

**Oracle Field Service Configurations for
Oracle Utilities Network Management
System Integration to Oracle Field
Service**

Setup Guide

Release 23C

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Oracle Field Service Configurations for Oracle Utilities Network Management System Integration to Oracle
Field Service Setup Guide

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Preface

Welcome to the Oracle Field Service Configurations for Oracle Utilities Network Management System Integration to Oracle Field Service Setup Guide for release 23C. This document covers relevant information to manage and configure Oracle Field Service as required by the integration.

Note: The screenshots and images provided in this document are sample references based on the current release of Oracle Field Service Configurations for Oracle Utilities Network Management System Integration to Oracle Field Service. They may change based on changes in future releases.

The preface includes the following:

- [Audience](#)
- [Documentation and Resources](#)
- [Updates to Documentation](#)
- [Documentation Accessibility](#)
- [Conventions](#)
- [Acronyms](#)

Audience

This document is intended for anyone implementing the integration between Oracle Utilities Network Management System and Oracle Field Service.

Documentation and Resources

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

Product Documentation

Resource	Location
Oracle Field Service Configurations for Oracle Utilities Network Management System Integration to Oracle Field Service documentation	https://docs.oracle.com/en/industries/energy-water/integrations-index.html
Oracle Utilities Network Management System documentation	https://docs.oracle.com/en/industries/energy-water/network-management-system/index.html
Oracle Field Service documentation	https://docs.oracle.com/en/cloud/saas/field-service/index.html

Additional Documentation

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

Updates to Documentation

The complete Oracle Field Service Configurations for Oracle Utilities Network Management System Integration to Oracle Field Service documentation set is available from Oracle Help Center at <https://docs.oracle.com/en/industries/energy-water/index.html>.

Visit [My Oracle Support](#) for additional and updated information about the product.

Documentation Accessibility

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

Access to Oracle Support

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

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	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
OUNMS	Oracle Utilities Network Management System
OFS	Oracle Field Service
OIC	Oracle Integration Cloud
OMA	Operations Mobile Application

Statute of Limitations

The screenshots in this guide were made for version 22C and might not reflect the latest updates made to screens in the product's current version.

Chapter 1

Accelerator Overview

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

- [Configuration Overview](#)
- [Accelerator Package](#)
- [Accelerator Activity Types](#)

Configuration Overview

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

Accelerator Package

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

The package helps customers configure and set up Oracle Field Service used in Oracle Utilities Network Management System integration with Oracle Field Service. The integration package contains only Oracle Utilities Network Management System and Oracle Integration Cloud configuration files and instructions hence this document is used in addition to the integration package that provides a complete end-to-end set up for the integration.

The contents of the package are:

- **User Types:** Define layouts and UI screens. For more details, refer to the [User Types](#) section.
- **Properties:** Create layouts and mapping. For more information, see the [Properties](#) section.
- **Plugins:** The plugins that are part of this integration are incidents, restoration data, pickup order, and attachments. Refer to the [Forms and Plugins](#) section for more information.

Accelerator Activity Types

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

Chapter 2

Installing Basic Accelerator Package

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

The chapter focuses on the following:

- [Order of Importing the Package](#)
- [Activity Types](#)
- [Properties](#)
- [Forms and Plugins](#)
- [User Types](#)

Order of Importing the Package

Make sure to import the package in the following order:

- Activity Types
- Properties Incidents Plugin
- Restoration Data Plugin
- Attachments NMS Plugin
- NMS Pickup Order Plugin
- OMA Damage Assessment
- OMA Unrelated Work
- OMA Switching
- Failed Equipment Form
- Event Details Form
- NMS OFSC User Type
- NMS OFSC Dispatcher User Type

Activity Types

Activity types define the categories of the activity supported by Oracle Field Service (in this case, Oracle Utilities Network Management System Integration to Oracle Field Service). In the activity type, various fields (such as time slots and activity status) are denoted using colors and features that each activity type supports. They can be customized for each activity type.

To create an activity type:

1. Navigate to the **Configuration** page > **Resources, Activities, Inventories** > **Activity Types**.
2. Click **Add Group**.
3. Enter “NMS-OFSC” in the **Label** field. Enter “NMS-OFSC” as the **English** translation value. Skip this step if the values already exist.
4. Click **Add Activity Type**.
5. Enter “NMS Trouble Activity” as the name of the activity type. Include other details and click **Add**.
6. To add other activity types, clone and modify the name and details as required. Make sure to have corresponding lookup values in OUTL-BRT-NMS_OFSC_ActivityType lookup for all activity types in Oracle Integration Cloud.
7. Add only those Activity Types that are needed and specific to the customers.

The screenshot shows the configuration page for a property named 'NMS-TROUBLE'. The configuration includes the following fields and options:

- * Label:** NMS-TROUBLE
- * Name:**
 - English: NMS Trouble Activity
 - SpanishLA:
 - Portuguese (Brazil):
- Active:**
- Group:** NMS-OFSC
- * Default Duration:** 48 minutes
- Color scheme:**
 - Copy from:
 - Pending: FFDE00
 - Completed: 79B6EB
 - Warning: FFAAAA
 - Suspended: 99FFFF
 - Not Done: 60CECE
 - Not Ordered: FFCC99
 - Started: 5DBE3F
 - En route: FFDE00
 - Cancelled: 80FF80
- Available time slots:**
 - 08-10 (08:00 AM - 10:00 AM) - disabled
- Options:**
 - Allow mass activities
 - Teamwork
 - Enable segmenting and extended duration
 - Allow move between resources
 - Allow creation in buckets
 - Allow reschedule
 - Support of not-ordered activities
 - Allow non-scheduled
 - Support of work zones
 - Support of work skills
 - Support of time slots
 - Support of inventory
 - Support of links
 - Support of preferred resources
 - Allow Repeating Activities
 - Calculate travel
 - Calculate activity duration using statistics
 - Allow to search
 - Allow to create from Incoming interface
 - Enable 'day before' trigger
 - Enable 'reminder' and 'change' triggers
 - Enable 'not started' trigger

Properties

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

To import the property file that is a part of the accelerator package:

1. Navigate to the **Configuration** page > **Resources, Activities, Inventories** > **Properties**.
2. Click **Import**.

