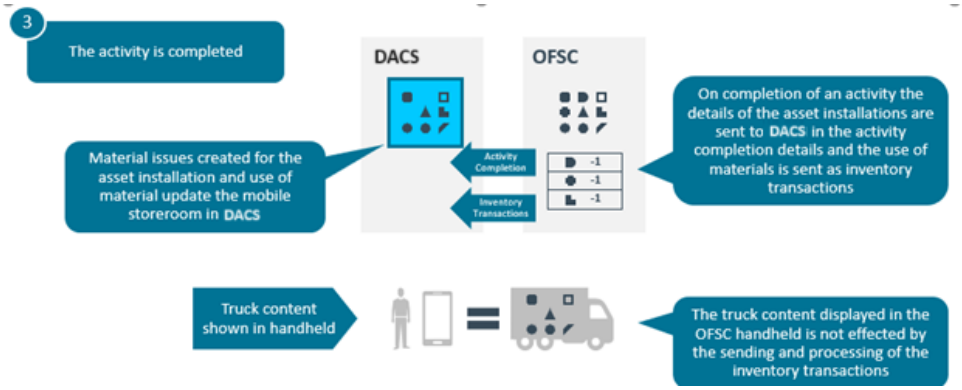
Snapshot at the start of the shift



Items used in the field



Oracle Utilities Digital Asset Cloud Service updated with item use



Truck Storeroom Admin Sync

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

The following figure shows the truck storerooms in Oracle Utilities Digital 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

The following figure shows trucks created by the integration in Oracle Field Service:

Truck Inventory Snapshot

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

> **Attention!** This process will delete the content of the Oracle Field Service truck and replace it with the content of the linked storeroom in Oracle Utilities Digital Asset Cloud Service. Any unprocessed inventory transaction in Oracle Field Service that is used in 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 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.

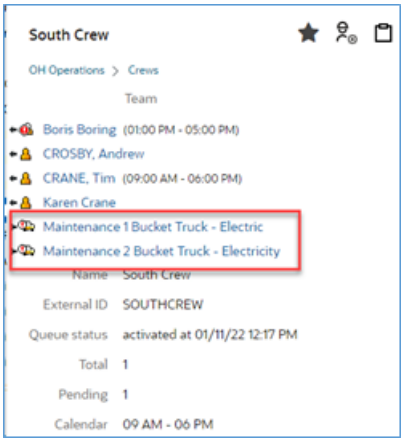
- **Option 3: On Request**

  The truck inventory snapshot process can be initiated by a dispatcher from the Truck Resource Inventory. This option can be used for exceptional situations.

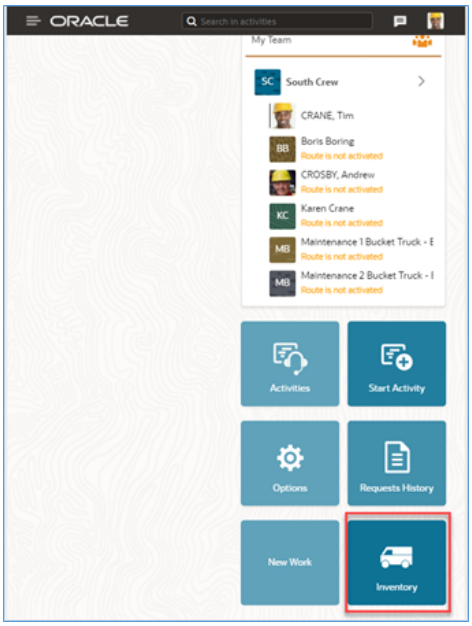
Assigning Truck to Crews

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

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



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



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
- 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 to be installed and click **Install Asset**.
2. If there is more than one location associated with the activity, select the location, and if necessary, adjust the installation date and time.

An asset will be installed at the location.

Materials

You can report material that has 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 can be changed and the changes are recorded in Oracle Utilities Digital Asset Cloud Service.

