

Oracle Field Service Cloud Configuring ETAWorkforce

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Preface

This preface introduces information sources that can help you use the application and this guide.

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1 Configuring Oracle Field Service Cloud ETAWorkforce

About Oracle Field Service Cloud ETAWorkforce

Oracle Field Service Cloud ETAWorkforce is a Force.com-based **Apex** package in the Salesforce platform. It helps you integrate a Salesforce Organization and an Oracle Field Service Cloud company for a Client.

Oracle Field Service Cloud ETAWorkforce is a cloud-based solution that connects Salesforce users to a suite of field workforce and customer appointment management tools, from booking appointments to sending post-job customer surveys. You can perform the following tasks:

- **Schedule:** Book a service request, whether at someone's home or place of business.
- **Track:** Track the progress of your and your staff's appointments in real time, monitor the status of mobile workers as if they were a dispatcher, answer questions and solve problem calls.
- **Connect:** Integrate Oracle Field Service Cloud ETAWorkforce with Salesforce.com creating an end-to-end service solution.

Oracle Field Service Cloud ETAWorkforce delivers dynamic, up-to-date information about appointment status to customers by their choice of text, phone, e-mail and Web. It helps your customers proactively confirm, cancel, and reschedule their appointments.

About Salesforce

The Salesforce platform is a customer-relationship management solution by Salesforce.com. For each Salesforce Client, one or several Salesforce instances (organizations) are created.

For each Organization that is created in a Salesforce instance, a set of rules can be defined, for example:

- The list of users and software that can access the organization and process its data
- Allowed access levels for users on various objects

The Salesforce platform includes Sales Cloud features that:

- Provide sales representatives with a complete customer profile and account history.
- Allow users manage marketing campaign spending and performance.
- Track all opportunity-related data including milestones, decision makers, customer communications, and any other information unique to the company's sales process.
- Provide a real-time sales collaborative tool called Chatter.
- Provide Service Cloud – a call center-like view that enables companies to create and track cases. Cases can be automatically routed and escalated.
- Provide the Force.com platform that allows external developers to create add-on applications. These applications can be integrated into the main Salesforce.com application and hosted on Salesforce.com's infrastructure and AppExchange. Users can purchase these applications and add to their Salesforce.com environment.

Oracle Field Service Cloud Overview

Oracle Field Service Cloud is a predictive, cloud-based, enterprise-level, on-demand mobile workforce management solution. For each client, one or several instances (Companies) are created. Each Company includes a tailored set of rules that comply with the Company's business needs and policies, including the geographical and administrative settings, the list of people and software that can access the Company and process its data (addressed in Oracle Field Service Cloud as Users) and their details including the permitted access levels, available mobile employees and groups of mobile employees (addressed in Oracle Field Service Cloud as *resource*) and their details, possible tasks (addressed in Oracle Field Service Cloud as Activities) and their details, sets of restrictions and constrains to be applied to Activities distribution between resources.

A number of functionality, such as resources and activity location-based units, automatic task distribution optimization, capacity management, context-aware communications unit for mobile workflow participants, tailored comprehensive reports, messaging capabilities and many other features that complement the activity processing functionality – a set of purposeful tools that enable users to create activities in the system, define and update their details including the resources to perform them, place and time of performance, etc., process their lifecycle (define whether an activity has been started, successfully completed, if it requires some additional work, etc.).

Each registered user of a Company can access and process its data (in accordance with the permissions granted to such user) using the native Mobility and Manage applications and a set of application interfaces. APIs support integration of the application with the corporate systems of a client company, enabling a wide variety of actions from getting data into Oracle Field Service Cloud to integration into a client's existing mobile application.

Oracle Field Service Cloud Entities

User

Oracle Field Service Cloud includes default users. Each user includes the following set of fields:

- User details, such as name, login, language
- User status, such as active or inactive
- A *resource* that the user can manage
- A security *profile* that has been assigned to the user

Activity

Activities are processed based on their type and status. The Activity type defines a set of features, such as whether activities of a specific type can be moved to another resource, created in a *bucket*, rescheduled, and so on. **activity status** defines the current state of the activity in the system. For example, whether the activity is started, completed, and so on.

Inventory

Inventory is equipment that can be installed or un-installed during the course of the activity. The way inventory is processed depends on its type. Inventory type can be *serialized* or *nonserialized*, therefore, supporting quantity or not.

Required inventory

Required inventory represents the inventory that is necessary for an activity to be completed. Required Inventory is defined by its type, model and quantity. Unlike Inventory, Required Inventory has quantity both for serialized and non-serialized inventory. Required Inventory is always associated with an activity, therefore, its property structure always includes the activity ID.

Processing Related Entities Using Messages

Oracle Field Service Cloud entity fields are mapped to the fields of the related message. Each instance of the message in Salesforce is related to an entity in Oracle Field Service Cloud. For example, when an Activity Message instance is created, deleted, or updated in a Salesforce Organization, the details of the transaction are sent to Oracle Field Service Cloud and the activity is created, deleted, or updated in Oracle Field Service Cloud. (For the update, values of the mapped fields are updated). Entities in Oracle Field Service Cloud are processed by the corresponding messages or by defining the mapping rules between messages and other custom or standard objects in the Organization. The same mechanism is used for *inventory* and *required inventory* entities.

How Message Fields are Processed

When an Oracle Field Service Cloud ETAWorkforce service runs, it reads Oracle Field Service Cloud Activity or Inventory History. The service then generates a transaction that specifies the information to be updated on Salesforce. The transaction provides the ability to update the fields of the corresponding message.

You can define mapping rules between the message and other custom or standard objects in the Organization, which will be updated with the message.

Oracle Field Service Cloud ETAWorkforce Workflow

The workflow of Oracle Field Service Cloud ETAWorkforce is as follows:

1. Oracle Field Service Cloud ETAWorkforce is installed and deployed. Activity Message, Activity Link Message, Inventory Message, Required Inventory Message and Service Run History custom objects are deployed in the Client's organization.
2. Fields of Activity Messages, Inventory Messages and Required Inventory Messages are mapped to the fields of activity, inventory, and Required Inventory in Oracle Field Service Cloud. Or, the fields are used to define the settings of commands available in Oracle Field Service Cloud to process an activity.
3. Oracle Field Service Cloud ETAWorkforce and the general company settings are configured. Update mode field mapping is defined. This mapping binds the fields of Activity Messages, Inventory Messages and Required Inventory Messages with the fields of other standard or custom objects of the Client's Organization (for example, Case).
4. When an instance of an object is created, deleted, or updated, the corresponding instance of Activity Message, Activity Link Message, Inventory Message or Required Inventory Message is created, deleted, or updated in accordance with the mapping rules (if any). When an instance of an Activity Message, Activity Link Message, Inventory Message or Required Inventory Message is processed, the corresponding instance of the Activity, Activity Link, Inventory or Required Inventory is created, deleted, or updated in Oracle Field Service Cloud accordingly. The success status of Activity Message, Activity Link Message, Inventory Message or Required Inventory Message is defined based on the success of the entity processed in Oracle Field Service Cloud.
5. When an event or a condition occurs in Oracle Field Service Cloud, it is logged in the Activity or Inventory History, and Oracle Field Service Cloud ETAWorkforce service sends all updates to the Salesforce Organization. The message pattern updates the fields of Activity Message, Activity Link Message, Inventory Message or Required Inventory Message instance, and the Client's Organization (for example, Case) object fields per the mapping rules (if any).

