

Implementing CX for Utilities

Oracle Fusion Release 24B

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About This Guide

This chapter contains the following information:

- Audience and Scope
- Related Guides

Audience and Scope

This guide is for managers and system administrators at a utility who intend to set up one or more of these Oracle Customer Experience (CX) for Utilities solutions:

- CX for Utilities Agent Service
- CX for Utilities Sales

This guide provides an overview of the implementation process for these solutions, and discusses how to:

- [Complete Initial Registration and Administrative Tasks](#)
- [Configure Data Synchronization](#)
- [Configure Single Sign On](#)
- [Configure User Synchronization](#)
- [Perform a Connectivity Test](#)
- [Configure Oracle Utilities Systems](#)
- [Configure Fusion Applications](#)
- [Manage Roles and Users](#)
- [Test Your Setup](#)

Related Systems and Guides

Refer to the related documentation listed in this table for additional information about CX for Utilities and the related systems:

Oracle System	Related Documentation
<p>Oracle Utilities Customer Experience solutions:</p> <ul style="list-style-type: none"> ▪ CX for Utilities Agent Service ▪ CX for Utilities Sales 	<p>See the Customer Experience for Utilities library to access additional information for these solutions, including user and implementation guides.</p>
<p>Fusion CX for Industries Framework</p>	<p>To access information for this system, log into My Oracle Support and view Document 2720527.1.</p>
<p>Oracle Utilities Customer Cloud Service</p>	<p>See the Oracle Utilities Customer Cloud Service library.</p>
<p>Oracle Utilities Customer to Meter</p>	<p>See the Oracle Utilities Customer to Meter library.</p> <p>Additionally, review the Upgrade Policy to verify that systems are upgraded to the appropriate release and maintenance levels to support all features and functionality. For additional</p>

Oracle System	Related Documentation
	<p>information, see My Oracle Support Document 2876281.1.</p>
<p>Oracle Fusion Service, which includes:</p> <ul style="list-style-type: none"> ▪ Service Requests ▪ Knowledge Management ▪ Computer Telephony Integration (CTI) ▪ Email Channels 	<p>See the Implementing Service Center with the Classic Experience Guide in the Oracle Fusion Service library in the Oracle Help Center.</p>
<p>Oracle Sales, which includes:</p> <ul style="list-style-type: none"> ▪ Contacts ▪ Accounts <p>Oracle Digital Sales, which includes:</p> <ul style="list-style-type: none"> ▪ Leads ▪ Opportunities 	<p>CX for Utilities Agent Service requires the use of Oracle Sales using the classic user experience.</p> <p>CX for Utilities Sales also requires the use of Oracle Digital Sales. For all sales features to function properly, you must disable Redwood Sales.</p> <p>See these guides in the Oracle Sales library, located in the Oracle Help Center:</p> <ul style="list-style-type: none"> ▪ <i>Implementing Sales Guide</i> ▪ <i>Using Digital</i>

Oracle System	Related Documentation
	<i>Sales Guide</i>

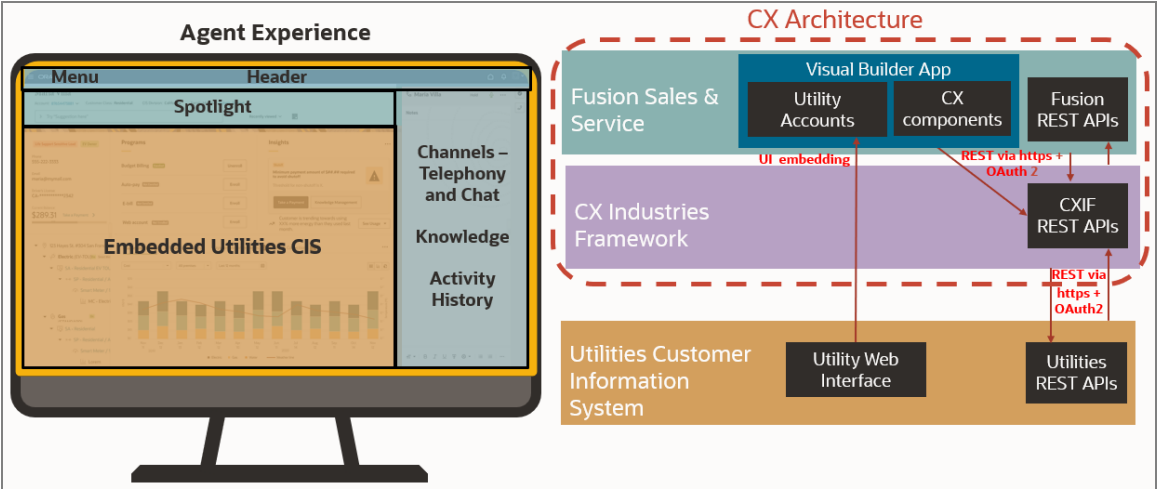
Implementation Overview

Before you can use any of the Oracle Customer Experience for Utilities solutions, you should have a complete understanding of how the different Oracle systems are integrated, the technical requirements that must be met, and the implementation steps you must complete to successfully implement the solution.

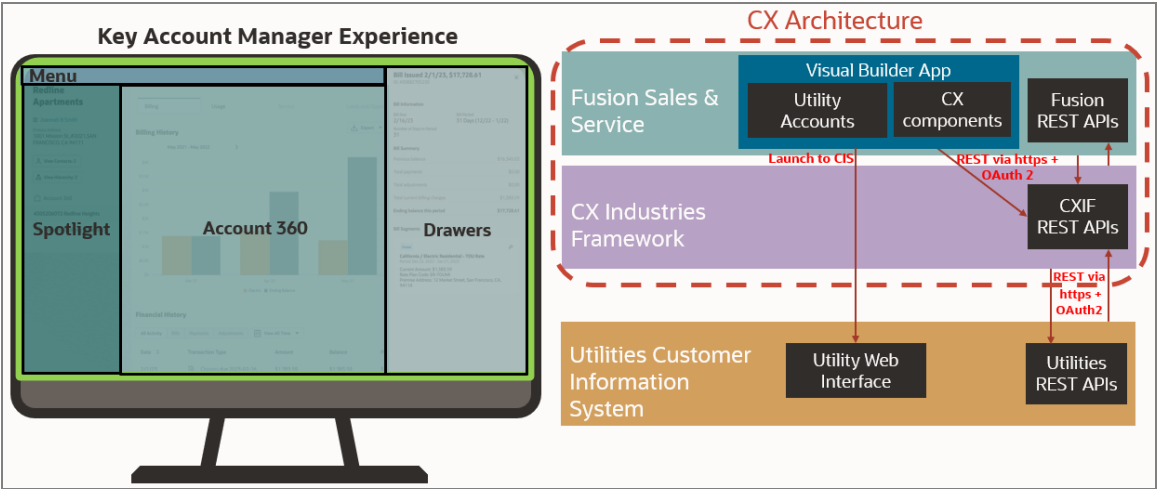
This chapter provides an overview of the solution architecture, lists technical requirements, discusses possible extension points that are available, and provides a list of the tasks you need to complete for your implementation.

Solution Architecture

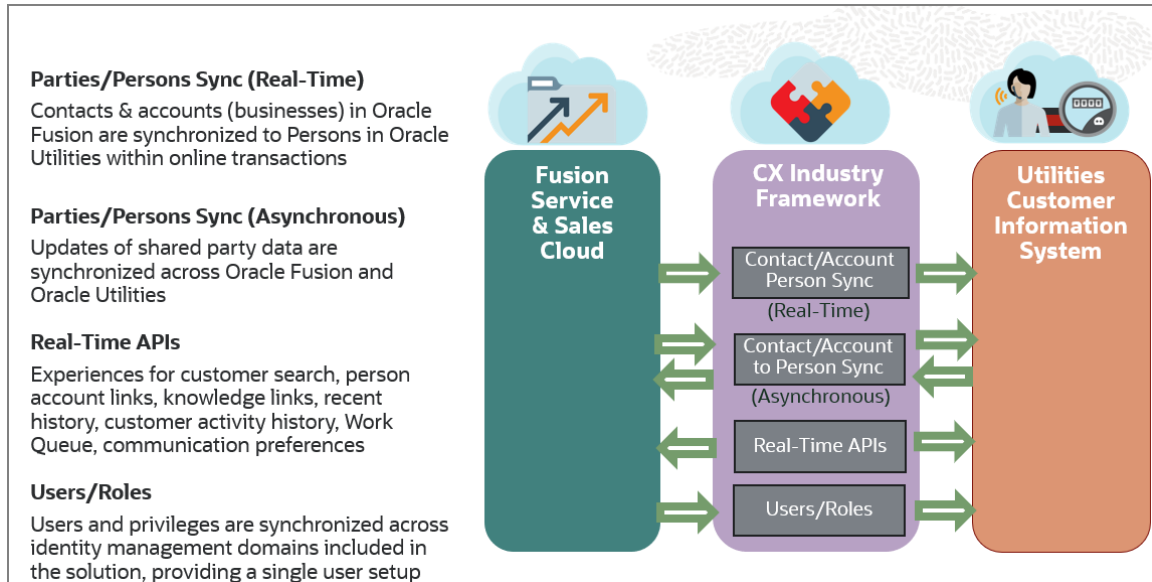
This graphic illustrates the CX for Utilities Agent Service solution architecture:



This graphic illustrates the CX for Utilities Sales solution architecture:



This graphic illustrates the data flow between the different systems used within the Customer Experience for Utilities solutions:



For additional information about the flow of data using APIs, see [Appendix: REST APIs](#).

Technical Requirements

To use CX for Utilities Agent Service, you must have licenses for the following Oracle products:

- Oracle Utilities Customer Cloud Service or Oracle Utilities Customer to Meter
- Oracle Customer Experience for Utilities - Fusion Agent Service Cloud Service
- Oracle Intelligent Advisor

This product is optional, and is used with the Create Payment Plan feature, available in CX for Utilities Agent Service.

To use CX for Utilities Sales, you must have licenses for the following Oracle products:

- Oracle Utilities Customer Cloud Service or Oracle Utilities Customer to Meter
- Oracle Customer Experience for Utilities - Fusion Sales Cloud Service

All additional Oracle Fusion products that are required for these experiences are included when you purchase the above licenses. Additional optional licenses might be needed to enable some features.

Extension Points

You can configure the experiences using the Oracle Visual Builder Studio application. Oracle Visual Builder Studio is an application development platform that helps you to develop an application extension and manage the entire development life cycle, from creation to publication.

Here are the extension points available:

- **Dynamic Forms and Tables:** Enables extensions to add, remove, reorder, or change the rendering of fields.
- **Dynamic Containers:** Enables extensions to insert content and to add, remove, or reorder base application content.
- **Constants, Variables, and Types:** Extensions can override base application constants or read and write to variables made available by the base application. User-defined types can also be made available for use by extensions.
- **Events:** Enables extensions to trigger base application behaviors or to respond to events initiated by the base application.
- **App UIs (New Flows):** Extensions can define new app UIs in which they can create new UI flows that are either linked from or embedded within existing pages.

For additional information about configuring and extending Oracle applications, see *Configuring and Extending Applications* in the Applications Common library on [Oracle Help Center](#).

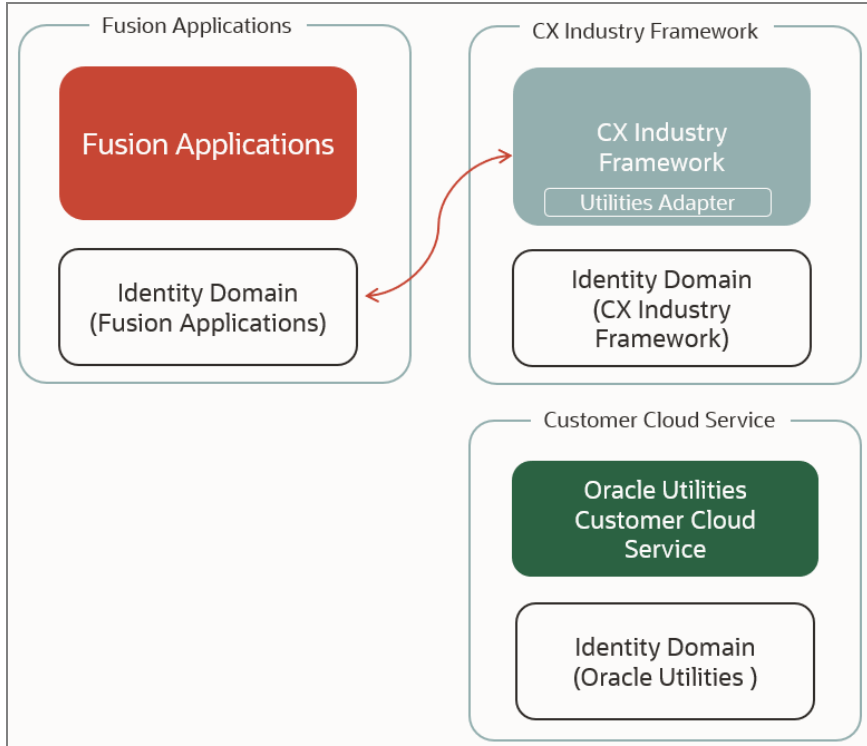
Setup Tasks

This section discusses the two different types of setup tasks that you must complete to use the Customer Experience for Utilities solutions. First, you complete the provisioning tasks, which includes provisioning each of the products included in the solution, and completing the steps that connect those systems so that data can flow between them. Once you have completed the provision steps, you complete the user and application setup steps, which includes creating and managing users and roles, and setting up the features you will use in each of the applications.

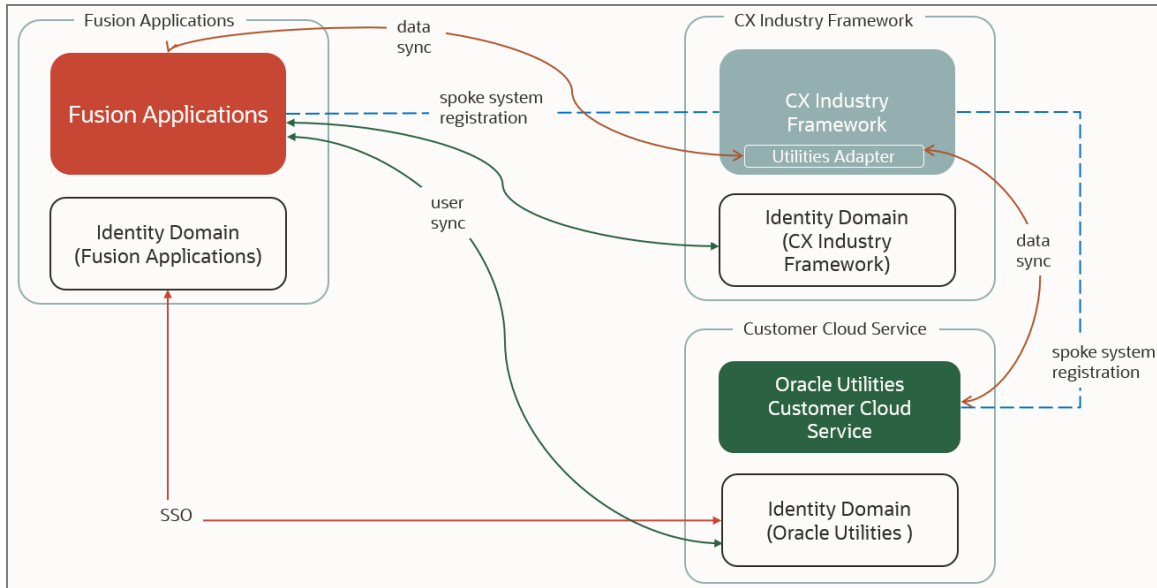
Provisioning Tasks

The first part of the setup process is to provision your systems, and connect them so that users can access each system, and data is easily shared between them.

This diagram provides an example of what your implementation looks like before completing the provisioning tasks:



This diagram provides an example of what your implementation looks like after completing the provisioning tasks:



This table lists the provisioning tasks that you must complete, in order, to implement Customer Experience for Utilities solutions.

Setup Task	Reference
<p>Complete initial registration and administrative tasks, which include:</p> <ul style="list-style-type: none"> ▪ Provisioning your Oracle Cloud applications. ▪ Installing and provisioning Oracle Utilities on-premises environments (if using an on-premises customer information system). ▪ Preparing your Oracle Utilities environments for registration. ▪ Registering your Oracle Utilities environment and Fusion applications. ▪ Completing cloud service administration tasks. ▪ Complete Fusion system registration tasks. ▪ Complete Oracle Utilities initial setup tasks. 	<p>See Complete Initial Registration and Administrative Tasks</p>
<p>Complete utility configurations using REST APIs, which includes:</p> <ul style="list-style-type: none"> ▪ Integration configuration ▪ Industry reference types configuration 	<p>See Configure Utility Details</p>
<p>Configure the initial data synchronization (for implementations with existing CIS data only) and ongoing data synchronization process.</p>	<p>See Configure Data Synchronization</p>
<p>Configure Single Sign On (SSO) which includes:</p> <ul style="list-style-type: none"> ▪ Setting up your Customer Cloud Service identity domain as the service provider in your Fusion applications identity domain. ▪ Setting up your Fusion applications identity domain as your identity provider in the Customer Cloud Service identity domain. 	<p>See Configure Single Sign On</p>

Setup Task	Reference
<ul style="list-style-type: none"> ▪ Testing your SSO. 	
<p>Configure user synchronization between source systems, which includes:</p> <ul style="list-style-type: none"> ▪ Migrating existing Customer Cloud Service users to Fusion applications. ▪ Synchronizing users between Fusion applications and Customer Cloud Service. ▪ Assigning user access in Customer Cloud Service. ▪ Synchronize users between Fusion applications and the CX Industry Framework identity domain. ▪ Assigning User Access in CX Industry Framework. 	<p>See Configure User Synchronization</p>
<p>Perform the connectivity test.</p> <p>Once you have completed this step, the remaining setup tasks can be done in order.</p>	<p>See Perform a Connectivity Test</p>

User and Application Setup Tasks

After you have completed the provisioning setup, use the table below to identify the steps you must complete to set up users and enable features in your applications.

Setup Task	Reference
<p>Manage users and roles, which includes:</p> <ul style="list-style-type: none"> ▪ Understanding role-based security. ▪ Understanding pre-defined privileges. ▪ Creating and managing users. 	<p>See Manage Users and Roles</p>
<p>Configure these items in your Oracle Utilities customer information system:</p>	<p>See Configure Your Oracle</p>

Setup Task	Reference
<ul style="list-style-type: none"> ▪ Zones in Customer 360 and Dashboard Portal ▪ Insight types ▪ Person data options ▪ To Do types ▪ Start/Stop/Transfer processes ▪ Inbound web services (APIs) ▪ Extendable lookups ▪ Data synchronization ▪ Populating old billing account IDs, if needed 	Utilities System
<p>Configure Oracle Fusion applications, which includes setting up:</p> <ul style="list-style-type: none"> ▪ Adaptive search ▪ Account hierarchy ▪ Computer Telephone Integration (CTI) ▪ Email channels ▪ Knowledge Management features ▪ Oracle Intelligent Advisor Pay Plan ▪ Service requests 	<p>See Configure Fusion Applications</p>
<p>When you have completed all of the setup steps, test your setup by completing standard end user tasks.</p>	<p>See Test Your Setup</p>

Complete Initial Registration and Administrative Tasks

Before you begin the implementation and setup tasks for Oracle Customer Experience for Utilities solutions, you must first ensure that your products are provisioned and registered, and that you have completed standard service administrative tasks. Once these tasks are complete, you can begin configuring your solution so your systems can communicate properly.

Provision Your Oracle Cloud Applications

The first step in the process is to provision all of the Oracle Cloud applications that are used by the Oracle Customer Experience for Utilities solutions. The cloud applications included in your implementation might vary, but can include:

- Oracle Utilities Customer Cloud Service
- Oracle Customer Experience for Utilities - Fusion Agent Service Cloud Service
- Oracle Customer Experience for Utilities - Fusion Sales Cloud Service
- Oracle Fusion CX Sales
- Oracle Fusion Service
- Oracle Fusion Chat and Cobrowse Cloud Service (Optional)

For instructions and additional information about provisioning Oracle cloud applications, see [Get Started with Oracle Cloud Applications](#) in the Oracle Help Center.

Install and Configure Your Oracle Utilities On-Premises System

If you are using Oracle Utilities Customer to Meter as your customer information system, you must install and configure the system so that it will communicate with your Oracle Customer Experience for Utilities solutions.

For instructions on implementing Oracle Utilities Customer to Meter, see the Installation Guides section of the [Oracle Utilities Customer to Meter library](#).

The current version of Oracle Utilities Customer to Meter runs with Oracle Fusion Middleware and Weblogic 12. The configuration of Weblogic should include Oracle Web Service Manager (OWSM). For details, see the Installing and Configuring the Oracle Fusion Middleware Infrastructure Guide, available in the [Oracle Fusion Middleware library](#).

Additionally, you must verify that the **persistent-store-type** element within the web application session-descriptor element is set to `replicated-if-clustered`. For details on this setting, see [Session Descriptor](#) in the *Developing Web Applications, Servlets, and JSPs for Oracle WebLogic Server Guide*.

After you complete the installation and configuration of your system, you must verify the following before continuing with the Customer Experience for Utilities implementation:

- You have full administrator access to all systems used by your implementation, including the identity and access management solution used by your Oracle Utilities Customer to Meter system.
- The Oracle Web Service Manager (OWSM) is available.
- A detailed design plan exists before Customer Experience solution setup begins. Work with your Oracle implementation and delivery team to create this plan.

Establish Network Connectivity and Enable OAuth for Customer to Meter

Customer Experience for Utilities solutions require you to verify that the following items are true:

- Oracle Utilities REST APIs are exposed via a public IP address.
- Your Oracle Utilities Customer to Meter system is allowed to send web service requests to Customer Experience Industry Framework (CXIF).
- OAuth-based authorization for inbound and outbound web services is implemented and enabled in your Oracle Utilities Customer to Meter system. This is needed to support successful communication between solution components.

Securing RESTful Web Services with OAuth

Various options exist for implementing the OAuth Server. This service may be provided by Oracle Identity Manager, Oracle Cloud Infrastructure Identity Access Manager, Identity Domains, or by another application. Oracle recommends using Identity Domains and leverage the out-of-the-box integration with Weblogic and Oracle Web Service Manager. The remaining steps in this guide are based on using the recommended approach.

Be aware that the documentation for these systems mention Oracle Identity Cloud Service (IDCS), but Oracle Customer Experience for Utilities no longer uses IDCS. The same setup described in that documentation can be used interchangeably with IDCS or with Identity Domains.

If your implementation uses an Oracle Cloud Infrastructure Identity Access Manager (IAM) Identity Domain as the OAuth server, you should complete the following tasks outlined in [Securing RESTful Web Services Using OWSM with IDCS](#):

- Configure Security Provider with Weblogic Server
- Secure REST Services using OWSM OAuth2 security policies. Attach the Oracle Web Service Manager (OWSM) security policy globally to the REST web services and configure trust.
- Perform OAuth2 configuration. This task can be done at this point in your implementation, or later, as a part of the Verifying Access to Customer to Meter with OAuth, discussed in the [Prepare Your Oracle Utilities Environments topic](#).

See also:

- "Enable OAuth on the Product" in the *Oracle Utilities Customer to Meter Security Guide*, available in the [Oracle Utilities Customer to Meter library](#).
- Web Services Best Practices for Oracle Utilities Application Framework, available in [My Oracle Support Document 2214375.1](#).

Prepare Your Oracle Utilities Environments for Registration

Complete the steps listed below for your Oracle Utilities system.

For Customer Cloud Service Environments

Before you can register your environments, you must contact your delivery team and request that they prepare your Oracle Utilities customer information system environments for registration.

Confirm the non-production Customer Cloud Service environments where you want to enable the CX for Utilities experiences. For example, DEV or TEST. Your delivery team can help you determine these details.

For Customer to Meter Environments

Complete these tasks:

- Configure and verify the access to the C2M REST API with OAuth-based authorization.
- Configure the system to support user interface embedding for CX for Utilities Agent Service and the data synchronization between Fusion Applications and Customer to Meter. This includes:

- Set System Properties
- Substitution Variables for Data Synchronization
- Substitution Variables for Embedded Application Support
- Configure the Content Security Policy

Verifying Access to Customer to Meter API with OAuth

If you not yet done so, define an OAuth resource to represent your Customer to Meter REST API endpoint and create an OAuth Client with permission to access this resource. For instructions, see IDCS OAuth2 Configuration in the [Securing RESTful Web Services](#) chapter of the *Use Cases for Securing Web Services Using Oracle Web Services Manager* document.

Request the CXIF certificate from your Oracle Support team, and amend the OAuth Client configuration to indicate that the client is trusted, then install a CXIF certificate on the OAuth Client,

Configure Customer to Meter to Support Embedded Applications and Data Synchronization

To support ongoing data synchronization between Oracle Utilities Customer to Meter and the Oracle Fusion applications required for these solutions, you must configure the substitution variable for the CX Industry Fabric (CXIF) URL to support Message Sender configuration.

If your implementation includes CX for Utilities Agent Service, configure the CORS filter and Content Security Policy as described below. For instructions on the substitution variables technique, refer to the "Installation and Planning Worksheets" section of the Customer to Meter Installation Guide, available in the [Oracle Utilities Customer to Meter library](#).

Set System Properties

Set the following properties in Oracle Utilities Application Framework:

- `com.oracle.ouaf.web.csp.enable=true`
- `com.oracle.ouaf.web.allowCORS=true`
- `com.oracle.ouaf.web.csp.allowedFrameAnsMaxNumber=MAX-NUMBER`

The default value is 2. If you created more than 2 host variables, update this value to reflect the number of host variables.

- `com.oracle.ouaf.uriSubstitutionVariables.file=FILE-PATH-VALUE`

This is the file path where `substitutionVariableList.xml` is located.

Verify that `com.oracle.ouaf.web.disableSecureCookie` is not present, or is set to `false`.

Create Substitution Variables for Data Synchronization

Create the following substitution variable:

- `C1FABRIC` with value `<fabric APIGW host>`

This variable is then used in when configuring the [Ongoing Data Synchronization](#).

Create Substitution Variables for Embedded Application Support

For the CORS filter, create the following substitution variables:

- `FA_DOMAIN`: Populate this value with the Fusion Applications URL
- `ALM_DOMAIN`: Populate this value with the `https://alm.oraclecorp.com`
- `CSP_FRAME_ANS_HOST1`: Populate this value with the Fusion Applications URL
- `CSP_FRAME_ANS_HOST2`: Populate this value with the Fusion Applications identity domain (or IDCS) URL

If additional host variables are needed, create them by incrementing the number. For example, create `CSP_FRAME_ANS_HOST3` if your system is configured for Single Sign On with an External Identity Provider.

Configure the Content Security Policy

If CORS is enabled, the Oracle Utilities Application Framework responds with a Content Security Policy (CSP) header that controls frame-ancestors, script source, image source, and other attributes.

By default, Oracle Utilities Application Framework populates CSP header options as follows.

```
default-src 'self'; img-src 'self' data: ; script-src 'self'
'unsafe-inline' 'unsafe-eval'; style-src 'self' 'unsafe-inline';
base-uri 'self'; form-action 'self';
```

Customize the `web.xml.template` and list all of the allowed origins for the CSP Filter under the `cspOption` parameter value, as described below.

1. Run this command: `cd $SPLEBASE/templates`
2. Run this command: `cp web.xml.template cm.web.xml.template`
3. Run this command: `vi cm.web.xml.template`
4. **Locate this line:** `<param-value>default-src 'self'; img-src 'self' data: ; script-src 'self' 'unsafe-inline' 'unsafe-eval'; style-src 'self' 'unsafe-inline'; base-uri 'self'; form-action 'self';</param-value>`
5. **Set the new value to:** `<param-value>default-src 'self'; img-src 'self' data: ; script-src 'self' 'unsafe-inline' 'unsafe-eval' https://static.oracle.com; style-src 'self' 'unsafe-inline'; base-uri 'self'; form-action 'self';</param-value>`
6. Execute: `initialSetup.sh`
7. Re-deploy and re-start the application.

Register Your Oracle Utilities Environment and Fusion Applications

After your Oracle applications are provisioned, you must register your Oracle Utilities customer information system environment with CX Industry Framework. The steps in this process are completed with assistance from the Oracle delivery team. You will work with them to enter client-specific information during the registration process.