ID	Property name	Property Label	Type	Entity	GUI	Actions
509	Activity status	status	text	Activity	text	Modify
862	# Pints	no_pints	integer	Activity	text	Modify

3. Browse to the location of the properties file “NMS_OFSC_Properties.xml” to be imported and click **Import**.
4. Verify the successful import of the file.

The **Successfully Imported** message with number of properties imported is displayed. Make sure the **Imported with warnings** and **Not imported count** is 0.

Forms and Plugins

Plugins are used to make changes to screen and data, based on their type and status of target and parent object. Plug-ins in Oracle Field Service perform actions not found in the standard solution. They appear as selectable links on the application. They open a

new window, tab, or frame in a browser where an external HTML5 application is executed.

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

<https://docs.oracle.com/en/cloud/saas/field-service/21c/fapcf/overview-of-the-plugin-api.html#overview-of-the-plugin-api>

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

During setup, some of the plugins require you to assign a value to their predefined secure parameters. These secure parameters are used in the corresponding JavaScript to complete the task assigned.

Following are the plugins and forms that needs to be present or imported:

- [Incidents Plugin](#)
- [Restoration Data Plugin](#)
- [Attachments Plugin](#)
- [Pickup Order Plugin](#)
- [OMA Damage Assessment Plugin](#)
- [OMA Switching Plugin](#)
- [OMA Unrelated Work](#)
- [Failed Equipment Form](#)
- [Event Details Form](#)

Incidents Plugin

Incidents plugin is used to show calls or incidents logged into Oracle Utilities Network Management System for an event. If there is an outage, the customer can call support who may log the call against an incident using Web Call Entry interface. This update will trigger an outbound from Oracle Utilities Network Management System to Oracle Field Service with the updated call details. On the Oracle Field Service side, crew can visit the activity associated with the event and view all calls logged against it.

To import the Incidents plugin:

1. Log in to Oracle Field Service with valid credentials.
2. Click the options menu icon on the **Home** page.
3. Navigate to **Configuration > Displays > Forms and Plugins**.
4. Click **Import > Plugins** from the drop-down list.
5. Select, or drag and drop, the XML file `NMS_OFSC_Incidents_Plugin.xml` to set the Incidents plugin provided with accelerator package.
6. Click **Continue**. Oracle Field Service validates the plugin. The number of valid items should be 1.

7. Click **Apply**. Make sure the Number of imported is 1 and the Number of not imported is 0.
8. Find and click the Incidents plugin to make sure the **Available Properties** tab is populated with all available properties if any.

Restoration Data Plugin

This plugin will be used by crew to capture periodic restoration information after the activity assigned to the crew is started in Oracle Field Service. Once the restoration is complete, crew can capture the same with completion timestamp and send it across to Oracle Utilities Network Management System. Information updated by this plugin also causes Oracle Utilities Network Management System to send an outbound message back to Oracle Field Service with updated information.

To import the Restoration Data plugin:

1. Repeat steps 1 to 5 from the [Incidents Plugin](#) section.
2. Click **Import Plugins** to import the Restoration Data plugin provided in the package.
3. Find and click the **Restoration Data** plugin to make sure the **Available Properties** tab is populated with the following properties:

4. Click the edit icon to set a value for the secure parameter `ert_min_threshold_minute`.

5. Enter the value and click **Modify**.

Note: This value should be the minimum number of minutes that it takes for the activity to be restored.

Attachments Plugin

This plugin is used to upload and show attachments uploaded either from Oracle Field Service or Oracle Utilities Network Management System. Oracle Utilities Network Management System activity may contain attachments originated from two different sources. Attachments can be uploaded to an Activity in Oracle Field Service, or they can be uploaded into an event in Oracle Utilities Network Management System. In both scenarios, attachments can be viewed in the **Activity Details** page in Oracle Field Service.

To import the plugin:

1. Repeat steps 1 to 5 from the [Incidents Plugin](#) section.
2. Click **Import Plugins** to import the Attachments NMS plugin provided in the package.
3. Find and click on the Attachments NMS plugin to make sure the **Available Properties** tab is populated with the following properties:

Note: There are no secure parameters in this plugin.

Pickup Order Plugin

This plugin creates a follow-up work order from within Oracle Field Service, so the crew can initiate an activity in relation to another one.


Note: The related activity will be linked to the same event as the initiating activity. Crew has an option to create this follow-up order either before or after the activity is started.

To import the plugin:

1. Repeat steps 1 to 5 from the [Incidents Plugin](#) section.
2. Click **Import Plugins** to import the **NMS Pickup Order** plugin provided in the package.
3. Find and click the **Pick Up NMS** plugin to make sure the **Available Properties** tab is populated with the properties as shown in the image below.

Note: In addition to seeded properties, this plugin uses dynamically generated properties in the respective environment. Dynamic properties are generated for the **Event Details** and **Failed Equipment** forms. For these two forms, the fields vary based on the Oracle Utilities Network Management System environmental setup and corresponding properties are created by Oracle Integration Cloud sync flow. These properties need to be manually added by implementers in the PickupNMS plugin configuration after they are created in Oracle Field Service.

