Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service

Configuration Guide

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Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service Configuration Guide

Contents

Preface

Welcome to the Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service Configuration Guide.

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 of the following products with Oracle Field Service:

- Oracle Utilities Work and Asset Cloud Service

Documentation and Resources

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

Product Documentation

Topic	Location
Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service documentation	https://docs.oracle.com/en/industries/energy-water/integrations-index.html
Oracle Utilities Work and Asset Cloud Service documentation	https://docs.oracle.com/en/industries/energy-water/work-asset-cloud-service/index.html
Oracle Field Service documentation	https://docs.oracle.com/en/cloud/saas/field-service/22d/index.html

Additional Documentation

Resource	Location
Oracle Support	Visit My Oracle Support at https://support.oracle.com regularly to stay informed about updates and patches.
Oracle Technology Network (OTN) for latest versions of documents	http://www.oracle.com/technetwork/index.html
Oracle University for training opportunities	http://education.oracle.com/

Updates to Documentation

The complete Oracle Utilities Work and 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/integrations-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.

Access to Oracle Support

Oracle customers have access to electronic support for the hearing impaired. Visit My Oracle Support or Oracle Accessibility Learning and Support for more information.

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
OFS	Oracle Field Service
OIC	Oracle Integration Cloud
ICS	Integration Cloud Service
DVM	Domain Value Map (Lookup)
WACS	Oracle Utilities Work and Asset Cloud Service

Chapter 1

Introduction

This chapter provides an overview about Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service using Oracle Integration Cloud. It focuses on software requirements, Oracle Integration Cloud and business standpoint of the integration.

The chapter includes the following:

- Overview of the Integration
- About Oracle Utilities Work and Asset Cloud Service
- About Oracle Field Service
- About Oracle Integration Cloud
- Software Requirements

Overview of the Integration

Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service helps to manage a fieldwork originated in the Oracle Utilities Work and 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 Work and Asset Cloud Service and sent to Oracle Field Service for the mobile worker to perform the activity. The field activity completion information is sent from Oracle Field Service to Oracle Utilities Work and Asset Cloud Service. In addition, the integration supports admin sync from Oracle Utilities Work and Asset Cloud Service to Oracle Field Service.
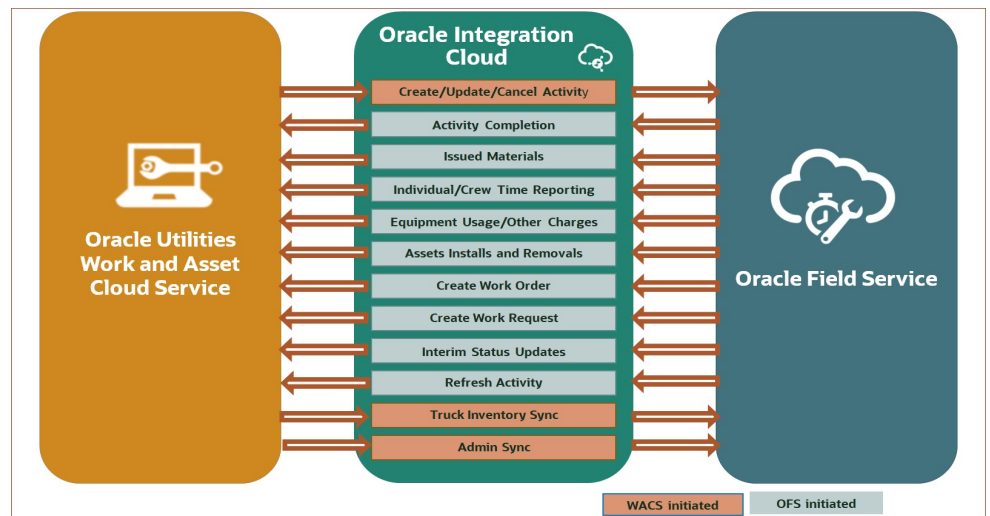
About Oracle Utilities Work and Asset Cloud Service

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

About 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.

About Oracle Integration Cloud

Oracle Integration Cloud is a unified platform to integrate the applications, automate processes, and create applications.

Using Process Builder the business processes can be rapidly designed, automated, and managed in the cloud. Using integrations connect the applications into a continuous business flow. The integrations can be quickly developed and activated between both the applications that live in the cloud; and the applications still live on premises. The lookups help to match application specific codes between the two applications.

Integration Insights and Stream Analytics helps to simplify and extract business metrics and create custom dashboards.

Software Requirements

The following software is required for the integration to work:

- Oracle Utilities Work and Asset Management (on-premises). The integration works but the functionality will be limited.

- Oracle Utilities Work and Asset Cloud Service

- Oracle Integration Cloud

- Oracle Field Service

For specific application versions, refer to the *Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service Release Notes* included in this release. The documentation is available on Oracle Help Center at:

https://docs.oracle.com/en/industries/utilities/integrations-index.html

Chapter 2

Solution Architecture

This chapter provides an overview of the application architecture used by the integration, including:

- Solution Diagram
- Business Flows

Solution Diagram

The technical aspects involved in Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service are:

- An integration between Oracle Utilities Work and Asset Cloud Service and Oracle Field Service.

- The integration layer is made up of integration processes deployed on Oracle Integration Cloud.

- It uses web services and REST APIs to facilitate communication between the two applications.

- In the Oracle Utilities Work and Asset Cloud Service initiated processes, outbound messages are sent and Oracle Field Service uses REST API to receive the messages.

- In the Oracle Field Service initiated processes, events are triggered and Oracle Utilities Work and Asset Cloud Service uses inbound web services (IWS) to receive the messages.

The integration patterns used in this solution are:

- Synchronous

- One-way Asynchronous

Synchronous

The synchronous integration process:

1. Receives request message from Oracle Utilities Work and Asset Cloud Service.

2. Transforms the message from Oracle Utilities Work and Asset Cloud Service format to the target format. Lookups are used for data translations.

3. Invokes Oracle Field Service.

4. Transforms the message (after invoking Oracle Field Service) from the Oracle Field Service format back to the source format. It sends back an acknowledgment/ synchronous response.

5. In case of any error, the global fault handler catches them and sends the transformed error message to Oracle Utilities Work and Asset Cloud Service.

6. An optional email notification is sent to the respective users as configured.
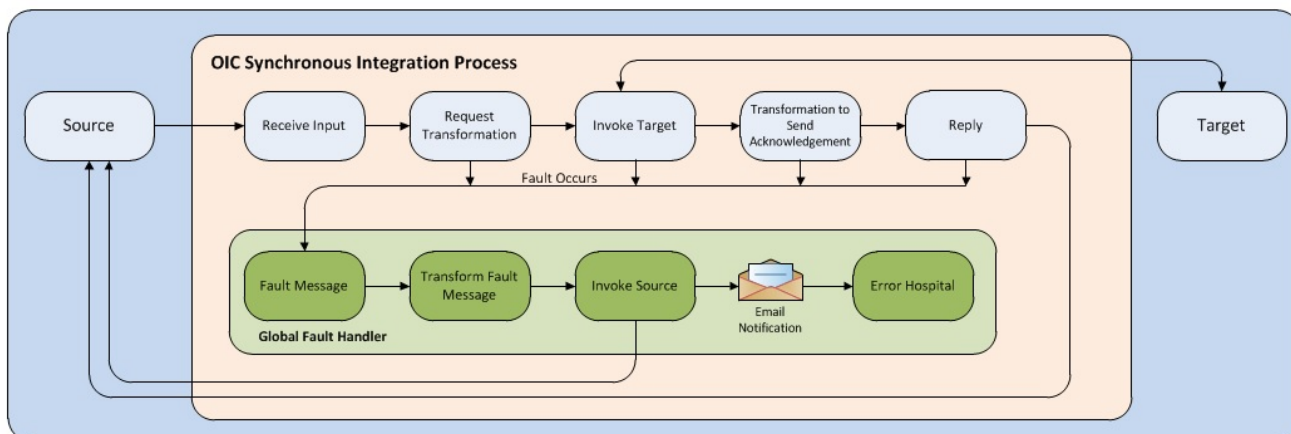
One-way Asynchronous

The one-way asynchronous integration process:

1. Receives request message from Oracle Field Service.

2. Transforms message from the source to the Oracle Utilities Work and Asset Cloud Service format. Lookups are used for data translations.

3. Invokes target application to send the request message.

4. In case of any error, the global fault handler catches them.

5. The error instance can be re-submitted from Oracle Integration Cloud. Refer to the Error Handling section in Configuring Lookups, Error Handling, and Email Notifications for more details.
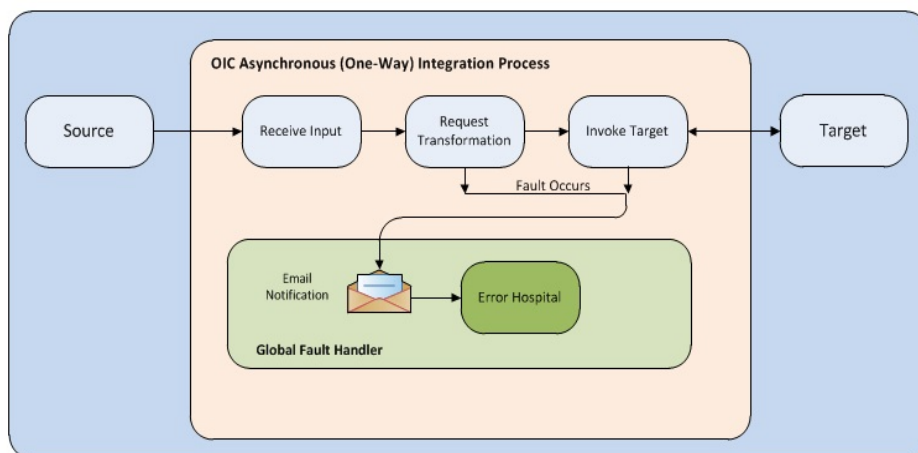
Business Flows

The integration scope supports the following business processes:

- Mobile Control Data Sync (Oracle Utilities Work and Asset Cloud Service Initiated)

- Process Activity (Oracle Utilities Work and 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)

- Pick Up Order (Oracle Field Service Initiated)

- Truck Storeroom Admin Sync (Oracle Utilities Work and Asset Cloud Service Initiated)

- Truck Storeroom Inventory Snapshot Sync/Update (Oracle Field Service Initiated)

  - Oracle Utilities OFSC WACS Route Activation

  - Oracle Utilities OFSC WACS Storeroom Sync

  - Oracle Utilities WACS OFSC Schedule Storeroom Sync

- Activity Pull Update (Oracle Field Service Initiated)

Mobile Control Data Sync (Oracle Utilities Work and Asset Cloud Service Initiated)

This integration process is used to sync the control data from Oracle Utilities Work and 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. It is run on initial installation or on a need only basis when new control data from Oracle Utilities Work and Asset Cloud Service or work skill related configurations needs to be created or updated in Oracle Field Service.

The following diagram shows a graphical representation of the Mobile Control Data Sync integration process.
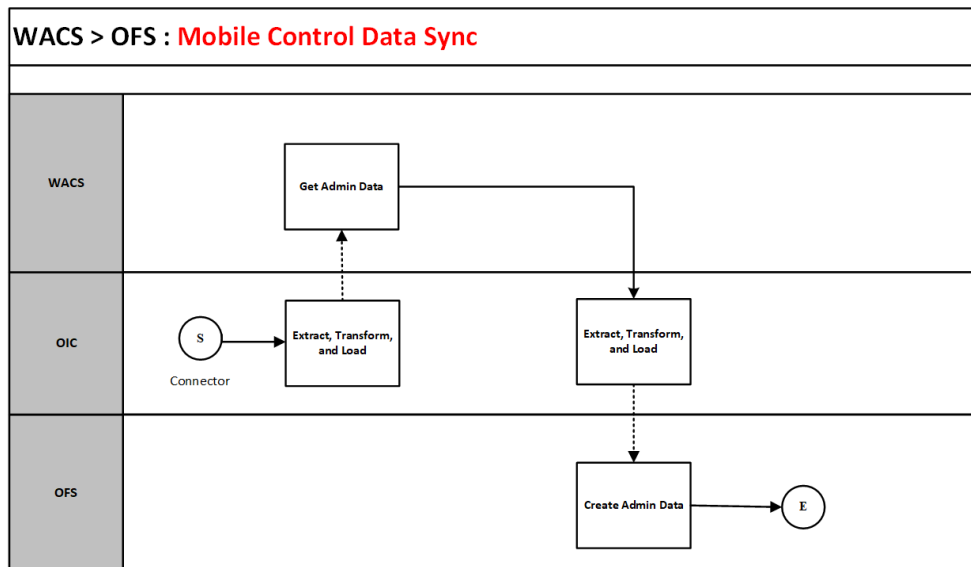
Business Processing

This synchronous integration process includes the following activities:

1. Oracle Utilities WACS OFSC Admin Data Sync deployed on Oracle Integration Cloud is run to retrieve the control data from Oracle Utilities Work and Asset Cloud Service needed in the Oracle Field Service application. This 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.