6. Activity Messages, Activity Link Messages, Inventory Messages and Required Inventory Messages created or updated from Salesforce, or received from Oracle Field Service Cloud appear on the Workforce Messages page in Oracle Field Service Cloud ETAWorkforce.

When an agent is run, a record is created in the Service Run History. The record includes the progress of the agent run and the result to be used for troubleshooting and further analysis.

2 Installing Oracle Field Service Cloud ETAWorkforce

Prerequisites

You must complete some prerequisites before installing Oracle Field Service Cloud ETAWorkforce.

Define the following system requirements:

- Which Oracle Field Service Cloud activity fields must be managed through Oracle Field Service Cloud ETAWorkforce
- What Salesforce Organization objects are to be managed from Oracle Field Service Cloud in addition to Activity Messages, Inventory Messages and Required Inventory Messages
- Under what conditions are Salesforce fields updated from Oracle Field Service Cloud
- Whether the client wants SSL encryption between Salesforce application and Oracle Field Service Cloud server
- Whether the client wants to enable Chatter at the destination Organization

Complete the following steps in Oracle Field Service Cloud:

- Create a company in Oracle Field Service Cloud for the client.
- Create all the required fields for the entities in the Oracle Field Service Cloud Company.
- Process the Oracle Field Service Cloud ETAWorkforce-related data created in Oracle Field Service Cloud and grant the relevant permissions to the user.

Provide the following information to the client:

- Oracle Field Service Cloud front-end URL
- Company name to be used in Oracle Field Service Cloud
- URL to the Oracle Field Service Cloud ETAWorkforce application
- Login and password for the user created in Oracle Field Service Cloud to interact with Oracle Field Service Cloud ETAWorkforce

Complete the following steps in the client's Organization:

- Create the client's Organization in the Salesforce platform.
- If the fields of Activity Message, Inventory Message or Required Inventory Message object are to be mapped to an object of the Salesforce Organization, add all the required fields to the object on the client's side.

Configuring Connectivity Settings

You must configure some of the settings to ensure that Salesforce is integrated with Oracle Field Service Cloud properly.


The following table describes the settings that you configure:

Name	Flags	Description	Example
Salesforce login URL	mandatory, static	May be the same for all companies, used to retrieve SessionId, operation URL and sandbox flag.	https://login.salesforce.com
Salesforce user name	mandatory, rarely changed	Salesforce user authorized to perform connectivity settings (should be unique for all companies)	admin.user@mycompany.com.rd
Salesforce user plain text password	mandatory, rarely changed	used for retrieving Session ID	password
Salesforce user token	mandatory, rarely changed	used for retrieving Session ID	SscBvy12sjd9hVfx0dmxdRDG
(ETAdirect) instance URL	mandatory, static	Oracle Field Service Cloud front-end URL (can be the same for all companies)	https://OFSC Workforce.(ETAdirect).com
(ETAdirect) login name	mandatory, rarely changed	Company name serving as the login for Oracle Field Service Cloud interfaces: Inbound, Capacity, Mobile	LoginName
(ETAdirect) plain text password	mandatory, rarely changed	password for Oracle Field Service Cloud interfaces: Inbound, Capacity, Mobile	(ETAdirect>Password

Install Oracle Field Service Cloud Workforce2 Package

ETAWorkforce2 is a Force.com-based Apex package in the Salesforce platform that enables integration between the Salesforce Organization and Oracle Field Service Cloud company for the client. The application connects Salesforce users to a full suite of field workforce and customer appointment management tools, and it does it in one cloud-based solution. This procedure describes how to integrate Oracle Field Service Cloud ETAWorkforce and a customer's application at Salesforce.com via the Salesforce-based Package ETAWorkforce2.

1. Log in to Salesforce.com using the URL provided to you.
2. Open the package URL (<https://login.salesforce.com/packaging/installPackage.apexp?p0=04td0000000Azek>)..
The **Package Installation Details** page is displayed. The page contains the basic information of the package and the list of its components.
3. Click **Continue**.
The **Approve Package API Access** page is displayed. By default, all objects at all levels have access. This means, Oracle Field Service Cloud ETAWorkforce can read, create, edit, and delete data on all objects. You can modify the access levels after installing the package.
4. Click **Next**.
The **Choose security level** page is displayed.
5. Use this page to grant or deny access to custom objects based on the custom user *profile*.

 **Note:** Standard profiles cannot have access to any installed custom objects. You cannot edit the permissions for standard profiles, so you must clone the profile to grant access.

- o **Grant access to admins only** – all users with the Administrator profile have full access to the application. All other users have the No Access level.

- o **Grant access to all users** – all users with all profiles in the system have full access.
- o **Select security settings** – grant access to profiles individually.

If you select the **Select security settings** option, the **Customize security** section is displayed. This section contains the list of profiles available in the system.

6. Use the **Set All** link to grant or deny access to all profiles with a single click. Or, grant access to profiles individually.
7. Click **Next**.
8. Click **Install** to start the installation.

When the installation finishes, the **Install Complete** page is displayed. A confirmation message is sent to the current user by e-mail and by a Chatter message.

If the installation process takes longer, instead of the **Install Complete** page, you see the **Processing your request** message. Close the application window and reopen after you receive the confirmation e-mail and Chatter message.

Compile Classes

As the final step to adapt the Oracle Field Service Cloud ETAWorkforce package to an application, you must compile its *apex* Classes.

1. Click the **Develop** link in the **App Setup** section and select **Apex Classes** in the drop-down menu.
The list of all existing Apex classes is displayed.
2. Click **Compile all classes**.
The classes are compiled and the relevant statistics are displayed.

Configure the Home Page Layout

The Home Page Layout section lets you customize the components available on the Home Page and assign layouts to certain *profiles*.

1. Click **Customize > Home > Home Page Layouts** in the App Setup section on the Home Page.
The list of all profiles existing in Oracle Field Service Cloud ETAWorkforce and the Home Page layouts assigned to them is displayed.
2. Click **Page Layout Assignment**.
3. Select the layout names for the user groups for which you want to configure Oracle Field Service Cloud ETAWorkforce2.
4. Return to the **Home Page Layouts** page, and click **Edit** next to the name of the selected Home Page layout.
The **Edit Home Layout** page appears, where you can select the components to be included in the Home Page layout.
5. Select **Workforce2** and click **Next**.
6. Arrange the components using the arrow keys and click **Save**.