When you are ready to complete this task:

1. Create an administrative user in CX Industry Framework.
2. Complete the registration steps outlined in [My Oracle Support Document 2913192.1](#). Contact your Fusion Application Support team if you need assistance. This task should be completed every time you upgrade to a new release. See [Upgrade Considerations](#).
3. Register your CX Industry Framework system account in Fusion Applications. For details, see the System Registration Tasks section in [Fusion System Registration Tasks](#).

Create an Administrative User in CX Industry Framework

You create this user to administer the utility configurations.

1. Log in to your CX Industry Framework identity domain as an administrator.
2. Create and activate a new user account using the following information:

- Select Oracle Cloud Services from the navigation panel and locate the application corresponding to the CX Industry Framework instance. The name starts with either CXIF or DX4C, and the description likely reads "CXIF IDCS Application". It was created during the CX Industry Framework provisioning process.
- Select the application and then, under Resources, select Application Roles.
- Assign the user to the following roles, which are required for Utility Configuration API access:
 - CXIF_Configuration_API_Registration_Read
 - CXIF_Configuration_API_Registration_Write
 - CXIF_Configuration_Endpoint_Read
 - CXIF_Configuration_Endpoint_Write
 - CXIF_Configuration_Routing_Read

Complete Cloud Service Administrator Tasks

Your Service Administrator must complete critical tasks listed in the Administrator Action List. By completing these tasks, you optimize the onboarding experience for you and your organization. You also ensure the successful implementation and ongoing use of your Oracle services and applications.

Tasks include:

- Verifying access and retaining sign-in details.
- Registering your Customer Support Identifier with My Oracle Support.
- Verifying access to administrator portals and identifying backup administrators.
- Adding notification contacts.
- Understanding the Oracle Support process.
- Review information that can assist you with your implementation, such as documentation, videos, and release readiness materials.

See the [Administrator Action List](#) for additional information and instructions.

Fusion System Registration Tasks

To use the CX for Utilities experiences, you must first enable the Oracle Fusion features you want to use and then register your CX Industry Framework system account. This includes:

- Enabling offerings
- Registering your CX Industry Framework account
- Register your CX Industry Framework Configuration account
- Enabling multiple Business Units for service

Enable Offerings

You must enable the features in the Oracle Fusion Service and Oracle Sales systems that you want to use. For instructions on enabling offerings, see Offering Configuration in the *Using Functional Setup Manager Guide*, available in the [Oracle Help Center](#).

You must register your CX Industry Framework system account. This task should be completed by your Fusion Applications security administrator.

Register CX Industry Framework System Accounts

To register your accounts:

1. Log in to Fusion Applications, navigate to Tools and then select the Security Console.
2. Create a new user account using **FABRIC_CX4U_SYSTEM_USER** as the user name.
3. Specify the security administrator email address and set the initial password.
4. Add the following roles:
 - ORA_PER_EMPLOYEE_ABSTRACT
 - ORA_HZ_RESOURCE_ABSTRACT
 - ORA_UER_UTILITIES_CUSTOMER_SERVICE_REPRESENTATIVE_JOB
 - ORA_UER_UTILITIES_CUSTOMER_SERVICE_ADMINISTRATOR_JOB
 - ORA_UER_UTILITIES_CUSTOMER_SERVICE_MANAGER_JOB
 - ORA_UER_UTILITIES_KEY_ACCOUNT_ADMINISTRATOR
 - ORA_UER_UTILITIES_KEY_ACCOUNT_MANAGER_FOR_SALES
 - ORA_UER_UTILITIES_KEY_ACCOUNT_MANAGER_FOR_SERVICE

- ORA_UER_UTILITIES_KEY_ACCOUNT_SUPERVISOR_FOR_SALES
- ORA_UER_UTILITIES_KEY_ACCOUNT_SUPERVISOR_FOR_SERVICE

5. Log in to the Fusion Applications identity domain and locate the **FABRIC_CX4U_SYSTEM_USER** user you just created.

Note: Depending on the order in which you've performed the administrative tasks, the user account might have synchronized automatically. If it is not yet present, create the new user manually, using **FABRIC_CX4U_SYSTEM_USER** as the user name and mark the user as **Federated** during creation.

6. Log in to the CX Industry Framework identity domain and locate the **FABRIC_CX4U_SYSTEM_USER** user.

Note: Depending on the order in which you've performed the administrative tasks, the user account might have synchronized automatically. If it is not yet present, create the new user manually, using **FABRIC_CX4U_SYSTEM_USER** as the user name and mark the user as **Federated** during creation.

Register CX Industry Framework Configuration Account

1. Log in to the CX Industry Framework identity domain.
2. Create a new user, specifying **CX4U_CONFIG_ADMIN** as the username.
3. Select Oracle Cloud Services from the navigation panel and locate the application corresponding to the CX Industry Framework instance. The name starts with either CXIF or DX4C, and the description likely reads "CXIF IDCS Application". It was created by the CX Industry Framework provisioning.
4. Assign this newly created user to the following application role:
 - CXIF_Configuration_Endpoint_Read

Enable Multiple Business Units

Your system administrator must complete this task before completing any of the additional tasks listed in this table. For detailed instructions, see Manage Common CRM BU Profile Options for Service BUs in the [Implementing Service Center with the Redwood Experience Guide](#).

Complete Oracle Utilities Initial Setup Tasks

Before you can use the Customer Experience for Utilities solutions, you must ensure that the related features are set up appropriately in in your Oracle Utilities customer information system. The following table identifies each item that needs to be set up during

the initial setup process, provides implementation details, and refers you to related documentation that can assist you.

All of the documentation listed below (unless otherwise noted) can be found in one of the following libraries the in the Oracle Help Center, along with additional information about using and configuring your Oracle Utilities customer information system:

- [Customer Cloud Service library](#)
- [Customer to Meter library](#)

Task	Details	Documentation
Extendable Lookups	<p>Extendable lookups are used to control some items within the Oracle Customer Experience for Utilities solutions, such as:</p> <ul style="list-style-type: none"> ▪ Available locations for knowledge icons ▪ The ongoing person data integration <p>Use the extendable lookup with a business object of F1-KnowledgeManagement to identify available locations to attach articles.</p> <p>The person synchronization is controlled by an F1-DataSyncControl extendable lookup business object of C1-CX4U-PERSON. The status of this lookup record must be active to enable the synchronization and the external system and message sender must be configured.</p>	See Defining Extendable Lookups in the <i>Administration Guide</i>
Data Synchronization	Person data synchronization is used to trigger updates to the Oracle Customer Experience for	See: <ul style="list-style-type: none"> ▪ Data

Task	Details	Documentation
	<p>Utilities and other Oracle systems when person record changes are made. To set up the synchronization, be aware that:</p> <ul style="list-style-type: none"> ▪ The maintenance object of PERSON is delivered with a generic audit algorithm of F1ONGDATASYN for ongoing data synchronization plugged in so that a generic outbound sync request can be processed by the F1-SYNRQ sync request monitor batch process. ▪ This batch process should be scheduled to run as frequently as ongoing updates need to be synchronized to Customer Experience for Utilities and other systems. ▪ This is a generic batch process that can be used for many objects but has parameters that can be used to control which sync request BOs to process, such as F1-GenericDataSync. 	<p>Synchronization in the <i>Administration Guide</i></p> <ul style="list-style-type: none"> ▪ Configure Data Synchronization
Request Deployment of the Utilities Integration Adapter	Create a service request using My Oracle Support and request the deployment of the Utilities Integration Adapter.	Contact My Oracle Support

Configure Utility Details

Before you can use CX for Utilities applications, you must ensure that the administrative details of your utility and the services that you provide are properly configured. This

includes:

- Completing the integration configuration tasks and the reference type configuration tasks. These configuration tasks are completed using REST APIs.
- Setting profile options

These tasks should be completed by your system administrator.

Integration Configuration Tasks

The **<CXIF-host>/admin/utilityConfigurations** is a REST service that is available to manage business configuration for the CX Industry Framework layer, which is required to enable integration between Fusion applications and your Oracle Utilities customer information system. You can access documentation about this REST service by logging in to My Oracle Support and viewing [Document 2720527.1](#).

Use the information in this documentation to:

- Verify your administrative user in the CX Industry Framework identity domain
- Generate the access token
- View the existing configuration.
- Edit the configuration, which includes:
 - Person data sync
 - Extended field configurations
 - Knowledge Management configurations
 - Customer List search settings
 - Service type settings
 - Export component settings
 - Target URLs
 - Feature flag settings
 - Oracle Intelligent Adviser
 - Miscellaneous settings
 - Country code mapping

When upgrading your Customer Experience solution to a new release, you must backup these configurations and merge them into your system post-upgrade. See [Upgrade Considerations](#) for additional information.

Verify Administrative User in CX Industry Framework

You use the administrative user you created during the registration process to administer the configurations in the Utility Configurations REST service. Before you continue, verify that this user exists and is set up correctly. See [Registering Your Oracle Utilities Environment and Fusion Applications](#) for details.

Generate the Access Token

The bearer token for authorization can be generated using clients such as Postman. This example describes how to generate the token using Postman.

1. Select OAuth 2.0 as the **Authorization Type**.
2. Select Client Credentials as the **Grant Type**.
3. Enter the following information:
 - **Access Token URL:** This URL is the endpoint for the authentication server, and is used to exchange the authorization code for an access token. For example, `https://xxxxxxxxx.identity.com/oauth2/v1/token`
 - **Client ID:** Enter the client identifier issued to the client during the application registration process. For example, `CXIF_FA_xxxxxx_APPID`
 - **Client Secret:** Enter the client secret issued to the client during the application registration process.
 - **Scope:** This value is used to grant specific permissions in the access request. For example, `https://xxxxxxxx.oci.customer-oci.comurn:opc:resource:consumer::all`
4. Enter the user credentials of the administrative user you just created.
5. Click **Get New Access Token**.

View the Existing Configuration

To view the existing configuration:

- **Request URL:** `<CXIF-host>/admin/utilityConfigurations`
For example, `https://xxxxxxxx.oci.customer-oci.com/admin/utilityConfigurations`

- **Operation:** GET
- **Authorization:** OAUTH2.0

Edit the Configuration

To edit the configuration:

1. Get the response using a GET call.
2. Using the tables below, update the configuration and perform a PUT operation to the same endpoint with the entire object as the payload.

The following tables describe the available configurations by integration point in CX for Utilities applications. The name in the first column is the **{id}** of the UtilityConfigurations to be updated.

Person Data Sync Configurations

The table below provides the business configurations available for attributes that can be mapped for the Fusion Contact (individual) or Account (business) synchronization to Persons in the Oracle Utilities system.

Person Data Sync Configurations for communicationType include new fields, iconClass, contactPointPurposeField and contactPointValueField, that require mapping. The iconClass refers to class of the icon that can be used in the interface for the communication type. The contactPointPurposeField and contactPointValueField both map to the Fusion application API field for the associated communication type, and are used to retrieve the corresponding contact purpose data and contact point value.

Person Data	Configuration	Comment
<p>Name: IdentifierType</p> <p>Description: Holds the mapping of lookup values for customer legal entity identifier types.</p>	<p>Example:</p> <pre>"ccsValue": "DL NUMBER", "faValue": "DRIVER_ LICENSE", "isPrimary": false</pre>	<p>This mapping is not currently used by the delivered data synchronization flows but is available as a sample and for possible future support within the solution.</p>

Person Data	Configuration	Comment
<p>Name: communicationType</p> <p>Description: Holds the mapping of lookup values for COMMUNICATION_TYPE.</p>	<p>Example:</p> <pre>"ccsValue": "FAX", "faValue": "TLX" "iconClass": "oj-ux-ico-laptop", "contactPointPurposeField": "WebPurpose",</pre>	<p>This list of values is fixed in Fusion applications and configurable in Oracle Utilities systems, where it is referred to as a routing type. If the values in Oracle Utilities are different than the fixed values in Fusion, you can map the corresponding values. If there is no entry, the values will be passed through unchanged.</p>
<p>Name: PHONE_purpose</p> <p>Description: Holds the mapping of lookup values for the CONTACT_PURPOSE type.</p>	<p>Example:</p> <pre>"ccsValue": "WORKPHONE", "faValue": "BUSINESS" "ccsValue": "FAXPHONE", "faValue": "FASCIMILE-NEW"</pre>	<p>This refers to the contact purpose specific to the PHONE contact type. You might not have the same contact purpose names configured in both systems.</p> <p>Be aware that in Oracle Utilities systems, FAX is a contact routing type that needs at least one value set as the primary value. In Fusion applications, FAX is a purpose field under Communication Type = Phone. The Communication Type</p>

Person Data	Configuration	Comment
		<p>needs at least one primary value in Fusion applications as well.</p> <p>To handle this mismatch, set up Fax as a custom communication method in your Oracle Utilities system to mimic the Fusion application setup so the sync will be successful. If you have different contact purpose names configured in Fusion applications and your Oracle Utilities system, update the mapping between Fusion applications and your Oracle Utilities system purpose name, and store it under the PHONE_purpose configuration in utilityConfigurations API, as FAX is considered to be a type of phone number.</p>
<p>Name: EMAIL_purpose</p> <p>Description: Holds the lookup values for the CONTACT_PURPOSE type.</p>	<p>Example:</p> <p>"ccsValue": "PRIMARYEMAIL", "faValue": "PERSONAL"</p>	<p>This refers to the contact purpose specific to the EMAIL contact type. You might not have the</p>

Person Data	Configuration	Comment
		same contact purpose names configured in both systems.
<p>Name: WEB_purpose</p> <p>Description: Holds the mapping of lookup values for the CONTACT_PURPOSE type.</p>	<p>Example:</p> <p>"ccsValue": "WEB", "faValue": "PERSONAL"</p>	<p>This refers to the contact purpose specific to the WEB contact type. You might not have the same contact purpose names configured in both systems.</p>

Extended Field Configurations

The table below provides the extended field configurations that store the mapping of the extended fields of the Contact and Account objects between Fusion applications and your Oracle Utilities application.

Use the Fusion Model Extension to extend the Fusion Contact and Account data model to define new fields for the characteristic types, as needed. Then, in the utility configuration, under Extended Fields, provide the mapping between the Fusion applications fields and corresponding Oracle Utilities fields.

Extended Field Data	Configuration	Comment
<p>Name: characteristics</p> <p>Description: Holds the extended fields mapping.</p>	<p>Examples:</p> <p>"ccsValue": "C1-SVTKA", "faValue": "MyHobby"</p> <p>"ccsValue": "C2MBTHDT", "faValue": "DateOfBirth"</p> <p>"ccsValue": "C1-NICK",</p>	<p>Characteristics can be configured to store additional data in your Oracle Utilities system. Each extension field requires a Characteristic Type as the ccsValue, which</p>

Extended Field Data	Configuration	Comment
	"faValue": "FavColor"	can be mapped to fixed fields delivered in the Fusion application schemas.

Knowledge Management Configurations

This table provides Knowledge Management configuration, which stores the data for the Article Configuration page. This configuration holds the resulting records that are configured by the customer service manager. By default, no data is seeded into the utility configurations. Post-provisioning, this data can be configured directly in the Article Configuration page or through the Utility Configurations REST API.

Knowledge Data	Configuration	Comment
<p>Name: Data</p> <p>Description: Holds the data needed for the Knowledge Management configuration.</p>	<p>Example:</p> <pre>"locationId": "C1CRCO", "locationName": "Credit & Collections - Active Process", "kmId": "SOL3", "kmTitle": "Payment options to stop collections"</pre>	<p>Holds Fusion Knowledge Management article association to look up location values within your Oracle Utilities system.</p>

Person and Premise Search (Customer List) Settings

The Person and Premise Search (previously known as the Customer List) includes search filters that are listed in a main list, and in sub-list categories for **Primary Identifier** and **Geo Type**. These search filters enable your agents to search for the right person or account using the right information. For example, your utility might use Driver's License Number as the primary identifier, while another utility might use Social Security Number. Your utility must determine which filters to include in the main list and in the sub-list categories. Using the information described in the tables below, your utility can rearrange the list, move items from a sub-list category to the main list, move items from the main list to a sub-list category, or remove items from the list.

Settings Data	Configuration	Comment
<p>Name: CustomerList_Landing_Settings</p> <p>Key: filters</p> <p>Description: Default field mapping templates for Customer List Landing</p>	<p>For example, to add a new ID in the main list:</p> <pre>{ "name": "NewName", "label": "NewNameLabel "target-system": "{CCS/CX}", "value": "{VALUE}" },</pre> <p>For example, to remove Prior Billing Account ID from main list:</p> <p>Remove below section from filter section in CustomerList_Landing_Settings</p> <pre>{ "name": "PriorAccountNumber", "label": "Prior Billing Account ID", "target-system": "CCS", "value": " {\\"name\\":\\"C1LA\\",\\"value\\":\\"\${value}\\\"}" },</pre> <p>For example, to move filter item to the main list from the Primary Identifier sub-list:</p> <p>Cut the Driver Licenses section from the Primary Identifier sub-list and add it to the main list.</p>	<p>New filters should be added only under Geo Type and Primary Identifiers.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 20px;"> <p>You must first decide which labels you want to appear in the Person and Premise Search filter list, and create a configuration record for each item that displays.</p> </div>

Use this table to set up each filter configuration you want to add to the search filter:

Configuration	Type	Purpose									
name	string	Unique identifier for the filter.									
label	string	Label that displays for the filter.									
target system	string	The target-system for data. This is set as a hard-coded value of CCS for Oracle Utilities Customer Cloud Service and Oracle Utilities Customer to Meter.									
	string	<p>JSON string representation of the filter with properties:</p> <table border="1"> <thead> <tr> <th>Configuration</th> <th>Type</th> <th>Purpose</th> </tr> </thead> <tbody> <tr> <td>name</td> <td>string</td> <td>Unique identifier for the filter in target-system. Should be "C1GE" for "GeoType" and "C1ID" for "Primary Identifier" filters respectively for Oracle Utilities customer information systems.</td> </tr> <tr> <td>value</td> <td>string</td> <td>Should be hard-coded to \${value} and would be used internally to pass the User input at run</td> </tr> </tbody> </table>	Configuration	Type	Purpose	name	string	Unique identifier for the filter in target-system. Should be "C1GE" for "GeoType" and "C1ID" for "Primary Identifier" filters respectively for Oracle Utilities customer information systems.	value	string	Should be hard-coded to \${value} and would be used internally to pass the User input at run
Configuration	Type	Purpose									
name	string	Unique identifier for the filter in target-system. Should be "C1GE" for "GeoType" and "C1ID" for "Primary Identifier" filters respectively for Oracle Utilities customer information systems.									
value	string	Should be hard-coded to \${value} and would be used internally to pass the User input at run									

Configuration	Type	Purpose
		time.
class	string	Unique identifier for the filter in target-system. Set the value to the value that is defined in your Oracle Utilities customer information system.

Export Component Settings

This table includes the configurations to modify the maximum rows for the export components.

Settings Data	Configuration	Comment
<p>Name: exportMaxRows</p> <p>Description: Configuration to set maximum rows used for export component</p>	<p>Example:</p> <p>Modify the value of maxRows as follows:</p> <pre>{ "name": "maxRows", "value": "5000" }</pre>	

Target URLs

This table includes the configurations that need to be set up in order for actions that require a target URL to work.

Settings Data	Configuration
<p>Name: serviceRequestEditPage</p> <p>Description: Configuration to set the serviceRequest edit action Url.</p>	<p>Example: Modify the value of serviceRequestEditPage as follows:</p> <pre>{ "name": "serviceRequestEditPage", "value": "https:// {{host}}/fscmUI/redwood/service/ec/container/sr/edit? srNumber={{srNumber}}" }</pre>
<p>Name: serviceRequestCreatePage</p> <p>Description: Configuration to set the serviceRequest create action Url.</p>	<p>Example: Modify the value of serviceRequestCreatePage as follows:</p> <pre>{ "name": "serviceRequestCreatePage", "value": "https:// {{host}}/fscmUI/redwood/service/ec/container/sr/creat e?srMap=PrimaryContactPuid= {{primaryContactPartyNumber}}" }</pre>
<p>Name: contactDetailsPage</p> <p>Description: Configuration to</p>	<p>Example: Modify the value of contactDetailsPage as follows:</p> <pre>{ "name": "contactDetailsPage",</pre>

Settings Data	Configuration
set contactDetails page url	<pre> "value": " https:// {{host}}/crmUI/faces/FuseOverview?fndGlobalItemNo deId=HZ_FOUNDATIONPARTIES_CONTACTS_ CRM_CARD&fndTaskItemNodeId=HZ_ FOUNDATIONPARTIES_CONTACTS_ CRM&fnd=;subTabName=Overview%253BContactPa rtyId={{partyId}};;;false;256;; " } </pre>
<p>Name: accountDetailsPage</p> <p>Description: Configuration to set accountDetails page url</p>	<p>Example: Modify the value of accountDetailsPage as follows:</p> <pre> { "name": "accountDetailsPage", "value": " https:// {{host}}/crmUI/faces/FuseOverview?fndGlobalItemNo deId=ZCM_CUSTOMERCTRINFRA360_ CUSTOMERS_CRM_ CARD&fndTaskItemNodeId=ZCM_ CUSTOMERCTRINFRA360_CUSTOMERS_ CRM&fnd=;subTabName=Overview&AccountPartyId= {{partyId}};;;false;256;; " } </pre>
<p>Name: iframeSrcCCS</p> <p>Description: Configuration to set CCS url for iframe</p>	<p>Example: Modify the value of iframeSrcCCS as follows:</p> <pre> { "name": "iframeSrcCCS", "value": "" } </pre>

Feature Flag Settings

This table includes the configurations that need to be set up to enable or disable specific features.

Settings Data	Configuration	Comment
<p>Name: KAM_BusinessList</p> <p>Description: Configuration to enable BusinessList for KAM users.</p>	<p>Example:</p> <p>Add the value of KAM_BusinessList as follows:</p> <pre>{ "name": "KAM_BusinessList", "value": "Y" }</pre>	
<p>Name: KAM_CustomerList</p> <p>Description: Configuration to enable new Extended customer list for Agent users.</p>	<p>Example:</p> <p>Add the value of KAM_CustomerList as follows:</p> <pre>{ "name": "KAM_CustomerList", "value": "Y" }</pre>	
<p>Name: EnableWarningDialog_CallWrapup</p> <p>Description: Configuration to enable the reminder at the end of an agent call.</p>	<p>Example:</p> <p>Modify the value of EnableWarningDialog_CallWrapup as follows:</p> <pre>{ "name": " EnableWarningDialog_CallWrapup ", "value": "Y" }</pre>	<p>Enables the pop-up reminder to close all open tabs. This reminder occurs after an agent completes a call with a customer.</p>

Oracle Intelligent Adviser - Pay Plan

This table includes the configurations that need to be set up if using the Oracle Intelligent Adviser (OIA) Pay Plan feature.

OIA Data	Configuration	Comment
<p>Name: OIA_HUB_DETAILS</p> <p>Description: Details for the Oracle Intelligent Adviser Hub.</p>	<p>Example:</p> <p>Add the URL in iaSiteUrl</p> <pre>{ "name": "iaSiteUrl", "value": "<OIA Hub web determination URL>" }</pre> <p>Add the deployment name in deploymentName</p> <pre>{ "name": "deploymentName", "value": "<Name of the 'create payment plan' interview created in the hub>" }</pre>	<p>Holds the URL used to access the Oracle Intelligent Adviser Hub, and the deployment name where the pay plan details are stored.</p>

Miscellaneous Settings

This table includes additional settings and configurations that need to be considered for the Customer Experience for Utilities solutions.

Settings Data	Configuration	Comment
<p>Name: UnsupportedLOVValues</p> <p>Description: Holds the LOV values that are not</p>	<p>Example:</p> <pre>"name": "COMMUNICATION_ TYPE",</pre>	<p>Holds unsupported values for:</p> <ul style="list-style-type: none"> ▪ COMMUNICATION_

Settings Data	Configuration	Comment
supported by the backend.	"value": "WEB,SMS,INSTANT_MESSAGING,TLX,EFT,ED "	<p>TYPE</p> <ul style="list-style-type: none"> ▪ CONTACT_POINT_PURPOSE ▪ CONTACT_POINT_PURPOSE_WEB <p>This configuration object for UnsupportedLOVValues determines what the unsupported values are for each Fusion LOV in terms of the CX for Utilities applications, as there is no disable option on the Fusion side.</p>

Country Code Mapping Configuration

This table provides the country code mapping configurations that store the mapping of the country and state codes between Fusion applications and your Oracle Utilities customer information system.

Country Data	Configuration	Comment
<p>Name: CountryCodes</p> <p>Description: Holds the lookup values for Country Codes.</p>	<p>Examples:</p> <p>"ccsValue": "USA", "faValue": "US", states; "ccsValue": "Alaska", "faValue": "AK"</p>	<p>Country codes can be configured to store the mapping between country and state codes of Fusion applications and your Oracle Utilities</p>

Country Data	Configuration	Comment
		customer information system.

Interaction History Configuration

This table provides the information needed to configure interaction history display.

Country Data	Configuration	Comment
<p>Name: defaultRangeInDays</p> <p>Description: Defines the default range of the number days of interaction history that can be viewed at once.</p>	<p>Example:</p> <p>Modify the value of defaultRangeInDays as follows:</p> <pre>{ "name": "defaultRangeInDays", "value": "180" }</pre>	<p>This value determines the default number of days of interaction history an agent can view.</p>
<p>Name: maxRangeInDays</p> <p>Description: Set the maximum range, in number of days, of interaction history that an agent can view. Agents cannot use filters to view data that was available before this date range.</p>	<p>Modify the value of maxRangeInDays as follows:</p> <pre>{ "name": "maxRangeInDays", "value": "1095" }</pre>	<p>The calendar will mask all the dates before the specified range. For example, if the value is 1095, you cannot select a date that is 1096 days ago.</p>
<p>Name:</p>	<p>Modify the value of</p>	

Country Data	Configuration	Comment
defaultDisplayIconOracle Description: Set the display icon of an interaction	defaultDisplayIconOracle as follows: <pre>{ "name": "defaultDisplayIconOracle", "value": "ico-financials.svg" }</pre>	
Name: filterFields Description: Set the value of the filter for interactions.	Modify the value of filterFields as follows: <pre>{ "name": " filterFields", "value": "interactionTypeDescription" }</pre>	Possible values for the filter fields include: <ul style="list-style-type: none"> ▪ interactionType ▪ interactionTypeDescription ▪ primaryText ▪ secondaryText ▪ tertiaryText

Customer Experience for Utilities Configuration Tasks

The `<hostname>/api/utilitiesAdmin/v1/<ReferenceTypeName>` is a REST service that is available to *access* administrative reference type information for your utility, and `<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/<ReferenceTypeName>` is the REST service to *manage* these reference types. For example, your host name might be `https://xxxxxxxxx.oci.customer-oci.com`

The reference types that are used by your utility must be enabled or added in order to properly use the Customer Experience for Utilities solutions. You can access detailed documentation about this REST service by logging in to My Oracle Support and viewing [Document 2953807.1](#).

Use the information in this documentation to:

- Create administrative user in Fusion Applications
- Generate the access token
- View the existing reference types

- Edit or add reference types, which include:
 - Service types
 - Units of measure
 - Standard usage identifiers
 - Premise tree
 - County
 - State
- Edit or add insight information, which includes:
 - Insight Severity
 - Insight Type
 - Insight Group
 - Insight Group Insight Types
 - User Actions
 - Insight Type User Actions

Before you edit or add insight information, you must add the insight groups and insight types that you want to use in your Oracle Utilities customer information system. For additional details, see [Configure Your Oracle Utilities System](#).

Create Administrative User in Fusion Applications

You create this user to administer the reference type configurations.

1. Log in to your Fusion Applications Security Console as an administrator.
2. Assign the following roles to a user. You can use an existing user or create a new user.
 - ORA_UER_UTILITIES_KEY_ACCOUNT_ADMINISTRATOR_JOB
 - ORA_UER_UTILITIES_CUSTOMER_SERVICE_ADMINISTRATOR_JOB

Generate Access Token

The bearer token for authorization can be generated using clients such as Postman. This example describes how to generate the token using Postman.

