Oracle Fusion Service

Implementing Digital Customer Service

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Get Help

There are a number of ways to learn more about your product and interact with Oracle and other users.

Get Help in the Applications

Use help icons to access help in the application. If you don't see any help icons on your page, click your user image or name in the global header and select Show Help Icons.

Get Support

You can get support at My Oracle Support. For accessible support, visit Oracle Accessibility Learning and Support.

Get Training

Increase your knowledge of Oracle Cloud by taking courses at Oracle University.

Join Our Community

Use Cloud Customer Connect to get information from industry experts at Oracle and in the partner community. You can join forums to connect with other customers, post questions, suggest ideas for product enhancements, and watch events.

Learn About Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program. Videos included in this guide are provided as a media alternative for text-based topics also available in this guide.

Share Your Feedback

We welcome your feedback about Oracle Applications user assistance. If you need clarification, find an error, or just want to tell us what you found helpful, we'd like to hear from you.

You can email your feedback to oracle_fusion_applications_help_ww_grp@oracle.com.

Thanks for helping us improve our user assistance!
1 About This Guide

Audience and Scope

This guide outlines the implementation and configuration steps required to develop, configure, manage, and administer Digital Customer Service in Oracle Fusion Service. To set up and work with the additional features of Oracle Fusion Service, see Oracle Fusion Sales and Fusion Service documentation on

This implementation guide is designed to be used as a starting point that shows how Digital Customer Service in Oracle Fusion Service can be developed and implemented using Oracle Visual Builder. An implementor can use the documented development and configuration information in this guide to successfully deploy Digital Customer Service.

Each implementation of Oracle Fusion Service is unique, and leads to the development of customer-specific applications that support their unique business requirements.

This guide describes how to deploy and configure Oracle Digital Customer Service in conjunction with Oracle Visual Builder Visual Applications. If you’re using Oracle Visual Builder Classic Applications for your Digital Customer Service application (even if your Oracle version is 18B or later), refer to Implementing Digital Customer Service in Engagement Cloud Release 13 (Update 18B). The Implementing Digital Customer Service in Engagement Cloud Release 13 (Update 18B) is the documentation that’s pertinent to the Classic Applications development model.

Note: This document describes features available to users under Oracle Fusion Sales, Oracle Fusion Service, and Oracle Engagement Cloud licensing agreements.

Related Guides

To understand more about the information covered in this guide, refer to the list of guides in the following table.

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2 About Digital Customer Service

Overview of Digital Customer Service

Oracle Digital Customer Service is an offering within Oracle Fusion Service that lets you provide your customer account users self-service access to their service requests and relevant knowledge articles through a web interface.

You can configure the Digital Customer Service application user interface to reflect a company brand. Using Oracle Visual Builder, you define root pages and styles, and include various UI components, depending on your business needs.

**Note:** To use Chat inlays in Oracle Fusion Service, you must configure some profile options. For more information, see "Configure Chat Inlay" in *Oracle CX Service Implementing Digital Customer Service*.

Once configured and deployed, your customers can self-serve through the application and search for knowledge articles to solve their problems. Additionally, your customers can register as Digital Customer Service self-service users so they can interact with your customer service representatives through service requests, work orders, by chatting, or by cobrowsing.

Here are general overviews of the design time and of the run time architecture. The Digital Customer Service application relies on the following APIs:

- `crmRestApi`. Provides the connection to Fusion Service.
- `fscmRestApi`. Provides the connection to the Oracle Application Cloud topology manager and functional setup.
- `idcsRestApi`. Provides the connection to Oracle Identity Cloud Service.
- `knowledge-service`. Provides the connection to knowledge content and search.

At design time, when developing a Digital Customer Service application, the developer logs into Oracle Identity Cloud Service to access the Visual Builder Designer and selects available application templates and components from the Component Exchange. The source code for the application can be maintained in a Git repository provided through the Visual Builder Studio (formerly known as Developer Cloud Service). The application is built to interact with various REST services from the associated Fusion Service instance. Here's a look at the design time architecture:
At run time, a self service user interacts with the Digital Customer Service application that's served up from the Visual Builder runtime environment, and can make requests for a self-service account that's created for the user on Oracle Identity Cloud Service. The user can then log in to Oracle Identity Cloud Service to get authenticated access to the application and use the full functionality of the application enabled by the various REST services from Fusion Service. The application may also expose Chat functionality and the ability to Cobrowse the customer's website with a customer service representative. Here's a look at the run time architecture:
Digital Customer Service Terminology

Here's an overview of some Digital Customer Service terminology.

- **Oracle Visual Builder**: A cloud-based visual development tool that gives you easy access to data from any REST-based service. You can create and test responsive web applications and native mobile applications without installing any additional software. The visual designer lets you quickly lay out pages in your applications by dragging and dropping UI components, configuring their attributes and defining their behavior.
• **Root Page:** A page that contains the shell of your application including the header and footer and navigation components. An application can have multiple root pages.

• **Service APIs:** The REST APIs that your Digital Customer Service application interacts with.

• **Digital Customer Service Application:** The application that you build using Oracle Visual Builder that acts as the web interface for your users. The Digital Customer Service application is built using the Digital Customer Service Reference Implementation template.

• **Digital Customer Service Users:** Your customer account users who have successfully registered to use the Digital Customer Service application as self-service users. These users can have a variety of roles.

• **Digital Customer Service Templates:** The available templates you can select while creating your Digital Customer Service application. These application templates include component extensions, themes, and predefined pages and actions.

• **Digital Customer Service Reference Implementation:** This template includes several pages and business components that enable a basic support experience including: knowledge search, service request creation and management, display of work orders, chat, and self-service user management capabilities for the account administrator. The account administrator manages all of the users and roles.

For more information on roles, refer to *Digital Customer Service Roles*.

**Related Topics**

- Developing Applications with Oracle Visual Builder

### Digital Customer Service Roles

You can grant different roles to Digital Customer Service users in Fusion Service and Oracle Identity Cloud Service. Here are some details about the privileges granted with each role in Fusion Service.

#### User

The User application role is mapped to the Customer Self-Service User job role in Identity Management. The role grants the privileges to view and edit service requests created by the user, and to create service requests. The role also grants the privileges to view and update work orders on which the user is the contact. Removing this role causes the removal of all privileges. The only way to restore the privileges is to submit a new registration request.

#### Account Manager

The Account Manager role grants the privileges to view and edit all service requests and view and edit all work orders for a specific customer account. Additionally, users with the Account Manager role can create service requests. The user can perform these tasks only on accounts that they're the Account Manager for.

#### Account Administrator

The Account Administrator application role is mapped to the Customer Self-Service Account Administrator job role in Identity Management. The role grants the privileges to view and approve registration requests in the customer account for which they're the Account Administrator. Additionally, the role permits the user to assign and remove the Account Administrator and Account Manager roles, and remove user roles in user accounts that they're the Account Administrator for.
Overview of Self-Service Optimization

Self-Service Optimization is the recommended approach for the following implementations:

- Embedded, agent-based applications, not self-service applications.
- DCS users who are also Employees (Internal Users or Existing Users).

In the past, Fusion Service used its own identity provider for authentication and authorization. As a result, Digital Customer Service self-service users who had to access data in Fusion Service were required to have an account in both Oracle Identity Cloud Service and in the Fusion Service identity store. The self-service registration process had to create user accounts in the Fusion Service identity store, and then synchronize them to Identity Cloud Service. You also couldn't configure the Fusion Service login page to match your corporate brand requirements.

Along with these limitations, the Fusion Service identity provider is limited in its ability to scale as it was designed more for Fusion applications rather than B2C applications. Many of the implementations oriented more to B2C require more scalability.

This is why the Proxy User Data Service makes sense. Using this implementation, users can access data in Fusion Service using accounts that reside solely in Identity Cloud Service. The way it works is the individual account is created in Identity Cloud Service, and is then mapped to proxy users which you predefine in Fusion Service. The user still self registers in exactly the same way from the Fusion Service and B2C Service application. Approval in the Fusion Service application is still required, but the user record is created in Oracle Identity Cloud Service and a simple contact record is created in Fusion Service. Once the user has been approved, the contact record is created in Identity Cloud Service and a welcome email is sent out from Identity Cloud Service to the user at which point the user can create their own password.

When the user logs in to the application the only login option is by way of Identity Cloud Service. The log in information can be configured by the user. All management of users is done using the Identity Cloud Service administrations console. There's no need for user synchronization for self service users as they're already present in Identity Cloud Service.

**CAUTION:** Authenticated Intelligent Advisor interviews aren't supported when Digital Customer Service customers are using Self-Service Optimization. Specifically, interviews that require the user to be a known contact, or require data to be loaded or saved to Fusion Sales and Fusion Service from Intelligent Advisor are incompatible with Self-Service Optimization. Anonymous advice interviews are supported.

Benefits of Self-Service Optimization

Self-Service Optimization gives you the following benefits:

- A log in page that you can configure to match your corporate identity.
• Fusion Service is still the identity provider for Fusion Service users.
• A local identity provider created in IDCS for ODCS self-service users.
• Self-service users log in using ODCS through IDCS.
• Self-service users are created in IDCS rather than in Fusion Service.
• There's no need for user sync from Fusion Service to IDCS, thereby allowing users to log in immediately after self-service registration approval.
• User accounts no longer need to be created in Fusion Service.
• There are only a small number of proxy users representing all self-service users in Fusion Service.
• Self-service users are still represented as customer contacts in Fusion Service.

The Proxy User

You define proxy users in Fusion Service. In general, there should be one proxy user per self-service persona in Fusion Service. For example, the Digital Customer Service application can be used by either Customer Self-Service users or Customer Self-Service Account Administrators.

Since there are two personas, two proxy user accounts must be created and configured. You must also create an anonymous proxy user. The two proxy users that correspond to Digital Customer Service application roles are:

• Customer Self-Service Users.
• Customer Self-Service Account Administrators

You give the proxy user all the functional privileges or roles required by the persona. If you create a proxy user account for the Customer Self-Service Users persona give that account the Customer Self-Service User role. When you create a proxy user account for the Customer Self-Service Account Administrators persona give the account the Customer Self-Service User and Customer Self-Service Account Administrator roles.

A proxy user account is used by multiple actual users to perform REST operations in Fusion Service. An actual user accessing data gets the functional privileges from the proxy user but the data privileges are based on the GUID of the actual user in Identity Cloud Service. This ensures that a given user will be able to see relevant data.

Functional privileges are those that relate to actions a user can perform in user interface pages, whereas data privileges are those which concern which data a user can access.

Self-Service Optimization Architecture

Self-Service Optimization gives you greater flexibility by using proxy users in Fusion Service.

Whereas both a contact and a user were formerly created in Fusion Service, now only a contact record is created in Fusion Service, and users, created in IDCS, map to proxy users that are few in number and created during initial setup.

The proxy users define the functional privileges that are accessible to the users. A distinct proxy user represents each persona using the application.
Self-Service Optimization Security

When the user is created in Identity Cloud Service a GUID attribute is created. This attribute maps to a GUID field in the Service Contact record.

Here's how authentication works:

- Identity Cloud Service is the identity provider for self-service users. Identity Cloud Service uses a local identity provider to authenticate the self-service users.
- Self-service user accounts are only created in Identity Cloud Service. You just need to set the SVC_CSS_USE_FA_AS_IDP profile option to `False` to control this behavior. For more information, see the link to the Set Profile Options topic in Related Topics.
- You have one proxy user for each application persona. The Customer Self Service User and the Customer Service Administrator are two personas, and two separate roles.
- Each self-service user is associated with a customer contact record in Fusion Service. The GUID field in the Identity Cloud Service user record maps to the GUID field in the Fusion Service contact record.
- Data in Fusion Service is accessed using a proxy user account with appropriate functional privileges. Proxy user data service manages access to data in Fusion Service with the appropriate proxy user.

Functional Privileges of the Proxy User

Here's an overview of the functional privileges of the proxy user.

- Has all the functional privileges given to the proxy user role.
- Has the FND_IDP_PROXY_USER_PRIV privilege allowing it to act as a proxy user.

Data Privileges of the Proxy User

Data privileges given to the proxy user vary dynamically based on the actual user session. The data privilege of the proxy user is determined by using the proxy user authentication mechanism:

- The GUID of the authenticated user is taken from the HTTP header and stored into the session in Fusion Service.
- The GUID is used to look up the PARTY_ID of the appropriate contact.
- Data security policy predicates are based on the PARTY_ID of the contact.

Related Topics

- Set Profile Options for Self-Service Optimization

Technical Compatibility

This topic describes the software versions that are compatible with this release of the Oracle Digital Customer Service offering.
Oracle Digital Customer Service is a cloud service. Oracle Digital Customer Service is delivered as a reference implementation application template on Oracle Visual Builder. When you create a new application for Oracle Digital Customer Service, use the template that matches the version of your Oracle Fusion Service. So, if you're using the latest release, use the template that matches that release number, and if you’re using an older release, use the template that matches that release number.

- The Oracle Identity Cloud Service license provided with Digital Customer Service is Oracle Identity Cloud Service Foundation. For more details, see the Related Topics section.
- Oracle JavaScript Extension Toolkit (Oracle JET). Oracle Visual Builder includes Oracle JET bundled in with it and updates the version to uptake new features periodically. Oracle Digital Customer Service is compatible with the Oracle JET versions bundled with the corresponding versions of Visual Builder.
- Browsers supported by Oracle Visual Builder are listed in the Supported Browser topic in the Oracle Cloud Known Issues for Oracle Visual Builder. See the Related Topics that follow.
- Oracle Digital Customer Service isn't Break-Glass compliant as it depends on Oracle Identity Cloud Service.
- Digital Customer Service isn't supported with Symantec Blue Coat Cloud Data Protection Gateway.

How to Determine the Version of Oracle Fusion Service

To determine the version of Fusion Service that you have installed:

1. Sign in to Fusion Service.
2. Select the menu next to the name of the signed-in user.
   - The Settings and Actions menu appears.
3. Click About This Application.
   - The About This Application dialog box is displayed. The version number appears after the word Revision.

Related Topics

- Determine Component Versions
- About Oracle Identity Cloud Service Pricing Models
- REST API for CX Sales and Fusion Service
- Known Issues for Oracle Visual Builder
3 Mandatory Setup Tasks

Overview of Mandatory Setup Tasks

Here are the mandatory tasks that are covered sequentially in this chapter. You can use these steps, like a checklist, to get your Digital Customer Service application set up:

**Note:** If you are using Self-Service Optimization, you must choose Oracle Identity Cloud Service as your primary identity provider. Self-Service Optimization employs proxy users in Fusion Service which streamlines setup and provides you with greater flexibility. In this architecture, only a contact record is created in Fusion Service, and users, created in IDCS, map to proxy users that are fewer in number and created during initial setup. For more information, refer to the Overview of Self-Service Optimization topic in this chapter.

1. Activate Digital Customer Service
2. Set Up Oracle Identity Cloud Service
   a. Locate the Oracle Identity Cloud Service URLs
   b. Set Up Oracle Identity Cloud Service for Authentication
   c. Create the Application Client
   d. Create Groups in Oracle Identity Cloud Service
   e. Configure the Resend Welcome and Password Recovery Email Templates
3. Set Up Fusion Service
   a. Enable Digital Customer Service
   b. Configure a User Category for Proxy Users
   c. Create the Proxy Users
   d. Set Profile Options for Self-Service Optimization
   e. Set the Oracle Identity Cloud Service Endpoint
   f. Configure the Client ID and Client Secret
   g. Manage the Proxy User Configuration Data
   h. Set Proxy User Credentials
4. Set Up Administrators and Developers
   a. Overview of Digital Customer Service Developer Roles
   b. Create an Internal Customer Account
   c. Create Digital Customer Service Developers
   d. Add Visual Builder Roles
5. Set Up Oracle Visual Builder
   a. Retrieve the Oracle Visual Builder Designer URL
   b. Verify Your Oracle Visual Builder Settings
Considerations for Setting Up Cloud Accounts

Most Oracle Cloud services are designed to run in an Oracle Cloud account paired with Oracle Identity Cloud Service (IDCS). However there’s also what’s known as a Traditional Cloud Account which uses traditional identity and access management software.

Traditional Cloud Accounts have a 1:1 mapping between the Identity instance and the Traditional Cloud Account.

An Oracle Cloud Account uses IDCS to manage users and control access to cloud services. IDCS allows a one-to-many mapping, which means many instances can be associated with a single cloud account.

To learn more about cloud accounts, refer to the About Oracle Cloud Accounts link in the Related Topics section.

**Note:** It’s strongly recommended that you choose the same Cloud account as the one that your implementation of Fusion Service resides in.

When setting up your cloud account note that the name you choose will also be used to create the URLs to access all of your cloud services and once you create the account name you can’t change it, so take extra care in creating your cloud account name.

As an example, say you call your Oracle account "abccorp." The URL for your cloud account may look something like this:


Additionally the cloud account name must have the following:

- Must be unique.
- Must start with a lowercase letter.
- Can have up to 25 lowercase letters and numbers.

**Related Topics**
- About Oracle Cloud Accounts

Activate Digital Customer Service as a New Customer

To perform this step you must have the Service Administrator role. The Service Administrator receives the "Action Required" welcome email from Oracle. As the designated activator of the Oracle Digital Customer Service service, the activator is only required to activate Digital Customer Service.

After that, the activator can select a different service administrator to manage the day-to-day administration of the service during the activation process if necessary.

1. Open the email prefaced "Action Required" that you received from Oracle Cloud.
2. Review the information about your service in the email, and then click the provided link to activate your service.
3. In the Activate My Service form, do the following:
a. Enter a cloud account name.
   This name is used to identify your cloud account. We recommend that you use the same Oracle Cloud account that Fusion Service resides in.

b. Enter Administrator details, and if you’re not going to be the Service Administrator going forward, assign the new Service Administrator at this time.

4. Click Create Account to proceed to submit your request.
5. Click Close.

The account is now active and ready to use.

Activate Digital Customer Service as an Existing User

To perform this step you must have the Service Administrator role. The Service Administrator receives the "Action Required" welcome email from Oracle. As the designated activator of the Oracle Digital Customer Service service, the activator is only required to kick off the provisioning process.

1. Open the email prefaced "Action Required" that you received from Oracle Cloud.
2. Review the information about your service in the email, and then click the provided link to activate your service.
3. Enter your cloud account name, and click Next.
4. Click Continue on the Cloud Tenant page.
5. On the log in page, enter your cloud account credentials, and click Sign In.

The My Services page appears.

6. Click the Manage Account tile.
7. On the Account page, click the Activate tab.
8. Choose the service you want to activate, and click the Cloud Services Account Setup button.
9. Click the Cloud Account Name drop down list and select the cloud account you want to activate the service into and then click the Assign Account button.

You receive a Review Summary message when the order is successfully activated.

10. Click Close to complete the activation phase.

The account is now ready to use.

Set Up Oracle Identity Cloud Service

Required Role for Identity Cloud Service Setup

To perform setup in Identity Cloud Service, you must have the Identity Domain Administrator role.
Locate the Oracle Identity Cloud Service URLs

After activating your new Oracle Cloud account, here’s how you locate your Identity Cloud Service URLs.

1. Log in to your Oracle Cloud account by navigating your browser to: https://www.oracle.com. This account is also known as your Administrator Account.
2. Click View Accounts, then Sign in to Cloud.
3. Enter the Cloud Account name if known, otherwise click Forgot Your Cloud Account Name? Get Help.
   - Note: The Cloud Account often corresponds to the name of the production pod
4. Now, click the Identity Cloud tile on the My Services dashboard.
   In your Cloud Account there’s an Identity instance along with additional instances corresponding to and named after each Fusion Service instance. There’s a 1:1 mapping between IDCS instance and each Fusion Service instance.
5. Click the tile or link for the Identity Service Instance that corresponds to the pod name and log in using your Oracle Identity Cloud Service Administrator credentials.

Set Up Oracle Identity Cloud Service for Authentication

The login is set to use Fusion Service by default. This task will show you how to configure Identity Cloud Service for authenticating your VBCS application.

1. Login to Identity Cloud Service as the Administrator user.
2. Click the Navigation drawer and then expand the Security list.
3. Click IDP Policies.
4. Click Add.
5. In the Policy Name field, enter a policy name, such as VBCS Login Policy, and click the Next icon.
6. On the Add Identity Provider Roles page, click the Add Rules button.
7. In the Rule Name field, enter a rule name, then click the Assign Identity Provider field and choose an identity provider.
   - If you use Fusion Service as your identity provider you will use Single Sign On (SSO) authentication. If you choose user-password you will use Oracle Identity Cloud Service.
8. Click Save.
9. Click the Next icon.
10. On the Apps page, click the Assign Apps button to add the VBCS application.
11. Select the application starting with VBINST_ and click OK.
12. Click Finish to complete and save the settings.

Create the Application Client

Fusion Service must be configured with the credentials of an application client it will use to interact with IDCS. Use the IDCS Administrator Console to obtain appropriate application client credentials.

You will either create an application client or get the Client ID and Client Secret of an existing client application.
Assuming you need to create an application to use, follow these steps:

1. Login to IDCS as the Administrator user.
2. Click the Navigation drawer and then expand the Applications list.
3. Click the Add icon.
4. Choose Confidential Application.
5. In the Name field enter Proxy User Data Service App and click Next.
6. Select Configure this application as a client now option.
7. In the Authorization area, select the Client Credentials option for Allowed Grant Types.
8. In the Token Issuance Policy area, for Grant the client access to Identity Cloud Service Administrator APIs, click Add.
9. In the Add App Role dialog box, select User Administrator, and click Add.
10. Click Next, and then on the Resources page, click Next again.
11. In the Web Tier Policy page, click Next again.
13. From the Application Added dialog box, record the Client ID and Client Secret and then click Close.
14. Click Activate, and then in the confirmation dialog box, click OK to activate the application.

Configure the Resend Welcome and Password Recovery Email Templates

As part of user registrations, a user is created in IDCS and initially the user record is inactive.

After all the data related to the user is stored in the appropriate locations, the user is activated again and an API call is made to resend the Welcome email. To prevent a user from receiving multiple emails and to ensure the user sees the appropriate welcome message you have two configuration tasks depending on the scenario.

- You use the Resend Welcome template when a new user has signed up.
- You use the Password Recovery template when the user has been migrated.

Here are both tasks:

Configure the Resend Welcome Template

Here’s how you configure the Resend Welcome template:

1. Log in to Identity Cloud Service as a user with Administrative access
2. From the Navigation drawer, select Settings, and then Notifications.
3. Click the Configure tab.
4. Deselect the Welcome and User Activation check boxes.
5. Make sure the Resend Welcome check box is selected.
6. Click Save, then when the confirmation pop up window appears click OK.
7. Click the Email Templates tab.
8. Expand the Resend Welcome template, and replace the existing Subject line and message text with your own information and click Save.

Configure the Password Recovery Template

And here’s how you configure the Password Recovery template:

1. Log in to Identity Cloud Service as a user with Administrative access
2. From the Navigation drawer, select **Settings**, and then **Notifications**.
3. Click the **Configure** tab.
4. Deselect the **Welcome** and **User Activation** check boxes.
5. Make sure the **Password Recovery Request** check box is selected.
6. Click **Save**, then when the confirmation pop up window appears click **OK**.
7. Click the **Email Templates** tab.
8. Expand the **Password Recovery Request** template, and replace the existing Subject line and message text with your own information and click **Save**.

**Self-Service Registration when IDCS is Configured as a Service Provider**

You can configure Identity Cloud Service to act as a Service Provider to other external identity providers.

In this scenario the self-service registrations made when the value of the profile option `SVC_CSS_USE_FA_AS_IDP` is False will continue to create user accounts only in IDCS.

Depending on the Identity Provider, a custom process must be used to synchronize the user account with the external Identity Provider.

As the identity provider in this scenario is not IDCS, the external provider will now have the responsibility for sending out the welcome email, managing the password cycle, and performing authentication. Additionally, IDCS must be configured to not send out the welcome email that allows a user to set the password.

Here's how you configure IDCS to not send the welcome email;

1. Log in to Identity Cloud Service as a user with Administrative access.
2. From the Navigation drawer, select **Settings**, and then **Notifications**.
3. Click the **Configure** tab.
4. In the **End-User Notifications** work area, deselect the following check boxes:
   - Welcome
   - User Activation
   - Resend Welcome
5. Click **Save**, and when the confirmation pop up window appears click **OK**.

For more information about adding an identity provider, refer to the Related Topics link.

**Related Topics**
- **Adding an Identity Provider**
Set Up Oracle Fusion Service

Enable Digital Customer Service

You must enable Digital Customer Service in Fusion Service to have access to the following profile options and work areas. Once enabled, the following work areas are grouped with the Service icon in Fusion Service:

- Self-Service Users
- Registration Requests

Once enabled, the profile options are available in the following work areas:

- Manage Digital Customer Service Account Setup Profile Options
- Manage Digital Customer Service Profile Options

To enable the Digital Customer Service Application:

1. Sign in to Fusion Service as an administrator or a setup user.
2. Click the Settings and Actions drop down list, and select Setup and Maintenance.
3. From the Actions drop down list, select Go to Offerings, and then select Service.
4. In the Setup and Maintenance work area select the Service offering.
5. Click the Opt In Features button.
   The Opt In: Service page is displayed.
6. Find the Digital Customer Service row, then select the Enable check box.
7. Click Done.

Related Topics
- Overview of Mandatory Setup Tasks
- Configure Profile Options

Configure a User Category for Proxy Users

You can configure the proxy users to have a different password expiry policy.

Doing so is strongly encouraged as it ensures that the regular password expiry rules don’t apply to proxy users. To do this, you can create a different user category for the proxy users.

To create a category specific for proxy users that uses a password policy that doesn’t expire passwords:

1. Sign in to Oracle Fusion Service.
2. Navigate to the Security Console work area and click the User Categories tab.
3. Click Create.
   The User Category: Details page appears.
4. Click Edit.
5. Enter a name in the User Category Name field, such as ProxyUsers.
   
   **Note:** Note this field can't contain spaces or special characters.
6. Click Save and Close.
7. Click Password Policy.
8. Click Edit.
9. Configure the fields for the proxy user password policy. In particular, you may want to set the Days Before Password Expiration to a relatively high number and give sufficient time for the Days Before Password Expiry Warning.
10. Click Save and Close.
11. Click Done.

### Create the Proxy Users

Though it's not required, it's strongly recommended you use the syntax shown in the following table when you create your proxy user accounts.

1. Sign in to Fusion Service as an administrator or setup user.
2. Click Navigator, then from the Tools menu, select Security Console.
3. In the Security Console work area, click the Users tab.
4. Click Add User Account.
5. Now, one at time, add three separate users and grant them roles by doing the following:
   a. From the User Category drop down list, select ProxyUsers.
   b. Fill in the First Name, Last Name, and Email fields.
   
   **Note:** The User Name field auto fills with the email address user name. Overwrite that in the following step.
   c. In the User Name field, choose one of the entries in the following table (PUDS_CSS_USER, PUDS_CSS_ADMIN, or PUDS_ANONYMOUS_USER).
   d. Enter a password, then confirm the password.
   
   **Note:** Passwords must be at least eight characters long.
   e. Click Add Role.
   f. In the Search field, enter the value listed in the Roles Granted column of the following table that corresponds with the user you have created.
   g. When the role is found, click Add Role Membership, and then click Done.
   h. Click Save and Close and repeat these steps for each of the three users you must create.

<table>
<thead>
<tr>
<th>User</th>
<th>Roles Granted</th>
<th>Role Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUDS_CSS_USER</td>
<td>Customer Self-Service Proxy User</td>
<td>ORA_SVC_CUSTOMER_SELF_SERVICE_PROXY_USER</td>
</tr>
<tr>
<td>PUDS_CSS_ADMIN</td>
<td>Customer Self-Service Proxy Account Administrator</td>
<td>ORA_SVC_CUSTOMER_SELF_SERVICE_PROXY_ACCOUNT_ADMINISTRATOR</td>
</tr>
</tbody>
</table>
Set Profile Options for Self-Service Optimization

Now you enable a number of profile options.

1. Sign in to Fusion Service as an administrator or setup user.
2. In the Setup and Maintenance work area, go to the following:
   - Offering: Service.
   - Task: Manage Digital Customer Service Profile Options.
3. Use the following table to set values for each of the profile options listed:

<table>
<thead>
<tr>
<th>Profile Option and Description</th>
<th>Default Value</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>FND_IDP_PROXY_USER_WHITELIST</td>
<td>None</td>
<td>Enter a comma-separated list of proxy user names.</td>
</tr>
<tr>
<td>Used to identify the list of allowed proxy users.</td>
<td></td>
<td>Note: There must be no spaces between the commas and the names.</td>
</tr>
<tr>
<td>ORACLE.ADF.VIEW.ALLOWED_ORIGINS</td>
<td>None</td>
<td>* or specific comma-separated FQDNs.</td>
</tr>
<tr>
<td>List of trusted domains that can make requests.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CORS_ACCESS_CONTROL_ALLOW_HEADERS</td>
<td></td>
<td>Add these values, in the comma separated list, if they’re not present:</td>
</tr>
<tr>
<td>Specifies comma-separated list of headers that are</td>
<td></td>
<td>Puds-Access-Token, kmauthtoken, content-language, X-Oracle-ABCS-Sessionid, X-Oracle-ABCS-Userld</td>
</tr>
<tr>
<td>allowed as part of a CORS request.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SVC_CSS_PUDS_CACHE_DURATION</td>
<td>15 minutes</td>
<td>Any changes to this parameter will force a refresh of the proxy users</td>
</tr>
<tr>
<td>Determines the amount of time, in minutes, that</td>
<td></td>
<td>configuration data cache.</td>
</tr>
<tr>
<td>Proxy User Data Service objects are cached.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SVC_CSS_USE_FA_AS_IDP</td>
<td>False</td>
<td>Make sure this value is set to False for self-service optimization mode.</td>
</tr>
<tr>
<td>Identifies if self-service users are created in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fusion Service or in IDCS.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Set the Oracle Identity Cloud Service Endpoint

Now you configure Fusion Service to enable back end communication with IDCS.

1. Sign in to Fusion Service as administrator or setup user.
2. In the Setup and Maintenance work area.
3. Click the Tasks icon, then click Manage Setup Content.
4. Click Manage Integration of Additional Applications.
5. In the Search Results area, click the Actions menu, and select Create.
6. In the Create Application Integration form, enter the following:

<table>
<thead>
<tr>
<th>Field</th>
<th>Enter this value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Name</td>
<td>IDCS_REST_ENDPOINTAPP</td>
</tr>
<tr>
<td>Full URL</td>
<td>For example: https://&lt;IDCS HOST&gt;/admin/v1</td>
</tr>
<tr>
<td>Note: This is the IDCS host that authenticates the Visual Builder instance.</td>
<td></td>
</tr>
<tr>
<td>Partner Name</td>
<td>IDCS</td>
</tr>
</tbody>
</table>

7. Click the Apply button and then verify the Protocol, Server Host and Context Root details are populated in the Server Details area.
8. Click Save and Close.

Configure the Client ID and Client Secret

Add the client ID and client secret that came from your confidential application on IDCS to your Fusion Service configuration. Use the client ID and secret that you created earlier in the Create the Application Client topic.

1. Sign in to Fusion Service as an administrator or a setup user.
2. In the Setup and Maintenance work area, go to the following:
   - Offering: Service.
   - Task: Manage Client Credentials for Proxy User Data
3. Enter the Client ID and Client Secret.
4. Click Test to make sure the values you entered are valid, and then click OK if so.
5. Click Save and Close.

Note: The credentials are cached by the Proxy User Data Service. These credentials can be cleared or refreshed by changing the value of SVC_CSS_PUDS_CACHE_DURATION profile option.
Create Groups in Oracle Fusion Service

Use this task only if required. The groups will be in place if you have previously run the Identity Cloud Service user import job. If the groups are present,

**Note:** If you delete a group that’s in use and then at another time recreate it we recommend that you clear the cache by adjusting the value of SVC_CSS_PUDS_CACHE_DURATION profile option. For more information, see the link in Related Topics to the Configure Profile Options topic.

<table>
<thead>
<tr>
<th>Role Name</th>
<th>External ID</th>
<th>Related Profile Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Self-Service User</td>
<td>ORA_SVC_CUSTOMER_SELF_SERVICE_USER_ABSTRACT</td>
<td>SVC_CSS_USER_ROLE_COMMON_NAME</td>
</tr>
<tr>
<td>Customer Self-Service Account Administrator</td>
<td>ORA_SVC_CUSTOMER_SELF_SERVICE_ACCOUNT_ADMINISTRATOR_ABSTRACT</td>
<td>SVC_CSS_ACCT_ADMIN_ROLE_COMMON_NAME</td>
</tr>
</tbody>
</table>

**Note:** If you have changed the value of the profile options listed in the last column of the following table, then don’t use the external ID and role name shown in the table, instead the external ID and role name will depend on the value of your change profile option.