Example: Items can be added to a truck from a standard storeroom. The inventory can be changed. In this situation, a truck inventory update should be requested from Oracle Field Service.

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

Chapter 4

Data Relationships

Both applications need to be initially synchronized to make sure the same data is reflecting in the user interfaces. This task needs to be done by the administrator after setting up the environment and schedule it periodically later to maintain the data integrity.

This chapter focuses on the following:

- Oracle Utilities Digital Asset Cloud Service to Oracle Field Service Data Synchronizations
- Oracle Field Service to Oracle Utilities Digital Asset Cloud Service Data Synchronizations

Oracle Utilities Digital Asset Cloud Service to Oracle Field Service Data Synchronizations

This section focuses on the following data synchronizations:

- Mobile Control Data Sync
- Truck Storeroom Admin Sync

Mobile Control Data Sync

Control data and activity types from Oracle Utilities Digital Asset Cloud Service are synchronized to Oracle Field Service. The work skill related configurations required in Oracle Field Service are created to match activities with resources and for crew tracking. This synchronization happens on initial installation or on a need only basis when new control data from Oracle Utilities Digital Asset Cloud Service or work skill related configurations needs to be created or updated in Oracle Field Service.

Control data includes codes and descriptions of selected admin entities, characteristic type valid values, and extendable lookup values. It also includes craft, equipment, and other direct changes, whose resource type is internal, needed to support timesheet and resource usage.

Activity types define the categories of the activity supported by Oracle Field Service (in this case, Oracle Utilities Digital Asset Cloud Service integration to Oracle Field Service). If an activity type already exists in Oracle Field Service, it is skipped from synchronization to avoid overriding of activity type settings in Oracle Field Service.

Control data from Oracle Utilities Digital Asset Cloud Service have three categories:

- controlDataEntities
- resourceTypes
- workClass

The controlDataEntities.default and resourceTypes.default properties in the DACOFSC_ConfigProps lookup can be used to control this synchronization based on the flag value. By default, this is set to "yes". Work class will always be synchronized to Oracle Field Service application.

The equipment work skill creation is optional. It is controlled by the createEquipmentWorkSkills.flag property in DACOFSC_ConfigProps lookup. By default, this is set to "no".

> **Note**: Once a resource is created in Oracle Utilities Digital Asset Cloud Service, the resource code (craft code, equipment code, and other resource code) cannot be changed. This synchronization integration process uses the resource codes to create the enumeration values for equipment, craft and other resource property in Oracle Field Service. Slash (/) also cannot be part of the resource code.

The enumeration values are populated for the following Oracle Field Service properties if the integration properties specified in the following table are set to "yes".

Property in DACOFSC_ConfigProps Lookup	Oracle Field Service Properties
controlDataEntities.default = 'yes'	• Crew Shift Types • Downtime Reason • Labor Earning Type • Material Unit of Measure • Measurement Meter Reason • Measurement Gauge Reason • Overtime Type • Pickup Work Category • Pickup Location Type • Pickup Work Type • Pickup Work Priority • Resource Unit of Measure • Stock Item Category
resourceTypes.default = 'yes'	• Craft • Equipment Type • Other Resource Type
None * These are always synchronized to Oracle Field Service.	• Pickup Work Class • Activity Type To PSH

Note: If admin data is deleted in Oracle Utilities Digital Asset Cloud Service, the enumeration value will not be deleted in Oracle Field Service. The synchronous integration process cannot delete enumeration values added to a property in Oracle Field Service; 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, recreating the property, and run the synchronization to get the latest values. If the resourceTypes.default property in the DACOFSC_ConfigProps lookup is set to 'yes', a work skill and work skill property is created for each craft retrieved from Oracle Utilities Digital Asset Cloud Service.

Managing Work Skills

If the resourceTypes.default property in the DACOFSC_ConfigProps lookup is set to "yes", a work skill and work skill property is created for each craft retrieved from Oracle Utilities Digital Asset Cloud Service. If the resourceTypes.default and createEquipmentWorkSkills.flag properties in the DACOFSC_ConfigProps lookup are set to "yes", it creates a work skill and work skill property for each equipment retrieved from Oracle Utilities Digital Asset Cloud Service.