Available Properties

Add properties that must be available through Plugin API 

Activity

Activity ID Activity Type Actual Restore Time Address
 Begin Time Begin Time Cause Comments
 common_utilities_product_code Control zone key
 Coordinate X Coordinate Y Customer Types
 Defective Equipment Defective Equipment
 Defective Equipment Defective Equipment Device Alias
 Device Confirmation Environment Environment
 Environment Environment Equipment Type
 Event Category Event Coordinates Latitude
 Event Coordinates Longitude Event DA Status
 Event Description Event Display Address Event Id
 Event Incidents Event Incidents Event Incidents
 Event Incidents Event Incidents Event Location
 Event Operator comments Event Status
 Event Trouble Code Description Event Type Failure
 Failure Failure Failure Feeder Name First Call Time
 First Call Time Foreign Interference Foreign Interference
 Foreign Interference Foreign Interference Instance Id
 Interrupting Device Interrupting Device
 Interrupting Device Interrupting Device Item
 Job comments Manufacturer
 NMS activity created in OFSC Number of Calls
 Number of Critical C Customers Out
 Number of Critical D Customers Out
 Number of Critical Key Customers Out
 Number of Customers Out Number on Life Support
 Other Other Other Other Phases
 Pickup Created By Primary Cause Primary Cause
 Primary Cause Primary Cause Primary Voltage Priority
 Rating Rating Units Remedy Remedy Remedy
 Remedy Restoration Restore Time Scheduled
 Scheduled Scheduled Scheduled Secondary Voltage
 Serial # Single Phase Size Sub-System Sub-System
 Sub-System Sub-System System System System
 System Three Phase Type Type Type Type
 Updated In OFSC User Number Of Customers Out
 Utility Error Utility Error Utility Error Utility Error
 Vegetation Vegetation Vegetation Vegetation
 Weather Weather Weather Weather
 Work Order Number Of Customers Out Work Order
 Work Zone


Inventory

Activity Id Resource Id











Resource

External ID Time zone

4. Add a value for each one of the secure parameters.

Secure parameters 

Duplicate names are not allowed. Overall size should not exceed 5 kB.

default_bucket		
ofsc_uname		
ofsc_password		
ofsc_hostname		
root_bucket		

Note: See the table below for details.

Parameter	Description
default_bucket	OFSC bucket to which this new activity will be assigned
ofsc_uname	Username or ClientID to access the hostname APIs, this can be found on the administration Configuration-Subsystems-Applications screen using the information from the active REST/SOAP application
ofsc_password	Password or Client Secret in above mentioned screen
ofsc_hostname	Full hostname of the OFSC application in this form as in https://{ofsc_hostname}/ for example: cloudInstance1.oracle.com
root_bucket	Root bucket of the OFSC

OMA Damage Assessment Plugin

This plugin is used to navigate from OFS to OMA to the **Task** details tab of a particular NMS event. Damage Assessment report can then be entered in OMA along with any attachments if needed. This plugin also provides configuration to navigate from OMA back to OFS Activity screen.

To import the plugin:

1. Log in to Oracle Field Service with valid credentials.
2. Click the options menu icon on the **Home** page.
3. Navigate to **Configuration > Displays > Forms and Plugins**.
4. Click **Import > Plugins** from the drop-down list.
5. Select or drag and drop the XML file
NMS_OFSC_OMA_DamageAssessment_Plugin.xml to select the Damage Assessment plugin provided with accelerator package. Click **Continue**. Oracle Field Service validates the plugin and the number of valid items should be 1.
6. Click **Apply**. Make sure the Number of imported is 1 and the Number of not imported is 0.
7. Find and select the OMA Damage Assessment plugin. The plugin is configured for Android, iPad, iPhone, and iPod user-agents string mask. The Launch application URL is configured to an OMA mobile application deep link. The URL includes an "id" parameter which accepts "nms_event_id" as its value to identify the event in OMA. The URL is also configured with a return URL to an OFS mobile deep link, which redirects to an OFS activity screen. The OFS activity id (aid) is passed as part of the OFS return URL parameter.
8. To return to the OFS activity screen from OMA, update with the OFS instance in use the URL section ofscinstance.test.etadirect.com in the pattern for the uxreturnurl defined in the Launch application URL:
uxreturnurl=com.oracle.ofsc://ofscinstance.test.etadirect.com/mobility/#screen=activity_by_id&activity_id={aid}

OMA Switching Plugin

This plugin is used to navigate from OFS to OMA to the **Switching** details tab of a particular NMS event. OMA opens the first switching sheet associated with the passed NMS event_id. This plugin also provides configuration to navigate from OMA back to OFS Activity screen.

To import the plugin:

1. Log in to Oracle Field Service with valid credentials.
2. Click the options menu icon on the **Home** page.
3. Navigate to **Configuration > Displays > Forms and Plugins**.
4. Click **Import > Plugins** from the drop-down list.
5. Select or drag and drop the XML file `NMS_OFSC_OMA_Switching_Plugin.xml` to select the OMA Switching plugin provided with accelerator package. Click **Continue**. Oracle Field Service validates the plugin and the number of valid items should be 1.
6. Click **Apply**. Make sure Number of imported is set to 1 and Number of not imported to 0.
7. Find and select the OMA Switching plugin. The plugin is configured for Android, iPad, iPhone, and iPod user-agents string mask. The Launch application URL is configured to an OMA mobile application deep link. The URL includes an "event_id" parameter which accepts "nms_event_id" as its value to identify the event in OMA. The URL is also configured with a return URL to an OFS mobile deep link, which redirects to an OFS activity screen. The OFS activity id (aid) is passed as part of the OFS return URL parameter.
8. To return to the OFS activity screen from OMA, update with the OFS instance in use the URL section `ofscinstance.test.etadirect.com` in the pattern for the `uxreturnurl` defined in the Launch application URL:
`uxreturnurl=com.oracle.ofsc://ofscinstance.test.etadirect.com/mobility/#screen=activity_by_id&activity_id={aid}`

OMA Unrelated Work

This plugin is used to navigate from OFS to OMA to the **Map** details tab of a particular NMS event. Unrelated work can then be entered in OMA. This plugin also provides configuration to navigate from OMA back to OFS Activity screen.