**Note:** By default, the related profile options reflect the preceding table. If you use custom roles, the Role Name and the Display Name values must match the value of the relevant profile option. If you need to create a new group, you do it using the **Create Groups in Identity Cloud Service** task in Functional Setup Manager.

1. Sign in to Fusion Service as an administrator or setup user.
2. In the Setup and Maintenance area, go to the following:
   - Offering: Service.
   - Task: Create Groups in Identity Cloud Service.
     
   **Note:** Select All Tasks from the Show drop down list to display the task.

3. Click the link for the task.
4. Select the appropriate Fusion Service role from the table.
5. If the corresponding Identity Cloud Service role doesn’t exist, click the **Create** button to create the IDCS group.

**Note:** If the corresponding IDCS group already exists, you will see information about the existing role instead of the Create button.
Manage the Proxy User Configuration Data

This task provides for managing all the URL patterns that you need to reach in Fusion Service through the proxy user data service.

The fields are prepopulated in Fusion Service with all of the endpoints that are used in the Digital Customer Service reference implementation. The standard use case is to set up the proxy user credentials.

If you need to add any additional objects, do the following:

1. Sign in to Fusion Service as administrator or setup user.
2. In the Setup and Maintenance work area, go to the following:
   - Offering: Service.
   - Task: Manage Proxy User Configuration Data.
3. For predefined configuration data note the following:
   - You can add new configuration data.
   - Only allowlisted resources can be exposed to anonymous users. The following resources are on the allowlist:
     - categories
     - catalogProductItems
     - catalogProductGroups
     - productGroupHierarchies
     - fndStaticLookups
     - selfRegistrations
     - chatAuthenticate
     - dynamicLinkPatterns
   - Custom objects that you create with Application Composer can be exposed to Anonymous users even though they're not on the allowlist.
4. To add new objects, do the following:
   a. In the Search Results area, click the New ( +) icon.
   b. Add the URL pattern.
   c. Click the drop down list and add the HTTP method.
   d. Click the drop down list and choose the appropriate user role.
   
      | Note: This is the same user role from Identity Cloud Service.
   e. Add the appropriate proxy user key.
   f. Click Active.
5. Click Save and Close.

| Note: Proxy user configuration data is cached for a duration specified by the SVC_CSS_PUDS_CACHE_DURatio profile option.
If this value is changed then the cache is cleared. For changes made using this UI to be read immediately, the value of SVC_CSS_PUDS_CACHE_DURATION profile must be altered. The recommended action is to add or subtract 1 minute from the existing value.

Set Proxy User Credentials

Complete the configuration of the proxy user configuration data for the Self-Service Optimization feature, you need to set the user credentials for the proxy users.

1. Sign in to Fusion Service as an administrator or setup user.
2. In the Setup and Maintenance work area, go to the following:
   - Offering: Service.
   - Task: Manage Proxy User Configuration Data.
3. Locate any line referencing the following proxy user keys:
   - PUK#_ANONYMOUS_USER
   - PUK#_SELF_SERVICE_USER
   - PUK#_SELF_SERVICE_ACCOUNT_ADMIN
4. Do the following with each of the three user keys:
   a. Select the entry, then from the Actions menu, click Edit.
   b. In the Edit Proxy User Configuration Data workspace, enter the Proxy User Name if it's different from the default name.
      Note: It’s recommended that you retain the proxy user names.
   c. Enter the password for the proxy user.
   d. Click Save and Close.

Since the same proxy user key is used by multiple URLs, you can edit any one URL that uses this proxy user key to set the proxy user credentials associated with that key.

Note: Proxy user configuration data is cached for a duration specified by the SVC_CSS_PUDS_CACHE_DURATION profile option.

Validate Self-Service Optimization Setup

Once you have performed all the tasks in "Set Up Oracle Fusion Service," you can validate to ensure that these have been correctly set up.

Functional Setup Manager tests enable you to do this by providing a set of validation checks. To perform these checks, you just need to provide certain basic configuration parameters. The checks are grouped by task and have a set of tests associated with them. Some tests requires you to enter parameters. If so, the Supply Parameters tab is enabled. The Test Results tab is enabled once all required parameters have been populated.
Here's an overview of all the tests you can run:

**Validate Self-Service Optimization Tests**

<table>
<thead>
<tr>
<th>Setup Task</th>
<th>Tests</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set Profile Options for Self-Service Optimization</td>
<td>Verify profile option: SVC_CSS_USE_FA_AS_IDP</td>
<td>Verifies the value of the SVC_CSS_USE_FA_AS_IDP profile option.</td>
</tr>
<tr>
<td></td>
<td>Verify profile option: FND_IDP_PROXY_USER_WHITELIST</td>
<td>Verifies the value of the FND_IDP_PROXY_USER_WHITELIST profile option.</td>
</tr>
<tr>
<td></td>
<td>Verify profile option: ORACLE.ADF.VIEW.ALLOWED_ORIGINS</td>
<td>Verifies the value of the ORACLE.ADF.VIEW.ALLOWED_ORIGINS profile option.</td>
</tr>
<tr>
<td></td>
<td>Verify profile option: CORS_ACCESS_CONTROL_ALLOW_HEADERS</td>
<td>Verifies the value of the CORS_ACCESS_CONTROL_ALLOW_HEADERS profile option.</td>
</tr>
<tr>
<td>Configure the Client ID and Client Secret</td>
<td>Get IDCS client access token</td>
<td>Retrieves the client access token for use in other tests.</td>
</tr>
<tr>
<td>Create Groups in Oracle Identity Cloud Service</td>
<td>Verify customer self-service user group in IDCS</td>
<td>Verifies that the Customer Self-Service User group is available in Identity Cloud Service.</td>
</tr>
<tr>
<td></td>
<td>Verify customer self-service account administrator group in IDCS</td>
<td>Verifies that the Customer Self-Service User group is available in Identity Cloud Service.</td>
</tr>
<tr>
<td>Set Proxy User Credentials</td>
<td>Get IDCS user access token</td>
<td>Retrieves the user access token for use in other tests.</td>
</tr>
<tr>
<td></td>
<td>Verify IDCS and Fusion Service integration</td>
<td>Verifies the Identity Cloud Service and Fusion Service Integration.</td>
</tr>
<tr>
<td></td>
<td>Verify anonymous proxy user setup</td>
<td>Verifies the Anonymous Proxy User setup.</td>
</tr>
<tr>
<td></td>
<td>Verify customer self-service proxy user setup</td>
<td>Verifies the Customer Self-Service Proxy User setup.</td>
</tr>
<tr>
<td></td>
<td>Verify customer self-service proxy account administrator setup</td>
<td>Verifies the Customer self-service proxy account administrator setup.</td>
</tr>
<tr>
<td></td>
<td>Get categories as anonymous user</td>
<td>Verifies the categories are available to an anonymous user.</td>
</tr>
</tbody>
</table>

**Run Pre-Validation Setup in IDCS**

1. Log in to IDCS as the Administrator user.
2. Click the Navigation drawer and then expand the **Applications** list.
3. Search for **Proxy User Data Service App** and select it.
4. Select the **Configure** tab, and expand the **Client Configuration** menu item.
5. In the Authorization area, select the Resource Owner along with the already selected Client Credentials option for Allowed Grant Types.

6. Click the Test Results step.

Run Validations Tests in Fusion Service

1. Sign in to Fusion Service as an administrator or setup user.
2. In the Setup and Maintenance work area, go to the following:
   - Offering: Service.
   | Note: To show this task, you may need to select All Tasks from the Show drop down list.
3. On the Select Test page, select the tests that you would like to run.
4. If required, enter parameters in the Value field on the Supply Parameters page.
   | Note: The Supply Parameters step is only enabled if parameters are required for the chosen test.
5. Click the Test Results step.
6. The tests are automatically run and the results displayed. You can return to the Select Test page as often as necessary until you’ve fully performed your validations.

Run Post-Validation Tests in IDCS

1. Log in to IDCS as the Administrator user.
2. Click the Navigation drawer and then expand the Applications list.
3. Search for Proxy User Data Service App and select it.
4. Select the Configure tab, and expand the Client Configuration menu item.
5. In the Authorization area, deselect the Resource Owner option for Allowed Grant Types.

Set Up Administrators and Developers

Overview of Digital Customer Service Developer Roles

To work with business objects relevant to Digital Customer Service, the developer must be a Digital Customer Service user and must be granted the appropriate roles. Here’s an overview of the tasks you need to perform:

1. Create an Internal Customer Account (This task only needs to be done once)
2. Register the Developer as a Self-Service User.
3. Add User Roles
Create an Internal Customer Account

Before creating the Digital Customer Service developer or administrator users, an internal customer account must be created for use by these users.

The internal customer account lets you associate your staff to a specific account. An account key is required when creating a new Digital Customer Service user.

**Note:** You only need to create the internal customer account once. This internal customer account can be used by all Developers and Administrators.

To create an internal customer account:

1. Sign in to Oracle Fusion Service.
2. Navigate to the **Service** work area and click **Accounts**.
3. Click **Create Account**.
4. Enter the **Name**.
   
   **Note:** The name that you enter in this field represents the **AccountKey** that you need to use in the Create Digital Customer Service Developers topic. This is true only if the value of the profile option SVC_CSS_ACCT_KEY_FIELD hasn't been changed.

5. Select **Customer** from the **Type** menu.
6. Click **Save and Close**.

Create Digital Customer Service Developers

Here's how you create Digital Customer Service Developer users.

1. Sign in to Oracle Fusion Service as an administrator or a setup user.
2. Click the Settings and Actions menu, and select **Setup and Maintenance**.
3. In the **Setup and Maintenance** work area, go to the following:
   
   - Offering: Service
   - Functional Area: Digital Customer Service
   - Task: Create Digital Customer Service Developers

   **Note:** To access this task, click the **Show** drop down list, and select All Tasks.

4. In the Create Developers for Digital Customer Service page, fill in each field.

   The default value of the account key is the account name you created in the topic Create an Internal Customer Account. You're encouraged to make the account key more secure by creating a custom account key. For instructions, refer to Create a Customer Account Key Field in the Related Topics.

   **Note:** The login ID is optional. If you want to use your email address as the login ID, just click the check box.

5. Click **Save** when you're finished.
The user account is created in both Fusion Service and IDCS. You will then receive an email from IDCS prompting you to reset your password.

**Related Topics**
- Create a Custom Account Key Field

### Set Up Oracle Visual Builder

#### Retrieve the Oracle Visual Builder URLs

You must have access to Oracle Visual Builder to perform the tasks in this section, as well as many other tasks in this document.

This task describes how you locate the URLs for:

- Oracle Visual Builder. Use for your application development and its lifecycle. VBCS has a 1:1 mapping with the Fusion Service Production, Test and Development environments.
- Oracle Visual Builder Studio (optional). You can use Visual Builder Studio if you want to use source control and build pipelines. You can integrate VB Studio with Visual Builder.

**Note:** Only 1 instance of VB Studio is provisioned per Cloud Account and is associated with the Test Fusion Service instance.

1. Sign in to Fusion Service as an administrator or setup user.
2. In the Setup and Maintenance work area, go to the following:
   - Offering: Service.
   - Task: View Digital Customer Service URLs.

**Note:** To view the task, select **All Tasks** from the **Show** drop-down list.

1. In the View Digital Customer Service URLs page, copy the URLs by locating the entry or either:
   - Oracle Visual Builder
   - Oracle Visual Builder Studio
2. When you’ve found the entry you want, click the **Copy** button.

**Related Topics**
- Oracle Visual Builder
- Oracle Visual Builder Studio
- Add a Connection for Applications Services
Specify the Fusion Service Details in Oracle Visual Builder

To specify Fusion Service details in Oracle Visual Builder:

1. Sign into Oracle Visual Builder as an administrator.
2. Click the Menu icon, and select Settings to open the Tenant Settings page.
3. Click the Services tab, then click the Back ends icon (+)
4. In the Back end Service Type window, select Oracle Cloud Application Instance.
5. In the Instance URL field of the Create Oracle Cloud Application Instance window, enter the instance URL of your Fusion Service back end service.
6. From the Authentication drop down list, select Oracle Cloud Account.
7. Click Create.

**Note:** You must set the Instance URL field with the fully qualified domain name of your Oracle Applications Cloud Fusion Service instance.

**Related Topics**

- Add a Connection to Oracle Cloud Applications

Verify Your Oracle Visual Builder Settings

Here's how to verify your Oracle Visual Builder settings:

1. Sign in to Oracle Visual Builder as a Service Administrator.
2. Click the Home menu.
3. Click Settings.
   - The Tenant Settings screen appears.
4. On the General tab, locate the Allow only secure applications to be created option, and ensure that it's turned off.

Add Visual Builder Roles

This topic describes how to add roles in Oracle Visual Builder and Oracle Visual Builder Studio to configure appropriate authorization for your Oracle Visual Builder platform and editor.

Instead of assigning roles to each user individually, you can simplify the process by creating groups and adding users to groups as a means of assigning roles. Each time you add a user to a group, the user automatically gets the roles defined for the group. Alternatively you can assign individual users to the Visual Builder roles.

Add Users to a Group

Add users to a group so that they automatically get the permissions defined for the group.

1. Sign in to Oracle Identity Cloud Service Console as an administrator.
2. From the Oracle Identity Cloud Service console, click the Navigation menu icon.
3. Click the Groups tab.
4. On the Groups page, click the group that you want to assign users to or add a new group.
5. On the Group Details page, select the Users tab.
6. Click + Assign.
7. Select the users you want to add to the group, then click OK.

The selected users are added to the group. You can now assign roles to all the users in the group, if required.

Assign Roles to a Group

After you create groups and add users to groups, you can assign roles and provide access to services and instances to all the members of the group at once.

Assign Roles to Users in Visual Builder

Here's how you assign roles in Visual Builder:

1. In Identity Cloud Service, click the Navigation Drawer, and select Oracle Cloud Services.
2. Select your Visual Builder instance.
   You can use the filter to help you locate your instance. For Oracle Visual Builder Studio instances search for your instance prefixed with “VBINST”.
3. Click the Application Roles tab.
4. Click the menu options icon shown next to the role, and select Assign Users. If you want to assign the role to a group, you need to select Assign Groups.
5. Assign the Oracle Visual Builder ServiceDeveloper role to the group or users that require Build and Maintain access in the Oracle Digital Customer Service applications.
6. Assign the Oracle Visual Builder ServiceAdministrator role to the group or users that require Administrative access to configure instance-wide settings for the Oracle Visual Builder environment for all applications.

For instructions about completing this task, refer to Assign User Roles in the Related Topics. Additionally, you can learn more about roles and privileges in Oracle Visual Builder by referring to the Privileges Available to Roles in Oracle Visual Builder in the Related Topics.

Assign Roles to Users in Visual Builder Studio

Here's how you assign roles in Visual Builder Studio:

**Note:** The following VB Studio steps apply only to one pod, typically your TEST instance. VBCS, however, is provisioned on all pods so those steps for the application roles are applicable to all instances.

1. Sign in to Identity Cloud Service, click the Navigation Drawer, and select Oracle Cloud Services.
2. From the Oracle Cloud console dashboard, navigate to the Identity Cloud console and click Applications.
3. Click the link for your Oracle Visual Builder Studio instance.
   You can use the filter to help you locate your instance. For Oracle Visual Builder Studio instances search for your instance prefixed with “VBINST”.
4. Click the Application Roles tab.
5. Click the menu options icon shown next to the role, and select Assign Users. If you want to assign the role to a group, you need to select Assign Groups.
6. Select the check box next to the name of each user that you want to add to the role, and then click Assign.
**Note:** You will need to add the DEVELOPER_USER or the DEVELOPER_ADMINISTRATOR user roles. For more information about these roles, refer to the Identity Domain Roles in the Related Topics.

**Related Topics**
- Assign Users to Roles
- Privileges Available to Roles in Oracle Visual Builder
- Identity Domain Roles
4 Create a Basic Digital Customer Service Application

Create a New Digital Customer Service Application

This topic describes how to create a new Digital Customer Service application in Oracle Visual Builder.

Note: The steps that follow assume that you have selected the current Reference Implementation template.

To create a new Digital Customer Service application:

1. Sign in to the Oracle Visual Builder editor as a user with the Developer role.
2. Click New.

   Note: If no applications have been created yet, the button will read New Application.

   The Create Application dialog appears.

3. In the Application template section, click Change template.
4. Click the reference implementation tile that matches the Fusion Service version you are using. For instance, if your implementation is version 22A, choose the 22A tile.

   This template creates an application with basic service functionality, including the ability to create and update SRs, search knowledge, and chat with an agent.

5. Click Select.
6. Specify the Application Name.
7. Specify the Application ID.

   The Application ID is automatically derived from the specified Application Name, but you can change it, if desired. The Application ID cannot be modified once the application is created: it appears in the application URL.

8. Click Finish.

   Once the Digital Customer Service application has been created, you are now ready to configure the application to meet your business needs.

Note: When Oracle Fusion Service is deployed with multiple business units, additional configuration is required. For more information, refer to the Configuring Multiple Business Units with Digital Customer Service topic in the Related Topics.

CAUTION: For your Digital Customer Service Reference Implementation template to work properly, access to Knowledge and Chat must be allowed anonymously. Your Oracle Visual Builder settings must to be configured to allow publicly accessible applications to be created. To verify the settings, do the following:

1. Open the application artifact and select the Settings editor in the Designer.
2. Open the Security tab and then, in the Access pane, select Allow anonymous access.
Stage and Publish the Digital Customer Service Application

You can preview your changes as you develop them by clicking the **Preview** button.

Test that your changes perform as expected by staging the application. Access the **Stage** option by clicking the **Menu** button from the Visual Builder home page as shown in the following example:

Staging your application enables you to test each update you make to confirm that it behaves as you expect and that no problems have been introduced, for example, when you add new features or change your data model.

When you publish a version of your application, it becomes read-only and can no longer be changed. If you want to make changes to update your application, you need to create a new version. When you publish a staged version of your...
application, it becomes the live version. If you're updating an earlier version of your application, the previous live version is archived and locked. Only one version of an application can be live at a time, but multiple versions of an application can be staged simultaneously.

**Note:** For detailed instructions on how to preview, stage and publish your application, you must refer to the Related Topic section for a link to the Developing Applications with Oracle Visual Builder guide. You must also refer to this topic for detailed instructions on how to retrieve the URL for your staged application.

**Related Topics**
- Developing Applications with Oracle Visual Builder
5 Develop Your Digital Customer Service Application

Overview of Developing Your Digital Customer Service Application

The Oracle Digital Customer Service reference implementation is an application built with the Oracle Visual Builder Visual Applications platform.

The reference application come configured with pages, styling, and functionality supporting a typical self-service experience. The Visual designer enables developers to make changes and implement the look-and-feel of a brand.

As with any development framework, there can be restrictions when using ready-to-use components and capabilities. While Oracle Visual Builder is flexible and code can be written to accommodate many use cases, Oracle recommends using the packaged components as a first fulfillment of your requirements. If those components don’t meet your requirements, then you may extend the capabilities.

**Note:** If you have modified your Digital Customer Service deployment, you must devise a product life cycle strategy to manage your own code migration and merges as well as uptake any environment changes.

Your Digital Customer Service application has rules for business objects to execute business logic that deals with the data. Using object and field validators you can ensure data at the field or record level is correct. For more information, see the Related Topics section.

**Related Topics**
- Create Rules for Business Objects

Configure Profile Options

This topic describes Digital Customer Service profile options, including configuration instructions.

The following two task lists apply to profile options for Digital Customer Service:

- Manage Digital Customer Service Profile Options
- Manage Digital Customer Service Account Setup Profile Options

Overview of Profile Options

Profile options let you configure and control application data centrally. Administrators and setup users manage profile options in the Setup and Maintenance work area.
Profile options store various kinds of information, including the following:

- User preferences
- Installation information
- Configuration choices
- Processing options

In this topic, we will focus on Oracle Fusion Service profile options specific to Digital Customer Service. For more information about profile options, refer to the Profile Options topic in the Related Topics.

### Registration Profile Options

The following table lists the profile options for Digital Customer Service Registration Profile Options.

<table>
<thead>
<tr>
<th>Profile Option</th>
<th>Default Value</th>
<th>Possible Values</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVC_CSS_SELF_REGISTRATION</td>
<td>New Or Existing</td>
<td>None, New Or Existing, Existing Only</td>
<td>Specifies which contacts can self-register. If Existing is specified, only existing contacts can self-register.</td>
</tr>
<tr>
<td>SVC_CSS_SELF_REG_AUTO_APPROVE</td>
<td>False</td>
<td>True, False</td>
<td>Enables automatic approval of self-service registration requests that are associated with an account. If SVC_CSS_SELF_REG_AUTO_APPROVE is set to False and SVC_CSS_ACCT_ADMIN_APPROVE is set to True, then the Digital Customer Service Account Administrators can approve user registration requests in the Digital Customer Service Customer user interface. Also, Digital Customer Service Administrators can approve registration requests in the Digital Customer Service Administration user interface.</td>
</tr>
<tr>
<td>SVC_CSS_ACCT_ADMIN_APPROVE</td>
<td>True</td>
<td>True, False</td>
<td>Enables the approval of self-service user registration requests by users with Digital Customer Service Account Administrator roles. If set to True, Digital Customer Service Account Administrators can approve user registration requests in the Digital Customer Service customer user interface and Digital Customer Service Administrators can approve registration requests in the Digital Customer Service Administration user interface.</td>
</tr>
<tr>
<td>Profile Option</td>
<td>Default Value</td>
<td>Possible Values</td>
<td>Effect</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SVC_CSS_ACCT_KEY_FIELD</td>
<td>OrganizationName</td>
<td>Any field in the Account object</td>
<td>Specifies a valid field name in the Account object. The field name is case sensitive.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Note:</strong> You must create an attribute in the account object to be the account key, because the default account key of account name isn't secure.</td>
</tr>
<tr>
<td>SVC_CSS_REG_CONT_MAP</td>
<td>An empty string</td>
<td>An empty string, with a colon separating fields, and commas separating the pairs.</td>
<td>You specify a value for this profile option only if the name of the attribute in the Self Registration object is different from the name in the Contact object. Cases where they may happen are if you have created a custom attribute for an object. Custom attributes are designated with an _c, such as PlaceOfBirth_c. For this use case, you ignore the <em>c when determining whether an attribute maps or not. So, let's take the custom attribute in the Self Registration object PlaceOfBirth_c. Since the Contact object has a out of the box attribute called PlaceOfBirth, no mapping is required since the two values match. If, however, the name of the custom attribute was BirthPlace_c the value of this profile option would then be BirthPlace_c:PlaceOfBirth. Here's a additional example with multiple mappings: First, you specify case sensitive name and value pairs to map the fields of the Registration View object to the Contact View object in the following way: reg</em></td>
</tr>
</tbody>
</table>

Note: This option applies only when the SVC_CSS_SELF_REG_AUTO_APPROVE option is set to False.
### Profile Option | Default Value | Possible Values | Effect |
--- | --- | --- | --- |
SVC_CSS_SIGN_IN_ATTR_NAME | EmailAddress | The value of the assigned attribute must be unique. Possible values include: EmailAddress | Specifies the sign-in attribute that users must specify in the Login ID field in the Self-Service Registration object. This field is used to determine whether the user exists in the Lightweight Directory Access Protocol server. |
SVC_CSS_REG_FLD_CONTACT | EmailAddress | Any field on the Self-Service Registration object. | Specifies the field to use during the user registration process to determine if the registering user is an existing contact. The field names are case sensitive. The SVC_CSS_REG_CONT_MAP profile option is used to locate the name of the attribute on the Contact. |
SVC_CSS_SEND_WELCOME_EMAIL | True | True, False | Enables sending a welcome email when a new user account is created. |
SVC_CSS_USER_ROLE_COMMON_NAME | ORA_SVC_CUSTOMER_SELF_SERVICE_USER_ABSTRACT | A string representing the name of the role that's set up for Customer Self-Service users. Typically, this is a copy of a Customer Self-Service User with additional privileges added. | Specifies the common name of the role granted to previously created Customer Self-Service Users. For more information refer to Assigning Custom Job Roles in the Related Topics. |
SVC_CSS_ACCT_ADMIN_ROLE_COMMON_NAME | ORA_SVC_CUSTOMER_SELF_SERVICE_ACCOUNT_ADMINISTRATOR_ABSTRACT | A string representing the name of the role that's set up for Customer Self-Service Account Administrator. Typically, this is a copy of a Customer Self-Service | Specifies the common name of the role granted to the previously created Customer Self-Service Account Administrators. |
<table>
<thead>
<tr>
<th>Profile Option</th>
<th>Default Value</th>
<th>Possible Values</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVC_CSS_USER_CATEGORY</td>
<td>An empty string</td>
<td>A string</td>
<td>Specifies the user category that defines the URL to which the self-service user is redirected after a password reset. The user category is defined in the Security Console.</td>
</tr>
<tr>
<td>SVC_CSS_IMP_SIGN_IN_ATTR_NAME</td>
<td>PrimaryEmailAddress</td>
<td>Any field on the Contact object.</td>
<td>Specifies a field in the Contact object to be used as the sign-in attribute when importing data into the Self-Service Roles object. The field name is case sensitive.</td>
</tr>
<tr>
<td>SVC_CSS_USE_FA_AS_IDP</td>
<td>False</td>
<td>True, False</td>
<td>Specifies whether the identity provider is Oracle Fusion Applications or Oracle Identity Cloud Service. When set to True, Oracle Fusion Applications is used.</td>
</tr>
<tr>
<td>ORA_SVC_CSS_SELF_REG_B2C_AUTO_APPROVE</td>
<td>True</td>
<td>True, False</td>
<td>Enables automatic approval of self-service registration requests that aren't associated with an account. If set to True, users who register without an account will be auto approved to become self-service users. If set to False, users who register without an account will need to be approved by an administrator before they can become self-service users.</td>
</tr>
<tr>
<td>SVC_CSS_PUDS_CACHE_DURATION</td>
<td>15</td>
<td>Integer in minutes</td>
<td>Determine the amount of time, in minutes, that Self-Service Optimization objects are cached.</td>
</tr>
<tr>
<td>SVC_CSS_ALLOW_CONTACT</td>
<td>True</td>
<td>True, False</td>
<td>Enables the self-service registration of B2C Service contacts.</td>
</tr>
<tr>
<td>SVC_CSS_ALLOW_CONSUMER</td>
<td>True</td>
<td>True, False</td>
<td>Enables the self-service registration of consumers.</td>
</tr>
<tr>
<td>SVC_CSS_CONSUMER_USERCATEGORY</td>
<td>An empty string</td>
<td>A string</td>
<td>Specify the user category for consumers defining the redirect URL for self-service users after a password reset.</td>
</tr>
</tbody>
</table>
Account Setup Profile Options
The following table lists the profile options for Digital Customer Service Account Setup Profile Options.

<table>
<thead>
<tr>
<th>Profile Option</th>
<th>Default Value</th>
<th>Possible Values</th>
<th>Effect</th>
</tr>
</thead>
</table>
| SVC_AC_MQS_ACCOUNT_ID   | None          | A string that represents the value of the identity domain assigned to your order. | Associates the Account ID to the identity domain assigned to the order.  
                          |               |                                                                             | This represents the Identity Domain shown in the MyAccount UI in Cloud Portal |
| SVC_AC_MQS_DATA_CENTER  | None          | A string that represents the value of the Data Center assigned to your order.   | Enables the data center to use the metering service.                    
                          |               |                                                                             | This represents the name of the Data Center shown in the MyAccount UI in Cloud Portal |
| CSO_CONTENT_RATING_TYPE | None          | True and False   | Enables content rating for Knowledge.                                 |

Set Digital Customer Service Profile Options
This topic describes how to set profile options for Digital Customer Service. The profile options specific to Digital Customer Service are found in two task areas: Manage Digital Customer Service Profile Options and Manage Digital Customer Service Account Setup Profile Options.

To find and set the Digital Customer Service profile options:

1. Sign in to Oracle Fusion Service as administrator or a setup user.
2. In the **Setup and Maintenance** work area, go to the following:
   - Offering: Service
   - Functional Area: Digital Customer Service
   - Task: Manage Digital Customer Service Profile Options

   or

   - Task: Manage Digital Customer Service Account Setup Profile Options
3. Click the name of the profile option that you want to modify.
4. Set the profile option value as needed.
5. Click **Save and Close**.
Configure Source Control for Applications

This topic describes how to configure Git for source control of your application.

To configure Git, follow these steps:

1. In Oracle Developer Cloud Service, set up a Git repository.
   
   **Note:** For groups that will be collaborating, when you’re creating your project, select the **Shared** option when defining **Security**.

   For more information about setting up a Git repository, refer to the Related Topics. After doing this task, you will receive an email informing you of the Oracle Developer Cloud Service URL.

   **Note:** It’s recommended that you create a branch for each developer to enable your developers to work independently and then merge to the main branch when they want their changes to be shared.

2. In Oracle Visual Builder, integrate your application with a Git repository. For more information about integrating your application with a Git repository, refer to the Related Topics.

**Related Topics**
- Work with Projects
- Manage Source Code Files with Git
- Integrate Your Application with a Git Repository

Secure Pages in Your Application

Page security is controlled at the flow level. You must view the flow Metadata 
"{}" to view and update the security setting for the flow.

For more information see the Related Topics section for a link to the Security section of the Developing Applications with Oracle Visual Builder in Oracle Integration guide.

Here's an example of how it works. In the reference implementation app, the contact-us flow is available anonymously, and has the following security metadata:

```
"security": {
  "access": {
    "requiresAuthentication": false
  }
}
```
Conversely, the service-request-list flow requires the user to log in and have the "User" application role, and has the following security metadata:

```
"security": {
  "access": {
    "requiresAuthentication": true,
    "roles": ["User"]
  }
}
```

Related Topics
- Security

**Use Custom Job Roles**

This topic describes how to use custom job roles in Digital Customer Service.

There are many reasons why you might create a custom job role for Customer Self-Service users. One possible reason is when you create a custom object and want to assign privileges to that object.

To assign custom job roles for use in Digital Customer Service:

1. Create a custom role by making a copy of one of the following predefined roles:
   - Customer Self-Service User
   - Customer Self-Service Account Administrator

   For more information about creating custom roles by making copies of roles, refer to the Related Topics.

2. Set the value of the appropriate Digital Customer Service profile option to the name of the custom role you created. The following profile options can be set to the name of the custom role:
   - **SVC_CSS_USER_ROLE_COMMON_NAME** If the value of this profile option is set to the name of a custom role, then all Customer Self-Service Users will be assigned this role when they're provisioned.
   - **SVC_CSS_ACCT_ADMIN_ROLE_COMMON_NAME** If the value of this profile option is set to the name of a custom role, then all self-service users who are assigned the Customer Self-Service Account Administrator role will receive this custom role.

For more information about setting profile options, refer to the Configuring Profile Options topic.

**Note:** If you update these profile options to specify a custom role once your Digital Customer Service application is in use, you must perform a mass update of any existing users from the old roles to the new roles.
For each custom job role you create, you also must create a group in Identity Cloud Service. The external ID of the IDCS group you create must match the code of the Fusion Service custom job role that you created. For more information about creating IDCS groups, refer to the Related Topics for the link to the Create Groups in Oracle Identity Cloud Service topic.

Related Topics
- Configure Profile Options

Application Configuration Settings

Digital Customer Service application settings are configured using application level variables in the Digital Customer Service web application. This topic describes how to configure settings, followed by descriptions of the application variables.

Modify the Application Variables

This topic describes how to modify application variables for your Digital Customer Service application in the Oracle Visual Cloud Builder Service. The variables that are available for configuration are described in the topics that follow.

To modify the application variables:

1. Sign in to Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click the Web Applications tile.
4. Click dcs.
   
   **Note:** This is the default name when using the Digital Customer Service Reference Implementation. If you have changed the name in Oracle Visual Builder, click on the modified name.

   The dcs tab appears.
5. Click the (x) icon (Variables).
6. Click a variable, and make your modifications.

Linking

This topic describes application variable related to Service Request and Knowledge Management article linking.

All of the application variables related to Service Request and Knowledge Management article linking are contained in the `linkConfig` application variable. When you use the Digital Customer Service Reference Implementation template, the article linking section is configured as follows:

```json
{
  "SERVICE_REQUEST_CRM": {
    "pattern": "\b(SR|Bug)(\d{10})\b"
  },
  "KNOWLEDGE_LINK": {
    "pattern": "\b((?:SOL|FAQ)\d+)\b",
    "keyProperty": "IMDocumentId"
  },
  "SERVICE_REQUEST_HCM": {
    "pattern": "\b(Ticket)(\d{10})\b"
  }
}
```
The `SERVICE_REQUEST_CRM` and `SERVICE_REQUEST_HCM` object type lines control the Service Request linking. The `KNOWLEDGE_LINK` object type line controls the Knowledge Management article linking.