    The integration is enhanced to allow skipping the sync for some properties based on the category. Control data from Oracle Utilities Work and Asset Cloud Service have three categories, controlDataEntities, resourceTypes and workClass. The properties controlDataEntities.default and resourceTypes.default in WAMOFSC_ConfigProps lookups can be used to control this sync based on the flag value. By default, this is set to "yes". WorkClass will always be synced to Oracle Field Service application.

    Equipment work skill creation is optional. It is controlled by property createEquipmentWorkSkills.flag in WAMOFSC_ConfigProps lookups. By default, this is set to "no".

    > **Note**: Once a resource is created in Oracle Utilities Work and Asset Cloud Service, the resource code (craft code, equipment code and other resource code) cannot be changed. This sync 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.

2. Run this integration sync process manually from Oracle Integration Cloud by scheduling the integration process to run on a scheduled date or selecting **Submit Now** from the menu of the activated sync integration process to initiate an instance of the integration. An optional language parameter can be entered to determine the description to retrieve from Oracle Utilities Work and Asset Cloud Service and to

know in which language code the property name should be created in Oracle Field Service. The language parameter entered should be an ISO 2 letter language code; if the language parameter is not populated or blank, it is defaulted to English (en).

3. It populates the enumeration values for the following Oracle Field Service properties if the integration properties specified below are set to 'yes'.

Property in WAMOFSC_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 • Resource Unit of Measure • Stock Item Category • Pickup Work Category • Pickup Location Type • Pickup Work Type • Pickup Work Priority
resourceTypes.default = 'yes'	• Craft • Equipment Type • Other Resource Type
None - These are always sync to Oracle Field Service	Pickup Work Class Activity Type To PSH

The enumeration values are obtained from the corresponding Oracle Utilities Work and Asset Cloud Service admin information.

OFS Property Label	Synced WACS Information
wam_actType_psh	Activity Type To PSH
wam_craft	Activity Type To PSH
wam_crew_shift_type	Crew Shift Type
wam_downtime_reason	Downtime Reason
wam_equipment_type	Equipment
wam_labor_earning_type	Labor Earning Type
wam_material_stockitemCategory	Stock Item Category
wam_material_uom	Material Unit of Measure
wam_measurement_gauge_reason	Measurement Gauge Reason
wam_measurement_meter_reason	Measurement Meter Reason

OFS Property Label	Synced WACS Information
wam_other_resource_type	Other Resource
wam_overtime_type	Overtime Type
wam_pickup_location_type	Pickup Location Type
wam_resource_uom	Unit of Measure-Resource
wam_work_category	Pickup Work Category
wam_work_class	Pickup Work Class
wam_work_priority	Pickup Work Priority
wam_work_type	Pickup Work Type

Note: If admin data is deleted in Oracle Utilities Work and Asset Cloud Service, the enumeration value will not be deleted in Oracle Field Service. The sync 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 sync to get the latest values.

4. If Property resourceTypes.default in WAMOFSC_ConfigProps Lookup is set to 'yes', it creates a work skill and work skill property for each craft retrieved from Oracle Utilities Work and Asset Cloud Service.

   • The label format for Work Skill created in Oracle Field Service is:

      • W_ + WAM craftcode

         Example: Label is W_Carpenter

   • The label format for Work Skill property created in Oracle Field Service is:

      • W_ + WAM craftcode + _Nd

         Example: Work Skill Property Label is W_Carpenter_Nd

   • The name format for Work Skill property created in Oracle Field Service is:

      • WAM Craft Code Description + value of property workSkillProperty.nameSuffix.default from WAMOFSC_ConfigProps Lookup.

         Example: WAM Craft Code description is Carpenter. workSkillProperty.nameSuffix.default value is needed. Work Skill Property Name is Carpenter Needed.

5. It also creates the work skill conditions based on the craft and the property value of workSkillCond.actvtySameSkillMaxWorker.default from WAMOFSC_ConfigProps Lookup.

   In this example: For work skill = Carpenter and workSkillCond.actvtySameSkillMaxWorker.default = 3, there will be 3 work skill conditions created.

   • Work skill name: Carpenter, Required level: 1; Preferable level: 1; Condition: carpenters_needed In 1

- Work skill name: Carpenter, Required level: 2; Preferable level: 2; Condition: carpenters_needed In 2

- Work skill name: Carpenter, Required level: 3; Preferable level: 3; Condition: carpenters_needed In 3

6. If Properties resourceTypes.default and createEquipmentWorkSkills.flag in WAMOFSC_ConfigProps Lookup are set to 'yes', it creates a work skill and work skill property for each equipment retrieved from Oracle Utilities Work and Asset Cloud Service.

- The label format for Work Skill created in Oracle Field Service is:

  - WE_ + WAM equipmentcode

    Example: Label is WE_Backhoe

- The label format for Work Skill property created in Oracle Field Service is:

    WE_ + WAM equipmentcode + _Nd

    Example: Work Skill Property Label is WE_Backhoe_Nd

- The name format for Work Skill property created in Oracle Field Service is:

    WAM Equipment Code Description + value of property workSkillProperty.nameSuffix.default from WAMOFSC_ConfigProps Lookup.

    Example: WAM Equipment Code description is Backhoe. workSkillProperty.nameSuffix.default value is Needed. Work Skill Property Name is Backhoe Needed.

7. It also creates work skill conditions based on the equipment and property value of workSkillCond.actvtyMaxEquipment.default from WAMOFSC_ConfigProps lookup.

   In this example: For work skill = Backhoe and workSkillCond.actvtyMaxEquipment.default = 3, there will be 3 work skill conditions created.

   - Work skill name: Backhoe, Required level: 1; Preferable level: 1; Condition: backhoe_needed In 1

   - Work skill name: Backhoe, Required level: 2; Preferable level: 2; Condition: backhoe_needed In 2

   - Work skill name: Backhoe, Required level: 3; Preferable level: 3; Condition: backhoe_needed In 3

8. It also synchronizes the activity types from Oracle Utilities Work and Asset Cloud Service to Oracle Field Service. Activity types define the categories of the activity supported by Oracle Field Service (in this case, Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service). If any Activity type already exists in Oracle Field Service, it is skipped from syncing to avoid overriding of Activity type settings in Oracle Field Service.

9. If a technical fault is encountered, when Oracle Utilities Work and Asset Cloud Service or Oracle Field Service is down, it will stop the process and send an optional email notification with error details to the users configured in the WAMOFSC_Email_ID lookup.

10. If any error occurs in the flow when creating or update the record(s) in Oracle Field Service, it will continue the process and send an email notification to the users configured in the WAMOFSC_Email_ID lookup of what record was not created/ updated.

11. Email notification is optional. Configure the property name email.flag in the WAMOFSC_ConfigProps Lookup to true to receive email notification when errors are encountered.

Technical Details

The following table describes the integration processes and the respective Oracle Utilities Work and Asset Cloud Service and Oracle Field Service artifacts used in this integration process.

Artifacts	Value
Integration Process Name	OracleUtilitiesWACS OFSCAdminData Sync
Integration Package Name	outl.ba.wacs.ofsc.01.22.3000.par
OFSC REST URI	To update or replace enumeration values for a property: Method: PUT URI: /rest/ofscMetadata/v1/properties/{label}/ enumerationList To create or replace a WorkSkill: Method: PUT URI: /rest/ofscMetadata/v1/workSkills/{label} To create or replace a property for WorkSkill: Method: PUT URI: /rest/ofscMetadata/v1/properties/{label} To replace WorkSkill conditions: Method: PUT URI: /rest/ofscMetadata/v1/workSkillConditions To create Activity Type: Method: PUT URI:/rest/ofscMetadata/v1/activityTypes/{activityType} To retrieve a Activity Type Group: Method: GET URI:/rest/ofscMetadata/v1/activityTypeGroups/{label}
WACS SOAP IWS	W1-ExtMobileControlData

Process Activity (Oracle Utilities Work and Asset Cloud Service Initiated)

This integration process is used to accept request from Oracle Utilities Work and Asset Cloud Service to create, update, or cancel activities in Oracle Field Service. The activity details message also include the list of issued assets if any. The information is sent synchronously from Oracle Utilities Work and Asset Cloud Service, regardless of the activity type, and Oracle Field Service sends back a response.

The following diagram shows a graphical representation of the Process Activity integration process.
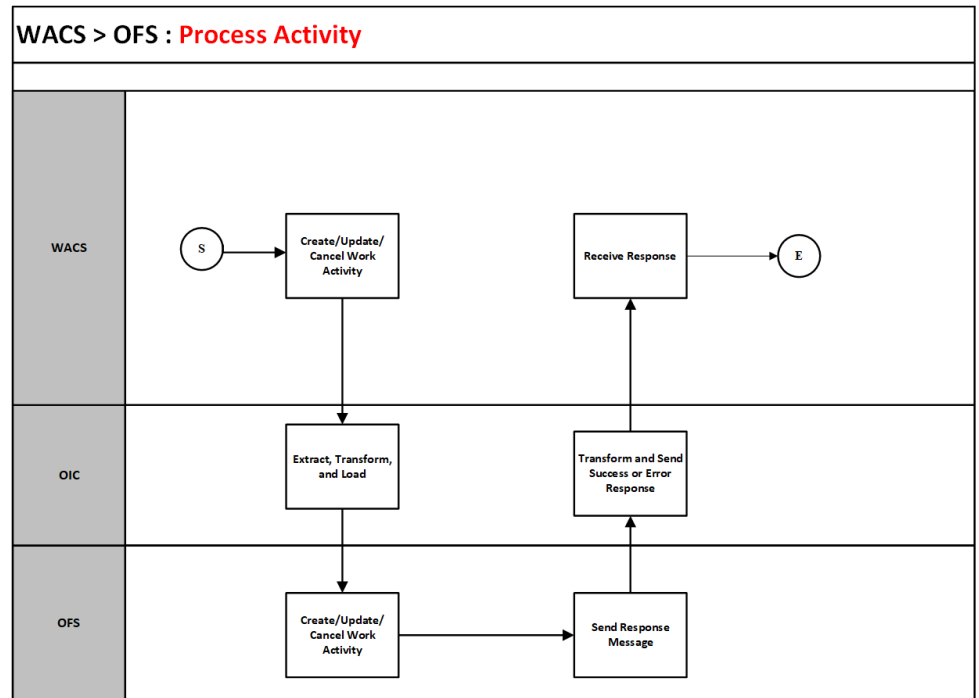
Business Processing

The integration process includes the following activities:

1. Oracle Utilities Work and Asset Cloud Service sends the create/update/cancel activity request to the Oracle Utilities WACS OFSC Activity Process integration process deployed on Oracle Integration Cloud.

2. If Oracle Utilities Work and Asset Cloud Service sends create or update activity request, the Oracle Utilities WACS OFSC Activity Process transforms the request message from Oracle Utilities Work and Asset Cloud Service to the request message format in Oracle Field Service and invokes bulkUpdate API.

3. Oracle Field Service sends the success or failure response to the integration.

4. If the activity creation is successful in Oracle Field Service, the integration process does the following:

    a. Transforms the attachments data from Oracle Utilities Work and Asset Cloud Service (if any) and invokes "Set File Property" OFSC REST API.

    b. Transforms the labor data from Oracle Utilities Work and Asset Cloud Service (if any) and invokes "Update activity" OFSC REST API.

5. Transforms and sends the success/failure response from Oracle Field Service to Oracle Utilities Work and Asset Cloud Service.

6. If Oracle Utilities Work and Asset Cloud Service sends the cancel activity request, the Oracle Utilities WACS OFSC Activity Process transforms the request message from Oracle Utilities Work and Asset Cloud Service to the request message format in Oracle Field Service and invokes bulkUpdate API.

7. Oracle Field Service sends the success or failure response to the integration transformed and sent to Oracle Utilities Work and Asset Cloud Service.

8. Any errors are reported back to Oracle Utilities Work and Asset Cloud Service through the global fault handler.

9. An optional email notification with error details is sent to the users configured in the WAMOFSC_Email_ID lookup.

10. Email notification is optional. Configure the property name email.flag in the WAMOFSC_ConfigProps Lookup to true to receive email notification when errors are encountered.

Technical Details

The following table describes the integration processes and the respective Oracle Utilities Work and Asset Cloud Service and Oracle Field Service artifacts used in this integration process.

Artifacts	Value
OFSC BO/Operation	Activity / Bulk Update Activity Activity / Set File Property Activity / Update activity
OFSC API	bulkUpdate
WACS BO	W1-WOActivityActiveOutboundMsg
Integration Process Name	Oracle Utilities WACS OFSC Activity Process
Integration Package Name	outl.ba.wacs.ofsc.01.22.3000.par

Activity Completion (Oracle Field Service Initiated)

This integration process is used to send the field activity completion and material usage details from Oracle Field Service to Oracle Utilities Work and Asset Cloud Service. Oracle Field Service sends the activity completion details, material usage details along with the completion status, to complete the activity in Oracle Utilities Work and Asset Cloud Service.