To import the plugin:

1. Log in to Oracle Field Service with valid credentials.
2. Click the options menu icon on the **Home** page.
3. Navigate to **Configuration > Displays > Forms and Plugins**.
4. Click **Import > Plugins** from the drop-down list.
5. Select or drag and drop the XML file `NMS_OFSC_OMA_UnrelatedWork_Plugin.xml` to select the Damage Assessment plugin provided with accelerator package. Click **Continue**. Oracle Field Service validates the plugin and the number of valid items should be 1.
6. Click **Apply**. Make sure the Number of imported is 1 and the Number of not imported is 0.

7. Find and select the OMA Damage Assessment plugin. The plugin is configured for Android, iPad, iPhone, and iPod user-agents string mask. The Launch application URL is configured to an OMA mobile application deep link. The URL includes "lat" and "long" parameters, which accept "nms_event_latitude" and "nms_event_longitude" as values to identify the location on the map in OMA. The URL also accepts a message in the "msg" parameter, and it is also configured with a return URL to an OFS mobile deep link, which redirects to an OFS activity screen. The OFS activity id (aid) is passed as part of the OFS return URL parameter.
8. To return to the OFS activity screen from OMA, update with the OFS instance in use the URL section `ofscinstance.test.etadirect.com` in the pattern for the `uxreturnurl` defined in the Launch application URL:
`uxreturnurl=com.oracle.ofsc://ofscinstance.test.etadirect.com/mobility/#screen=activity_by_id&activity_id={aid}`

Note: The value for the "msg" parameter can also be updated with the message required.

Failed Equipment Form

The Failed Equipment form is used by Crew to enter the failed equipment details after an activity is started. It is a synchronous call and data is synchronized with Oracle Utilities Network Management System at runtime.

1. Log in to Oracle Field Service with valid credentials.
2. Click the options menu icon on the **Home** page.
3. Navigate to **Configuration > Displays > Forms & Plugins**.
4. If the form does not exist, click **Add Form**. Else, go to step 6.
5. Enter the details as shown in the following image. Click **OK**.

6. Navigate to the form and click the icon showing three vertical dots. Select **Import Content** in the menu.
7. Select or drop the **Failed Equipment Json** file from the accelerator package provided.
8. Click **Import**.

Oracle Field Service validates the form and imports in the same step. Make sure the values for **Number of errors, warnings, and notices** are 0 and "Form content was imported/saved".

Event Details Form

This form is used by Crew to enter the event details after the activity is started.

To create an event details form:

1. Repeat steps 1 to 4 from the [Failed Equipment Form](#) section.
2. Enter the details as shown below. Click **Add**.

3. After creating the form, click the icon with three vertical dots and then click **Import Content** in the menu.
4. Drag and drop the **Event Details Json** file.
5. Click **Import**.

Oracle Field Service validates the form and imports in the same step. Make sure the values for **Number of errors**, **warnings**, and **notices** are 0 and “Form content was imported/saved”.

User Types

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

Use the Screen Configuration settings in specific user types to create custom screen context layouts for the integration.

The user types that are part of this integration are:

- NMS_OFSC_Dispatcher_User_Type
- NMS_OFSC_Mobile_User_Types

Prerequisite! Make sure the **Properties**, **Activity Types**, and **Plugins** are loaded before proceeding.

To configure the user types:

1. Log in to Oracle Field Service with valid credentials.
2. Click the options menu icon on the **Home** page.
3. Navigate to the **Configuration** page > **Users, Security, Integrations** > **User Types**.

4. Click **Import** to import the user types.
5. On the **Choose file** field, click **Browse** to select **NMS_OFSC_Mobile_User_Types**.
6. Click **Validate**. Make sure the **Successfully Imported** validation shows 1.
7. Click **Import** and verify the import is successful. Make sure there are no “Imported with warnings” and “Not Imported” messages.
8. Repeat step 6 and 7 for **Import > NMS_OFSC_Dispatcher_User_Type**. Make sure that there are no “Imported with warnings” and “Not Imported” messages.

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

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

Search	External ID	Status	Active	Login	User Type
Admin		Manager/Dispatcher/Admin	Active	admin	(or) NMS OFSC Dispatch Administrator
Administrator		Manager/Dispatcher/Admin	Active	root	Privileged Administrator (UT 14)

Note: If already set for any of the existing integration, you can skip this step.

6. Set the user type as NMS OFSC Dispatch Administrator.
7. Enter the password and click **Submit**.

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

User type info		Access settings	
Label	NMS OFSC	<input checked="" type="checkbox"/>	Allow access via web application
Name	NMS OFSC	<input checked="" type="checkbox"/>	Allow access via installed application for Android
Active	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Allow access via installed application for iOS
Login Policy	Default policy	<input checked="" type="checkbox"/>	Maps

User type info		Access settings	
Label	NMS OFSC Dispatch Administrator	<input checked="" type="checkbox"/>	Allow access via web application
Name	NMS OFSC Dispatch Administrator	<input checked="" type="checkbox"/>	Allow access via installed application for Android
Active	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Allow access via installed application for iOS
Login Policy	Default policy	<input checked="" type="checkbox"/>	Maps

Chapter 3

Additional OFS Configurations

This chapter elaborates on the additional configuration of organization, work zones, outbound channels, and UI validations in user types. Verify that the Oracle Integration Cloud connections and lookups are customized for the environment and all the Oracle Integration Cloud integrations are “active”.