By default in the Digital Customer Service Reference Implementation template, `SR` and `Bug` are defined as the case-insensitive prefix that identify CRM Service Requests. Similarly, `Ticket` is defined as the case-insensitive prefix that identifies HCM Service Requests. For Knowledge Management articles, `SOL` and `FAQ` can be used interchangeably as the case-insensitive prefix that identifies articles. These prefixes are defined in the `pattern` application variable in each object type.

For example, if you want to change the prefix for Service Requests specifically to include both SR and Service Request as the prefix patterns, modify the `SERVICE_REQUEST` object type as follows:

```
"SERVICE_REQUEST_CRM": { "pattern": "\b((?:SR|Service Request)\d{10})\b"},
```

**Configure Product and Category Filtering**

This topic describes the application variables related to product and category filtering.

- **dcsCategoriesOnly** Specifies the categories to display in your Digital Customer Service application. When set to `true`, categories with the `CSSFlag` set to `false` in the REST API won't be displayed in the **Category Selector**.
- **dcsProductsOnly** Specifies the products to display in your Digital Customer Service application. When set to `TRUE`, only products with `Enable for Customer Self Service` set to `YES` will be displayed in the **Product Selector**. When set to `FALSE`, all products in the Oracle Fusion Service product catalog are displayed.

**Configure Product and Category Recent Selections**

This topic describes the application variables related to product and category recent selections.

- **recent-selections** Contains the recent selections. This variable should be mapped to an application level variable. Up to five recent selections are displayed, with the most recent listed first.
- **recent-list-limit** Determines the number of rows that are displayed.
- **show-recent** Determines if recent selections are displayed.

**Configure Language Defaults in Knowledge Management**

This topic describes the application variables related to language defaults in Knowledge Management.

This configuration is required when more than one region is supported for the same language, because the default from the configuration file is used. Also for the API that retrieves the Knowledge Management locales, a `localeId` must be provided in the `kmauthToken`, so that value is taken from the configuration file.

Oracle Knowledge Management supports a predetermined set of locales for knowledge searches. If the `Accept-Language` header element of the knowledge search REST request doesn't match one of the supported locales, an HTTP 400 error is returned. To prevent this, the locale specified in the `Accept-Language` header is overridden. This logic that determines the override locale is as follows:

1. Query the Server for all the supported locales and cache it.
2. Get the locale preference from the Oracle JET locale configuration using oj.Config.getLocale();

   **Note:** Oracle JET determines the locale for locale-sensitive operations in the following order: locale specification in the RequireJS configuration, lang attribute of the HTML tag, navigator.language browser property or navigator.userLanguage Internet Explorer property.

   - If the locale preference is on the supported locale list, use it.
   - If the locale preference isn't a supported locale, extract the language from it.

3. Search the supported locale list by language. If only one match is found, use it.
4. Search kmLanguageDefaults in the kmConfig application variable. If a match is found, use it.
5. Pick the default locale for any language not on the list and use it.

The kmLanguageDefaults variable is the child of kmConfig variable. It maintains a mapping of language to locale.

### The Interface ID for Knowledge Requests

This topic describes the application variables related to Interface ID defaults for Knowledge Management articles.

Use the kmInterfaceId variable, which is a child of the kmConfig top level application variable, to control what type of Knowledge Management articles appear in your Digital Customer Service application.

<table>
<thead>
<tr>
<th>kmInterfaceId Variable Value</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Only Oracle Fusion Service articles appear.</td>
</tr>
<tr>
<td>2</td>
<td>Only Oracle HCM Cloud articles appear.</td>
</tr>
<tr>
<td>-1</td>
<td>Both Oracle Fusion Service and Oracle HCM Cloud articles appear.</td>
</tr>
</tbody>
</table>

### Application Configuration Settings

The Digital Customer Service application determines whether or not the user registration request requires an account key based on the value of the application variable userRegistrationType. This variable can have one of two values:

- **Contact.** Users registering as self-service users must provide an account key. When the user registration request is approved, the contact representing the user is associated with a specific account.
- **Consumer.** Users registering as self-service users do not have to provide an account key. When the user registration request is approved, the contact representing the user is created as a standalone contact.

The default value is contact.

To set the value of the userRegistrationType variable:

2. Select **Web Applications**.
3. Select **dcs**.
4. Select **Variables and Types**.
5. Select **userRegistrationType**.
6. Change the default value to either **contact** or **consumer** based on the requirements of your application.
Apply Themes to your Digital Customer Service Application

This topic describes how to apply themes to your own Digital Customer Service application.

Oracle JET includes themes that provide styling across a web or hybrid mobile application. You can use these themes as provided, or you can configure them manually and through the tooling.

For more information about applying themes to your Digital Customer Service application, refer to the chapter related to applying themes in the Developing Applications with Oracle JET guide, in the Related Topics.

Related Topics
- Developing Applications with Oracle Visual Builder
- Developing Applications with Oracle JET

Change the Appearance of your Digital Customer Service Application

This topic describes how to change the appearance of your own Digital Customer Service application.

The Oracle Digital Customer Service Reference Implementation template has been styled to enhance its appearance. This has been done by modifying objects and adding styles to the app.css file.

To modify objects in the app.css file:

1. Navigate to the Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click Web Apps.
4. Expand dcs, expand resources, expand css, then click app.css.

The app.css tab appears.
5. Locate and configure the object that you want to modify. For example, to set the header of the Reference Implementation template to a transparent black, modify the odcs-header CSS class selector:

```
.odcs-header {
  background-color: rgba(0, 0, 0, 0.7);
  height: 58px;
}
```

CSS Classes defined in app.css can then be referenced in the HTML of the application. For example we have this code in pages/shell-page.html:

```
<header role="banner" id="header" class="odcs-header oj-web-applayout-header">
```

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You can also use Oracle JET themes to provide consistent appearance of components across your Digital Customer Service application. For more information about Oracle JET themes refer to the Theming Applications chapter in the Developing Applications with Oracle JET guide, in the Related Topics.

Once an Oracle JET theme is created it can be added uploaded to resources/css and then referenced in the index.html of the application with code like this:

```html
<link type="text/css" rel="stylesheet" href="resources/css/app.css">
<link type="text/css" rel="stylesheet" href="resources/css/myJETTheme.css">
```

*Related Topics*

- Theming Applications

**Custom Objects**

If you create custom objects for either Fusion Sales or Fusion Service, you must use Application Composer. If you use the Business Objects feature in Visual Builder your work won’t be backed by disaster recovery operations. Only use the Business Objects feature in Visual

*Related Topics*

- Configuring Applications Using Application Composer
6 Additional Feature Configuration

Configure Multiple Business Units with Digital Customer Service

When you have multiple business units, additional configuration is required once you have created your Digital Customer Service applications. Each business unit must have its own Digital Customer Service application.

Note: Only one business unit is supported per Digital Customer Service application.

For more information about setting up multiple business units, refer to the following cross-references in the Related Topics section: Setting Up Business Units for Service and Multiple Business Units in Sales.

Once you have created your Digital Customer Service applications, follow the instructions in the following sections of this topic:

1. Locate the business unit ID in Oracle Fusion Service.
2. Specify the business unit ID in the Digital Customer Service application.
3. Configure the Business Unit ID for the Open Service Requests list.

Locate the Business Unit ID

To locate the business unit ID for your Digital Customer Service application:

1. Sign in to Oracle Fusion Service as an administrator or a setup user.
2. In the Setup and Maintenance work area, go to the following:
   - Offering: Service
   - Functional Area: Company Profile
   - Task: Manage Business Unit
3. Locate your business unit in the Search Results list and copy the value in the BusinessUnitId column.
   - If you don’t see a BusinessUnitId column, click the View menu to access the Columns menu, and then select the columns to display.
   - Note: You will need to use the value that you copied in the Specifying the Business Unit ID and Product Catalog Usage Code in the Digital Customer Service Application task.

Locate the Product Catalog Usage Code

To locate the Product Catalog Usage Code for your Digital Customer Service application:

1. Sign in to Oracle Fusion Service as an administrator or a setup user.
2. In the Setup and Maintenance work area, go to the following:
   - Offering: Service
3. Copy the value in the Business Unit Profile Value text box.

You will need to use the value that you copied in the Specifying the Business Unit ID and Product Catalog Usage Code in the Digital Customer Service Application task.

**Note:** If you haven't yet set the scope for tasks, the Select Scope dialog box appears. For more information about setting the scope for tasks, refer to the Set the Scope in Service BU Setup topic in the Related Topics.

### Specify the Business Unit ID and Product Catalog Usage Code in the Digital Customer Service Application

Once you have located the business unit ID and product catalog usage code in Oracle Fusion Service, you must specify them in your Digital Customer Service application.

To specify the business unit ID and product catalog usage code:

1. Sign in to Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click the Web Apps tile.
4. In the Web Apps tree, click dcs.

A dcs tab appears.
5. Click the (x) (Variables) icon.
6. Set the business unit ID:
   a. Click businessUnitId.
   b. In the Default Value text box, specify the value that you copied in Step 3 of the Locating the Business Unit ID task.
7. (Optional) Set the non-default usage code:
   a. Click usageCode.
   b. In the Default Value text box, specify the value that you copied in Step 5 of the Locating the Product Catalog Usage Code task.

**Note:** When adding the Chat or Category Selector to a page, you must ensure that your businessUnitId property is bound to $application.variables.businessUnitId. Moreover, when adding the Product Selector to a page, its usageCode property must be bound to $application.variables.usageCode.

**Related Topics**
- Create a New Digital Customer Service Application
Configure Installed Base Asset Components

Configure Installed Base Assets

Here's the configuration steps you must perform to make Fusion products manageable as Installed Base Assets.

The Digital Customer Service product picker, by default, shows all products flagged as Enabled for Customer Self Service. You must set an additional property in Fusion Service to enable a product to be managed as an Installed Base Asset.

1. Sign in to Fusion Service as an administrator or setup user.
2. From the home page, select Product Management, then click the Product Information Management tile.
3. Click the Tasks drawer icon, and then click the Manage Items link.
   The Manage Items form appears.
4. Perform a search for your product, then, in the search results, select the link for the product.
5. In the product detail page, select the Specifications tab, then from the Item Organization list, select Service.
6. Update the products to make them manageable as Installed Base Assets, locate the Assets area of the view, and do one of the following:
   a. Click the Enable Asset Tracking drop down list and select: Full Lifecycle.
   b. Or, click the Enable Asset Maintenance drop down list, and select Yes.

Configure Create and Update Function Security Policies for Installed Base Asset Components

The seeded Customer Self-Service Proxy User role has privileges to view Installed Base Assets but doesn't have Update or Create privileges by default. You must add these privileges using Security Console.

For more information on enabling installed base assets, see the Related Topics link.

Create a New Role

The Customer Self-Service Proxy User role has privileges to view Installed Base Assets but doesn't have update or create privileges by default. You must add these privileges using Security Console.

1. Using Navigator, expand the Tools section, then select Security Console.
2. Click Create Role.
3. Complete the fields as shown in the following table:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role Name</td>
<td>Create Update Assets</td>
</tr>
<tr>
<td>Role Code</td>
<td>Create_Update_Assets</td>
</tr>
</tbody>
</table>
Disable Asset Management

You can hide the asset registration link from the application User menu if you don’t want this functionality to be displayed to your users.

You can also completely remove the asset-related flows from Visual Builder if you want to remove this functionality in your application altogether. Here’s how you do both.

Remove the Registered Products Link

Here’s how you delete asset registration from the User menu in the Digital Customer Service Application.

1. In Visual Builder, open your application, then click Web Apps.
2. Expand dcs, and then expand Root Pages.
3. Click shell.
4. In the design palate, click the Code button.
5. Search for "registered" and select the code entry as shown in the following example:

6. Delete the lines of code.

Delete the Asset Flows
If you want the asset flows removed entirely from your application, here's how you do it:

1. In Visual Builder, open your application, then click Web Apps.
2. Expand dcs, and then expand Flows.
3. Right-click the following three asset related flows and choose Delete.
   - asset-detail
   - asset-list
   - asset-register

All asset related functionality will now be removed from your Digital Customer Service application.

Configure Cobrowse
Here's how to set up Cobrowse, and Integrate the Cobrowse script tag in your Digital Customer Service application.
Set Up Cobrowse
This topic describes what's required before integrating the Oracle Cobrowse script tag in your Digital Customer Service application.

1. Configure the Oracle Cobrowse widget using the Oracle Digital Engagement Channels Administrative Console:
   a. Navigate to the following URL:
      https://my.livelook.com
   b. In the Login field, enter the administrator's email address that was specified when you ordered the service.
   c. Enter your password.
      Note: On your first login attempt, you will need to click the Forgot my password link and instructions for creating a password will be emailed to you.
   d. Click Login.

   For more information, refer to the Related Topics section for documentation on Cobrowse setup.

2. Locate the src URL, which is in the Cobrowse Launcher Script in the Oracle Cobrowse administration UI. For more information, refer to the Related Topics section for documentation on Cobrowse setup.

Integrate the Cobrowse Script Tag in Your Digital Customer Service Application
Before integrating Oracle Cobrowse with your Digital Customer Service application you must configure Cobrowse in Oracle Fusion Service and obtain the script tag.

1. Sign in to Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click the Web Apps tile.
4. In the Web Apps tree, expand dcs, then root pages, and then click shell.
   The shell tab appears.
5. Click the Page Structure icon.

6. In the Page Structure panel filter field, enter Cobrowse.
7. Click the highlighted Cobrowse component.
8. Enter the launcher URL obtained in the previous topic in the launcher-url field of the component’s property inspector.

---

**Related Topics**
- Using Standalone Co-browse
- Implementing Standalone Co-browse
- Configuring Standalone Co-browse
- Administering Standalone Co-browse
- Co-browse In-App SDK for iOS and Android

**Integrate Chat in Your Digital Customer Service Application**

In the Digital Customer Service reference implementation, the chat component is deployed in the footer of the shell page so that chat sessions persist across page navigation.

If you want to create another shell page or show the chat dialog from an action, follow these steps.
Create a New Root Page
In the Digital Customer Service reference implementation, the chat component is deployed in the footer of the shell page so that chat sessions persist across page navigation. If you want to create another shell page follow these steps:

1. In Visual Builder, expand the Root Pages node, open the original shell page where the chat component appears.
2. Click the Code button:

![Code button](image)

3. Copy the oj-odcs-chat component from the footer of the original shell page, and then replace the oj-odcs-chat element in the foot of the new shell page. In the Components Search field, enter chat.

Copying the code from the original shell page ensures that you have the correct ID, translations and correct references to application variables.

Show Chat with an Action
If you want to show the chat dialog from an action, follow these steps.

1. In the Web Apps navigator, click your application icon.
2. Click the Actions icon:

![Actions icon](image)

3. In the list of Actions, locate and select the ShowChatAction action chain.
4. In the Action Chain properties window, make sure the following entries are correct:
   
   o Component: `{{ document.getElementById('odcs-chat') }}`
   
   o Method Name: open.
Configure Chat to be Offered Only When Agents are Available
You can configure chat so that it's offered as an option to customers only when an agent is available. You just need to do the following two steps:

1. Set SVC_CHAT_INLAYS_ACCESS_ENABLED profile option to **Yes**.
2. Set the default value of the DCS chatPollingEnabled application variable to **True**.

Disable the Chat Download Button
If you don't want your users to have the ability to download chat transcripts at the end of a chat session, you can hide the Download button by adding to the application's app.css file:

```css
div[slot="endChat"] > div > div:nth-child(2) > div:nth-child(2) {
  visibility: hidden;
}
```

Map Roles for Digital Customer Service

Now you map roles to let the Oracle Visual Builder role to match with Oracle Fusion Service. Once you have done this task you will be able to manage user roles in the Oracle Fusion Service and your Digital Customer Service application similarly.

You must follow the process for mapping roles in this topic if you want to define additional roles.

Map a New Role

1. Sign in to Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click the **Menu** icon and select **Settings**.
4. Click the **User Roles** tab.
5. Click **Add Role**.
6. Enter a role name in the **Role** text box.
7. In the **Mapping** list, select the role to which to map.
8. Click the **Check Mark** icon to complete the mapping.

Edit an Existing Role Mapping

1. Sign in to Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click the **Menu** icon and select **Settings**.
4. Click the **User Roles** tab.
5. Hover over the role that you want to edit in the **User Roles** list, then click the **Pencil** icon.
6. Edit the role name in the **Role** text box.
7. In the **Mapping** list, select the role to which to map.
8. Click the **Check Mark** icon to complete the mapping.
Remove an Existing Role Mapping

1. Sign in to Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click the **Menu** icon and select **Settings**.
4. Click the **User Roles** tab.
5. Hover over the role that you want to remove in the **User Roles** list, then click the **Trash Can** icon.
   The user role is removed.
6. Click **Close**.

Set Up Products, Categories and Knowledge Articles

Here are instructions on how to create products, categories, and author knowledge articles specific to Digital Customer Service.

Product items and groups are used within the Digital Customer Service application to provide better support and knowledge article navigation. Also, product items and groups help you associate service requests for Oracle Fusion Service process flows. So, when you’re creating and using product items and groups, think of them as another way to improve your customer’s experience.

To configure products and categories for service request management:

1. Sign in to Oracle Fusion Service as an administrator or a setup user.
2. Configure the products that are available in service requests.
   
   **Note:** When creating your products, the following options must be selected: *Eligible to Sell, Eligible for Service* and *Enable Customer Self-Service*.

3. Configure the available categories for service requests.
4. Author Knowledge articles that you want users to have access to in their Digital Customer Service applications.

Create a Digital Customer Service Icon in Oracle Fusion Service

Sometimes, when users perform certain actions in the Digital Customer Service application, they’re redirected to the Oracle Fusion Service Dashboard. To make this path easier for your users, Oracle recommends that you include a Digital Customer Service icon within the user’s dashboard.

**Note:** If you use a third-party identity management solution with Oracle Fusion Service, you must address the redirect issues within your deployment.

Follow the procedures in this topic in the listed order to create a Digital Customer Service icon in Oracle Fusion Service:

1. Create a New Sandbox.
2. Create a New Card Icon for Accessing Digital Customer Service.
3. Validate the Card Icon.
4. Publish the Sandbox.

Create a New Sandbox

To create a new sandbox:

1. Sign in to Oracle Fusion Service.
2. Click Navigator > Configuration > Sandboxes.
3. Click the + icon (New) to create the new sandbox.
4. Select the sandbox created in Step 3.
5. Click Set as Active.

Create a New Card Icon for Accessing Digital Customer Service

To create a new card icon for accessing Digital Customer Service:

1. Sign in to Oracle Fusion Service.
   
   | Note: Ensure that your sandbox is set as active.

2. Navigate to the Configuration work area and click Structure.
3. From the Create menu, select Create Page Entry.
4. Enter information for the new card:
   
   - **Name**: Specify DCS.
   - **Icon**: Select an icon.
   - **Group**: Select Service.
   - **Show on Navigator**: Select EL Expression, then select the Edit and paste the following expression:
     
     ```
     #{!securityContext.userInRole['ORA_PER_EMPLOYEE_ABSTRACT']}
     ```
   - **Show on Springboard**: Select EL Expression, then select the Edit and paste the following expression:
     
     ```
     #{!securityContext.userInRole['ORA_PER_EMPLOYEE_ABSTRACT']}
     ```
   - **Link Type**: Select Static URL.
   - **Destination**: Specify the URL for your Digital Customer Service web application.
5. Click Save and Close.

Validate the Card Icon

To validate the card icon:

1. Sign in to Oracle Fusion Service.
2. Click Navigator > Configuration > Sandboxes.
3. Select the sandbox created in the Create a New Sandbox topic.
4. Click Set as Active.
5. Navigate to the Home page.

The DCS icon appears on the Home page and in the Navigator.
Publish the Sandbox

To publish the sandbox:

1. Sign in to Oracle Fusion Service as a user with the Sales Administrator job role.
2. Click Navigator > Configuration > Sandboxes.
3. Select the name of the sandbox created in the Create a New Sandbox topic.
   The Sandbox Details dialog appears.
4. Click Publish.

Configure Proactive Knowledge

This topic provides an overview of the proactive knowledge feature and describes how to configure variables relating to proactive knowledge.

Overview of Proactive Knowledge

The proactive knowledge feature enables you to display relevant knowledge articles to users prior to creating a Service Request (SR). Having access to knowledge articles helps customers self-service their own issues, possibly avoiding creating SRs altogether.

When the user attempts to submit an SR, the application uses the title of the SR to search the knowledge base. If the knowledge search returns matches, the application shows a list of relevant knowledge articles to the user. If the user determines that one of the articles answers their question, then the SR isn't submitted. If the knowledge articles don't help, the user can go ahead and create the SR. If the knowledge search doesn't return any matches, the application automatically submits the SR.

You can control if proactive knowledge is displayed at all, or based on how many knowledge searches a user has completed, or even by the number of articles that the user views. Also, you can configure the number knowledge articles that are displayed.

Control when Proactive Knowledge is Displayed

Proactive knowledge display options are controlled using variables. This table lists and describes the variables, and also contains an explanation of the accepted values that can be assigned to each variable.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Accepted Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>isProactiveKnowledgeOn</td>
<td>Controls if proactive knowledge is displayed during SR creation.</td>
<td>true or false</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If this variable is set to false, proactive knowledge is entirely disabled.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consequently, no other variables related to proactive knowledge need to be configured.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The default value is true.</td>
<td></td>
</tr>
</tbody>
</table>
### Oracle Fusion Service
Implementing Digital Customer Service

#### Chapter 6
Additional Feature Configuration

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Accepted Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>disableProactiveKnowledgeSearchCount</td>
<td>The number of knowledge searches that a user must perform to prevent proactive knowledge articles from being displayed. For example, if this value is set to 2, then if a user performs at least two searches for knowledge articles, then proactive knowledge isn't displayed.</td>
<td>Positive integer&lt;br&gt;The default value is 1.</td>
</tr>
<tr>
<td>disableProactiveKnowledgeViewCount</td>
<td>The number of knowledge articles that a user must view to prevent proactive knowledge articles from being displayed. For example, if this value is set to 3, then if a user views at least three knowledge articles, then proactive knowledge isn't displayed.</td>
<td>Positive integer&lt;br&gt;The default value is 2.</td>
</tr>
</tbody>
</table>

To configure the variables that control if and when proactive knowledge is displayed:

1. Sign in to Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click the **Web Applications** tile.
4. In the **Web Apps** tree, expand `dcs`, and then expand `flows`.
5. Click on **service-request-create**. The **service-request-create** tab opens.
6. Click the (x) (Variables &Types) icon.
7. Modify the **Default Value** field of one or more variables of the following variables:
   - `isProactiveKnowledgeOn`
   - `disableProactiveKnowledgeSearchCount`
   - `disableProactiveKnowledgeViewCount`

**Note:** If the number of knowledge searches performed is equal to or greater than the value in `disableProactiveKnowledgeSearchCount` or the number of knowledge articles viewed is equal to or greater than the value in `disableProactiveKnowledgeViewCount`, then proactive knowledge isn't displayed.

### Control How Many Knowledge Articles are Displayed
You can control the maximum number of knowledge articles to display when proactive knowledge displayed. The variable that controls this is `kmArticlesPageSize`.

**Note:** The default value assigned to `kmArticlesPageSize` is 5.

To configure how many knowledge articles to display:

1. Sign in to Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click the **Web Applications** tile.
4. In the **Web Apps** tree, expand `dcs`, then expand **flows**, and then expand **service-request-create**.
5. Click on **service-request-create-answers**.
   The **service-request-create-answers** tab opens.
6. Click `kmArticlesPageSize`.
7. Enter the number of articles to display in the **Default Value** field.

### Self-Service Registration Setup

There are two types of Self-Service registration requests, Fusion and B2C.

- You allow Fusion requests by setting the value of the **SVC_CSS_ALLOW_CONTACT** profile option to `TRUE`.
- You allow B2C requests by setting the **SVC_CSS_ALLOW_CONSUMER** profile option to `TRUE`.

The following users can submit self-service registration requests:

- Anonymous Users
- User with Customer Self-Service Administration duty role
- User authenticated by IDCS through the Proxy User Data Service

Here's how the self-service registration request works:

First, the registration request is validated. If no errors are found, the status of the request is set to **ORA_CSS_PENDING**. If the value of profile option (either **SVC_CSS_ALLOW_CONTACT** for Fusion, or **SVC_CSS_ALLOW_CONSUMER** for B2C) is set to `TRUE` then the process continues.

If the profile option is set to `FALSE`, then the request must be manually initiated by a user with either the Customer Self-Service Account Administrator job role or Customer Self-Service Account Administration duty role. The name of the profile option is **SVC_CSS_SELF_REG_AUTO_APPROVE** for Fusion requests and **ORA_SVC_CSS_SELF_REG_B2C_AUTO_APPROVE** for B2C requests.

Here's the expected result:

- The user account in IDCS with the Customer Self-Service User job role (or job role given by profile option **SVC_CSS_USER_ROLE_COMMON_NAME**) will be present.
- The contact in Fusion Service, stamped with the GUID of the user account in IDCS.
- The contact is given the Self-Service User role.
- If the request was of the Fusion type:
  - A relationship between the business account and the contact is indicated.
  - If the user is the first user of a business account the user is given the Customer Self-Service Account Administrator job role (or a job role given by the **SVC_CSS_ACCT_ADMIN_ROLE_COMMON_NAME** profile option).

The primary attributes that influence the Self-Service registration are:

- Request Type Code (RequestTypeCd). If this attribute is absent in the request payload or if the value of this attribute is **ORA_CSS_REQ_TYPE_CONTACT** then it's a Fusion request. If the value of this attribute is **ORA_CSS_REQ_TYPE_CONSUMER** then it's a B2C request.
• Account Key (AccountKey). For Fusion requests, this attribute is expected to identify a unique business account. The profile option SVC_CSS_ACCT_KEY_FIELD determines the attribute of the Account object whose value must be the specified account key value. The default value of this profile option is OrganizationName but it can be set to any attribute of the account object whose value is unique to a single account.

• Email Address (EmailAddress). This attribute is the default value of the SVC_CSS_REG_FLD_CONTACT profile option and is used to locate an existing contact. You can set this profile option to any attribute on the Self-Service Registration object. The corresponding attribute on the Contact object is located either using auto mapping logic or using the value of the SVC_CSS_REG_CONT_MAP profile option. The email address of the located contact and the email address of the registration request must be the same.

• Login ID (LoginId). If a value for this attribute isn’t specified, the value will be set to the value of the attribute identified by the SVC_CSS_SIGN_IN_ATTR_NAME profile option whose default value is EmailAddress. Login ID is used to locate a user account in the Identity database.

The following table shows the actions taken based on the result of searching for existing contact and user account:

<table>
<thead>
<tr>
<th>Search Result</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact doesn’t exist but the user account exists.</td>
<td>A contact record is created and the GUID of the user account is stamped on the contact if the user submitting the registration request is authenticated by IDCS or the user submitting the registration request has been given the Associate User With Contact privilege. The Associate User With Contact privilege is given by default only to users with the Customer Self-Service Administration duty role.</td>
</tr>
<tr>
<td>Contact exists and the user exists and contact record isn’t stamped with the GUID of the user account.</td>
<td>The GUID of the user is stamped on the contact provided the user submitting the registration request is authenticated by IDCS and the email address of the user account is same as that of the registration request or the user submitting the registration request has been given the Associate User With Contact privilege.</td>
</tr>
<tr>
<td>Contact exists and the user exists and contact record is stamped with the GUID of the user account.</td>
<td>If this is a Fusion request, the user already has a self-service user role for one account and is granted the self-service role for another account.</td>
</tr>
<tr>
<td>Contact exists but user account isn’t found.</td>
<td>A user account is created and the contact is stamped with the GUID of the user account.</td>
</tr>
<tr>
<td>Neither a contact nor a user account is found.</td>
<td>The records are created and the contact record is stamped with GUID of the user account.</td>
</tr>
</tbody>
</table>

After the contact record is created, the attributes of the Self-Service Registration object are copied over to the Contact object. If the name of an attribute of the SelfRegistration object (ignoring _c) is same as that of the Contact object then the value of that attribute is copied over. If the names aren’t the same then the SVC_CSS_REG_CONT_MAP profile option can be used to map an attribute of the SelfRegistration object to an attribute of the Contact object.

Configure the Self-Service Registration Object

Use this topic to configure the Self-Service Registration object.
Overview of the Self-Service Registration Object

Digital Customer Service self-service registration requests are submitted using the Self-Service Registration object. This object is extensible and can be configured using the Application Composer in Oracle Fusion Service. With the Application Composer, you can add new fields, validation rules and triggers to the object.

The payload of the REST request to the Self-Service registration resource can supply values for the following attributes:

**Basic attributes:**

<table>
<thead>
<tr>
<th>Attribute Name for the SelfRegistration Object</th>
<th>Display Name</th>
<th>Attribute in the Contact Object</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>EmailAddress</td>
<td>Email Address</td>
<td>EmailAddress</td>
<td>Text</td>
</tr>
<tr>
<td>AccountKey</td>
<td>Account Key</td>
<td>AccountKey</td>
<td>Text</td>
</tr>
<tr>
<td>FirstName</td>
<td>First Name</td>
<td>FirstName</td>
<td>Text</td>
</tr>
<tr>
<td>MiddleName</td>
<td>Middle Name</td>
<td>MiddleName</td>
<td>Text</td>
</tr>
<tr>
<td>LastName</td>
<td>Last Name</td>
<td>LastName</td>
<td>Text</td>
</tr>
<tr>
<td>PlaceOfBirth</td>
<td>Place Of Birth</td>
<td>PlaceOfBirth</td>
<td>Text</td>
</tr>
</tbody>
</table>

**Address attributes:**

<table>
<thead>
<tr>
<th>Attribute Name for the SelfRegistration Object</th>
<th>Display Name</th>
<th>Attribute in the Contact Object</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrimaryAddressLine1</td>
<td>Primary Address Line 1</td>
<td>Address1</td>
<td>Text</td>
</tr>
<tr>
<td>PrimaryAddressLine2</td>
<td>Primary Address Line 2</td>
<td>Address2</td>
<td>Text</td>
</tr>
<tr>
<td>PrimaryCountry</td>
<td>Primary Country</td>
<td>Country</td>
<td>LOV</td>
</tr>
<tr>
<td>PrimaryCity</td>
<td>Primary City</td>
<td>City</td>
<td>LOV</td>
</tr>
<tr>
<td>PrimaryState</td>
<td>Primary State</td>
<td>State</td>
<td>LOV</td>
</tr>
<tr>
<td>PrimaryProvince</td>
<td>Primary Province</td>
<td>Province</td>
<td>Text</td>
</tr>
<tr>
<td>PrimaryPostalCode</td>
<td>Primary Postal Code</td>
<td>PostalCode</td>
<td>LOV</td>
</tr>
<tr>
<td>PrimaryAddressType</td>
<td>Primary Address Type</td>
<td>AddressType</td>
<td>Text</td>
</tr>
<tr>
<td>Attribute Name for the SelfRegistration Object</td>
<td>Display Name</td>
<td>Attribute in the Contact Object</td>
<td>Type</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>----------------------------</td>
<td>---------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>SecondaryAddressLine1</td>
<td>Secondary Address Line 1</td>
<td>Address1</td>
<td>Text</td>
</tr>
<tr>
<td>SecondaryAddressLine2</td>
<td>Secondary Address Line 2</td>
<td>Address2</td>
<td>Text</td>
</tr>
<tr>
<td>SecondaryCountry</td>
<td>Secondary Country</td>
<td>Country</td>
<td>LOV</td>
</tr>
<tr>
<td>SecondaryCity</td>
<td>Secondary City</td>
<td>City</td>
<td>LOV</td>
</tr>
<tr>
<td>SecondaryState</td>
<td>Secondary State</td>
<td>State</td>
<td>LOV</td>
</tr>
<tr>
<td>SecondaryProvince</td>
<td>Secondary Province</td>
<td>Province</td>
<td>Text</td>
</tr>
<tr>
<td>SecondaryPostalCode</td>
<td>Secondary Postal Code</td>
<td>PostalCode</td>
<td>LOV</td>
</tr>
<tr>
<td>SecondaryAddressType</td>
<td>Secondary Address Type</td>
<td>AddressType</td>
<td>Text</td>
</tr>
</tbody>
</table>

**Contact Point attributes:**

<table>
<thead>
<tr>
<th>Attribute Name for the SelfRegistration Object</th>
<th>Display Name</th>
<th>Attribute in the Contact Object</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>RawWorkPhoneNumber</td>
<td>Raw Work Phone Number</td>
<td>RawPhoneNumber</td>
<td>Text</td>
</tr>
<tr>
<td>RawMobileNumber</td>
<td>Raw Mobile Number</td>
<td>RawPhoneNumber</td>
<td>Text</td>
</tr>
<tr>
<td>RawHomePhoneNumber</td>
<td>Raw Home Phone Number</td>
<td>RawPhoneNumber</td>
<td>Text</td>
</tr>
<tr>
<td>WorkPhoneCountryCode</td>
<td>Work Phone Country Code</td>
<td>PhoneCountryCode</td>
<td>Text</td>
</tr>
<tr>
<td>HomePhoneCountryCode</td>
<td>Home Phone Country Code</td>
<td>PhoneCountryCode</td>
<td>Text</td>
</tr>
<tr>
<td>WorkPhoneAreaCode</td>
<td>Work Phone Area Code</td>
<td>PhoneAreaCode</td>
<td>Text</td>
</tr>
<tr>
<td>MobileAreaCode</td>
<td>Mobile Area Code</td>
<td>PhoneAreaCode</td>
<td>Text</td>
</tr>
<tr>
<td>HomePhoneAreaCode</td>
<td>Home Phone Area Code</td>
<td>PhoneAreaCode</td>
<td>Text</td>
</tr>
<tr>
<td>WorkPhoneExtension</td>
<td>Work Phone Extension</td>
<td>PhoneExtension</td>
<td>Text</td>
</tr>
</tbody>
</table>
Attribute Name for the SelfRegistration Object | Display Name | Attribute in the Contact Object | Type
--- | --- | --- | ---
MobileExtension | Mobile Extension | PhoneExtension | Text
HomePhoneNumber | Home Phone Extension | PhoneExtension | Text
WorkPhoneNumber | Work Phone Number | PhoneNumber | Text
MobileNumber | Mobile Number | PhoneNumber | Text
HomePhoneNumber | Home Phone Number | PhoneNumber | Text

During the approval process, a contact record is created, and the attributes of the Self-Service Registration object can be transferred to the Contact object. The value assigned to the `svc_css_reg_cont_map` profile option determines which attributes in the Self-Service Registration object are transferred to which attributes in the Contact object. The default is an empty string. You specify a value for this profile option only if the name of the attribute in the Self Registration object is different from the name in the Contact object. Cases where they may happen are if you have created a custom attribute for an object. Custom attributes are designated with an `_c`, such as PlaceOfBirth_c. For this use case, you ignore the `_c` when determining whether an attribute maps or not. So, let’s take the custom attribute in the Self Registration object PlaceOfBirth_c. Since the Contact object has a out of the box attribute called PlaceOfBirth no mapping is required since the two values match. If, however, the name of the custom attribute was BirthPlace_c the value of this profile option would then be BirthPlace_c:PlaceOfBirth.