1. Select OAuth 2.0 as the **Authorization Type**.
2. Select Authorization Code as the **Grant Type**.
3. Enter the following information:
 - **Access Token URL:** This URL is the endpoint for the authentication server, and is used to exchange the authorization code for an access token. For example, <https://xxxxxxxxx.identity.com/oauth2/v1/token>
 - **Client ID:** Enter the client identifier issued to the client during the application registration process. For example, CXIF_FA_xxxxxx_APPID
 - **Client Secret:** Enter the client secret issued to the client during the application registration process.
 - **Scope:** This value is used to grant specific permissions in the access request. For example, <https://xxxxxxxxx.oci.customer-oci.comurn:opc:resource:consumer::all>
 - **Callback URL:** This is the callback URL to which redirection will happen after authorization. This URL should match the one used during the application registration process. For example, <https://xxxxxxxxx.oci.customer-oci.com/oidc/redirect>
 - **Auth URL:** This URL is the endpoint for the authorization server. This is used to get the authorization code. For example, <https://xxxxxxxxx.identity.com/oauth2/v1/authorize>
4. Click **Get New Access Token** and user credentials to be provided in the flow in the next step.
5. Enter the user credentials associated with the user you just set up above.
6. On submit, a new token is generated that can be used to invoke the API.

View the Existing Reference Types

To view the existing reference types:

- **Request URL:** <hostname>/api/utilitiesAdmin/v1/<ReferenceTypeName>
For example, For example, <https://xxxxxxxxx.oci.customer-oci.com/api/utilitiesAdmin/v1/<ReferenceTypeName>>
- **Operation:** GET
- **Authorization:** OAUTH2.0

Edit Reference Types

To edit the reference types:

1. Get the response using a GET call.
2. Using the information below, update the configuration and perform a POST operation to the below endpoint with the specified payload.

Request URL:

<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/<ReferenceTypeName>

For Example, <https://xxxxxxx.oci.customer-oci.com/api/CXIPlatformService/v1/CXIReferenceEntity/<ReferenceTypeName>>

Operation: POST

Authorization: OAUTH2.0

Request payload

```
{
  "items": [
    {
      "operation": "update",
      "data": <object for a single record returned from GET in
step 1>
    }
  ]
}
```

The following tables describe the available configurations by integration point in CX for Utilities applications.

Service Types

The following service types are delivered with the solution. You must activate the service types that are associated with your utility, or add additional service types, if necessary. All service types are delivered inactive.

- **E:** Electric
- **G:** Gas
- **M:** Miscellaneous
- **RF:** Refuse
- **W:** Water
- **WW:** Waste water

Currently, the usage features available in the solution support only Electric and Gas service types.

The table below provides additional details on the tasks you need to complete.

Task	Configuration	Comments
Fetch a service type	GET /utilitiesAdmin/v1/serviceType?q=active=false Example: GET https://<hostname>/api/utilitiesAdmin/v1/serviceType?q=active=false A specific service type can be fetched using: GET /utilitiesAdmin/v1/serviceType/{id} Example: GET https://<hostname>/api/utilitiesAdmin/v1/serviceType/E	
Activate a service type	POST /CXIPlatformService/v1/CXIReferenceEntity/serviceType Example: POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/serviceType	Complete this task for every service type associated with your utility.

Task	Configuration	Comments
	<pre> { "items": [{ "operation": "update", "data": { "id": "E", "active": true } }] } </pre>	<p>You can activate multiple service types together by adding them to the "items" list.</p>
<p>Edit a service type</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/serviceType</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIRefere nceEntity/serviceType</p> <pre> { "items": [{ "operation": "update", "data": { "id": "E", "color": "#DE7F11", "icon": "oj-ux-ico-outage", "active": true } }] } </pre>	<p>Multiple service types can be updated together by adding objects to the "items" list.</p>

Task	Configuration	Comments
	<pre> } }] } </pre>	
<p>Create a new service type</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/serviceType</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/serviceType</p> <pre> { "items": [{ "operation": "create", "data": { "id": "O", "code": "O", "color": "#83401E", "icon": "oj-ux-ico-configurator", "active": true, "description": "ORA_UER_SERVICE_TYPE_O" //Lookup Code } }] } </pre>	<p>Oracle recommends using the same value for 'id' and 'code'.</p> <p>Also, 'description' is a translatable field, so the value should be the relevant lookup code created under the lookup type ORA_UER_SERVICE_TYPE.</p> <p>Multiple service types can be created together by adding more objects to the "items"</p>

Task	Configuration	Comments
		<p>list.</p> <p>For additional information on Lookups, see Profile Options, Lookups, and Scheduled Processes in the Implementing Customer Data Management for Sales and Fusion Service Guide.</p>

Units of Measure

The following units of measure are delivered with the solution. You must activate the units of measure that are associated with your utility, or add additional units of measure, if necessary. All units of measure are delivered inactive.

- **KW:** Kilowatts
- **KWH:** Kilowatt Hours
- **MWH:** Megawatt Hours
- **CCF:** Hundred Cubic Feet
- **TH:** Thermal Units
- **GAL:** Gallons

The table below provides additional details on the tasks you need to complete.

Task	Configuration	Comments
Fetch a unit of measure	<p>GET /utilitiesAdmin/v1/unitOfMeasure?q=active=false</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/unitOfMeasure?q=active=false</p> <p>A specific unit of measure record can be fetched using:</p> <p>GET /utilitiesAdmin/v1/unitOfMeasure/{id}</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/unitOfMeasure/KW</p>	
Activate a unit of measure	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/unitOfMeasure</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/unitOfMeasure</p> <pre>{ "items": [{ "operation": "update", "data": { "id": "KW", "active": true } }] }</pre>	<p>Complete this task for every unit of measure associated with your utility.</p> <p>Multiple units of measure can be activated together by adding more of them to the "items" list.</p>

Task	Configuration	Comments
	<pre> }] } </pre>	
<p>Edit a unit of measure</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/unitOfMeasure</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/unitOfMeasure</p> <pre> { "items": [{ "operation": "update", "data": { "id": "KW", "serviceType": "E", "active": true } }] } </pre>	<p>Multiple units of measure can be edited together by adding more of them to the "items" list.</p>
<p>Create a new unit of measure</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/unitOfMeasure</p> <p>Example:</p>	<p>Oracle recommends using the same value for 'id'</p>

Task	Configuration	Comments
	<pre> POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/unitOfMeasure { "items": [{ "operation": "create", "data": { "id": "CF", "code": "CF", "active": true, "description": "ORA_UER_UOM_CF", // Lookup Code "serviceType": "G" } }] } </pre>	<p>and 'code'.</p> <p>Also, 'description' is a translatable field, so the value should be the relevant lookup code created under the lookup type ORA_UER_UOM.</p> <p>Multiple units of measure can be created together by adding more of them to the "items" list.</p> <p>For additional information on Lookups, see Profile Options, Lookups, and</p>

Task	Configuration	Comments
		Scheduled Processes in the Implementing Customer Data Management for Sales and Fusion Service Guide .

Standard Usage Identifier

The following standard usage identifiers are delivered with the solution. Each usage identifier is associated with a unit of measure. You must activate the identifiers along with the units of measure that are associated with your utility, or add additional identifiers, if necessary. You can also change the colors associated with each entry to match your utility branding colors. All standard usage identifiers are delivered inactive.

Code	Description	Associated Unit of Measure
KWH--	Kilowatt Hour	KWH
KWH-ON-	Kilowatt Hour - Peak	KWH
KWH-OFF-	Kilowatt Hour - Off-peak	KWH
KWH-MID-	Kilowatt Hour - Mid	KWH
KW--	Kilowatt	KW

Code	Description	Associated Unit of Measure
TH--	Therm	TH
GAL--	Gallons	GAL

The table below provides additional details on the tasks you need to complete.

Task	Configuration	Comments
Fetch a standard usage identifier	<p>GET /utilitiesAdmin/v1/standardUsageIdentifier?q=active=true</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/standardUsageIdentifier?q=active=true</p> <p>A specific identifier can be fetched using:</p> <p>GET /utilitiesAdmin/v1/standardUsageIdentifier/{id}</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/standardUsageIdentifier/KW--</p>	
Activate a standard usage identifier	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/standardUsageIdentifier</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/standardUsageIdentifier</p> <p>{</p>	Complete this task for every standard usage identifier associated with your utility.

Task	Configuration	Comments
	<pre> "items": [{ "operation": "update", "data": { "id": "KWH--", "active": true } }] } </pre>	<p>Multiple standard usage identifier can be activated together by adding them to the "items" list.</p>
<p>Edit a standard usage identifier</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/standardUsageldentifier</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIReferenceEntity/v1/CXIReferenceEntity/standardUsageldentifier</p> <pre> { "items": [{ "operation": "update", "data": { "id": "KW--", "color": "#DE7F11", "unitOfMeasure": "KW", </pre>	<p>Multiple standard usage identifier can be edited together by adding them to the "items" list.</p>

Task	Configuration	Comments
	<pre> "active": true } }] } </pre>	
<p>Create a new standard usage identifier</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/standardUsageldentifier</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/standardUsageldentifier</p> <pre> { "items": [{ "operation": "create", "data": { "id": "KL--", "usageIdentifier": "KL--", "color": "#DE7F11", "unitOfMeasure": "KL", "active": true, "description": "ORA_UER_USAGE_IDENT_KL_ON" // Lookup Code } }] } </pre>	<p>Oracle recommends using the same value for 'id' and 'usageIdentifier'.</p> <p>Also, 'description' is a translatable field, so the value should be the relevant lookup code created under the lookup type ORA_UER_USAGE_IDENTIFIER.</p>

Task	Configuration	Comments
	<pre data-bbox="337 365 358 457">] }</pre>	<p data-bbox="1159 365 1312 751">Multiple standard usage identifier can be created together by adding them to the “items” list.</p> <p data-bbox="1159 785 1312 1612">For additional information on Lookups, see Profile Options, Lookups, and Scheduled Processes in the Implementing Customer Data Management for Sales and Fusion Service Guide.</p>

Premise Tree

The premise tree displays a hierarchical list of the components within a premise. You must also identify the URL associated with your premise tree. The following premise tree

components are delivered with the solution.

- **ASSOC_ACCT:** oj-ux-ico-file
- **COMPONENT:** oj-ux-ico-chart-bar
- **DEVICE:** oj-ux-ico-odometer
- **METER:** oj-ux-ico-odometer
- **PREMISE:** oj-ux-ico-city
- **SPCOMP:** oj-ux-ico-chart-bar
- **SPDEV:** oj-ux-ico-odometer
- **SVC_CONT:** oj-ux-ico-outage
- **SVC_POINT:** oj-ux-ico-location-pin
- **treeName:** C1-CX-PremiseTree
- **UNLINK_SP:** oj-ux-ico-location-pin

The table below provides additional details on the tasks you need to complete.

Task	Configuration	Comments
Fetch a premise tree record	GET /utilitiesAdmin/v1/premiseTree Example: GET https://<hostname>/api/utilitiesAdmin/v1/premiseTree A specific premise tree record can be fetched using: GET /utilitiesAdmin/v1/premiseTree/{id} Example: GET https://<hostname>/api/utilitiesAdmin/v1/premiseTree/PRE MISE	
Specify your	POST /CXIPlatformService/v1/CXIReferenceEntity/premiseTree	Oracle recommen

Task	Configuration	Comments
URL	<p>Example:</p> <p>POST <a href="https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/premiseTree">https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/premiseTree</p> <pre>{ "items": [{ "operation": "create", "data": { "id": "premiseViewInCISUrl", "name": "premiseViewInCISUrl", "value": "https://ugbu-ccs-cndevcorp.appoci.oraclecorp.com:8084/cx4uig/prod/ccs/web/cis.jsp?script=C1-CCByAcct&ACCT_ID={{accountId}}" } }] }</pre>	<p>ds using the same value for 'id' and 'name'.</p>
Edit a URL	<p>POST <a href="https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/premiseTree">/CXIPlatformService/v1/CXIReferenceEntity/premiseTree</p> <p>Example:</p> <p>POST <a href="https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/premiseTree">https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/premiseTree</p> <pre>{ "items": [</pre>	<p>Oracle recommends using the same value for 'id' and 'name'.</p> <p>Multiple premise tree</p>

Task	Configuration	Comments
	<pre> { "operation": "update", "data": { "id": "premiseViewInCISUrl", "name": "premiseViewInCISUrl", "value": "https://ugbu-ccs- cndevcorp.appoci.oraclecorp.com:8084/cx4uig/prod/ccs/we b/cis.jsp?script=C1-CCByAcct&ACCT_ID={{accountId}}" } }] } </pre>	<p>records can be edited together by adding them to the "items" list.</p>
Delete a URL	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/premiseTree</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/premiseTree</p> <pre> { "items": [{ "operation": "delete", "data": { "id": "premiseViewInCISUrl" } }] } </pre>	

Task	Configuration	Comments
	<pre>] }</pre>	

Country

Use the country codes to specify the countries in which your utility operates. You can specify one or more countries.

The country **US**, and all associated states, are delivered with the solution.

The table below provides additional details on the tasks you need to complete.

Task	Configuration	Comments
Add all needed country records	<p>POST /api/CXIPlatformService/v1/CXIReferenceEntity/country</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/country</p> <pre>{ "items": [{ "operation": "create", "data": { "id": "UK", "faValue": "UK", "cisValue": "United Kingdom" } }] }</pre>	<p>Oracle recommends using the same value for 'id' and 'faValue' in the request.</p> <p>Multiple country records can be added together by adding them to the "items" list in the request.</p>

Task	Configuration	Comments
	<pre> }</pre>	
<p>Edit a country record</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/country</p> <p>Example:</p> <p>POST <a href="https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/country">https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/country</p> <pre> { "items": [{ "operation": "update", "data": { "id": "UK", "faValue": "UK", "cisValue": "United Kingdom" } }] }</pre>	<p>Multiple country records can be added at the same time by adding them to the "items" list in the request.</p>
<p>Delete a country record</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/country</p> <p>Example:</p> <p>POST <a href="https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/country">https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/country</p> <pre> { "items": [{ "operation": "delete", "data": {</pre>	<p>Multiple country records can be deleted at the same time by adding them to the "items" list in the request.</p>

Task	Configuration	Comments
	<pre>"id": "UK" } }</pre>	
Fetch country records	<p>GET /utilitiesAdmin/v1/country</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/country</p> <p>A specific country record can be fetched using:</p> <p>GET /utilitiesAdmin/v1/country/{id}</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/country/US</p>	

State

Use the state codes to specify the states in which your utility operates. You can specify one or more states as children of the country they belong to.

The table below provides additional details on the tasks you need to complete.

Task	Configuration	Comment
Add all needed state records	<p>POST</p> <p>/api/CXIPlatformService/v1/CXIReferenceEntity/country/{id}/child/state</p> <p>Here, {id} is the country to which states should be added.</p> <p>Example:</p> <p>POST</p> <p>https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/country/US/child/state</p>	Oracle recommends using the same value for 'id' and 'faValue' in the request.

Task	Configuration	Comment
	<pre> { "items": [{ "operation": "create", "data": { "id": "Alabama", "faValue": "Alabama", "cisValue": "AL" } }, { "operation": "create", "data": { "id": "Alaska", "faValue": "Alaska", "cisValue": "AK" } }] } </pre>	
<p>Edit a state record</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/country/{id}/child/state</p> <p>Here, {id} is the country associated with the state you are editing.</p> <p>Example:</p> <p>POST</p>	<p>Multiple state records can be edited together by adding</p>

Task	Configuration	Comment
	<pre> https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/country/US/child/state { "items": [{ "operation": "update", "data": { "id": "Alabama", "faValue": "Alabama", "cisValue": "AL" } }] } </pre>	<p>them to the “items” list in the request.</p>
<p>Delete a state record</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/country/{id}/child/state</p> <p>Here, {id} is the country associated with the state you are deleting.</p> <p>Example:</p> <p>POST</p> <pre> https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/country/US/child/state { "items": [{ "operation": "delete", </pre>	<p>Multiple state records can be deleted together by adding them to the “items” list in the request.</p>

Task	Configuration	Comment
	<pre>"data": { "id": "Alabama" } }] }</pre>	
<p>Fetch state records</p>	<p>GET /utilitiesAdmin/v1/country/{id}/child/state</p> <p>Here {id} is the id of country associated with the states being fetched.</p> <p>Example:</p> <p>GET <a href="https://<hostname>/api/utilitiesAdmin/v1/country/US/child/state">https://<hostname>/api/utilitiesAdmin/v1/country/US/child/state</p> <p>A specific state record can be fetched using:</p> <p>GET /utilitiesAdmin/v1/country/{id}/child/state/{childid}</p> <p>Example:</p> <p>GET <a href="https://<hostname>/api/utilitiesAdmin/v1/country/US/child/state/Alabama">https://<hostname>/api/utilitiesAdmin/v1/country/US/child/state/Alabama</p>	

Insight Severity

The following insight severity records are delivered with the solution. You can modify these values or add new values as needed, using the information below. All records are delivered inactive.

Severity	Default Style	Active	Description	Rank	ID
F1IN	info	false	Information	30	F1IN
F1WN	warning	false	Warning	20	F1WN
F1ER	error	false	Critical	10	F1ER

This table provides additional details on the tasks you can complete:

Task	Configuration
Fetch insight severity	<p>GET /utilitiesAdmin/v1/insightSeverity</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/insightSeverity</p> <p>A specific insight severity can be fetched using:</p> <p>GET /utilitiesAdmin/v1/insightSeverity/{id}</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/insightSeverity/F1IN</p>
Edit insight severity	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/insightSeverity</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/insightSeverity</p> <pre>{ "items": [{ "operation": "update", "data": {</pre>

Task	Configuration
	<pre>"id": "F1ER", "defaultStyle": "error", "active": true } }] }</pre> <p>You can also update multiple records in the same request.</p> <p>Example:</p> <pre>{ "items": [{ "operation": "update", "data": { "id": "F1ER", "defaultStyle": "error", "active": true } }, { "operation": "update", "data": { "id": "F1IN", "defaultStyle": "info", "active": true } }]</pre>

Task	Configuration
	<pre> }] } </pre>
<p>Create new insight severity</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/insightSeverity</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/insightSeverity</p> <pre> { "items": [{ "operation": "create", "data": { "defaultStyle": "error", "active": true, "rank": 30, "id": "CRIT", "description": "ORA_UER_INSIGHT_SEV_CRIT" //Lookup Code } }] } </pre> <p>You can create multiple records in the same request.</p> <p>Example:</p> <pre> { "items": [</pre>

Task	Configuration
	<pre> { "operation": "create", "data": { "defaultStyle": "error", "active": true, "rank": 30, "id": "CRIT", "description": "ORA_UER_INSIGHT_SEV_CRIT" //Lookup Code } }, { "operation": "create", "data": { "defaultStyle": "error", "active": true, "rank": 40, "id": "DRIT", "description": "ORA_UER_INSIGHT_SEV_DRIT" //Lookup Code } }] } </pre>

Insight Type

The following insight types are delivered with the solution. You can modify these values or add new values as needed, using the information below. All records are delivered inactive.

Source System	Description	Active	Rank	ID
CCS	Unpaid Account for Person	false	10	C1-PER-NONPAY-CARD
CCS	Account Past Due	false	10	C1-ACCT-PASTDUE-CARD
CCS	Account Collection Active Card	false	20	C1-ACCT-COLL-CARD
CCS	Account Pay Agreement Card	false	30	C1-ACCT-PAYAGREE-CARD
CCS	Account Severance Active Card	false	10	C1-ACCT-SEV-CARD
CX	Contract Renewal This insight uses the CONTRACT_RENEWAL_ALG insight algorithm.	false	5	CONTRACT_RENEWAL

This table provides additional details on the tasks you can complete:

Task	Configuration
Fetch insight type	<p>GET /utilitiesAdmin/v1/insightType</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/insightType</p> <p>A specific insight type can be fetched using:</p>

Task	Configuration
	<p>GET /utilitiesAdmin/v1/insightType/{id}</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/insightType/C1-ACCT-PASTDUE-CARD</p>
<p>Activate insight type</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/insightType</p> <p>One or more insight type can be activated at once.</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/insightType</p> <pre>{ "items": [{ "operation": "update", "data": { "id": "C1-ACCT-PASTDUE-CARD", "active": true } }, { "operation": "update", "data": { "id": "CCS", "active": true } }] }</pre>

Task	Configuration
	<pre>] } </pre>
<p>Edit an insight type</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/insightType</p> <p>One or more insight type can be updated at once.</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/insightType</p> <pre> { "items": [{ "operation": "update", "data": { "id": "C1-ACCT-PASTDUE-CARD", "sourceSystem": "CCS", "active": true } }, { "operation": "update", "data": { "id": "C1-PER-NONPAY-CARD", "sourceSystem": "CCS", "active": true } }] } </pre>

Task	Configuration
	<pre>] } </pre>
<p>Create insight type</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/insightType</p> <p>One or more insight type can be created at once.</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/insightType</p> <pre> { "items": [{ "operation": "create", "data": { "id": "C1-PER-NONPAY-CARD", "sourceSystem": "CCS", "active": false, "rank": 10, "description": "ORA_UER_PER_NONPAY" //Lookup Code } }, { "operation": "create", "data": { "id": "C1-ACCT-PASTDUE-CARD", "sourceSystem": "CCS", "active": false, </pre>

Task	Configuration
	<pre>"rank": 10, "description": "ORA_UER_ACCOUNT_PAST_DUE" //Lookup Code } }] }</pre>

Insight Groups

The following insight groups are delivered with the solution. You can modify these values or add new values as needed, using the information below. All insight group records are delivered inactive.

Description	ID
Billing accounts insight	C1XA
Business insights	C1XP
Customer Dashboard Agent Insights	C1XC

This table provides additional details on the tasks you can complete:

Task	Configuration
Fetch insight group	<p>GET /utilitiesAdmin/v1/insightGroup</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/insightGroup</p> <p>A specific insight type can be fetched using:</p> <p>GET /utilitiesAdmin/v1/insightGroup/{id}</p>

Task	Configuration
	<p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/insightGroup/C1XA</p>
<p>Edit insight group</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/insightGroup</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/insightGroup</p> <pre>{ "items": [{ "operation": "update", "data": { "id": "C1XA", "description": "ORA_UER_BILLING_ACC_INS_GRP" //Lookup Code } }] }</pre>
<p>Create a new insight group</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/insightGroup</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/insightGroup</p> <pre>{ "items": [{</pre>

Task	Configuration
	<pre> "operation": "create", "data": { "id": "C1XA", "description": "ORA_UER_BILLING_ACC_INS_GRP" //Lookup Code } }] } </pre>

Insight Group Insight Types

The following insight group insight types are delivered with the solution. You can modify these values or add new values as needed, using the information below. All records are delivered inactive.

insightGroup	ID	insightType
C1XP	C1XP_C1PERNONPAYCARD	C1-PER-NONPAY-CARD
C1XA	C1XA_C1ACCTPASTDUECARD	C1-ACCT-PASTDUE-CARD
C1XC	C1XC_C1COLLCARD	C1-ACCT-COLL-CARD
C1XC	C1XC_C1PAYAGREECARD	C1-ACCT-PAYAGREE-CARD

insightGroup	ID	insightType
C1XC	C1XC_C1SEVCARD	C1-ACCT-SEV-CARD

This table provides additional details on the tasks you can complete:

Task	Configuration
Fetch insight group	<p>GET /utilitiesAdmin/v1/insightGroupInsightTypes</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/insightGroupInsightTypes</p> <p>A specific insight type can be fetched using:</p> <p>GET /utilitiesAdmin/v1/insightGroupInsightTypes/{id}</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/insightGroupInsightTypes/C1XP_C1PERNONPAYCARD</p>
Edit insight group	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/insightGroupInsightTypes</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/insightGroupInsightTypes</p> <pre>{ "items": [{ "operation": "update", "data": { "id": "C1XP_C1PERNONPAYCARD",</pre>

Task	Configuration
	<pre> "insightGroup": "C1XP", "insightType": "C1-PER-NONPAY-CARD" } }] } </pre>
<p>Create insight grouping</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/insightGroupInsightTypes</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/insightGroupInsightTypes</p> <pre> { "items": [{ "operation": "create", "data": { "id": "C1XP_C1PERNONPAYCARD", "insightGroup": "C1XP", "insightType": "C1-PER-NONPAY-CARD" } }] } </pre>

User Actions

The following user actions are delivered with the solution. Review the values to determine whether you have the user actions you need for your implementation. You can modify these values or add new values as needed using the APIs. All user actions are delivered as inactive.

ID	Active	Description
ACTION_VIEW_BILL_ACC_DET	false	Navigate to Billing tab in Account 360.
ACTION_VIEW_OPTY	false	Navigate to Opportunity Detail page in Oracle Fusion.
ACTION_VIEW_COLL_PROC	false	Navigate to the collection process.
ACTION_VIEW_CUT_PROC	false	Navigate to the cut process.
ACTION_VIEW_OD_PROC	false	Navigate to the overdue process.
ACTION_VIEW_PAY_AGREE	false	Navigate to the payment agreement.
ACTION_VIEW_SA	false	Navigate to the service agreement.
ACTION_VIEW_SEV_	false	Navigate to the

ID	Active	Description
PROC		severance process.

This table provides additional details on the tasks you can complete:

Task	Configuration
Fetch user action	<p>GET /utilitiesAdmin/v1/userAction</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/userAction</p> <p>A specific insight type can be fetched using:</p> <p>GET /utilitiesAdmin/v1/userAction/{id}</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/userAction/ACTION_VIEW_BILL_ACC_DET</p>
Activate user action	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/userAction</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/userAction</p> <p>Sample body:</p> <pre> { "items": [{ "operation": "update", "data": { "id": "ACTION_VIEW_BILL_ACC_DET", "active": true } }] } </pre>

Task	Configuration
	<pre> } }] } </pre> <p>This payload can have one or multiple items, as needed.</p>
<p>Edit user action</p>	<p>PATCH /CXIPlatformService/v1/CXIReferenceEntity/userAction</p> <p>Example:</p> <p>PATCH https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/userAction</p> <p>Sample body:</p> <pre> { "items": [{ "operation": "update", "data": { "id": "ACTION_VIEW_BILL_ACC_DET", "description": "ORA_UER_ACTION_VIEW_DETAIL" } }] } </pre> <p>This payload can have one or multiple items, as needed.</p>
<p>Create new user action</p>	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/userAction</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/use</p>

Task	Configuration
	<p>rAction</p> <p>Sample body:</p> <pre data-bbox="503 451 1120 1071"> { "items": [{ "operation": "create", "data": { "id": "ACTION_VIEW_BILL_ACC_DET", "active": true, "description": "ORA_UER_ACTION_VIEW_DETAIL" } }] } </pre> <p>This payload can have one or multiple items, as needed.</p>

Insight Type User Actions

The following insight type user actions are delivered with the solution. Review the values to determine if you have the values needed for your implementation. You can modify these values or add new values as needed, using the APIs.