When you add **Workforce2** the Narrow (Left) Column, the **Workforce2** tab appears in the left column of the Salesforce screen. This tab shows the number and status of all messages in Workforce2. Clicking any of the statuses opens the **Messages** screen that displays the messages for the selected status.

Uninstall the Package

You must delete all the *Apex* triggers and then uninstall the Oracle Field Service Cloud ETAWorkforce package. You can save the settings of the installed package for future use.

1. Log in to Salesforce.com using the URL provided to you.
2. Click **Salesforce user name** > **Setup** > **App Setup** > **Develop.** > **Apex Triggers**

The **Apex Triggers** page is displayed.

3. Click **Del** in the **Action** column and delete all the triggers.
4. Click **Salesforce user name** > **Setup** > **App Setup** > **Installed Packages.**

The **Installed Packages** page is displayed.

5. Optionally, click **Configure** to save the installation settings to a file.
6. Click **Uninstall.**

The **Uninstalling a package** page appears and displays the list of package components and custom object data that will be deleted.

7. Click **Yes** on the confirmation message.
8. Click **Uninstall.**

The selected package and the related components are uninstalled.

3 General Details and Settings

Activity Message Object Overview

When Oracle Field Service Cloud ETAWorkforce is deployed, the Activity Message custom object is created in the client's Salesforce Organization. You can view all the custom objects on the Custom Objects page.

Initially, the Object fields define the default flow of the related *activity*. The object contains a set of fields mapped to the fields of Activity in Oracle Field Service Cloud. Based on the mapping, when an instance of an Activity Message is processed in Salesforce, the instance of Activity is created, deleted, or updated in Oracle Field Service Cloud. Similarly, when a certain event or condition occurs in Oracle Field Service Cloud, the specified fields of the Activity Message are updated.

Clicking the custom object label opens its details screen where certain attributes of the selected custom object can be edited. For Oracle Field Service Cloud ETAWorkforce, the relevant settings are contained in the Page Layouts and Field Sets sections allowing to define the message layout and the message fields, respectively.

Page Layouts define the fields displayed in the layout of the Activity Message, Inventory Message or Required Inventory Message. Field Sets contain the fields used in the message list component placed on a linked object page layout.

Create a Page Layout

Message Page Layout defines the fields available for editing messages in the Activity (Inventory, Required Inventory) Messages page. The **Page Layouts** section lists the message page layouts that are available for editing.

1. Click **New**.

The **Create New Page Layout** page is displayed. You can create a message page layout or clone from an existing layout.

2. Type a name for the layout in the **Page Layout Name** field.

3. Click **Save**.

The Message Layout page is displayed, where you select the fields to be used in the current message layout.

4. Modify the layout by dragging fields, buttons, and actions, from or to the **Message Sample** section.

A green line indicates the position of the newly-added item in the layout.

5. Optionally, click the **Remove** icon displayed against a field to remove it.

6. Click the **Properties** icon displayed against a field to open the **Field Properties** window.

7. Define the field as Read-Only or Required.

8. Optionally, click **Page Layout Assignment** to assign page layouts to *profile*.

9. Click **Save**.

The page layout is saved.

Create a Field Set

The Field Set defines the message component fields for the corresponding object. The Inventory Message and Required Inventory Message custom objects are created in the same way as described in this procedure.

1. Click **New**.
The **New Field Set** page is displayed.
2. Type information in the **Field Set Label**, **Field Set Name**, and **Where is this used?** fields.
3. Click **Save**.
The **Message component fields** page is displayed.
4. Modify the **In the Field Set** section by dragging items from the list of items at the top of the page.
The green line indicates the position of the newly-added item in the layout.
5. Optionally, click the **Remove** icon against a field to remove it.
6. Click the **Properties** icon against a field to open the **Field Set Item Properties** window.
7. In the **Field Set Item Properties** window, select whether the field is required.
8. To save the Field Set, click **Save**.

4 Oracle Field Service Cloud ETAWorkforce Settings

Field Mapping

You map fields so that you can move data between the mapped applications—in this case, Oracle Field Service Cloud and Salesforce.

You must map the ETAWorkforce2 object fields with the fields of Oracle Field Service Cloud entities. You can use the **Workforce2 Wizard** to map the mandatory fields of Activity and Inventory to the fields of Oracle Field Service Cloud ETAWorkforce object.


Map Using the Workforce2 Wizard

You can use either the **Workforce2 Wizard** or the **Settings** page to map mandatory fields of *activity* and *inventory* with the fields of Oracle Field Service Cloud ETAWorkforce object. The wizard creates the basic object mapping between Salesforce and Oracle Field Service Cloud. The mapping rules that are created through the wizard work in both directions – when a Salesforce object field is updated, the related Oracle Field Service Cloud entity field is updated. Similarly, if an Oracle Field Service Cloud entity field is updated, the corresponding fields of the related Salesforce object are also updated.

1. Go to the **All Tabs** page and click **Workforce2 Wizard**.
The **Credentials** page is displayed.
2. Enter the credentials of the Interface User.
Interface User is the user that handles the objects during the interaction between Salesforce and Oracle Field Service Cloud.
3. If no Interface User exists, click **Create new user** and use the credentials that you receive by e-mail. Ensure that the user has **English (United States)** locale and that the **API Enabled** profile permission is selected.
4. Click **Next**.
5. Enter the password for the Interface User in the pop-up window, and click **OK**.
If the user is authenticated, Step 2 of the wizard, **Activity fields mapping** page is displayed.
6. Select the object that you want to use as activity in Oracle Field Service Cloud ETAWorkforce.
The object that you select here determines what the next section is, and what fields are displayed in the section. The activity fields in Oracle Field Service Cloud will be filled with values of the fields of the object that you select here. For example, if you select Task, the activity fields of Oracle Field Service Cloud will be mapped with the Task object fields in Oracle Field Service Cloud ETAWorkforce. The **Task mapping** section displays the default mapping fields for the mandatory activity fields.
7. In the **Task mapping** section, change the mapping fields for the mandatory activity fields, if required. Hover the mouse over a field to see the list of all Task fields where other fields can be selected. Select a field of your choice.
8. Optionally, click **Add new** to add a new field.
9. Click **Next**.
The **Inventory fields mapping** step is displayed.

10. Select the Salesforce object that you want to map to Inventory in Oracle Field Service Cloud.

The **Custom mapping** section is displayed. The default mapping is displayed in all the mandatory fields.

 **Note:** You cannot select the same Salesforce object for both Activity and Inventory mapping in the wizard. The object that is selected for Activity mapping is not displayed in the list of Salesforce objects for Inventory mapping.

11. Change the mapping fields for the mandatory fields, if required. Hover the mouse over a field to see the list of fields that you can select. Select a field of your choice.
12. Optionally, click **Add new** to add a new field.
13. Click **Finish**.

The mapping is completed.