The following diagram shows a graphical representation of the Activity Completion integration process:
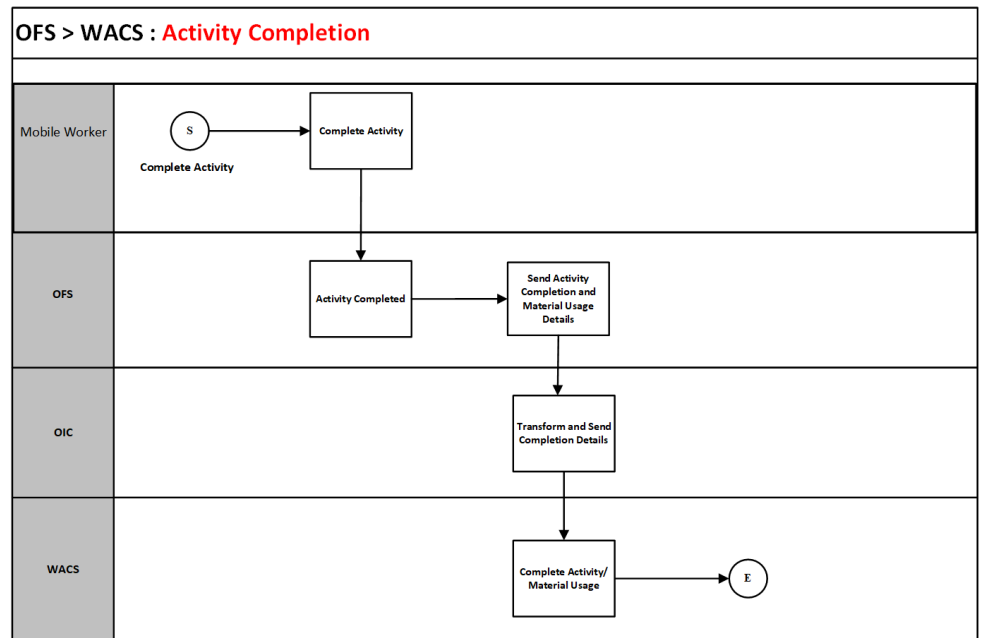
Business Processing

The integration process includes the following activities:

1. Oracle Field Service sends the activity completion and material usage details to the Oracle Utilities OFSC WACS Activity Complete integration process deployed on Oracle Integration Cloud, when the "Activity Completed" event occurs.

2. The Oracle Utilities OFSC WACS Activity Complete process transforms the completion event data and get the activity and material usage details from Oracle Field Service by invoking the getActivity API.

3. The integration process gets the asset/inventory details from a file property by invoking the getActivityFileProperty Oracle Field Service API, also gets the service history attachment(s) data if any by invoking the same Oracle Field Service API.

4. The integration process transforms the activity completion message from Oracle Field Service to the message format in Oracle Utilities Work and Asset Cloud Service and invokes the W1-MblActCom inbound web service.

5. The integration process transforms the activity material usage message from Oracle Field Service to the message format in Oracle Utilities Work and Asset Cloud Service and invokes the W1-ActivityMaterialUsage inbound web service.

6. Any errors are captured through the global fault handler.

7. An optional email notification with error details are sent to the users configured in the WAMOFSC_Email_ID lookup.

8. Email notification is optional. Configure the property name email.flag in the WAMOFSC_ConfigProps Lookup to true to receive email notification when errors are encountered.

Technical Details

The following table describes the integration processes and the respective Oracle Utilities Work and Asset Cloud Service and Oracle Field Service artifacts used in this integration process.

Artifacts	Value
Integration Package Name	outl.ba.wacs.ofsc.01.22.3000.par
OFSC Event	Activity/Activity Completed
OFSC BO/Operation	Activity/Get Activity
OFSC API	getFileProperty
WACS IWS	W1-MblActCom W1-ActivityMaterialUsage
Integration Process Name	Oracle Utilities OFSC WACS Activity Complete

Resource Usage (Oracle Field Service Initiated)

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

The following diagram shows a graphical representation of the Resource Usage integration process.
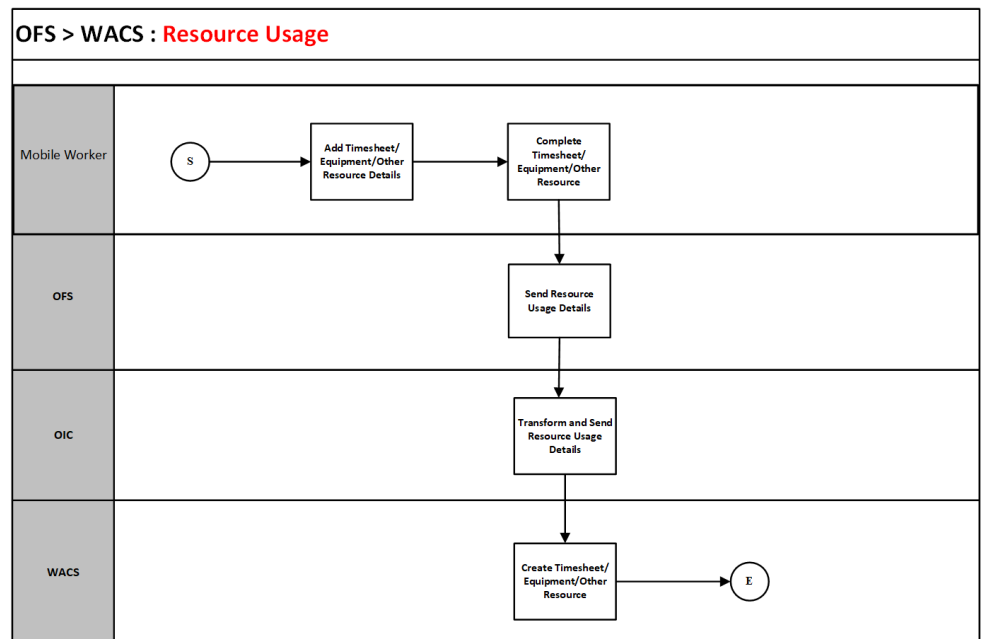
Business Processing

The integration process includes the following activities:

1. Oracle Field Service sends 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 WACS Resource Usage Details integration process deployed on Oracle Integration Cloud.

2. The Oracle Utilities OFSC WACS Resource Usage Details process transforms the message from Oracle Field Service to the message format in Oracle Utilities Work and Asset Cloud Service and invokes the W1-IntTMSDtl inbound web service if its individual time sheet or crew time usage submitted by supervisor or invokes the W1-IntODCDtl inbound web service if its equipment usage or other equipment usage information.

3. Any errors are captured through the global fault handler.

4. An optional email notification with error details are sent to the users configured in the WAMOFSC_Email_ID lookup.

5. Email notification is optional. Configure the property name email.flag in the WAMOFSC_ConfigProps Lookup to true to receive email notification when errors are generated.

Technical Details

The following table describes the integration processes and the respective Oracle Utilities Work and Asset Cloud Service and Oracle Field Service artifacts used in this integration process.

Artifacts	Value
OFSC Entity	Custom Plugin : Resource Usage
WACS SOAP IWS	W1-IntTMSDtl
	W1-IntODCDtl
Integration Process Name	Oracle Utilities OFSC WACS Resource Usage Details
Integration Package Name	outl.ba.wacs.ofsc.01.22.3000.par

Interim Status Updates (Oracle Field Service Initiated)

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

The following diagram shows a graphical representation of the Interim Status Updates integration process.

Business Processing

The integration process includes the following activities:

1. Oracle Field Service sends the interim activity status to the Oracle Utilities OFSC WACS Activity Interim Status integration process deployed on Oracle Integration Cloud.

2. Any errors are caught in the global fault handler.

3. An optional email notification with error details are sent to the users configured in the WAMOFSC_Email_ID lookup.

Technical Details

The following table describes the integration processes and the respective Oracle Utilities Work and Asset Cloud Service and Oracle Field Service artifacts used in this integration process.

Artifacts	Value
Integration Process Name	Oracle Utilities OFSC WACS Activity Interim Status
Integration Package Name	outl.ba.wacs.ofsc.01.22.3000.par
OFS Events	Activity Started
	Activity Suspended
WACS SOAP IWS	W1-UpdateActivityStatus

Asset Installs and Removals (Oracle Field Service Initiated)

This integration process is used to perform various operations from Oracle Field Service to Oracle Utilities Work and 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

The following diagram shows a graphical representation of the Asset Installs and Removals integration process.
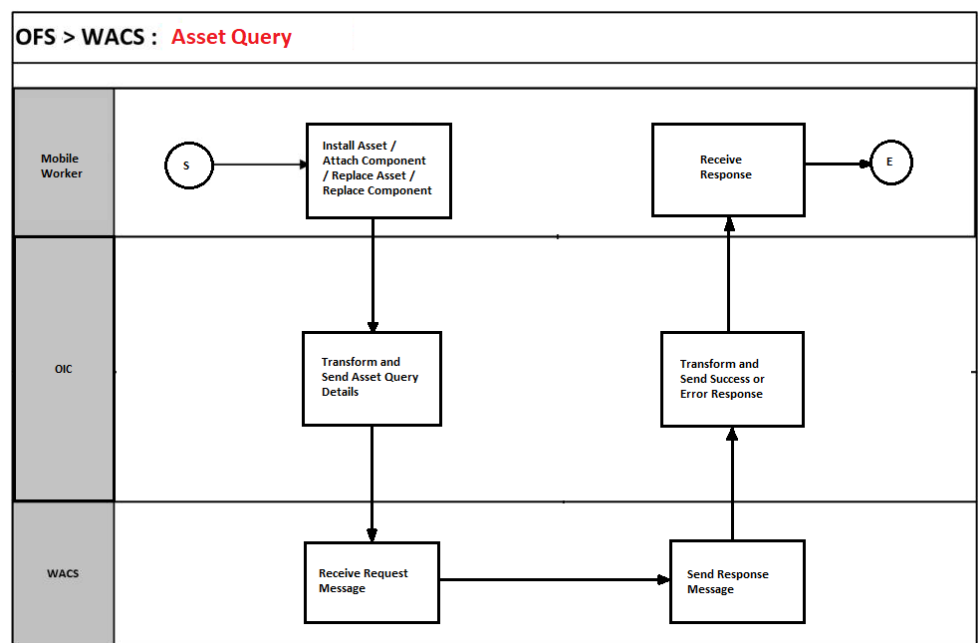
The following operations can be performed on Assets and Components from Oracle Field Service, independent of the Asset Query Integration process.

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

Business Processing

The integration process includes the following activities:

1. For Install Asset, Attach Component, and Replace operations, Oracle Field Service sends the Asset Query details which include Asset ID, Badge Number, and location ID to the Oracle Utilities OFSC WACS Asset Query integration process deployed on Oracle Integration Cloud.

2. The Oracle Utilities OFSC WACS Asset Query process transforms the message from Oracle Field Service to the message format in Oracle Utilities Work and Asset Cloud Service and invokes the W1GAstDtlBNo inbound web service.

3. Oracle Utilities Work and Asset Cloud Service responds with all the asset details if the call is successful, else it responds with an error message. If the response succeeds, the installed asset/attached component moves to the installed pool. When an asset or component is replaced, the replaced asset or component moves to the deinstalled pool.

4. Remove and Out of Service operations are directly performed in Oracle Field Service. After performing these operations, the asset moves to deinstalled pool.

5. Every operation on the Asset or Component can be undone using their corresponding Undo operations.

6. The data about the performed operations is sent from Oracle Field Service to Oracle Utilities Work and Asset Cloud Service after activity completion.

7. Any errors are captured through the global fault handler.

8. An optional email notification with error details are sent to the users configured in the WAMOFSC_Email_ID lookup.

9. Email notification is optional. Configure the property name email.flag in the WAMOFSC_ConfigProps Lookup to true to receive email notification when errors are generated.
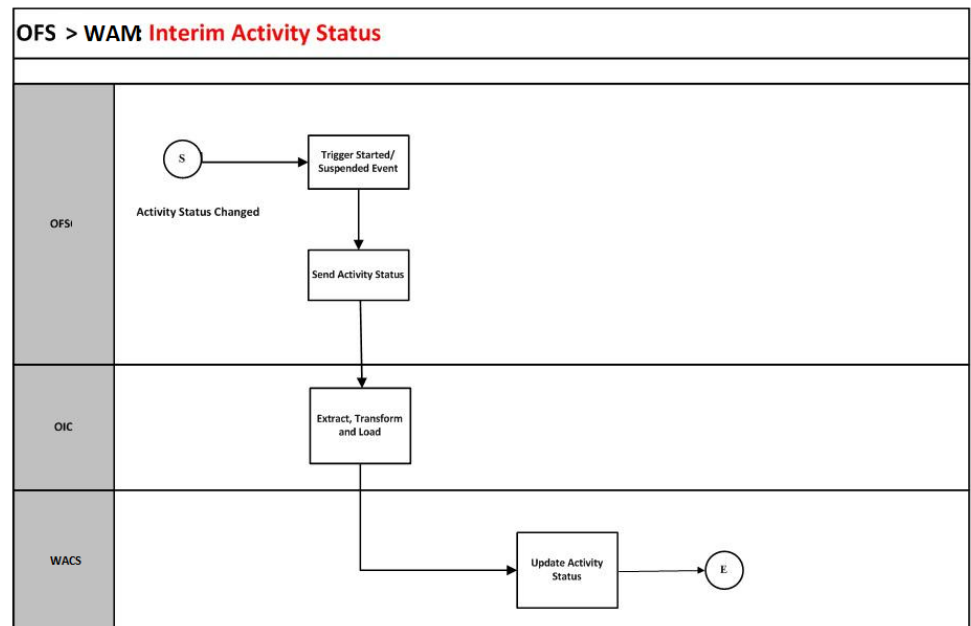
Technical Details

The following table describes the integration processes and the respective Oracle Utilities Work and Asset Cloud Service and Oracle Field Service artifacts used in this integration process.