The chapter includes the following configurations:

- [Sync Mobile Control Data Information from NMS to OFS](#)
- [Organization](#)
- [Work Zones](#)
- [Resource and Bucket Information](#)
- [Outbound Channel](#)
- [Crew Configuration](#)
- [Oracle Utilities Network Management System Activity Priority](#)
- [Assertion Key Generation](#)
- [Collaboration](#)
- [Link Templates](#)
- [Checklist](#)

Sync Mobile Control Data Information from NMS to OFS

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

As part of this accelerator, Oracle Utilities NMS OFSC Admin Sync deployed on Oracle Integration Cloud is provided to create these configurations automatically making migration of data easier and get rid of tedious manual work. This will run after the Oracle Field Service package is applied first. The forms are created before the user types and then perform the admin sync.

Oracle Utilities NMS OFSC Admin Sync needs to be run on initial installation or on a need to basis when new control data from Oracle Utilities Network Management System or work skill related configurations needs to be created or updated in Oracle Field Service.

This sync integration process is manually run in Oracle Integration Cloud or 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. Enter an optional language parameter. It should be an ISO 2 letter language code, to determine the description to retrieve from Oracle Utilities Network Management System and in what language code the property name should be created in Oracle Field Service. If the language is not populated or blank, it is defaulted to English (en).

To verify the information synchronized from Oracle Utilities Network Management System to Oracle Field Service, navigate to the respective property and check the enumeration values. Click **Modify**.

To configure Oracle Field Service to run admin sync successfully:

1. Log in to Oracle Field Service.
2. Navigate to **Configuration > Subsystems > Applications**.
3. Select the Oracle Field Service application with API access.
4. Click **Metadata API** in the **API** section.
5. Select **Read-write** permission for all entities listed.
6. Click **Submit** and then click **Save**.

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

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

Organization

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

To create an organization:

1. Navigate to the **Configuration** page > **Users, Security, Integrations** > **Organizations**.
2. If it does not exist, click **Add New** to add a new organization. Else, click the organization to show details as shown in step 3.
3. Enter the name of the organization and click **Submit** to save the details.

Work Zones

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

To add a work zone:

1. Navigate to the **Configuration** page and click **General** > **Work Zone**.
2. Make sure the **Work Zone Key** (top-left corner) is ZIP/Postal Code.
3. On the **Work Zones** page, click **Add new** to add the required postal codes in the **Work Zone Keys** field.

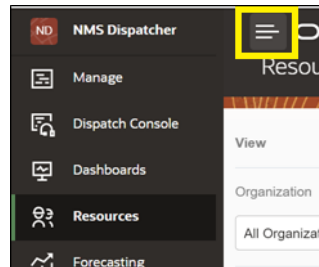
4. Click **Add** to save the new work zone.

Resource and Bucket Information

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

To configure resource and bucket information:

1. On the Oracle Field Service Home page, click the icon showing three horizontal lines.



2. Click **Resources** and click **Add New**.
3. Select **Bucket** to add a new bucket in the **Resource type**.
4. Enter the required details and click **OK**.
5. Click the icon (showing three lines) on the top-right corner and then click **Add child resource**.
6. Select **Technician** from the **Resource type** drop-down list and enter the required details. Click **OK**.
7. Select the required work skills for this Technician. Click **Save**.
8. For Oracle Utilities Network Management System crew, select “NMS” in the **Utilities Resources** drop-down list.
9. For chat notification for crew members, select the related chat collaboration group from the **Collabration Group** drop-down list.

Outbound Channel

This element is used to create a channel to communicate with Oracle Utilities Network Management System through Oracle Integration Cloud. You can choose various channel types, but since Oracle Utilities Network Management System integration to Oracle Field Service is through Oracle Integration Cloud, it is used as the channel type.

To add a communication channel:

1. Navigate to the **Configuration** page > **Subsystems** > **Applications**.
2. Click **Add Application** and enter the required details. Click **OK**.
 - **Application Type:** Oracle Integration
 - **Application Name:** Name of your channel (Example: OIC)
 - **Host:** OIC host name
 - **User Name:** OIC user name

- **Password:** OIC password
- **Confirm Password:** OIC password

Crew Configuration

To configure a crew:

1. Navigate to **Configuration** page > **Resources, Activities, Inventories** > **Resource Types**.
2. If needed, click **Add Resource Type**. Else, click **Modify** to view and update.
3. Enter the required details and make sure the crew has 'PR' as the label. Save the record.

This section focuses on the following:

- [Adding Crew and Crew Members](#)
- [Assigning Resources](#)

Adding Crew and Crew Members

To create resources for a crew member and crew:

1. Navigate to the **Configuration** page > **Resources, Activities, Inventories** > **Resource Types**.
2. If needed, click **Add Resource Type**. Else, modify to view and update.

3. Populate the required information and click **Add**.

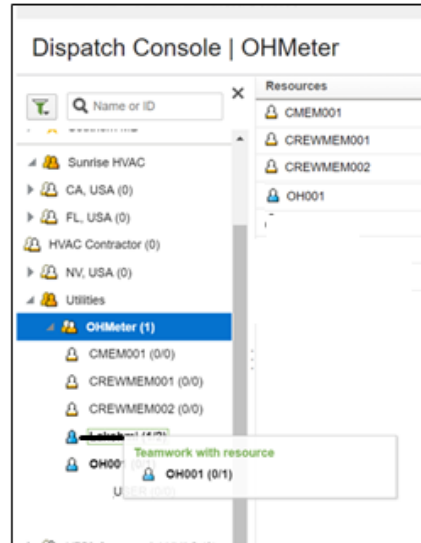
4. Repeat steps 2 and 3 to create resource types for crew members.

Assigning Resources

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

1. Navigate to the **Dispatch Console** page and observe various resources.

2. Drag and drop the resources to the crew.



3. On successful drag and drop, add activities to the crew.
4. Populate the required information and click **Submit**.

To display the activity in the Dispatch console, configure the Event ID in the **Business Rule Search** section. Follow these steps:

1. Log in to Oracle Field Service.
2. Navigate to **Configuration > General > Business Rules > Search**.
3. Click **Edit**. Click **+** and select the **Event ID** checkbox.
4. Click **Add**.