14. Optionally, click **Show Settings**.

The **Settings View** page is displayed, which summarizes the installed package details and the mapping settings.

This completes the installation process. The **Installation Info** page appears, displaying the configurations that you have performed. If any step fails, it is not marked as completed. The installation process stops, the screen displays an error message describing the problem, and lets the user return to the previous screens to modify the details. If the user clicks **Go to Settings** without going back and modifying the details, only the successful settings are saved.

Related Topics

- [Configuring Connectivity Settings](#)

Oracle Field Service Cloud ETAWorkforce Settings

The **OFSC Workforce** details section on the **Setting View** page contains the credentials of the current user, the details of settings, and the last modified details.

After installing Oracle Field Service Cloud ETAWorkforce, you can view the installed Oracle Field Service Cloud ETAWorkforce package from the User profile in Salesforce. The **Settings View** page contains the **OFSC Workforce details** section, which displays the basic user and package details. If Oracle Field Service Cloud ETAWorkforce was configured using the **Workforce2 Wizard**, the Oracle Field Service Cloud ETAWorkforce details are populated.

The **OFSC Workforce details** section contains the user credentials, the settings creation details, the last modification details, and the following mapping limit settings:

Limit	Description
Incoming inline mapping	If the number of incoming messages is more than this value, mapping Apex Job is created for them.
Incoming Interface messages	The number of status updates or messages that are sent to Salesforce when the agent runs. Values range from 1-9999.
Outgoing inline mapping	If the number of outgoing messages is more than this value, mapping Apex Job is created for them.
Outgoing Interface messages	The number of Activity messages that are processed and sent to Oracle Field Service Cloud when an agent runs. Values range from 1-9999.
Mapping messages	The number of Activity messages of the new status that are processed when an Apex Job runs.

Limit	Description
Mapping batch scope	The number of messages in the new status that are processed in one batch of an Apex Job. The number of batches must not exceed 200, so (Mapping messages limit/ Mapping batch scope) must be less than 200.


Create Field Mapping Manually

Field mapping is the process of linking the Salesforce fields sent in a message to the corresponding fields in Oracle Field Service Cloud. Correct mapping ensures proper update of Salesforce fields when corresponding fields in Oracle Field Service Cloud are updated. The reverse is true as well. If Oracle Field Service Cloud ETAWorkforce is configured manually, the **Settings View** screen does not contain mapping sections.

1. Click **Create activity mapping for**, **Create required inventory mapping**, or **Create inventory mapping for**. The **Map to object** pop-up window appears.

2. Select the Salesforce object to which you want to map the selected Oracle Field Service Cloud entity.

The corresponding mapping section with the Triggers and Fields mapping subsections are displayed. The header of the section is in the format: [(Oracle Field Service Cloud) field name] mapping for [Salesforce object name] object.

 **Note:** You can select a Salesforce object only once for an Oracle Field Service Cloud entity—this is regardless of whether you have selected the entity through the **Workforce2 Wizard** or manually. When you select an object for mapping, it is no longer available in the **Map to Object** list. The **Settings View** page displays the mapping sections based on the Activity and Inventory mapping rule set in the wizard.

The **Fields mapping** subsection lists the Salesforce object fields that can be sent in the Activity Message, Inventory Message, or Required Inventory Message. That is, the [Mapping Object] field name column corresponding to the imported Oracle Field Service Cloud fields, if any.

Whenever you add a new object for mapping, the application configures a key field by default. This field is the key field for the entity in Oracle Field Service Cloud and it cannot be deleted. Some of the key fields are as follows:


- o Activity – Activity number
- o Inventory – Serial number
- o Required Inventory – Required Inventory ID

3. Optionally, if you want to import fields, click **Import fields from Oracle Field Service Cloud**.

The **Import mapping fields** window appears, where you can import fields for the selected entity. The window contains the list of fields available for import.

4. Select the fields and click **Import**.

The selected fields, their corresponding Salesforce fields, and the corresponding Message fields are added to the **Fields mapping** list.

 **Note:** You cannot import properties that have spaces in their labels. Salesforce does not support properties with spaces in their names.

Create Mapping Rules

After identifying the Oracle Field Service Cloud fields and the corresponding Message fields that you want to map, define the mapping rules.

1. On the **[Field name] mapping for [name of the object] object** page, click **New** in the **Action** column of the **[Name of the object] fields mapping** section.
The **New message mapping field** page is displayed.
2. Select one of the following options for **Direction**:
 - Send to Oracle Field Service Cloud: Updates to Salesforce object fields are sent to Oracle Field Service Cloud and the corresponding entity fields are updated. No updates of Oracle Field Service Cloud entity fields are sent to Salesforce.
 - Retrieve from Oracle Field Service Cloud: Updates to Oracle Field Service Cloud entity fields are retrieved by Salesforce and the corresponding object fields are updated. No updates of Salesforce object fields are sent to Oracle Field Service Cloud.
 - Both directions: Updates of Oracle Field Service Cloud entity fields and Salesforce object fields are sent in both directions and the corresponding fields in both applications are updated.
3. Complete the following fields in the **Mapping method** section:

Field	Description
Field value	The field is updated with the value of the corresponding field in the other application. When you select this option, the user must choose the object field for mapping. Hover the mouse over the field to see the list of all fields where you can select the desired field.
Document content	When the mapped field is a file property, the corresponding field is updated with the content of such file property.
Text value	When you select this option, the user must enter a text value in the field. The mapped field(s) will be updated with this value.

4. Click **Create**.
The mapping rule is created and added to the **Fields mapping** list.
5. To edit a mapping rule, click **Edit** in the **Action** column.
6. To delete a mapping rule, you must first clear it. Click **Clear** in the **Action** column.
The mapping rule is cleared and the field is retained in the **Fields mapping** list. The **Clear** link changes to **Delete**.
7. To remove the field from the **Field mapping** list, click **Delete**.

Link Template Mapping

Links are not actual fields, they are a kind of bidirectional templates, for example, start-before and start-after. You define link mapping as part of Activity mapping and include in the Activity mapping table. To create a link mapping, you must import the corresponding fields from Oracle Field Service Cloud. When you filter the list of fields to show links, the list of link templates configured in Oracle Field Service Cloud are shown.

Because link fields are not actual *activity* fields in Oracle Field Service Cloud, when imported, they have [feature] instead of a label. In addition, as links can be bidirectional, you import two items for the same link template. When you import link templates, you must define mapping rules for them. Mapping rules ensure that the fields are updated properly between

Oracle Field Service Cloud and Salesforce. It is recommended to choose the Lookup relation field to the same object, so that the Activity object has only one link per direction.