The work skill conditions are also created based on the craft, equipment, and the property values of the workSkillCond.actvtySameSkillMaxWorker.default and

workSkillCond.actvtyMaxEquipment.default properties from the DACOFSC_ConfigProps lookup.

Truck Storeroom Admin Sync

This synchronization process is used to synchronize storeroom data from Oracle Utilities Digital Asset Cloud Service to Oracle Field Service where the storeroom type is "Truck". Oracle Utilities Digital Asset Cloud Service will send only the active storerooms data at this time.

For each storeroom from the storeroom list returned by Oracle Utilities Digital Asset Cloud Service, only storerooms of TRUCK type are filtered and compared to each storeroom with the list of existing resources from Oracle Field Service.

- If the resource from the list in Oracle Field Service does not exist in Oracle Utilities Digital Asset Cloud Service storeroom list, the resource status is updated as "inactive" and sent to Oracle Field Service.
- If the resource from the list in Oracle Field Service exists in Oracle Utilities Digital Asset Cloud Service storeroom list, the corresponding data in Oracle Field Service is updated.
- If the storeroom from Oracle Utilities Digital Asset Cloud Service does not exist in Oracle Field Service, a new record in Oracle Field Service is created.

This synchronization process is a scheduled business flow which can be planned to run at a specific time of day/week/month to synchronize the truck admin data from Oracle Utilities Digital Asset Cloud Service to Oracle Field Service.

The DACS OFSC Schedule Storeroom Sync synchronization process is used to synchronize individual truck's inventory from Oracle Utilities Digital Asset Cloud Service to Oracle Field Service which is also a scheduled business flow that can be planned to run at a specific time of day, week, or month, or can be ran manually whenever necessary.

Oracle Field Service to Oracle Utilities Digital Asset Cloud Service Data Synchronizations

This section focuses on the following data synchronizations:

- Truck Storeroom Inventory Snapshot Sync

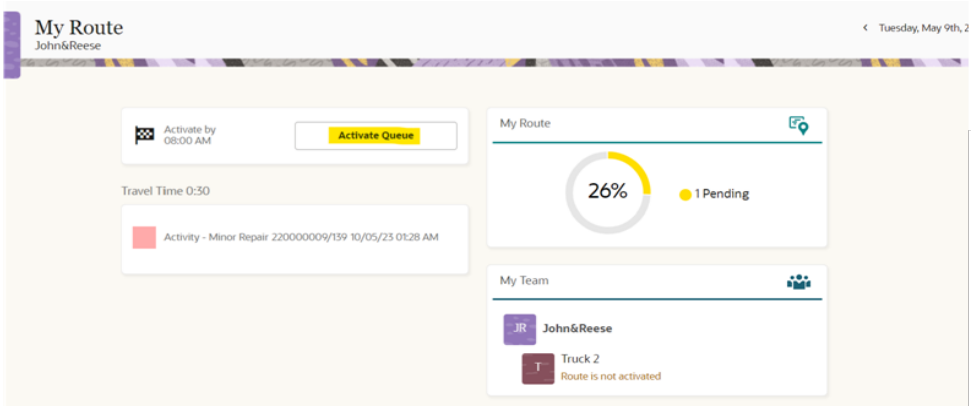
Truck Storeroom Inventory Snapshot Sync

This synchronization is used to synchronize the inventory of each storeroom (individual truck data) in Oracle Utilities Digital Asset Cloud Service to Oracle Field Service. The truck storeroom inventory can be synchronized in the following ways:

- Storeroom Sync on Route Activation
- Scheduled Storeroom Sync

Storeroom Sync on Route Activation

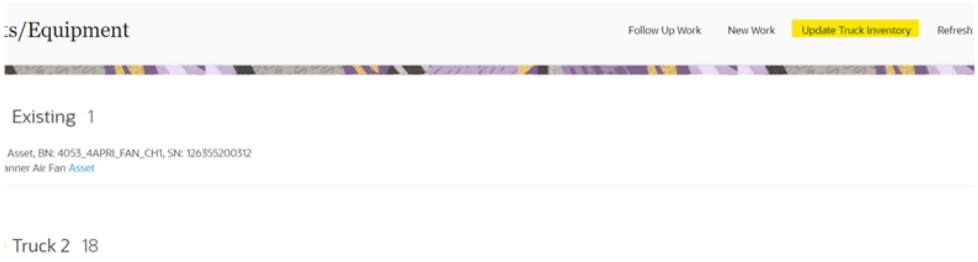
On route activation of a crew or an individual, if there are any trucks associated with that crew or an individual, the initial storeroom inventory is synchronized.



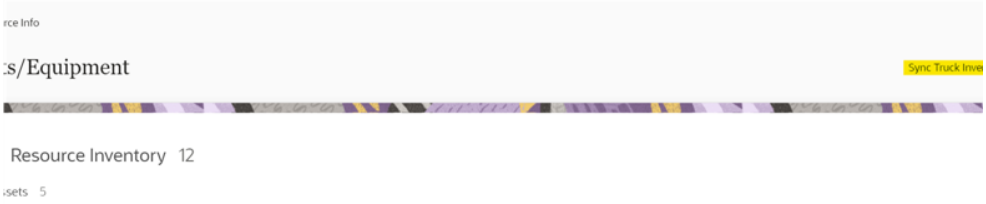
Scheduled Storeroom Sync

Batch scheduled from Oracle Integration Cloud to run at a specific time of day, week, or month to run snapshot synchronization of all trucks synchronized between Oracle Utilities Digital Asset Cloud Service and Oracle Field Service.

The **Update Truck Inventory** option can be used from the crew's **Assets/Equipment** screen to update the inventory when transfer in or transfer out happens from the truck. Adding new truck inventory does not come under this scenario. In Oracle Field Service, the **lastSyncDateTime** field keeps track of the date when the last time inventory synchronization happened. All the inventory transfer in or transfer out happened on or after this date from the truck gets synchronized when "update truck inventory" is triggered. If no transfers happened, nothing would get updated in truck.



The **Sync Truck Inventories** option on the **Resource Info** tab from the Oracle Field Service admin screen is used to update the truck inventory whether it is newly added or transferred, but this data is not updated in the Oracle Field Service mobile screen.



Note: Before using the **Update Truck Inventory** or **Sync Truck Inventories** option, the truck's inventory in Oracle Field Service has to be in synchronized with Oracle Utilities Digital Asset Cloud Service,

which can be achieved by triggering the DACS OFSC Schedule Storeroom Sync flow in Oracle Integration Cloud.

Appendix A

Considerations

Below are important considerations and known limitations for this integration:

- Only 15 attachments per service history are allowed.
- Oracle Utilities Digital Asset Cloud Service operators can delete all attachments, but Oracle Field Service crews can only delete the attachment from their activity.

Appendix B

Additional Information - Integration Concepts

This chapter includes additional information about terms and concepts required for this integration. It describes examples of several use cases and defines key terms for both Oracle Utilities Digital Asset Cloud Service and Oracle Field Service respectively:

- Oracle Utilities Digital Asset Cloud Service
- Oracle Field Service

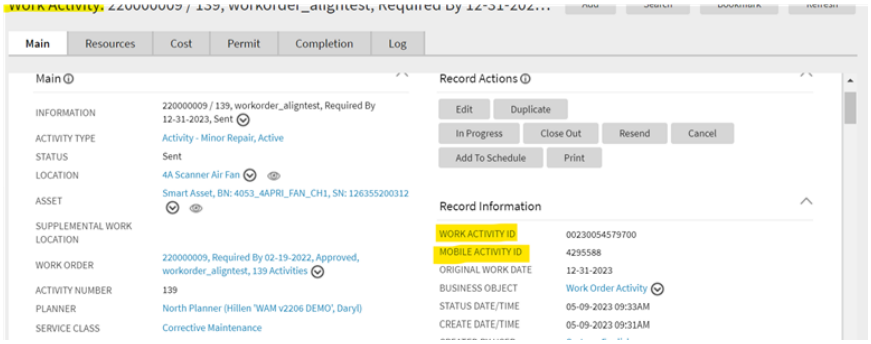
Oracle Utilities Digital Asset Cloud Service

