

**Oracle Utilities Customer Cloud Service  
Integration to Oracle Field Service**

Upgrade Guide

Release 22A

**F70171-01**

May 2022



---

---

# Contents

<b>Preface</b> .....	<b>i</b>
Audience .....	ii
Documentation and Resources .....	ii
Updates to Documentation.....	iii
Documentation Accessibility .....	iii
Conventions.....	iii
Acronyms.....	iii
<b>Chapter 1</b>	
<b>Upgrade Overview</b> .....	<b>1-1</b>
Prerequisites.....	1-2
Upgrade Matrix .....	1-2
<b>Chapter 2</b>	
<b>Upgrading the Integration</b> .....	<b>2-1</b>
Upgrade Process Overview.....	2-2
Creating a Backup.....	2-2
Removing Old References .....	2-3
Deleting References to Lookups .....	2-3
Deleting References to Libraries.....	2-3
Upgrade Process .....	2-3
<b>Chapter 3</b>	
<b>Validations</b> .....	<b>3-1</b>
Connections.....	3-2
Integrations.....	3-2
Lookups.....	3-2
Agents.....	3-3
Libraries.....	3-3
<b>Chapter 4</b>	
<b>Merging the Customizations</b> .....	<b>4-1</b>
Merging the Oracle Integration Cloud Prebuilt Customizations .....	4-2
Merging the Oracle Field Service Customizations .....	4-3
Properties.....	4-3
User Type .....	4-3

---

---

# Preface

Welcome to the Oracle Utilities Customer Cloud Service Integration to Oracle Field Service Upgrade Guide. This document guides you through the process of planning and executing the integration between Oracle Utilities Customer Cloud Service and Oracle Field Service.

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 Customer Cloud Service and Oracle Field Service.

## Documentation and Resources

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

### Product Documentation

Resource	Location
Oracle Utilities Customer Cloud Service Integration to Oracle Field Service documentation	<a href="https://docs.oracle.com/en/industries/utilities/integrations-index.html">https://docs.oracle.com/en/industries/utilities/integrations-index.html</a>
Oracle Utilities Customer to Meter documentation	<a href="https://docs.oracle.com/en/industries/energy-water/c2m/">https://docs.oracle.com/en/industries/energy-water/c2m/</a>
Oracle Utilities Customer Cloud Service documentation	<a href="https://docs.oracle.com/en/industries/utilities/customer-cloud-service/">https://docs.oracle.com/en/industries/utilities/customer-cloud-service/</a>
Oracle Field Service documentation	<a href="https://docs.oracle.com/en/cloud/saas/field-service/22a/index.html">https://docs.oracle.com/en/cloud/saas/field-service/22a/index.html</a>

### Additional Documentation

Resource	Location
Oracle Integration Cloud Service documentation	Refer to the OIC documentation at: <a href="https://docs.oracle.com/en/cloud/paas/integration-cloud/index.html">https://docs.oracle.com/en/cloud/paas/integration-cloud/index.html</a>
Oracle Support	<p>Visit My Oracle Support at <a href="https://support.oracle.com">https://support.oracle.com</a> 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 <a href="http://my.oracle.com/site/tugbu/productsindustry/productinfo/utilities/integration/index.htm">http://my.oracle.com/site/tugbu/productsindustry/productinfo/utilities/integration/index.htm</a></p>
Oracle University for training opportunities	<a href="http://education.oracle.com/">http://education.oracle.com/</a>

## Updates to Documentation

The complete Oracle Utilities Customer Cloud Service Integration to Oracle Field Service documentation set is available from Oracle Help Center at <https://docs.oracle.com/en/industries/utilities/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
<b>boldface</b>	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
OUCCS	Oracle Utilities Customer Cloud Service
OFS	Oracle Field Service
OIC	Oracle Integration Cloud
OUC2M	Oracle Utilities Customer to Meter

# Chapter 1

---

## Upgrade Overview

**Please note** that this document focuses only on Oracle Integration Cloud and Oracle Field Service **accelerator** upgrades and does not apply to Oracle Integration Cloud and Oracle Field Service **application** upgrades.

This chapter provides an overview of the required artifacts needed before upgrading the integration and merging the customizations to the latest version. It focuses on the prerequisites and upgrade matrix necessary for the integration.

**Important!** For all annual releases (a “B” release), upgrade the following packages:

- Oracle Field Service Accelerator
- Oracle Utilities Customer Cloud Service Integration to Oracle Field Service Oracle Integration Cloud Accelerator

Also, upgrade the following applications:

- Oracle Utilities Customer Cloud Service
- Oracle Field Service

For the other releases (“A” or “C”), you can choose to only upgrade the Oracle Utilities Customer Cloud Service application.