When you import and map links properly, they work as follows:

- When a link field is changed, a new Activity Link Message is created and a request is sent to Oracle Field Service Cloud Activity Management API to link to activities.
- When the link is changed in Oracle Field Service Cloud, the link field is updated in Salesforce and an Activity Link Message with the External System flag is created.
- If there are multiple activities with the same Activity ID--this can happen when an activity is suspended, canceled and then reopened--the activity to be linked will be a scheduled activity not in a final status which is the most distant in the future. For example, suppose the following activities have the same ID:
 - 3000-01-01 Pending
 - 2020-01-01 Canceled
 - 2019-01-01 Pending
 - 2018-01-01 Pending
 - 2000-01-01 Pending

The 2019-01-01 *pending activity* activity is selected for linking. The 3000-01-01 pending activity is non-scheduled, the 2020-01-01 cancelled activity is in a final status, and of the remaining three 2019-01-01, pending is the most distant in the future.

Triggers

Triggers help the mapped fields send the corresponding messages. The **Triggers** subsection is part of the window where you create a field mapping.

You can edit or delete triggers using the **Edit** and **Delete** links in the **Action** column.

Create Advanced Mapping Rules

For complex mapping rules such as map fields if a certain condition is true but not otherwise, simple GUI-supported mapping rules are not enough. In such cases, you can use the Apex-trigger supported rules. An Apex trigger is **Apex** code that executes before or after specific data manipulation. The goal of this trigger is to provide a possibility for the client to manage object messages. For example, customize conditions for creating messages, message behavior, map fields, and handling message statuses.

1. Click **Organization** > **{Salesforce user name}** > **Setup** > **App Setup** > **Develop** > **Apex Triggers** .
2. Click the trigger name.
The trigger details page is displayed.
3. Click **Edit**.
The **Apex Trigger Edit** page is displayed.
4. Edit the code to suit your requirement and click **Save**.

Initiate Activity Operations

Activity operations in Oracle Field Service Cloud such as start, cancel, or suspend are performed using advanced mapping. Advanced mapping is created using *apex* triggers. You must edit the trigger to initiate activity operations.

The following operations are available:

- start_activity
- complete_activity
- notdone_activity
- suspend_activity
- update_activity
- cancel_activity
- delete_activity

1. Find the **[Linked Object] triggers** section on the **OFSC Workforce Settings View** page.
2. Click **Edit** for the **Workforce2_CreateActivityMessageFor[Linked object name] trigger**.

The **Apex trigger edit** page is displayed.

3. Replace the following code:

```
messages.add(new TOA2__Workforce2_ActivityMessage__c(TOA2__InternalKey__c=A-  
+obj.Id,TOA2__appt_number__c=obj.Id));
```

with the following code:

```
String operation=update_activity;  
if(Trigger.oldMap!=null && Trigger.oldMap.get(obj.Id).[Your field]!=obj.[Your field])  
{ if(obj.[Your field]==[Your start status]) operation=start_activity;  
if(obj.[Your field]==[Your complete status]) operation=complete_activity;  
}  
messages.add(new TOA2__Workforce2_ActivityMessage__c(TOA2__InternalKey__c=A-  
+obj.Id,TOA2__appt_number__c=obj.Id,TOA2__type__c=operation));
```

Update Mapping in Oracle Field Service Cloud

When you map fields, you must communicate the new mapping settings to Oracle Field Service Cloud for the mapping to work. To do this, you must establish or reestablish the communication between Oracle Field Service Cloud and Salesforce.

1. Click **Connect to Oracle Field Service Cloud** on the **Settings View** page.
2. Enter the password.

The mapping settings are sent to Oracle Field Service Cloud, and are applied when the mapped fields are updated in either application.

All changes to Oracle Field Service Cloud ETAWorkforce Settings except the URLs and user credentials are updated and applied automatically when the agent runs the next time. Changes to the URLs and user credentials (Instance name, User login, User password, Oracle Field Service Cloud URL, Interface user login, Interface user token, Salesforce user login) require reconnecting to Oracle Field Service Cloud. Link mapping settings are not applied automatically and require reconnecting to Oracle Field Service Cloud. In addition, changes to link templates, resource list, and time zones in Oracle Field Service Cloud are not applied automatically. Reconnect to update

these changes in Salesforce. Otherwise, Oracle Field Service Cloud ETAWorkforce continues using old values for 15 minutes.

3. To apply link mapping settings, click **Reconnect to Oracle Field Service Cloud** .
The current connection is interrupted and a new connection is established using the new credentials.
4. If a different organization has to use the same instance to connect to Oracle Field Service Cloud, the existing connection has to be interrupted. Click **Disconnect from Oracle Field Service Cloud** link on the **Settings View** screen.

5 Creating Messages and Processing Activities

Activity Types

An activity is any time-consuming task done by a resource (for example, installation, trouble call, lunch, team meeting, and so on). Each activity type includes a set of features, which are yes/no flags and define the way the activity type is processed. For example, whether activities of a specific type can be moved, created in *bucket*, rescheduled, and so on. Access to the **Activity Types** window is controlled by the **Activity Types visibility**. You must set this permission for each user type that you want to manage Activity Types. If the action is not configured for the user type or if no visibility is defined, **Activity Types** are not visible to the user. If you select ReadOnly, **Activity Types** is placed into a view only mode. If you select Read/Write for this setting, the user can manage Activity Types.

The following table provides a detailed description of the features that may influence the processing of *activity* from the back office applications through Oracle Field Service Cloud:

Feature	If enabled, the activities of the type...
Allow to create from Incoming Interface	... can be created from external systems, including Oracle Field Service Cloud ETAWorkforce
Allow move between resources	... can be moved between resources
Allow creation in bucket	... can be created in bucket through routing plans and profiles
Allow reschedule	... can be moved to another day
Support of not-ordered activities	... can be not-ordered – such that can be started by the resource before/after any other activity within the route
Allow non-scheduled	... can be activities without a date
Support of time slots	... can use time slots (time-period within which they are to be started can be defined)
Calculate activity duration using statistics	... are estimated using statistics that are gathered at the resource level and company level

Activity Status

An *activity* can have the statuses of pending, started, completed, canceled, not done, suspended, and deleted.

An activity can have following statuses in Oracle Field Service Cloud:

Status	Description
Pending	the activity is created in the resources route
Started	the activity is started and is being processed; only one activity can be started for a route at the same time

Status	Description
Completed	the activity is successfully completed
Canceled	the activity is not started and will not be performed
Not done	the activity is started, but is not completed yet
Suspended	the activity is postponed for some reason; when an activity is postponed in Oracle Field Service Cloud, its end_time is set as the time of suspension, and it is assigned with the suspended status; a new activity of pending status copying the suspended one is created; the suspended activity is ignored by Oracle Field Service Cloud ETAWorkforce, and the pending activity is processed
Deleted	the activity is deleted from the system; deleted activities do not appear anywhere in the system and cannot be viewed

How Activity Status and Activity are Processed

Activities are processed based on their type and status.