Usage Example

For business reasons, if additional information needs to be gathered about the user submitting a registration request, custom fields can be added to the Self-Service Registration Object. If an additional field is a required, then a value must be provided in the REST request sent to the Self-Service Registration object.

If a new required custom attribute is added to the Contact object, a new custom attribute must also be added to the Self-Service Registration object and then specified in the `svc_css_reg_cont_map` profile option. This will transfer the value of the new attribute of the Self-Service Registration object to the new attribute of the Contact object.

For example, let’s say there’s a custom attribute in the Self Registration object called PlaceOfBirth_c. This attribute can be added to the Self-Service Registration object and mapped to the **Place of Birth** attribute that already exists on the Contact object. If the name of the attribute is BirthPlace_c then the value of `svc_css_reg_cont_map` profile option should be BirthPlace_c:PlaceofBirth. You can map multiple attributes using colon separating fields, and commas separating the pairs. For more information, see the entry in the Registration Profile Options table in the Configure Profile Options topic listed in the Related Topics section.

**Note:** The API Name of the new attribute is different from the Name.

Here are the tasks that you need to complete to address this use case:

1. Create the Field
2. Test the REST Request
3. Modify the Profile Option
Create the Field

First, you need to create the field.

To create the field:

1. Sign in to Oracle Fusion Service as an administrator or a setup user.
2. Create a sandbox for adding the Place of Birth field:
   a. Click Navigator > Configuration > Sandboxes.
   b. Click Create Sandbox.
      The Create Sandbox page appears.
   c. Enter a name in the Name field.
   d. From the All Tools list, select Application Composer.
   e. Click Create.
   f. In the Available Sandboxes list, click the name of the sandbox name that you specified in step c.
   g. Click Enter Sandbox.
3. Navigate to Application Composer.
4. Expand Objects, then Standard Objects, then Self-Service Registration, and then click Fields.
   The Fields page appears.
5. Click Create a custom field.
6. Click the Text option, then click OK.
7. Specify the following for the Date field options:
   o In the Display Label field, enter the following string:
      Birth Place
   o The Name field will be pre-populated based on the name that you entered for the Display Label, without any spaces.
   o The API Name field will be pre-populated based on the name that you entered for the Display Label, without any spaces, and typically with the following suffix: _c
      Tip: Note the value assigned to the Birth Place field, because it will be assigned to the svc_css_reg_cont_map profile option in the Modify the Profile Option task, later in this topic.
   o Deselect the Required option in the Constraints section.
   o Select the Updatable option in the Constraints section.
   o Deselect the Searchable option in the Constraints section.
   o Select the Include in Service Payload option in the Constraints section.
8. Click Save and Close.

Test the REST Request

Use the following sample curl command to test the REST request. You must set the profile option before you complete your testing. Also, given a meaningful value for the Birth Place (birthplace_c) field such as "2001-01-01".

Note: This is only an example. Your curl command must include details relevant to your deployment.

curl -X POST \
Modify the Profile Option
To modify the `svc_css_reg_cont_map` profile option so that it includes the Place of Birth field:

1. Sign in to Oracle Fusion Service as administrator or a setup user.
2. In the **Setup and Maintenance** work area, go to the following:
   - Offering: Service
   - Functional Area: Digital Customer Service
   - Task: Manage Digital Customer Service Profile Options
3. Click the `svc_css_reg_cont_map` profile option.
4. Add the following profile option value to the list of values:
   
5. Click **Save and Close**.

Usage Example with Multiple Mappings
Now, let's briefly consider a scenario with multiple mappings.

First, you specify the case sensitive name and value pairs to map the fields of the Registration View object to the Contact View object. Here's how you do it: in the following way:

```
• reg_field1:contact_field1,reg_field2:contact_field2
```

Where, the `reg_field1` is the `PlaceOfBirth_c` in the Registration View Object which is itself a custom object created in Application Composer.

The `contact_field` is the `PlaceOfBirth` field in the Contact View object. This attribute is already present in the Contact object.

So the mapping would be: `reg_field1:contact_field1 LIKE BirthPlace_c:PlaceOfBirth`

**Related Topics**
- Configure Profile Options

Set Up Visual Navigator

Visual Navigator, once configured, enables you to show a grid of tiles on a page to facilitate navigation within and outside of the Digital Customer Service application.
When you drop the component on a page in the DCS application, you must configure the component before anything appears in the UI. You must determine the number of grid tiles, the image and text that displays in each tile along with the action that's taken when each tile is clicked.

Find the Visual Navigator component in the list of Digital Customer Service components in the Components palette. Drag and drop the component from that location onto the page where you would like the Visual Navigator to appear. When you drop the component on the page, a NavigatorLoadAction action chain is created at the page level. You will need to modify this action to configure the items the navigator displays. A number suffix is added to the name if more than one navigator is added to a given page.

Specify Items for an Array
To configure the navigator items you must first specify the items that you want the navigator to show in an array. You can specify this either by an action chain variable or using a separate JSON file.

Specify Items for the Action Chain Variable
Now you specify the items as an action chain variable. You edit the NavigatorLoadAction and set the default value of the action chain variable items to be an array.

1. From the page flow that you dropped the Visual Navigator component on, select the Actions icon.
2. From the list of Actions, select **NavigatorLoadAction**.
3. Click the **Action Chains - Variables** tab.
4. Select the items array from the list of variables.
5. In the **Default Value** field, enter your code.

See the following example as reference.

```json
[
  {
    "title": "Happy Holidays",
    "description": "Wishing all our customers a happy holiday season!",
    "type": "info",
    "icon": "fa fa-5x fa-glass-cheers"
  },
  {
    "title": "Setup your Nimbus 3000",
    "description": "How do I configure my Nimbus 3000?",
    "type": "knowledge-article",
    "id": "1003002",
    "icon": "fa fa-5x fa-question"
  },
  {
    "title": "My Service Requests",
    "type": "service-request",
    "operation": "list",
    "icon": "fa fa-5x fa-ticket-alt"
  },
  {
    "type": "product",
    "id": "CRMITEM-AS54888-00182744",
    "icon": "fa fa-5x fa-desktop"
  },
  {
    "type": "my-profile",
    "title": "My Profile",
    "description": "View your account information.",
    "icon": "fa fa-5x fa-user"
  }
]"
Work With the JSON File

Create a JSON file on your local file system using the same format as the previous example. From the web application
navigator in Visual Builder upload the JSON file in a folder under the application’s resource folder. Do this by either
dragging and dropping the file or by right-clicking the folder you want to upload the JSON file to and selecting Import
from the menu.

If you need to edit the NavigatorLoadAction use these steps:

1. Add a Call Module Function action as the first action in the chain.
2. Set the Call Module Function to call the application level loadJSON function.
3. Set the path input parameter of the function to be the relative path of the JSON file under the resources
directory.
4. Add an Assign Variables action after the newly added Call Module Function action.
5. Assign the result of the call module function to flow level items variable.

Navigation Items

The supported types and operations are defined in the NavigateAction on the shell page. By default, the following types
and operations are supported but these can be extended by adding additional cases to the shell page’s NavigateAction.
If no operation is specified it defaults to details.

The supported types and operations are listed in the following table:

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Operation</th>
<th>ID</th>
<th>Parameters</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static information</td>
<td>info</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Navigate to the Contact Us Page</td>
<td>contact-us</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Navigate to the Home page</td>
<td>homepage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visit a knowledge article</td>
<td>knowledge-article</td>
<td></td>
<td></td>
<td>Knowledge article identifier. The kmContentId URL parameter when viewing the article in DCS.</td>
<td></td>
</tr>
<tr>
<td>Navigate to the user’s profile page</td>
<td>my-profile</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Type</td>
<td>Operation</td>
<td>ID</td>
<td>Parameters</td>
<td>Additional Information</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------</td>
<td>------------</td>
<td>---------------------------</td>
<td>----------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Navigate to the product page</td>
<td>product</td>
<td></td>
<td>Item number of product</td>
<td></td>
<td>The title of the navigation item will be the product’s name loaded from Fusion Service.</td>
</tr>
<tr>
<td>Product Group</td>
<td>product-group</td>
<td></td>
<td>ProductGroupId of the</td>
<td></td>
<td>Title of the navigation item will be the product group’s name loaded from Fusion Service.</td>
</tr>
<tr>
<td>Category</td>
<td>category</td>
<td></td>
<td>CategoryId of the category</td>
<td></td>
<td>Title of the navigation item will be the category’s name loaded from Fusion Service.</td>
</tr>
<tr>
<td>Navigate to the service request</td>
<td>service-request</td>
<td>create</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>request create page.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Navigate to the service request</td>
<td>service-request</td>
<td>list</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>list page.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Navigate to the work order list</td>
<td>work-order</td>
<td>list</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>list page.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open a URL in a new tab</td>
<td>url</td>
<td></td>
<td></td>
<td></td>
<td>{ &quot;url&quot;: &quot;<a href="https://www.samplewebpage.com">https://www.samplewebpage.com</a>&quot; }</td>
</tr>
</tbody>
</table>

**Icons and Images**

Items can have either an icon, such as a Font Awesome icon, or an image.

To apply an icon set the icon property of the item and specify the style classes required as its value, for example, fa fa-5x fa-user.

To use an image set the imageUrl property to the image's URL. Just a reminder, image names are case sensitive. Here's an example:

```
"imageUrl": "[$application.path + 'resources/images/service-request/SR000038250.png']"
```

**Translations**

To specify a key in the application resource bundle set the title or description of the item to the key prefixed with an exclamation mark, for example, !bundle_key.

Here's an example:
Automatically Populate Key Information in Pre-Chat Form

You can automatically populate the product, category, and service request number in the pre-chat form, based on the page context in which the chat is initiated.

Here’s how it works:

First, with the service request number on a service request form:

- If you’re viewing a service request with a product (or product group) already selected and you initiate a chat, then the selected product (or product group) will be auto-populated in the pre-chat form.
- If you’re viewing a service request with a category already selected and you initiate a chat, then the selected category will be auto-populated in the pre-chat form.
- If you’re viewing a service request and you initiate a chat, then the service request number will be auto-populated in the pre-chat form.

Here’s how fields are automatically populated on the Product Group landing page:

- If you’re viewing a product landing page and you initiate a chat, then the selected product will be auto-populated in the pre-chat form.
- If you click through to a knowledge article from a product landing page, then the selected product will be auto-populated in the pre-chat form.

Now, the Product Group landing page:

- If you’re viewing a product group landing page and you initiate a chat, then the selected product group will be auto-populated in the pre-chat form.

The Category Landing page:

- If you’re viewing a category landing page and you initiate a chat, then the selected category will be auto-populated in the pre-chat form.
- If you click through to a knowledge article from a category landing page, then the selected category will be auto-populated in the pre-chat form.

And finally, here’s the behavior with Knowledge search results:

- If you have done a knowledge search and selected a product from the product selector and you initiate a chat from the search results list or from a knowledge details page (from the search results), then the selected product will be auto-populated in the pre-chat form.
- If you have done a knowledge search and selected a category from the category selector and you initiate a chat from the search results list or from a knowledge details page (from the search results), then the selected category will be auto-populated in the pre-chat form.
The Chat component doesn't display the category, product or service request by default, so you must enable them by doing the following:

2. Navigate to Web Applications, dcs, and expand Root Pages, and then click shell.
3. Click shell, and then click the Page Structure icon.
4. In the Page Structure list, search for Chat.
5. Click Chat to display the property inspector.
6. Within the chat attributes, locate the category property, and click the arrow to display the sub-category.
7. Change the category.show sub-category value to true.
8. Click the category arrow to close the sub-category.
9. In the property inspector, locate the product property in the Chat attributes, and click the arrow to display the sub-category.
10. Change the product.show sub-category value to true, then click the product property arrow to close to sub-category.
11. Now locate the service-request property in the Chat attributes property inspector and click the arrow to expand the sub-category.
12. Change the service-request.show sub-category value to true

Set Up Vanity URLs

The Vanity URL feature enables you to map a custom domain to your Oracle Visual Builder instance and Digital Customer Service Application.

This topic describes how to provide a replacement domain to use instead of the typical Oracle domain. The Vanity URL feature is distinct from domain forwarding, where the browser gets redirected. With the CNAME mapping described here, your users will never see the Oracle domain in their browser.

To successfully set up a vanity URL, follow the following three tasks in this topic:

1. Configure a Domain Provider
2. Log a Service Request for Oracle Support
3. Set Up the Root URL App

Prerequisites

Before following the steps in this task you must make sure you own the sub-domain that you want to use and have access to the SSL certificate bundle information.

**Note:** If you have multiple Digital Customer Service applications you must perform these configuration steps on each one.

Configure the Domain Provider

The following instructions represent a generic overview for configuring a domain provider. The exact steps might be different, depending on your domain provider.

1. Create or identify a subdomain to map to Oracle Visual Builder via a domain provider. For example: https://myvanity.example.org.
2. Add a CNAME record for the subdomain to map to the Oracle Visual Builder instance URL. For example, create a CNAME record for https://myvanity.example.org that points to myvb-instance.builder.ocp.oraclecloud.com.
3. Ensure a valid SSL certificate applies to that subdomain, either through your domain provider or through a valid certifying authority. For example, Comodo, DigiCert, or other.

   **Note:** Even though it’s possible to use a wildcard SSL certificate (*.example.org), the certificate bundle needs to be maintained on the server. Because of this, you will want to consider an SSL certificate, specifically for that subdomain. The following example shows a wildcard certificate issued for the *.example.org domain.

4. Ensure that you have extracted or exported the bundle that contains the certificate and private key, because the certificate bundle will be managed on the server.

   **Note:** Depending on your domain provider, you may need to indicate that you want to use the certificate on your own server in order to download the bundle.

   You should now have a certificate along with a private key file.

**Log a Service Request for Oracle Support**

Now, you need to log a Service Request (SR) with Oracle Support to request your Oracle Visual Builder instance to be configured with your vanity domain.

1. Navigate to the Oracle Support site.
2. Sign in using your user name and password.
3. Create an SR. Your SR must include the following information:

   a. The full VB URL Designer URL. For example: myvbinstance.builder.ocp.oraclecloud.com.
   b. This the CNAME as provided and the VB domain e.g. myvbinstance.builder.ocp.oraclecloud.com.
   c. The Certificate and Private key files. For example, the keys ending in .cer and .key.

**Set Up the Root URL App**

Follow the steps in this task to configure the custom URL for your domain.
To map a custom domain to your application:

1. In Visual Builder, click the **Web Applications** tab, and then click **Menu** and select **Settings**, as shown in the following example:

2. In the Settings dialog box, enter the URL into the **Vanity URL** text field and click **Close**.
   
   The URL must be the full URL that you want to use and it must use valid form (for example, https://myvanity.example.org).

After you publish your DCS application, a visitor can type the custom domain (for example, https://foo.example.org) in the browser to open the web application. The URL won't contain any additional path parameters because the app is loaded as the root domain.

### Post-Configuration Verification Tasks

This topic describes the post-configuration verification tasks recommended after configuring your Digital Customer Service application. The tasks outlined in this topic apply only if you created your Digital Customer Service application using the Digital Customer Service Reference Implementation template.

#### Verify the Knowledge Search Component

To verify the Knowledge Search component:

1. Navigate to your Digital Customer Service application.
2. Enter the search text for the Knowledge Management articles that have been created.
3. Click the **Search** icon.
4. Verify that the search results match the search text.
5. Click the **Category** field to verify the list of categories are displayed.
6. Click the **Product** field to verify the list of products are displayed.
7. Sign in to your Digital Customer Service application as a self-registered user.
8. Enter the search text for the Knowledge Management articles that have been created.
9. Click the **Search** icon.
10. Verify that the search results match the search text.
11. Click the **Category** field to verify the list of categories are displayed.
12. Click the **Product** field to verify the list of products are displayed.

**Verify the Service Request Creator Component**

To verify the Service Request Creator component:

1. Sign in to your Digital Customer Service application as a self-registered user.
2. Click the **User** menu, then select **My Service Requests**.
3. Click **Create Service Request**.
4. Enter details in the following fields:
   - **Title**
   - **Describe the Problem**
   - **Category**
   - **Product**
5. Click **Submit**.
6. Verify that a confirmation message appears.

**Verify the Service Request List Component**

To verify the Service Request List component:

1. Sign in to your Digital Customer Service application as a self-registered user.
2. Click the **User** menu, then select **My Service Requests**.
3. Verify that the **Service Requests** list contains the service requests created in the Verify the Service Request Creator Component task.
4. Specify a **Filter**.
5. Verify that the **My Service Requests** list returns only SRs that contain the filter in the title.
6. Change the **Sort By** to **Service Request Number Ascending**.
7. Verify that the **Service Request** list is ordered by SR number, where the lowest SR number appears first in the list.

**Verify the Edit Service Request Data Component**

To verify the Edit Service Request Data component:

1. Sign in to your Digital Customer Service application as a self-registered user.
2. Click the **User** menu, then select **My Service Requests**.
3. View an existing SR by clicking on it from the **My Service Requests** list.
4. Verify that the details of the SR that you selected are displayed as expected.
5. Add a message:
   a. In the **Messages** tab, enter a message in the **Write a new message** field.
   b. Click **Submit**.
   c. Verify that the message you entered is displayed in the list of messages at the end of the page.
6. Add a file attachment:
a. Click the **File Attachments** tab.
b. Drag-and-drop files into the **Drop files to attach or browse** box.
c. Click the **Pencil** (Edit Description) icon next to an uploaded file, enter a description, then click the **Check Mark** (Update Description) icon.
d. Verify that the file and its description are listed in the list of file attachments.
e. Click the file name.
f. Verify that the file is successfully downloaded.

7. Add a URL attachment:
   a. Click the **URL Attachments** tab.
   b. Enter a URL and a description.
   c. Click **Submit**.
   d. Verify that the URL and its description are listed in the list of URL attachments.

8. Escalate the SR:
   a. Click the **Actions** menu and select **Escalate this request**.
   b. Enter a message in the **Escalate this request** dialog box.
   c. Click **Escalate**.
   d. Verify that the SR displays an escalated indicator.
   e. Verify that the escalation message appears in the list of messages on the **Messages** tab.

9. Close the SR:
   a. Click the **Actions** menu and select **Resolve this request**.
   b. Enter a message in the **Resolve this request** dialog box.
   c. Click **Resolve**.
   d. Check that the SR displays a **Status** of **Resolved**.
   e. Verify that the closure message appears in the list of messages on the **Messages** tab.

### Verify the Chat Component

To verify the Chat component:

1. Sign in to your Digital Customer Service application as a self-registered user.
2. Click the **Live Chat Support** link.
3. Fill in the **Subject** field.
   - **Note:** Some user details are prepopulated in the form.
4. Click **Start Chat**.
5. Verify that the chat connects, and is placed in the queue.
   - If the chat component isn't working, you may need to enable the SVC_ENABLE_CHAT profile option. For more information, see Related Topics for a link to the Configure Chat Profile Options topic.

### Verify Search Results with Product and Category as Search Criteria

To verify search results where both product and category are used as search criteria:

1. Sign in to your Digital Customer Service application as a self-registered user.
2. Enter your search criteria in the **Search** text box.
3. Expand the **Filter your search** option.
The **Select category** and **Select product** fields appear.

4. Navigate the product hierarchy in the **Select product** field, then click a product.
5. Navigate the category hierarchy in the **Select category** field, then click a category.
6. Click the **Magnifying Glass** (Search) icon.
   Your search results appear.
7. Verify the results match the search criteria.

## Add a Fusion Service Field to the Service Request Page

There are several steps you perform to add a custom field from Fusion Service into the Service Request form.

- Replace the service metadata: You first replace the service metadata in Digital Customer Service with the latest metadata from Fusion Service, including the configurations you would like the Digital Customer Service application to consume.
- Edit the page itself. You add the new field, change the REST API call to ensure that the new field is requested or sent, and then you add a new UI control for the new field onto the page.

### Replace the Metadata

Replace the endpoint metadata in the application with the latest metadata from the server that includes the new configuration.

1. In Visual Builder select the **crmRestApi** in the Services window, and then click the **Service Connections** icon in the navigator.
2. Click the **Endpoints** tab.
3. Click the **Replace definitions for all selected endpoints** icon.
4. Click **Replace** on the **Confirm definitions replace** dialog box.
5. Once the operation is complete, click **OK**.

### Add the New Field

Now you add the new field to the corresponding type in the Digital Customer Service application.

1. In the navigator, click the **Web Application** icon.
2. Expand the **Flows** node.
3. Expand the **service-request-create** flow.
4. Select **service-request-create-start**.
5. From the Designer list, select the **Variables and Types** icon.
6. In the workspace, for the createServiceRequest type, click **Edit from Endpoint**.
7. From the **Endpoint Structure** list, select the custom field, and then click **Finish**.

### Change the REST Request

Change the action chain for the REST request to ensure that the field is included in the body of the create request and mapped to the property on the object.

1. Ensure that the **service-request-create-start** is selected, and then from the Designer list, select the **Actions** icon.
2. In the workspace, select **SubmitServiceRequestAction**.
3. In the workspace, select the **callCreateServiceRequestEndPoint** REST call.
4. In the **Call Action Chain** window, in the **Input Parameters** area, click **Assign**.
5. In the **Call Action Chain** workspace, in the **Target** area, click **body**.
6. Before the closing brace in the JSON code, add a new entry for the custom field. Make sure you add a trailing comma to the preceding line.

   For example, "MyCustomField_c": [[ $page.variables.serviceRequest.MyCustomField_c ]]

**Change the GET REST Request for the List**

Edit the action chain or service data provider that does the GET request and make sure the field parameter of the GET includes the custom field. You also may need to map the field in the response to a variable.

1. In the Web Apps list, expand the Flows node, and then expand the **service-request-list** node.
2. Select **service-request-list-start**
3. In the Designer, click the **Variables and Types** icon.
4. In the Variables workspace, select **srListServiceDataProvider**.
5. In the **Parameters** list, select the **fields** parameter.
6. In the **urlParameters.field** area, add a comma at the end of the field list, and add the Fusion Service custom field name, then click **Save**.

**Change the GET REST Request for the Detail Page**

Now edit the request for the detail page.

1. From the Flows list, expand the **service-request-detail** node, and then select **service-request-detail-start**.
2. Click the **Actions** icon in the Designer.
3. Locate **LoadServiceRequestAction**, and click the **Menu** icon in that row, and select **Edit**.
4. In the diagram, click **Call REST Endpoint**.
5. In the **Input Parameters** list, select **fields**.
6. Add the new custom field to the comma separated list of fields and then click **Save**.

**Enable Your Own Sign In Pages**

To enable your own sign-in pages, you must first update your Digital Customer Service application configuration to use Digital Customer Service as the Security provider.

After doing this, VBCS will inject data into the **app-flow.json** file which will allow the Digital Customer Service Security Provider to have access to the same IDCS configuration information as the standard VB security provider. In addition to enabling you to create your own sign-in page, using the Digital Customer Service Customer Security Provider enables you to use the Change Password button on the My Profile page in the out of the box reference implementation. That button takes the user to the reference implementation's Change Password page.

1. Using the application navigator's Source View, navigate to **webApps > webAppName > app-flow.json**.
2. Locate the **userConfig** element in the **app-flow.json** file of the application in the DT editor, and replace the child element "type": "vb/DefaultSecurityProvider" with: "type": "oj-odcs/application-common/OdcsSecurityProvider".

---

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3. Then, add "defaultSecurity": true.

   This entry must be a child element of the "userConfig/configuration" element which tells VBCS to send IDCS configuration data to the `app-flow.json` file during application staging. Here’s how the updated "userConfig" element should look:

   ```json
   "userConfig": {
     "type": "oj-odcs/application-common/OdcsSecurityProvider",
     "configuration": {
       "defaultSecurity": true,
       "authentication": {
         "type": "implicit"
       },
       "embedding": "deny"
     }
   }
   ``

   You can optionally specify the custom sign-in page for Digital Customer Service by setting `userConfig/configuration.odcsLoginPath` to point to a VB page path. If this path isn’t specified, the RI default of `shell/sign-in` is used.

Set the Service Instance URL

Now you must set the service instance URL for the `idcsRestApi` Service Connection.

1. In Oracle Visual Builder, open your Digital Customer Service application (if it’s not open already).
2. Click Service Connections, click `idcsRestApi`, and then click the `Servers` tab.
3. Click `Edit`, then in the Edit Server page, edit the Instance URL to be the URL of your IDCS server. For example: `https://idcs-xxx.identity.yyy.idcs-example.com`.
4. Click `Save`.

Verify the Identity Cloud Service Identity Provider Policy

If you have a custom sign-in page for your Digital Customer Service application confirm that IDCS is enabled to use the User Name-Password authentication factor.

1. In the Identify Cloud Service administration console, click the Navigation Drawer, the expand `Security`, and choose `IDP Policies`.
2. Click `Default Identity Provider Policy`, and then the `Identity Provider Rules` tab.
3. Click the `Menu` icon and choose `Edit`.
4. In the Edit Default IDP Rule dialog box, make sure `Username-Password` is shown in the `Allowed Identity Providers` box. If not, do the following:
   a. Click in the `Assign Identity Providers` box, and select `Username-Password`.
   b. Click `Save`.

If you don’t want to add `Username-Password` to the Default Identity Provider Policy, you can add a new IDP Policy for the Digital Customer Service application to use. When you create the new policy, add a rule that allows the Username-Password Identity Provider and assign the VBINST_xxxxx application to the policy. This will ensure that the application uses the new IDP policy instead of the default IDP policy.

For more information, see Related Topics for a link to the Identity Cloud Service documentation.

Related Topics

- Understand Identity Provider Policies
Enable Automatic Login for Authenticated Identity Cloud Service Users

You can configure your custom sign-in page in the Digital Customer Service application to automatically log in users who are already authenticated through Identity Cloud Service.

Users can be authenticated either directly through the IDCS administration console, or through another application that uses the same IDCS instance as the Digital Customer Service application. This functionality is disabled by default, but can be enabled by setting the `enableAutoLogin` constant in the new `LoginAuthenticatedIdcsUser` application level action chain to `true`.

Here's how you do it:

1. In Visual Builder, click your application icon in the Web Apps navigator.
2. Click the **Actions** tab.
3. In the list of Actions, locate and select the `LoginAuthenticatedIdcsUser` action.
4. Set the default value of the `enableAutoLogin` constant to `true`.

Required Steps to Configure Custom Password Reset in Identity Cloud Service

This topic is required to set up Identity Cloud Service to include the Digital Customer Service Reset Password page URL link when a user requests a password reset.

For this functionality to work Identity Cloud Service requires a REST request to be made to the IDCS `/Settings` API by a tenant administrator to set `allowedNotificationRedirectUrls` to include the Digital Customer Service Reset Password page URL. This setting defines the allowed notification redirect URLs which can be specified as the value of `notificationRedirectUrl` in the POST .../admin/v1/MePasswordResetRequestor request payload, which is then included in the reset password email notification sent to a user as part of the forgot password and password reset flow.

**Note:** The Client ID and Client Secret must be for an IDCS application which has either the Identity Domain Administrator or Security Administrator application role granted. This is required to successfully call the `/Settings` REST API.

Use the following Powershell script. If you're using a Mac or Linux computer, you'll need to install Powershell first to run the script. See Microsoft’s website for details. Powershell is installed by default on Windows.

Save the following script in a file called `passwordreset.ps1` and modify the '...' values in the script as appropriate for your environment.

- To run the script from a Command Prompt on Windows enter: `powershell -File passwordreset.ps1`
- To run the script on Mac or Linux enter: `pwsh passwordreset.ps1`

### MODIFY THE FOLLOWING VARIABLES FOR YOUR IDCS/ODCS ENVIRONMENT ###

# Set IDCS variables (modify for your IDCS instance)
```powershell
$IdcsUrl = '...' # e.g. 'https://idcs-xxx.identity.yyy.idcs-example.com'
$ClientId = '...' # Client ID for privileged app in IDCS
$ClientSecret = '...' # Client Secret for privileged app in IDCS

# Either set the first 3 variables below for your ODCS app or explicitly define $ForgotPasswordUrl
$OdcsHost = '...' # e.g. 'my-odcs-example.com'
$OdcsAppName = '...' # e.g. 'my_odcs_app'
$OdcsVersion = '...' # e.g. '1.1'
$ForgotPasswordUrl = "https://${OdcsHost}/ic/builder/rt/${OdcsAppName}/${OdcsVersion}/webApps/dcs/?page=shell&shell=forgot-password"

### DO NOT MODIFY THIS SCRIPT BELOW THIS LINE ###

# Generate an access token
$Credentials = [Convert]::ToBase64String([System.Text.Encoding]::UTF8.GetBytes("${ClientId}:${ClientSecret}"))
$Uri = "$IdcsUrl/oauth2/v1/token"
$Headers = @{
    Authorization = "Basic $Credentials"
}
$Parameters = @{
    grant_type = 'client_credentials'
    scope = 'urn:opc:idm:__myscopes__'
}
try {
    $Response = Invoke-RestMethod -Uri $Uri -Method POST -Headers $Headers -Body $Parameters
} catch {
    Write-Host ("Access token request POST to {0} failed with an error: {2} `nForm parameters: {1} `nException: {3}" -f $Uri, ($Parameters | Out-String), $_.ErrorDetails, $_.Exception) -fore red
    exit
}
$AccessToken = $Response.access_token
Write-Debug "Access Token = $AccessToken"

# Check the 'allowedNotificationRedirectUrls' IDCS Setting value
$Uri = "$IdcsUrl/admin/v1/Settings/Settings/?attributes=allowedNotificationRedirectUrls"
$Headers = @{
    Authorization = "Bearer $AccessToken"
    'Content-Type' = 'application/scim+json'
}
try {
    $Response = Invoke-RestMethod -Uri $Uri -Method GET -Headers $Headers
} catch {
    Write-Host ("Request to GET {0} failed with an error: {1}. `nException: {2}" -f $Uri, $_.ErrorDetails, $_.Exception) -fore red
    exit
}
$AllowedUrls = $Response.allowedNotificationRedirectUrls
Write-Debug "Allowed URLs from GET /admin/v1/Settings/Settings = $AllowedUrls"

# Add the forgot password URL to the Settings, if required (i.e. not already in $AllowedUrls)
if ($null -ne $AllowedUrls -And $AllowedUrls.Contains($ForgotPasswordUrl)) {
    Write-Output "URL ($ForgotPasswordUrl) is already registered"
} else {
    # Remove query parameter from /Settings URL, headers remain as for previous request
    $Uri = "$IdcsUrl/admin/v1/Settings/Settings/"

    # Add new URL and format the list for inclusion in the JSON payload (without powershell encoding)
    $AllowedUrls += $ForgotPasswordUrl;
    $AllowedUrls = "$$AllowedUrls" -f ($AllowedUrls -join ''
    $Body = '{
        "schemas": [
            "urn:ietf:params:scim:api:messages:2.0:PatchOp"
        ],
```
Localize Digital Customer Service for Multilingual Support

This topic describes how to localize Digital Customer Service for multilingual support.