Artifacts	Value
Integration Process Name	Oracle Utilities OFSC WACS Asset Query
Integration Package Name	outl.ba.wacs.ofsc.01.22.3000.par
OFSC Entity	Custom Plugin: Asset Component Install Exchange Undo
WACS SOAP IWS	W1GAstDtlBNo

Pick Up Order (Oracle Field Service Initiated)

This integration process is used to perform various operations including creation of Work Order and Work Request from Oracle Field Service to Oracle Utilities Work and Asset Cloud Service. For querying assets invoke the Oracle Utilities OFSC WACS Asset Query integration flow providing badge number/location type as the search criteria from Oracle Utilities Work and Asset Cloud Service.

The following diagram shows a graphical representation of the Pick Up Order integration process.
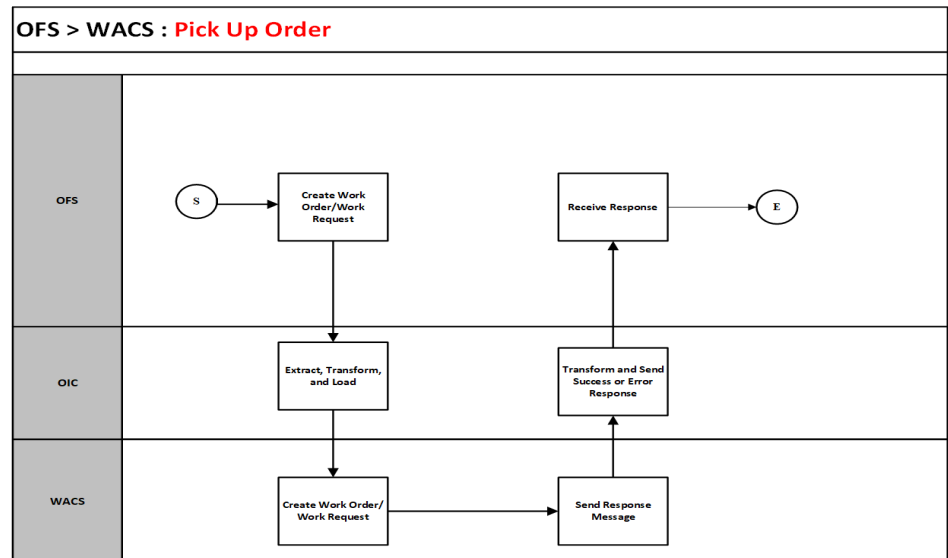
Business Processing

The integration process includes the following activities:

1. Oracle Field Service sends the work order create activity to Oracle Utilities OFSC WACS Work Order integration process deployed on Oracle Integration Cloud.

2. Oracle Field Service sends the work request create to Oracle Utilities OFSC WACS Work Request.

3. Any errors are captured through the global fault handler.

4. An optional email notification with error details are sent to the users configured in the WAMOFSC_Email_ID lookup.

5. Email notification is optional. Configure the property name email.flag in the WAMOFSC_ConfigProps Lookup to true to receive email notification when errors are generated.

Technical Details

The following table describes the integration processes and the respective Oracle Utilities Work and Asset Cloud Service and Oracle Field Service artifacts used in this integration process.

Artifacts	Value
Integration Process Name	Oracle Utilities OFSC WACS Work Order Oracle Utilities OFSC WACS Work Request Oracle Utilities OFSC WACS Asset Query
Integration Package Name	outl.ba.wacs.ofsc.01.22.3000.par
OFSC Entity	Custom Plugin: pickUpWork
WACS SOAP IWS	W1-CreateMobileWorkOrder W1-CreMoblWR W1-AssetQuery W1-GetAssetLocationDetails

Truck Storeroom Admin Sync (Oracle Utilities Work and Asset Cloud Service Initiated)

This integration process is used to sync storeroom data from Oracle Utilities Work and Asset Cloud Service to Oracle Field Service where the storeroom type is Truck. Oracle Utilities Work and Asset Cloud Service will send only the active storerooms data at this time.

The following diagram shows a graphical representation of the Storeroom admin sync integration process.
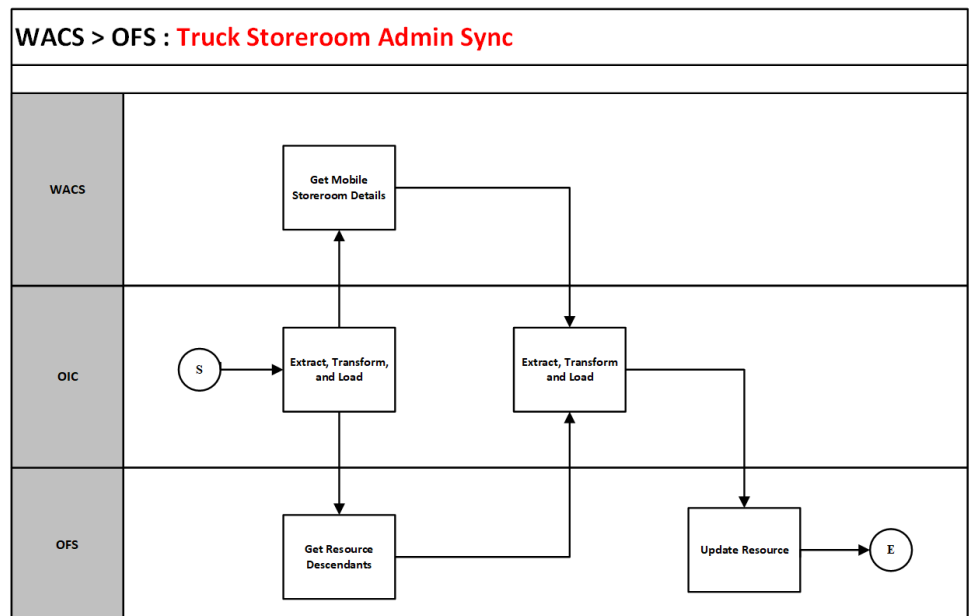
Business Processing

The integration process includes the following activities:

1. Oracle Utilities WACS OFSC Storeroom Admin Sync deployed on Oracle Integration Cloud is run to retrieve the active truck storeroom data from Oracle Utilities Work and Asset Cloud Service and send it to Oracle Field Service.

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

3. The integration process invokes the Oracle Utilities Work and Asset Cloud Service Synchronize Mobile Storeroom Details service to get the list of storerooms.

4. The integration process invokes Resource OFSC BO to get the list of existing resources for a specific bucket.

5. For each storeroom from the storeroom list returned by Oracle Utilities Work and Asset Cloud Service, filter only storerooms of TRUCK type and compare each storeroom with the list of existing resources from Oracle Field Service.

   a. If the resource from the list in Oracle Field Service does not exist in Oracle Utilities Work and Asset Cloud Service storeroom list, update the resource status as 'inactive' and send it to Oracle Field Service.

   b. If the resource from the list in Oracle Field Service exists in Oracle Utilities Work and Asset Cloud Service storeroom list, update the corresponding data in Oracle Field Service.

   c. If the storeroom from Oracle Utilities Work and Asset Cloud Service does not exist in Oracle Field Service, create a new record in Oracle Field Service.

   d. Invoke Resource OFSC BO to update the resource details in Oracle Field Service.

6. Any errors are captured through global fault handler.

7. An optional email notification with error details are sent to the users configured in the WAMOFSC_Email_ID lookup.

8. Email notification is optional. Configure the property name email.flag in the WAMOFSC_ConfigProps Lookup to true to receive email notification when errors are encountered.

Technical Details

The following table describes the integration processes and the respective Oracle Utilities Work and Asset Cloud Service and Oracle Field Service artifacts used in this integration process.

Artifacts	Value
Integration Process Name	outl.ba.wacs.ofsc.01.22.3000.par
Integration Package Name	Oracle Utilities WACS OFSC Storeroom Admin Sync

Artifacts	Value
OFSC BO/ Operation	Resource/Get Resource Descendants Resource/Update Resource
WACS SOAP IWS	W1-SynchronizeMobileStoreroomDetails

Truck Storeroom Inventory Snapshot Sync/Update (Oracle Field Service Initiated)

This integration process is used to sync inventory of each storeroom in Oracle Utilities Work and Asset Cloud Service into Oracle Field Service. The truck storeroom inventory can be sync in multiple ways:

Option 1: Storeroom Sync on Route Activation

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

The following Oracle Integration Cloud integration processes are involved to achieve this functionality:

- Oracle Utilities OFSC WACS Route Activation
- Oracle Utilities OFSC WACS Storeroom Sync

Oracle Utilities OFSC WACS Route Activation

The following diagram shows a graphical representation of the Oracle Utilities OFSC WACS Route Activation integration process.
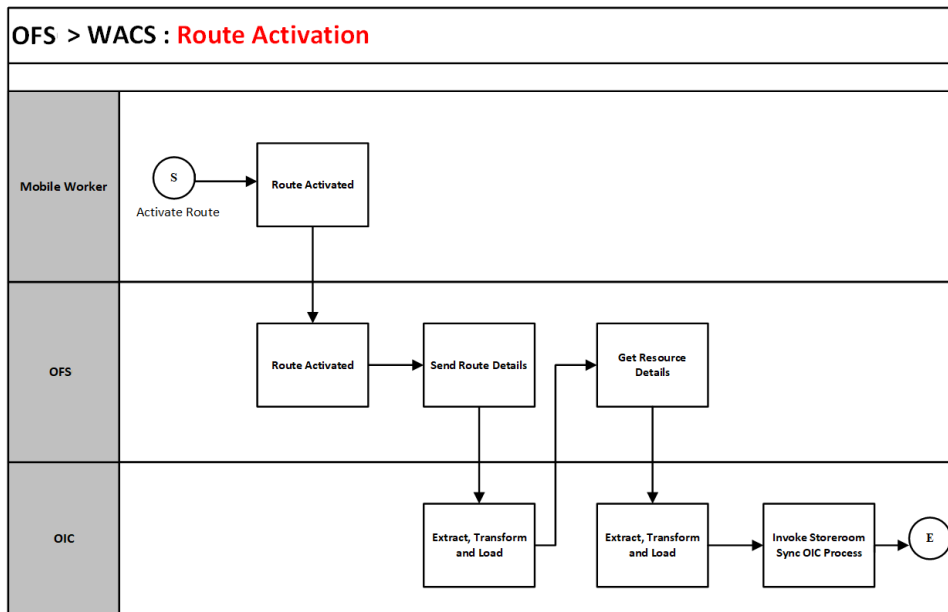
Business Processing

The integration process includes the following activities:

1. Oracle Field Service invokes Oracle Utilities OFSC WACS Route Activation process deployed on Oracle Integration Cloud when the "Route Activated" business event occurs (when a crew or an individual's route is activated in Oracle Field Service).

2. Integration process invokes "Resource Types" OFSC REST endpoint to get the resource type using REST Adapter.

3. If resource type is CR (Crew) or PR (Person), invoke OFSC "Resource" business object to get more details about the resource using Oracle Field Service adapter.

4. Invoke "Activity" OFSC business object to get all activities and check if this is a teamResourceId using the Oracle Field Service adapter. If the response is not empty, form a list of allresourceIds.

5. For each unique resourceId from the above list, invoke the "Resource" OFSC business object to get the resource information.

    a. If resource type is 'TR' and resource source is 'WACSTR' invoke Oracle Utilities OFSC WACS Storeroom Sync integration process with input parameters resourceId, resourceType and lastSyncDateTime as empty.

6. Else, process the next resource.

7. Any errors are captured through global fault handler.

8. An optional email notification with error details are sent to the users configured in the WAMOFSC_Email_ID lookup.

9. Email notification is optional. Configure the property name email.flag in the WAMOFSC_ConfigProps Lookup to true to receive email notification when errors are encountered.

Technical Details

The following table describes the integration processes and the respective Oracle Utilities Work and Asset Cloud Service and Oracle Field Service artifacts used in this integration process.