Oracle Utilities Network Management System Activity Priority

This property is used to identify urgent activities.

To configure the activity priority:

1. Log in to Oracle Field Service.
2. Navigate to the **Configuration** page > **General** > **Business Rules** > **Activity Priority**.
3. Configure the **nms_priority** values.
 - **Property:** Priority [nms_priority]
 - **Urgent activities value:** 100100, 100, 50100, 70100

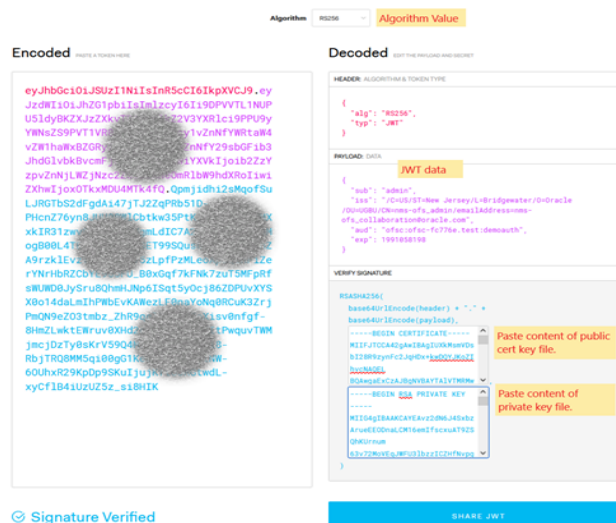
Assertion Key Generation

This property is used to identify urgent activities.

1. Log in to Oracle Field Service.
2. Navigate to **Configuration > Subsystems > Applications**.
3. Click the required application, select the **Authenticate using JWT** assertion checkbox, and upload the certificate under **Authentication Settings**.
4. Configure the application as shown in the following figure.



5. Navigate to the jwt.io website with the available certificate and private key. Fill in the details as shown in the following screenshot. Note that the text in red indicates the type of data you need to add for the corresponding sections:



```
{
  "sub": "admin",
  "iss": "/C=US/ST=New Jersey/L=Bridgewater/O=Oracle/OU=UGBU/
CN=nms-ofs_admin/emailAddress=nms-ofs_collaboration@oracle.com",
  "aud": "ofsc:ofsc-fc776e.test:demoauth",
  "exp": 1991058198
}
```

Note: The "sub" will be the originator of the JWT token. Refer to the next section for extra configuration in regard to this value. The "aud" contains "ofsc:{instance}:{ofs_ClientId}", as shown on the Applications screen. The "exp" is the epoch timestamp value, in the value above it converts to *Thursday, February 3, 2033 3:43:18 PM* time.

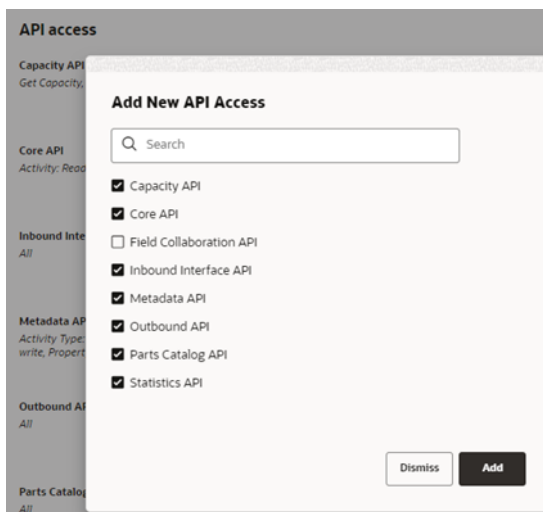
- After the assertion key is generated, include it in **OUTL-BRT-NMS_OFSC_ConfigProps** for the property **chat.notification.assertion** and property **chat.notification.grant_type** : urn:ietf:params:oauth:grant-type:jwt-bearer.

Note: As a pre-requisite, signed certificate and private key from the client server are required for configuration.

Collaboration

This section explains how to configure OFS using chat collaboration to receive error message from OIC.

- Log in to Oracle Field Service.
- Navigate to **Configuration > Subsystems > Applications**.
- Click the required active application that's used by OIC to communicate with this OFS instance.
- In the API section, make sure you get "Field Collaboration API" option. If this option does not appear on your options list, click the Add icon (+) to add a new API Access, then select the "Field Collaboration API" option.



- Navigate to **Configuration > Subsystems > Collaboration**
- Create a new group named **NMSCrews**.
- OFS authorization needs to be set up correctly to accept the chat message. There are 2 options to ensure the message can be received (otherwise, a 403 will be returned). Depending on the "sub" value created in the JWT section above, we need to configure this as either the same group, or the different group option.
 - Sender and Receiver are in the same group:

- Navigate to **Resources** and edit the information from your default dispatcher user.
- You can modify the **Collaboration Group** by selecting the newly created group (see step 6).
- Other **NMSCrews** can also be added in a similar way.
- Sender and Receiver are in a different group, for example **Admin** from **Administrators** and **NMSDispatcher** from the new **NMSCrews** group:
 - In this case, we need to ensure that both groups can collaborate together, which is completed in the **Collaboration** screen.
 - Modify the **Collaboration with groups** section to add **Administrators**. This way both groups are allowed to chat to each other.

The screenshot displays the configuration page for an NMSCrews group. At the top right is a 'Delete' button. The main form includes:

- * Name: NMSCrews
- * Type: Group (dropdown menu)
- Active:
- Description: (empty text box)

 Below the form are two sections:

- Collaboration with groups**: A list containing 'Administrators' with a count of 8 and an edit icon.
- Assisting Helpdesks**: A list showing 'No items to display' with an edit icon.

 A blue 'Save' button is located at the bottom right of the form.