User Action	Entity Type	ID	insightType
ACTION_VIEW_BILL_ACC_DET	BillingAccount	C1ACCTPASTDUE_VIEW_BA_DET	C1-ACCT-PASTDUE-CARD
ACTION_VIEW_	BillingAccount	C1PERNONPAYCARD_VIEW_BA_DET	C1-PER-NONPAY-

User Action	Entity Type	ID	insightType
BILL_ACC_DET			CARD
ACTION_VIEW_COLL_PROC	CollectionProcess	C1XCCOLLCARD_VIEW_COLL_PROC	C1-ACCT-COLL-CARD
ACTION_VIEW_OD_PROC	OverdueProcess	C1XCCOLLCARD_VIEW_OD_PROC	C1-ACCT-COLL-CARD
ACTION_VIEW_PAY_AGREE	PaymentAgreement	C1XCPAYAGREE_VIEW_PA	C1-ACCT-PAYAGREE-CARD
ACTION_VIEW_SA	ServiceAgreement	C1XCPAYAGREE_VIEW_SA	C1-ACCT-PAYAGREE-CARD
ACTION_VIEW_CUT_PROC	CutProcess	C1XCSEVCARD_VIEW_CUT_PROC	C1-ACCT-SEV-CARD
ACTION_VIEW_SEV_PROC	SeveranceProcess	C1XCSEVCARD_VIEW_SEV_PROC	C1-ACCT-SEV-CARD

This table provides additional details on the tasks you can complete:

Task	Configuration
Fetch insight type user action	<p>GET /utilitiesAdmin/v1/insightTypeUserAction</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/insightTypeUserAction</p> <p>A specific insight type can be fetched using:</p> <p>GET /utilitiesAdmin/v1/insightTypeUserAction/{id}</p> <p>Example:</p> <p>GET https://<hostname>/api/utilitiesAdmin/v1/insightTypeUserAction/C1ACCTPASTDUE_VIEW_BA_DET</p>
Edit insight type user action	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/insightTypeUserAction</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/insightTypeUserAction</p> <p>Sample body:</p> <pre> { "items": [{ "operation": "update", "data": { "id": "C1ACCTPASTDUE_VIEW_BA_DET", "userAction": "ACTION_VIEW_BILL_ACC_DET" } }] } </pre> <p>This payload can have one or multiple items, as needed.</p>

Task	Configuration
Create insight type user action	<p>POST /CXIPlatformService/v1/CXIReferenceEntity/insightTypeUserAction</p> <p>Example:</p> <p>POST https://<hostname>/api/CXIPlatformService/v1/CXIReferenceEntity/insightTypeUserAction</p> <p>Sample body:</p> <pre> { "items": [{ "operation": "create", "data": { "id": "C1ACCTPASTDUE_VIEW_BA_DET", "userAction": "ACTION_VIEW_BILL_ACC_DET", "entityType": "BillingAccount", "insightType": "C1-ACCT-PASTDUE-CARD" } }] } </pre> <p>This payload can have one or multiple items, as needed.</p>

Setting Profile Options

Profile options are a set of preferences that you can use to configure and centrally control user interface settings and application behavior. Administrators and setup users manage profile options in the Setup and Maintenance work area. You can enable a profile option at the following levels:

- **Site level** (lowest): The option value applies to the entire site of deployment.
- **User level** (highest): The option value applies to a specific user only.

For more information about profile options, refer to the Profile Options chapter of the *Implementing Applications Guide*, available in the [Applications Common Library on Oracle Help Center](#).

In this topic, we will focus on the profile options that are associated with Customer Experience for Utilities (ORA_UER), which are associated with:

- **Application:** Customer Experience for Utilities
- **Module:** Customer Experience for Utilities

Customer Experience for Utilities Profile options control various settings, including:

- Landing page configurations for each Customer Experience for Utilities role
- Maximum number of child accounts to include in the Account Hierarchy charts
- Default map coordinates for the Service Contract Usage Map
- Phone number format
- Insight groups to use for insight display
- URLs for integrated systems
- Redirect settings

Setting Profile Option Values

To find and set the Customer Experience for Utilities profile options:

1. Sign into Oracle Fusion as an administrator or a setup user.
2. Using the menu in the Oracle Header, select **Setup and Maintenance** and then select **Setup: Sales**.
3. Search for the **Manage Administrator Profile Values** task, which provides access to all profile options.
4. Using the values in the table below, search for the Profile Option Code you want to set. Codes for Customer Experience for Utilities begin with **ORA_UER**.
5. Use the instructions in the [Set Profile Option Values](#) topic in the *Implementing Applications Guide* to complete your setup.

Profile Options

This table lists the available profile options and their functions:

Profile Option Code	Description	Values	Level	Used By
Configurable Landing Page Options (codes vary)	There are multiple options used to specify default landing pages. See Configuring Landing Page Profile Options for more details, including default and available values.	Varies by option.	These options can be set at the site or user level.	CX for Utilities Agent Service CX for Utilities Sales
ORA_UER_ACCT_HIER_REC_LIMIT	Use this profile option to specify the maximum number of child accounts to display in the comparison charts available in the Account Hierarchy.	Any numeric value. Default: 50	This option should be set at the site level.	CX for Utilities Sales
ORA_UER_MAP_GEO_CORD	Use this profile option to specify the default center point	Any latitude and longitude values. Default: long=116.9586;lat=33.78	This option should be set at the site	CX for Utilities Sales

Profile Option Code	Description	Values	Level	Used By
	of the Service Contract Usage Map.	39	level.	
ORA_UER_PHONE_FORMAT	Use this profile option to specify the format to use for phone numbers when searching for an entity.	Alphanumeric value that consists of numbers, dashes, and parentheses. For example, (123) 123-1234. Default: No default value defined.	This option should be set at the site level.	CX for Utilities Agent Service
ORA_UER_ACCOUNT_360_BILLING_ACCOUNT_INSIGHT_GROUP	Use this option to specify which insight group to use when rendering insights for a billing account in Account 360.	Insight group name. Default: C1XA	This option should be set at the site level.	CX for Utilities Sales
ORA_UER_ACCOUNT_360_BUSINESS_INSIGHT_GROUP	Use this option to specify which insight group to use when rendering insights for a business (Oracle	Insight group name. Default: C1XP	This option should be set at the site level.	CX for Utilities Sales

Profile Option Code	Description	Values	Level	Used By
	Fusion account) in Account 360.			
ORA_UER_CUSTOMER_DASHBOARD_INSIGHT_GROUP	Use this option to specify which insight group to use when rendering insights for a billing account in the Customer Dashboard in CX for Utilities Agent Service.	Insight group name. Default: C1XC	This option should be set at the site level.	CX for Utilities Agent Service
ORA_UER_IFRAME_SOURCE_CIS_URL	Use this option to add or change the value of the URL for your customer information system.	Specify the URL.	This option should be set at the site level.	CX for Utilities Agent Service CX for Utilities Sales
ORA_UER_CCS_REDIRECT	Use this option to enable a full-	True or False. Default: false	This option should be set at	CX for Utilities Agent Service

Profile Option Code	Description	Values	Level	Used By
	page customer information system redirect for IDCS authorization regardless of x-frame-options. This option must be set to true for redirects to your Oracle Utilities customer information system to work.		the site level.	CX for Utilities Sales
ORA_UER_OIA_HUB_IA_SITE_URL	Use this option to specify the URL of your Oracle Intelligent Advisor Hub.	Specify the URL.	This option should be set at the site level.	CX for Utilities Agent Service CX for Utilities Sales
ORA_UER_AGENT_SERVICE_DASHBOARD	Use this option to specify which customer management interface you	Customer 360 or Customer Dashboard. Default: Customer 360	This option can be set at the site or the	CX for Utilities Agent Service

Profile Option Code	Description	Values	Level	Used By
	<p>want to use in CX for Utilities Agent Service. You can set this option to use either the Customer 360 interface or the Customer Dashboard interface.</p>		<p>user level.</p>	
<p>ORA_UER_HISTORICAL_DATA_RANGE</p>	<p>Use this option to specify the number of years of historical data users can see in CX for Utilities Sales. The system will display history data starting from January first of the year that is X number previous to the current</p>	<p>Specify a whole number greater than 1. Default: 3</p>	<p>This option should be set at the site level.</p>	<p>CX for Utilities Sales</p>

Profile Option Code	Description	Values	Level	Used By
	<p>year.</p> <p>For example, if you set this option to 3, at any point during 2025, the system will display history as far back as January 1, 2022.</p>			

Configuring Landing Page Profile Options

You can use profile options to determine which landing page (page tab) is displayed by default when your users log in to the Customer Experience for Utilities solutions. You can define that all users with a particular role are brought to a specific landing page (site level), or you can set up individual users to have a specific landing page (user level).

For example, you can use profile options to specify that all Customer Service Representatives are brought to the Customer List by default. This is the site-level setup. You could also specify that certain users with that same role are brought to the Work Queue by default, instead of the Customer List. This is user-level setup, and it takes priority over any site-level setup you define.

If users are assigned to multiple roles, the role with the highest priority is used to determine which landing page is displayed.

This table lists the Customer Experience for Utilities roles, their priorities, and their default landing pages:

Role	Priority	Default Landing Page
ORA_UER_UTILITIES_CUSTOMER_SERVICE_	1	Customer

Role	Priority	Default Landing Page
REPRESENTATIVE		List
ORA_UER_UTILITIES_CUSTOMER_SERVICE_MANAGER	2	Work Queue
ORA_UER_UTILITIES_CUSTOMER_SERVICE_ADMINISTRATOR	3	Work Queue
ORA_UER_UTILITIES_KEY_ACCOUNT_ADMINISTRATOR	4	Business List
ORA_UER_UTILITIES_KEY_ACCOUNT_MANAGER_FOR_SALES	5	Business List
ORA_UER_UTILITIES_KEY_ACCOUNT_SUPERVISOR_FOR_SALES	6	Business List
ORA_UER_UTILITIES_KEY_ACCOUNT_MANAGER_FOR_SERVICE	7	Business List
ORA_UER_UTILITIES_KEY_ACCOUNT_SUPERVISOR_FOR_SERVICE	8	Business List

This table lists the profile options that are associated with landing pages.

Profile Option and Description	Default Value	Possible Values
ORA_UER_UTILITIES_KEY_ACCOUNT_MANAGER_FOR_SALES Landing Page for the Role of	Business List Landing Page	Business List Landing Page

Profile Option and Description	Default Value	Possible Values
Utilities Customer Service Manager		
ORA_UER_UTILITIES_KEY_ACCOUNT_SUPERVISOR_FOR_SALES Landing Page for the Role of Utilities Key Account Supervisor	Business List Landing Page	Business List Landing Page
ORA_UER_UTILITIES_KEY_ACCOUNT_MANAGER_FOR_SERVICE Landing Page for the Role of Utilities Key Account Manager	Business List Landing Page	Business List Landing Page Work Queue Landing Page
ORA_UER_UTILITIES_KEY_ACCOUNT_ADMINISTRATOR Landing Page for the Role of Utilities Key Account Administrator	Business List Landing Page	Business List Landing Page Work Queue Landing Page
ORA_UER_UTILITIES_CUSTOMER_SERVICE_REPRESENTATIVE Landing Page for the Role of Utilities Customer Service Representative	Customer List Landing Page	Business List Landing Page Work Queue Landing Page
ORA_UER_UTILITIES_CUSTOMER_SERVICE_MANAGER Landing Page for the Role of Utilities Customer Service Manager	Work Queue Landing Page	Business List Landing Page Work Queue Landing Page
ORA_UER_UTILITIES_	Work Queue Landing	Business List

Profile Option and Description	Default Value	Possible Values
CUSTOMER_SERVICE_ADMINISTRATOR Landing Page for the Role of Utilities Key Account Administrator	Page	Landing Page Work Queue Landing Page
ORA_UER_UTILITIES_KEY_ACCOUNT_SUPERVISOR_FOR_SERVICE Landing Page for the Role of Utilities Key Account Administrator	Business List Landing Page	Business List Landing Page Work Queue Landing Page

Configure Data Synchronization

Both the Oracle Fusion and Oracle Utilities applications require a record of customer information to perform functions such as:

- Identifying a customer when an interaction is initiated through a Customer Experience for Utilities solution.
- Creating a service request for follow-up and resolution of a customer issue.
- Managing a service agreement or service contract with a financially responsible entity.
- Generating a bill for the customer's service usage.
- Sending a service communication to a customer.

In the Oracle Fusion applications, a customer party can be classified as follows:

- **Customers:** These records represent Oracle Fusion contacts or accounts who are associated with a utility billing account. These entities exist as contacts or accounts in the Oracle Fusion systems and also as Persons in your Oracle Utilities customer information system.
- **Contacts:** These records represent Oracle Fusion contacts who are not associated with a utility billing account. These could be persons that the utility wants to establish a relationship with, or any other person you need to record details for that is not attached to a billing account. These records exist only as contacts in the Oracle Fusion system, and do not exist in your Oracle Utilities customer information system.

- **Prospects:** These records can represent businesses or people in multiple scenarios, as follows:
 - Businesses that exist only as Oracle Fusion accounts. These could be businesses the utility wants to establish a relationship with.
 - Businesses that exist as both an Oracle Fusion account and also as a Person (with Type = Business) in your Oracle Utilities customer information system, but were never associated with a utility billing account.
 - People that exist as both an Oracle Fusion contact and also as a Person (with Type = Person) in your Oracle Utilities customer information system, but were never associated with a utility billing account.
- **Premises:** These records represent vacant premises, or premises that do not currently have any active service contracts.

The type of information stored varies for a contact or account, and for individual or business customers. In Oracle Utilities customer information systems, a Person record can be classified as a person or a business.

For the experiences to function, the following customer information must be synchronized between the Oracle Fusion and Oracle Utilities systems:

- Primary Name
- Communication Contact Points
- Internal System Record Identifiers
- Characteristics and Mapped Attributes

The data synchronization allows each application to make changes to these customer details independently.

If you are using an existing Oracle Utilities customer information system that already has customer data, you must first complete the [initial data synchronization process](#) before the ongoing data synchronization process can be used. For the initial synchronization to occur, you create csv files from your Oracle Utilities system, use the information in the [Appendix A: Data Mapping](#) topic to edit the files, and then import the files into Oracle Fusion.

In the ongoing data synchronization process, updating this data from the Oracle Fusion Customer Experience for Utilities solutions is an asynchronous update using Oracle Signals. Updates made only in the Oracle Utilities customer information system are triggered via an asynchronous batch process. You can schedule this batch process to run as frequently as required.

For the ongoing synchronization to occur, you must:

- Set up the Oracle Fusion data synchronization using Oracle Signals, which includes:
 - Activating the ORA_ZCA_ENABLE_SIGNALS profile option
 - Provision the Sales Administrator role to fetch signals
 - Submit a request to run the Utilities Migration job
 - Create an Oracle Utilities user to persist data in your Oracle Utilities customer information system
- Set up the Oracle Utilities data synchronization process, which includes:
 - Mapping business configurations between Oracle Fusion and Oracle Utilities so that the right information is transferred and stored in the appropriate place in each system. You use the Fusion CX for Industries Framework Utility Configurations REST Service to configure this mapping and to define target URLs.
 - Running the sync request batch process (F1-SYNRQ) to generate messages for all pending changes from your Oracle Utilities system since the last batch run. You can schedule this batch process to run as frequently as required.

For additional information about this REST service and about person data mapping and configuration, see:

- [Manage Utility Configurations](#)
- [Appendix A: Data Mapping](#)
- [Appendix B: REST APIs.](#)

Initial Data Synchronization

If you are adding Customer Experience for Utilities solutions to an existing Oracle Utilities customer information system, you must load your existing person and contact data from Oracle Utilities into the Oracle Fusion system. You perform this initial data synchronization process for each type of person data to ensure that all required data is available in Oracle Fusion. For example, if you are using Oracle Utilities Customer to Meter, complete these steps:

1. Export person data from Customer to Meter into a csv file.
2. Edit the csv file so that data represents the values that are accepted by the Oracle Fusion system.
3. Import your data into Oracle Fusion using the Oracle Sales and Service Import and Export feature.

You will perform this process once for each of the following types of data:

- Export Person records with type = P (Person) to create Oracle Fusion Contact records.
- Export Person records with type = B (Business) to create Oracle Fusion Account records.
- Export contact information for all Person records to create Oracle Fusion Contact Point records.

After you complete these initial data imports to Oracle Fusion, you can then rely on the [Ongoing Data Synchronization](#) process to manage any changes that occur in your systems.

As you edit your csv files to include Oracle Fusion values, refer to [Appendix A: Data Mapping](#) for assistance and additional information.

For information about the Oracle Sales and Service Import and Export features, see the *Understanding Import and Export Management for Sales and Fusion Service Guide*, available in the [Oracle Sales library](#).

Import Initial Contact Data

Before you can begin using Customer Experience for Utilities solutions, you must perform the initial load of contact data into the Oracle Fusion system.

1. Using the method of your choice, export the following data from your Oracle Utilities customer information system (CIS) into a CSV file:
 - Person records with **PER_OR_BUS_FLG = P**
2. Update the CSV file so that it contains the following column headings, in this order, and so that the data in the columns represents valid Oracle Fusion values. For additional information about accepted values, see [Appendix A: Data Mapping](#).
 1. **SourceSystem** - This column should contain the value **CIS** for all records.
 2. **SourceSystemReferenceValue** - If you are not using auto numbering, this column should contain the Person ID from your CIS. For example, **0123456789**.
 3. **PartyNumber** - If you are not using auto numbering, this column should contain the values that you want to use. You might use a combination of the SourceSystem column and the SourceSystemReferenceValue column, separated by an underscore. For example, this column might contain **CIS_0123456789**.

Oracle Fusion has a Profile Option Code, **HZ_GENERATE_PARTY_NUMBER**, that controls whether the Party Number (Registry Id) is auto generated or provided. It also controls whether edits to this value are allowed. See "Foundation Profile Options" in the *Oracle Fusion Cloud Sales Automation Implementation Reference Guide*, available in the [Oracle Sales library](#), located in the Oracle Help Center.

4. **Type** - This column should contain the value that you want to use for the ZCA_CONTACT_TYPE of your person records. Valid lookup values are:

- ZCA_CONTACT
- ZCA_CUSTOMER
- ZCA_PROSPECT

The default value can be set in Oracle Fusion and the field is typically hidden from users so they can't change the value after it is set. See "Set the Default Customer Type" in the *Configuring Sales for B2C Guide*, available in the [Oracle Sales library](#).

If you use **ZCA_CUSTOMER** or **ZCA_CONTACT**, addresses are not required because person addresses are not included in the data synchronization from your Oracle Utilities system. However, you must set the value for these profile option codes to **No**, so that the address is not required:

- ZCA_ACCOUNT_ADDRESS_REQUIRED_ENABLED
- ZCA_CONTACT_ADDRESS_REQUIRED_ENABLED

See "[How Do I Set Up Required Address Option for Accounts and Contacts](#)" in the *Oracle Fusion Cloud Sales Automation Implementation Reference Guide* for additional information.

5. **FirstName** - This column should contain the first name of the person.
 6. **LastName** - This column should contain the last name of the person.
 7. You can include additional columns to import characteristics. When importing characteristics, you must ensure that the column heading is an accepted value in the Oracle Fusion system. For additional information, see [Appendix A: Data Mapping](#).
3. This image shows a simplified example of what your file might look like:

	A	B	C	D	E	F
1	SourceSystem	SourceSystemReferenceValue	PartyNumber	Type	FirstName	LastName
2	CIS	123456	CIS_123456	ZCA_CONTACT	John	Jacobs
3	CIS	234567	CIS_234567	ZCA_CONTACT	Sandra	North
4	CIS	345678	CIS_345678	ZCA_CONTACT	Allen	Combs
5	CIS	456789	CIS_456789	ZCA_CONTACT	Deborah	Stanley

4. Import this file into Oracle Fusion. See the *Understanding Import and Export Management for Sales and Fusion Service Guide* in the [Oracle Sales library](#) for instructions.
5. Verify that the contacts exist in the Oracle Fusion system. For information, see the *Managing Contacts* topic in the [Oracle Sales Automation library](#).

Import Initial Account Data

Before you can begin using Customer Experience for Utilities solutions, you must perform the initial load of account data into the Oracle Fusion system.

1. Using the method of your choice, export the following data from your Oracle Utilities customer information system (CIS) into a CSV file:
 - Person records with **PER_OR_BUS_FLG = B**
2. Update the CSV file so that it contains the following column headings, in this order, and that the data in the columns represents valid Oracle Fusion values. For additional information about accepted values, see [Appendix A: Data Mapping](#).
 1. **OrganizationName** - This column should contain the name of the business.
 2. **SourceSystem** - This column should contain the value **CIS** for all records.
 3. **SourceSystemReferenceValue** - This column should contain the Person ID from your CIS. For example, **0123456789**.
 4. **PartyNumber** - If you are not using auto numbering, this column should contain the values that you want to use. You might use a combination of the **SourceSystem** column and the **SourceSystemReferenceValue** column, separated by an underscore. For example, this column might contain **CIS_0123456789**.

Oracle Fusion has a Profile Option Code, **HZ_GENERATE_PARTY_NUMBER**, that controls whether the Party Number (Registry Id) is auto generated or provided. It also controls whether edits to this value are allowed. See "Foundation Profile Options" in the *Oracle Fusion Cloud Sales Automation Implementation Reference Guide*, available in the [Oracle Sales library](#), located in the Oracle Help Center.

5. **Type** - This column should contain the value that you want to use for the ZCA_CONTACT_TYPE of your organization party records. Valid lookup values are:

- ZCA_CUSTOMER
- ZCA_PROSPECT

The default value can be set in Oracle Fusion and the field is typically hidden from users so they can't change the value after it is set. See "Set the Default Customer Type" in the *Configuring Sales for B2C Guide*, available in the [Oracle Sales library](#).

If you use ZCA_CUSTOMER or ZCA_CONTACT, addresses are not required because person addresses are not included in the data synchronization from your Oracle Utilities system. However, you must set the value for these profile option codes to **No**, so that the address is not required:

- ZCA_ACCOUNT_ADDRESS_REQUIRED_ENABLED
- ZCA_CONTACT_ADDRESS_REQUIRED_ENABLED

See "[How Do I Set Up Required Address Option for Accounts and Contacts](#)" in the *Oracle Fusion Cloud Sales Automation Implementation Reference Guide* for additional information.

6. You might also have additional columns to import characteristics. When importing characteristics, you must ensure that the column heading is an accepted value in the Oracle Fusion system.

3. This image shows a simplified example of what your file might look like:

	A	B	C	D	E
1	OrganizationName	SourceSystem	SourceSystemReferenceValue	PartyNumber	Type
2	ABC Incorporated	CIS	899856	CIS_899856	ZCA_PROSPECT
3	DEF Industries	CIS	854596	CIS_854596	ZCA_PROSPECT
4	GHI Corporation	CIS	635751	CIS_635751	ZCA_PROSPECT

4. Import this file into Oracle Fusion. See the *Understanding Import and Export Management for Sales and Fusion Service Guide* in the [Oracle Sales library](#) for instructions.

5. Verify that the accounts exist in the Oracle Fusion system. For information, see the *Managing Accounts* topic in the [Oracle Sales Automation library](#).

Import Initial Contact Point Data

Before you can begin using Customer Experience for Utilities solutions, you must perform the initial load of contact point data into the Oracle Fusion system. Contact point data

represents the contact information associated with the person records in your Oracle Utilities customer information system (CIS).

1. Using the method of your choice, export the following data from your Oracle Utilities customer information system (CIS) into a CSV file:
 - All Person records with **PER_OR_BUS_FLG** = P or B
2. Update the CSV file so that it contains the following column headings, in this order, and that the data in the columns represents valid Oracle Fusion values. For additional information about accepted values, see [Appendix A: Data Mapping](#).

1. **PartyNumber** - This column should contain **CIS_** followed by the **SourceSystemReferenceValue** associated with the person that you imported during the previous tasks. For example, **CIS_0123456789**.

If the data is imported from your Oracle Utilities customer information system, the party number can be assigned during the export file generation. The same party number should be updated in your customer information system for that person record. See [Update the Party Number in Oracle Utilities](#) for additional information.

2. **ContactPointType** - This column should contain the Oracle Fusion value that represents the type of contact point. For example, **PHONE** or **EMAIL**.
3. **PrimaryFlag** - This column should contain a **Y** or **N** to identify whether the contact point is the primary contact method for the specified type.
4. **URL** - This column should contain the URL value of the contact point, if available.
5. **WebPurpose** - This column should contain the description of the associated URL. For example, **SALESURL**.
6. **EmailAddress** - This column should contain the email address, if available.
7. **EmailPurpose** - This column should contain the description of the associated email address. For example, **PERSONAL**.
8. **PhoneCountryCode** - This column should contain the country code of the phone number.
9. **PhoneAreaCode** - This column should contain the area code of the phone number.
10. **PhoneNumber** - This column should contain the phone number, less the country code, area code, and extension.
11. **PhoneExtension** - This column should contain the phone extension, if available.
12. **PhonePurpose** - This column should contain the description of the associated phone number. For example, **PERSONAL**.

13. **PhoneType** - This column should contain the type of the associated phone number. For example, **MOBILE**.
 14. You might also have additional columns to import characteristics. When importing characteristics, you must ensure that the column heading is an accepted value in the Oracle Fusion system.
3. This image shows a simplified example of what your file might look like:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	PartyNumber	ContactPointType	PrimaryFlag	URL	WebPurpose	EmailAddress	EmailPurpose	PhoneCountryCode	PhoneAreaCode	PhoneNumber	PhoneExtension	PhonePurpose	PhoneType
2	CIS_966489	WEB	Y	https://we	SALESURL								
3	CIS_966489	PHONE	N					1	123	3575867	33	FASCIMILE-NEV FAX	
4	CIS_966489	EMAIL	Y			abc@email.co	PERSONAL						
5	CIS_966454	WEB	Y	https://us	SALESURL								
6	CIS_966454	PHONE	N					1	555	9988997	11	HOME_BUSINE	HOME
7	CIS_966454	PHONE	N					1		4445678		PERSONAL	MOBILE
8	CIS_966454	EMAIL	Y			def@email.co	BUSINESS						

4. Import this file into Oracle Fusion. See the *Understanding Import and Export Management for Sales and Fusion Service Guide* in the [Oracle Sales library](#) for instructions.
5. Verify that the contact points exist in the Oracle Fusion system. For information, see the Managing Contacts and Managing Accounts topics in the [Oracle Sales Automation library](#).

Update the Party Number in Oracle Utilities

If customer data from your Oracle Utilities customer information system is being imported into Oracle Fusion as part of the initial data load, the Party Number reference must be updated for the Person records in the Oracle Utilities database as well. The necessary characteristic type is **C1-EXCID** with the Party Number from the Oracle Fusion record as the value.

To populate the appropriate characteristic on each Person record, use a Plug-in Driven Batch process. For additional information on running this process:

- For cloud implementations, see "Cloud Live Operate Data Fix Plug-In Driven Batch" in the *Oracle Utilities Cloud Operations Guide*, which is available in the library for [your Oracle Utilities customer information system](#).
- For on-premises implementations, see "Plug-In Driven Background Processes" in the Framework Administrative User Guide, available in the [Oracle Utilities Customer to Meter library](#).

To use this mechanism, you create a new batch control and the associated script/algorithms:

- Selection script/algorithm
- Process records script/algorithm

For the selection script/algorithm, use the relevant selection SQL to find Person records that do not include the Party Number characteristic:

```
SELECT PER_ID

FROM CI_PER

WHERE PER_ID NOT IN

(SELECT PC.PER_ID FROM CI_PER_CHAR PC WHERE PC.CHAR_
TYPE_CD = 'C1-EXCID')
```

For the process records script/algorithm, use the base **C1CXPerson** business object that includes characteristics to process an update.

Additionally, the update initiated by the script/algorithm must prevent the creation of an **echo** sync request message back to Oracle Fusion, which would be triggered by default. When the context variable **\$\$sourceExternalSystem** is set to **CX4U**, the audit does not create a sync request.

Use this example script code and verify the format for the Party Number:

```
move "$personId" to "C1CXPerson/personId";

move 'C1-EXCID' to
"C1CXPerson/+personCharacteristic/characteristicType";

move "concat('CIS_', $personId)" to
"C1CXPerson/personCharacteristic[last
()]/ad hocCharacteristicValue";

move '1950-01-01' to "C1CXPerson/personCharacteristic
[last()]/effectiveDate";

//prevent an echo sync request

move 'CX4U' to $$sourceExternalSystem;

invokeBO 'C1CXPerson' using "C1CXPerson" for update;
```

In the example script above, the party number data is populated by using the pattern - string 'CIS_' prefixed to the value of personId attribute for each Person Entity.

```
"concat('CIS_', $personId)"
```

In the actual script, this should reflect the party number generation pattern used for the particular implementation.

Ongoing Data Synchronization

Once all party data is available in both applications, ongoing updates to mapped attributes that are made in either system need to be kept in sync. In the ongoing data synchronization process, updating data from the Customer Experience for Utilities solutions is an asynchronous update that is triggered using Oracle Signals. Customer information that is created or updated in your Oracle Utilities system is sent to Oracle Fusion using a periodic batch process that enables you to keep these changes up to date in the Oracle Fusion application. Both parts of the synchronization must be configured to ensure that data between your systems is kept current.

For additional information about person data mapping and configuration, see:

- [Appendix A: Data Mapping](#)

The remaining steps in this topic are written for Oracle Utilities Customer Cloud Service. If you are using another Oracle Utilities customer information system, refer to the documentation for your identity management system to determine how to complete these steps for your implementation. Contact your implementation team for additional assistance.