Activity commands ignore the following types of activities:

- **Prework**
- Activities with status set to canceled from Salesforce
- Activities with status set to deleted or **suspended** (regardless of how the status was set)
- Activities scheduled for a past date

Thus even if any of the activities mentioned earlier have any key fields, they are not considered as existing activities. Inbound API considers them as non-existent activities. For example, if a command is set, and the key fields are present only in an activity canceled through the Inbound API, or a deleted activity, such activities are not considered. A new activity is added.

If there are multiple activities with the same key fields, the activity with the maximum ID is processed. The remaining activities are considered as duplicates and are canceled or deleted at the end of the transaction.

Pending activities are processed according to the command flow. All the fields, including date and resource can be processed if the command request sets so. Activities with statuses of started, completed, cancelled (from Oracle Field Service Cloud), or **not done** are processed according to the values specified for action_if_completed.

action_if_completed parameter

The action_if_completed parameter can have any of the following values:

Value	Description
ignore: not to update the activity and neither to insert a new activity	No new activity is created and the error, Appointment status is not pending is generated.
update: update existing activity	No new activity is created and the existing activity is updated. Date, resource and standard Oracle Field Service Cloud fields cannot be updated. Only custom properties can be updated.
create: always create a new activity, unless an existing activity is started	<ul style="list-style-type: none"> • Canceled by user, completed, and not done activities are ignored – a new activity is created. • Properties of activities with the started status are updated.
create_if_reassign_or_reschedule: create activity with new date or provider or provider_group (= create_as_new and default)	<ul style="list-style-type: none"> • If the date specified for the transaction is different from the one specified for the started activity, a new pending activity is created.

Value	Description
	<ul style="list-style-type: none"> If the date or provider, or provider group specified for the transaction is different from the one specified for canceled by user, completed, or not done, a new activity is created with the Pending status. If not, the existing activity is updated.

How Activity Fields are Processed

Activity fields are processed based on their visibility and type.

When you have two fields with the same name, the fields are called duplicates. The fields may have different values, but while updating, the value that belongs to a Oracle Field Service Cloud activity and has the highest ID is used. Sometimes duplicate fields are necessary to implement specific things, but they can cause confusion. So, a warning is issued when you try to add duplicate fields.

Refer to the following topics:

- Activity field types
- Visibility of activity fields

Visibility of Activity Fields

The visibility of **activity** fields is defined for each user as part of the display profile.

Visibility of activity fields is as given in the following table:

Value	Description
Not Visible	<ul style="list-style-type: none"> The field cannot be accessed (customer-specific). If the Activity Message contains a field marked not visible, the field is ignored and a corresponding warning is sent.
ReadOnly	<ul style="list-style-type: none"> The field value can be retrieved but cannot be edited. If the Activity Message contains a ReadOnly field, the field is ignored and a corresponding warning is sent to Oracle Field Service Cloud ETAWorkforce from Oracle Field Service Cloud.
Optional	<ul style="list-style-type: none"> The field value can be retrieved and, optionally, edited. If the Activity Message contains an optional field, the field is processed. If the Activity Message contains an invalid optional field, the field is ignored and a corresponding warning is sent.
Mandatory	<ul style="list-style-type: none"> The field must be defined. If the Activity Message contains a mandatory field, the field is processed. If the Activity Message contains an invalid or a no mandatory field, the activity is not processed and the error message is sent to Salesforce.

Activity Field Types

Every *activity* field has a fixed type.

The activity field types are as follows:

Type	Description
Text	Any string can be assigned to a field.
Number	<ul style="list-style-type: none"> Any integer can be assigned to a field. Suppose the Activity Message has a field of type number, but has non-numeric value and the visibility is not mandatory. The field is ignored and a warning is sent to Salesforce. Suppose the Activity Message contains a field of type number, but has non-numeric value and the visibility is mandatory. The activity is not processed and an error message is sent.
Email	<ul style="list-style-type: none"> E-mail address in the established format (the @ symbol must always be used) If the Activity Message contains an E-mail field with an invalid value, the field is not updated. The message, Invalid Email is sent.
Picklist	<ul style="list-style-type: none"> Only values of a fixed subset of integers can be assigned to a field. The subset is defined for the field and cannot be configured.
Date	<ul style="list-style-type: none"> Date in the MM/DD/YYYY format. If the Activity Message contains a Date field in an invalid format, the field is not updated. The message, Invalid Date is sent.
DateTime	<ul style="list-style-type: none"> Date and time in the MM/DD/YYYY HH:MM[AM/PM] format. If the Activity Message contains a DateTime field in an invalid format, the field is not updated. The message, Invalid Date and Time is sent.

Order of Activities in a Route

In Oracle Field Service Cloud, an *activity* can be either *ordered* or *not ordered*.

Ordered and not-ordered activities are defined as follows:

- Ordered: Must be started within the defined period with the service window start and service window end values. Earlier activities are displayed higher in the list. Activities are ordered in the resources route (activity ordering is not significant for *bucket*):
 - By service window end values.
 - If they are the same, activities are ordered by the service window start values.
 - If they are the same, activities are ordered by their *service-level agreement* (SLA) window end values.
 - If they are the same, activities are ordered by their SLA window start values.

- o If they are the same, activities are ordered by the activity ID. When a route contains ordered finish-to-start linked activities, the links have higher priority in the activities ordering than any other criteria. Activities are first ordered according to their sequence in the link and then, the service window, SLA and ID are checked.
 - o Not-ordered: Can be started at any time, completed at any time of the day, and appear at the top of the list. Relative order of not-ordered activities is not significant. If an activity is created from *Oracle Field Service Cloud ETAWorkforce* and its service window time is not specified, it becomes not-ordered.
- Here is an example of correct ordering:

#	Service Window Start	Service Window End
1.	08:00	10:00
2.	10:00	11:00
3.	08:00	12:00
4.	10:00	12:00

When activities are updated, they are again reordered by the same criteria, if necessary.

Updating and Replacing Properties

When activity-related commands are executed, *activity* properties are updated or replaced, based on the **head** and **properties_mode** setting of the transaction.

Properties are updated or replaced based on the following rules:

- Replace: When an activity is updated, all the existing properties are erased and properties from the current request are added.
- Update: When an activity is updated, properties from the current request are added to the existing properties. The existing properties are retained.

The *time slot* (service window) values are always updated with the values specified in the Activity Message. If the Activity Message field has an empty value, the activity is set to *not-ordered activity*. If the field is not defined for the Activity Message, it is not changed.

Fields Changed from Oracle Field Service Cloud

Some fields of the existing *activity* cannot be updated from Oracle Field Service Cloud ETAWorkforce, if they have been previously changed in Oracle Field Service Cloud. If Oracle Field Service Cloud ETAWorkforce attempts to change such fields, the changes are rejected. The fields that cannot be updated from Oracle Field Service Cloud ETAWorkforce are:

Field Name
reminder_time
language
time_zone
name
address

Field Name
city
zip
state
phone
email
cell
sla_window_start
service_window_start
time_slot_id
sla_window_end
service_window_end

Fields Updated only from Oracle Field Service Cloud

Some fields can be updated only in Oracle Field Service Cloud and sent to Salesforce. The reverse is not available due to the nature of the field values. For example, fields such as `delivery_window`, are calculated in Oracle Field Service Cloud, therefore, cannot be updated from Salesforce. These fields can only be retrieved from Oracle Field Service Cloud, so, you must map such fields only in the in direction. Mapping in the out direction will have no effect.