How You Create Localized Digital Customer Service Applications

You can create localized versions of your application by translating the UI text and messages in your application into other languages. The localized strings are displayed in the application during runtime. When you run the staged or published application, a localized version is displayed based on the language settings of your browser.

A Digital Customer Service application created using the Reference Implementation template includes translations to the 25 languages supported by Oracle Fusion Service. While the Reference Implementation template is delivered with these translation strings and files, any modifications that you apply to the strings in your Digital Customer Service application will require additional translation.

The supported default language locales are as follows: ar, cs, da, de, es, fi, fr-CA, fr, hu, it, iw, ja, ko, nl, no, nl, pt-BR, ro, ru, sk, sv, th, tr, zh-CN, zh-TW.

The resource bundles provide an initial set of translated strings for the majority of the application that you can use for your own translation files. To populate the rest of the translation files for the languages you want to support, follow the instructions for generating files for new languages, and then use the existing translated files to obtain translations for use in your new file.

The Digital Customer Service Reference Implementation template comes with a single, application specific bundle. If you create strings, you must add the translations to the bundle, or create bundles.

For comprehensive information about adding translated text to your application, refer to the Work with Translations topic in the Develop Applications chapter of the Developing Applications with Oracle Visual Builder guide in the Related Topic.
Configure Languages Available in your Digital Customer Service Application

By default, the preferred language specified in the viewing browser is used to display your Digital Customer Service application to users. In the Digital Customer Service Reference Implementation template, a languages menu can be configured to list the specific languages that you want to make available to your users, should they want to use another language.

To configure the languages available to your Digital Customer Service application users:

1. Sign in to Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click Web Applications.
4. In the Web Apps tree, expand des, then root pages, and then click shell.
   
   The shell tab appears.
5. Click the JS (Functions) icon.
6. Search the script for the following string:
   
   PageModule.prototype.localeList
7. Copy the language that you want to include in the languages menu from the section that is commented out. Do not include the // at the beginning of the line. For example, if you want to make Italian available, copy the following string:
   
   { code: 'it', name: 'Italiano'},
8. Paste the string that you copied in step 7 into the available languages that are not commented out, in the PageModule.prototype.localeList section.
9. Click the Play icon (Run) to view the change in your application.
10. Click the Globe icon (Languages) to verify that the language that you added in step 7 appears in the list of available languages.

Set a Non-English Default Language

By default the starting language for your application is English, if you want to change this there you must modify variable values. Use the list of supported locales outlined earlier in this topic for the correct format. For this exercise, we'll use Spanish as an example:

1. In the index.html page, do the following: locate the following entry:
   
   a. Locate the following entry: <html lang="en">
   b. Change the entry to: <html lang="es">.
   c. Now, locate the var lang entry: var lang =window.localStorage.getItem('odcs-reference-implementation.locale') || navigator.language;
   d. Change the entry to: var lang = window.localStorage.getItem('odcs-reference-implementation.locale') || "es";
2. Now, in the app-flow.json file, and do the following:
   
   a. Locate the entry to:"{{ window.localStorage.getItem('odcs-reference-implementation.locale') || navigator.language }}"
   b. Change that entry to: "locale": "{{ window.localStorage.getItem('odcs-reference-implementation.locale') || 'es' }}""
3. The default language is now Spanish. Use these examples and substitute your locale code as needed.
Create Translations for New Languages

You can introduce a new language beyond the ones delivered with a Digital Customer Service application that was created using the Reference Implementation.

For more information, refer to the Work with Translations topic in the Developing Applications with Oracle Visual Builder in the Related Topics.

To introduce a new language beyond the ones delivered with a Digital Customer Service application that was created using the Reference Implementation, follow these steps:

1. Sign in to Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click the Menu icon in the editor, and select Settings.
   The Settings tab appears.
4. Click the Translations secondary tab.
5. Download the latest language bundle by clicking the ARB or XLIFF download link in the Download all strings section.
   A zip file is downloaded.
6. Open your zip file.
7. Extract the app-strings file.
8. Rename the app-strings file to app-strings-<locale>.arb or app-strings-<locale>.xliff, depending on the downloaded file type. Where <locale> is the language locale.
   For example, for a file containing Welsh translations, the modified file name should be: app-strings-cy.arb or app-strings-cy.xliff.
9. Open your app-strings-<locale> file in a text editor. The first few lines of the file will resemble the following:

```json
{
  "@@x-bundleName" : "app",
  "@@x-bundlePath" : "webApps/dcs/resources/strings/app/nls/app-strings",
  "common_save" : "Save",
  "@common_save" : {
    "description" : "Used by components that perform a saving operation.",
    "source_text" : "Save"
  },
  "common_cancel" : "Cancel",
  "@common_cancel" : {
    "description" : "Used by components that cancel the current operation.",
    "source_text" : "Cancel"
  },
  "common_done" : "Done",
  "@common_done" : {
    "description" : "Used by components that finish an operation causing no changes.",
    "source_text" : "Done"
  },
  "common_download" : "Download",
  "@common_download" : {
    "description" : "Used by components that require a download label.",
    "source_text" : "Download"
  }
}
```
10. Replace the English strings with the translation for the language you are creating. Consider the following cancel string:

```json
,
  "common_cancel" : "Cancel",
  "@common_cancel" : {
```

You would want to replace the string after the "common_cancel": " with the translated language equivalent. In this example, you would want to replace the string Cancel with the Welsh equivalent for Cancel, which is Canslo. The modified text will look similar to the following:

```json
},
"common_cancel": "Canslo",
"@common_cancel": {
"description": "Used by components that cancel the current operation.",
"source_text": "Cancel",
}
```

11. Repeat step 10 for all the strings in the language that you are creating.
13. Add the `app-strings-<locale>` file to the zip file that you downloaded in step 5, and save the updated zip file.
14. Click the Menu icon in the editor, and select Settings.

   The Settings tab appears.
15. Click the Translations secondary tab.
16. Upload the zip file that you saved in step 13, containing your new `app-strings-<locale>` file to the Uploaded updated bundle section.

   The language is added to the bundle.

Add New String Translations for Existing Languages

You can translate additional strings after modifying strings in your Digital Customer Service application generated from the Reference Implementation template.

For more information, refer to the Work with Translations topic in the Developing Applications with Oracle Visual Builder in the Related Topics.

To add new string translations for existing languages:

1. Sign in to Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click the Menu icon in the editor, and select Settings.

   The Settings tab appears.
4. Click the Translations secondary tab.
5. Download the latest language bundle by clicking the ARB or XLIFF download link in the Download new and changed strings section.

   A zip file is downloaded.
6. Open your zip file.
7. Extract the app-strings file.
8. Rename the app-strings file to `app-strings-<locale>.arb` or `app-strings-<locale>.xliff`, depending on the downloaded file type. Where `<locale>` is the language locale.

   For example, for a file containing French translations, the modified file name should be: `app-strings-fr.arb` or `app-strings-fr.xliff`. 
9. Open your **app-strings-<locale>** file in a text editor.
10. Replace the English strings with the translation for the language you are updating. Consider the following Submit Now String:

```json
{
  "common_submit_now" : "Submit Now",
  "@common_submit_now" : {
    "description" : "Used to submit data entered in a form immediately."
  },
}
```

You would want to replace the string after the `"common_submit_now": "Submit Now"` with the translated language equivalent. In this example, you would want to replace the string **Submit Now** with the French equivalent for Submit Now, which is **Soumettre Maintenant**. The modified text will look similar to the following:

```json
{
  "common_submit_now" : "Soumettre Maintenant",
  "@common_submit_now" : {
    "description" : "Used to submit data entered in a form immediately."
  },
}
```

11. Repeat step 10 for all the strings in the language that you are creating.
12. Save your **app-strings-<locale>** file.
13. Add the **app-strings-<locale>** file to the zip file that you downloaded in step 5, and save the updated zip file.
14. Click the **Menu** icon in the editor, and select **Settings**. The **Settings** tab appears.
15. Click the **Translations** secondary tab.
16. Upload the zip file that you saved in step 13, containing your new **app-strings-<locale>** file to the **Uploaded updated bundle** section.

The language bundle is updated with the new string translations for the existing language.

### Related Topics
- Developing Applications with Oracle Visual Builder
- Work with Translations

## Propagate Attribute Changes of Fusion Service Contacts to IDCS Users Accounts

### Overview of Steps to Propagate Attribute Changes of Fusion Service Contacts to IDCS Users Accounts

When you use Self-Service Optimization, a self-service user is represented by a Contact record in the Fusion Service application and by a User account in Identity Cloud Service.

This topic shows you how changes made to attributes of a contact record can be propagated to the user account associated with this contact in IDCS.
When the attributes of a contact are changed, an object workflow is triggered. You can use this workflow to propagate any changes to attributes of interest to a user account in IDCS. Here's a high level overview of the required steps:

- Check if the contact record is that of a self-service user.
- Verify if the attributes of interest changed.
- Use the Party ID of the contact to find a Self-Service Role record.
- Obtain the Login ID of the user from the Self-Service Role record.
- Use the Login ID to find the GUID of the user account in IDCS.
- Change the attributes of interest in IDCS

Setup for Coding

Here are the setup tasks you need to perform to prepare for the required coding.

1. Sign in to Fusion Service.
2. Click Navigator, and expand Tools.
4. Click the API Authentication tab.
5. Click the Oracle Public Certificate link to download the orakey_sign certificate.

Create a Trusted Client Application in Identity Cloud Service

Use this task to create a trusted client application in IDCS.

1. In the IDCS admin console, click the Navigator menu and choose Applications.
2. Click Add.
3. In the dialog box that appears, choose Confidential Application.
4. In the Name field enter Contact Sync App and click Next.
5. Select Configure this application as a client now.
6. Choose the following Allowed Grant Types:
   - Client Credentials
   - JWT Assertion
7. Click the Trusted Client check box.
8. Click Import.
9. Enter OraKeySign in the Certificate Alias field.
10. Choose the certificate file that was downloaded in the previous step and click Import.
11. Click Add in the Grant the client access to Identity Cloud Service Admin APIs workspace.
12. In the Add App Role dialog box, choose User Administrator and click Add.
13. Click Next to advance to the Resources tab stop.
14. Click Next to advance to the Web Tier Policy tab stop.
15. Click Next to advance to the Authorization tab stop.
16. Click Finish.
17. Record the Client ID and Client Secret and then dismiss the dialog box.
18. Click **Activate** and then **OK** to activate the client application.

### Create a User

Now you use Identity Cloud Service to create a user.

1. Sign in to IDCS and click the Navigation drawer, and select **Users**.
2. Click the Add (+) icon.
3. In the **Add User** window, enter the following:
   - First Name: contact.sync
   - Last Name; admin.user
   - User Name: contact.sync.admin.user
     
     | Note: Deselect the **Use the email address as the user name** check box.
   - Email: Enter the user’s email address.
4. Click **Finish**.

   A Welcome email will now be sent to the email address you entered in this procedure. This email provides instructions on how to change the password.

### Assign the User Administrator Role

Now, you assign the User Administrator role to the newly created user.

1. Sign in to IDCS and click the Navigation drawer, and select **Administrators**.
2. Expand **User Administrator**.
3. Click the Add (+) icon.
4. In the **Add Users to the Administrator Role** work area, enter **contact.sync.admin.user** in the search field.
5. Select the sync.admin user, and click **OK** to add the User Administrator role.

### Create Web Services

Here’s the initial setup for these tasks:

1. Sign in to Fusion Service and activate a sandbox.
2. Click **Navigator > Configuration > Application Composer**.
3. In the Explorer, expand **Common Setup**, then click **Web Services**.

#### Create the FindIdcsGuidByLoginId Web Service

Create the FindIdcsGuidByLoginId web service by doing the following:

1. In the Web Services work area, click the **Create Web Service reference** icon.
2. In the Select Connection Type dialog box, choose **REST** and then click **OK**.
3. In the **Create REST Web Service Connection** work area, enter the following in the **Name** field: **FindIdcsGuidByLoginId**.
4. In the URL field enter
   https://<IDCS_HOST>>/admin/v1/Users?filter=userName%20eq%20%22##LOGIN_ID##%22

5. In the Authentication Scheme area, select **Call using IDCS OAUTH**.
6. Click the Create Credential Key icon (+) beside the Client Credential Key drop down list.
7. In the **Client Key** dialog box, enter the following:
   - CSF Key: contact-sync-app-key
   - User Name: Enter the Client ID.
   - Password: Enter the Client Secret.
8. Click OK.
9. In the **Token URL** field enter the following:
   https://<<IDCS_HOST>>/oauth2/v1/token

10. In the **Scope** field enter urn:opc:idm:__myscopes__
11. Make sure the Subject Precedence check box isn't selected.
12. In the Authentication Scheme area, select **Call using IDCS OAUTH**.
13. Click the Create Credential Key icon (+) beside the Credential Key for Switch Identity drop down list.
14. In the CSF Key text box enter contact-sync-admin-key
15. In the **Client Key** dialog box, enter the following: field enter:
   - CSF Key: contact-sync-admin-key
   - User Name: Enter contact.sync.admin.user.
   - Password: Enter the password for the user.
16. Click **OK**.
17. In the **Select and configure Methods against the Resource** work area, select the **GET** check box.
18. For Request Payload, select the **Schema URL** option.
19. For Response Payload choose **Code Sample**, and enter the following in the code field: 
   ```
   {}
   ```
20. Click **Save and Close**.

### Create the UpdateIdcsUserAttributes Web Service

Create the UpdateIdcsUserAttributes web service by doing the following:

1. In the Web Services work area, click the **Create Web Service reference** icon.
2. In the Select Connection Type dialog box, choose **REST** and then click **OK**.
3. In the **Create REST Web Service Connection** work area, enter the following in the **Name** field:
   **UpdateIdcsUserAttributes**.
4. In the **URL** field enter
   https://<IDCS_HOST>>/admin/v1/Users/##USER_ID##

5. In the Authentication Scheme area, select **Call using IDCS OAUTH**.
6. Click the **Client Credential Key** drop down list, and select: **contact-sync-app-key**.
7. In the **Token URL** field enter the following:
   https://<<IDCS_HOST>>/oauth2/v1/token
8. In the **Scope** field enter urn:opc:idm:__myscopes__
9. Make sure the Subject Precedence check box isn’t selected.
10. Click the Credential Key for Switch Identity drop down list, and select contact-sync-admin-key.
11. In the Select and configure Methods against the Resource work area, select the PATCH check box.
12. For Method Name, click the drop down list and select PATCH.
13. For Format, click the drop down list and select JSON.
14. For Request Payload, select Code Sample, and enter the following in the code field: {}
15. For Response Payload choose Code Sample, and enter the following in the code field: {}.
16. Click Save and Close.

Create the FindSelfServiceUser Web Service

Create the FindSelfServiceUser web service by doing the following:

1. In the Web Services work area, click the Create Web Service reference icon.
2. In the Select Connection Type dialog box, choose REST and then click OK.
3. In the Create REST Web Service Connection work area, enter the following in the Name field: FindSelfServiceUser.
4. In the URL field enter

   https://<<FA_HOST>>/crmRestApi/resources/11.13.18.05/selfServiceRoles?q=ContactPartyId=##CONTACT_PARTY_ID##%20and%20RelationshipTypeCd=%27ORA_CSS_USER%27

5. In the Authentication Scheme area, select Call with Basic Authentication.
6. Create or use a Client Credential Key for the user in Fusion Service that has the Sales Administrator role or Customer Self-Service Administration duty role.
7. In the Select and configure Methods against the Resource work area, select the GET check box.
8. For Method Name, click the drop down list and select GET.
9. For Format, click the drop down list and select JSON.
10. For Request Payload, select Schema URL.
11. For Response Payload choose Code Sample, and enter the following in the code field: {}.
12. Click Save and Close.

Create Global Functions

Now you create the following global functions that will be used in an object workflow groovy script.

Create the findSelfServiceUserLoginId Global Function

Use this topic to create the findSelfServiceUserLoginId global function.

1. In Application Composer, expand Common Setup, and select Global Functions.
2. Click the Add a Global Function icon.
3. Use the following table to fill in the necessary fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>What You Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function Name</td>
<td>Enter: findSelfServiceUserLoginId</td>
</tr>
<tr>
<td>Field</td>
<td>What You Do</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Returns</td>
<td>Click the drop down list and select <strong>String</strong>.</td>
</tr>
<tr>
<td>Parameters</td>
<td>a. Click to expand the workspace.</td>
</tr>
<tr>
<td></td>
<td>b. Click the <strong>Add Parameter</strong> icon.</td>
</tr>
<tr>
<td></td>
<td>c. In the <strong>Name</strong> field enter: contactPartyId.</td>
</tr>
<tr>
<td></td>
<td>d. From the <strong>Type</strong> drop down list, select <strong>String</strong>.</td>
</tr>
</tbody>
</table>

4. In the Edit Script field, copy and paste the following script:

```java
def request = adf.webServices.FindSelfServiceUser

try{
    def httpHeaders=['REST-Framework-Version':'3']
    request.requestHTTPHeaders = httpHeaders

    def searchResults = request.GET(contactPartyId)
    def count = searchResults.get("count")

    if(count == 0){
        def message = "Unable to locate self-service user by Party ID: " + contactPartyId + ":" + searchResults
        throw new oracle.jbo.ValidationException(message);
    }

    def loginId = searchResults.get("items")[0].get("LoginId")

    return loginId
}catch(Exception e){
    throw new oracle.jbo.ValidationException(" " + e + ": " + request.httpErrorResponse)
}
```

5. Click **Save and Close**.
6. Click **Yes** to accept the warning message.

Create the getIdcsUserGuid Global Function

Use this topic to create the getIdcsUserGuid global function.

1. In Application Composer, expand **Common Setup**, and select **Global Functions**.
2. Click the **Add a Global Function** icon.
3. Use the following table to fill in the necessary fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>What You Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function Name</td>
<td>Enter: getIdcsUserGuid</td>
</tr>
<tr>
<td>Returns</td>
<td>Click the drop down list and select <strong>String</strong>.</td>
</tr>
<tr>
<td>Parameters</td>
<td>a. Click to expand the workspace.</td>
</tr>
<tr>
<td></td>
<td>b. Click the <strong>Add Parameter</strong> icon.</td>
</tr>
<tr>
<td></td>
<td>c. In the <strong>Name</strong> field enter: loginId.</td>
</tr>
<tr>
<td></td>
<td>d. From the <strong>Type</strong> drop down list, select <strong>String</strong>.</td>
</tr>
</tbody>
</table>
4. In the Edit Script field, copy and paste the following script:

```java
def request = adf.webServices.FindIdcsGuidByLoginId

try{
def searchResults = request.GET(loginId)
def totalResults = searchResults.get("totalResults")

if(totalResults != 1)
    throw new oracle.jbo.ValidationException("Unable to locate user by login ID: " + loginId + ", total results: " + totalResults);
}

def resources = searchResults.get("Resources")
def user = resources[0]
def guid = user.get("id")

return guid;
)\catch(Exception e){
    throw new oracle.jbo.ValidationException("Error finding IDCS User: " + e + ":" +request.httpErrorResponse);
}
```

5. Click **Save and Close**.
6. Click **Yes** to accept the warning message.

### Create the updateUserAttributesInIdcs Global Function

Use this topic to create the getIdcsUserGuid global function.

1. In Application Composer, expand **Common Setup**, and select **Global Functions**.
2. Click the **Add a Global Function** icon.
3. Use the following table to fill in the necessary fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>What You Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function Name</td>
<td>Enter: updateUserAttributesInIdcs</td>
</tr>
<tr>
<td>Returns</td>
<td>Click the drop down list and select <strong>void</strong>.</td>
</tr>
<tr>
<td>Parameters</td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>Click to expand the workspace.</td>
</tr>
<tr>
<td>b.</td>
<td>Click the <strong>Add Parameter</strong> icon.</td>
</tr>
<tr>
<td>c.</td>
<td>In the <strong>Name</strong> field enter: userId.</td>
</tr>
<tr>
<td>d.</td>
<td>From the <strong>Type</strong> drop down list, select <strong>String</strong>.</td>
</tr>
<tr>
<td>e.</td>
<td>Click the <strong>Add Parameter</strong> icon.</td>
</tr>
<tr>
<td>f.</td>
<td>In the <strong>Name</strong> field enter: firstName.</td>
</tr>
<tr>
<td>g.</td>
<td>From the <strong>Type</strong> drop down list, select <strong>String</strong>.</td>
</tr>
<tr>
<td>h.</td>
<td>Click the <strong>Add Parameter</strong> icon.</td>
</tr>
<tr>
<td>i.</td>
<td>In the <strong>Name</strong> field enter: lastName.</td>
</tr>
<tr>
<td>j.</td>
<td>From the <strong>Type</strong> drop down list, select <strong>String</strong>.</td>
</tr>
</tbody>
</table>

4. In the Edit Script field, copy and paste the following script:

```java
def conn = adf.webServices.UpdateIdcsUserAttributes
try{
def patch_body = [
```
"schemas": [  "urn:ietf:params:scim:api:messages:2.0:PatchOp"
],
"Operations": [  [    "op": "replace",    "path": "name",    "value":      [        "givenName": firstName,        "familyName": lastName      ]    ]  ]
}
conn.PATCH(userId, patch_body)
}catch(Exception e){
    throw new oracle.jbo.ValidationException(" " + e + " " + conn.httpErrorResponse)
}

5. Click **Save and Close**.
6. Click **Yes** to accept the warning message.

**Create the syncContactAttributes Global Function**

Use this topic to create the getIdcsUserGuid global function.

1. In Application Composer, expand **Common Setup**, and select **Global Functions**.
2. Click the **Add a Global Function** icon.
3. Use the following table to fill in the necessary fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>What You Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function Name</td>
<td>Enter: <code>syncContactAttributes</code></td>
</tr>
<tr>
<td>Returns</td>
<td>Click the drop down list and select <strong>void</strong>.</td>
</tr>
<tr>
<td>Parameters</td>
<td>a. Click to expand the workspace.</td>
</tr>
<tr>
<td></td>
<td>b. Click the <strong>Add Parameter</strong> icon.</td>
</tr>
<tr>
<td></td>
<td>c. In the <strong>Name</strong> field, <code>contactPartyId</code>.</td>
</tr>
<tr>
<td></td>
<td>d. From the <strong>Type</strong> drop down list, select <strong>String</strong>.</td>
</tr>
<tr>
<td></td>
<td>e. Click the <strong>Add Parameter</strong> icon.</td>
</tr>
<tr>
<td></td>
<td>f. In the <strong>Name</strong> field, <code>firstName</code>.</td>
</tr>
<tr>
<td></td>
<td>g. From the <strong>Type</strong> drop down list, select <strong>String</strong>.</td>
</tr>
<tr>
<td></td>
<td>h. Click the <strong>Add Parameter</strong> icon.</td>
</tr>
<tr>
<td></td>
<td>i. In the <strong>Name</strong> field, <code>lastName</code>.</td>
</tr>
<tr>
<td></td>
<td>j. From the <strong>Type</strong> drop down list, select <strong>String</strong>.</td>
</tr>
</tbody>
</table>

4. In the Edit Script field, copy and paste the following script:

```java
def loginId = adf.util.findSelfServiceUserLoginId(contactPartyId)
def userGuid = adf.util.getIdcsUserGuid(loginId)
adf.util.updateUserAttributesInIdcs(userGuid,firstName,lastName)
```

5. Click **Save and Close**.
6. Click **Yes** to accept the warning message.
Create an Object Function on the Contact Object

Use this topic to create an object function on the contact object.

1. In Application Composer, expand the Standard Objects node, and then expand Contact.
2. Click Server Scripts, and then click the Object Functions tab.
3. Click the Add a new Object Function icon.
4. Use the following table to create the function:

<table>
<thead>
<tr>
<th>Field</th>
<th>What You Do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function Name</td>
<td>Enter: syncContactAttributes</td>
</tr>
<tr>
<td>Visibility</td>
<td>Click the drop down list and select: Callable By External Systems.</td>
</tr>
</tbody>
</table>

5. In the Edit Script field, copy and paste the following script:

```python
def contactPartyId = PartyId + ""
def firstName = PersonFirstName
def lastName = PersonLastName

adf.util.syncContactAttributes(contactPartyId, firstName, lastName)
```

6. Click Save and Close.

Create Object Workflow on the Contact Object

Use this topic to create an object workflow on Contact object.

1. In Application Composer, expand Common Setup, then select Object Workflows.
2. Click the Create (+) icon.
3. Click the Object drop down list, and select Contact.
4. In the Name field, enter: SyncContactAttributesToIdcsWf.
5. For Event Point and Condition, select: When a record is updated.
6. Click in the Condition field, then click the Groovy builder icon.
7. Copy and paste the following code in the Expression Builder, then click OK.

```python
if (ContactRole == 'SERVICE' &&
    (isAttributeChanged('PersonFirstName') || isAttributeChanged('PersonLastName')) )
    return true;
else
    return false;
```
8. Click the Create button of the Groovy Script Action.
9. In the Name field, enter: SyncContactAttributesToIdcsGs.
10. In the Method Name drop down list, select SyncContactAttributes.
11. Click Save, and then click Save and Close.
Test the Global Methods using Triggers

Now create triggers to test your global methods.

1. In Application Composer, expand **Standard Objects > Contact > Server Scripts**.
2. Click the **Triggers** tab.
3. Click the **Add a new Trigger** icon.
4. Click the **Trigger** drop down list and select **Before Update in Database from the Trigger**.
5. In the **Trigger Name** field, enter: `test_sync_contact_attributes`.
6. Copy the following code and paste it in the Trigger Definition field:

   ```java
   def contactPartyId = PartyId + ""
   def firstName = PersonFirstName
   def lastName = PersonLastName
   afd.util.syncContactAttributes(contactPartyId, firstName, lastName)
   ```

7. In the Contacts UI of the Fusion Service application, make a change to any self-service contact and make sure the script worked.
8. Once your testing and corrections are made, you can remove this trigger.

Test the Object WorkFlow

Update the First Name or Last Name of any self-service contact. Use Fusion Service administrator’s console to verify if the changes to the contact record in Fusion Service were propagated to IDCS.
7 Users and Accounts

Self-Service Registration

Here's an overview of user self-service registration.

When the Digital Customer Service Reference Implementation template is used to create your Digital Customer Service application, users can take advantage of the self-service registration feature available to anonymous users through the Sign-Up link on the home page of their Digital Customer Service application. There are various profile options that control the way in which the self-service registration feature behaves. For more information about profile options relating to self-service registration, refer to Configure Profile Options in the related topics.

One profile option to note though is the ZCA_CONTACT_ADDRESS_REQUIRED_ENABLED profile option. You must set this profile option to one of two values:

- **No.** This means a contact address for the contact is optional.
- **Yes for Customer only.** This is the default value and it means that an address is required for contacts of the Customer type only.

**Note:** The Digital Customer Service Self Service Registration feature doesn't support requiring addresses for all contact types, just for the Customer type.

The APPID user is used to call the self-registration API on behalf of the anonymous user when they use the **Sign-Up** link. For this API call to function the user must enter a unique email address.

**Note:** A user can register multiple times if they need to be registered as a user in multiple customer accounts. Each registration request should use a different Account Key.

**Related Topics**
- Configure Profile Options

Set Up Self-Service Registration without an Account Key Requirement

Administrators can enable this feature in the Setup and Maintenance work area. This feature is delivered enabled.

**Note:** After enabling the self-service registration without an account key requirement, as specified in this section, the ODCS application developer specifies whether or not to require the account key by specifying the ODCS application-level variable userRegistrationType. The value **consumer** is used if you don’t want to specify an account key. The default is **contact**, which requires an account key.
1. Sign in to Fusion Service as an administrator or setup user.
2. In the Setup and Maintenance work area, go to the following:
   - Offering: Service.
   - Task: Manage Digital Customer Service Profile Options.
3. Locate the SVC_CSS_ALLOW_CONSUMER profile option and set it to Yes.
4. **Optional step:** Locate the SVC_CSS_CONSUMER_USER_CATEGORY and set it to the user category for consumers which defines the redirect URL for self-service users after a password reset. After these settings are enabled, the Account key field will no longer be required for self-service users to register in the ODCS application.

Assign Roles to Digital Customer Service Users

This topic shows you how to assign user roles in the Digital Customer Service application.

Self-Service Account Administrator

Each customer account must have at least one self-service account administrator. You can assign or remove the account administrator role to user accounts in Oracle Fusion Service.

**Note:** The first user created under a customer account is always automatically made granted the Account Administrator role for that account. The steps that are listed in this topic, are for creating additional account administrators.

To assign the self-service account administrator role:

1. Sign into Oracle Fusion Service as an administrator or setup user.
2. Navigate to the **Service** work area and click **Self-Service Users**.
3. From the **Self-Service Users** list, select the user you want to modify.
4. In the **User Administration** section, select the following role: **Account Administrator**.
5. Click **Save**.
   A dialog appears, confirming the role modification.

Self-Service Account Manager

You can assign the self-service account manager role to user accounts in Oracle Fusion Service.

To assign the self-service account manager role:

1. Sign into Oracle Fusion Service as an administrator or setup user.
2. Navigate to the **Service** work area and click **Self-Service Users**.
3. From the **Self-Service Users** list, select the user you want to modify.
4. In the **User Administration** section, select the following role: **Account Manager**.
5. Click **Save**.
   A dialog appears, confirming the role modification.
Create and Manage Custom Self-Service Roles

Custom self-service roles give you the flexibility to segment self-service users into different groups and provide them with a more specifically tailored experience.

For example, you might want to allow some users to see knowledge that other users can't see.

Digital Customer Service includes three self-services roles: User, Account Administrator and Account Manager. All self-service users are given the User role. The first user of an account is assigned the Account Administrator role. The following table shows the job roles these self-service roles are given and if they are used in data security policies:

<table>
<thead>
<tr>
<th>Self-Service Role</th>
<th>Related Identity Provider Role</th>
<th>Use in Data Security Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>Customer Self-Service User</td>
<td>No</td>
</tr>
<tr>
<td>Account Administrator</td>
<td>Customer Self-Service Account Administrator</td>
<td>Yes</td>
</tr>
<tr>
<td>Account Manager</td>
<td>No related role</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Custom self-service roles can be defined and mapped to custom identity provider roles or used in data security policies. When a self-service user is assigned a custom self-service role, this user is also assigned to the corresponding custom identity provider role.

A custom self-service role can be mapped to only one custom identity provider role. Out of the box self-services roles can't be mapped to any identity provider roles.

Here's a list of tasks that you must perform to grant a self-service user a custom self-service role:

- Create a custom self-service role
- Create or locate a role in Fusion Service
- Create or locate a role in Identity Cloud Service
- Map the custom self-service role to an identity provider role
- Grant the custom self-service role to a self-service user

To assign these custom roles to new users, refer to "Add Mappings to User Roles" in Related Topics.

Create a Custom Self-Service Role

You can define custom self-service roles by adding a new code to the ORA_SVC_CSS_REL_TYPE_CD lookup type. You do this using the Manage Self-Service Relationship Type Standard Lookup task in Functional Setup Manager.

1. Sign in to Fusion Service as an administrator or setup user.
2. In the Setup and Maintenance area, go to the following:
   - Offering: Service.
   - Task: Manage Self-Service Relationship Type Standard Lookup
Tip: Select All Tasks from the Show drop down list to display the task.