The following are included:

- [Prerequisites](#)
- [Upgrade Matrix](#)

## Prerequisites

Download the following artifacts related to the version to which the product needs to be upgraded:

- Oracle Integration Cloud Prebuilt Integration Accelerator Package
- Oracle Field Service Accelerator Package

To upgrade the integration to 22A, download the 22A Prebuilt Integration and 22A Oracle Field Service Accelerator packages. It is applicable to other versions as well.

**Note:** Marketplace will include only the latest releases of Oracle Integration Cloud and Oracle Field Service Accelerator. To upgrade to version that is not listed on Marketplace, raise a service request with My Oracle Support at <https://support.oracle.com/portal/>. The artifacts for the requested version are shared through the service request.

## Upgrade Matrix

The following upgrade matrix provides details about mandatory version upgrade, supported and not supported integration package versions (that include both Oracle Integration Cloud prebuilt and Oracle Field Service accelerator packages) with respect to the Oracle Utilities Customer Cloud Service application version.

Application/ Package Versions	CCS-OFSC 20A	CCS-OFSC 20B	CCS-OFSC 20C	CCS-OFSC 21A	CCS-OFSC 22A
CCS 20A	Ⓜ	×	×	×	×
CCS 20B	✓	✓	×	×	×
CCS 20C	✓	✓	✓	×	×
CCS 21A	×	×	×	Ⓜ	×
CCS 21B	×	×	×	✓	×
CCS 22A	×	×	×	✓	×

Ⓜ Mandatory    ✓ Supported    × Not supported



# Chapter 2

---

## Upgrading the Integration

This chapter focuses on the process to upgrade the product integration from other versions to 22A.

Before proceeding with the upgrade, please note that the best practice is to create a backup (including Oracle Field Service custom plugins) to retain all the previous customizations of Oracle Integration Cloud prebuilt integration/Oracle Field Service accelerator package).

The chapter includes the following:

- [Upgrade Process Overview](#)
- [Creating a Backup](#)
- [Removing Old References](#)
- [Upgrade Process](#)

# Upgrade Process Overview

The integration upgrade mainly consists of the following steps:

1. Take a backup of the integration, including Oracle Field Service custom plugins. For more details, refer to the [Creating a Backup](#) section.
2. Remove all references to the previous version available for lookups and libraries. Refer to the [Removing Old References](#) section for more details.
3. After the integration package import is completed, validate the components for successful upgrade. Refer to [Chapter 3: Validations](#) for more details.
4. Merge all the customizations for which a backup was created. Refer to [Chapter 4: Merging the Customizations](#) for more information.

## Creating a Backup

Take a backup of the following:

- **Oracle Integration Cloud Prebuilt Integration:** Export the Oracle Integration Cloud package and integration flows from Oracle Integration Cloud and store them in the local folder.

**Note:** Currently, Business Accelerator packages cannot be exported. If there are no changes to the base “outl.ba.ccs\_ofsc\_fieldwork.1\_0\_0” package, make sure to take a backup of the Oracle Integration Cloud lookups. If the base package is cloned and the customizations are included in the cloned flows or if an older version package existed before consuming Oracle Integration Cloud accelerator (oracle.util.somofsc.fieldwork.par), take a backup of the Oracle Integration Cloud package.

To export the package and integration flows:

- a. Login to Oracle Integration Cloud.
  - b. Navigate to **Packages** from integrations.
  - c. Select the required package to be exported.
  - d. Browse to the path where the package has to be exported and click **Export**.
- **Oracle Field Service Properties:** Export the Oracle Field Service properties that start with “c2m\_” and store/save them in the local folder.
  - **Oracle Field Service User Type:** Export the user type file from the Oracle Field Service environment.
  - **Oracle Field Service Plugin:** Export the Oracle Field Service plugin from Oracle Field Service environment.

For detailed steps to take a backup of the process, refer to the *Oracle Utilities Customer Cloud Service Integration to Oracle Field Service Configuration Guide* included in this release. The documentation is available on Oracle Help Center at:

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

---

## Removing Old References

After creating a backup of the required items, remove all references to lookups and libraries that are related to the older/previous version. Make sure to perform this step accurately since merging the changes from one version to other version for lookups and libraries is not taken care in the upgrade process.

### Deleting References to Lookups

To remove references to lookups related to the older version of integration:

1. Login to Oracle Integration Cloud.
2. Navigate to **Integrations > Lookups**.
3. Select all lookups related to the integration.
4. From the **Options** menu, click **Delete** to delete the selected lookups.

For a list of lookups in the integration, refer to the [Lookups](#) section in [Chapter 3: Validations](#).

**Important!** The current integration version might not include the same list of lookups as the previous integration version. A few of them might be included or deprecated. Please refer to the specific integration version documentation that you are running to get the list of lookups.