The fields that can be updated only from *Oracle Field Service Cloud ETAWorkforce* are:

Field name
appt_number (key field which cannot be changed in Salesforce. At the same time, if appt_number is changed in Oracle Field Service Cloud, the related object will not be updated in Salesforce)
activity_workskills
astatus (can only be mapped through the start_activity and cancel_activity operations. For more details, refer to Advanced Mapping Rules)
aid
aworkzone
time_delivered
end_time (only used in the complete_activity operation)
delivery_window
eta_end_time
pid
acoord_status
accord_x
accord_y
travel

Field name
atravelarea
activity_capacity_categories
ETA
auto_routed_to_date
atime_of_assignment
atime_of_booking
auto_routed_to_provider_id
first_manual_operation
first_manual_operation_interface
first_manual_operation_user_name
first_manual_operation_user_id
first_manual_operation_user_login
auto_routed_to_provider_name

Non-Scheduled Activity

When a *non-scheduled activity* is canceled, it is rescheduled to the current day and then canceled.

The following scenarios further describe how non-scheduled activities are processed:

If...	Then...
The resource has a non-working day or is inactive AND the fallback_external_id parameter is not specified or is invalid	An error message appears and the activity is not canceled.
The resource has a non-working day or is inactive AND the fallback_external_id parameter is specified and is valid	The activity is moved to the fallback resources route for the current day and canceled.

The delete_activity command deletes non-scheduled activities without moving them, so it never fails.

Activity Assigned to a Non-Working Resource

If an *activity* is assigned to:

- a **resource** with non-working calendar
- an inactive resource
- be moved to such a resource with the update

the activity is updated as requested, but it is not moved or canceled.

Activity Processing Commands

activity processing commands are used to manage an activity throughout its lifecycle.

The following activity-related commands are available:

- start_activity
- complete_activity
- notdone_activity
- suspend_activity
- update_activity
- cancel_activity
- delete_activity

start_activity Command

The start_activity command affects only the *activity* specified by the key fields that exist in the system within an active route for the current day. It sets the activity status to **Started**.

The command works as described in the following table:

If...	Then...
The activity processed is not the first in the route	<ul style="list-style-type: none"> • The activity is moved into the first position in the queue. • The warning, The appointment starting order is invalid is displayed.
If/when the activity processed is the first in the route	<ul style="list-style-type: none"> • The activity specified by the key fields is started. • The activity fields are updated with the values from the Activity Message. • The travel time (time from the end of the previous activity to the start of the processed activity) is recorded in the statistics table, unless the activity was not initially the first in the route.

The command fails, if:

- The activity does not exist in Oracle Field Service Cloud
- The activity is in an inactive route.
- The command/time is not current day (except overnight work).
- Another activity in the route has the Started status.
- The command/time is less than the route activation time.
- The command/time is less than the time the previous activity was finished.

complete_activity Command

The command affects only the started activity specified by the key fields that exists in the system. It sets the *activity status* to *Completed*.

The command:

- Completes the existing started activity, specified by key fields
- Updates activity fields

The command fails, if:

- The activity does not exist in Oracle Field Service Cloud.
- The activity status is other than *Started*.
- The command/time is less than the activity start time.

notdone_activity Command

The command affects only the *activity* that is *started* and is specified by the key fields that exist in the system. It sets the activity status to *not done*.

The command:

- Sets the existing started activity, specified by the key fields to Not done.
- Updates the activity fields with the fields of the Activity Message.

The command fails, if:

- The activity does not exist in Oracle Field Service Cloud.
- The activity status is other than Started.
- The command/time is less than the activity start time.

suspend_activity Command

The command affects only the *started* activity specified by the key fields that exists in the system. It sets the *activity* status to Pending and creates a new suspended activity.

The command:

- Sets the existing started activity specified by the key fields to Pending and make it a *not-ordered activity*.
- Creates a new activity with the status Suspended that duplicates the *pending* activity.
- Sets the end_time of the suspended activity to command/time.
- Updates the pending activity fields with the fields of the Activity Message.

The command fails, if:

- The activity does not exist in Oracle Field Service Cloud.
- The activity status is other than Started.
- The command/time is less than the activity start time.

update_activity Command

The command affects only the **activity** specified by the key fields.

The command works as described in the following table:

If...	Then...
No activities with the specified key field values exist in the system	<ul style="list-style-type: none"> • A new activity is inserted. • Standard and custom fields are set for it as specified in the Activity Message.
A pending activity with the specified key field values exists in the system	<ul style="list-style-type: none"> • The date, resource, fields, and custom fields are updated or replaced as specified in the Activity Message. • All duplicating activities are deleted or canceled.
A started, canceled from the Oracle Field Service Cloud, completed or not-done activity with the specified key field values exists in the system	It is processed based on the value selected for action_if_completed.

cancel_activity Command

The command works as described in the following table:

If...	Then...
No activities with the specified key field values exist in the system	The command is rejected.
An activity with the specified key field values exists in the system	<ul style="list-style-type: none"> • The standard and custom fields of the activity are updated (update_activity command). • The activity is canceled. • All duplicating activities are deleted.
The existing activity is <i>non-scheduled activity</i> and the date field is not defined	<ul style="list-style-type: none"> • If the resource for the current day is valid, the activity is rescheduled to the current date and then canceled. • If the resource is not working or not valid for the current day and the fallback resource is specified and valid, the activity is moved to the fallback resource, rescheduled to the current date and then canceled. • If the resource is not working or not valid for the current day and fallback resource is not specified or is invalid, the command is rejected and the activity is not canceled.

delete_activity Command

The command affects the *pending* activity specified by the key fields that exists in the system. It deletes the activity from the system if the route has not been started yet or cancels the activity otherwise.

The command works as described the following table:

If...	Then...
The external_id is specified in the command and is different from the existing activity external_id	The activity is moved to the specified resource.
The resources route is active	<ul style="list-style-type: none">• The standard and custom fields (update_activity command) are updated.• The activity is canceled.
The resources route is inactive	The activity is deleted.

The command fails, if:


- The activity does not exist in Oracle Field Service Cloud.
- The activity status is something other than *started*.

6 Message Processing

How Required Inventory, Inventory, and Activity Messages are Processed

Required inventory and *inventory* are processed the same way in Salesforce.