8. Lastly, configure OIC to set the OFS default dispatcher, who will receive the chat messages when no OFS user is known, in **OUTL-BRT-NMS_OFSC_ConfigProps** for the property **notification.chat.defaultDispatcher**.

Link Templates

Activities can be linked together from within OFS, but also from the NMS-OFS Oracle Integrations. To ensure OFS understands how to link activities, the link type needs to be configured.

To find the Oracle Field Service property:

1. Log in to Oracle Field Service.
2. Navigate to **Configuration > General > Link Templates**.
3. Find the label in the **Link** for the second activity column for **Related Activity**.

Verify or update this value with the OIC instance property. To find this property in your OIC instance:

Log in to Oracle Integration Cloud instance.

1. Navigate to **Integrations > Lookup**.
2. Open the OUTL-BRT-NMS_OFSC_ConfigProps lookup.
3. Ensure the value from the activities.linktype matches the OFSC value.

PropertyName ▾	Value ▾
activities.linktype	related_activity2

Checklist

Before proceeding to [Chapter 4: User Operations](#), verify if the following activities are complete.

- Sync the Admin information from Oracle Utilities Network Management System to Oracle Field Service
- All the activity types specific to customer are created.
- Properties are imported.
- Plugins and forms are imported.
- User types are imported.
- Make sure the quota is allocated and need not be configured.
- Name of the organization.
- Name of the resources and work zones.
- Details of Oracle Integration Cloud used to create the outbound channel.
- Collaboration has been setup in OFS and OIC.

Chapter 4

User Operations

This chapter provides step-by-step instructions for user operations.

1. Log in to the Oracle Field Service Mobility application.


You can access the application by adding '/m' to the Oracle Field Service URL <ofsc_link/m>.

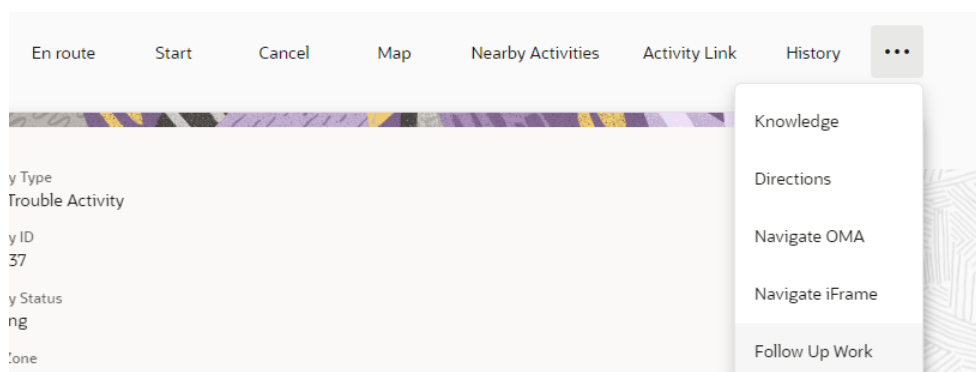
2. Access the **Mobility** page using the worker/technician's credentials. The page shows activities in the queue of the worker.
3. Click **Activate Queue** to start the activity in the worker's queue.
4. Click the activity.
5. On the **Activity Details** page:
 - a. Click **Calls**.

Oracle Field Service displays all call records attached to it. It shows calls or incidents logged into Oracle Utilities Network Management System for an event. If there is an outage, customer can call support who in-turn may log the call against an incident using the **Web Call Entry** interface.

Event ID:	1792
Event Description:	Revised Prediction
Number of Calls:	8
Priority:	
Critical First Comments First	
Critical:	Key
Customer Name:	ROBERT M + DEANNA YANIA
Address:	3901 SWEITZER ST NW, Lake Twp., OH, 44685, , -
Phone:	(330)2200685
Account:	2200685
Call Time:	07/28/2021 05:51 PM
Critical:	Key
Customer Name:	ROBERT M + DEANNA YANIA
Address:	3901 SWEITZER ST NW, Lake Twp., OH, 44685, , -
Phone:	(330)2200685
Account:	2200685
Call Time:	07/28/2021 05:43 PM
Critical:	Key
Customer Name:	ROBERT M + DEANNA YANIA
Address:	3901 SWEITZER ST NW, Lake Twp., OH, 44685, , -
Phone:	(330)2200685
Account:	2200685
Call Time:	07/27/2021 03:29 PM

- b. Click **Details** in the **Quick Links** section.
- c. Enter the necessary details on the **Activity Details** page.

6. To enter the failed equipment details:
 - a. Click **Failed Equipment** on the **Activity** page.
 - b. Add the details for the failed equipment and submit it.
 - c. Click **Submit**. The submitted records are synchronized to Oracle Utilities Network Management System.
7. To enter restoration data:
 - a. Click **Restoration Data** on the **Activity** page.
 - b. Enter the details for restoration data to capture periodic restoration information after the activity assigned to the crew is started in Oracle Field Service.
8. To upload attachments:
 - a. Click **Attachments** on the **Activity** page.
 - b. On the **Attachment** window, click **Browse** to navigate and select the attachments to upload.
 - c. Click **Upload** to upload and save the attachments.
9. To create Pickup Work Order:
 - a. Click the  icon on the top-right corner of the window and then click **Follow Up Work** from the menu.



- b. On the **Follow Up Work** window, enter the required details and click **Submit**.
10. On the **Activity Details** page, click **Complete** to verify the eligibility of the activity to complete.
11. On the **End Activity** page, click **Submit**.

Chapter 5

Customizations

Property additions and customizations help customers using this integration to enhance the functionality of the integration and increase the usability too. Customizations are done in Oracle Integration Cloud, Oracle Field Service, and Oracle Utilities Network Management System depending on the fields, elements, or properties to be added and their availability.