Fusion Data Synchronization

In the ongoing data synchronization process, updating data from the Customer Experience for Utilities solutions is an asynchronous update that is completed using Oracle Signals. This process requires you to:

- Enable Signals in your profile options
- Provision a user role to fetch signals from Oracle Fusion applications
- Update existing signal definitions (optional)
- Understand the naming conventions for signals
- Submit a request to run the Utilities Migration job
- Create a user in your Oracle Utilities customer information system to persist data

The remaining steps in this topic are written for Oracle Utilities Customer Cloud Service. If you are using another Oracle Utilities customer information system, refer to the documentation for your identity management system to determine how to

complete these steps for your implementation. Contact your implementation team for additional assistance.

Additionally, extended attributes are currently not supported. Signal definitions are seeded and cannot be modified. Seeded signal definition cannot be configured to have an extended attribute. Create, update, and delete of extended attributes is not supported.

Enable Signals

To implement near real-time synchronization for contact and account records, you must enable the Signals functionality by setting the profile option, Common CRM Signals Active (ORA_ZCA_ENABLE_SIGNALS), to Yes. By default, Signals functionality is disabled.

For information about setting profile options, see [Set Profile Option Values](#) in the *Oracle Fusion Implementing Applications Guide*.

Provision User Role to Fetch Signals

Add the Sales Administrator role (ORA_ZBS_SALES_ADMINISTRATOR_JOB) to the provisioned FABRIC_CX4U_SYSTEM_USER user.

For additional information, see [Manage Roles and Users](#).

Update Existing Signal Definitions (Optional)

If you need to customize signals for your business needs, you can complete these steps:

1. Fetch all active seeded definitions using the following URL:
`https://<HOST>:<PORT>/crmRestApi/resources/11.13.18.05/signalDefinitions?q=OwnerGroup='CX4U';ActiveFlag=true`
2. Fetch the configuration using the following URL:
`https://<HOST>:<PORT>/crmRestApi/resources/11.13.18.05/signalDefinitions/<SignalDefinitionId>/enclosure/Configuration`
3. Encode the modified configuration into Base64 format.
4. Submit the request:

```
URL:  
https://<HOST>:<PORT>/crmRestApi/resources/11.13.18.05/signalDefinitions/<SignalDefinitionId>
```

```
Request: PATCH
```


1. Log into your Oracle Utilities customer information system and your related Oracle Identity Cloud Service (IDCS) as an administrator.
2. In IDCS, select **Oracle Cloud Services**.
3. Locate the record with the description "CX4U Integration (Signals)" and click the hyperlink in the **Name** column.
4. Scroll down to the **OAuth Configuration** section, and locate the **Client ID** field.
5. Copy the value displayed in the **Client ID** field.
6. Go to your Oracle Utilities customer information system, and add a user that has the following values:
 - **User:** Enter a name that represents an integration user. For example, **CX4UINTG**.
 - **Login ID:** Enter the Client ID you copied from IDCS.
 - **First Name:** Enter a name that will enable you to easily understand the purpose of this user. For example, **CX4U**.
 - **Last Name:** Enter a name that will enable you to easily understand the purpose of this user. For example, **OAuth Client**.
7. **User Enable:** Select **Enable**.
8. Specify a user group that is given to users who are using the Customer Experience for Utilities experiences.
9. On the **To Do Roles** tab, specify a role that enables integration of all necessary data between your customer information system and Customer Experience for Utilities. For example, ensure that the role includes customer, person, and account data.
10. On the **Access Security** tab, specify a data access role that enables this user to access all data required by the integration, and pass it between systems. For example, person, customer and account data.
11. Complete the steps for creating a user. See Security and User Options in the Framework Administrative User Guide for your Oracle Utilities customer information system, available in [the Oracle Energy and Water help center](#).

Utilities Data Synchronization

When a change is made, or a new record is created in your Oracle Utilities customer information system, the system sends one message for every customer that needs to be synchronized. This message contains all customer-related data. The changed records are marked as pending synchronization.

You then run the sync request batch process (F1-SYNRQ) to generate messages for all pending changes from your Oracle Utilities system since the last batch run. You can schedule this batch process to run as frequently as required.

For ongoing synchronization to occur, you must map business configurations between Oracle Fusion and your Oracle Utilities system so that the right information is transferred and stored with the appropriate values in each system. You use the Fusion CX for Industries Framework Utility Configurations REST Service to configure this value mapping and to define target URLs.

For additional information about this REST service and about person data mapping and configuration, see:

- [Manage Utility Configurations](#)
- [Appendix A: Data Mapping](#)
- [Appendix B: REST APIs.](#)

The remaining steps in this topic are written for Oracle Utilities Customer Cloud Service. If you are using another Oracle Utilities customer information system, refer to the documentation for your identity management system to determine how to complete these steps for your implementation. Contact your implementation team for additional assistance.

Service-related updates to customer information that are initiated in the Customer Experience for Utilities solutions follow these high-level steps:

1. Customer service agent accesses a customer record and submits an update, or creates a new customer record. The new or updated record is committed in the Oracle Fusion application by invoking the Oracle Fusion REST API.
2. If the customer record is already linked to a Customer Cloud Service person record, or this is a utilities service-related flow:
 - The Oracle Utilities Person Information Synchronization REST API is invoked with the party number as the external identifier and the person details.
 - If no errors occur, the person identifier is returned, and the customer record in the Oracle Fusion application is updated with the source system reference of the Customer Cloud Service person identifier, which is the system-assigned key for the record.
3. If errors occur from the REST APIs, messages are displayed for the end user to review.

See [Appendix B: REST APIs](#) for additional information.

Configure the Data Synchronization Process

To configure this part of the synchronization, log in to CX Industry Framework identity domain. Under Oracle Cloud Services locate an application created for the ongoing data synchronization in the CX Industry Framework identity domain. This was likely created during the initial registration process, and is named something similar to CX4UINT. You will be using the OAuth client credentials configured in this application to complete the remaining steps. Contact your delivery team if you need assistance gathering the required information.

Refer to the Data Synchronization section in the [Oracle Utilities Framework User Guide](#) for more information on batch processing and error handling.

1. Configure the Key Ring **C1-CXIF** to store:
 - **OAuth Client ID:** The client ID for the OAuth Client mentioned above.
 - **OAuth Client Secret:** The client secret for the OAuth Client mentioned above.
2. Configure the outbound data synchronization with a Message Sender of **C1CxPersonSy** for the delivered application Outbound Message Type of **C1PERSYNC** on the External System of CX4U for Real-time HTTP / JSON messages. The context is delivered for sending the synchronization records with the following values:
 - **HTTP Method:** PUT
 - **HTTP URL 1:** URL for CX Industry Framework API with path variables
 - **OAuth Grant Type:** client_credentials
 - **Sender Security Type:** OAUTH
3. Additional values need to be configured for the CX Industry Framework pairing:
 - **OAuth Access Token URL:** The OAuth server URL from which to obtain the access token. Use the CX Industry Framework identity domain.
 - **OAuth REST API Scope:** Scope for CX Industry Framework REST API.
4. Schedule the **F1-SYNRQ** (sync request monitor) batch process to send the sync request messages from Customer Cloud Service. This is a generic batch process that is used for multiple integration sync processes and should be scheduled based on frequency for all external system synchronizations.
5. The person synchronization is controlled by an F1-DataSyncControl extendable lookup business object of **C1-CX4U-PERSON**. The status of this lookup record must be **ACTIVE** to enable the synchronization and the external system.

6. The **Installation Options - Person** should be configured to allow synchronization from the Fusion application without government issued identifiers prior to linking the person to a utility billing account or prior to starting new utility service. The **Person ID Usage** setting cannot be configured as required, as this will cause the data synchronization to fail when no person identifiers are passed from Fusion. Depending on your business requirements, use one of these settings for the **Person ID Usage**:
 - Optional
 - Required When Financially Responsible
 - Required When Linked to Account
 - Required When Main Person
7. Complete the steps to flush the caches for the Server Cache, Batch Cache, and Client Cache as described in the *Caching Overview* section of the *Customer Cloud Service Administrative User Guide*, available in the [Oracle Utilities Customer Cloud Service library](#).

For additional information on batch processing and error handling, see *Data Synchronization* in the *Oracle Utilities Framework User Guide*, available in the [Oracle Utilities Customer Cloud Service library](#).

Contact your delivery team and confirm that the Cloud Customer Support team prepared the environments for registration, including variables that are referenced such as @C1FABRIC@ for the HTTP URL in the application cloud parameters.

Data Sync Considerations and Recommendations

This section lists several items that should be considered during implementation of the data sync process.

Contact Types

In your Oracle Utilities system, each contact type refers to a routing type that has delivered base values, but each implementation can add more configured values. Only one primary contact point record is allowed for each routing type. Synchronizing a list of multiple instances of the same communication type (such as multiple home phone numbers) is enabled because the integration synchronizes a cross-reference of the unique contact communication point record identifiers in each system.

Recommendation: Implementation teams should use the same configured values for communication types in both systems where possible so that no further value mapping is

needed. However, if different values must be configured, mappings within the CX Industry Framework Utility Configurations can be used to configure the integration.

For additional information, see [Manage Utility Configurations](#).

Characteristics and Extension Attributes

Oracle Utilities customer information systems support configuration of characteristic types to store additional data on person objects. For additional information, refer to *Defining Characteristic Types* in the *Customer Cloud Service Administrative Guide*, available in the [Oracle Utilities Customer Cloud Service library](#).

If these values need to be synchronized to Contacts or Accounts in Fusion, determine the mapping to explicit fields in the Fusion application schemas. For additional information on extensions, refer to the Configuring and Extending Fusion Cloud Applications in the Oracle Help Center.

Recommendation: Set the Utility Configuration to map the Characteristic Type as the "cssValue" and the Fusion application field as "faValue" for each pair of attributes that should be included in the data synchronization. For example:

```
"cssValue": "C2MBTHDT", "faValue": "DateOfBirth"
```

or

```
"cssValue": "C1-NICK", "faValue": "NickName"
```

For additional information, see [Manage Utility Configurations](#).

Primary IDs and Personally Identifiable Information (PII)

Oracle Utilities customer information systems support multiple types of identification that can be used to identify a customer. Typically, at least one of some group of fields must be provided to verify the customer identity. For example, in the United States:

- Federal Social Security Number, state driver's license number, or passport number for an individual.
- Federal Employer Identification Number for a business.

Each type of identification, and the rules regarding which fields are required for verification, are configured by the utility during installation.

Recommendation: Sensitive data can be retained only in Customer Cloud Service and typically would not need to be stored in the Oracle CX Sales or Oracle Fusion Service systems. If this sensitive information is required in multiple systems, the data synchronization can be extended by your implementation to include customer identifiers

with appropriate security controls. Optionally, Oracle Fusion Enterprise Data Quality can be implemented with the Oracle Fusion applications to identify duplicate records where matching rules are configurable. Warnings can be issued based on a match score (using name, communication points, and other information beyond identifiers), which allows for selecting an existing party instead of creating a duplicate.

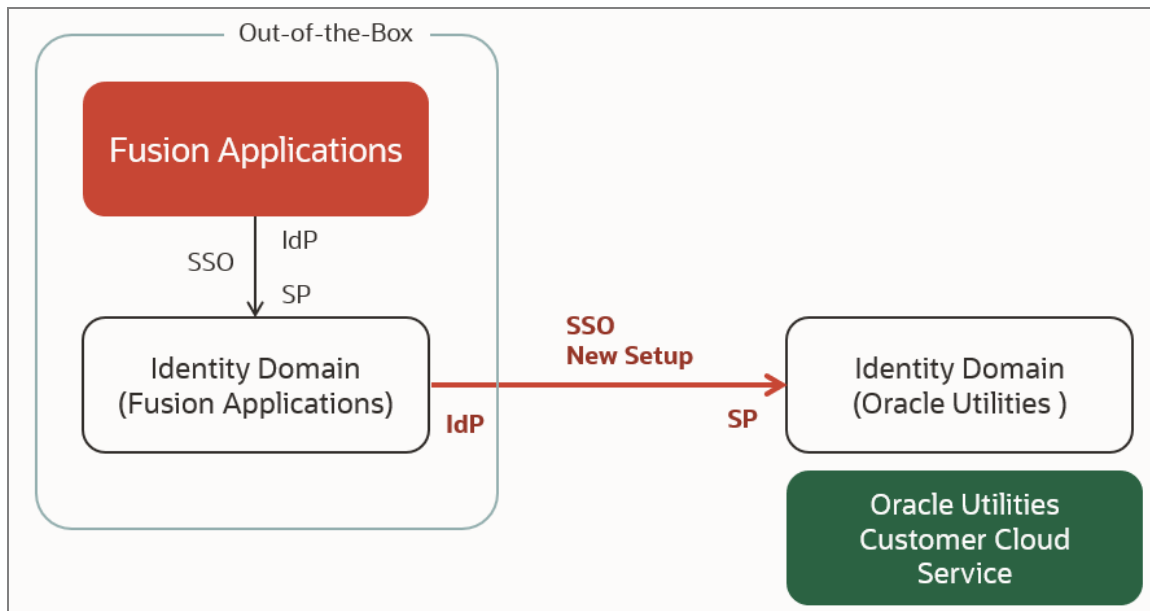
See [Appendix A: Data Mapping](#) for detailed synchronization message mapping information for this integration.

Configure Single Sign On

For your employees to access CX for Utilities applications, you must set up your system to enable single sign on (SSO) for your Oracle Fusion and Customer Cloud Service systems.

This chapter provides instructions for setting up SSO using the suggested topology displayed in the following image. Your implementation might vary from this topology, based on the setup of your environments. Changes in topology could result in changes to the instructions provided here. Before you attempt these steps, work with your delivery team to ensure you fully understand the topology of your implementation, and how it impacts your SSO configuration.

This suggested topology provides SSO via the Fusion applications identity domain, as shown here:



To configure SSO, your system administrator must complete the following steps, as depicted in the above image:

- **Step 1:** Set up your Customer Cloud Service identity domain as the service provider in your Fusion applications identity domain.
- **Step 2:** Set up your Fusion applications identity domain as your identity provider in the Customer Cloud Service identity domain.

When you have completed these steps, you then test your SSO setup to verify that it works.

Prerequisites

Before completing these tasks, you should have a solid understanding of the Oracle Cloud Infrastructure (OCI) Identity and Access Management system. For additional information, see these resources on the [Oracle Help Center](#):

- [Understanding Identity Concepts](#)
- [Identity and Access Management Tutorial](#) (Oracle Cloud account required)
- [Identity Access Manager with Identity Domains](#)

You must also complete these steps before you continue with the tasks listed in this chapter:

1. Log in to your Fusion applications identity domain in your Oracle Cloud Infrastructure account. You can get this link from your welcome email. If you have questions about which tenancy and domain to log in to, contact My Oracle Support.
2. Go to **Settings** and then select **Session Settings**.
3. In the **Customer endpoint settings** section of the form, verify that the following option is deselected. This option is selected by default.
 - Enable Session Picker for OCI Console
4. Click the **Save Changes** button.

Additionally, you must gather the following information, which you will need to complete the SSO configuration:

- Oracle Fusion application URL.
- Administrator user credentials for Oracle Fusion applications.
- Oracle Fusion identity domain URL.
- Administrator user credentials for Oracle Fusion identity domain.
- Customer Cloud Service URL.

- Customer Cloud Service identity domain URL.
- Administrator user credentials for Customer Cloud Service identity domain.

If you need assistance gathering this information, contact My Oracle Support or your delivery team.

Set Up Customer Cloud Service Identity Domain as Service Provider in Fusion Applications Identity Domain

Your system administrator completes this task.

1. Log in to your Fusion applications identity domain in your Oracle Cloud Infrastructure account. You can get this link from your welcome email. If you have questions about which tenancy and domain to log in to, contact My Oracle Support.
2. Go to **Applications** and then click **Add** to create a new application.
3. Select **SAML Application**.
4. Complete these fields, and then click **Next**:
 - **Name**
 - **Description**
 - **Enforce Grants as Authorization**: Deselect this option.
5. In the **SSO Configuration** section, complete the following fields. Example values for each field are provided below, using `idcs-xxx.identity.oraclecloud.com` as the basis for the value. You will replace this value with your own information.
 - **Entity ID**: `https://idcs-xxx.identity.oraclecloud.com:443/fed`
 - **Assertion Consumer URL**: `https://idcs-xxx.identity.oraclecloud.com/fed/v1/sp/sso`
 - **NameID Format**: Select Unspecified from the drop-down list.
 - **NameID Value**: Select Username from the drop-down list.
6. In the **Additional Configurations** section, complete these fields:
 - **Signed SSO**: Assertion
 - **Signature Hashing Algorithm**: SHA-256
 - **Enable Single Logout**: Deselect this field.

7. At the top of the screen, click the **Download the identity metadata provider** button. If applicable, click the **Keep** button to continue.
8. Click the **Download signing certificates** button. If applicable, click the **Keep** button to continue.
9. Make note of the file names you download, as you will need them in the next task.
10. Click **Finish** at the bottom of the screen.
11. On the next screen, click the **Activate** button, then click **Activate Application**.

Set Up Fusion Applications Identity Domain as the Identity Provider in Customer Cloud Service Identity Domain

Your system administrator completes this task.

1. Log in to your Customer Cloud Service identity domain in your Oracle Cloud Infrastructure account. You can get this link from your welcome email. If you have questions about which tenancy and domain to log in to, contact your Oracle Support team.
2. In the navigation pane, select **Security**, and then select **Identity providers**.
3. Click the **Add IdP** dropdown button and select **Add SAML IdP**.
4. On the **Add SAML identity provider** screen, complete these fields, and then click **Next**:
 - **Name**
 - **Description** (optional)
 - **Icon** (optional)
5. Choose **Import Metadata** and upload the metadata file from the previous task.
6. In the **Configure IdP** section, select the **Import identity provider metadata** button, and then select the file you downloaded in the previous task.
7. Click **Next**.
8. Under **Map attributes**, complete the following fields as described:
 - In the **Identity provider user attribute** area, select **Name ID**.
 - In the **Identity domain user attribute** field, select **Username**.
 - In the **Requested NameID format** field, select **Unspecified**.
9. Click the **Create IdP** button.

10. In the **Export** screen, click the **Download** button next to **Service provider signing certificate**, and save the file.
11. Click **Next** and do not click anything else before completing the next steps. You will return to this screen later in the process.
12. In a new browser window, log in to your Fusion application identity domain in the Oracle Cloud Infrastructure Console.
13. In the navigation pane, click **Applications**.
14. In the **Applications** screen, click the hyperlink for the Customer Cloud Service application (as service provider) you created previously.
15. Under the **SSO configuration** section, click the **Edit SSO Configuration** button.
16. On the **Edit SSO configuration** screen, scroll down to the **Signing Certificate** field and upload the signing certificate you downloaded in the previous task.
17. Click **Save changes**.
18. Click the **Users** link in the navigation panel under **Resources**.
19. In the **Users** section of the screen, click the **Assign users** button.
20. Select the users you want to assign, and then click the **Assign** button.
21. Scroll to the top of the screen and verify that the application is active. If it is not, click the **Activate** button.
22. Return to the browser window with your Customer Cloud Service identity domain.
23. On the Test IdP screen, click the **Test login** button. You will receive a message indicating whether your test is successful. If there is an error, contact My Oracle Support for assistance. If it is successful, click **Next**.
24. On the Activate IdP screen, click **Activate**.
25. Click **Finish**. You will see a list of identity providers.
26. In the navigation pane, select **IdP policies**.
27. Click the hyperlink for the default identity provider policy.
28. In the **Identity provider rules** section, click the action menu (3 dots) on the record, and select **Edit IdP rule**.
29. On the Edit identity provider rule screen, in the **Assign identity providers** field, click inside the field and select the provider you just created. It will appear in the field next to **Username-Password**.
30. Click the **Save changes** button.

Later, you will test your SSO and verify that it is working as expected. Once you are satisfied with your test, you will return to this screen and remove **Username-Password** from the **Assign identity providers** field. This removes the ability to log in with your local username and password.

Test Your Single Sign On Setup

The identity provider is now active and Single Sign On (SSO) is set up. Now you use Fusion applications to log in for both Oracle Fusion and Customer Cloud Service. All of your log in activities will go through the Fusion applications.

Now you will test your sign on in all systems.

Important Note: Oracle recommends creating and using a test user to perform your SSO verification. If there are issues with your test, using your administrator credentials could result in your administrator being locked out.

This section provides the steps you need to test your SSO.

Create a Test User in Fusion Applications

1. Log in to Fusion applications as an administrator and click **User**.
2. On the Add User Account screen, complete the fields necessary to create a user with a user name and password.
3. Click **Add Role**, and select one of the roles used with this solution. For example, select Customer Service Representative.
4. Click **Done**.
5. In the **Account Information** section, verify that the user is set to **Active**.
6. Click **Save and close**.

Create a Test User in Fusion Applications Identity Domain

1. Log in to your Fusion applications identity domain in your Oracle Cloud Infrastructure account. You can get this link from your welcome email. If you have questions about which tenancy and domain to log in to, contact your Oracle Support team.
2. Click **Identity and Security** in the navigation pane, and then click **Domains**.
3. Click **Users** in the navigation pane.

4. Click the **Create User** button.
5. Complete the fields necessary to create a new user, using the same information you used in the previous task.
6. Click the **Create** button.

Create a Test User in Customer Cloud Service Identity Domain

1. Log in to your Customer Cloud Service identity domain in your Oracle Cloud Infrastructure account. You can get this link from your welcome email. If you have questions about which tenancy and domain to log into, contact your Oracle Support team.
2. Click **Identity and Security** in the navigation pane, and then click **Domains**.
3. Click **Users** in the left navigation pane.
4. Click the **Create User** button.
5. Complete the fields necessary to create a new user, using the same information you used in the previous task.
6. Click the **Create** button.
7. Return to the Identity Domain screen and click **Oracle Cloud Services** in the navigation pane.
8. Find the Customer Cloud Service application environment and select it.
9. Select **Application roles** in the navigation pane.
10. On the **AppUser** row, click the action menu (3 dots) and then click **Assign Users**. Locate and select the user you just created, and then click **Assign**.
11. On the **AppWebServices** row, click the action menu and then click **Assign Users**. Locate and select the user you just created, and then click **Assign**.
12. Wait for cache to be refreshed. Typically, this takes about 15 minutes. This is required for the assignments to be recognized by Customer Cloud Service.

Test the Sign On in All Systems

1. Using the URL you received in your welcome email, log in to Fusion Applications as the test user.
2. Using the URL you received in your welcome email, log in to Customer Cloud Service as the test user.
3. If these attempts are successful, your test is complete.

- Using the instructions provided in [Set Up Fusion Applications Identity Domain as the Identity Provider in Customer Cloud Service Identity Domain](#), remove **Username-Password** from the **Assign identity providers** field. This removes the ability to log in with your local user name and password.

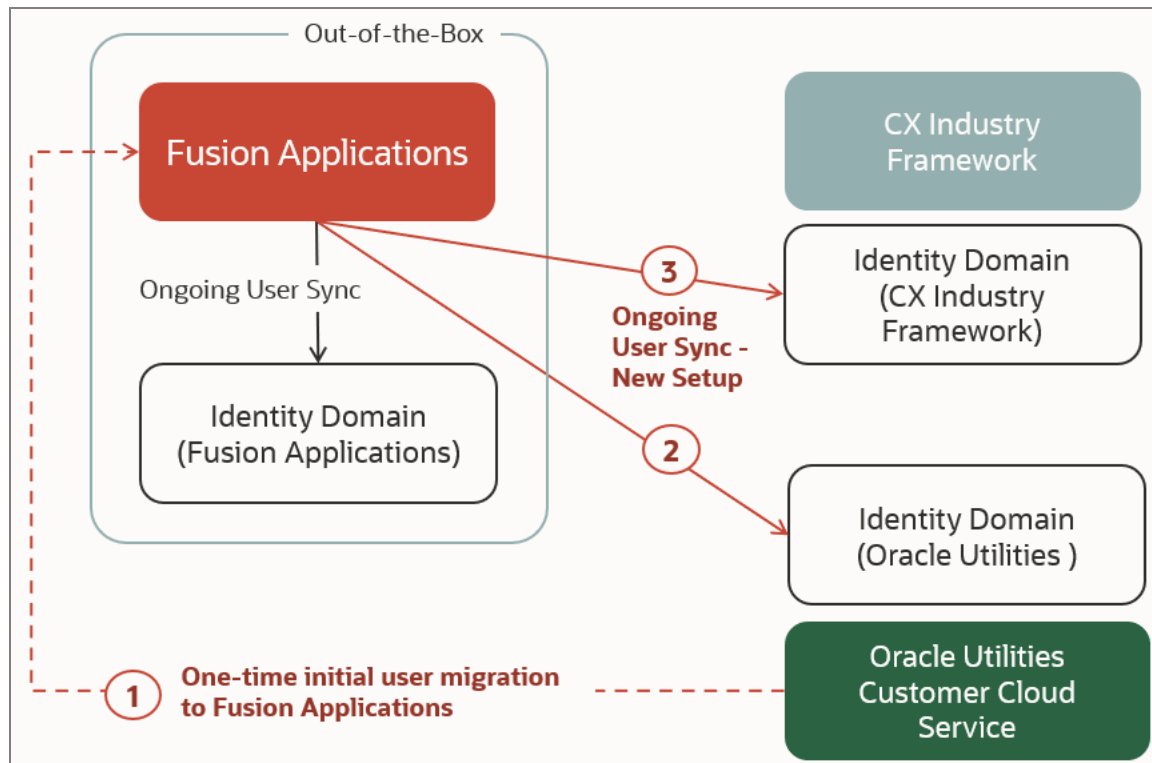
Configure User Synchronization

To configure users, and enable all users to use single sign on (SSO) to access both your Oracle Utilities system and Oracle Fusion systems, you must ensure that users have been synchronized to the appropriate identity domains.

The tasks in this chapter are performed by the system administrator. Once these tasks are complete, all users will sign into the system through the Fusion applications identity provider using their SSO credentials.

The steps that are outlined in this chapter are intended to provide you with an example of how you can set up your user synchronization process. This process can vary depending on your environment, identity domain setup, and which Oracle Utilities system you are using. This chapter uses Oracle Utilities Customer Cloud Service to explain this process.

The supported user synchronization process consists of these main steps:



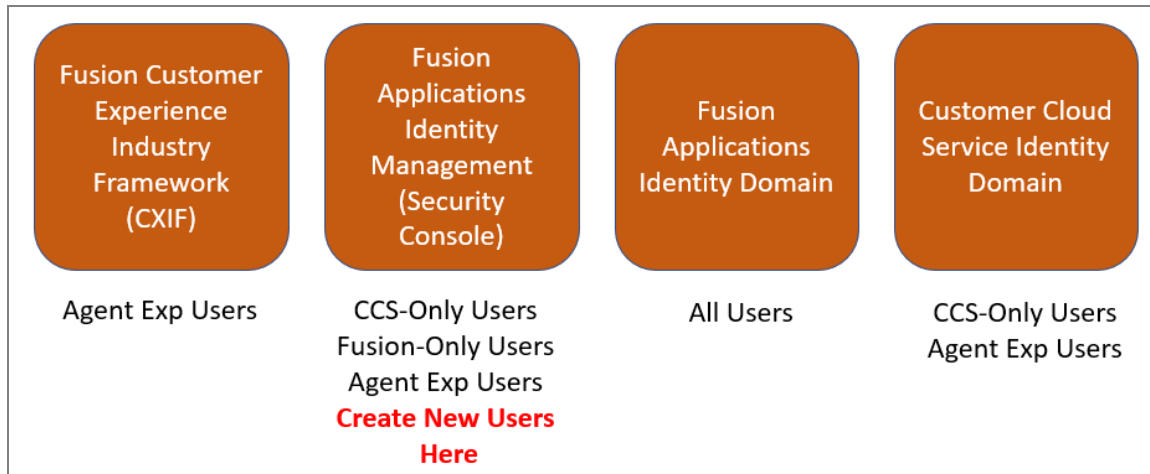
To configure user synchronization, your system administrator must complete the following tasks, as depicted in the above image:

- **Step 1:** Migrate existing Customer Cloud Service users to Fusion applications.
- **Step 2:** Synchronize users from Fusion applications to the Customer Cloud Service identity domain.
- **Step 3:** Synchronize users from Fusion applications to the CX Industry Framework identity domain.

Important Note: The steps in this chapter should be completed in conjunction with the steps in the [Configure Single Sign On](#) chapter, in the following order. If you do not follow this order, some users could lose access to the system until all steps are complete.