3. Click Manage Self-Service Relationship Type Standard Lookup.
4. Add the custom self-service roles by adding the new codes to this standard lookup by doing the following:
   a. Click the New (+) icon.
   b. Enter values for the Lookup Code and Meaning fields.
      Optionally, enter values for other fields.
   c. Add a new row for each new self-service role.
   d. Click Save and Close.

Create or Locate a Custom Identity Provider Role in Fusion Service Using Security Console

For this task you create a new role or locate an existing role in Security Console. For more information on creating roles, refer to the Create Job and Abstract Roles topic from the Securing CX Sales and Fusion Service guide, in the Related Links.

Create or Locate a Custom Identity Provider Role in Identity Cloud Service

The custom role must exist in Identity Cloud Service also and the code of the role in Fusion Service must be the external ID of the group in Identity Cloud Service. You use IDCS SCIM API calls can to create the group in IDCS. Refer to the following example of the API Call.

```bash
curl --location --request POST 'https://idcs-002d5462cc68420a96fc9ed392854d2.identity.c9dev2.oc9qadev.com/admin/v1/Groups' 
--header 'Content-Type: application/json' 
--header 'Authorization: Bearer eyJ4NXQjUzI1NiI6InZfLCZhakQ' 
--data-raw '{
  "displayName": "Adjudicator",
  "externalId": "CUST_ADJUDICATOR",
    "creationMechanism": "api",
    "description": "Created using Postman"
  },
  "schemas": [
    "urn:ietf:params:scim:schemas:core:2.0:Group",
    "urn:ietf:params:scim:schemas:extension:custom:2.0:Group"
  ]
}'
```

For more information on creating groups, refer to the Create Groups in Oracle Identity Cloud Service topic in the Related Topics.

Map the Custom Self-Service Role to an Identity Provider Role

For this task you use the Functional Setup Manager task, Manage Custom Role Mapping for Digital Customer Service to enable the viewing of existing mappings and creating new mappings between custom Self-Service roles and custom identity provider roles.

1. Sign in to Fusion Service as an administrator user.
2. In the Setup and Maintenance screen, select Service, then Digital Customer Service.
3. From the Show drop down list, select All Tasks.
5. Select a Self-Service role.
6. Select a Job role.
7. Click **Save**.

### Grant a User the Custom Self Service Role

You use the selfServiceRoles REST API to assign a custom self-service role to a self-service user. The functional security required to use this API is given to the Customer Self-Service Account Administrator job role and the Customer Self-Service Administration duty role.

Here’s an example:

```bash
curl --location --request POST 'https://<POD>.fa.<data center ID>.oraclecloud.com/crmRestApi/resources/11.13.18.05/selfServiceRoles' \
--user 'ADMIN_USER:ADMIN_USER_PWD' \
--header 'Content-Type: application/json' \
--data-raw '{
  "AccountPartyId": 100000015022002,
  "ContactPartyId": 300100544667497,
  "RelationshipTypeCd": "CUST_ADJUDICATOR"
}'
```

### Related Topics
- Create Groups in Oracle Fusion Service

### Grant Self-Service Access to Resources

You can grant self-service access to employees who are resources in Fusion service using the selfRegistrations REST resource provided those employees have been given the CONTACT usage.

To grant Contact usage to these resources, you use the Trading Community Party Information Service.

The following table shows the relevant information for this SOAP web service:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Enter this value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service WSDL URL</td>
<td>https://&lt;Fusion Host&gt;/crmService/PartyInformationService?WSDL</td>
</tr>
<tr>
<td>Operation</td>
<td>assignPartyUsage</td>
</tr>
</tbody>
</table>
| Required Parameters      | - PartyId
|                          | - PartyUsageCode = CONTACT
|                          | - CreatedByModule = FUSE

A UI widget you create such as a button can be configured to execute this groovy code. For more information refer to the Actions and Links topic of the Configuring Applications Using Application Composer documentation shown in Related Topics.
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Here’s an example of a groovy script that invokes the assignPartyUsage operation of the Party Information Service SOAP API.

```groovy
def curPartyId = <Party ID of Resource>
Date curDate = new Date()

def partyUsageAssignment = [
  PartyId : curPartyId,
  PartyUsageCode : 'CONTACT',
  EffectiveStartDate : curDate,
 CreatedByModule : 'FUSE'
]

adf.webServices.Call_Party_Usage_Service.assignPartyUsage(partyUsageAssignment)
```

Set Up Customer Accounts

Create a Custom Account Key Field

Use this topic to create a custom Account Key field for Digital Customer Service.

The value of the new Account Key field must be unique to each account and can be set to any value. If the value is set to a string that’s easy to guess then someone could guess the value and create for themselves a user account. This is a particular problem if automatic approval is set to true. If the account key is set to a string that is difficult to guess then only those to whom the string is sent can successfully submit a registration request.

End user customers are required to have a known account key. Users must also specify an appropriate account key when they register for a self-service user account.

Multiple tasks must be completed to create a custom Account Key field for Digital Customer Service. To create a custom Account Key field for Digital Customer Service, complete these tasks in the order that they appear in this topic:

1. Add the Account Key to the Account Object
2. Add the Account Key to Pages
3. Populate the Account Key for Existing Accounts
4. Publish the Sandbox
5. Set a Profile Attribute for the Account Key

Add the Account Key to the Account Object

To add a custom field for the Account Key to the Account object, you will need to use the Application Composer in Oracle Fusion Service.

To add the Account Key to the Account Object:

1. Sign in to Oracle Fusion Service as an administrator or a setup user.
2. Create a sandbox for adding the Account Key field:
   a. Click **Navigator > Configuration > Sandboxes**.
   b. Click the + icon (New) to create the new sandbox.
   c. Enter a name in the **Sandbox Name** field.
d. Click **Save and Close**.
   A confirmation dialog appears.

e. In the **Manage Sandboxes** list, click the line item with the sandbox name that you specified in step c.

f. Click **Set as Active**.

3. Navigate to the **Application Composer**.

4. Expand **Objects**, then **Standard Objects**, then **Account**, and then click **Fields**.
   The **Select Field Type** page appears.

5. Click the **Action** menu, and select **Create**.
   The **Select Field Type** dialog appears.

6. Click the **Text** option, then click **OK**.
   The **Create Text Field** page appears.

7. Specify the following for the Account Key text field options:
   - In the **Display Label** field, enter the following string:
     Account Key
     - The **Name** field will be pre-populated based on the name that you entered for the **Display Label**, without any spaces.
     - The **API Name** field will be pre-populated based on the name that you entered for the **Display Label**, without any spaces, and typically with the following suffix: _c
     **Tip:** You will need to note the value assigned to the **API Name** field, because it will be assigned to the 
     `svc_css_acct_key_field` profile option in the Set a Profile Attribute for the Account Key task, later in this 
     topic.
   - In the **Display Type** option, click the **Simple Text Box** option.
   - Deselect the **Required** option in the **Constraints** section.
   - Select the **Updatable** option in the **Constraints** section.
   - Select the **Searchable** option in the **Constraints** section.
   - Select the **Include in Service Payload** option in the **Constraints** section.

8. Click **Save and Close**.

**Add the Account Key to Pages**

In this task, you will add the Account Key field that you created in the previous task to the necessary pages in the Oracle Fusion Service Application Composer.

To add the Account Key to Pages:

1. Sign in to Oracle Fusion Service as an administrator or a setup user.
2. Navigate to the **Application Composer**.
3. Expand **Objects**, then **Standard Objects**, then **Account**, and then click **Pages**.
   The **Account: Pages** page appears.
4. In the **Creation Page Layouts** section, select a layout to base your page on, such as **Standard layout**.
5. In the **Creation Page Layouts** section, click the **Actions** menu, and select **Duplicate**.
   The **Duplicate Layout** dialog appears.
6. Enter a name in the **New Layout Name**.
7. Click **Save and Edit**.
8. Click the **Pencil** icon (Edit) next to **FUSE Customer ObjectCreation View**.
9. The **Creation Layout** page appears.
10. From the **Available Fields** column, click the **AccountKey** field that you created in the previous task, then click the arrow to move it to the **Selected Fields** column.
11. Click **Save and Close**.
12. Click the **AccountKey** hyperlink, then set the following options on the **Edit UI Properties** dialog:
   - Set **Required** to **No**.
   - Set **Updatable** to **Yes**.
   - Set **Hidden** to **No**.
13. Click **Save and Close**.
14. Click **Done**.
15. In the **Details Page Layouts** section, click the **Actions** menu, and select **Duplicate**.
   - The **Duplicate Layout** dialog appears.
16. Enter a name in the **New Layout Name**.
17. Click **Save and Edit**.
18. In the **Subtabs Region**, click the **Profile** subtab.
19. Click the **Pencil** icon (Edit) next to **SummaryEdit Summary Subtab**.
   - The **Details Layout Edit Summary** page appears.
20. From the **Available Fields** column, click the **AccountKey** field that you created in the previous task, then click the arrow to move it to the **Selected Fields** column.
21. Click **Save and Close**.
22. Click the **AccountKey** hyperlink.
   - The **Edit UI Properties** dialog appears.
23. Set **Required** to **Expression**, then click the **xyz** next to the **Required** field.
   - The **Advanced Expression** dialog appears.
24. In the **Edit Script** text box, add the following expression:
   ```javascript
   if (SalesProfileType == "ZCA_CUSTOMER") {return true} else {return false}
   ```
   **Note:** This makes the Account Key required if the **Account Type** is **Customer**. Self-service registration only works for **Customer** accounts.
25. Click **OK**.
26. Set **Updatable** to **Yes**.
27. Set **Hidden** to **Expression**, then click the **xyz** next to the **Required** field.
   - The **Advanced Expression** dialog appears.
28. In the **Edit Script** text box, add the following expression:
   ```javascript
   if (SalesProfileType != "ZCA_CUSTOMER") {return true} else {return false}
   ```
   **Note:** This hides the field if it's not a **Customer** account type.
29. Click **OK**.
30. Click **Save and Close**.
Populate the Account Key for Existing Accounts

If you already have existing Customer accounts, you will need to edit the accounts, and add the required Account Key field.

**Note:** Make sure to assign unique values to each account.

To add the Account Key to existing Customer account:

1. Sign in to Oracle Fusion Service as an administrator or a setup user.
2. Navigate to **Accounts**.
3. Search for, then click on the account. The **Edit Account** dialog appears.
4. In the **Account Key** field, enter a value that uniquely identifies the Customer account.
5. Click **Save and Close**.
6. Repeat steps 3-5 for all previously existing Customer accounts.

Publish the Sandbox

To ensure that the configuration that you applied in the previous tasks takes effect, you must now publish the sandbox.

To publish the sandbox:

1. Sign in to Oracle Fusion Service as an administrator or a setup user.
2. Click **Navigator > Configuration > Sandboxes**.
3. Select the name of the sandbox created in step 2 of the Add the Account Key to the Account Object task. The **Sandbox Details** dialog appears.
4. Click **Publish**.

Set a Profile Attribute for the Account Key

The account key is used to uniquely identify an account, and is determined by the value assigned to the **SVC_CSS_ACCT_KEY_FIELD** profile option.

By default, the **SVC_CSS_ACCT_KEY_FIELD** profile option is set to the **organizationName** field, which appears as **Name of the Account** in the Oracle Fusion Service User Interface for account management. You must create an attribute to be the account key: the default account key of **organizationName** isn't secure because it can be easily guessed.

You must set the **SVC_CSS_ACCT_KEY_FIELD** profile option to the **API Name** field of the Account Key created in step 7 of the Add the Account Key to the Account Object task in this topic.

For more information about configuring profile options, refer to Configure Profile Options in the Related Topics.

**Related Topics**
- Configure Profile Options

Create a Customer Account in Oracle Fusion Service

To set up a customer account in Oracle Fusion Service:
1. Sign in to Oracle Fusion Service.
2. Navigate to the Service work area and click Accounts.
3. Click Create Account.
4. Enter the Name.
5. Select Customer from the Type menu.
6. Specify the account key in the appropriate field.

**Note:** The field in which you enter the account key depends on the value assigned to the SVC_CSS_ACCT_KEY_FIELD profile option. The account key should be specified in the attribute that you defined for the account key.

7. Click Save and Close.

**End User Self-Registration User Account Creation**

The Oracle Digital Customer Service Reference Implementation has sample pages that provide the ability for an end user to self-identify and register within the application.

The end user needs the account key to register successfully.

**Related Topics**
- Configure Profile Options

**Manage Registration Requests**

Registration requests are sent to Oracle Fusion Service for users intending to use Digital Customer Service features. Administrators must then determine whether the request should be approved or rejected in the Service work area in Fusion Service.

This topic explains how to accept and reject registration requests in Fusion Service.

**Note:** Account Administrators can also use the Digital Customer Service application to select multiple pending self-service registration requests to approve or reject.

**Approve Registration Requests**

This topic describes how to approve registration requests in Oracle Fusion Service.

To approve registration requests:

1. Sign in as a user with a role that includes the Customer Self-Service Administrator duty role.
2. Navigate to the Service work area and click Registration Requests.
   
   The Self-Service Registrations screen is displayed. By default, a list of pending self-service registrations is displayed.
3. Click the Actions list, then select Approve.
4. Select one or more pending registration requests that you want to approve.
5. Click the Approve (# Selected) button.
Reject Registration Requests

This topic describes how to reject registration requests in Oracle Fusion Service.

To reject registration requests:

1. Sign in as a user with a role that includes the Customer Self-Service Administrator duty role.
2. Navigate to the Service work area and click Registration Requests.
   The Self-Service Registrations screen is displayed. By default, a list of pending self-service registrations is displayed.
3. Click the Actions list, then select Reject.
4. Select one or more pending registration requests.
5. Click the Reject (# Selected) button.

   Note: The number sign (#) represents the number of registration requests that you have selected.

   The Requests to Be Rejected dialog box appears.
6. (Optional) In the Reason for Rejecting text box, enter a reason.
7. Click the Reject button.
   A message appears, confirming the number of rejected registration requests. The rejected requests no longer appear in the pending list.

Manage Self-Service Users

Users can be granted different roles. By default, when a registration request is approved for a user, they are granted the User role. However, administrators can grant or remove roles, depending on the user’s intended responsibilities.

Note: The first user to be approved for a customer account is automatically granted the Account Administrator role. There must always be one user with the Account Administrator role for an account.

Use this topic to add and remove roles for self-service users in Oracle Fusion Service. For more information about self-service user roles, see About Digital Customer Service Roles.
To manage self-service roles for an account:

1. Sign in as a user with the Customer Self-Service Administrator role.
2. Navigate to the Service work area and click Self-Service Users.
3. From the Self-Service Users list, select the user you want to modify.
4. In the User Administration section, select or deselect one or more of the following roles:
   - User
   - Account Manager
   - Account Administrator

   **Note:** Removing the User role causes the removal of all privileges. The only way to restore the privileges is to submit a new registration request. Only a user with the SVC_DELETE_LAST_ACCOUNT_ADMIN_ROLE_PRIV privilege can delete the user role for the last Account Administrator. Users with the Customer Self-Service Administration role have the SVC_DELETE_LAST_ACCOUNT_ADMIN_ROLE_PRIV privilege by default. The last account administrator can only be deleted using the selfServiceRoles REST API.

5. Click Save.
   
   A dialog appears, confirming the role modifications.

**Related Topics**

- Digital Customer Service Roles

## Import Self-Service Users

This topic shows you how to import self-service users for use with your Digital Customer Service application.

Use cases for import include when you're migrating from one service implementation solution to Digital Customer Service, or when you have a new customer account and have been supplied with a list of authorized users.

If you're migrating from another service implementation to Digital Customer Service, you might have some existing reference identifiers that you'll want to retain from the originating service implementation. In this particular case, the following fields might help: AccountPartyNumber from the accounts, ContactPartyNumber from the contacts.

First you must create a contact. Once you've created the contact, you have two choices: you can use the Contact Party ID or Contact Party number. When contacts are created or imported, the contact party ID is automatically assigned. You can explicitly specify the Contact Party number. If you choose not to specify the Contact Party number, a number will be automatically assigned.

Accounts are handled in much the same way. An Account Party ID is automatically assigned, and you can choose to specify an Account Party number or have one automatically assigned.

Finally, there's a primary key for the imported data set. The value of the primary key column is automatically generated in the Oracle Fusion Applications data model.

Here's a high-level overview of what you will be doing when importing self-service users:

- Creating contacts
- Downloading the Self-Service Roles template.
- Preparing the Import file, then importing the users.
• Sending pending LDAP requests.

**Note:** When using the import process for creating self-service users, there is no additional approval step required.

### Create Contacts

Your first step is to create the contacts. The contact must have an email address. To create contacts, follow the instructions in the Import Your Contact Data task in the Related Topics list. This may also require you do the Import Your Account Data task, which is also in the Related Topics list, if you haven’t already done that yet.

### Download the Self-Service Role Template

This section describes how to download the self-service roles template.

The Self-Service roles template contains the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>AccountPartyId</td>
<td>A mandatory field if the AccountPartyNumber value isn't specified. Don’t provide this value for B2C.</td>
</tr>
<tr>
<td>AccountPartyNumber</td>
<td>A mandatory field if the AccountPartyId value isn't specified. Don’t provide this value for B2C.</td>
</tr>
<tr>
<td>ContactPartyId</td>
<td>A mandatory field if the ContactPartyNumber value isn't specified.</td>
</tr>
<tr>
<td>ContactPartyNumber</td>
<td>A mandatory field if the ContactPartyId value isn't specified.</td>
</tr>
<tr>
<td>LoginId</td>
<td>An optional field. If a value isn’t specified its assigned the value of a Contact attribute specified by the SVC_CSS_IMP_SIGN_IN_ATTR_NAME profile option. The default value for this profile option is Email Address.</td>
</tr>
<tr>
<td>RelationshipTypeCd</td>
<td>A mandatory field. The following values can be assigned:</td>
</tr>
<tr>
<td></td>
<td>• ORA_CSS_USER. This corresponds to the Digital Customer Service User role.</td>
</tr>
<tr>
<td></td>
<td>• ORA_CSS_ACC_MGR. This corresponds to the Digital Customer Service Account Manager role.</td>
</tr>
<tr>
<td></td>
<td>• ORA_CSS_ACC_ADMIN. This corresponds to the Digital Customer Service Account Administrator role.</td>
</tr>
<tr>
<td>RequestTypeCd</td>
<td>A mandatory field for B2C. An optional field for Fusion. The following values can be assigned:</td>
</tr>
<tr>
<td></td>
<td>• ORA_CSS_REQ_TYPE_CONTACT. This Fusion Service value corresponds to the Fusion Contact.</td>
</tr>
<tr>
<td></td>
<td>• ORA_CSS_REQ_TYPE_CONSUMER. This B2C Service value that corresponds to the B2C Consumer.</td>
</tr>
<tr>
<td>RoleId</td>
<td>An optional field. You can remove from the first row of the file.</td>
</tr>
</tbody>
</table>

To download the Self-Service roles template file:

1. Sign in to Oracle Fusion Service as an administrator or a setup user.
2. From the Navigator menu, expand **Tools**, and then select **Import Management**.
3. In the Manage Imports work area, click the Import Objects tab, and select Search.
4. In the Import Object Details page, enter Self-Service Role in the Display Name search box.
5. Click Download and then save the .zip file to a convenient directory.

Prepare the Import File

This section describes how to prepare the import file for importing self-service users. For more information about import management, refer to Understanding Import and Export Management in the Related Topics.

To prepare the import file:

1. Locate, and open the Self-Service Role Templates<date>.zip file that you saved in the Download the Self-Service Role Template topic.
2. Extract, then open the SelfServiceRole.csv file.
3. For each self-service user you plan to import, enter the following data in a dedicated row:

   a. Enter the account information relating to the self-service user in the **AccountPartyId** or **AccountPartyNumber** column.

      **Note:** The Account ID value isn't needed for B2C Service requests.

      **Tip:** To quickly locate the values for **AccountPartyId** or **AccountPartyNumber** using REST API, run the following command as an administrator:

      ```
      GET <Oracle-Fusion-Application-Host>/crmRestApi/resources/11.13.18.05/accounts/
      ```

   b. Enter the contact information relating to the self-service user in the **ContactPartyId** or **ContactPartyNumber** column.

      **Note:** When importing the Contacts, it's possible to provide a unique identifier for each contact in the form of the ContactPartyNumber. This must be unique for each user. So you should provide the same unique numbers for ContactPartyNumber for the user in the Contact import file and the Self-Service Roles import file to match them up.

   c. Enter the login ID relating to the self-service user in the **LoginId** column.

      **Note:** If the svc_css_imp_sign_in_attr_name profile option is set, then the LoginId is optional.

   d. Enter the Digital Customer Service roles to assign to the self-service user in the **RelationshipTypeCd** column. The following values can be assigned:

      - **ORA_CSS_USER**. This corresponds to the Digital Customer Service User role.
      - **ORA_CSS_ACC_MGR**. This corresponds to the Digital Customer Service Account Manager role.
      - **ORA_CSS_ACC_ADMIN**. This corresponds to the Digital Customer Service Account Administrator role.

      **Note:** The ORA_CSS_ACC_MGR and ORA_CSS_ACC_ADMIN roles by themselves can be only used if the self-service user already exists. If the import is going to create a new self-service user the ORA_CSS_ACC_MGR and ORA_CSS_ACC_ADMIN roles must be combined with ORA_CSS_USE role. To assign multiple roles to a user concatenate them using the & character. For example: ORA_CSS_USER&ORA_CSS_ACC_ADMIN.

   e. Enter the Digital Customer Service roles to assign to the self-service user in the **RequestTypeCd** column. If a value isn't supplied the default is **ORA_CSS_REQ_TYPE_CONTACT**.

      The following values can be assigned:

      - **ORA_CSS_REQ_TYPE_CONTACT**. This value is for Fusion Service instances and corresponds to the Fusion Contact.
      - **ORA_CSS_REQ_TYPE_CONSUMER**. This value is for B2C Service instances and corresponds to the B2C Consumer. B2C is general public.

4. Repeat step 4, on a dedicated row for each additional self-service user you want to import.

   **Note:** For each AccountPartyId or AccountPartyNumber, at least one user in the import file must have the **ORA_CSS_ACC_ADMIN** role assigned.

5. Save the **SelfServiceRole.csv** file.
6. Include the `SelfServiceRole.csv` in a new `Self-Service Role_Templates<date>.zip` archive, and save it.

   **Tip:** When using a Mac, you must the `zip` utility in terminal to create the `Self-Service Role_Templates<date>.zip` file.

Consider the following sample data in the `SelfServiceRole.csv` file:

**Example 1: Using Party IDs for import**

```
AccountPartyId,ContactPartyId,RelationshipTypeCd
300100110957452,300100156316610,ORA_CSS_User & ORA_CSS_ACC_ADMIN
```

**Example 2: Using Party numbers for import**

```
AccountPartyNumber,ContactPartyNumber,RelationshipTypeCd
CDRM_67617,CDRM_743628,ORA_CSS_USER
CDRM_67617,CDRM_743711,ORA_CSS_USER&ORA_CSS_ACC_ADMIN
CDRM_67617,CDRM_743651,ORA_CSS_USER&ORA_CSS_ACC_MGR
```

**Example 3: The Login ID explicitly used**

```
AccountPartyNum,ContactPartyNum,LoginId,RelationshipTypeCd
CDRM_67617,CDRM_743628,Mary.Smith,ORA_CSS_USER
CDRM_67617,CDRM_743711,John.Rogers,ORA_CSS_USER&ORA_CSS_ACC_ADMIN
CDRM_67617,CDRM_743651,Pat.Williams,ORA_CSS_USER&ORA_CSS_ACC_MGR
```

**Example 4: B2C**

```
ContactPartyNum,RelationshipTypeCd, RequestTypeCd
CDRM_943831,ORA_CSS_USER, ORA_CSS_REQ_TYPE_CONSUMER
CDRM_943832,ORA_CSS_USER, ORA_CSS_REQ_TYPE_CONSUMER
```

## Import the Self-Service Users

Before proceeding with the instructions in this section, you must have completed the steps in the previous sections:

- Downloading the Self-Service Roles Template
- Preparing the Import File

**Note:** For best performance set the value of profile option `ZCA_STANDARD_IMPORT_COMMIT_SIZE` to 1.

To import the self-service users:

1. Sign in to Oracle Fusion Service as an administrator or a setup user.
2. From the Navigator menu, expand **Tools**, and then select **Import Management**.
3. In the **Manage Imports** work area, click the **Create Import Activity** button.
4. In the **Create Import Activity** workspace, enter the following import options:
   a. In the required **Name** field, enter a name for the import activity.
   b. In the optional **Description** field, enter a description of the import activity.
   c. Click the **Object** drop down list, and search for **Self-Service Role**.
   d. Click the **File Name** **Browse** button and locate the `SelfServiceRole.csv` file you downloaded.
5. Click **Next**.
6. Verify the mappings are as expected. If necessary, make your corrections.
7. Click **Validate Data**.
8. Click **Next**.

   The **Create Import Activity: Review and Submit** screen is displayed.

9. Click the **Submit** button.

   Your import job is listed in the **Manage Import Activities** list. The **Status** value of your job will change multiple times during processing, until it's **Completed** or **Completed with Errors**.

10. From the **Manage Imports** workspace, click the **My Completed Imports** tile and select the link for your import from the list and review the import details.
11. (Optional) Review errors. If the **Status** value is **Completed with Errors**, some users might not have been imported. Follow these steps to review the errors:
   
   a. On the **Import Status** workspace, click the **Actions** menu and select **Generate Diagnostics**.
   b. Download the generated **zip** file, to review the diagnostic messages.

For more information about importing users, refer to Understanding Import and Export Management in the Related Topics.

### Send Pending LDAP Requests

Perform this task after successfully importing the self-service user roles.

**Note:** This topic is only required only if SVC_CSS_USE_FA_AS_IDP profile option is set to TRUE.

With the import of the self-service roles to associate with the contact records, the final step to enable a self-service user account is to create the user account in the Oracle Fusion Service identity management system. This is in turn synchronized with Oracle Identity Cloud Service, allowing users to sign in. To create the user account in the Oracle Fusion Service identity management system, the **Send Pending LDAP Requests** job needs to be run.

To send the pending LDAP requests:

1. Sign in to Oracle Fusion Service as an administrator or a setup user.
2. Navigate to the **Scheduled Processes** work area.
3. Click **Schedule New Process**.

   The **Schedule New Process** dialog box appears.

4. Select the **Job** option.
5. Click the **Name** menu, then select **Search**.
6. Enter the following string in the **Name** text box, then click **Search**:

   **Send Pending LDAP Requests**

7. Click **Send Pending LDAP Requests**, then click **OK**.
8. Click **OK** on the **Schedule New Process** dialog box.

   The **Process Details** dialog box appears.

9. Click **Submit**.

   A **Confirmation** dialog is displayed.

10. Click **OK**.

    Monitor the job. When it's complete, the newly imported self-service users are created in LDAP.
Self-Service Contact or Account Merge

Fusion Service uses Oracle Customer Data Management to cleanse contact and account records. Merge actions eliminated duplicate records by creating a victim and survivor record. The survivor record serves as the master record. Digital Customer Service has several rules which are used in Fusion Service to prevent merge operations on victim records.

Here's a list of potential error messages along with resolutions.

<table>
<thead>
<tr>
<th>Error Message Name and Message Text</th>
<th>Description</th>
<th>How You Resolve the Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZCH_GUID_ISSUE</td>
<td>This error message is displayed when one of the duplicates in a merge request is a valid user.</td>
<td>Delete the victim Self-Service user using Self-Service Users UI.</td>
</tr>
<tr>
<td></td>
<td>This merge request can't be processed because one of the duplicate records is a valid user.</td>
<td></td>
</tr>
<tr>
<td>SVC_CSS_CNT_MRG_PENDING_REG</td>
<td>This message is displayed when two accounts are being merged and the victim record has pending registration requests.</td>
<td>Use the Registration Requests UI to reject the pending registration request of the victim contact.</td>
</tr>
<tr>
<td>SVC_CSS_ACT_MRG_PENDING_REG</td>
<td>This message is displayed when 2 accounts are being merged and the victim record has pending registration requests.</td>
<td>Use the Registration Requests UI to reject the pending registration request of contacts from the victim account.</td>
</tr>
<tr>
<td>SVC_CSS_ACT_MRG_USERS</td>
<td>This message is displayed when 2 accounts are being merged and the victim record has existing self-service users.</td>
<td>Currently there's no resolution (one will come in a future release).</td>
</tr>
<tr>
<td></td>
<td>This merge request can't be processed because 1 of the duplicate records has pending self-service registration requests.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This merge request can't be processed because 1 of the duplicate records has existing self-service users.</td>
<td></td>
</tr>
</tbody>
</table>
8 Components

Overview of Components

This topic describes the Digital Customer Service components that are available when developing your application in the Oracle Visual Builder.

There are two types of components:

- **Oracle JavaScript Extension Toolkit Composite Component Architecture components.** These components are reusable pieces of user interface code that you can embed as custom HTML elements in the Visual Builder Application.

- **Oracle Visual Builder pattern components.** These components use templates of existing available components and HTML elements and additional Oracle Visual Builder-related bindings such as page variables, listeners and action chains.

Oracle Visual Builder pattern components aren't accessible as a component whose attributes you can inspect. Once included on a page, the Oracle Visual Builder pattern components are a collection of other HTML components with no outer component. Whereas the Standard Oracle JavaScript Extension Toolkit Oracle JET Composite Component Architecture components have attributes that can be inspected.

Oracle Visual Builder pattern components that are a part of Digital Customer Service are:

- Asset Detail
- Asset List
- Asset Register
- Change Password Form
- Forgot Password Form
- Knowledge Article
- Knowledge Article Facets
- Knowledge Article List
- Knowledge Popular Articles
- Knowledge Search
- Reset Password Form
- Service Request Creator
- Service Request Data
- Service Request File Attachment
- Service Request List
- Service Request Message List
- Service Request Message Creator
- Service Request URL Attachment List
Components

- Sign In
- Sign In Form
- Sign Out
- Sign Up
- User Registration Request Management
- User Registration Requests List
- User Roles Management
- User Roles List
- Visual Navigator
- Work Order Data
- Work Order List

Standard Oracle JavaScript Extension Toolkit Oracle JET Composite Component Architecture components that are a part of Digital Customer Service are:

- Chat
- Cobrowse
- Category Selector
- Product Selector
- Linked Text
- Download Attachment

Installed Base Asset Components

If you’re an Oracle Cloud customer that uses Installed Base Assets for processes such as Supply Chain, Service Logistics, Service Contracts, or IOT, you can opt-in to use the same asset model for your service request and work order processes.

Your users can register products as installed base assets using the asset-register flow in the Digital Customer Service reference implementation. Users access the flow by clicking the Register Product button on the Registered Products view. You can only register products that have been configured to allow tracking as assets.

**Note:** Assets and product registrations are Oracle Fusion Installed Base Assets.

Account managers can view and manage all assets associated with the account that they manage. Non-account manager users can only access and manage assets that they have registered themselves.

Users can do the following with registered products:

- View a list of product assets
- Register a product asset
- View the details of a product asset
- Update the product asset description
• See knowledge articles associated with a product asset
• See service requests logged against a product asset
• Create a new service request against a product asset from the product asset details page

Users access the list of registered products by clicking the Settings and Actions menu, and selecting the **Registered Products** option from the drop-down list.

The following table describes components specific to asset registration.

<table>
<thead>
<tr>
<th>Component Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset List</td>
<td>Lists the Installed Base Assets of Digital Customer Service self-service users. Users can register products as installed base assets using the asset-register flow in the Digital Customer Service Reference Implementation, by clicking the Register Product button on the Registered Products flow. Only products that have been configured to be tracked as assets can be registered.</td>
</tr>
<tr>
<td>Asset Register</td>
<td>Enables a self-service user to register an Installed Base Asset in the Digital Customer Service application.</td>
</tr>
<tr>
<td>Asset Detail</td>
<td>Enables a self-service user to view details and update the description of the registration of an Installed Base Asset in the Digital Customer Service application.</td>
</tr>
</tbody>
</table>

**How Digital Customer Service User Roles are Used by the Installed Base Asset Components**

Your users can register products as installed base assets using the asset-register flow in the Digital Customer Service reference implementation. Users access the flow by clicking the Register Product button on the Registered Products view. You can only register products that have been configured to allow tracking as assets.

Here’s a list of the roles required for registering products and what each role can do:

<table>
<thead>
<tr>
<th>Role</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account Manager</td>
<td>Can view and manage all assets associated with the account being managed.</td>
</tr>
<tr>
<td>Non-Account Manager User</td>
<td>Can only access and manage assets that they have registered.</td>
</tr>
<tr>
<td>B2C User</td>
<td>Can register and manage assets.</td>
</tr>
</tbody>
</table>

**Interaction Methods Components**

This topic lists and describes interaction methods components.