### Deleting References to Libraries

To remove the references to libraries related to the older version of integration:

1. Login to Oracle Integration Cloud.
2. Navigate to **Integrations > Libraries**.
3. Select all libraries related to the integration.
4. From the **Options** menu, click **Delete** to delete the selected libraries.

For a list of libraries in the integration, refer to the [Libraries](#) section in [Chapter 3: Validations](#).

**Important!** The current integration version might not include the same list of libraries as the previous integration version. A few of them might be included or deprecated. Please refer to the specific integration version documentation that you are running to get the list of libraries.

## Upgrade Process

The integration between Oracle Utilities Customer Cloud Service and Oracle Field Service can happen in the following ways:

- **Upgrading the edge applications (CCS/OFS) and using Oracle Integration Cloud Accelerator**

In this scenario, edge applications are upgraded and use Oracle Integration Cloud Accelerator as it is. Since Oracle Integration Cloud Accelerator is on the

lower version, the enhancements released as part of edge application will not be supported.

For information about supported features, refer to the version specific release notes.

- **Upgrading Oracle Utilities Customer Cloud Service only**

In this scenario, only Oracle Utilities Customer Cloud Service is upgraded. New features released as part of Oracle Utilities Customer Cloud Service will not be supported, as it requires both Oracle Integration Cloud and Oracle Field Service Accelerator upgrades.

For information about supported features, refer to the version specific release notes.

- **Upgrades Oracle Field Service only**

In this scenario, Oracle Field Service is upgraded to the latest version.

**Caution!** There will be a loss of functionality/errors in the following situations:

- Oracle Field Service Accelerator carries the latest version and Oracle Integration Cloud Accelerator and Oracle Utilities Customer Cloud Service have lower versions. Refer to [Upgrade Matrix](#) in [Chapter 1: Upgrade Overview](#) for more details.

**Recommendation!** Make sure both Oracle Integration Cloud and Oracle Field Service Accelerator are on the same version.

- **Upgrading Oracle Integration Cloud Accelerator and using edge applications (CCS/OFS)**

This is not a recommended approach. When you upgrade Oracle Integration Cloud Accelerator and use the end-point application as is, some of the features or flows released as part of the Oracle Integration Cloud Accelerator will not be supported. It needs edge application enhancements.

To upgrade the integration between Oracle Utilities Customer Cloud Service and Oracle Field Service:

1. Select the upgrade type.
2. For feature enhancements, do the following:
  - a. Select the desired integration package version.
  - b. Select the current edge application version and query the required component version to support the feature.
  - c. If the required component is not listed or if you experience an issue, contact My Oracle Support through a service request.
3. For required/planned upgrade, all components should be upgraded to version 'A'. Do the following:
  - a. Select the current edge application version.
  - b. Select the current integration package.
  - c. If the new accelerator is available, proceed with the upgrade.
  - d. If you experience an issue, contact My Oracle Support through a service request.

# Chapter 3

---

## Validations

After completing the integration package import, validate the following components for successful upgrade of the integration:

- [Connections](#)
- [Integrations](#)
- [Lookups](#)
- [Agents](#)
- [Libraries](#)

---

## Connections

The following connections related the integration should be in “configured” state:

- Oracle Utilities SOAP CCS for CCS-OFSC
- Oracle Utilities OFSC for CCS-OFSC
- Oracle Utilities REST OFSC Admin Sync for CCS-OFSC
- Oracle Utilities REST OFSC Appmt for CCS-OFSC
- Oracle Utilities REST for CCS-OFSC

## Integrations

The following integrations should be in the “active” state:

- Oracle Utilities CCS OFSC Activity Process (1.0)
- Oracle Utilities CCS OFSC Activity Get Status (1.0)
- Oracle Utilities CCS OFSC Admin Sync (1.0)
- Oracle Utilities CCS OFSC Appointment Get (1.0)
- Oracle Utilities OFSC CCS Device Verification (1.0)
- Oracle Utilities OFSC CCS ServicePoint Query (1.0)
- Oracle Utilities OFSC CCS Activity Complete (1.0)
- Oracle Utilities OFSC CCS Activity Create (1.0)

## Lookups

The following lookups imported during the upgrade should in “configured” state:

- SOMOFSC\_ConfigProps
- OFSCSOM\_Appt\_Timeslots
- SOMOFSC\_CountryCode
- SOMOFSC\_LifeSupport
- SOMOFSC\_MeasurementCondition
- SOMOFSC\_Key
- SOMOFSC\_DeviceLocation
- SOMOFSC\_Email\_ID
- SOMOFSC\_TimeZone
- SOMOFSC\_MeterLocation
- SOMOFSC\_ActivityType
- SOMOFSC\_InterimStatus
- SOMOFSC\_Sync\_RegisterTOUData