1. Set up your single sign on.
2. Test your single sign on.
3. Turn it off and complete the steps in this chapter.
4. Turn on single sign on.

Once all of the steps in this chapter are complete, your user community should exist as shown here. Going forward, you will create all new users in Oracle Fusion. See [Manage Roles and Users](#) for additional information.



Prerequisites

Before completing these tasks, you must gather the following information, which you will need to complete the user synchronization configuration:

- Oracle Fusion application URL
- Administrator user credentials for Oracle Fusion applications
- Fusion identity domain URL
- Administrator user credentials for Fusion identity domain
- Customer Cloud Service URL
- Customer Cloud Service identity domain URL
- Administrator user credentials for Customer Cloud Service identity domain
- Customer Experience Industry Framework identity domain URL
- Administrator user credentials for Customer Experience Industry Framework identity domain

If you need assistance gathering this information, contact My Oracle Support or your delivery team.

After you gather this information, you must also schedule the following user synchronization processes in Oracle Fusion:

- Schedule and run the Import User and Role Application Security Data process. See "Set Up Applications Security" in the *Securing Sales and Fusion Service Guide*, which is available in the [Oracle Fusion Service library](#).

- Retrieve the latest LDAP changes. See "Security Console" in the *Securing Sales and Fusion Service Guide*, available in the [Oracle Fusion Service library](#).
- Schedule and run the Send Pending LDAP Requests process. See "Set Up Applications Security" in the *Securing Sales and Fusion Service Guide*, which is available in the [Oracle Fusion Service library](#).

Migrate Existing Oracle Utilities Users to Fusion Applications

Utilities that are adding CX for Utilities to their existing Customer Cloud Service implementation must migrate their existing Customer Cloud Service users to Fusion applications. By bringing all users into Fusion, you ensure that access to Customer Cloud Service continues uninterrupted after switching to the Single Sign On (SSO).

To migrate your existing Oracle Utilities users to Oracle Fusion applications, complete these steps:

1. Export your Oracle Utilities users to Oracle Cloud Infrastructure Identity Access Manager (OCI IAM). See the [IAM with Identity Domains library](#) in Oracle Help Center for information about using OCI IAM.
2. Import your Oracle Utilities users into Fusion Applications using the Import Management tool. To complete this task, you must sign into Oracle Fusion as an administrator, and complete the steps listed in the "Import Your Resource Data" chapter of the *Understanding Import and Export Management for Sales and Fusion Service Guide*, available in the [Oracle Sales library](#), located in the Oracle Help Center.
3. Complete the steps listed below to assign your imported users to the appropriate roles.

The steps in this topic are written for Oracle Utilities Customer Cloud Service. If you are using another Oracle Utilities customer information system, you can use these steps as a basic guide, but refer to the documentation for your identity management system to determine how to complete these steps for your implementation. Contact your implementation team for additional assistance.

Assign Roles to Imported Users

After you have imported your users, you should assign users to one or more roles related to CX for Utilities. The role assignment can be completed by using either Fusion Applications Security Console or Fusion Applications using the Import Management tool.

The following roles are available in your provisioned Oracle Fusion applications environment:

- ORA_UER_UTILITIES_CUSTOMER_SERVICE_MANAGER_JOB
- ORA_UER_UTILITIES_CUSTOMER_SERVICE_REPRESENTATIVE_JOB
- ORA_UER_UTILITIES_CUSTOMER_SERVICE_ADMINISTRATOR_JOB
- ORA_UER_UTILITIES_CUSTOMER_SERVICE_USER_SYNCHRONIZATION_JOB
(use this role for Customer Cloud Service users who do not need access to Fusion applications.)
- ORA_UER_UTILITIES_KEY_ACCOUNT_ADMINISTRATOR
- ORA_UER_UTILITIES_KEY_ACCOUNT_MANAGER_FOR_SALES
- ORA_UER_UTILITIES_KEY_ACCOUNT_MANAGER_FOR_SERVICE
- ORA_UER_UTILITIES_KEY_ACCOUNT_SUPERVISOR_FOR_SALES
- ORA_UER_UTILITIES_KEY_ACCOUNT_SUPERVISOR_FOR_SERVICE

Synchronize Users Between Fusion Applications and Oracle Utilities

Complete these steps to enable the automatic synchronization of Fusion users and Oracle Utilities users between Fusion applications and Oracle Utilities.

The steps in this section use the Oracle Utilities Customer Cloud Service system, and are completed in the Customer Cloud Service identity domain by the system administrator:

- Configure the application.
- Activate and test the synchronization.

Configure the Application

1. Log in to your Customer Cloud Service identity domain in your Oracle Cloud Infrastructure account. You can get this link from your welcome email. If you have questions about which tenancy and domain to log in to, contact your Oracle Support team.
2. Create a new application by selecting **Applications** in the navigation pane, and then click the **Add application** button.
3. Select **Application Catalog** and then click the **Launch app catalog** button.

4. Search for and select the template named **Oracle Fusion Applications Release <X>**, where the release is 13 or later.
5. On the Add Oracle Fusion Applications Release screen, complete these fields:
 - **Name**
 - **Description** (optional)
 - **Application icon** (optional)
6. Click **Next**.
7. In the **General** section, complete these fields using a bogus URL that begins with **http://** and ends with **.com**:
 - **Entity ID:** http://bogus-url.com
 - **Assertion Consumer URL:** http://bogus-url.com
8. Under **Additional configurations**, complete these fields with the same URL.
 - **Single Logout URL:** http://bogus-url.com
 - **Logout Response URL:** http://bogus-url.com
9. Click **Next**.
10. Turn on **Enable Provisioning** and click **Confirm**.
11. In the **Configure connectivity** section, complete the following fields:
 - **Administrator Username:** Enter your Fusion applications administrator credentials.
 - **Administrator Password:** Enter your Fusion applications administrator password.
 - **Host Name:** Enter the Fusion application URL host name portion without **http://**. For example, enter **myFAhostname.oraclecloud.com**
 - **Port Number:** 443
 - **SSL Enabled:** Select this option.
 - **Override Custom Sync:** Select this option.
12. In the **Provisioning Operations** section, complete these fields:
 - **Authoritative Sync:** Select this option.
 - **Create account:** Select this option.
 - **Update account:** Select this option.

- **Deactivate account:** Select this option.
 - **Delete account:** Deselect this option.
13. Turn on **Enable Synchronization**.
 14. Scroll up to view the **Configure Attribute Mapping** section, and click the **Attribute mapping** button.
 15. On the Attribute mapping screen select the **Application to identity domain** option.
 16. Locate the row with the **User** column value set to **Federated** and modify the source value in the left column to be **true** where it says **false**.
 17. Click the **Save changes** button, which returns you to the previous screen.
 18. In the **Configure synchronization** section, complete the **Synchronization Schedule** field with the frequency you want to use for synchronization. The recommended value is **Every hour**.
 19. Click **Finish**.
 20. When you are ready to either test the synchronization, or make the synchronization live, Click **Activate** and continue to the next task.

Activate and Test the Synchronization

This process includes importing users and groups that you want to synchronize, and tests the synchronization setup to ensure that the Fusion application users are being synchronized to Customer Cloud Service.

1. Log in to Fusion applications as an administrator.
2. Select **Tools** and then select **Security Console**.
3. Create several test users.
4. Return to the Customer Cloud Service identity domain.
5. Scroll down to the **Resources** section in the navigation panel and select **Import**, and then click the **Import** button.
6. The message on the screen indicates that the import job has been submitted and is running. Refresh the screen until the **Import status** changes to **Complete**.
7. Go back to the main screen for the Customer Cloud Service identity domain to verify that users were successfully copied from Fusion applications.
8. In the navigation pane, click **Users** and verify that the users you expect to see are available.

9. If you are not ready to perform the full user synchronization, remove the test results by completing these steps:
 - Deactivate the application created in the previous task.
 - Delete all users that were migrated into the Customer Cloud Service identity domain.
10. If you deactivate the application, you will need to reactivate it and complete the steps to import the users again when you are ready to make the synchronization live.

cAssign User Access in Oracle Utilities

This section discusses how to authorize the synchronized CX for Utilities Agent Service and CX for Utilities Sales users to access your Oracle Utilities data and applications.

Important! The steps in this topic are written for Oracle Utilities Customer Cloud Service. If you are using another Oracle Utilities customer information system, refer to the documentation for your identity management system to determine how to complete these steps for your implementation. Contact your implementation team for additional assistance.

The authorization must be configured in both the Customer Cloud Service identity domain and from within the Customer Cloud Service application.

In the Customer Cloud Service identity domain, the users must be assigned to the appropriate roles in the application that represents your Customer Cloud Service environment. The role assignment is done directly or indirectly by groups.

- **Direct assignment:** Use this approach for scenarios where a limited number of new users are added occasionally. For example, use this method during the implementation phase.
- **Indirect assignment via groups:** Use this approach for scenarios where large numbers of users are on-boarded, or when new users are added on the regular basis. For example, use this approach for ongoing production user management. When using this approach:
 - Consider creating one or more groups in Customer Cloud Service identity domain before you begin and assign these groups to the application roles.
 - Then add newly synchronized users to the group(s), which automatically provides these users with access to Customer Cloud Service. For more details on user

access management for Customer Cloud Service, see the *Cloud Service Administration Guide*, available in [the Customer Cloud Service library](#).

These two roles are required for the access to CX for Utilities Agent Service and CX for Utilities Sales features:

- AppUser
- AppWebService

To assign an individual user or a group to the Application Role in Customer Cloud Service, complete these steps:

1. Log in to your Customer Cloud Service identity domain in your Oracle Cloud Infrastructure account. You can get this link from your welcome email. If you have questions about which tenancy and domain to log in to, contact your Oracle Support team.
2. Select **Oracle Cloud Services** and then select your Customer Cloud Service application that represents your environment. For example, **CCS-DEV12-(ABCDEF)**.
3. Select the **Application roles** tab. You will complete these steps for both the **AppUser** and the **AppWebServices** roles:
 1. Select the action menu on the application role that you want to assign the user or group to, and then click **Assign groups** or **Assign users**.
 2. On the next screen, search for and select the utility agent groups or users you want to assign to the role, and then click the **Assign** button.
4. Now log in to your Customer Cloud Service system as an administrator.
5. Complete the steps provided in the topic "Configuring Just In Time Provisioning" in the *Cloud Service Administration Guide*, which is available in the [Customer Cloud Service library](#). You will set up the template users for the various utility agent roles and assign these templates to the corresponding Identity Domain groups.

Synchronize Users Between Fusion Applications and CX Industry Framework Identity Domain

Complete these steps to enable the automatic synchronization of CX for Utilities users between Fusion applications and the CX Industry Framework identity domain.

This configuration is done in the CX Industry Framework identity domain, and includes these tasks:

- Configure the application.
- Test the configuration.
- Activate the synchronization process.

Configure the Application

1. Log in to your Fusion applications identity domain in your Oracle Cloud Infrastructure account. You can get this link from your welcome email. If you have questions about which tenancy and domain to log in to, contact your Oracle Support team.
2. Create a new application by selecting **Applications** in the navigation pane, and then click the **Add application** button.
3. Select **Application Catalog** and then click the **Launch app catalog** button.
4. Search for and select the template named **Oracle Fusion Applications Release <X>**, where the release is 13 or later.
5. On the Add Oracle Fusion Applications Release screen, complete these fields:
 - **Name**
 - **Description** (optional)
 - **Application icon** (optional)
6. Click **Next**.
7. In the **General** section, complete these fields using a bogus URL that begins with **http://** and ends with **.com**:
 - **Entity ID:** http://bogus-url.com
 - **Assertion Consumer URL:** http://bogus-url.com
8. Under **Additional configurations**, complete these fields with the same URL:
 - **Single Logout URL:** http://bogus-url.com
 - **Logout Response URL:** http://bogus-url.com
9. Click **Next**.
10. Turn On **Enable Provisioning** and click **Confirm**.
11. In the **Configure connectivity** section, complete the following fields:
 - **Administrator Username:** Enter your Fusion applications administrator credentials.
 - **Administrator Password:** Enter your Fusion applications administrator password.

- **Host Name:** Enter the Fusion application URL hostname portion without **http://**. For example, **myFAhostname.oraclecloud.com**
 - **Port Number:** 443
 - **SSL Enabled:** Select this option.
 - **Override Custom Sync:** Select this option.
12. In the **Provisioning Operations** section, complete these fields:
 - **Authoritative sync:** Select this option.
 - **Create account:** Select this option.
 - **Update account:** Select this option.
 - **Deactivate account:** Select this option.
 - **Delete account:** Deselect this option
 13. Turn on **Enable Synchronization**.
 14. Scroll up to view the **Configure Attribute Mapping** section, and click the **Attribute mapping** button.
 15. On the Attribute mapping screen select the **Application to identity domain** option.
 16. Locate the row with the **User** column value set to **Federated** and modify the source value in the left column to be **true** where it says **false**.
 17. Click the **Save changes** button, which returns you to the previous screen.
 18. In the **Configure synchronization** section, complete the **Synchronization Schedule** field with the frequency you want to use for synchronization. The recommended value is **Every hour**.
 19. Click **Finish**.
 20. When you are ready to either test the synchronization, or make the synchronization live, Click **Activate** and continue to the next task.

Test the Synchronization

This process includes importing users and groups that you want to synchronize, and tests the synchronization setup to ensure that the Fusion application users are being synchronized to the Fusion application identity domain. When you have successfully tested the synchronization, you then activate the process using the instructions in the next task.

1. From where you left off in the previous task, scroll down to the **Resources** section in the navigation panel and select **Import**, and then click the **Import** button.
2. The message on the screen indicates that the import job has been submitted and is running. Refresh the screen until the **Import status** changes to **Complete**.
3. Go back to the main screen for the Fusion applications identity domain to verify that users were successfully copied from Fusion applications.
4. In the navigation pane, click **Users** and verify that the users you expect to see are available.
5. Remove the test results by completing these steps:
 - Deactivate the application created in the previous task.
 - Delete all users and groups that were migrated into Fusion applications identity domain.
6. Complete the steps in the next task to activate the synchronization process.

Activate the Synchronization Process

1. Log in to your CX Industry Framework identity domain in your Oracle Cloud Infrastructure account. You can get this link from your welcome email. If you have questions about which tenancy and domain to log in to, contact your Oracle Support team.
2. Select **Domains**, then click on the domain name.
3. Select **Oracle Cloud Services** from the navigation panel and locate the application corresponding to the CXIF instance. The name starts with either **CXIF** or **DX4C**, and the description likely reads *CXIF IDCS Application*. It was created during the CX Industry Framework provisioning process.
4. Select the application and then, under **Resources**, select **Application roles**.
5. Verify that the application has the following application roles:
 - CXIF_Configuration_Endpoint_Read
 - CXIF_Configuration_Endpoint_Write, and others
6. Using the steps in the previous task, activate the application and import the users again.
7. Return to the application referenced in step 3, and then select **Application roles**. The roles beginning with "CXIF" are displayed.

omAssign User Access in CX Industry Framework

This section discusses how to authorize the synchronized CX for Utilities users to access services and features of the CX Industry Framework. This step should be performed manually after each scheduled user synchronization.

1. Return to the application referenced in step 3 above (in the *Activate the Synchronization Process* task). The name starts with either **CXIF** or **DX4C**, and the description likely reads *CXIF IDCS Application*.
2. Select **Application roles** to display the list of roles.
3. Assign newly synchronized users to the role with the name ending in **Configuration_Endpoint_Read**.

Perform Connectivity Test

After you have completed the initial setup steps, you should test your setup to make sure that each of the systems included in your solution are connected. After you have verified that your systems are properly connected, you can continue with the tasks associated with full configuration of each system to meet your business needs.

When performing a connectivity test, you should create a very basic Person record in your Oracle Utilities customer information system. This record should contain only the required fields that are needed to create the record and synchronize it to the Oracle Fusion system.

To complete the connectivity test:

- Create a basic Person record in your Oracle Utilities customer information system. If you are implementing CX for Utilities Agent Service, create a Person of type Person. If you are implementing CX for Utilities Sales, create a Person of type Business.
- Log in to your home page.
- Depending on which experience you are implementing, complete one of the following steps:
 - CX for Utilities Agent Service: Access the Customer List and search for the record you created.
 - CX for Utilities Sales: Access the Business List and search for the record you created.
- Access Customer 360.

For instructions and additional information about these tasks, see the User Documentation section of the [Oracle Utilities Customer Experience library](#).

Configure Your Oracle Utilities System

Before you can use CX for Utilities applications, you must ensure that the related features are set up appropriately in your Oracle Utilities system. The following information identifies each item that needs to be set up, provides implementation details, and refers you to related documentation that can assist you.

All of the documentation listed in this topic (unless otherwise noted) can be found in these libraries in the Oracle Help Center, along with additional information about using and configuring your Oracle Utilities system:

- [Customer Cloud Service library](#)
- [Customer to Meter library](#)

Task	Details	Documentation
<p>Configure Zones in the Customer 360 and Dashboard Portals</p>	<p>Only the zones that are configured to display for the user in the Customer 360 portal are available from the Agent Home Page. Therefore, if you want CX for Utilities Agent Service users to view a particular zone, you must configure it to display in the Customer 360 portal in your Oracle Utilities system.</p> <p>For each zone that you want to display in Customer 360:</p> <ul style="list-style-type: none"> ▪ Confirm the Display option is selected. ▪ Update the sequence in the portal preferences. <p>You can also update user preferences to define favorite links and scripts to display in the side panel dashboard.</p>	<p>See these topics:</p> <ul style="list-style-type: none"> ▪ <i>Configuring Zones in the Business User Guide</i> ▪ <i>Portal Preferences in the Administration Guide</i>

Task	Details	Documentation
Configure Insights	<p>Contextual Insights provide a powerful way to surface focused intelligence and alerts to users in the context of their customers. Customer insights are configured in your Oracle Utilities system, and can be displayed as noted below.</p>	<p>See Configuring Insights in your Customer Information System</p>
Configure Person Data Options	<p>You can store customer data that is important for your business process, such as, but not limited to:</p> <ul style="list-style-type: none"> ▪ Name types ▪ Contact routing ▪ Contact types ▪ Contact status ▪ Other required or optional characteristics <p>You must configure the administration data so that the appropriate types of customer information can be stored with person and business records within your Oracle Utilities system.</p>	<p>See these topics in the <i>Administration Guide</i>:</p> <ul style="list-style-type: none"> ▪ Setting Up Person Options ▪ Defining Characteristic Types
Configure Notification Preferences	<p>You can configure notification types for sending messages out of your Oracle Utilities system and maintaining customers' communication preferences for receiving these messages.</p> <p>Once these communications are configured, you can set notifications preferences for each of the customer's billing accounts.</p>	<p>See Setting Up Notification Preference Options in the <i>Administration Guide</i></p>

Task	Details	Documentation
Configure To Do Types	<p>Customer service agents need access to service requests and to do entries from their Work Queue. To get the to do entries to display, you must complete the following tasks so that agents have access to the appropriate to do entries:</p> <ul style="list-style-type: none"> ▪ Configure to do types ▪ Configure to do roles <p>Once this configuration is complete, agents can view and manage accessible to do entries from the Work Queue or from within your Oracle Utilities system.</p>	See Defining To Do Types in the <i>Business User Guide</i>
Configure Start, Stop, and Transfer Processes	<p>Processes to start, stop, or transfer service can be launched after creating or identifying a customer record in the Customer List.</p> <p>To enable these processes, you must configure customer service request types that are used to orchestrate customer service processes related to service agreements and contracts at customer service locations.</p>	See Setting Up Customer Service Request Types in the <i>Administration Guide</i>
Inbound Web Services (APIs)	<p>The following information is integrated into CX for Utilities using inbound web services:</p> <ul style="list-style-type: none"> ▪ Person synchronization ▪ Person context ▪ Customer activity history 	See Inbound REST Web Services in the <i>Administration Guide</i>

Task	Details	Documentation
	<ul style="list-style-type: none"> ▪ Work queue items <p>Inbound web services in the web service category of Customer Experience should be set to active for the message options so that they can be used in CX for Utilities. This web service category includes values of C1-CX, D1-CX, and X1-CX.</p>	
Schema Constants	<p>Some optional Fusion features rely on schema constants to reference specific administrative entities configured by the customer.</p> <p>Schema constants are defined on a Feature Configuration record of type Schema Constants.</p> <ul style="list-style-type: none"> ▪ If your implementation assigns a name to billing accounts using an account characteristic, reference the corresponding characteristic type as the Account Name Characteristic Type schema constant. ▪ If your implementation captures the geocode of a premise using a geographic type, reference the code of this geographic type record as the Lat/Long Geographic Type schema constant. 	<p>See Defining Feature Configurations in the <i>Framework Administrative User Guide</i></p>
Extendable Lookups	<div style="border: 1px solid black; border-radius: 10px; padding: 5px; text-align: center;"> <p>This task should have been</p> </div>	<p>See Defining Extendable Lookups in</p>

Task	Details	Documentation
	<div data-bbox="513 310 961 470" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>completed during initial setup.</p> </div> <p>Extendable lookups are used to control some items within CX for Utilities, such as:</p> <ul style="list-style-type: none"> ▪ Available locations for knowledge icons ▪ The ongoing person data integration <p>Use the extendable lookup with a business object of F1-KnowledgeManagement to identify available locations to attach articles.</p> <p>The person synchronization is controlled by an F1-DataSyncControl extendable lookup business object of C1-CX4U-PERSON. The status of this lookup record must be active to enable the synchronization and the external system and message sender must be configured.</p>	<p>the <i>Administration Guide</i></p>
<p>Data Synchronization</p>	<div data-bbox="513 1491 961 1692" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>This task should have been completed during initial setup.</p> </div> <p>Person data synchronization is used to trigger updates to CX for Utilities and other Oracle systems</p>	<p>See:</p> <ul style="list-style-type: none"> ▪ Data Synchronization in the <i>Administration Guide</i> ▪ Configure Data Synchronization

Task	Details	Documentation
	<p>when person record changes are made. To set up the synchronization, be aware that:</p> <ul style="list-style-type: none"> ▪ The maintenance object of PERSON is delivered with a generic audit algorithm of F1ONGDATASYN for ongoing data synchronization plugged in so that a generic outbound sync request can be processed by the F1-SYNRQ sync request monitor batch process. ▪ This batch process should be scheduled to run as frequently as ongoing updates need to be synchronized to CX for Utilities and other systems. ▪ This is a generic batch process that can be used for many objects but has parameters that can be used to control which sync request BOs to process, such as F1-GenericDataSync. 	
<p>Populating Old Account ID</p>	<p>If your utility converts from one CIS to an Oracle Utilities CIS, you can store account ID numbers from your legacy system in the 'Old Account Id' field (table field name OLD_ACCT_ID). This field is used in the Utilities CIS system to ensure that payments made after a conversion are attributed to the correct accounts.</p> <p>In CX for Utilities Agent Service,</p>	<p>See:</p> <ul style="list-style-type: none"> ▪ Use the Person and Premise Search ▪ Service Agreement - Main Information in the <i>Business User Guide</i>

Task	Details	Documentation
	the Prior Billing Account ID search parameter in the Person and Premise Search will return valid results only if this field is populated in your CIS.	

Configuring Insights in Your Utilities CIS

Contextual Insights provide a powerful way to surface focused intelligence and alerts to users in the context of their customers. Customer insights are configured in multiple places to function properly, including:

- In your Oracle Utilities system
- In your [UtilitiesAdmin REST API](#)

Insights can appear in different locations across the Customer Experience for Utilities solution, as noted here:

If you are using...	Insights are displayed...
Customer 360 to view customer information in CX for Utilities Agent Service	<ul style="list-style-type: none"> ▪ Within Customer 360 zones such as Customer Insights. ▪ In the Program Enrollments zone. ▪ Inline to provide customer context. ▪ Within Start/Stop/Transfer process panels.
Customer Dashboard to view customer information in CX for Utilities Agent Service	On the Overview tab of the Customer Dashboard
CX for Utilities Sales	On the Overview tab in

If you are using...	Insights are displayed...
	Account 360.

Configure any required insight types and associate them with an insight group. The insight group must reference a unique insight class. The insight classes are defined using a lookup field of INSIGHT_CLASS_FLG.

For insights that are used in the Overview tab of Account 360 or the Customer Dashboard, you can create the insight groups and insight types that are used in the REST API by default, or you can create your own, and update the values in the REST API to reflect your new insight groups and types.

This table provides the default values for insight types:

Display Location	Default Values
CX for Utilities Sales Account 360 Overview tab	The default insight types are: <ul style="list-style-type: none"> ▪ C1-PER-NONPAY-CARD ▪ C1-ACCT-PASTDUE-CARD
CX for Utilities Agent Service Customer Dashboard Overview tab	The default insight types are: <ul style="list-style-type: none"> ▪ C1-ACCT-COLL-CARD ▪ C1-ACCT-PAYAGREE-CARD ▪ C1-ACCT-SEV-CARD

This table provides the default values for insight groups:

Display Location	Default Values
CX for Utilities Sales	The default insight groups are: <ul style="list-style-type: none"> ▪ C1XA: Billing account insights ▪ C1XP: Oracle Fusion account insights
CX for Utilities Agent Service using the Customer Dashboard	The default insight group is: <ul style="list-style-type: none"> ▪ C1XC: Customer Dashboard Agent Insights

Once these insight groups and types are defined in your customer information system, you can complete the required setup using REST APIs. See [Customer Experience for Utilities Configuration Tasks](#) for additional details on which insight types and insight groups to set up to match the default API settings, and how to edit the settings if you create new ones.

For instructions on adding your insight group, see the task steps below. For additional information about setting up insights in your Oracle Utilities Customer information system, see "Contextual Insights" in the *Administration Guide* one of these libraries:

- [Customer Cloud Service library](#)
- [Customer to Meter library](#)

Adding An Insight Group In Your Customer Information System

1. From your Utilities Customer Information System, search for "Add Insight Group" in the Search menu.
2. Complete the following fields as noted:

- **Insight Group:** CX4U-ACCT-AGENT
- **Description:** CX Billing Account Insights-Agent
- **Insight Class:** CX Billing Account Insights-Agent
- **Valid Visual Structures:** Card Insight

3. Click Save.

4. Under Related Insight Types, Click Edit and add the following insight types:

- Account Collection Active Card
- Account Pay Agreement Card
- Account Severance Active Card

5. Click Save.

Configure Fusion Applications

Before you can use CX for Utilities, you must ensure that the related features are set up appropriately in the Oracle CX Sales, Oracle Fusion Service, and Oracle CX Industry Framework systems. This chapter identifies each item that needs to be set up, if there are any specific data requirements, and refers you to the documentation that can assist you.

For additional information about implementing, configuring, and using these systems, see the following libraries in the Oracle Help Center:

- [Oracle Fusion Service library](#)
- [Oracle Sales library](#)
- [Oracle Intelligent Adviser library](#)

Adaptive Search Tasks

Before you can use search capabilities in CX for Utilities applications, you must enable the following business objects for Oracle Fusion Adaptive Search:

- Contact
- Account

For more information about Adaptive Search, and instructions to enable business objects, see "Adaptive Search Setup" in the *Implementing Sales Guide*, available in the [Oracle Sales library](#).

Account Hierarchy Tasks

To enable the account hierarchy view in Account 360 of CX for Utilities Sales, you must complete several tasks to enable rollups. Before completing these tasks, you must have a complete understanding of rollups. Details on rollups, and the tasks listed below, can be found in the [Rollups chapter](#) in the *Implementing Sales Guide*.