Artifacts	Value
Integration Process Name	outl.ba.wacs.ofsc.01.22.3000.par
Integration Package Name	Oracle Utilities OFSC WACS Route Activation
OFSC BO/ Operation	Resource/Get Resource Activity/Get Activities
OFSC REST URI	URI: /rest/ofscMetadata/v1/resourceTypes Method: GET
Target OIC integration process name	Oracle Utilities OFSC WACS Storeroom Sync

Oracle Utilities OFSC WACS Storeroom Sync

The following diagram shows a graphical representation of the Oracle Utilities OFSC WACS Storeroom Sync integration process.
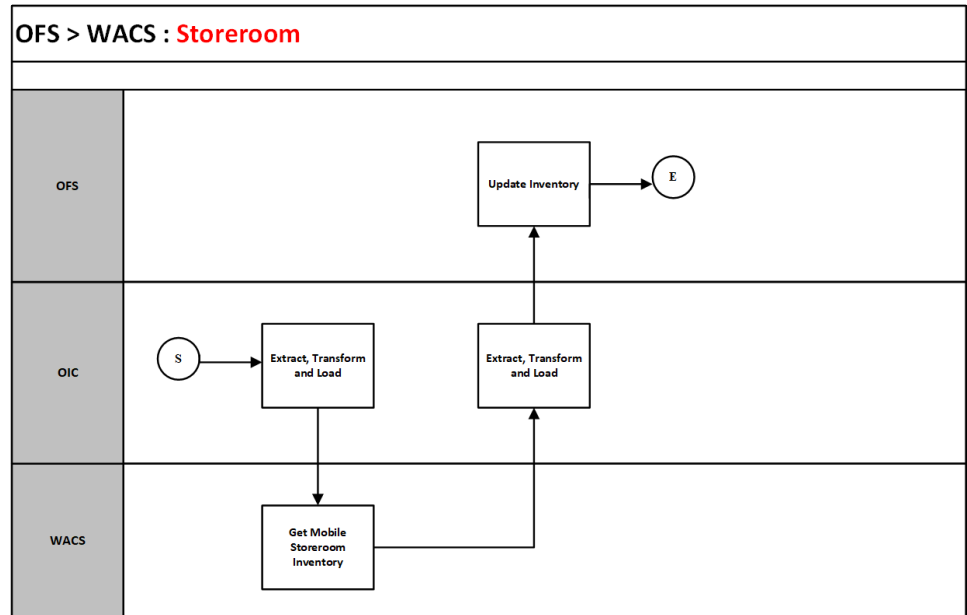
Business Processing

The integration process includes the following activities:

1. Oracle Utilities OFSC WACS Storeroom Sync integration process is invoked by another integration process and it takes these three input parameters: resourceId, resourceType and lastSyncDateTime.

2. If the resource type is 'TR' invoke W1-MobileStoreroomInventory WACS IWS to get the details of the resource using Oracle Utilities adapter.

3. If lastSyncDateTime is empty:

   a. Transform the data from Oracle Utilities Work and Asset Cloud Service to Oracle Field Service format.

   b. Invoke "bulkUpdateInventories" OFSC REST API to sync the truck storeroom inventory.

      Note: If lastSyncDateTime is empty, initial sync.

4. If lastSyncDateTime is not empty:

   a. Invoke "Resource" OFSC business object to get resource inventory of a particular resourceId using the Oracle Field Service adapter.

   b. For each inventory entry from Oracle Utilities Work and Asset Cloud Service, check if the inventory exists in the list returned from Oracle Field Service in the above call.

      a. If it exists in the list, then get the quantity retrieved from Oracle Field Service for this inventory and add or remove the quantity from Oracle Utilities Work and Asset Cloud Service and create a new entry for the new request to be made to Oracle Field Service bulkUpdateInventories.

      b. If it does not exist in the list, add it to bulkUpdateInventories.

   c. Invoke bulkUpdateInventories OFSC REST API with the new bulkUpdateInventory.

      d.   Invoke Resource OFSC BO for the resource merging existing inventory details with latest from Oracle Utilities Work and Asset Cloud Service.

5. Any errors are captured through global fault handler.

6. An optional email notification with error details are sent to the users configured in the WAMOFSC_Email_ID lookup.

7. Email notification is optional. Configure the property name email.flag in the WAMOFSC_ConfigProps Lookup to true to receive email notification when errors are encountered.

Technical Details

The following table describes the integration processes and the respective Oracle Utilities Work and Asset Cloud Service and Oracle Field Service artifacts used in this integration process.

Artifacts	Value
Integration Process Name	outl.ba.wacs.ofsc.01.22.3000.par
Integration Package Name	Oracle Utilities OFSC WACS Storeroom Sync
OFSC BO/ Operation	Resource / Update Resource
OFSC REST URI	URI: /rest/ofscCore/v1/resources/custom-actions/ bulkUpdateInventories Method: POST
WACS SOAP IWS	W1-MobileStoreroomInventory

Option 2: Scheduled Storeroom Sync

Batch scheduled from Oracle Integration Cloud to run at a specific time of day/week/ month to run snapshot sync of all trucks synced between Oracle Utilities Work and Asset Cloud Service and Oracle Field Service.

The following Oracle Integration Cloud integration processes are involved to achieve this functionality:

- Oracle Utilities WACS OFSC Schedule Storeroom Sync
- Oracle Utilities OFSC WACS Storeroom Sync

Oracle Utilities WACS OFSC Schedule Storeroom Sync

The following diagram shows a graphical representation of the Oracle Utilities WACS OFSC Schedule Storeroom Sync integration process.
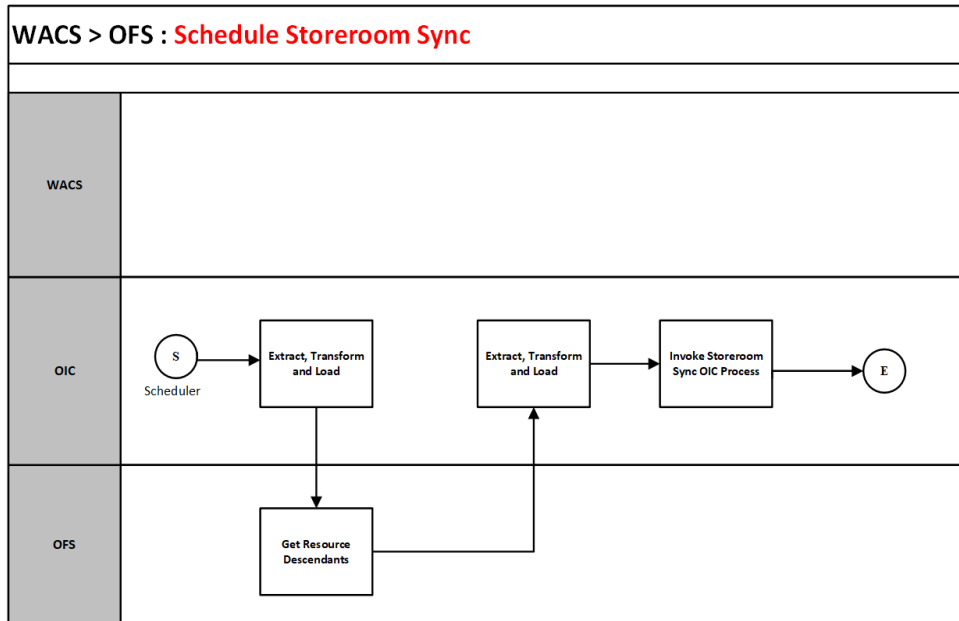
Business Processing

The integration process includes the following activities:

1. Oracle Utilities WACS OFSC Schedule Storeroom Sync is a batch process deployed on Oracle Integration Cloud and scheduled to run on a regular basis or as needed basis or turned off.

2. Integration process invokes Oracle Field Service to get the list of resources that are descendants of the respective Oracle Field Service bucket configured in the system.

3. For each descendant check if the resource type of "TR" and "wam_resource_source": "WACSTR"

4. If the resourcetype is truck, invoke Oracle Utilities OFSC WACS Storeroom Sync OIC integration process with the resourceId, resourceType and lastUpdatedDateTime as empty as input parameters.

5. Any errors are captured through global fault handler.

6. An optional email notification with error details are sent to the users configured in the WAMOFSC_Email_ID lookup.

7. Email notification is optional. Configure the property name email.flag in the WAMOFSC_ConfigProps Lookup to true to receive email notification when errors are encountered.

Technical Details

The following table describes the integration processes and the respective Oracle Utilities Work and Asset Cloud Service and Oracle Field Service artifacts used in this integration process.

Artifacts	Value
Integration Process Name	outl.ba.wacs.ofsc.01.22.3000.par
Integration Package Name	Oracle Utilities WACS OFSC Schedule Storeroom Sync

Artifacts	Value
OFSC REST URI	URI: /rest/ofscCore/v1/resources/OHMeter/ descendants
	Method: GET
Target OIC integration process name	Oracle Utilities OFSC WACS Storeroom Sync

Oracle Utilities OFSC WACS Storeroom Sync

For information about the Oracle Utilities OFSC WACS Storeroom Sync integration process, refer to the Oracle Utilities OFSC WACS Storeroom Sync section.

Activity Pull Update (Oracle Field Service Initiated)

This integration process 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 Work and Asset Cloud Service.

The following diagram shows a graphical representation of the Activity Pull Update integration process.
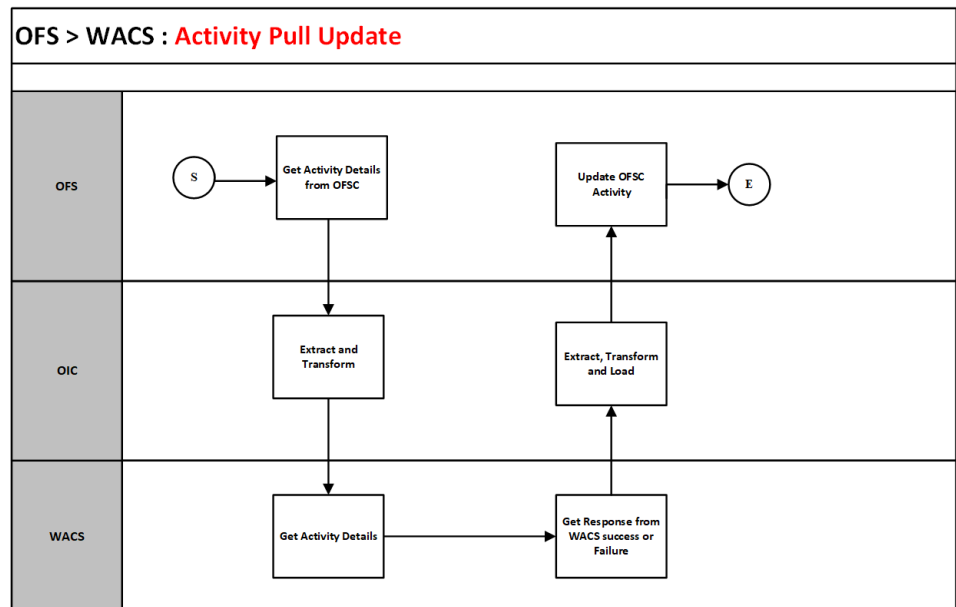
Business Processing

The integration process includes the following activities:

1. Oracle Utilities OFSC WACS Activity Pull Update is an event based process deployed on Oracle Integration Cloud.

2. Oracle Field Service fetches the work activity details using "Get activity" OFSC BO. Transforms the request message from Oracle Field Service Cloud to request message for Oracle Utilities Work and Asset Cloud Service and invokes W1-WOActivityDetails inbound web service.

3. Transform the response from Oracle Utilities Work and Asset Cloud Service to request message for Oracle Field Service and invoke "Bulk Update Activity" OFSC BO.

4. Any errors are captured through the global fault handler.

5. An optional email notification with error details are sent to the users configured in the WAMOFSC_Email_ID lookup.

6. Email notification is optional. Configure the property name email.flag in the WAMOFSC_ConfigProps Lookup to true to receive email notification when errors are generated.

Technical Details

The following table describes the integration processes and the respective Oracle Utilities Work and Asset Cloud Service and Oracle Field Service artifacts used in this integration process.

Artifacts	Value
Integration Process Name	outl.ba.wacs.ofsc.01.22.3000.par
Integration Package Name	Oracle Utilities OFSC WACS Activity Pull Update
OFS BO/Operation	Activity/Get Activity
	Activity/Bulk Update Activity
WACS SOAP IWS	W1-WOActivityDetails

Chapter 3

Configuring Oracle Utilities Work and Asset Cloud Service

This chapter elaborates about the configuration of about various data, messages and catalog for the integration used by Oracle Utilities Work and Asset Cloud Service. It includes the following sections:

- Configuring Admin Data
- Adding Oracle Integration Cloud Certificates
- Managing Catalog Services

Configuring Admin Data

To configure the Oracle Utilities Work and Asset Cloud Service setup for the integration:

1. Login to Oracle Utilities Work and Asset Cloud Service.

2. Create message senders. Refer to the Message Senders section for details.

3. Create outbound message types. Refer to the Outbound Message Types section for details.

4. Create an external system. Refer to the External System section for details.

5. Complete the master configuration.

6. Create activity types. Refer to the Admin Entities section for details.

7. Generate certificates. Refer to the Adding Oracle Integration Cloud Certificates section for more details.

8. Add the required Admin types.

Message Senders

Create a new message sender for each integration service initiated from Oracle Utilities Work and Asset Cloud Service.

To create a message sender:

1. Navigate to the **Message Sender** page from the **Admin** menu or from the **Search** menu.

2. Enter a unique message sender and its description.

3. Populate the following values:

    • Invocation Type - Real-time

    • Message Class - SOAPSNDR

    • Active - Select the checkbox.

    • MSG Encoding - UTF-8 message encoding

4. Select the **Context** tab and set values for the following context types:

    • HTTP Header - SOAPAction:"<operation name in Oracle Integration for Cloud Activated Integration wsdl url>"

    • HTTP Login User - User ID to access the Oracle Integration for Cloud flow

    • HTTP Password - Password to access the OIC flow

    • HTTP Method (POST/GET) - POST

    • HTTP Timeout - 60

    • HTTP Transport Method - SendReceive

    • HTTP URL 1 - Set the Activated Integration end point URL by removing the ?wsdl from the URL.