- SOMOFSC\_Sync\_ServicePointData
- SOMOFSC\_Sync\_DeviceModelData
- SOMOFSC\_Sync\_ActivityData
- SOMOFSC\_Sync\_DeviceManufacturerData
- SOMOFSC\_ActivityTypeConfigProps
- SOMOFSC\_Sync\_DeviceHeadEndSystemData
- SOMOFSC\_Sync\_DeviceConfigurationData
- SOMOFSC\_LanguageCode
- SOMOFSC\_Sync\_DeviceTypesData
- SOMOFSC\_Sync\_RegisterSQIData
- SOMOFSC\_Sync\_RegisterUOMData
- OFSCSOM\_Dials
- OFSCSOM\_ReadSequence
- OFSCSOM\_Decimal
- SOMOFSC\_MeterConfigurationType
- OFSCSOM\_ActionCode
- OFSCSOM\_MeterStatus
- SOMOFSC\_AttachmentBO

## Agents

The agents should be in “configured” state. This is only applicable if you are using on-premises Oracle Utilities Customer to Meter application. Else, ignore this step.

## Libraries

The imported libraries related to integration should be in “configured” state:

- SOMOFSC\_AddressFormat
- SOMOFSC\_AppointmentSlots
- SOMOFSC\_AddOffsetToDateTime
- SOMOFSC\_NoOfOccurrences

# Chapter 4

---

## Merging the Customizations

The current customizations are handled by place holders in xslts.

After the integration is successfully upgraded, merge all customizations for which a backup was created. See [Creating a Backup](#) in [Chapter 2: Upgrading the Integration](#) for more details.

This chapter includes the following:

- [Merging the Oracle Integration Cloud Prebuilt Customizations](#)
- [Merging the Oracle Field Service Customizations](#)



# Merging the Oracle Integration Cloud Prebuilt Customizations

Oracle Integration Cloud prebuilt customizations can be merged in the following scenarios:

- Oracle Integration Cloud 20B or lower is installed
- Oracle Integration Cloud accelerator 21A or higher is installed
- If Oracle Integration Cloud 20B or lower is installed, to add the customization on top of the out-of-the-box xslt file, do the following:
  - a. Edit the integration.
  - b. In all integration mappings, add the template to all complex elements. Any custom elements under that complex element can be added directly to the template provided by editing the xslt.
  - c. Add the mapping under the respective customization template.
  - d. Save the changes.
  - e. Activate the integration to reflect the custom mappings.
- If Oracle Integration Cloud accelerator 21A or higher is installed, perform the following steps. Note that since the Oracle Integration Cloud package is delivered as accelerator, it cannot be modified.
  - a. Clone the integration.
  - b. This integration has all mappers.
 

To add any new mapping, edit the respective mapper/xsl file in code view. Note that mappings cannot be added using the Mapper Design view.
  - c. In all integration mappings, a template is added under every complex element. Any custom elements under that complex element can be added directly in the template provided.
  - d. Add the mapping under the respective customization template. Save the changes.
  - e. In Oracle Integration Cloud, click the integration to add the mapping for an extra element. Select the respective map activity.
  - f. Save and close.
  - g. Activate the integration to reflect the custom mappings.
- New process of implementing customization in integrations where 22A or higher version is installed

For Gen3 introduced extension groups along with data switch, do not clone the accelerator, because the extension groups are enabled in edit mode to add the available activities.

Perform the following steps:

- a. Replace custom xslt with Extension Group activity.
- b. Add Data Switch activity.

- c. Map the required custom elements in request /response schema as required.

**Note:** Mapping complex elements is possible only when the respective switches are available.

## Merging the Oracle Field Service Customizations

The following customizations have to be added after the upgrade:

- [Properties](#)
- [User Type](#)

### Properties

- If Oracle Field Service Accelerator 20C or a lower version is installed, re-import the properties for which a backup was created on the latest import of the plugins.
- If Oracle Field Service Accelerator 21A or a higher version is installed, re-import the properties that are not part of admin sync. The admin sync will synchronize the data to the admin sync properties.

### User Type

Add your customization back to the user type file on top of the latest code line.

- **Adding customization from UI**

Navigate to the section of UI in the user type file and add the customization manually.

- **Adding customization by editing the user type file directly**

Perform the following steps:

- a. Open the user type file in a text editor and search for the section where the customization should be added.
- b. Copy the customization from the old backup file and paste it into the latest user type section.
- c. Repeat step 2 for those sections where customizations can be added.

For more details about the Oracle Field Service Accelerator customization, refer to the **Customizations** chapter in *Oracle Field Service Configurations for Oracle Utilities Customer Cloud Service Integration to Oracle Field Service Setup Guide* included in this release. The documentation is available on Oracle Help Center at:

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