The following table describes components specific to interaction methods.
### Components

<table>
<thead>
<tr>
<th>Component Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chat</td>
<td>Enables users to initiate a chat request and exchange messages with an agent.</td>
</tr>
<tr>
<td>Cobrowse</td>
<td>Enables users to initiate a Cobrowse session. Cobrowse is launched using the supplied launcherUrl attribute value and the JET language by loading the launcher.js file into the application. The Cobrowse component is by default included on the shell page of the Digital Customer Service Reference Implementation template. For more information, refer to the Configure Cobrowse topic in the Related Topics.</td>
</tr>
</tbody>
</table>

**Related Topics**
- Configure Cobrowse

### Product and Category Components

This topic lists and describes product and category components.

The following table describes components specific to products and categories.

<table>
<thead>
<tr>
<th>Component Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category Selector</td>
<td>Enables users to select a category, for example to filter the search results. This component works in conjunction with Knowledge Search, Chat, Create Service Request and Edit Service Request.</td>
</tr>
<tr>
<td>Product Selector</td>
<td>Enables users to select a product, for example to filter the search results. This component works in conjunction with the Knowledge Search, Chat, Create Service Request and Edit Service Request.</td>
</tr>
</tbody>
</table>

### Knowledge Management Components

This topic lists and describes knowledge management components.

The following table describes components specific to knowledge management components.

<table>
<thead>
<tr>
<th>Component Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Article</td>
<td>Enables you to display a knowledge article when the component's variable <code>kmContentId</code> is configured with a valid Knowledge Article ID.</td>
</tr>
<tr>
<td>Knowledge Article List</td>
<td>Displays a list of knowledge articles associated with a supplied search term and optionally selected product and category filters.</td>
</tr>
</tbody>
</table>
Component Name | Description
--- | ---
Knowledge Popular Articles List | Displays Popular Knowledge Articles. This component provides a user interface component that displays popular articles that are measured by a ranking score. This ranking score is derived from the strength of the knowledge article viewed within a time lapse mechanism.

The following variables are associated with this component:

- **kmPopularArticlesList** - The Service Data Provider for the component which maps the Service Data Provider to the following custom fetch action chain: `kmPopularArticlesFetchAction`.

- **kmPopularArticlesFilter** - The product category filter that adds context to the query. The Action chain associated with the Popular Articles Fetch has a description with details on how `kmPopularArticlesFetchAction` can be used. `kmPopularArticlesFetchAction` queries the most popular items back from the Knowledge Management content REST API. The number of results can be limited by updating the `kmPopularArticlesLimit` NUMBER page variable.

- **kmPopularArticlesLimit** - Controls the maximum number of articles to display. The default value is 5.

- **kmPopularArticlesResultsCache** - Represents the object used to scope the caching of the popular articles, and prevents an article from being called more frequently than appropriate.

Knowledge Search | Displays a list of knowledge articles associated with a supplied search term and optionally selected product and category filters. This component can used in collaboration with the Knowledge Article List and Knowledge Article Facets components.

Knowledge Article Facets | Enables you to filter a list of knowledge articles resulting from a knowledge search. Types of facets include: Product, Category, Collection, and Document Type.

Service Requests Components

This topic lists and describes service requests components.

The following table describes components specific to Service Requests. It also lists the restrictions associated with the component and any additional configuration required.

Component Name | Description
--- | ---
Download Attachment | Enables the Service Request Attachment List to support downloading of the listed attachments.

Linked Text | Replaces a text field with references to service requests with links to the details page for the service request, and creates links to Knowledge Management articles.

For example, "SR1234567890" in the Field value would be replaced with a link to the details page for service request number 1234567890.

Service Request Creator | Displays the service request creation form and the functionality required to allow users to create Service Requests.
### Component Name | Description
---|---
Service Request Data | Displays the summary details of a service request.

For the Service Request Data component to render a valid service request, it must be mapped to the input page `serviceRequestNumber` parameter. This parameter is a required parameter and has to be wired to a valid service request number by the calling page navigation.

Service Request File Attachment | Lists service request file attachments and allows the user to edit the description or add new file attachments.

For the Service Request File Attachment component to render a valid service request, it must be mapped to the input page `serviceRequestNumber` parameter. This parameter is a required parameter and has to be wired to a valid service request number by the calling page navigation.

Service Request List | Displays a list of service requests to the account user in a preconfigured Oracle Visual Builder list view. The presentation of a row can be edited.

Service Request Message Creator | Provides functionality to allow new messages to be added to a service request.

Service Request Message List | Displays the messages that are associated with a service request.

Service Request URL Attachment List | Lists service request URL attachments and allows the user to edit the description or add new URL attachments.

For the Service Request URL component to render a valid service request, it must be mapped to the input page `serviceRequestNumber` parameter. This parameter is a required parameter and has to be wired to a valid service request number by the calling page navigation.

### Work Order Components

This topic lists and describes work order components.

The following table describes components specific to Work Orders. It also lists the restrictions associated with the component and any additional configuration required.

**Note:** To use work orders in your Digital Customer Service application, you must first complete the setup of either general work orders or Oracle Field Service work orders with Fusion Service. For more information, refer to the following guides:

- Integrating Fusion Service with Field Service
- Implementing Fusion Service
<table>
<thead>
<tr>
<th>Component Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Order List</td>
<td>Displays a list of work orders to the account user in a preconfigured Oracle Visual Builder list view. The presentation of a row can be edited. Provides the capability to search for a work order and sort the list of work orders.</td>
</tr>
<tr>
<td>Work Order Data</td>
<td>Displays the summary details of a work order. Provides the capability to update contact information, add a message for the technician, reschedule a work order and cancel a work order. It also provides information about the technician and displays the technician’s location.</td>
</tr>
<tr>
<td>Note:</td>
<td>Self-Service users can only reschedule Oracle Field Service work orders, not generic work orders.</td>
</tr>
</tbody>
</table>

### Sign In and Sign Out Components

This topic lists and describes sign in and sign out components.

The following table describes components specific to Sign In and Sign Out.

<table>
<thead>
<tr>
<th>Component Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sign In</td>
<td>Enables users to sign in.</td>
</tr>
<tr>
<td>Sign Out</td>
<td>Enables users to sign out.</td>
</tr>
</tbody>
</table>

### User Components

This topic lists and describes user components.

The following table describes components specific to users.

<table>
<thead>
<tr>
<th>Component Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sign Up</td>
<td>Allows anonymous users to register to become self-service users.</td>
</tr>
<tr>
<td>User Registration Request Management</td>
<td>Enables Oracle Digital Customer self-service administrator users to manage user registrations. The component shows the selected user’s name, email, account information, status and a reason associated with the approval or rejection.</td>
</tr>
<tr>
<td>For the User Registration Request Management component to render a user’s registration details, the user’s ID must be mapped to the component’s page variable named selfServiceRegistrationId.</td>
<td></td>
</tr>
</tbody>
</table>
### Component Name | Description
--- | ---
**User Registration Requests List** | Lists the Digital Customer Service self-service registrations. The listing can be sorted by last update date, email, name, role or account in either descending or ascending order. The list displays the username, email, account, registration status and last update date.

**User Roles List** | Lists the Digital Customer Service self-service users and their roles. The list can be sorted by last update date, email, name, role or account in either descending or ascending order. The list displays the username, email, account, roles and last update date. The rows have a trash can icon, which can be used to remove the user.

**User Roles Management** | Allows the Digital Customer Service self-service administrator users to view, add and remove user roles. The component shows the selected user’s name, email, account information and their assigned roles and details on who made the last update and when.

For the User Roles Management component to render a user’s roles, the user’s ID must be mapped to the component's page variable named userRolesUsersId. This parameter is a required parameter. It must be configured by the calling page navigation -- typically from an instance of the User Roles List -- in that calling page's UserRolesNavigateToEditAction action's navigateToEdit step.

The remove user button removes the user.

**Change Password Form** | Component that creates a form that allows a user to change their password.

**Forgot Password Form** | Component that creates a form that allows users who have forgotten their password to initiate the reset password process.

**Reset Password Form** | Component that creates a form that allows users who have forgotten their password to complete the reset password process.

**Sign-In Form** | Component that creates a form that allows IDCS users to log in to the DCS application.

---

**Integrate Composite Component Architecture Components**

You can integrate non-Digital Customer Service Oracle JET Composite Component Architecture (CCA) components with your application.

For more information about this type of integration, refer to the Interviews for Digital Customer Service topic in the Oracle Intelligent Advisor documentation in the Related Links.
Related Topics
- Interviews for Digital Customer Service

View Information about Components

This topic describes how to view additional information about components.

You can find more information about component attributes directly in Oracle Visual Builder.

To view more information about a specific component:

1. Navigate to the Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click Web Apps.
4. Expand dcs, then expand flows.
5. Select a page where the component appears.
6. In the Page Structure panel, click the component.
7. Click the Design tab in the <Component> Selector inspector.
8. All of the attributes specific to the selected component appear in the <Component> Selector section of the inspector, in the All tab.
9. Hover over the name of the attribute, then hover over the question mark icon to reveal one or more of the following fields relating to the attribute:
   - Type
   - Value
   - Supported Values
   - Description
9 Life Cycle Management

Determine Component Versions

Digital Customer Service provides reusable components to your application through a component catalog service integrated into Oracle Visual Builder. These components may be updated periodically to provide bug fixes or additional features.

This topic describes how to determine your Digital Customer Service component versions in Oracle Visual Builder.

To determine your Digital Customer Service application component versions:

1. Sign in to Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click the **Puzzle Piece** icon (Components).

   The **Components** list appears.
4. Click the **Installed** tab.

   The names of all of your installed components are listed, including version numbers.

Determine Template Version

This topic describes how to determine the version of the Digital Customer Service template your application was based on, in Oracle Visual Builder.

Digital Customer Service provides templates for you to create your application. Additional templates may be provided with each version, and in some situations, you might want to know the version of the template that your application was based on.

To determine the version of your template:

1. Sign in to Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click **Web Applications**.
4. In **Web Apps**, click **dcs**.
5. Click the **JS** icon (Functions).

   The functions appear.
6. The first line of the functions will look similar to the following:

   ```
   ```

   In this example, the **19C 2.3.1** indicates the version of the template that you are using.
Updates and Upgrades

Application Upgrade Dependencies

Periodically Oracle updates the underlying version of Visual Builder. When an upgrade occurs, the Visual Builder Runtime and Oracle JET versions are also updated.

If a new Digital Customer Service application is created, it's automatically set to use the latest version of the runtime dependencies. Although Oracle recommends you always run the latest versions for your existing Digital Customer Service applications, it's for you to decide when the appropriate time is for you to upgrade the components.

Before you start any upgrade always backup your Digital Customer Service application first. You can do this in any one of the following ways:

- Export the application and save the archive file.
- Create a new version of the application.
- Duplicate the application to create a new application.
- Push the changes to a Git repository.

Once the application has been upgraded you must stage and publish it again.

Related Topics

- Manage Runtime Dependencies for Visual Applications
- Update a Component from the Component Exchange
- Choose Your Instance's Update Window

Upgrade Visual Builder Runtime and JET Version

Periodically Oracle updates the underlying version of Visual Builder. When an upgrade occurs, the Visual Builder Runtime and Oracle JET versions are also updated.

If a new Digital Customer Service application is created, it's automatically set to use the latest version of the runtime dependencies. Although Oracle recommends you always run the latest versions for your existing Digital Customer Service applications, it's for you to decide when the appropriate time is for you to upgrade the components.

Before you start any upgrade always backup your Digital Customer Service application first. You can do this in any one of the following ways:

- Export the application and save the archive file.
- Create a new version of the application.
- Duplicate the application to create a new application.
- Push the changes to a Git repository.

Once the application has been upgraded you must stage and publish it again.
Updates to the oj-odcs JET Pack

When a newer version of the oj-odcs JET components is available, you can install it using the Updates tab in the Components pane.

You'll know an update is available when you see a notification in your browser window or a badge over the Components icon in the Navigator.

To update a component from the Component Exchange, do the following:

1. Open the Components tab in the Navigator.
2. Open the Updates tab in the Components tab.
3. Click Update All to install all updates available for installed components.

To update an individual component, click the component's name to open its detail page, then click the Update button.

If the installed component isn't compatible with the JET version in your Visual Builder instance, you'll see a notice to that effect. For more information, refer to the Update a Component from the Component Exchange topic in the Related Topics section.

Related Topics
  • Update a Component from the Component Exchange

Manage Your Instance Patching Window

Visual Builder's functional updates are typically provided in two windows which are typically two weeks apart. With Visual Builder you can choose the update window for your instance.

It's recommended that you update non-production instances in the first window (Window 1) and your production instance in the second window (Window 2). Using this upgrade method you can test your applications before the update is applied to your production environment.

Here's a quick overview of the process:

1. Open the Visual Builder instance's Tenant Settings editor.
2. From the Patch drop down list, select the Window option.

   There are only two options: Window 1 and Window 2. Window 1 is the default option. For a more detailed look, refer to the Related Topics.

Related Topics
  • What's New in Oracle Visual Builder
  • Choose Your Instance's Update Window
Promote Your Application to Another Instance

Promote Your Digital Customer Service Application to Other Instances

Here’s the recommended approach for managing the lifecycle of your application from the development phase up through the publishing of your application.

Your Fusion Service instance is provisioned with a Non-Production and Production environment, with some customers also having additional non-production instances. With each of your Fusion Service instances a Visual Builder instance is provisioned. This means there is a distinct Visual Builder associated with your Non-Production and Production environments respectively. The Non-Production instance will also include a Visual Builder Studio instance, enabling you to use a Git repository and a dedicated development environment.

**Note:** When promoting your application to the production environment consider following the Performance Tuning checklist listed in Related Topics. In these steps you’ll be using the Digital Customer Service application and Visual Builder.

These multiple instances allow development to occur in safe, independent environments, without affecting any production applications. We recommend that development is carried out in your Non-Production environment and promoted to Production only when ready. Additionally, if you have Development environments, these can be used to further segregate the phases of development and provide restricted, controlled access before promoting to the next.

When your Digital Customer Service application is ready to be promoted from the Non-Production or Development Visual Builder environment to the Production environment there are two options available. These options are described in the following topics.

**Note:** You should not promote to a new environment until you’ve performed all the steps listed in Chapter 3, Mandatory Setup Tasks.

Promote an Application Using Export and Import

You can export your Digital Customer Service application as an archive to your local system, and then import it to create a new visual application. You can use the import and export mechanism to share application sources and to move applications between instances.

When you export the application, you can choose whether you want the archive to include the data contained in the application’s business objects. Some information, such as credentials for external REST end points, is removed when you export an application. This information must be provided after the archive is imported. The application archive can be imported to the required instance via the import tool. You can also replace an existing visual application’s source files with content from an archived file using the Import command located in the Application menu.

Once you’re done, you then set up the user role mapping. For instructions, refer to Add Mappings to User Roles in Related Links.

Finally, stage and publish the application. If you’re using a Vanity URL, then make sure you’ve followed the steps from the Set Up Vanity URLs topic in the Related Topics list.
For instructions on the export and import framework, refer to Import and Export Visual Applications in the Related Topics list.

**Perform Required Prerequisite Steps Before Promoting the Application Using Visual Builder Studio**

If you're not already using Visual Builder Studio, then there a few steps required before you can start developing your new Digital Customer Service application.

- Set up the required IDCS roles.
- Get access to the Visual Builder instance.
- Create a project for the Visual Application using the Digital Customer Service template.
- Set up the development project

For instructions on these steps, refer to "Set Up VB Studio for Developing Visual Applications" in the Related Topics.

Once you create a Digital Customer Service project using the Visual Application template, several artifacts are created for you:

- A Git repository that contains the visual application's source code.
- A Development environment that points to the Visual Builder development instance.
- Optionally, a private workspace to edit the visual application in the Visual Builder Studio Designer.

Once your Digital Customer Service application is set up in Visual Builder Studio, it’s possible to promote it to your production Visual Builder instance, or to any other instance. You can do this by using the Import Application from Visual Builder Studio Git option in Visual Builder.

**Promote the Application Using a Git Repository**

If your application is stored in a Git repository, then you can import it to the Production environment.

To do this, you first have to make the existing Git repository accessible to the production environment by doing the following:

1. Log into Visual Builder.
2. Select Import and then Import Application from Visual Builder Studio Git.
3. Select Add Credentials.
4. Enter the Git repository URL using the following format: https://host/organization.
5. Enter the user name and password of the Git user, and then click Save Credentials.
6. From the Project Selection drop down list, select your project.
7. From the Repository Selection drop down list, select your repository.
8. From the Branch Selection drop down list, select your branch.
9. Give the application a name, an ID and a brief description.
10. Click Save Configuration.

Once you're done, you then set up the user role mapping. For instructions, refer to Add Mappings to User Roles in Related Links.

Finally, stage and publish the application. If you're using a Vanity URL, then make sure you've followed the steps from the Set Up Vanity URLs topic in the Related Topics list.
Application Modifications

After the application has been promoted to the new environment it's possible that some modifications may be required. Each environment has its own Identity Cloud Service so if your application or user flow makes calls to IDCS then changes are required.

The types of configurations could include:

- Your own sign in page
- A custom password reset
- Cobrowse setup
- Custom endpoint calls. These include any direct calls made in your application to a service. This only applies if the service address is different in the new environment.

For more information, see the Related Topics links.

Promote Your Fusion Service Proxy User Data to Another Instance

Export Configuration Data from the Stage Environment

The proxy user name and password aren't moved by this process. Proxy user configuration data must be configured in the stage environment and moved to the production environment.

| Note: You perform this step in your Fusion Service environment. |

1. Sign in to Fusion Service as administrator or setup user.
2. In the Setup and Maintenance work area, go to the following:
   - Offering: Service.
3. From the Actions drop down list, select **Export**, then **Create New**.
4. Click **Yes** to dismiss the Warning dialog box.
5. In the **Export Offering Setup Data** work area, click the **Show** drop down list in the **Business Objects** area and select **All**.
6. Make sure **Proxy User Configuration** is selected for export. If you don't want to export profile options, deselect **Export** for the Application Profile Value row.
7. If you deselected the Application Profile Value row, click through the Warning pop up window.
8. Enter a name in the Process Name field and then click Submit.
9. If you deselected the Application Profile Value row, click through the Warning pop up window.
10. When the status reads **Ready to Export**, click the link.
11. Click **Download File**, and then click **Done**.
12. A compressed file with the name you gave the process will be downloaded locally.

**Import Configuration Data Into the Production Environment**

Now you import the data into your production environment.

**Note:** You perform this step in your Fusion Service environment.

1. Sign in to Fusion Service as administrator or setup user.
2. In the Setup and Maintenance work area, go to the following:
   - Offering: Service.
3. From the Actions drop down list, select **Import**, then **Create New**.
4. Click **Yes** to dismiss the Warning dialog box.
5. In the **Import Offering Setup Data** work area, click **Browse** and select the compressed file you downloaded in the previous step.
6. Click **Submit**, and then click **OK** to confirm the import.
7. Click the **Waiting for manual import** link.
8. In the Resume Import Setup Data window, click Yes to resume the import.
9. When the status reads **Ready for data validation**, you can validate it using the Manage Proxy User Configuration task.
10 Migrating to Self-Service Optimization

Overview of Migrating Users to Self-Service Optimization

Self-Service User Optimization makes it possible to use Identity Cloud Service for authentication.

With Identity Cloud Service you have a sign-in page that you can configure, along with email notification and immediate login access after registration. This enables you to scale Self Service Optimization to a much larger number of users than would occur in many B2C scenarios.

During the registration approval process, the SVC_CSS_USE_FA_AS_IDP profile option determines the overall behavior. Here are the profile option settings:

- If the profile option is set to TRUE, the user account is created in the Identity Store managed by Fusion Service, and then copied over to Identity Cloud Service.
- If the profile option is set to FALSE, the user is created directly in Oracle Identity Cloud Service.

A user that's created in the Fusion Service Identity Store, with the SVC_CSS_USE_FA_AS_IDP profile option set to TRUE, must also be enabled for Self-Service Optimization prior to having access to the Digital Customer Service application. The user migration process enables these user accounts.

Here are some terms to keep in mind during your setup:

- Self-Service Optimization enabled Digital Customer Service application: A Digital Customer Service application that's Self-Service Optimization enabled is configured to send all Fusion Service requests through the Proxy User Data Service.
- Self-Service Optimization enabled user account: When Self-Service Optimization is used, the user is always authenticated by Oracle Identity Cloud Service. A user account with the same User ID value may or may not exist in the Fusion Service Identity Management Store. A user account in Oracle Identity Cloud Service is considered to be Self-Service Optimization enabled only if the GUID of the Oracle Identity Cloud Service user account is stamped on a contact record representing the Oracle Identity Cloud Service user account in Fusion Service.
- Self-Service Optimization user migration: Self-Service Optimization user migration is the process that ensures the GUID of an Oracle Identity Cloud Service user account is stamped on a contact record representing the Oracle Identity Cloud Service user account in Fusion Service.

Pre-Migration Tasks

Overview of Pre-Migration Tasks

Use this topic as a guide as you prepare to migrate your Digital Customer Service implementation to include Self-Service Optimization.
Before you begin, you must previously have set up your environment following the instructions in Chapter 3. Prior to doing user migration, however, you must complete the steps laid out in this topic.

Overview of Tasks

Here’s an overview of the tasks you’ll perform.

**Note:** You must perform each of these listed tasks in the order they’re presented.

1. Set up Oracle Identity Cloud Service
2. Set up Oracle Fusion Service
3. Set up Administrators and Developers
4. Set up Oracle Visual Builder
5. Set up Oracle Visual Builder Cloud Service with Oracle Fusion Service
6. Prepare your current application for Self-Service Optimization

Pre-Migration Tasks for Setting Up Oracle Identity Cloud Service

First you set up Oracle Identity Cloud Service using the following topics from Chapter 3.

1. Set Up Oracle Identity Cloud Service for Authentication.
2. Create the Application Client.
3. Allow Anonymous Users to Access the Signing Certificate.
4. Configure the Password Reset Email.
   
   - You use the Resend Welcome template when new users are registered by way of Self Service Optimization. It’s recommended that you ensure the message content is appropriate.
   - You use the Password Recovery template when the user has been migrated. This template is also used when user uses the forgot password flow and so, if this template is configured for the purpose of migration, it must be changed appropriately after migration is complete.

   **Note:** If users are presently using IDCS as the Identity Provider then disable the notification based on the Password Recovery Request template so that users don’t receive an email asking them to change their password.

5. In Identity Cloud Service disable the notification called User Profile Updated by Administrator. By disabling this notification, you ensure that email isn’t sent about the user profile change when the isFederated parameter is set to FALSE. You do this in the menu under Settings, Notifications and then by deselecting User Profile Updated by Administrator and then saving the setting.

6. Use the Fusion Service application in Oracle Identity Cloud Service to trigger a full import of users and roles from Fusion Service to Oracle Identity Cloud Service. Once the operation is complete, check the Synchronization Failure Report to determine if there were any issues that need to be addressed.

Pre-Migration Tasks to Set Up Oracle Fusion Service

Now you set up Oracle Fusion Service using the following tasks from Chapter 3.
1. Configure a User Category for Proxy Users.
2. Create the Proxy Users.
   
   **Note:** If you’re using custom job roles for your self-service users, consult the Related Topics for a link to the guidelines on creating proxy users.
3. Set Profile Options for Self-Service Optimization.
   
   **CAUTION:** In the production environment, change the value of profile option SVC_CSS_USE_FA_AS_IDP to false only just before you migrate the users otherwise user registration may fail or users won’t be able to use the application.
4. Set the Oracle Identity Cloud Service Endpoint.
5. Configure the Client ID and Client Secret.
6. Manage the Proxy User Configuration Data.
7. Set Proxy User Credentials.

**Related Topics**
- Create the Proxy Users

### Pre-Migration Tasks to Set Up Administrators and Developers

While you’re developing your application for Self Service Optimization, you test the application in Preview mode using a Developer user account. You create this account by reviewing the information the topic shown in Related Topics.

**Related Topics**
- Overview of Digital Customer Service Developer Roles

### Specify Fusion Service Details to Visual Builder Cloud Service

You set up Oracle Visual Builder using the following steps from Chapter 3.

To specify Fusion Service details to Oracle Visual Builder, do the following:

1. Sign into Oracle Visual Builder as an administrator.
2. Click the Menu icon, and select Settings to open the **Tenant Settings** page.
3. Click the **Services** tab, then click the **Back ends** icon (+)
4. In the **Back End Service Type** window, select Oracle Cloud Application Instance, and click **Close**.
5. In the Instance URL field of the Create Oracle Cloud Application Instance window, enter the instance URL of your Oracle Cloud Applications back end service.
6. From the **Authentication** drop down list, select **Oracle Cloud Account**.
7. Click **Create**.

   **Note:** You must set the Instance URL field with the fully qualified domain name of your Oracle Applications Cloud Fusion Service instance.
Prepare Your Current Application for Self-Service Optimization

Now make a new version of the current application and modify it to work with Self-Service Optimization by performing the following tasks:

1. Perform the steps in the Chapter 11 section Create an Application for Self-Service Optimization with Pre-20C Template.
2. Perform the steps in the Chapter 4 task Add Mappings to User Roles.
3. If you're working on the stage environment, you can stage the application and test it by signing up and using that user for further testing the application.

Related Topics
- Enable the Implicit Grant in the Digital Customer Service Application
- Create Development and Production Application Profiles
- Set Up Service Connections

User Migration

Self-Service Optimization User Migration Prerequisites

The Fusion Service user account used to initiate the Self-Service Optimization user migration process must have the below roles as part of their user roles:

- Custom Objects Administration
- Customer Relationship Management Application Administrator
- Employee
- Sales Administrator

Overview of the User Migration Process

The complex Self-Service Optimization user migration task is performed by a method on the IdpMigrationManager class.

These methods are available to Application Composer Groovy scripts. The user migration is initiated by scheduling the Schedule Custom Groovy Object Functions ESS Job which is configured to trigger a custom object function written on a Custom Object. You can view the results of the migration process in a custom report.

From the development perspective, here’s what the migration entails:

- Determine a logic for partitioning users that will be migrated.
- And the following three tasks are covered under the Create Required Artifacts for the Migration topic.
  - Create a Custom Object
Create Custom Object Functions
Create a Custom Report

Once these pieces are in place, you can schedule the Schedule Custom Groovy Object Functions ESS Job. Once this job is run, you can view the custom report.

Partition Users for Self-Service Optimization

It is strongly recommended that you use the functions available for the Self-Service Optimization user migration and migrate no more than 2000 users at one time.

If you need to migrate more than 2000 self service users you must partition them into batches. This task shows you how to partition users based on the contact party ID value. The users are partitioned into batches and the party ID of the first contact and last contact in the batch are shown. This migration strategy assumes that no users have been migrated. If some users have already been migrated then this task will still work, but if a large number of users have already been migrated this partitioning method may not work as expected.

Note: See the section "Create a Data Model from a Custom Query" for more information on how to run the following queries.

First, for information only, use the following query to find the total number of users:

```sql
SELECT count(*)
FROM fusion.svc_self_service_roles
WHERE relationship_type_cd = 'ORA_CSS_USER'
AND delete_flag = 'N'
AND current_idp_cd != 'ORA_CSS_IDP_IDCS'
```

Next, use the following query that uses the DENSE_RANK analytic function to partition the users into batches. The batch size in this example is 2000.

```sql
SELECT
  batch_num,
  MIN(contact_party_id) first_contact_party_id,
  MAX(contact_party_id) last_contact_party_id,
  COUNT(*) batch_size
FROM
  (SELECT
    contact_party_id,
    floor((rank - 1) / 2000) batch_num
  FROM
    (SELECT
      DISTINCT contact_party_id,
      DENSE_RANK() OVER(
        ORDER BY
        contact_party_id
      ) AS rank
    FROM fusion.svc_self_service_roles
    WHERE
      relationship_type_cd = 'ORA_CSS_USER'
      AND delete_flag = 'N'
      AND current_idp_cd != 'ORA_CSS_IDP_IDCS'
    ) )
```
The output shows the party ID of the first and last contact in each batch.

Create a Custom Object for the Migration

You first create a custom object as part of the migration requirements.

1. Sign in to Oracle Fusion Service as a user who has privileges to perform migration tasks.
2. Create a sandbox by doing the following:
   a. Click **Navigator > Configuration > Sandboxes**.
   b. Click **Create Sandbox**.
      The **Create Sandbox** page appears.
   c. Enter a name in the **Name** field.
   d. Click **Create**.
   e. In the **Available Sandboxes** list, click the name of the sandbox name that you specified in step c.
   f. Click the **Plus** icon (Active Tools).
      The **All Tools** dialog appears.
   g. Click the **Application Composer**, and then click **OK**.
   h. Click **Enter Sandbox**.
3. Navigate to the **Application Composer**.
4. From the Objects list in the Object Explorer, click the **Create (+)** icon against Custom Objects to create a custom object.
5. In the Create Custom Objects dialog box, enter: PudsUserMigrator as the display label. The other required fields will auto fill.
6. Click **OK**.

Overview of the IdpMigrationManager

The IdpMigrationManager class provides methods that enable existing users in Fusion Service Identity Store to use Self-Service Optimization.

The following table lists the available methods:

<table>
<thead>
<tr>
<th>Instance Method</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>migrate()</td>
<td>Use this method to migrate all the users.</td>
</tr>
<tr>
<td>migrate(contactPartyId: String)</td>
<td>Use this method to migrate only the user identified by the given contact party ID.</td>
</tr>
<tr>
<td>migrate(contactPartyIds: String[])</td>
<td>Use this method to migrate all the users identified by the given contact party IDs.</td>
</tr>
</tbody>
</table>
### Instance Method

<table>
<thead>
<tr>
<th>Method</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>migrateByAccountPartyIds(accountPartyIds: String[])</code></td>
<td>Use this method to migrate all the users related to the accounts identified by the given account party ID.</td>
</tr>
</tbody>
</table>

### The getInstance() Method

You can use the static getInstance() method of the `IdpMigrationManager` to obtain an instance of the `IdpMigrationManager`.

This method takes the following argument.

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>idpDestination</code></td>
<td>The value of this parameter must always be <code>ORA_CSS_IDP_IDCS</code>.</td>
</tr>
<tr>
<td><code>batchSize (optional)</code></td>
<td>This number determines the number of users fetched from the database and processed at one time. The recommended batch size is 100. This parameter value isn’t used when methods that accept <code>contactPartyId</code> as parameter.</td>
</tr>
<tr>
<td><code>totalCount (optional)</code></td>
<td>The total number of users processed. This value should not be greater than 2000.</td>
</tr>
</tbody>
</table>

### Groovy Code

Use the following Groovy code to get an instance of the `IdpMigrationManager`.

```groovy
def idpDestination = "ORA_CSS_IDP_IDCS";
def mgr = oracle.apps.crm.service.css.migrationService.util.IdpMigrationManager.getInstance(idpDestination, 100, 2000);
```

Here’s an example use of the Groovy script code to enable a single contact identified by the contact party ID for Self-Service Optimization.

```groovy
def contactPartyId = 1234L;
def idpDestination = "ORA_CSS_IDP_IDCS";
def mgr = oracle.apps.crm.service.css.migrationService.util.IdpMigrationManager.getInstance(idpDestination);
def msg = mgr.migrate(contactPartyId);
return msg;
```

### Create Custom Object Functions

Now you create the following functions:

<table>
<thead>
<tr>
<th>Function Name</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>getContactsInRange</code></td>
<td>Returns the party IDs of contacts within a given range.</td>
</tr>
<tr>
<td><code>migrateContactsInRange</code></td>
<td>Migrates all the contacts in the given range.</td>
</tr>
</tbody>
</table>
1. In Application Composer, expand Custom Objects, expand the **PudsUserMigrator** node.
2. Select **Server Scripts**, then click the **Object Functions** tab.
3. Click the **Action** drop down list, and select **Add a New Object Function**.
4. In the Create Object Function page, do the following:
   a. In the Function Name field, enter: **getContactsInRange**
   b. Click the Returns drop down list, and select: **List**.
   c. Expand the Parameters area, and click the **Add Parameter** icon.
   d. In the Name field, enter: **start** and from the Type drop down list, select **Long**.
   e. Click the **Add Parameter** icon again.
   f. In the Name field, enter **end**, and from the Type drop down list, select **Long**.
   g. In the Edit Script field, paste the following code:

   ```java
   def partyList = [];
   def selfRegnVO = newView('SelfRegistrationVO');

   selfRegnVO.appendViewCriteria("(ContactPartyId between '${start}' and '${end}' ) AND StatusCd = 'ORA_CSS_APPROVED' ");

   selfRegnVO.setMaxFetchSize(6000)
   selfRegnVO.executeQuery()

   while (selfRegnVO.hasNext()){  
      def curRow = selfRegnVO.next();
      partyList.add(curRow.ContactPartyId);
   }

   partyList = partyList.unique()
   return partyList.sort();
   ```
   h. Click **Save and Close**.
5. Click the **Add a New Object Function** icon, and In the Create Object Function page, do the following:
   a. In the Function Name field, enter: **migrateContactsInRange**
   b. Click the **Returns** drop down list, and select: **String**.
   c. Expand the Parameters area, and click the **Add Parameter** icon.
   d. In the Name field, enter: **start** and from the Type drop down list, select **Long**.
   e. Click the **Add Parameter** icon again.
   f. In the Name field, enter **end**, and from the Type drop down list, select **Long**.
   g. In the **Edit Script** field, paste the following code:

   ```java
   def contactPartyIdList = getContactsInRange(new Long(start), new Long(end)) as Long[];
   
   if(contactPartyIdList.size() == 0){
      throw new oracle.jbo.ValidationException('There are no contacts identified by the given partyId range: ' + start + "-" + end);
   }
   
   if(contactPartyIdList.size() > 2000){
   ```
throw new oracle.jbo.ValidationError('There are more than 2000 contacts identified by the
given partyId range: ' + start + "--" + end);
}

def contactPartyIds = contactPartyIdList as Long[];
def idpDestination = "ORA_CSS_IDP_IDCS";
def mgr =
oracle.apps.crm.service.css.migrationService.util.IdpMigrationManager.getInstance(idpDestination,
100, 2000);
def msg = mgr.migrate(contactPartyIds);
return msg;

h. Click **Save and Close**.