      If the URL value does not fit, use the additional HTTP URL types to set the complete URL.

    • Message Namespace URI - Provide the namespace of the schema in the respective integration process.

- Sender Security Type - Basic

  Important! Make sure the namespace does not include any extra spaces. Copy the namespaces into Notepad to check for any extra spaces.

Message sender configuration for integration services

Message Sender	Description	Message Namespace URI	HTTP Header	HTTP URL
Process Activity (create/update/cancel)				
WD_WO_PA	WAM process activity message Sender OFSC	http://ouaf.oracle.com/outbound/W1-WOActivityActiveOutboundMsg	SOAPAction: "OFSC_INT_WO_PA"	@EXT_PUB@OIC_Host:OIC_Port/ic/ws/integration/v1/flows/oracleutilities/OUTL-BA-WACS_OFSC_ACTIVITY_PROC/1.0/
	WAM process activity cancel	http://ouaf.oracle.com/outbound/W1-WOActivityActiveOutboundMsg		@EXT_PUB@OIC_Host:OIC_Port/ic/ws/integration/v1/flows/oracleutilities/PROCESS_ACTIVITY_WAMTOOFSC/1.0/

Outbound Message Types

The following outbound message types are provided for each integration process.

On the **Admin** menu, navigate to the **Outbound Message Type** page. You can also navigate from the **Search** menu.

Add the following details to create the outbound message type:

- **Outbound Message Type**: W1-WOACTAMSG
- **Description**: Process Activity ((create/update/cancel activity) Outbound Message Type
- **Outbound Message BO**: Activity Active Outbound Message
- **Priority**: 50

Add the following details to cancel outbound message type:

- **Outbound Message Type**: W1-WOACTFMSG
- **Description**: Cancel Work Order Activity
- **Outbound Message BO**: W1-WOActivityFinalOutboundMsg
- **Priority**: 50

External System

To create a new external system to support the integration:

1. Navigate to the **External System** page from the **Admin** menu or from the **Search** menu.

2. Enter a unique external system and description.

   For example: Name = WD-EXT-ACT, Description = OFSC External System

3. Set the **Our Name in Their System** field to "WAM".

4. Associate the outbound message types and message senders created to the external system.

   For each outbound message type, set the following:

   - **Outbound Message Type**: Outbound message type for the respective integration service

   - **Processing Method**: Real-time

   - **Message Sender**: Set the message sender created for the integration service

   - **Date/Time Format**: XSD

   - **Namespace Option**: Configured on sender

For more information about message senders and outbound message type for each integration service, refer to the Message Senders and External System sections respectively.

External system configuration for integration services

Example External System - WD-EXT-ACT

Integration Service	Outbound Message Type	Message Sender
Process Activity(create/update)	W1-WOACTAMSG	WD_WO_PA
Process Activity(cancel)	W1-WOACTFMSG	Cancel Act

Admin Entities

This section describes the entities required to support the integration.

The definition of each Activity Type for work activities that are interfaced to Oracle Field Service should include the following configuration:

- Outbound Activity Information

  - External System: <Created above> WD-EXT-ACT

    - Outbound Message Type: W1-WOACTAMSG, Usage: Add(W1AD)

    - Outbound Message Type: W1-WOACTAMSG, Usage: Cancel(W1CA)

    - Outbound Message Type: W1-WOACTAMSG, Usage: Update(W1UP)

- An optional list of Planned Service History

- The following completion events:

  - Create Any Service History (W1-CrAnyServiceHistComplEvtTyp)

- Create Operational Reading (W1-CreateOperationalRead)
- Update Worked Assets (W1-MobileUpdateWorkedAssets)
- Remove Non-Tracked Asset (W1-RemoveNonTrackedAsset)
- Remove Tracked Asset (W1-RemoveTrackedAsset)
- Attach Component (W1-AttachComponent)
- Install Non-Tracked Asset (W1-InstallNonTrackedAsset)
- Install Tracked Asset (W1-InstallTrackedAsset)

Adding Oracle Integration Cloud Certificates

Add the Oracle Integration for Cloud certificate to the Oracle Utilities Work and Asset Cloud Service stores where ever applicable to send transactions to the Oracle Integration for Cloud layer.

Managing Catalog Services

The catalog service is used by Oracle Integration for Cloud to communicate with the respective application. It is configured in Catalog URL in the Oracle Integration Cloud connection.

To configure the catalog service in Oracle Utilities Work and Asset Cloud Service:

1. Login to Oracle Utilities Work and Asset Cloud Service.

2. Navigate to the **Web Service Catalog** page either from the **Admin** menu or the **Search** menu.

   The external system and inbound web services mentioned in the table in step 3 are added to the catalog.

3. To get the catalog URL, append "webservices/builtin/ServiceCatalog?wsdl" to the on-premises application.

   Example: http(s)://<WAM_HOST>:<WAM_PORT>/<ContextRoot>/ webservices/builtin/ServiceCatalog?wsdl

   If you are using Oracle Utilities Work and Asset Cloud Service, the format should be: https://{host}:{port}/{tenant}/{domain}/{appName}/soap/api/iws/ ServiceCatalog?WSDL

Following is the list of artifacts to be included in web service catalog:

Service Type	Service Name	Device Verification
External System	WD-EXT-ACT	WD-EXT-ACT External System - Field Work System
Inbound Web Service	W1-ExtMobileControlData	External Mobile Control Data
Inbound Web Service	W1-IntODCDtl	Interface Other Direct Charge Details

Service Type	Service Name	Device Verification
Inbound Web Service	W1-IntTMSDtl	Interface Timesheet Details
Inbound Web Service	W1-MblActCom	Mobile Activity Completion
Inbound Web Service	W1GAstDtlBNo	Get Asset Details by Badge Number
Inbound Web Service	W1-WOActivityDetails	Get Activity Details
Inbound Web Service	W1-ActivityMaterialUsage	Activity Material Usage
Inbound Web Service	W1-UpdateActivityStatus	Update Activity Status
Inbound Web Service	W1-CreateMobileWorkOrder	Create Mobile Work Order
Inbound Web Service	W1-CreMoblWR	Create Mobile Work Request
Inbound Web Service	W1-SynchronizeMobileStoreroom Details	Synchronize Mobile Storeroom Details
Inbound Web Service	W1-MobileStoreroomInventory	Mobile Storeroom Inventory
Inbound Web Service	W1-AssetQuery	Asset Query
Inbound Web Service	W1-GetAssetLocationDetails	Get Asset/Location Details

For more information about configuration, refer to the Oracle Utilities Work and Asset Cloud Service documentation available on Oracle Help Center at:

https://docs.oracle.com/en/industries/energy-water/work-asset-cloud-service/index.html

Chapter 4

Configuring Oracle Field Service

For Oracle Field Service configuration information refer to the Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service Setup 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

Chapter 5

Importing, Configuring, and Testing Integration Connections

This chapter explains in detail the process for importing the connections, packages, and files needed for the integration and the configuration of these connections imported through the packages. After a successful import and configuration the chapter lists out steps to help test the connections. It includes the following sections:

- Importing the Oracle Integration Cloud Package from Oracle Cloud Marketplace

- Verifying the Package Import

- Configuring Connections in Oracle Integration Cloud

- Configuring Agent (if applicable)

- Setting up Certificates for Security

Importing the Oracle Integration Cloud Package from Oracle Cloud Marketplace

All integration points are shipped as part of single package (.par) file.

To import a pre-built integration from Oracle Cloud Marketplace:

1. Launch the Oracle Cloud Marketplace portal.

2. Click **Applications**.

3. Search for "Oracle Utilities Work and Asset Cloud Service".

4. Browse through the list of applications and select the pre-built integration package to import.

5. Click **GetApp**.

6. Review and accept "Oracle Standard Terms and Restrictions".

7. Click **Next**. My Oracle Support portal opens.

8. Download the integration package from My Oracle Support.

9. When prompted, select the server where the pre-built integration file should be uploaded.

   The pre-built integration is imported as a package file that is visible on the **Packages** page in Oracle Integration Cloud.

10. On the **Integrations** page, the individual integrations of the imported package file that are designated with a BUILT BY ORACLE message are displayed.

To import a package in Oracle Integration Cloud:

1. Login to Oracle Integration Cloud.

2. Navigate to **Integrations** > **Designer** > **Packages**.

3. Click **Import**.

4. Select the .par file downloaded from Oracle Cloud Marketplace.

5. Verify if the package is imported successfully.

Verifying the Package Import

To verify the package import was successful:

1. Verify whether the following integrations are imported successfully.

   • Oracle Utilities WACS OFSC Activity Process

   • Oracle Utilities WACS OFSC Admin Data Sync

   • Oracle Utilities OFSC WACS Activity Complete

   • Oracle Utilities OFSC WACS Resource Usage Details

   • Oracle Utilities OFSC WACS Asset Query

   • Oracle Utilities OFSC WACS Activity Interim Status

   • Oracle Utilities OFSC WACS Work Request

   • Oracle Utilities OFSC WACS Work Order

- Oracle Utilities OFSC WACS Activity Pull Update

- Oracle Utilities OFSC WACS Route Activation

- Oracle Utilities OFSC WACS Storeroom Sync

- Oracle Utilities WACS OFSC Schedule Storeroom Sync

- Oracle Utilities WACS OFSC Storeroom Admin Sync

2. Verify if the following connections are in place.

- Oracle Utilities REST for WACS-OFSC

- Oracle Utilities REST OFSC for WACS-OFSC

- Oracle Utilities OFSC for WACS-OFSC

- Oracle Utilities SOAP WACS for WACS-OFSC

3. Make sure that the following look ups are imported successfully.

- WAMOFSC_ActivityType

- WAMOFSC_Email_ID

- WAMOFSC_ConfigProps

- WAMOFSC_Language

- WAMOFSC_AttachmentBO

- WAMOFSC_ActivityStatus

- WAMOFSC_SegmentedActivityTypes

- WAMOFSC_ActivityTypeConfigProps

- WAMOFSC_ServiceArea

4. Make sure that the following libraries are imported successfully.

- WAMOFSC_AddOffsetToDateTime

- WAMOFSC_ConcatAddress

Configuring Connections in Oracle Integration Cloud

After the packages are imported and verified, the respective connections have to be configured.

This section describes the procedure to set up the following connections:

- Configuring Oracle Utilities SOAP WACS for WACS-OFSC Connection

- Configuring Oracle Utilities OFSC for WACS-OFSC Connection

- Configuring Oracle Utilities REST for WACS-OFSC Connection

- Configuring Oracle Utilities REST OFSC for WACS-OFSC Connection

Configuring Oracle Utilities SOAP WACS for WACS-OFSC Connection

This connection is used to communicate with Oracle Utilities Work and Asset Cloud Service using the Oracle Utilities adapter.

To configure the Oracle Utilities SOAP WACS for WACS-OFSC connection:

1. Add the Oracle Utilities Work and Asset catalog to the **catalogURL** section.

   In on-premises applications, make sure that the catalog is in the following format:

   http(s)://<WAM_HOST>:<WAM_PORT>/<ContextRoot>/webservices/builtin/ServiceCatalog?wsdl

   If you are using Oracle Utilities Work and Asset Cloud Service, the format should be: https://{host}:{port}/{tenant}/{domain}/{appName}/soap/api/ iws/ServiceCatalog?WSDL

2. On the **Security policy** tab, select the **Basic Authentication** policy.

3. In case of Oracle Utilities Work and Asset on-premises, configure the agent in the connection.

   a. In the **Agent Group** section, click **Configure Agents**.

   b. Select the agent group from the list created in Creating an Agent Group.

4. On the **Connection** page, enter the user name and password. Click **Test** at the upper-right corner.

5. After the connection is tested successfully, click **Save**.

Configuring Oracle Utilities OFSC for WACS-OFSC Connection

This connection is used to communicate with Oracle Field Service using the Oracle Field Service adapter.

Configure the Oracle Utilities OFSC for WACS-OFSC connection with the required details:

1. Enter the API URL in the **Field Service Cloud API URL** field.

2. Enter the **Instance ID**.

3. From the **Security Policy** drop-down list, select **Basic Authentication**.

4. As part of the user name and password, provide ClientID and Client Secret (you can retrieve them from the Oracle Field Service environment).

   Note: For more information, refer to the Oracle Field Service 22B documentation.

5. On the **Connection** page, enter the user name and password. Click **Test** at the upper-right corner.

6. After the connection is tested successfully, click **Save**.

Configuring Oracle Utilities REST for WACS-OFSC Connection

This connection is used to communicate with Oracle Field Service using the REST adapter. It is used in the Report usage flows (Oracle Field Service initiated flows triggered by Oracle Field Service).

Edit the Oracle Utilities REST for WACS-OFSC connection and test it to make sure it is successful. Click **Save**.

Configuring Oracle Utilities REST OFSC for WACS-OFSC Connection

This connection is used to communicate with the OFSC API using the REST adapter. It is used in the Admin sync flow inbound to Oracle Field Service.