When you deploy Oracle Field Service Cloud ETAWorkforce, the Required Inventory, Inventory, and Activity message custom objects are created in the client's Salesforce Organization. In some cases, the client's Salesforce-based application requires the ability to create the message instances and send them to Oracle Field Service Cloud through Oracle Field Service Cloud ETAWorkforce. These message instances are used to process the custom objects from the application code. So, you must implement the code to create the Required Inventory, Inventory, or Activity message instance that defines the way the Required Inventory, Inventory, or Activity message object instance in Oracle Field Service Cloud is processed.

 **Note:** This process is same for Required Inventory, Inventory, and Activity messages. For more details, refer to Inbound SDK document.

About the Inventory Object

In the context of Salesforce, Inventory is a piece of hardware that exists at the customer's premises, before an activity is performed.

Inventory is also referred to as customer inventory. Customer inventory is an activity property of the activity it is assigned to.

Serialized and Non-Serialized Inventory

Serialized inventory is identified with a serial number, while non-serialized inventory is identified by inventory type and model. Non-serialized inventory has the quantity property, which defines the number of inventory units in the pool.

Activity Inventory: Validating and Updating

When activity-related commands are executed, the corresponding properties of *inventory* are updated. All the inventories specified for the *activity* are validated and only the validated inventories are updated.

Validating activity inventory

If the required conditions are met, inventory is validated, if not, it is rejected. The successfully validated activity inventory items are updated. The inventory is validated as follows:

If	Then
Inventory keys are not set	Inventory is rejected with the message, Inventory key fields are not defined.
Inventory has no properties at all	Inventory is rejected with the message, Inventory properties are absent or inventory key is absent.
One of the key fields is not specified	Inventory is rejected with the message, Inventory key field field name is empty or inventory key field field name is absent.

If	Then
Any of inv_pid, inv_aid, invtype, invid, inv_change_invid values are non-numeric	Inventory is rejected with the message, Inventory key field field name has numeric type but non-numeric value value.
An inventory property has no name	Inventory is rejected with the message, Property has no name.

Updating validated inventory

No existing inventory is deleted. Each inventory item is reconciled based on the following conditions:

If	Then
The existing activity has inventory with the same key values as this inventory	All non-key fields of the existing inventory are updated with the values from the Inventory Message AND the fields of the existing inventory absent in Inventory Message are deleted (if any).
The existing activity does not have this inventory	New inventory is inserted.

Required Inventory Processing Details


If an update_activity command contains a required_inventories element, then:

- The existing *required inventory* of the *activity* are deleted.
- New required inventories are added when specified in the request.
- An empty required_inventories element deletes all existing required inventories of the activity.

The required inventory will not be added if:

- The command type is not update_activity.
- The activity status is something other than *pending*.
- The activity does not have the required inventory support feature enabled.
- Inventory Type specified in the request is invalid.
- The model specified in the request does not match the model property rules.
- Required Inventory with this type ID and model already exists for this activity.

In all cases mentioned earlier, a warning is returned in response and the rest of the command is executed without modifying the Required Inventory.

 **Note:** Each Activity Message in Oracle Field Service Cloud ETAWorkforce contains the **Update required inventory** field set to **True** by default. Therefore, a Required Inventory Message is sent even when there is no inventory required for the activity. In this case, the warning : Cannot add required inventories: It is not allowed to set required inventory for this type of activity. ApptID=xxxx. may be displayed. For this error, depending on the situation, either enable the support for Required Inventory for the Activity Type or modify the trigger and disable the **Update required inventory** field for the Activity Message.

Advanced Message Processing

When an event or a condition occurs in the system, Oracle Field Service Cloud ETAWorkforce receives the message with a set of message fields and values.

A list of message scenarios is created based on your organizational requirements. This list is used to deliver messages to Oracle Field Service Cloud ETAWorkforce. While some of the messages provide transaction success details, some messages are used to modify the values of the message instances. If message instances are modified, other Salesforce objects that are mapped are also modified.

7 Troubleshooting

Troubleshoot Oracle Field Service Cloud ETAWorkforce

All events that occur between Salesforce and Oracle Field Service Cloud are recorded in the **Service Run History** object. This is a special Salesforce object that stores the operations history.

1. Navigate to the **Settings View** page and click the **Troubleshooting** link.
The **Troubleshooting** page appears and displays the summary of all processed messages. The message summary is shown only for those objects for which mapping is defined. The Troubleshooting screen also displays the history of mapped jobs and deleted jobs.
2. Click the refresh icon to enable auto-updating of messages every minute.
If you choose to disable auto-update, you must refresh the page manually.

Additional Salesforce Logs

In addition to the log data displayed on the Troubleshooting page, other Salesforce logs are available. The logs are available under **Setup > Administration Setup > Monitoring** .

Troubleshoot the Connection

This section provides tips to troubleshoot connection errors between Salesforce and Oracle Field Service Cloud.

1. Perform the following checks:
 - o Check the last connect message in the Oracle Field Service Cloud ETAWorkforce sidebar component.
 - o Check the last connect message on the Oracle Field Service Cloud ETAWorkforce settings page.
 - o Check **Service Run History** on the **Troubleshooting** page, to make sure that the agent connects to Salesforce and attempts to process messages.
 - o Check the current Salesforce user e-mail.
 - o Check the primary contact e-mail of the Salesforce Organization.
 - o Try clicking **Connect/Reconnect** to Oracle Field Service Cloud from the **OFSC Workforce Settings** page.
2. Perform the following checks for the corresponding error messages:

Error	Troubleshooting Tip
Can't connect to Oracle Field Service Cloud: Unable to tunnel through proxy. Proxy returns "HTTP/1.0 404 Not Found"	Check the Oracle Field Service Cloud URL on the Settings page. If the URL stated on the page is correct, contact Oracle support.
Can't connect to Oracle Field Service Cloud:API-Portal: Authentication failed	Check the instance name. If the instance name is correct, contact Oracle support.

Error	Troubleshooting Tip
Can't connect to Oracle Field Service Cloud:Login failed	Check the user login and user password.
Can't connect to Oracle Field Service Cloud:SDFC login error. INVALID_LOGIN: Invalid username, password, security token; or user locked out.	Check the interface user login, interface user token, interface user password and Salesforce login URL.

3. Lower the current limits on the Oracle Field Service Cloud ETAWorkforce Settings page for errors related to the limits of the Service Run History or Mapping jobs tables.
4. If none of the earlier checks resolves the problem, contact Oracle support.

Revision History

This document will continue to evolve as existing sections change and new information is added.

Date	What's Changed	Notes
June 2017	Minor changes for clarity and consistency	
May 2017	Minor changes for clarity and consistency	
April 2017	Minor changes for clarity and consistency	
March 2017	Minor changes for clarity and consistency	
February 2017	Minor changes for clarity and consistency	
January 2017	Minor changes for clarity and consistency	
November 2016	Minor changes for clarity and consistency	
September 2016	Minor changes for clarity and consistency	
August 2016	Minor changes for clarity and consistency	
April 2016	Minor changes for clarity and consistency	