This chapter focuses on the following customizations:

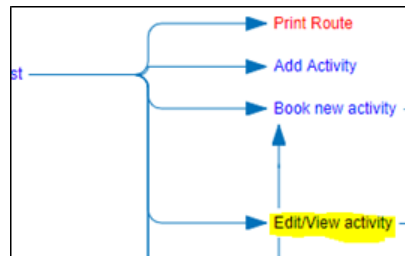
- [Adding New Fields to Field Activity](#)
- [Plugins/Forms Rendering Data](#)

Adding New Fields to Field Activity

This section includes steps to add new fields to Field Activity. These fields are available but not present in Field Activity.

Oracle Field Service Configurations

1. Log in to Oracle Field Service.
2. Navigate to **Configuration > Resources, Activities, Inventories > Properties**.
3. Enter the **Property Name** and **Property Label**.
4. Select the entity, type of GUI, and add the enumeration values “customprop1” and “customprop2”.
5. Navigate to **Configuration > Users, Security, Integrations > User Types** and select the required user type.
6. Navigate to **Screen Configurations** of the selected user type and open the **Edit/View activity** section.



7. In the **Add New Element** section, drag and drop a new 'Input' to add a new element.
8. Map the element to **Test Custom Property**. Save this screen configuration after mapping the field.

Plugins/Forms Rendering Data

This section explains how each plugin renders the data. It focuses on the following plugins:

- [Incidents Plugin](#)
- [Restoration Data Plugin](#)
- [Attachments Plugin](#)

- [Pickup Work Plugin](#)
- [Failed Equipment Form](#)
- [Event Details Form](#)

Incidents Plugin

Used to display calls or incidents logged into Oracle Utilities Network Management System for an event.

If there is an outage, the customer can contact the support team who, in turn, can log the call against an incident using the **Web Call Entry** interface. This update will trigger an outbound from Oracle Utilities Network Management System to Oracle Field Service with the updated call details. On the Oracle Field Service side, crew can view the activity associated with the event and view all calls logged against it.

Restoration Data Plugin

Serves the purpose of reading and submission of restoration data.

Oracle Utilities Network Management System crew will use this plugin to capture periodic restoration information after the activity assigned to the crew is started in Oracle Field Service. Once the restoration is complete, crew can capture the same with the completion timestamp and send it across to Oracle Utilities Network Management System. Information updated by this plugin also causes Oracle Utilities Network Management System to send an outbound message back to Oracle Field Service with updated information.

Attachments Plugin

Used to upload and show attachments uploaded either from Oracle Field Service or Oracle Utilities Network Management System.

Oracle Utilities Network Management System activity may contain attachments originated from two different sources. Attachments can be uploaded to an Activity in Oracle Field Service, or they can be uploaded into an event in Oracle Utilities Network Management System. In both the scenarios, attachments can be viewed on the **Activity Details** page in Oracle Field Service.

Pickup Work Plugin

Serves the purpose of creating a follow up work order from within Oracle Field Service.

After an activity is assigned to a crew, another can be initiated that is similar to the activity assigned to the crew if there is a need for that. The crew might want to create a new activity as a follow up to what he/she is doing. Currently, crew may create only related activity that will be linked to the same event as the initiating activity. Crew has an option to create this follow up order either before or after the activity is started. Newly created follow up activity can be assigned to a bucket selected from a list of available buckets.

Failed Equipment Form

Serves the purpose of adding Failed Equipment Details for any activity that is added to the Crew bucket and in 'started' status. Once the data is submitted by crew, it is a synchronous call and data will be synced with Oracle Utilities Network Management System in runtime.

Event Details Form

Serves the purpose of adding Event Details for any activity which is added to the Crew bucket and in 'started' status. Once the data is submitted by the crew, it is a synchronous call and data will be synchronized with Oracle Utilities Network Management System in runtime.

Chapter 6

Hosting Plug-Ins in OFS

Plugins can be hosted within Oracle Field Service or externally.

Oracle Field Service has now the ability to host more than 10 plugins that can be hosted within Oracle Field Service. However, the plugin can be hosted on different server as well.

The steps to host a plug-in within Oracle Field Service are documented in <https://docs.oracle.com/en/cloud/saas/field-service/fapcf/c-hostingPlugins.html#HostingPlug-ins-3574237F>

The plugins can be hosted externally on:

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

Additionally, if the plugins are hosted externally:

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

Hosting Files on a Web Server

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

Please refer to the documentation of the webserver of choice on how setup and host the static content. The unzipped files of the plugin is then hosted on the webserver. The path to the index.html or the directory containing the index.html is configured in the URL field of the plugin screen as defined in:

https://docs.oracle.com/en/cloud/saas/field-service/fapcf/t-configure-plugin-to-add-main-menu.html#t_configure_plugin_to_add_main_menu

The externally hosted plugin can be secured and Oracle Field Service supports authentication mechanism as defined in:

<https://docs.oracle.com/en/cloud/saas/field-service/fapcf/c-authentication.html#Authentication-25E75B9D>

Storing files on Object Storage

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

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

https://docs.oracle.com/cd/F35460_01/PDF/UGBU_Cloud_Services_Object_Storage_Setup_20C.pdf

Using Public Bucket

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

ProductTitle
BookTitle
Release
Release
PartNumber
PrintDate
Product/BookTitle
CopyrightBody
CopyrightBody
Body
Heading1TOC
Chapter_CaptionTOC
Heading2TOC
Heading2TOC
Heading2TOC
Heading2TOC
Heading2TOC
Heading2TOC
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Chapter_CaptionTOC
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LetterA
Indent2
Letter
Letter
Numbered
LetterA
Letter
Letter
Numbered
LetterA
Letter
Numbered
LetterA
Letter
Letter

Chapter_Caption

Body

Body

Body

Body

Bullet1

Bullet1

Body

Numbered1

Numbered

Heading2

Body

Body

Body

Body

Body

Heading2

Body

Body

Body

Heading3

Body