Configure the Oracle Utilities REST OFSC for WACS-OFSC connection with required details:

1. From the **Connection Type** drop-down list, select **REST API Base URL**.

2. Do not configure the TLS version.

3. Enter **https://api.etadirect.com/rest** in the **Connection URL** field.

4. From the **Security Policy** drop-down list, select **Basic Authentication**.

5. On the **Connection** page, enter the user name and password. Click **Test**.

6. After the connection is tested successfully, click **Save**.

Configuring Agent (if applicable)

Create an agent group in Oracle Integration Cloud and install agent on the on-premises server before creating/activating an integration in which messages are exchanged between the on-premises applications and Oracle Integration Cloud. The agent related configurations are needed only if the server points to an on-premises application.

This section includes:

- Possible Combinations
- Creating an Agent Group
- Downloading Agent Installer
- Installing On-Premises Agent

Possible Combinations

The possible combination of an agent group is:

- Oracle Utilities Work and Asset Cloud Service on-premises and Oracle Field Service

Creating an Agent Group

Create an agent group in Oracle Integration Cloud before running the agent installer. When the on-premises agent is installed in the environment, the on-premises agent is

associated with the agent group identifier. Only one on-premises agent can be associated with an agent group.

For a single Oracle Integration Cloud instance, you can create up to five agent groups. Creating the agent group also creates the necessary queues required for message exchange.

To create an agent group:

1. Login to Oracle Integration Cloud.

2. On the **Home** page, navigate to **Integration** > **Agents**.

3. Click **Create Agent Group**.

4. Enter the following information:

    • Agent Group Name

    • Identifier

      Note: The agent group name and identifier must be same.

    • Description

5. Click **Create**.

Downloading Agent Installer

Download the agent installer from Oracle Integration Cloud and run the installer to install the on-premises agent in your local environment. During the installation, associate the agent with the Agent Group Identifier generated when creating an agent group in Oracle Integration Cloud.

For more information on agent installer, refer to the **Download and Run the Connectivity Agent Installer** section in the Oracle Integration Cloud documentation.

Installing On-Premises Agent

To install an on-premises agent:

1. Login to Oracle Integration Cloud.

2. On the **Home** page, navigate to **Integration** > **Agents**.

3. Click **Download**.

4. Select **Connectivity Agent**.

5. Select **Save File** when prompted to save the file to a directory location on your on-on-premises host.

6. Navigate to that directory and unzip **oic_connectivity_agent.zip**.

7. Change the file permissions to be executable.

8. Download the Oracle Utilities Work and Asset Cloud Service certificate and upload by running the below command from agent home directory.

   ```
   keytool -import -file directoryPath/sample.crt -alias SampleCert -
   keystore <Agent_Home>/agenthome/agent/cert/keystore.jks
   ```

9. Modify **InstallerProfile.cfg** to include the following information.

   a. Provide the oic_URL value with the OIC SSL host name.

      For example: https://OIC_host:OIC_port

   b. Provide the agent_GROUP_IDENTIFIER. It should be the agent group created in Oracle Integration Cloud.

   c. Set the proxy parameters if the connectivity agent is used with a proxy in the on-premises environment.

   d. Set the JAVA_HOME property to the directory/folder where JDK is installed.

      Note: Before running the connectivity agent installer, perform the steps in the Oracle Utilities Adapter with Oracle Integration documentation.

   e. Run the connectivity agent installer from the command prompt.

      ```
      java -jar connectivityagent.jar
      ```

   f. Provide the Oracle Integration Cloud credentials when prompted.

   g. Wait for a successful installation message to appear.

After the installation is complete, an agent instance is created to interact with Oracle Integration Cloud.

To verify if the agent instance was created:

1. Navigate to **Integration** > **Agents** in Oracle Integration Cloud.

2. Check if the agent count for your **Agent Group** is increased by one.

3. Click the number to view the agent details.

For more details, refer to Oracle Integration Cloud documentation.

Setting up Certificates for Security

> **Important!** Skip this section if there are valid CA certificates for the integration.

If there no valid certificates for this integration, download the Oracle Utilities Work and Asset Cloud Service certificates and upload them to Oracle Integration Cloud to handshake with Oracle Utilities Work and Asset Cloud Service.

To download the Oracle Utilities Work and Asset Cloud Service certificate:

1. Login to Oracle Utilities Work and Asset Cloud Service.

2. Click the URL on the top-left corner.

3. On the **Security** tab, click **View Certificate**.

4. On the **Details** tab, click **Export**.

5. Save the certificate.

To upload the certificate to Oracle Integration Cloud:

1. Login to Oracle Integration Cloud with Admin credentials.

2. Navigate to **Settings** > **Certificates**.

3. On the **Certificate** window, click **Upload**.

4. Select **Certificate Type** as **Trust Certificate**.

5. Provide the **Certificate Alias Name**.

6. Select the certificate to upload.

7. Click **Upload**.

Chapter 6

Configuring Lookups, Error Handling, and Email Notifications

This chapter focuses on the lookups configuration, handling business and technical errors, sending email notifications, and customizations in this integration. It includes the following sections:

- Configuring Lookups
- Error Handling
- Email Notifications

Configuring Lookups

The following table lists the lookups that are part of this integration.

Lookup Name	Integration Name	Purpose
WAMOFSC_Attachment BO	Oracle Utilities OFSC WACS Activity Complete	Translates OFSC attachment MIME type to WAM BO name. **Note**: Only on the edit of a service history, can we add an attachment to a service history. If a specific file type cannot be attached at service history, check if the corresponding file type is mentioned in this lookup; add it if is missing. Also, verify if the respective MIME type is available in OFSC properties wam_upload_attachment_1 to wam_upload_attachment_5.
WAMOFSC_ ActivityType	Oracle Utilities WACS OFSC Activity Process Oracle Utilities OFSC WACS Activity Pull Update	Translates the WAM Activity Type to OFSC Activity Type.

Lookup Name	Integration Name	Purpose
WAMOFSC_Email_ID	Oracle Utilities OFSC WACS Activity Interim Status	Used to configure the email IDs of the respective users.
	Oracle Utilities WACS OFSC Activity Process	Under the Email_Id column where the value of Recipient is "to", add comma separated email IDs to send an email to multiple users.
	Oracle Utilities OFSC WACS Resource Usage Details	
	Oracle Utilities OFSC WACS Work Order	Do not change or add any values under the Recipient column.
	Oracle Utilities OFSC WACS Activity Complete	
	Oracle Utilities WACS OFSC Admin Data Sync	
	Oracle Utilities OFSC WACS Work Request	
	Oracle Utilities OFSC WACS Asset Query	
	Oracle Utilities OFSC WACS Activity Pull Update	
	Oracle Utilities OFSC WACS Route Activation	
	Oracle Utilities WACS OFSC Schedule Storeroom Sync	
	Oracle Utilities OFSC WACS Storeroom Sync	
	Oracle Utilities WACS OFSC Storeroom Admin Sync	

Lookup Name	Integration Name	Purpose
WAMOFSC_ ConfigProps	Oracle Utilities OFSC WACS Resource Usage Details	Used for configurable properties.
	Oracle Utilities OFSC WACS Activity Complete	
	Oracle Utilities WACS OFSC Admin Data Sync	
	Oracle Utilities OFSC WACS Activity Interim Status	
	Oracle Utilities WACS OFSC Activity Process	
	Oracle Utilities OFSC WACS Activity Pull Update	
	Oracle Utilities OFSC WACS Work Order	
	Oracle Utilities OFSC WACS Work Request	
	Oracle Utilities OFSC WACS Route Activation	
	Oracle Utilities OFSC WACS Storeroom Sync	
	Oracle Utilities WACS OFSC Storeroom Admin Sync	
	Oracle Utilities WACS OFSC Schedule Storeroom Sync	
WAMOFSC_Language	Oracle Utilities WACS OFSC Admin Data Sync	Translates the language code from WAM to OFSC.
WAMOFSC_ ActivityStatus	Oracle Utilities OFSC WACS Activity Interim Status	Translation between WAM Activity status and the OFSC status.
WAMOFSC_ SegmentedActivityTypes	Oracle Utilities WACS OFSC Admin Data Sync	Used to identify activity types in OFSC that needs segmentation.
WAMOFSC_ActivityType ConfigProps	Oracle Utilities WACS OFSC Admin Data Sync	Used to sync between the two systems
WAMOFSC_ServiceArea	Oracle Utilities WACS OFSC Activity Process	Maps service area to the bucket name

Editing Lookups

To edit a lookup:

1. Login to Oracle Integration for Cloud.

2. Navigate to **Integrations** > **Lookups**.

3. Select the look up to edit.

4. Make the necessary changes.

5. Click **Save** and **Close**.

Configuration Properties

WAMOFSC_ConfigProps lookup contains the properties that can be defaulted in the integration. It also contains a flag to enable email notifications.

Property Name	Sample Value	Description	Used in Integration Process Name
source.system	WAM	Defines the WAM product code	Oracle Utilities WACS OFSC Activity Process Oracle Utilities OFSC WACS Activity Complete
asset.inventory.type	Asset	Defines asset inventory type	Oracle Utilities WACS OFSC Activity Process
email.flag	true	Configures the optional email notification. If the value is set to true, email notification will be sent to the configured users.	Oracle Utilities WACS OFSC Admin Data Sync Oracle Utilities WACS OFSC Activity Process Oracle Utilities OFSC WACS Resource Usage Details Oracle Utilities OFSC WACS Activity Complete
mat.inventory.type	Material	Inventory Type	Oracle Utilities WACS OFSC Activity Process Oracle Utilities OFSC WACS Activity Complete
ofsc.bucket	OHMeter	Configures the bucket name available in OFSC to assign the tasks	Oracle Utilities WACS OFSC Activity Process
activeFlag.default	true	Used for enumeration property values and workskill creation	Oracle Utilities WACS OFSC Admin Data Sync

Property Name	Sample Value	Description	Used in Integration Process Name
workSkill.sharing.default	summary	Default sharing used for workskill creation	Oracle Utilities OFSC WACS Activity Complete Oracle Utilities WACS OFSC Activity Process Oracle Utilities WACS OFSC Admin Data Sync
workSkillProperty.type. default	string	Default type used for workskill property creation	Oracle Utilities WACS OFSC Admin Data Sync
workSkillProperty.entity. default	activity	Default entity used for workskill property creation	Oracle Utilities WACS OFSC Admin Data Sync
workSkillProperty.gui. default	text	Default GUI used for workskill property creation	Oracle Utilities WACS OFSC Admin Data Sync
workSkillProperty.nameSuffix.default	needed	Name suffix default used for workskill property creation	Oracle Utilities WACS OFSC Admin Data Sync
workSkillCond.actvtySameSkillMaxWorker.default	3	Default value for maximum number of people with the same work skill allowed to work simultaneously in an activity used for workskill condition creation	Oracle Utilities WACS OFSC Admin Data Sync
workSkillCond.function. default	in	Default function used for workskill condition creation	Oracle Utilities WACS OFSC Admin Data Sync
wam.handleTextFileDecoding	true	Default value used for Decoding	Oracle Utilities OFSC WACS Activity Complete
wam.timeZoneIANA	America/Los_Angeles	Default value for timezone	Oracle Utilities OFSC WACS Activity Complete
default.user.flag	false	Default value of user flag	Oracle Utilities OFSC WACS Work Order
default.userId	OFSCUSER	Default user ID	Oracle Utilities OFSC WACS Work Order
issuedAsset.inventory.type	issuedAsset	Inventory type for issued Asset	Oracle Utilities WACS OFSC Activity Process
mobileStoreroom. language.default	en	Default language value	Oracle Utilities WACS OFSC Storeroom Admin Sync
mobileStoreroom. timeZone.default	America/New_York	Default timezone	Oracle Utilities WACS OFSC Storeroom Admin Sync
issuedComponent. inventory.type	issuedComponent	Inventory type for issued component	Oracle Utilities WACS OFSC Activity Process
mobileStoreroom. resource.type	TR	Truck type	Oracle Utilities WACS OFSC Storeroom Admin Sync

Property Name	Sample Value	Description	Used in Integration Process Name
mobileStoreroom. resource.source	WACSTR	Truck resource	Oracle Utilities WACS OFSC Storeroom Admin Sync
mobileStoreroom. organization	default	Default value for mobile storeroom	Oracle Utilities WACS OFSC Storeroom Admin Sync
controlDataEntities. default	yes	Default type used to check whether to sync controlDataEntity properties to OFSC. By default, it is set to 'yes'.	Oracle Utilities WACS OFSC Admin Data Sync
resourceTypes.default	yes	Default type used to check whether to sync resourceTypes properties to OFSC. By default, it is set to 'yes'.	Oracle Utilities WACS OFSC Admin Data Sync
search.dateFrom	(2022-03-01)yyyy-mm-dd	Default value used to store date for searching activity in OFSC	Oracle Utilities WACS OFSC Activity Process
createEquipmentWorkSkills.flag	no	Flag used to check whether to create equipment workskills in OFSC. By default, it is set to 'no'.	Oracle Utilities WACS OFSC Admin Data Sync
workSkill.Equipment.sharing.default	summary	Default sharing used for equipment workskill creation	Oracle Utilities WACS OFSC Admin Data Sync
workSkillCond.actvtyMaxEquipment.default	3	Default value for maximum number of equipment with the same work skill allowed to work simultaneously in an activity used for workskill condition creation.	Oracle Utilities WACS OFSC Admin Data Sync
wam.active.default	true	Default value used for active status	Oracle Utilities WACS OFSC Activity Process
lock.functionality	true	Default value used to enable the lock functionality in OFSC.	Oracle Utilities WACS OFSC Activity Process

Error Handling

This section provides information about the different ways used to handle errors in the integration and also resubmitting the instances after rectifying the errors.