Oracle Utilities Digital Asset Cloud Service efficiently manages asset lifecycles, streamlines maintenance operations, maximizes supply chain performance, enhances safety, and improves regulatory compliance.

Activities

Work activities are work tasks that originate from a work order or a work order template and they need to be completed. Activities may be created for maintenance and inspection of assets, to create service history, and to install or exchange devices.

Example: An activity needs a particular crew to fix the issue, and that activity is assigned to a crew in Oracle Field Service. These activities are identified in the Oracle Field Service by Mobile Activity ID or Work Activity ID.



Oracle Field Service

This section includes the following:

- Admin
- Dispatch Console
- Resource Tree
- Buckets
- Field Resources

Admin

The Administrator plays an essential role in the application. The Administrator user type is assigned to an individual or group of individuals who oversee the regular maintenance and updates to users, resources, calendars, and the resource tree.

The Administrator is responsible for a combination of functions that can include:

- Managing users: Adding new users and deactivating existing users.
- Assigning user types to users.
- Resetting passwords.
- Managing the resource tree.

- Managing the resource calendars, shifts, and teamwork.
- Working with work zones, work skills, work conditions, and work skills groups.

As an administrator, one of your key responsibilities is to manage user information. There are two primary types of users:

- Users who use the manage aspect.

  Example: dispatchers and field managers

- Field service resources who use the mobile application

  Example: field service personnel

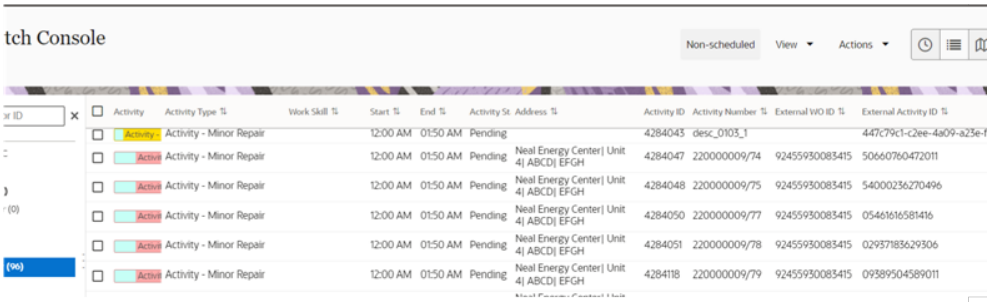
In either case, a user is someone who requires access to some part of the application's interface to act upon the incoming activities.

Many of these tasks are not daily tasks, but completed during setup of the application and management changes. Refer to the *Administer User Guide* at https://docs.oracle.com/en/cloud/saas/field-service/administer.html for more details.

Dispatch Console

The dispatch console is a dashboard for the dispatcher who can see all the activities that are scheduled or non-scheduled. The assigned dispatcher has a variety of tasks it can perform.

For more information, refer to the **Dispatch Console Activities** section at: https://docs.oracle.com/en/cloud/saas/field-service/faaca/c-working-with-activities.html#ManagingActivities-A09A0581



Resource Tree

The resource tree provides a hierarchical view of your organization's resources, typically sorted by geographical region. It is displayed on the left pane of the page.

Use the toggle button to show or hide the resource tree. When you select a resource from the resource tree, the resource's activities are displayed in the work area on the right. Click the plus sign (+) next to an entity in the resource tree to expand and view the entities under that group or bucket. Click the minus (-) sign to collapse that view.