Task	Description
Set up jobs for rollup data	Configure these jobs in the Oracle Digital Sales system to run at your desired interval:

Task	Description																								
	<ul style="list-style-type: none"> ▪ Refresh Denormalized Data for Account Hierarchy Rollup ▪ Incremental Refresh 																								
<p>Enable and publish metrics</p>	<p>Verify that the following metrics are enabled and published:</p> <table border="1" data-bbox="459 527 1312 1507"> <thead> <tr> <th data-bbox="459 527 873 653">Metric</th> <th data-bbox="873 527 1070 653">Source</th> <th data-bbox="1070 527 1312 653">Related Object</th> </tr> </thead> <tbody> <tr> <td data-bbox="459 653 873 751">Total Open Activities</td> <td data-bbox="873 653 1070 751">Account</td> <td data-bbox="1070 653 1312 751">Activity</td> </tr> <tr> <td data-bbox="459 751 873 890">Total Open Service Requests</td> <td data-bbox="873 751 1070 890">Account</td> <td data-bbox="1070 751 1312 890">Service Request</td> </tr> <tr> <td data-bbox="459 890 873 1029">Total Open Critical Service Requests</td> <td data-bbox="873 890 1070 1029">Account</td> <td data-bbox="1070 890 1312 1029">Service Request</td> </tr> <tr> <td data-bbox="459 1029 873 1127">Total Open Opportunities</td> <td data-bbox="873 1029 1070 1127">Account</td> <td data-bbox="1070 1029 1312 1127">Opportunity</td> </tr> <tr> <td data-bbox="459 1127 873 1266">Total Potential Revenue from Open Opportunities</td> <td data-bbox="873 1127 1070 1266">Account</td> <td data-bbox="1070 1127 1312 1266">Opportunity</td> </tr> <tr> <td data-bbox="459 1266 873 1365">Total Open Leads</td> <td data-bbox="873 1266 1070 1365">Account</td> <td data-bbox="1070 1266 1312 1365">Sales Lead</td> </tr> <tr> <td data-bbox="459 1365 873 1507">Total Potential Revenue from Open Leads</td> <td data-bbox="873 1365 1070 1507">Account</td> <td data-bbox="1070 1365 1312 1507">Sales Lead</td> </tr> </tbody> </table>	Metric	Source	Related Object	Total Open Activities	Account	Activity	Total Open Service Requests	Account	Service Request	Total Open Critical Service Requests	Account	Service Request	Total Open Opportunities	Account	Opportunity	Total Potential Revenue from Open Opportunities	Account	Opportunity	Total Open Leads	Account	Sales Lead	Total Potential Revenue from Open Leads	Account	Sales Lead
Metric	Source	Related Object																							
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Total Potential Revenue from Open Opportunities	Account	Opportunity																							
Total Open Leads	Account	Sales Lead																							
Total Potential Revenue from Open Leads	Account	Sales Lead																							
<p>Run full refresh</p>	<p>After publishing new metrics, run a full refresh. Going forward, your scheduled jobs will maintain account hierarchy data to incorporate the future changes.</p>																								

Computer Telephony Integration Tasks

Complete these tasks related to Computer Telephony Integration (CTI) features. Use the links listed in the Documentation column to access detailed information about each task.

Task	Description	Documentation
<p>Enable the Redwood User Interface</p>	<p>Ensure that the Redwood user interface is available on the environment. This setup is required to simulate a call for agent assistance.</p>	<p>See the following topic:</p> <ul style="list-style-type: none"> ▪ Enable the Redwood User Interface
<p>Configure the Media Toolbar and Profiles</p>	<p>You can configure the media toolbar and define profile options to enable the media toolbar.</p>	<p>See the following topic:</p> <ul style="list-style-type: none"> ▪ Configure the Computer Telephony Integration
<p>Set Up Pop-Up Windows</p>	<p>To enable agents to answer calls using CTI, you must enable pop-up windows to appear when an agent receives an incoming call.</p> <p>Optionally, you can configure the pop-up window to appear using Oracle UI Events Framework.</p> <p>Oracle UI Events Framework is a client-side library that is supported with the Oracle Service Center. It can be used to customize your Oracle Utilities Customer Experience solution for scenarios that require bi-directional event communication. Some examples of how you can use this framework for your CTI integration include:</p>	<p>See the following topic:</p> <ul style="list-style-type: none"> ▪ Set Up Pop-Up Windows <p>If you are using UI Event Framework, see How To Use UI Events Framework in the <i>Implementing Service Center with the Redwood Experience Guide</i>.</p>

Task	Description	Documentation
	<ul style="list-style-type: none"> ▪ Launching specific screen-pop behavior ▪ Triggering logic such as pre-populating page values or creating new records. 	
Set Up Communication Channels	<p>You can configure Customer Experience for Utilities to use standard Fusion Service communication channels.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Complete this task only if you are using additional communication channels via Oracle Fusion Service.</p> </div>	<p>See the following topics in the Fusion Service library in the Oracle Help Center:</p> <ul style="list-style-type: none"> ▪ How inbound messages are processed ▪ Configure chat profile options ▪ How you set up social channels

Enable Redwood User Interface

Ensure that the Redwood user interface is available on the environment. This setup is required to simulate a call for agent assistance. First you add the Redwood user interface, and then you enable it. For additional information, see the [Fusion Service library](#) in the Oracle Help Center.

Add Redwood User Interface for Service Promotion

1. Verify that the **Redwood User Interface for Service** promotion is available in the environment.
2. Log in to the application as an administrator.
3. Go to **My Enterprise > Enterprise**.
4. Click **Manage Promotion Codes**.

5. On the Manage Promotion Codes page, verify whether the **Redwood User Interface for Service** promotion is available.
6. If this promotion isn't available, click **Enter Promotion Code**.
7. Contact Oracle Support to get the promotion code.
8. Enter the promotion code that you receive.
9. Click **Save and Close**. The **Redwood User Interface for Service** promotion is now shown on the page.
10. Click **Done** on the Manage Promotion codes page.

Enable Redwood User Interface

Follow these steps to enable the Redwood User Interface:

1. Go to **My Enterprise > Offerings**.
2. On the Offerings page, select the **Service** offering.
3. Click **Opt In Features**.
4. On the Opt In page, enable the **Redwood User Interface for Service** task.
5. Click **Features**.
6. Enable the **Enable Redwood User Interface for Service** feature.
7. Verify that all the sub-features are also enabled.
8. Click **Done**.

Configure Computer Telephony Integration

If you are using the Oracle Computer Telephony Integration (CTI), you must sign in as an administrator to configure the media toolbar, application classification, and screen pop up. You also set up profile options to enable the media toolbar. For additional information, see the [Fusion Service library](#) in the Oracle Help Center.

Note that the use of a CTI system is not required for CX for Utilities systems to function. However, some features might not be available or work as described in this documentation if you are not using an integrated CTI system.

Configure Media Toolbar

As an administrator, you can configure the vertical media toolbar. The media toolbar is displayed in the following ways:

- If the company has enabled partner Computer Telephony Integration (CTI) service.
- When the signed-in user has access privileges to a toolbar.

While configuring the toolbars, you can also configure the incoming call notification window. The notification window displays basic details about the incoming call. As an administrator, you can configure multiple media toolbars, and specify a default.

To configure the media toolbar:

1. Go to **Navigator > My Enterprise > Setup and Maintenance**.
2. In the Setup and Maintenance work area, click the **Tasks** icon.
3. Select **Search** and enter **Manage Media Toolbar Configuration**.
4. Click the **Manage Media Toolbar Configuration** link.
5. On the Manage Media Toolbar Configuration page, click **Add New** to add a toolbar. Enter a name for the toolbar.
6. From the **Status** options, select **Enabled** to make the toolbar active. If a default toolbar is already specified, this field is disabled by default.
7. Select the **Redwood** layout. The layout is selected as Embedded (Horizontal) by default.
8. Enter the domain name. This configuration entry will help you in URL redirection. If you enter the domain name in the **Domain Name** field, then the application allows cross-origin requests from hosts within the same primary domain or any sub-domain.
9. In the **Settings** section, Enter the CTI customer URL.
10. Select the recently added toolbar from the list of toolbars and click **Default** to set the toolbar as the default for all the enabled users.
11. Click **Save** or **Save and Close**.

Configure Profile Options to Enable Partner Media Toolbar

The profile option **SVC_PARTNER_MEDIA_TOOLBAR_ENABLED** controls the visibility of the partner media toolbar. If you don't enable this profile option, the partner media toolbar is hidden. You can set this profile option at a site level or at a user level.

For more information, see the Configure Profile Options to Enable Partner Media Toolbar topic in the *Implementing Fusion Service Guide*, available in the [Fusion Service library](#) in the Oracle Help Center.

Set Up Pop-Up Windows

You must enable pop-up windows so that when an agent receives an incoming call, a window appears in CX for Utilities applications. The agent can answer the call from this window. For additional information, see:

- The [Fusion Service library](#) in the Oracle Help Center
- [How do I configure screen pop pages?](#) in Oracle Fusion Service Questions and Answers

Prerequisite

Before you complete the task below, you must disable the predefined lookup record with the application classification set to **ADVANCED CUSTOMER CARE**.

Setting Up Pop-Up Windows

To set up pop-up windows for Customer Experience for Utilities:

1. Log in to the application as an administrator.
2. Go to the Setup and Maintenance work area.
3. Search for **Manage Screen Pop Configuration**.
4. Click **Lookup Filters** on the Screen Pop Configuration page.
5. Go to the row corresponding to **LOOKUPSET** and click the **duplicate** button.
6. Click **Confirm** to create a duplicate entry.
7. Add the following:
 - **Name:** CX4ULOOKUPSET
 - **Application Classification:** ADVANCED CUSTOMER CARE
 - **Active:** Checked
 - **Description:** LookupSet for CX for Utilities Agent Service
8. Verify that contact filters are available under **CX4ULOOKUPSET:FILTERS**.
9. If they are not available, add them manually.
10. Click **Save** or **Save and Close**.

Available Predefined Tokens

Predefined tokens are available in the Tokens section of the Manage Screen Pop Configuration page.

Page	Token
Utilities Service Dashboard	SVCMCA_ UTILITIES_ SERVICE_ DASHBOARD

Email Channel Tasks

Complete these tasks related to email management features. All of the topics listed in the Documentation column are available in the [Oracle Fusion Service library](#) in the Oracle Help Center.

Task	Description	Documentation
Configure Email Channels	<p>In order to send emails directly from Customer 360, you must configure the outbound email channels you are using. You can also:</p> <ul style="list-style-type: none"> ▪ Configure profiles ▪ Define email templates ▪ Set the from name in outbound emails ▪ Enable links to Knowledge Management articles in emails 	<p>Review all of the tasks listed in the “Email Channels” chapter of the <i>Implementing Fusion Service Guide</i>.</p>

Knowledge Management Tasks

Complete these tasks related to Knowledge Management features. All of the topics listed in the Documentation column are available in the [Oracle Fusion Service library](#) in the Oracle Help Center.

Task	Description	Documentation
Enable Knowledge Management Features	You must set up Knowledge Management so agents and account managers can access and use knowledge articles in service requests and in the Customer Experience for Utilities user interface.	Review all of the tasks listed in the “Enable Knowledge Features” chapter of the <i>Implementing Knowledge Management Guide</i> .

Oracle Intelligent Advisor Tasks

Customer Experience for Utilities solutions can be integrated with Oracle Intelligent Advisor (OIA) to enable your sales and service employees to use OIA interviews to gather information from customers or prospects, and provide them with recommended next steps.

You can use OIA with Customer Experience for Utilities to:

- Enable pay plan features in CX for Utilities Agent Service
- Enable needs analysis features in CX for Utilities Sales

Unless otherwise noted, all of the topics listed in this topic are available in the [Oracle Intelligent Advisor library](#). For additional information, see [Integrate with Oracle Intelligent Advisor](#) in the *Implementing Service Center with the Redwood User Experience Guide*.

Complete these tasks related to using supported Oracle Intelligent Advisor features in your Customer Experience for Utilities implementation.

Task	Description	Documentation
Oracle Intelligent Advisor configurations	In order to use the delivered pay plan or needs analysis flows, you must complete these tasks: <ul style="list-style-type: none"> ▪ Configure the OIA Hub for authenticating web-determination APIs ▪ Set the hub URL using the 	For information about setting profile options, see Setting Profile Options . Review the tasks listed in these sections of the OIA library:

Task	Description	Documentation
	<p>ORA_UER_OIA_HUB_IA_SITE_URL profile option.</p> <ul style="list-style-type: none"> ▪ Set up a new workspace ▪ Add permissions for specific domain to enable CORS ▪ Upload the schemas and flows in the OIA hub. ▪ Deploy the uploaded flow. <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>Configurations for the Create Pay Plan and Energy Efficiency Program (needs analysis) sample interviews are seeded in the application. If you want to customize the interface or the rules associated with the interview, you must edit the flow and schema, and deploy it again.</p> </div>	<ul style="list-style-type: none"> ▪ Implement Intelligent Advisor ▪ Use Intelligent Advisor ▪ Customize and Extend Intelligent Advisor <p>For a sample payment plan flow and schema, see My Oracle Support Article 2906638.1.</p> <p>For a sample needs analysis flow and schema for an energy efficiency program, see My Oracle Support Article 3007543.1.</p> <p>When using the above articles, download the zip file and then upload the schema and then upload the flow.</p>
<p>Update the product table if using the needs analysis sample interview</p>	<p>If you are using needs analysis sample interview, you must update the products table in the interview rules and complete the following tasks:</p> <ol style="list-style-type: none"> 1. Create each product in Oracle Sales 2. Verify that the ItemNumber 	<p>For additional information see:</p> <ul style="list-style-type: none"> ▪ Overview of Sales Products in the <i>Oracle Fusion Cloud Sales Automation Implementation</i>

Task	Description	Documentation
	<p>matches the productNo from the table.</p> <p>3. Complete the following required fields:</p> <ul style="list-style-type: none"> ▪ Name ▪ Description ▪ ExtendedDescriptionOne ▪ DefaultUOM 	<p><i>Reference</i></p>
<p>Add a new needs analysis interview</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>This task assumes the user has knowledge of the Visual Builder and Oracle Intelligent Advisor systems and processes.</p> </div>	<ol style="list-style-type: none"> 1. Create new deployment in OIA hub. 2. Use Visual Builder Studio to extend the Needs Analysis Dashboard page, available in CX for Utilities Sales by adding the interview properties object in the EXTENDED_OIA_INTERVIEWS array in the application with the following properties: <ul style="list-style-type: none"> ▪ id (String): Unique identifier of the interview. ▪ name (String): Name of the interview. ▪ description (String): Description of interview. ▪ deployment (String): Deployment name of the interview deployed in hub. ▪ active (Boolean): Boolean value that determines whether the interview is 	<p>For additional information see:</p> <ul style="list-style-type: none"> ▪ The Oracle Intelligent Advisor library ▪ <i>Configuring and Extending Applications</i> in the Applications Common library on Oracle Help Center ▪ The Extending Oracle Cloud Applications with Visual Builder Studio Guide

Task	Description	Documentation
	<p>active.</p> <ol style="list-style-type: none"> Add the interview id in the EXTENDED_INTERVIEW_IDS array in the page where you want the interview to appear. Custom actions from OIA can be handled using the OIAcustomDataAction event available for extension. 	
Update seeded interview properties	To update the name and description of an interview, or to deactivate an interview, add the interview in "EXTENDED_OIA_INTERVIEWS" in the same way as if adding new interviews. For example, use IDs such as ORA_ENERGY_EFFICIENCY for your energy efficiency plan interview or ORA_PAYPLAN for your create pay plan interview.	<p>For additional information see:</p> <ul style="list-style-type: none"> The Oracle Intelligent Advisor library

Service Request Tasks

To enable service requests in CX for Utilities applications, you must complete the following configuration tasks. All of the topics listed in the Documentation column are available in the [Oracle Fusion Service library](#) in the Oracle Help Center.

Task	Description	Documentation
Enable Multiple Business Units for Service	If not already completed, your system administrator must complete this task before completing any of the additional tasks listed in this table.	<p>See the following topic:</p> <ul style="list-style-type: none"> Manage Common CRM BU Profile

Task	Description	Documentation
		Options for Service BUs
Configure Service Request Categories	You should fully understand service request categories, and configure the categories you want to use in CX for Utilities.	<p>See the following topics:</p> <ul style="list-style-type: none"> ▪ Overview of Service Request Categories ▪ Create a Service Request Category
Configure Service Request Templates	You can configure your service request application pages to include the information you want your utility users to access.	<p>See the following topic:</p> <ul style="list-style-type: none"> ▪ Overview of Application Pages
Create Service Request Assignment Rules	You can use assignment rules to automatically assign service requests to queues when they are created or updated. These assignment rules can be run on a schedule.	<p>See the following topic:</p> <ul style="list-style-type: none"> ▪ How you define queue assignment rules
Configure Agent Capacity	You can define capacity rules to indicate the maximum number of open work items of a certain type that an agent can handle.	<p>See the following topic:</p> <ul style="list-style-type: none"> ▪ Agent capacity

Manage Roles and Users

Using duty roles and job roles, you can view and manage contact, customer, account, and service request data in the CX for Utilities solutions. When deploying the solutions, you have access to predefined security privileges and roles.

Utilities Customer Service Administrator, Utilities Customer Service Manager, and Utilities Customer Service Representative are predefined job roles of CX for Utilities Agent Service. Utilities Key Account Administrator, Utilities Key Account Manager for Sales, Utilities Key Account Manager for Service, Utilities Key Account Supervisor for Sales, and Utilities Key Account Supervisor for Service are predefined job roles of CX for Utilities Sales. A mapping of the job hierarchy and what permissions each utility role has access to is outlined in the following sections.

This section also discusses how those predefined roles and privileges are defined and made available to the utility's agents and key account managers. For details on Oracle Fusion security and how to create new roles with specific privileges for users, see *Securing Sales and Fusion Service* in the [Fusion Service library](#) in the Oracle Help Center.

Role-Based Security

In addition to the roles that are delivered with the solution, you can also create custom roles and users. Before creating custom roles, you should have a complete understanding of Oracle's role-based security.

For more information, see *Understand Role-Based Access Control* in the [Fusion Service library](#) in the Oracle Help Center.

Predefined Privileges and Roles - CX for Utilities Agent Service

These are the predefined functional privileges associated with CX for Utilities Agent Service:

- View utilities agent desktop.
- View utilities call center module.
- Access customer list on home page.
- Access knowledge management on home page.
- View my day work queue.
- View utilities create contact flows.

- View knowledge management administrative console.
- View embedded customer information system application.
- Access Customer 360
- Access Utilities Tile under Service Folder
- Create Sales Organization
- Update Sales Organization

This table outlines the predefined duty roles for CX for Utilities Agent Service:

Duty Role and Description	Privileges	Child Job Roles
Utilities Customer Service Representative	<ul style="list-style-type: none"> ▪ View Utilities Call Center Module ▪ Access Customer List on Home Page ▪ Access Knowledge Management on Home Page ▪ View My Day Work Queue ▪ View Utilities Create Contact Flows ▪ View Utilities Agent Desktop ▪ Update Sales Organization ▪ Create Sales Organization ▪ Access Utilities Tile under Service Folder ▪ Access Premium Service Actions in CIS ▪ Access Customer 360 	<ul style="list-style-type: none"> ▪ Customer Service Representative ▪ Knowledge Search Service ▪ Knowledge Home for Service ▪ Knowledge Home ▪ Access Groups Enablement
Utilities Customer	<ul style="list-style-type: none"> ▪ View Utilities Agent 	<ul style="list-style-type: none"> ▪ Customer Service

Duty Role and Description	Privileges	Child Job Roles
Service Manager	Desktop <ul style="list-style-type: none"> ▪ View Utilities Call Center Module ▪ Access Customer List on Home Page ▪ Access Knowledge Management on Home Page ▪ View My Day Work Queue ▪ View Utilities Create Contact Flow ▪ View Knowledge Management Administrative Console ▪ Update Sales Organization ▪ Create Sales Organization ▪ Access Utilities Tile Under Service Folder ▪ Access Premium Service Actions in CIS ▪ Access Customer 360 	Manager <ul style="list-style-type: none"> ▪ Knowledge Authoring ▪ Knowledge author service ▪ Knowledge Home ▪ Knowledge Home for Service ▪ Knowledge Search Service ▪ Engagement Channel Supervisor ▪ Access Groups Enablement
Utilities Customer Service Administrator	<ul style="list-style-type: none"> ▪ View Knowledge Management Administrative Console ▪ Access Customer List on Home Page ▪ Access Knowledge Management on Home Page 	<ul style="list-style-type: none"> ▪ Knowledge Analytics ▪ Knowledge Rest Administrator ▪ Knowledge Setup and Maintenance ▪ Customer Service Administrator

Duty Role and Description	Privileges	Child Job Roles
	<ul style="list-style-type: none"> ▪ View My Day Work Queue ▪ View Utilities Agent Desktop ▪ View Utilities Call Center Module ▪ Update Sales Organization ▪ Create Sales Organization ▪ Access Utilities Tile Under Service Folder ▪ Access Premium Service Actions in CIS ▪ Access Customer 360 	<ul style="list-style-type: none"> ▪ Engagement Channel Application Administrator ▪ Knowledge User Management ▪ Customer Relationship Management Application Administrator ▪ Sales Administrator ▪ Access Groups Enablement
<p>Utilities Customer Service User Synchronization</p> <p>Used for Oracle Identity Management user sync between Oracle Fusion Service and Oracle Utilities Customer Cloud Service.</p>	<ul style="list-style-type: none"> ▪ View Embedded Customer Information System Application 	

Predefined Privileges and Roles - CX for Utilities Sales

These are the predefined functional privileges associated with CX for Utilities Sales:

- Access Business Customer Hierarchy
- Access Business List on Home Page
- Access Knowledge Management on Home page

- Access Customer 360
- Access C360 Leads and Opportunities Tab
- Access Premium Service Actions in CIS
- Access Utilities Tile under Sales Folder
- Access Utilities Tile under Service Folder
- View Knowledge Management Administrative Console
- View My Day Work Queue
- View Utilities Call Center module
- View Utilities Create Contact Flows

Not all privileges are fully functional.

This table outlines the predefined duty roles for CX for Utilities Sales:

Duty Role and Description	Privileges	Child Job Roles
CX for Utilities Sales - Sales	<ul style="list-style-type: none"> ▪ View utilities create contact flows ▪ View My Day Work Queue ▪ Access Utilities Tile under Sales Folder ▪ Access Knowledge Management on Home Page ▪ Access Customer 360 ▪ Access C360 Leads and Opportunities tab ▪ Access Business List on Home Page ▪ Access Business Customer Hierarchy 	<ul style="list-style-type: none"> ▪ Sales Representative ▪ Knowledge Home for Service ▪ Knowledge Search Service ▪ Knowledge Home ▪ Access Groups Enablement

Duty Role and Description	Privileges	Child Job Roles
CX for Utilities Sales - Service	<ul style="list-style-type: none"> ▪ View Utilities Create Contact Flows ▪ View Utilities Call Center module ▪ View My Day Work Queue ▪ Access Utilities Tile under Service Folder ▪ Access Premium Service Actions in CIS ▪ Access Knowledge Management on Home Page ▪ Access Customer 360 ▪ Access Business List on Home Page ▪ Access Business Customer Hierarchy 	<ul style="list-style-type: none"> ▪ Customer Service Representative ▪ Knowledge Home for Service ▪ Knowledge Search Service ▪ Knowledge Home
Utilities Key Account Supervisor for Sales	<ul style="list-style-type: none"> ▪ View Utilities Create Contact Flows ▪ View My Day Work Queue ▪ Access Utilities Tile under Sales Folder ▪ Access Knowledge Management on Home Page ▪ Access Customer 360 ▪ Access C360 Leads and Opportunities tab ▪ Access Business List on 	<ul style="list-style-type: none"> ▪ Knowledge Home for Service ▪ Knowledge Authoring ▪ Knowledge Search Service ▪ Knowledge Author Service ▪ Knowledge Home ▪ Engagement Channel Supervisor

Duty Role and Description	Privileges	Child Job Roles
	<ul style="list-style-type: none"> Home Page ▪ Access Business Customer Hierarchy 	<ul style="list-style-type: none"> ▪ Access Groups Enablement
Utilities Key Account Supervisor for Service	<ul style="list-style-type: none"> ▪ View Utilities Create Contact Flows ▪ View Utilities Call Center module ▪ View My Day Work Queue ▪ Access Utilities Tile under Service Folder ▪ Access Premium Service Actions in CIS ▪ Access Knowledge Management on Home Page ▪ Access Customer 360 ▪ Access Business List on Home Page ▪ Access Business Customer Hierarchy 	<ul style="list-style-type: none"> ▪ Customer Service Manager ▪ Knowledge Home for Service ▪ Knowledge Authoring ▪ Knowledge Search Service ▪ Knowledge Author Service ▪ Knowledge Home ▪ Engagement Channel Supervisor ▪ Access Groups Enablement
Utilities Key Account Administrator	<ul style="list-style-type: none"> ▪ View Utilities Create Contact Flows ▪ View Utilities Call Center module ▪ View My Day Work Queue ▪ View Knowledge Management Administrative Console 	<ul style="list-style-type: none"> ▪ Customer Relationship Management Application Administrator ▪ Customer Service Administrator ▪ Knowledge Analytics

Duty Role and Description	Privileges	Child Job Roles
	<ul style="list-style-type: none"> ▪ Access Utilities Tile under Service Folder ▪ Access Utilities Tile under Sales Folder ▪ Access Premium Service Actions in CIS ▪ Access Knowledge Management on Home Page ▪ Access Customer 360 ▪ Access C360 Leads and Opportunities tab ▪ Access Business List on Home Page ▪ Access Business Customer Hierarchy 	<ul style="list-style-type: none"> ▪ Knowledge Setup and Maintenance ▪ Knowledge User Management ▪ Knowledge Search Service ▪ Knowledge Rest Administrator ▪ Sales Administrator ▪ Engagement Channel Application Administrator ▪ Access Groups Enablement

Extending Predefined Roles

This section describes suggested extended roles for your CX for Utilities solutions that enable account creation and maintenance. If you create additional custom roles during your implementation process, you must review [user synchronization configuration](#), as adjustments might be required so that users assigned to custom roles are propagated to your Oracle Utilities customer information system and to CX Industry Framework, as required.

For specific instructions and information about creating and managing roles in Oracle Fusion, see the following topics in the *Securing Applications Guide*, available in the [Oracle Help Center](#):

- Data Security Policies
- Role Provisioning, Role Assignments, and Role Configuration

Set Up Security for CX for Utilities Agent Service Users

You must update the access for each of the following roles, as needed, using the steps below:

- ORA_UER_UTILITIES_CUSTOMER_SERVICE_MANAGER_JOB
- ORA_UER_UTILITIES_CUSTOMER_SERVICE_ADMINISTRATOR_JOB
- ORA_UER_UTILITIES_CUSTOMER_SERVICE_REPRESENTATIVE

This step is not required for CX for Utilities Sales users.

You must have access to the IT Security Manager job role to perform the following steps.

To update access:

1. Sign in to the Oracle Fusion Applications as an administrator.
2. Navigate to **Sales and Service Access Management**.
3. In the Configure Groups tab, search for the role you want to use. For example, search for Utilities Customer Service Representative.
4. In the Search Results region, drill down to the group.
5. Select **Object Rules**.
6. Select the object you want and click **Search**. For example, select Account.
7. You can view existing access rules for any of your Role based groups for the object.
8. To add a new access rule, click the **Add Rule** button.
9. Using the table below as a guide, select the designated rules for each object mentioned.
10. Click **Apply** after each selection.
11. Click **Done**.
12. On the Edit Access Group screen, click **Save And Close**.
13. Click **Object Rules**, then click **Actions** and select **Publish Rules**.
14. Refresh your screen to confirm the rules are published. This might take several minutes.
15. Complete these steps for each role.

Object	Rule	Access Level	Purpose
Account	All Accounts	Full	To be able to do CRUD operations to Accounts.
Contact	All Contacts	Full	To be able to do CRUD operations to Contacts.
Contact	Person Home Phone and Personal Email	Full	To be able to do CRUD operations to Personal Email (with purpose PERSONAL). To be able to do CRUD operations to Home Phone (with purpose PERSONAL or phone type HOME).
Contact	Person Social Security Number	Full	To be able to do CRUD operations to SSN/Tax Number.
Contact	Person Address	Full	To be able to do CRUD operations to Home Address (with site use HOME).

Object	Rule	Access Level	Purpose
Contact	Person Additional Identifier Person Citizenship Number Person Mobile Phone Number	Full	

Create and Manage Utilities Users

After you have completed the [user synchronization process](#), you might need to create additional users or manage existing user information. This topic explains how you can create new **utility system users** after the user synchronization process is complete. This includes utility customer service agents and their managers, key account managers and their supervisors, and administrators, as well as users who will need access to Oracle Utilities customer information system, but not need access to any Oracle Fusion system, including Customer Experience for Utilities solutions.

When you create a new utility user, you log in to the Oracle Fusion application URL. You can create administrative users and application end users. Use the following references for additional information on creating users:

- For instructions on creating administrative (setup) users, see "Setup Users" in the *Implementing Sales Guide*, available in the [Oracle Sales library](#).
- For instructions on creating end users, see "Users and Security" in the *Implementing Sales Guide*, available in the [Oracle Sales library](#).