- Error Handling Ways
- Resubmitting the Error Instances in Oracle Integration Cloud

Error Handling Ways

In this integration, the errors are handled in different ways due to the limitation of Oracle Integration Cloud.

- Synchronous Flow Error Handling
- Asynchronous Flow Error Handling

Synchronous Flow Error Handling

As part this error handler the errors are sent back to the respective system in the same flow.

Technical Fault

This fault occurs when there is a data mismatch or any Xpath related error. On this error, the flow immediately goes to global fault handler and the fault is sent back to the respective system.

Remote Fault

This fault occurs when the target system is down. When this error occurs the flow immediately goes to global fault handler and the fault is sent back to the respective system.

Business Fault

This fault occurs only when the business fault occurs in the target system due to invalid data. When this error occurs the error information is sent back to the respective system as a fault.

Asynchronous Flow Error Handling

Technical Fault

This fault occurs when there is a data mismatch or any Xpath related error. When this error occurs, the flow immediately goes to global fault handler and an optional email to the respective user is sent.

Remote Fault

This fault occurs when the target system is down. When this error occurs, the flow immediately goes to global fault handler and an optional email is sent to the respective user.

Business Fault

This fault occurs only when the business fault occurs in the target system due to invalid data. When this fault occurs, the error information is sent to the source system and an optional email notification is sent to the respective user.

Resubmitting the Error Instances in Oracle Integration Cloud

In this integration, the flows initiated by Oracle Field Service are asynchronous flows, and the resubmit option is available only for asynchronous flows.

To resubmit the error instances in Oracle Field Service:

1. Login to Oracle Field Service.

2. Navigate **Monitoring** > **Integrations** > **Errors**.

3. Select the integration to resubmit.

4. Click the **Resubmit** icon.

Email Notifications

This pre-built integration includes a configurable email notification.

To receive an email notification:

1. Login to Oracle Integration Cloud.

2. Navigate to **Integrations** > **Lookups**.

3. Edit the **WAMOFSC_ConfigProps** look up.

   Change the **email.flag** property value to 'true'.

4. Edit the **WAMOFSC_Email_ID** look up.

   a. In the **from** field, enter the email ID to receive an email from.

   b. In the **to** field, enter the email ID to send the email to.

   c. In the **Email_Id** field, provide the comma separated email IDs.

      Note: In the WAMOFSC_Email_ID lookup, do not edit the values provided under the **Recipient** column.

Chapter 7

Extension Libraries in Oracle Integration Cloud

The extension libraries provide a means to register and organize JavaScript for use in integrations. Library functions are automatically available for you to drag from the **Actions** palette to your orchestration integrations.

This integration includes the following extension libraries:

Extension Library	Function	Description	Used in Integration Process
WAMOFSC_AddOffsetTo DateTime	WAMOFSC_addOffsetTo DateTime	Adds the offset needed for conversion	Oracle Utilities OFSC WACS Activity Complete
WAMOFSC_ConcatAddress	WAMOFSC_ConcatAddress	Concatenates the address information	Oracle Utilities WACS OFSC Activity Process

The same extension libraries can be accessed from the **Libraries** page in Oracle Integration Cloud. For more information about extension libraries, refer to the Oracle Integration Cloud documentation.

Chapter 8

Activating and Testing the Integration Flows

This section provides an overview of how integration flows are activated and tested. It includes the following sections:

- Prerequisites
- Activating Integration Flows
- Testing the Integration Flows

Prerequisites

Make sure the catalog in Oracle Utilities Work and Asset Cloud Service is configured completely to activate an integration process.

Activating Integration Flows

To activate the integration flows:

1. Login to Oracle Integration Cloud.

2. From **Home** page, navigate to the integration to activate.

3. Drag the slider for that integration. When prompted to enable tracing, click **Yes** to view the instances.

4. Click **Activate**.

The integration takes time to get activated. The activated integration appears at the top of the integrations list.

Testing the Integration Flows

The following table lists the end point URLs for respective applications in which these endpoints need to be configured. Configure the same and perform an end-to-end testing.

Integration Name	End Point URL to be Configured	Application to be Configured
Oracle Utilities WACS OFSC Activity Process	https://OIC_Host:OIC_Port/ic/ws/integration/v1/flows/oracleutilities/OUTL-BA-WACS_OFSC_ACTIVITY_PROC/1.0/	WAM/WACS
Oracle Utilities OFSC WACS Activity Complete	https://OIC_Host:OIC_Port/ic/api/integration/v1/flows/ofsccloudadapter/OUTL-BA-OFSC_WACS_ACTIVITY_COMP /1.0/notify	As OFSC is event based, there is no need to configure the integration endpoint URLs. Subscription for the event will be created once the respective integration is activated.
Oracle Utilities WACS OFSC Admin Data Sync	https://OIC_Host:OIC_Port/ic/api/integration/v1/integrations/OUTL-BA-WACS_OFSC_ADMIN_SYNC%7C01.00.0000 / schedule/jobs	An OIC initiated flow that can be triggered by selecting the hamburger and select Submit Now.
Oracle Utilities OFSC WACS Resource Usage Details	https://OIC_Host:OIC_Port/ic/api/integration/v1/flows/rest/OUTL-BA-OFSC_WACS_RES_USAGE_SEND /1.0/ resourceUsage	OFSC

Integration Name	End Point URL to be Configured	Application to be Configured
Oracle Utilities OFSC WACS Asset Query	https://OIC_HostOIC_Port/ic/api/integration/ v1/flows/rest/ OUTL-BA- OFSC_WACS_ASSET_QUERY /1.0/assetQuery https://OIC_Host:OIC_Port/ic/api/integration/ v1/flows/rest/OUTL-BA- OFSC_WACS_ASSET_QUERY/1.0/ assetQueryDetailsPickup https://OIC_Host:OIC_Port/ic/api/integration/ v1/flows/rest/OUTL-BA- OFSC_WACS_ASSET_QUERY/1.0/ assetQueryDetails	OFSC
Oracle Utilities OFSC WACS Activity Interim Status	https://OIC_HostOIC_Port/ic/api/integration/ v1/flows/ofsccloudadapter/ OUTL-BA- OFSC_WACS_ACTIVITY_STAT /1.0/ notify	OFSC
Oracle Utilities OFSC WACS Work Request	https://OIC_Host:OIC_Port/ic/api/integration/ v1/flows/ofsccloudadapter/OUTL-BA- OFSC_WACS_WORK_REQ/1.0/notify	OFSC
Oracle Utilities OFSC WACS Work Order	https://OIC_Host:OIC_Port/ic/api/integration/ v1/flows/ofsccloudadapter/OUTL-BA- OFSC_WACS_WORK_ORDER/1.0/notify	OFSC
Oracle Utilities OFSC WACS Activity Pull Update	https://OIC_Host:OIC_Port/ic/api/integration/ v1/flows/rest/OUTL-BA- OFSC_WACS_ACT_UPDT_PULL_/1.0/ retrieveUpdates	OFSC
Oracle Utilities OFSC WACS Route Activation	https://OIC_Host:OIC_Port/ic/api/integration/ v1/ integrations/OUTL-BA- OFSC_WACS_RTE_ACTIVATION/1.0/notify	OFSC
Oracle Utilities WACS OFSC Schedule Storeroom Sync	https://OIC_Host:OIC_Port/ic/api/integration/ v1/ integrations/OUTL-BA- WACS_OFSC_SCH_STRM_SYNC%7C01.22.3000 /schedule/jobs	OFSC
Oracle Utilities WACS OFSC Storeroom Admin Sync	https://OIC_Host:OIC_Port/ic/api/integration/ v1/flows/ofsccloudadapter/OUTL-BA- WACS_OFSC_STRM_ADMN_SYNC%7C01.22.30 00/schedule/jobs	WACS
Oracle Utilities OFSC WACS Storeroom Sync	https://OIC_Host:OIC_Port/ /ic/api/integration/ v1/flows/rest/OUTL-BA- OFSC_WACS_STOREROOM_SYNC/1.0/ syncStoreroom	OFSC

Chapter 9

Monitoring and Troubleshooting

This chapter provides information about monitoring and troubleshooting the integration. It includes the following:

- Oracle Utilities Work and Asset Cloud Service
- Oracle Integration Cloud

Oracle Utilities Work and Asset Cloud Service

This section provides information about monitoring Oracle Utilities Work and Asset Cloud Service.

Oracle Utilities Work and Asset Cloud Service Error Logs

Monitoring the error logs is possible only in on-premises applications. Applications on cloud cannot access the error logs.

The following error logs can be monitored for Oracle Utilities Work and Asset Management:

- Errors related to the online integration invocation from Oracle Utilities Work and Asset Management are stored in the WACS_ENVIRONMENT_NAME/ logs/ or WAM_ENVIRONMENT_NAME/logs/system folder.

  For example: V24001_WAM_ORA_WLS/logs/system\

For more information about errors and notifications, see the Oracle Utilities Work and Asset Cloud Service documentation.

Oracle Integration Cloud

This section focuses on the monitoring Oracle Integration Cloud and troubleshooting any issues that occur during the integration activation.

Monitoring Integration Flows

Integration flows are monitored using the following:

- Dashboard
- Cloud Logs

To monitor the integration flows from the Oracle Integration Cloud dashboard:

1. Login to Oracle Integration Cloud.

2. On the **Home** page, click **Monitoring**.

3. Select any of the following as required:

   - **Dashboards**: To monitor the complete dashboard of integration.

   - **Integrations**: To monitor each integration.

   - **Tracking**: To monitor instance and flow trace/activity stream of the integration.

   - **Error**: To monitor the integrations in 'error' state. Re-submit the asynchronous integration flows.

To monitor the integration flows using Oracle Integration Cloud logs:

1. Login to Oracle Integration Cloud.

2. On the **Home** page, click **Monitoring**.

3. On the navigation pane, click **Dashboards** > **Integrations** > **Dashboards** to view the overall success/failure rate of the integration.

4. Navigate to the **Logs** menu.

5. In the right pane, click the link to show options for downloading the Oracle Integration Cloud logs or diagnostics logs.

6. In case of any issues, attach the diagnostic logs to a service request for help.

Troubleshooting

If an activation fails, the Integrations page displays an error message.

To troubleshoot the activation error:

1. Click **Download Diagnostic Logs** to download the logs for diagnosing the issue.

2. Select **Enable Tracing**.

   TRACE ENABLED is displayed next to ACTIVE.

Some of the sample cases are as follows:

- For any connectivity errors while activating the integration, make sure the trigger connection is successful. Test the connection and refresh the metadata, and then activate the integration.

- If the integration (Oracle Utilities Work and Asset Cloud Service initiated flows) is activated for the first time, ensure the Oracle Utilities Work and Asset Cloud Service catalog is configured accurately.

Appendix A

Validation Algorithms

This appendix focuses on the algorithms in inbound communication and completion events.

- Completion Events

Completion Events

The completion events in this integration are as follows:

Activity Type	Completion Events	Required	Algorithm	Description
WD-EXT-ACT	W1-CrAnyServiceHistComplEvtTyp	Optional		Create Any Service History The Required value source xpath needs to be configured: rawMessage/completion/ assetLocationAssets/ assetLocationAssetList/ serviceHistories
	W1-CreateOperationalRead	Optional		Create Operational Reading The required source xpath needs to be configured: rawMessage/completion/ assetLocationAssets/ assetLocationAssetList/ measurements
	W1-MobileUpdateWorkedAssets	Optional		Update Worked Assets The required source xpath needs to be configured: rawMessage/activityId
	W1-RemoveNonTrackedAsset	Optional		Remove Non- Tracked Asset The Required value source xpath needs to be configured: rawMessage/completion/ assetLocationAssets/ assetLocationAssetList/ actionTaken
	W1-RemoveTrackedAsset	Optional		Remove Tracked Asset The required source xpath needs to be configured: rawMessage/completion/ assetLocationAssets/ assetLocationAssetList/ actionTaken
	W1-AttachComponent	Optional		Attach Component The required source xpath needs to be configured: rawMessage/completion/ assetLocationAssets/ assetLocationAssetList/actionTaken Required Value Source XPath Value: W1IN

Activity Type	Completion Events	Required	Algorithm	Description
	W1-InstallNonTrackedAsset	Optional		Install Non Tracked Asset
				The Required value source xpath needs to be configured: rawMessage/completion/ assetLocationAssets/ assetLocationAssetList/ actionTaken
				Required Value Source XPath Value: W1IN
	W1-InstallTrackedAsset	Optional		Install Tracked Asset
				The required source xpath needs to be configured: rawMessage/completion/ assetLocationAssets/ assetLocationAssetList/ actionTaken
				Required Value Source XPath Value: W1IN