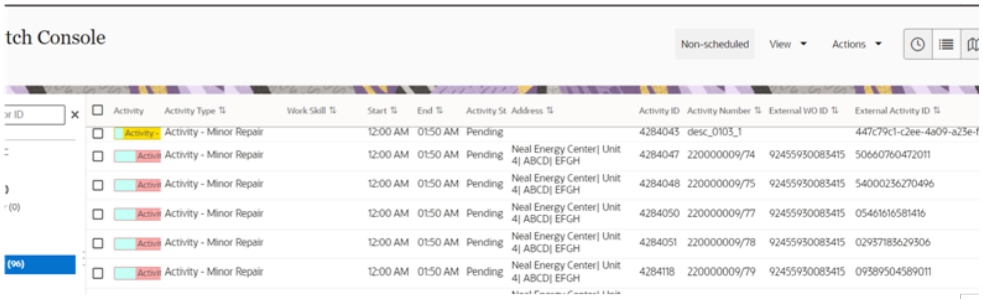
The resource types and the overview of the roles performed by each item in the resource tree are:

- **Field resource**: Performs work, has work skills, work zones associated, and has a related user that is an actual person performing work or a crew or people.

- **Vehicle**: Has work skills, inventory, and geolocation tracking enabled. When assigned to a team it may add the required work skills and inventory to be used by the team.
- **Tool**: Represents specific tools, such as 30-feet ladder and excavator. This resource can have work skills, inventory, and geolocation tracking enabled. When assigned to a team it may add the required work skills and inventory to be used by the team.
- **Bucket**: Used to accumulate work that is not yet distributed to field resources. Only the application can assign activities to this resource. This resource is used for Quota Management.
- **Organization unit**: Aggregates field resources, vehicles, and tools in the tree-like hierarchy to simplify management and reporting. This resource is used for Quota Management.

Buckets

Use organization units to sort and organize the items in the resource tree. In the following figure, you can note that buckets hold the activities that are not yet assigned to field resources.



Organization units are typically used to group resources by location. They cannot be route owners and cannot assign activities to them. Buckets can have activities. However, dispatchers can assign activities to buckets manually and Routing can assign activities to buckets automatically.

Field Resources

Resources are the people who perform the activities and the items that are paired with those people. Examples of resources include technicians, tools, and trucks.

Difference between resource, user, and child resource

A *resource* can be a field resource (a human being), a dispatcher, an administrator, a vehicle, or a tool. All resources are elements of the resource tree. A *user* is a field resource or any other user that has access to Oracle Field Service. A *child resource* is a resource that is added to a bucket or an organization unit element of the resource tree. In the hierarchy of the resource tree, the bucket or the organization unit appears at a higher level than the child resource. A child resource can be a field resource (a human being), a vehicle, or a tool.

Users are field resources that will login to the Oracle Field Service mobile application and work on activities. Depending on the user's role and permissions they will have different responsibilities, such as a dispatcher, a manager, or an administrator user.

Appendix C

FAQs

Below is a list of frequently asked questions about the integration:

- Does Oracle Field Service know when a crew has lost communication? Can it send "out of range" indicators to Oracle Utilities Digital Asset Cloud Service?

  This is not supported in the current integration.

- If Oracle Utilities Digital Asset Cloud Service is configured to include a utility-specific field on event (special priority flag), can that field be passed to Oracle Field Service?

  Yes, this can be handled by utilizing user defined fields in the integration mapping, and by adding the appropriate fields in Oracle Field Service.

- Can Oracle Field Service be used for Automatic Vehicle Location, passing vehicle coordinates to Oracle Utilities Digital Asset Cloud Service?

  This is not currently supported. Oracle Utilities Digital Asset Cloud Service uses the MultiSpeak adapter to get vehicle coordinates for displaying AVL crews. If Oracle Field Service is configured to pass location coordinates via the MultiSpeak protocol, Oracle Utilities Digital Asset Cloud Service would accept the data.