After you create the user, you will assign them to the appropriate job role.

CX for Utilities Agent Service uses the following predefined roles:

- ORA_UER_UTILITIES_CUSTOMER_SERVICE_MANAGER
- ORA_UER_UTILITIES_CUSTOMER_SERVICE_REPRESENTATIVE
- ORA_UER_UTILITIES_CUSTOMER_SERVICE_ADMINISTRATOR

- ORA_UER_UTILITIES_CUSTOMER_SERVICE_USER_SYNCHRONIZATION (Use this role for Customer Cloud Service users who do not need access to Fusion applications or CX for Utilities Agent Service.)
- Any custom roles that have been created for use with CX for Utilities Agent Service.

CX for Utilities Sales uses the following predefined roles:

- ORA_UER_UTILITIES_KEY_ACCOUNT_ADMINISTRATOR
- ORA_UER_UTILITIES_KEY_ACCOUNT_MANAGER_FOR_SALES
- ORA_UER_UTILITIES_KEY_ACCOUNT_MANAGER_FOR_SERVICE
- ORA_UER_UTILITIES_KEY_ACCOUNT_SUPERVISOR_FOR_SALES
- ORA_UER_UTILITIES_KEY_ACCOUNT_SUPERVISOR_FOR_SERVICE
- Any custom role you have created for use with CX for Utilities Sales

Once your users are created, you must also be aware of how to manage them. For specific instructions and additional information about creating and managing users in Oracle Fusion, see the guides that are available in the Security section of the [Oracle Fusion Service Help Center](#).

This table lists the information you need to be aware of when managing users:

Task	Utility-Specific Details
<p>Create users that will use or administer CX for Utilities Agent Service.</p>	<ol style="list-style-type: none"> 1. Create the user in Oracle Fusion applications using one or more of these roles: <ul style="list-style-type: none"> ▪ ORA_UER_UTILITIES_CUSTOMER_SERVICE_MANAGER ▪ ORA_UER_UTILITIES_CUSTOMER_SERVICE_REPRESENTATIVE ▪ ORA_UER_UTILITIES_CUSTOMER_SERVICE_ADMINISTRATOR ▪ Any custom roles that have been created for use with CX for Utilities Agent Service. 2. Wait for the user to be synchronized from Fusion applications to the CX Industry Framework and Customer Cloud Service identity domains. This occurs using the

Task	Utility-Specific Details
	<p>frequency you defined during the user synchronization setup process.</p>
<p>Create users that will use or administer CX for Utilities Sales.</p>	<ol style="list-style-type: none"> 1. Create the user in Oracle Fusion applications using one or more of these roles: <ul style="list-style-type: none"> ▪ ORA_UER_UTILITIES_KEY_ACCOUNT_ADMINISTRATOR ▪ ORA_UER_UTILITIES_KEY_ACCOUNT_MANAGER_FOR_SALES ▪ ORA_UER_UTILITIES_KEY_ACCOUNT_MANAGER_FOR_SERVICE ▪ ORA_UER_UTILITIES_KEY_ACCOUNT_SUPERVISOR_FOR_SALES ▪ ORA_UER_UTILITIES_KEY_ACCOUNT_SUPERVISOR_FOR_SERVICE ▪ Any custom roles that have been created for use with CX for Utilities Sales. 2. Wait for the user to be synchronized from Fusion applications to the CX Industry Framework and Oracle Utilities identity domains. This occurs using the frequency you defined during the user synchronization setup process.
<p>Create users that need access to your Oracle Utilities system but do not need access to any Oracle Fusion applications, including CX for Utilities systems.</p>	<ol style="list-style-type: none"> 1. Create the user in Oracle Fusion applications using this role: <ul style="list-style-type: none"> ▪ ORA_UER_UTILITIES_CUSTOMER_SERVICE_USER_SYNCHRONIZATION 2. Wait for the user to be synchronized from Fusion applications to the CX Industry Framework and Oracle Utilities identity domains. This occurs using the frequency you defined during the user synchronization setup

Task	Utility-Specific Details
	process.
Create users who need access to Fusion applications but do not need access to CX for Utilities Agent Service, CX for Utilities Sales, or your Oracle Utilities system.	<ol style="list-style-type: none"> 1. Create the user in Oracle Fusion applications using a Fusion applications role. 2. Wait for the user to be synchronized from Fusion applications to the CX Industry Framework and Oracle Utilities identity domains. This occurs using the frequency you defined during the user synchronization setup process.
Updating user information for all users.	All updates to user information, whether completed by a system administrator or by self-service processes, should be done in Fusion applications.
Deleting a user.	<ol style="list-style-type: none"> 1. A system administrator deletes the user from the Fusion applications identity domain. 2. Wait for the user to be removed from the related systems, including the CX Industry Framework and Oracle Utilities identity domains. This occurs using the frequency you defined during the user synchronization setup process. 3. To remove the user immediately, perform the removal manually in all related systems.
Remove or change roles for users.	<ol style="list-style-type: none"> 1. Modify the user in Fusion applications to update all necessary roles. 2. In cases where the role change affects a user's ability to access Customer Cloud Service, update the role assignment in the CX Industry Framework and Oracle Utilities identity domains.

Task	Utility-Specific Details
Deactivate a user.	Deactivate the user in Fusion applications to block the access immediately.
Password and sign on activities such as: <ul style="list-style-type: none"> ▪ Reset user passwords. ▪ Manage password policies. ▪ Manage account recovery settings. ▪ Manage sign-on policies. 	These tasks are completed by the system administrator in Fusion applications, and changes take effect immediately.

Test Your Setup

After you have completed all of the steps to implement Customer Experience for Utilities, you should log in to the CX for Utilities solution using each of the user roles you have defined. For each role, verify that you can complete basic end user tasks, and that your interface displays the expected options. To complete these tasks, customer and contact data must exist in your system.

Complete these tasks to test your CX for Utilities Agent Service setup:

- Log in to your home page.
- Access to do tasks and service requests from the Work Queue.
- Access the Fusion Contact page from the Customer List.
- Access Customer 360.
- Answer calls and set your call availability.
- View Knowledge Management articles.

Complete these tasks to test your CX for Utilities Sales setup:

- Log in to your home page.
- Access the Business List and search for a customer or prospect.

- Access the Fusion Account page from the Business List.
- Access Account 360.
- View Knowledge Management articles.

For instructions and additional information about these tasks, see the user documentation available in the [Oracle Utilities Customer Experience library](#).

Extending Your Solution Using Visual Builder

This chapter provides a brief overview of Visual Builder extensibility options, and discusses how they can be used to meet your business requirements within the Customer Experience for Utilities solutions.

Oracle Visual Builder Studio is an application development platform that helps you to develop an application extension and manage the entire development life cycle, from creation to publication.

Here are the extension points that are available via Visual Builder:

- **Dynamic Forms and Tables:** Enables extensions to add, remove, reorder, or change the rendering of fields.
- **Dynamic Containers:** Enables extensions to insert content and to add, remove, or reorder base application content.
- **Constants, Variables, and Types:** Extensions can override base application constants or read and write to variables made available by the base application. User-defined types can also be made available for use by extensions.
- **Events:** Enables extensions to trigger base application behaviors or to respond to events initiated by the base application.
- **App UIs (New Flows):** Extensions can define new app UIs in which they can create new UI flows that are either linked from or embedded within existing pages.

For additional information about configuring and extending Oracle applications, see:

- *Configuring and Extending Applications* in the Applications Common library on [Oracle Help Center](#)
- The [Extending Oracle Cloud Applications with Visual Builder Studio Guide](#)

Use Cases for Customer Experience for Utilities

Oracle has tested several use cases to extend specific objects in the Customer Experience for Utilities experience. As use cases are created and validated, they will be included here for your reference.

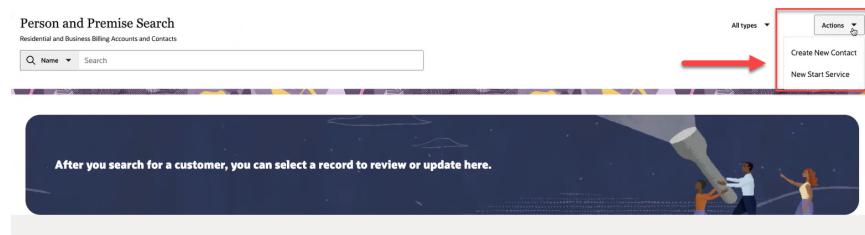
This documentation does not cover all steps you need to take within the Visual Builder application. Before attempting to implement these use cases, you must have a working knowledge of the Visual Builder application, and a thorough understanding of the extension process. These use cases are intended as a reference only. You can use your knowledge of Visual Builder, along with these examples to determine how you to implement similar use cases.

Available use cases include:

- [Adding an action to the Person and Premise Search](#) (Agent Service Only)
- [Adding an action to the Quick Action bar in Customer 360](#) (Agent Service Only)
- [Adding a user action to an existing insight](#)
- [Adding a new insight with a user action](#)

Adding an Action to the Person and Premise Search

You can use Visual Builder to add custom actions to the Action button on the Person and Premise Search screen, available in CX for Utilities Agent Service.



You can add these types of actions:

- Open URL action
- Navigate to page action

This example shows how to add either an open URL action or a navigate to page action to the button.

This example assumes that the reader understands how to use Visual Builder. For additional information, see:

- [Using the Person and Premise Search](#) in the *Using CX for Utilities Agent Service Guide*
- [The Visual Builder library](#) in the Oracle Help Center
- [Customizing Variables and Constants](#) in the *Extending Oracle Cloud Applications with Visual Builder Studio Guide*

Example: Adding an Action Menu Item to the Person and Premise Search

1. Log into CX for Utilities Agent Service as an administrator, and select the **Person and Premise Search** page tab.
2. Click the menu at the top right of the page and select **Edit Page in Visual Builder Studio**.
3. Select your workspace and click **Select**. Note that you can also create a new workspace if needed.
4. In the **App UIs** panel, expand Oracle Utilities Advanced Care UI application and then select **advanced-customer-care**.
5. Select the **Variables** sub-tab to display the constants and variables.
6. Click on the **USER_ACTION_CONTEXT_LIST** constant.
7. On the right side of the screen, enter the following sample code in the **Default Value** field, which will add an open url action:

```
[
  {
    "id": "CUSTOM_ACTION_NAME",
    "label": "Custom Menu Label",
    "active": true,
    "context": {
      "type": "Url",
      "url":
        "https://custommenuname.html?component=${component}&demo=${demo}&testId=${testId}",
      "params": [
```

```
{
  "name": "component",
  "value": "menu"
},
{
  "name": "demo",
  "value": "overview"
},
{
  "name": "testId",
  "scope": "ui"
}
]
}
}
]
```

You can also add a navigate to page action by replacing the above code sample with this code sample:

```
[
  {
    "id": "CUSTOM_ACTION_NAME",
    ...
  },
  {
    "id": "NAVIGATE_ACTION_NAME",
    "label": "Navigate to digital-sales page",
    "active": true,
    "context": {
      "type": "InAppNavigation",
      "appName": "digital-sales",
```



```
"appPage": "es/p/mycustomers/contacts",
"windowName": "_blank",
"params": [
  {
    "name": "puid",
    "alias": "partyNumber"
  }
]
}
```

8. If there are extensions params that you want to use in action meta-data's context params, complete these steps:
 1. Return to the main-contacts-start tab and select the **Variables** sub-tab.
 2. Click on the **USER_ACTION_PARAMS_HEADER_ACTIONS** constant.
 3. In the **Default Value** field, enter the value mapping for extension params:

```
[[
  [
    {
      "name": "testId",
      "value": $page.variables.testId
    }
  ]
]]
```

9. Click on the **JSON** sub-tab to display a view where you can easily edit this sample code, and update the code sample so it reflects your custom values.
10. Return to the **main-contacts-start** tab and select the **Variables** sub-tab.
11. Click on the **USER_ACTION_UI_HEADER_ACTIONS** constant.
12. In the **Default Value** field, enter the ID you used in your code sample above. For example, enter ["CUSTOM_ACTION_NAME"] in this field.
13. Preview your changes to verify that they look as you expected. This will launch a new tab with the **Person and Premise Search**. Validate that your new option is available,

and that it navigates to the appropriate URL.

14. When your changes are ready for use, complete the steps to publish your changes to your production environment.

Adding Actions to the Quick Action Bar in Customer 360

You can use Visual Builder to add custom actions to the Quick Action bar in Customer 360, which is available in CX for Utilities Agent Service.



You can add these types of actions:

- Open URL action
- Navigate to page action

This example shows how to add an open URL action to the button. For an example of a navigate to page action, see [Adding Action Menu Items to the Person and Premise Search](#).

This example assumes that the reader understands how to use Visual Builder. For additional information, see:

- [Using Customer 360](#) in the *Using CX for Utilities Agent Service Guide*
- [The Visual Builder library](#) in the Oracle Help Center
- [Customizing Variables and Constants](#) in the *Extending Oracle Cloud Applications with Visual Builder Studio Guide*

Example: Adding Actions to the Quick Action Bar in Customer 360

1. Log into CX for Utilities Agent Service as an administrator, and select the **Person and Premise Search** page tab.
2. Search for and select a customer to access **Customer 360**.

3. Click the menu at the top right of the page and select **Edit Page in Visual Builder Studio**.
4. Select your workspace and click **Select**. Note that you can also create a new workspace if needed.
5. In the **App UIs** panel, expand Oracle Utilities Advanced Care UI application and then select **advanced-customer-care**.
6. Select the **Variables** sub-tab to display the constants and variables.
7. Click on the **USER_ACTION_CONTEXT_LIST** constant.
8. On the right side of the screen, enter the following sample code in the **Default Value** field.

Be sure that any `params` that you include in your code sample are also included in your URL.

```
[
  {
    "id": "CUSTOM_ACTION_NAME",
    "label": "Custom Menu Label",
    "active": true,
    "context": {
      "type": "Url",
      "url":
      "https://custommenuname.html?component=${component}&demo=${demo}&testId=${testId}&billingAccountID=${billingAccountID}&contactPartyNumber=${contactPartyNumber}": [
        {
          "name": "component",
          "value": "menu"
        },
        {
          "name": "demo",
          "value": "overview"
        }
      ]
    }
  }
]
```

```

    "name": "testId",
    "scope": "ui"
  }
  {
    "name": "billingAccountID",
  }
  {
    "name": "contactPartyNumber",
  }
]
}
}
]

```

9. If there are extensions params that you want to use in action meta-data's context params, complete these steps:
 1. Return to the main-dashboard-start tab and select the **Variables** sub-tab.
 2. Click on the **USER_ACTION_PARAMS_QUICK_ACTION_BAR** constant.
 3. In the **Default Value** field, enter the value mapping for extension params:

```

[[
  [
    {
      "name": "testId",
      "value": $page.variables.testId
    }
  ]
]]

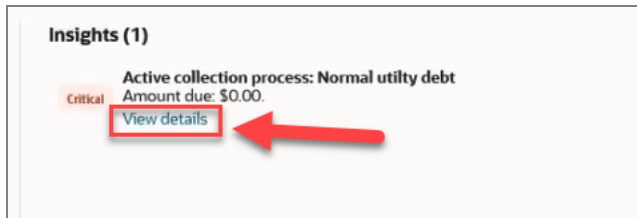
```

10. Click on the **JSON** sub-tab to display a view where you can easily edit this sample code, and update the code sample so it reflects your custom values.
11. Return to the **main-dashboard-start** tab and select the **Variables** sub-tab.
12. Click on the **USER_ACTION_UI_QUICK_ACTION_BAR** constant.

13. In the **Default Value** field, enter the ID you used in step 8. For example, enter ["CUSTOM_ACTION_NAME"] in this field.
14. Preview your changes to verify that they look as you expected. This will launch a new tab with the **Customer 360** screen. Validate that your new option is available in the Quick Action bar, and that it navigates to the appropriate URL.
15. When your changes are ready for use, complete the steps to publish your changes to your production environment.

Adding User Actions to Existing Insights

You can use Visual Builder to change the action on existing insights that appear in CX for Utilities. For example, in CX for Utilities Agent Service, if you click on the **View details** link on a collections insight, the system brings you to your customer information system. You can use these steps to change the navigation of that link to go to a different location. For example, you can have the link navigate you to the **Billing** tab instead.



You can add these types of actions:

- Open URL action
- Navigate to page action

Before you complete this task, you must first complete these tasks using the information available in the [Customer Experience for Utilities Configuration Tasks](#) topic:

1. Create the user action you want to use in your insight.
2. Create a new user action insight type to associate your user action with the specific type of insight for which you want the action to be available.
3. Delete the existing insight type user action that is associated with the insight type to which you want to add your custom action.

This example assumes that the reader understands how to use Visual Builder. For additional information, see:

- [The Visual Builder library](#) in the Oracle Help Center
- [Customizing Variables and Constants](#) in the *Extending Oracle Cloud Applications with Visual Builder Studio Guide*

For additional information about insights, see:

- [Using the Overview Tab](#) in the *Using CX for Utilities Agent Service Guide*
- [Managing Insights](#) in the *Using CX for Utilities Sales Guide*

Example: Adding a Custom User Action to Insights

1. Log into CX for Utilities Agent Service or CX for Utilities Sales as an administrator.
2. Click the menu at the top right of the page and select **Edit Page in Visual Builder Studio**.
3. Select your workspace and click **Select**. Note that you can also create a new workspace if needed.
4. In the **App UIs** panel, expand Oracle Utilities Advanced Care UI application and then select **advanced-customer-care**.
5. Select the **Variables** sub-tab to display the constants and variables.
6. Click on the **USER_ACTION_CONTEXT_LIST** constant.
7. On the right side of the screen, enter the following sample code in the **Default Value** field.

Be sure that any `params` that you include in your code sample are also included in your URL.

```
[
  {
    "id": "CUSTOM_ACTION_NAME",
    "label": "Custom Menu Label",
    "active": true,
    "context": {
      "type": "Url",
      "url":
```

```

"https://custommenuname.html?component=${component}&demo=${d
emo}&tes

tId=${testId}&billingAccountID=${billingAccountID}&contactPa
rtyNumbe

r=${contactPartyNumber}": [

{

"name": "component",

"value": "menu"

},

{

"name": "demo",

"value": "overview"

},

{

"name": "extTestId",

"scope": "ext"

}

{

"name": "billingAccountID"

}

{

"name": "contactPartyNumber"

}

]

}

]

```

8. If there are extensions params that you want to use in action meta-data's context params, complete these steps:
 1. Return to the main-keyaccounts-dashboard-start tab and select the **Variables** sub-tab.
 2. Click on the **USER_ACTION_PARAMS_INSIGHTS** constant.

3. In the **Default Value** field, enter the value mapping for extension params:

```
[[
[
{
"name": "extTestId",
"value": $page.variables.extTestId
}
]
]]
```

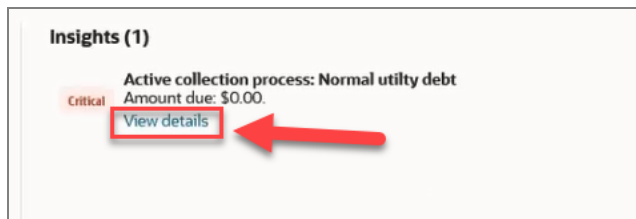
9. Click on the **JSON** sub-tab to display a view where you can easily edit this sample code, and update the code sample so it reflects your custom values.

Adding New Insights With User Actions

You can use Visual Builder to make a new custom insight appear in your Customer Experience for Utilities solution, and you can add your own user action to that insight.

For example, you might want to create an insight that appears when a customer's usage exceeds a certain value. You can also create a custom user action for that insight so that if you click on the **View details** link on your new insight, the system brings you to the Usage tab.

This image shows an example of an insight, and the **View details** link, which is used to launch the user action.



You can add these types of actions:

- Open URL action
- Navigate to page action

Before you complete this task, you must first complete these tasks using the information available in the [Customer Experience for Utilities Configuration Tasks](#) topic:

1. Create a new insight type.
2. Create a new insight group insight type, and associate your new insight with this new insight group.
3. Create the user action you want to use in your insight.
4. Create a new user action insight type to associate your user action with the specific type of insight for which you want the action to be available.
5. Delete the existing insight type user action that is associated with the insight type to which you want to add your custom action.

This example assumes that the reader understands how to use Visual Builder. For additional information, see:

- [The Visual Builder library](#) in the Oracle Help Center
- [Customizing Variables and Constants](#) in the *Extending Oracle Cloud Applications with Visual Builder Studio Guide*

For additional information about insights, see:

- [Using the Overview Tab](#) in the *Using CX for Utilities Agent Service Guide*
- [Managing Insights](#) in the *Using CX for Utilities Agent Service Guide*

Example: Adding a New Insight with a Custom User Action

1. Log into CX for Utilities Agent Service or CX for Utilities Sales as an administrator.
2. Click the menu at the top right of the page and select **Edit Page in Visual Builder Studio**.
3. Select your workspace and click **Select**. Note that you can also create a new workspace if needed.
4. In the **App UIs** panel, expand Oracle Utilities Advanced Care UI application and then select **advanced-customer-care**.
5. Select the **Variables** sub-tab to display the constants and variables.
6. Click on the **USER_ACTION_CONTEXT_LIST** constant.
7. On the right side of the screen, enter the following sample code in the **Default Value** field.

Be sure that any `params` that you include in your code sample are also included in your URL. Also be sure that the value of "id" matches the id of the user action you created.

```
[
  {
    "id": "CUSTOM_ACTION_NAME",
    "label": "Custom Menu Label",
    "active": true,
    "context": {
      "type": "Url",
      "url":
        "https://custommenuname.html?component=${component}&demo=${demo}&testId=${testId}&billingAccountID=${billingAccountID}&contactPartyNumber=${contactPartyNumber}": [
        {
          "name": "component",
          "value": "menu"
        },
        {
          "name": "demo",
          "value": "overview"
        },
        {
          "name": "extTestId",
          "scope": "ext"
        }
      ]
    }
  }
]
```

```
{
  "name": "contactPartyNumber"
}
]
}
}
]
```

8. If there are extensions params that you want to use in action meta-data's context params, complete these steps:
 1. Return to the main-keyaccounts-dashboard-start tab and select the **Variables** sub-tab.
 2. Click on the **USER_ACTION_PARAMS_INSIGHTS** constant.
 3. In the **Default Value** field, enter the value mapping for extension params:

```
[[
  [
    {
      "name": "extTestId",
      "value": $page.variables.extTestId
    }
  ]
]]
```

9. Click on the **JSON** sub-tab to display a view where you can easily edit this sample code, and update the code sample so it reflects your custom values.

Appendix A: Data Mapping

Oracle Fusion REST APIs for Contacts and Accounts are used to integrate with the Person Information Synchronization REST API in your Oracle Utilities customer information system.

The Person ID from your Oracle Utilities customer information system is stored as a Source System Reference Value with Source System of **CIS** on the Fusion Party record. The Fusion Party Number is stored as a CIS Person characteristic value with characteristic type of **C1-EXCID** for the External Contact ID.

To view data element mappings for the names, contact points, and characteristic values that are synchronized between your Oracle Utilities customer information system and the Oracle Customer Experience for Utilities experiences, see the [Customer Experience for Utilities Data Mapping spreadsheet](#).

Appendix B: REST APIs

This appendix provides information about the REST APIs that are used by Oracle Customer Experience for Utilities solutions.

REST APIs	Documentation Link
<p>Metering and Customer Information REST Endpoints</p> <p>These REST endpoints belong to Oracle Utilities customer information systems, and include:</p> <ul style="list-style-type: none">▪ Admin<ul style="list-style-type: none">▪ Extendable Lookup (F1-ExtendableLookup)▪ Financial Transactions<ul style="list-style-type: none">▪ Account Data (C1-AccountData)▪ Adjustment (C1-Adjustment)▪ Bill (C1-Bill)▪ Bill Segment (C1-BillSegment)▪ Pay Plan (C1-PayPlan)▪ Payment (C1-Payment)▪ Service Agreement Data (C1-SAData)▪ System Services<ul style="list-style-type: none">▪ Expand Tree (F1-ExpandTree)▪ Insights (F1-Insights)▪ Service<ul style="list-style-type: none">▪ Work Queue (C1-WorkQueue)▪ V-Model<ul style="list-style-type: none">▪ Billing Context (C1-BillingContext)▪ Business Search (C1-BusinessSearch)	<p>See Oracle Utilities Customer Cloud Service APIs.</p>

REST APIs	Documentation Link
<ul style="list-style-type: none"> ▪ Business Person Queries (C1-PersonQueries) ▪ Communication Preferences (C1-CommunicationsPreferences) ▪ Customer Activity History (C1-CustomerActivityHistory) ▪ Person Information Synchronization (C1-CXperson) ▪ Person (C1-Person) ▪ Person Search (C1-PersonSearch) ▪ Premise (C1-Premise) ▪ Service Agreement (C1-ServiceAgreement) ▪ Service Points Common (C1-ServicePointCommon) ▪ Usage <ul style="list-style-type: none"> ▪ Billed Usage for SA (C1-BilledUsageData) <p>These Inbound Web Service APIs all have a Web Service Class of REST and Web Service Category of Customer Experience.</p>	
<p>Sales and Service REST Endpoint</p> <p>The following REST endpoints belong to the Oracle Fusion Sales and Service systems:</p> <ul style="list-style-type: none"> ▪ Contacts ▪ Contacts / Contact Points ▪ Contacts / Source System References ▪ Accounts ▪ Accounts / Contact Points ▪ Accounts / Source System References 	<p>See the <i>REST API for CX Sales and Fusion Service Guide</i>, available in the Fusion Service library in the Oracle Help Center.</p>

REST APIs	Documentation Link
<ul style="list-style-type: none"> ▪ Service Requests ▪ Service Request References ▪ Hub Source System References ▪ Industries Class ▪ Industries Class Metadata ▪ Industries Class Related Entities ▪ Industries Class Relationships ▪ Interview References ▪ Wrap Ups ▪ Wrap Ups References ▪ Conversation Messages ▪ Conversation Message References ▪ Opportunities ▪ Sales Leads ▪ Leads References ▪ Standard Lookups List of Values ▪ Search Resources ▪ Resources 	
<p>Utility Configurations REST Service</p> <p>The <CXIF-host>/admin/utilityConfigurations REST service is used to configure utility information in the CX for Industries Framework system.</p>	<p>To access information for this REST API, log in to My Oracle Support and view Document 2720527.1.</p>
<p>Customer Experience for Utilities REST Service</p>	<p>To access</p>

REST APIs	Documentation Link
<p>The <CXIF-host>api/utilitiesAdmin/v1/<ReferenceTypeName> REST service to manage reference types such as units of measure, service types, standard usage identifiers, and other utility related information.</p>	<p>information for this REST API, see Customer Experience for Utilities REST APIs. For additional information on using this REST API, see Customer Experience for Utilities Configuration Tasks.</p>

Appendix C: Upgrade Considerations

This appendix provides information about the steps you need to complete when you upgrade from one release of Customer Experience for Utilities to a newer release.

Task	Documentation Link
<p>Register Applications</p> <p>Register your upgraded Oracle Utilities environment and Fusion applications to ensure that all new components and applications are functional in your upgraded release.</p>	<p>See Register Your Oracle Utilities Environment and Fusion Applications</p>
<p>Review Upgrade Policy</p> <p>Review the Upgrade Policy to verify that systems are upgraded to the appropriate release and maintenance levels to support all features and functionality.</p>	<p>See My Oracle Support Document 2876281.1.</p>

Task	Documentation Link
<p>Complete Content Merge of Utility Configurations</p> <p>Before you upgrade your solution to a new release, complete the following steps:</p> <ol style="list-style-type: none"> 1. Before you provision the instance, take a backup of the configurations you entered in the UtilityConfigurations REST API by invoking: GET: <FA API GW>/admin/utilityConfigurations 2. After the instance is upgraded, invoke the UtilityConfigurations REST API using: GET: <FA API GW >/admin/utilityConfigurations 3. Compare the pre-upgrade configuration content to the post-upgrade content, merge any utility configurations from the pre-upgrade content to the post-upgrade content, and publish the merged content by invoking: PUT: <FA API GW>/admin/utilityConfigurations 	<p>See Integration Configuration Tasks</p>