6. Click **Add a New Object Function**, then in the Create Object Function page, do the following:
   a. In the **Function Name** field, enter: `migrateBatch<N>`.
   b. Click the **Returns** drop down list, and select: **String**.
   c. Change the **Visibility** value to **Callable by External System**.
   d. In the **Edit Script** field, paste the following code:

   ```java
   def batchStartContactPartyId = ?L;
   def batchEndContactPartyId = ?L;

   def msg = migrateContactsInRange(new Long(batchStartContactPartyId), new Long(batchEndContactPartyId));
   return msg;
   ```

   **Note:** ?L must be replaced with the start and end contact party ID values from the Partition Users for Self-Service Optimization topic. If you save without changing this value, the script will throw an error.

   e. Click **Save and Close**.

   **Note:** Create as many migrateBatch jobs as required based on the partitioning logic output.

---

**Create a Data Model from a Custom Query**

Use this topic to create a data model from a custom query.

1. Log in to Fusion Service as a user who can use Reports and Analytics.
2. Click **Navigator > Tools > Reports and Analytics**.
3. Click **Browse Catalog**.
   Your browser opens the Oracle Business Intelligence catalog in a new browser tab.
4. Click **New**, and then from the drop down list, select **Data Model**.
5. On the Diagram tab, click the Plus icon, and select **SQL Query** from the drop down menu, and do the following:
   a. In the **Name** field, enter: **Migration Data**.
   b. From the **Data Source** drop down list, select **ApplicationDB_CRM**.
   c. From the **Type of SQL** drop down list, select **Standard SQL**.
   d. Paste the following SQL statement into the SQL query text box:

   ```sql
   SELECT
   event_id,
   ```
job_id, 
contact_party_id, 
hzp.party_unique_name contact_name, 
event_type_cd, 
etlookup.meaning event_type, 
event_status_cd, 
eslookup.meaning event_status, 
event_note, 
login_id, 
history.last_update_date
FROM 
fusion.svc_css_idp_migr_history history, 
fnd_lookups etlookup, 
fnd_lookups eslookup, 
hz_parties hzp
WHERE 
etlookup.lookup_code = event_type_cd 
AND etlookup.lookup_type = 'ORA_SVC_CSS_EVENT_TYPE_CD' 
AND eslookup.lookup_code = event_status_cd 
AND eslookup.lookup_type = 'ORA_SVC_CSS_EVENT_STATUS_CD' 
AND hzp.party_id = history.contact_party_id 
AND history.last_update_date >= :JOB_START_DATE

e. Click OK.

6. In the Add Parameter dialog box, select the JOB_STATE_DATE check box and click OK.
7. In the Parameters page, click the Data Type drop down list for JOB_START_DATE parameter and select Date.
8. Click the Mandatory check box.
9. In the Display Label field, enter Job Start Date.
10. In the Data Model pane, click Properties > Data Sets > Migration Data.
11. Click the gear icon for each entry in the G_1 table, select properties each time, and then enter the information shown in the following table:

<table>
<thead>
<tr>
<th>Name</th>
<th>Display Name</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVENT_ID</td>
<td>Event ID</td>
<td>Long</td>
</tr>
<tr>
<td>JOB_ID</td>
<td>Job ID</td>
<td>String</td>
</tr>
<tr>
<td>CONTACT_PARTY_ID</td>
<td>Party ID</td>
<td>Long</td>
</tr>
<tr>
<td>CONTACT_NAME</td>
<td>Name</td>
<td>String</td>
</tr>
<tr>
<td>EVENT_TYPE_CD</td>
<td>Event Type Code</td>
<td>String</td>
</tr>
<tr>
<td>EVENT_TYPE</td>
<td>Event Type</td>
<td>String</td>
</tr>
<tr>
<td>EVENT_STATUS_CD</td>
<td>Event Status Code</td>
<td>String</td>
</tr>
<tr>
<td>EVENT_STATUS</td>
<td>Status</td>
<td>String</td>
</tr>
</tbody>
</table>
### Create a Custom Report Based on a Data Model

Now you can create a report based on the data model you have created.

1. Log in to Fusion Service as a user who can use Reports and Analytics.
2. Click **Navigator > Tools > Reports and Analytics**.
3. On the Reports and Analytics page, click **Create**, and then select **Report**.
4. Select Use Data Model, then click the search icon and locate the data model you previously created.
5. Click **Next**.
6. On the **Select Layout** page, choose the **Landscape** page option, and the **Table** layout option, and then click **Next**.
7. On the **Create Table** page, deselect **Show Grand Totals Row** and then click **Next**.
8. On the **Save Report** page, click **Customize Report Layout**.
9. Click **Finish**.
10. In the **Save As** dialog box, enter a name such as **Migration Report**, and then click **OK**.
11. Add a layout grid by doing the following:
   a. In the report editor, click **Drop a Data Item Here**, and press the delete button on your keyboard.
   b. Click the **Insert** tab (if it’s not already selected).
   c. Drag the **Layout Grid** from the Components list and drop it below the report title.
   d. In the Insert a Layout Grid dialog box, enter 1 in the Rows box, and leave the Columns box as 2, and then click **OK**.
   e. Click the **Insert** tab again, and from the Components list, drag a **Text Item** and drop it in the first column.
   f. Double-click the text item and enter the following: **Job started on or after**.
   g. From the **Data Source** pane, drag the **JOB_START_DATE** parameter to the second column.
   h. Reduce the width of the **Job started on or after** column.
12. Add a repeating section component by doing the following:
   a. Click the **Insert** tab, and then drag the **Repeating Section** component and drop it below the Layout Grid.
b. In the **Insert a Repeating Section** dialog box, select **JOB ID** from the **Element** drop down list, and then click **OK**.

c. Click the **Insert** tab, and drag a **Layout Grid** and drop it into the repeating section.

d. Click the **Insert** tab, and drag a **Text Item** and drop it in the first column.

e. Double-click the text item and enter the following: **Job ID**.

f. From the **Data Source** pane, drag the **JOB_ID** parameter to the second column.

g. Re-size the first column.

13. Now add a data table by doing the following:

   a. Click the **Insert** tab, and drag the **Data Table** component and drop it under the row in the repeating component,

   b. While the data table is selected, click the **Show** drop down list on the **Table** tab and select the first item that indicates no (darkened) summary row.

   c. From the Data Source pane, drag and drop the following fields into the data table:

      - Event ID
      - Contact Party ID
      - Login ID
      - Event Type
      - Event Status
      - Comments

14. Click the **Save** icon, and then click the **Done** button to access the report in View mode.

15. In the **Start Date** field, enter a job start date, and then click **Apply** to view the report.

### Schedule the Job for Users for Self-Service Optimization

Before you schedule your job, make sure of the following:

- The value of the profile option SVC_CSS_USE_FA_AS_IDP is set to FALSE.
- All the users to be migrated are in the FA Identity Store and Identity Cloud Service.

**Note:** The Job Schedule process must be repeated for every migrateBatch <N> custom object function that's created based on partitioning logic.

1. Log in into Fusion Service as a user with privileges required to schedule ESS jobs.
2. Click on **Navigator > Tools > Scheduled Processes**.
3. Click the **Schedule New Process** button.
4. In the Schedule New Process dialog box, enter: **Schedule Custom Groovy Object Functions**, then click **OK**.
5. In the Process Details dialog box, add the Object name (such as PudsUserMigrator_c) and Object Function (such as, migrateBatch1) and click **Submit**.
6. After the job completes, review the log files and the text files.
7. If the job ran successfully, the output log file output will resemble the following:

   ```
   JobId 36773: Successfully invoked and executed PudsUserMigrator_c object function migrateBatch1
   ```

8. The text file output will include one line for each contact that was migrated successfully. If the status is FAILED you can use this report to figure out what caused it. Here’s an example of the output:

   ```
   Executing PudsUserMigrator_c object function migrateBatch1 returns: 300100185580882: MIGRATED
   ```
View the Migration Report

Use this task to view migration reports.

1. Log in to Fusion Service.
2. Click Navigator > Tools > Reports and Analytics.
3. Click Browse Catalog.
4. Locate the report you created, and then click Open.
5. Enter a value in the Start Date field, and click Apply to view the report.

Post-Migration Tasks

Overview of Post-Migration Tasks

Use this topic as a guide as you perform post-migration tasks on your Digital Customer Service implementation.

1. Stage the updated Digital Customer Service application that includes the Self-Service Optimization modifications and validate it's functioning correctly for existing users who have been migrated.
2. Publish the updated Digital Customer Service application that includes the Self-Service Optimization modifications.
4. Disable the Identity Cloud Service User Sync process if this was only being used for Digital Customer Service and not any other Hybrid SaaS service. Go to Oracle Cloud Services, Click on Oracle Applications Cloud Provisioning and toggle the "Enable Provisioning" to disable it.
11 Alternative Implementation Options

Implement Your Digital Customer Service Experience with REST APIs

Overview of the Digital Customer Service Experience with REST APIs

Find information in this chapter on implementing and configuring your Oracle Digital Customer Service experience using REST APIs.

You will get to know the details on how to develop, configure, manage, and administer an Oracle JET-based customer service application. Also, you will learn how to set up and work with the additional features in Oracle Fusion Service. For more information about Oracle Fusion Service, refer to the Related Topics.

A significant part of implementing your Digital Customer Service experience using REST APIs relies on Oracle JavaScript Extension Toolkit (Oracle JET). Oracle JET is a collection of JavaScript libraries and functions used to develop client-based applications. Your implementation will leverage Oracle JET libraries and development best practices to provide service lifecycle, knowledge management, and products association with service requests and user management request and approvals. For more information about Oracle JET, refer to the Related Topics.

The topics in this chapter describe how to build an application purely based on JavaScript using Oracle JET, consuming data from Oracle Fusion Service using REST APIs.

Related Topics
- Oracle Help Center
- Welcome to Oracle JET

Get Started with the Digital Customer Service Experience with REST APIs

Implementing the Digital Customer Service experience with REST APIs requires the JavaScript reference implementation that was developed using Oracle JET and Oracle’s JavaScript framework and toolkit, including third-party dependent software.

Installation Prerequisites

You must download all of the dependent software for use on the computer where the Digital Customer Service experience is being implemented with REST APIs.
Note: The versions of the prerequisite software listed in the following table were used in development. Later versions might also work with your deployment.

<table>
<thead>
<tr>
<th>Software or Package Name</th>
<th>Tested Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Java Development Kit</td>
<td>1.8.0_181</td>
</tr>
<tr>
<td>Node.js</td>
<td>7.10.1</td>
</tr>
<tr>
<td>NPM</td>
<td>6.4.1</td>
</tr>
<tr>
<td>Oracle JET</td>
<td>5.1.0</td>
</tr>
<tr>
<td>Oracle Identity Cloud Service</td>
<td>18.4.2</td>
</tr>
</tbody>
</table>

Related Topics
- Oracle JET
- NPM

Add Self-Service Registration

Users require a user name and password to access the customer service application that is developed on Oracle JET.

If the user is not self-registered, the user must provide a first name, last name, and user name on the Self-Registration page in the customer service application developed on Oracle JET.

Once the required information is provided, the self-service registration process will inform the administrator by sending an email notification. The administrator can then sign in to the application and approve or reject the request. The self-service registration process creates an account in Oracle Fusion Service and assigns appropriate roles. For more information about approving and rejecting self-service registration requests, refer to the Manage Registration Requests in the Related Topics.

Related Topics
- Manage Registration Requests

Set Up Oracle Identity Cloud Service Applications

Overview of Oracle Identity Cloud Service Applications

Your Oracle JET application will access Oracle Fusion Service REST API resources.

Within this model, your Oracle JET application performs actions on behalf of an Oracle JET application user. For authentication to work, the Oracle Identity Cloud Service or other identity provider must support OAuth2-based
authentication. Irrespective of the identity provider used, applications should be defined in the identity provider representing the Oracle JET application. The following topics describe how to create the necessary applications in Oracle Identity Cloud Service.

Follow the instructions in these topics in the order in which they appear:

2. Create an Application for OAuth Implicit Flow.
3. Create an Application for JSON Web Token Assertion.

Create an Oracle Fusion Service Resource Application

This topic describes how to create a confidential resource application for Oracle Fusion Service in Oracle Identity Cloud Service.

For detailed instructions on creating confidential applications in Oracle Identity Cloud Service, refer to the in the Adding a Confidential Application link in the Related Topics.

To create a confidential resource application for Oracle Fusion Service in Oracle Identity Cloud Service:

1. Sign in to your Oracle Identity Cloud Service administration console.
2. Expand the Navigation Drawer, and then click Applications.
3. Click Add.

   The Add Application page appears.

4. Click Confidential Application.
5. In the App Details pane of the Add Confidential Application window, specify a name for the application in the Name field.
6. Click Next to proceed.

   A confirmation message indicates that the application has been added in a deactivated state.
7. You will be prompted to configure authorization information for your application now. Do not configure now, instead, click Skip for later.
8. Click Next.
9. Click Configure this application as a resource server now, and configure these fields as follows:
   
   o Access Token Expiration. Leave at the default value.
   o Refresh Token Expiration. Leave at the default value.
   o Primary Audience. Specify the Oracle Fusion Service instance that is used to perform resource invocation.
   o Add (Allowed Scopes). Click Add next to Allowed Scopes:
     
     i. In the Add Scope dialog enter the following for Scope:

     /

     ii. Select Requires consent.
     iii. Click Add.

10. Click Next.
11. Skip the Web Tier Policy prompt by clicking Skip for later.
12. Click Next.
13. Click Finish.
Create an Application for OAuth Implicit Flow

This topic describes how to create a mobile application for OAuth implicit flow in Oracle Identity Cloud Service.

**Note:** You must create a confidential resource application for Oracle Fusion Service in Oracle Identity Cloud Service before following the instructions in this topic. For more information, refer to the Create an Oracle Fusion Service Resource Application topic.

For detailed instructions on creating mobile applications in Oracle Identity Cloud Service, refer to the Adding a Mobile Application link in the Related Topics.

To create a mobile application for OAuth implicit flow in Oracle Identity Cloud Service:

1. Sign in to your Oracle Identity Cloud Service administration console.
2. Expand the Navigation Drawer, and then click Applications.
3. Click Add.
   The Add Application page appears.
4. Click Mobile Application.
5. In the App Details pane of the Add Mobile Application window, specify a name for the application in the Name field.
6. Click Next to proceed.
   A message confirms that the application has been added in a deactivated state.
7. In the Authorization and Accessing APIs from Other Application sections of the Add Mobile Application page, configure the these fields as follows:
   - **Authorization Code.** Select this check box.
   - **Implicit.** Select this check box.
   - **Allow non-HTTPS URLs.** Select this check box, and specify the redirect URL.

   **Note:** If the Oracle JET reference implementation is used, this application already has a callback resource that can be used. For example, the redirect URL would be similar to the following: `http://OracleJETApplicationHost:port/?root=callback`. If the Oracle JET application is not deployed or developed yet, then this field can be left empty temporarily. Once the application is up and running this setting should be updated before using the Oracle JET application for accessing Oracle Fusion Service resources.
8. In the Allowed Scopes section, click Add.
9. Select the Oracle Fusion Service instance.
10. Click Next.
11. Click Finish.
Create an Application for JSON Web Token Assertion

Use this topic to create a confidential application for JSON Web Token Assertion in Oracle Identity Cloud Service.

**Note:** You must create a confidential resource application for Oracle Fusion Service, and create a mobile application for OAuth implicit flow in Oracle Identity Cloud Service before following the instructions in this topic. For more information, refer to the Create an Oracle Fusion Service Resource Application and Create an Application for OAuth Implicit Flow topics.

For detailed instructions on creating confidential applications in Oracle Identity Cloud Service, refer to the Adding a Confidential Application link in the Related Topics.

To create a confidential application for JSON Web Token Assertion in Oracle Identity Cloud Service:

1. Sign in to your Oracle Identity Cloud Service administration console.
2. Expand the Navigation Drawer, and then click Applications.
3. Click Add.
   
   The Add Application page appears.
4. Click Confidential Application.
5. In the App Details pane of the Add Confidential Application window, specify a name for the application in the Name field.
6. Click Next to proceed.

   A confirmation message indicates that the application has been added in a deactivated state.
7. Click Configure this application as a client now, and configure the these fields as follows:
   
   o **Client Credentials.** Select this option.
   o **JWT Assertion.** Select this option.
   o In the Client Type section follow these steps:
     
     i. Click Trusted.
     ii. Click Import.
     iii. Specify the public certificate file that you want to import for use with Oracle JET.
   o In the Allowed Scopes section, follow these steps:  
     
     i.  click Add.
     ii. Select the Oracle Fusion Service instance.

8. Click Next.
9. Click Finish.

**Related Topics**

- Add a Confidential Application
Set Up the JSON Web Token Application

Overview of JSON Web Token Applications
OAuth JSON web tokens can be used to exchange Oracle Identity Cloud Service access tokens. This is a standalone JSON web tokens Java application that returns JSON web tokens which can be used by the Oracle JET application to fetch access token from Oracle

- **User Assertion.** In this model a non-null JSON web token is returned for user JSON web token and a null value for client (Oracle JET application) JSON web tokens token.
- **Client Assertion.** In this model, a non-null JSON web token is returned for both user and client JSON web tokens.

Prerequisites for Running JSON Web Token Applications
Before downloading and running the JSON web token application, Maven and Java Development Kit must be installed on the computer on which the application is deployed. The application was developed using the following versions:

- Maven 3.5.4
- Java Development Kit 1.8.0_221

**Note:** After installing the prerequisite software, they must be added to the path.

Compile and Start the JSON Web Token Application
This topic describes how to compile and start the JSON web token application.

After downloading the JSON web token application software run the following commands on the command line, in the stated order:

1. `mvn clean`
   - This command cleans the project.
2. `mvn install`
   - This command compiles the code and creates a jar file in the target directory.
3. `java -jar target/JWTAssertionTokens-1.0.jar`
   - This command starts the jetty server to run on port 8080 with the application deployed.

Test the JSON Web Token Application
This topic describes how to test your JSON web token application.

Once your JSON web token application is running you should verify that it’s deployed properly and is in working order by testing some URLs.

**Note:** Alternatively, you can verify the URL using Postman, a free third-party software desktop tool, or any other API testing tool of your choice.
Verify the Output for Client Assertion
Type the following URL into a browser:

```
http://hostname:8080/jwttokens?
userId=username@oracle.com&clientId=ee7323169a7743fa929d94a117b131bb&assertionType=clientAssertion
```

Output similar to the following should be returned for the previously mentioned URL:

```
{
  "userJWTToken": "eyJ4NXQjUzI1NiI6InBMQzNBWGE3b1oxVExpJU2JjcVNVx11xTVM3cDRsV0VBLVBCZGhydVBHZFkiLCJ4NXQjO1i1wRdVlV0pSVV13NUM5UThvV3BMYXpSVnUCmN8n3gyWd12QjEiGKZa7N88qmnFhbe88S5fGxq8ctJW7T90M-5vOt0MEklGq0c5HNLqKVMrL16by7Xxd35rHeVXe6RnAKQ4b3vmtXgSjPcYBbTyOMFmja4E7xuY82Zm9h3bkXFGTRbfqWbqH-4VNY4gWuURpm8a8JhJZTzxs3CnUEP26d5AJFJU102sDthQJQgQjmas-2W1Ii4y4rHzs3U3S65GJF6Fh9Ho1v1PFKznByuFYL_5d11IMI7p8BDJ
  "clientJWTToken": "eyJ4NXQjUzI1NiI6InBMQzNBWGE3b1oxVExpJU2JjcVNVx11xTVM3cDRsV0VBLVBCZGhydVBHZFkiLCJ4NXQjO1i1wRdVlV0pSVV13NUM5UThvV3BMYXpSVnUCmN8n3gyWd12QjEiGKZa7N88qmnFhbe88S5fGxq8ctJW7T90M-5vOt0MEklGq0c5HNLqKVMrL16by7Xxd35rHeVXe6RnAKQ4b3vmtXgSjPcYBbTyOMFmja4E7xuY82Zm9h3bkXFGTRbfqWbqH-4VNY4gWuURpm8a8JhJZTzxs3CnUEP26d5AJFJU102sDthQJQgQjmas-2W1Ii4y4rHzs3U3S65GJF6Fh9Ho1v1PFKznByuFYL_5d11IMI7p8BDJ"
```

Verify the Output for User Assertion
Type the following URL into a browser:

```
http://hostname:8080/jwttokens?
userId=username@oracle.com&clientId=ee7323169a7743fa929d94a117b131bb&assertionType=userAssertion
```

Output similar to the following should be returned for the previously mentioned URL:

```
{
  "userJWTToken": "eyJ4NXQjUzI1NiI6InBMQzNBWGE3b1oxVExpJU2JjcVNVx11xTVM3cDRsV0VBLVBCZGhydVBHZFkiLCJ4NXQjO1i1wRdVlV0pSVV13NUM5UThvV3BMYXpSVnUCmN8n3gyWd12QjEiGKZa7N88qmnFhbe88S5fGxq8ctJW7T90M-5vOt0MEklGq0c5HNLqKVMrL16by7Xxd35rHeVXe6RnAKQ4b3vmtXgSjPcYBbTyOMFmja4E7xuY82Zm9h3bkXFGTRbfqWbqH-4VNY4gWuURpm8a8JhJZTzxs3CnUEP26d5AJFJU102sDthQJQgQjmas-2W1Ii4y4rHzs3U3S65GJF6Fh9Ho1v1PFKznByuFYL_5d11IMI7p8BDJ"
  "clientJWTToken": null
```

Referenced Third-Party Libraries
This topic lists the reference third-party libraries.

The following table lists the referenced third-party libraries for JSON web tokens.

<table>
<thead>
<tr>
<th>JAR File Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>commons-codec:commons-codec:jar version 1.11</td>
<td>Simple encoder and decoders for various formats such as Base64 and Hexadecimal.</td>
</tr>
<tr>
<td>org.apache.commons:commons-lang3:jar version 3.9</td>
<td>Apache Commons Lang, a package of Java utility classes for the classes that are in the java.lang hierarchy.</td>
</tr>
<tr>
<td>JAR File Name</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>org.junit.jupiter:junit-jupiter-engine.jar version 5.4.2</td>
<td>For unit tests.</td>
</tr>
<tr>
<td>com.fasterxml.jackson.core:jackson-databind.jar version 2.9.9</td>
<td>Jackson is a high-performance JSON processor (parser, generator).</td>
</tr>
<tr>
<td>org.eclipse.jetty:jetty-annotations:jar:9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.eclipse.jetty:jetty-continuation:jar:9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.eclipse.jetty:jetty-http:jar:9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.eclipse.jetty:jetty-io:jar:9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.eclipse.jetty:jetty-jndi:jar:9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.eclipse.jetty:jetty-plus:jar:9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.eclipse.jetty:jetty-security:jar:9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.eclipse.jetty:jetty-server:jar:9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.eclipse.jetty:jetty-servlet:jar:9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.eclipse.jetty:jetty-webapp:jar:9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.eclipse.jetty:jersey:jar:9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.eclipse.jetty:jetty-jmx:jar:9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.eclipse.jetty:jetty-util:jar:9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.eclipse.jetty:toolchain:jetty-schemas:jar:3.1</td>
<td></td>
</tr>
<tr>
<td>All versions 9.4.15.v20190215</td>
<td></td>
</tr>
<tr>
<td>org.glassfish.jersey.core-jersey-server</td>
<td>Open source framework for developing RESTful Web Services in Java.</td>
</tr>
<tr>
<td>org.glassfish.jersey.inject-jersey-hk2</td>
<td></td>
</tr>
<tr>
<td>org.glassfish.jersey.containers-jersey-container-servlet-core</td>
<td></td>
</tr>
<tr>
<td>org.glassfish.jersey.containers-jersey-container-jetty-http</td>
<td></td>
</tr>
<tr>
<td>org.glassfish.jersey.media-jersey-media-moxy</td>
<td></td>
</tr>
<tr>
<td>All versions 2.28</td>
<td></td>
</tr>
</tbody>
</table>
Run the Oracle JET Application

This topic describes how to run the Oracle JET application.

Once configured, your Oracle JET application it's ready for use. We can now build and deploy the Oracle JET application.

To build and deploy the Oracle JET application, run these command in the stated order:

1. **npm install**
   
   This command installs all npm packages that are necessary for running the Oracle JET application. Run this command whenever there are changes to the packages used by the application.

2. **ojet build**
   
   This command builds the Oracle JET application.

3. **ojet serve**
   
   This command deploys the Oracle JET application on port 8000.

   **Note:** You can deploy your Oracle JET application to a different port by using the command with the following parameter: `--server-port=<port#>`. Where `<port#>` is the port number.

Configure the Oracle JET Application

Use this topic to configure your Oracle JET application.

After downloading the Oracle JET application, you must configure the javascript file to include site-specific values. The javascript file can be found in the installed directory, at the following path:

```
../src/js/config/siteConfig.js
```

The configuration file is seeded with default values that represent the authentication scheme chosen to connect to Oracle Fusion Service resources, application endpoints, and timeout values. The following table provides an overview of the configuration parameters that require modifications.

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>adminUserForRegn</td>
<td>The user name used by self-signed user registration in conjunction with <code>adminUserPswdForRegn</code>, the password to sign in to Oracle Fusion Service. For example: <code>firstname.lastname@yourdomain.com</code></td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> This property is used exclusively for self-service registration.</td>
</tr>
</tbody>
</table>


## Property Name | Description
--- | ---
adminUserPswdForRegn | The password used by self-signed user registration in conjunction with adminUserForRegn, for the user name to sign in to Oracle Fusion Service.

**Note:**
This property is used exclusively for self-service registration.

faInstance | The URL for Oracle Fusion Service.

loginType | A string that represents how your Oracle JET application connects to Oracle Fusion Service. These are possible values:
- **Basic** When the user attempts to login, the user name and password are required.
- **Implicit** Uses the OAuth Implicit grant type flow. This method is browser-based, where a user is redirected to the identity provider to sign in. With this method, the user consents to allowing Oracle Fusion Service to access resources on their behalf.
- **UserAssertion** Uses JSON web tokens provided by a jetty-based server application. The JSON web tokens are used as user information. The client ID and client secret are used to represent the application.
- **ClientAssertion** - Uses JSON web tokens provided by a jetty-based server application. JSON web tokens are used for the user and client.

authzEndpoint | The URL for the Oracle Identity Cloud Service authorize endpoint.

For example:
https://IDCSservice/oauth2/v1/authorize

**Note:**
This property is used only when loginType is set to Implicit.

idcsTokenEndpoint | The URL for the Oracle Identity Cloud Service token endpoint.

For example:
https://IDCSservice/oauth2/v1/token/

redirectUri | The URL for the Oracle JET application callback endpoint.

For example:
http://OJETApplication:portnumber/?root=callback

clientId | The string representing the Oracle Identity Cloud Service application ID.

For example:
8dab63f5fc204a3582c80fc76ccba1e3

scope | The URL representing the Oracle Fusion Service instance.
### Property Name | Description
--- | ---
assertionClientId | The string representing the Oracle Identity Cloud Service application ID of a confidential application. For example: he7323169a7743fa929d94a117b138bb
clientSecret | The string representing the Oracle Identity Cloud Service application client secret. For example: 64f25f01-b7d7-4a50-9b30-9ea9c8967c8b
jwtToken | The URL for the Oracle JET application endpoint. For example: http://JWTTokensAppHost:portnumber/jwttokens
  **Note:** This property can be left blank when loginType is set to Implicit or Basic.
serviceRequestResource | The path for service request resources. For example: /crmRestApi/resources/11.13.17.11/serviceRequests/
useApiGatewayService | If autonomous API Gateway service is used then set this property to True, if not, set it to False. Possible values are True or False.
apiGatewayEndpoint | The URL endpoint for the autonomous API Gateway service. For example: http://APIGatewayServiceHost:8001

### Implement Chat Inlay

### Overview of the Chat Inlay

This topic describes how to configure the Chat inlay for Digital Customer Service.

Chat inlays are syndicated widgets that you can deploy on any web page. The Chat inlay markup can be put on any page in the Digital Customer Service application. The Chat inlay is a chat session that occurs between a chat agent and
an end user. It can be initiated from a chat offering such as a Conditional Chat link or a Proactive Chat as well as being simply placed on a page. To use chat inlay you must enable a number of profile options.

For additional information about Chat inlay, refer to the Related Topics. The cross-reference in the Related Topics refer to Oracle Fusion Service documentation. Clicking the link will redirect you to the Oracle Fusion Service Customer Portal.

1. Sign in to Fusion Service as administrator or setup user.
2. In the Setup and Maintenance work area, go to the following:
   ○ Offering: Service.
   ○ Task: Manage Digital Customer Service Profile Options.
3. Use the following table to set values for each of the profile options listed:

<table>
<thead>
<tr>
<th>Profile Option</th>
<th>Description</th>
<th>Default Value</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORS_ACCESS_CONTROL_ALLOW_HEADERS</td>
<td>Specifies comma-separated list of headers that are allowed as part of a CORS request.</td>
<td>None</td>
<td>Add these values if they're not present:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Puds-Access-Token</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Note: Add this if you're using Self-Service Optimization.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• kmauthtoken</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• content-language</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• X-Oracle-ABCSSessionId</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• X-Oracle-ABCS-UserId</td>
</tr>
<tr>
<td>ORACLE.ADF.VIEW.ALLOWED_ORIGINS</td>
<td>List of trusted domains that can make requests.</td>
<td>None</td>
<td>* or specific comma-separated FQDNs.</td>
</tr>
<tr>
<td>SVC_CHAT_INLAYS_ACCESS_ENABLED</td>
<td>Enable access for chat inlays to get the bootstrap configuration.</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>SVC_CHAT_ANONYMOUS_ACCESS_ENABLED</td>
<td>Enable anonymous chat access for end users.</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>SVC_CHAT_WAIT_TIME_ENABLED</td>
<td>Enable a wait time for chat.</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

**Related Topics**
- Inlay Registry Documentation
Configure Chat Inlay on any HTML Page

To configure the Chat inlay on any web page edit the page’s HTML to add the chat inlay markup and JavaScript loader.

1. Add markup to the HTML page on which the Chat inlay will reside.

```html
<inlay-oracle-chat-embedded id="chatInlay" class="inlay" site-url="[Oracle Cloud Applications Instance URL]" site-type="ec">
</inlay-oracle-chat-embedded>
```

The attribute value "[Oracle Cloud Applications Instance URL]" shown in the previous example represents the fully qualified domain name of the host of the Oracle Fusion Service instance. Replace the value in the example, with your own Oracle Cloud Applications Instance URL. Here’s an example of the markup:

```html
<inlay-oracle-chat-embedded id="chatInlay" class="inlay" site-url="acme-test.fa.us2.oraclecloud.com" site-type="ec">
</inlay-oracle-chat-embedded>
```

**Note:** For the Chat inlay to work with Oracle Fusion Service, you must set the `site-type` to "ec".

2. Add a script tag on the page that you configured in step 1. Use the following script tag as a model:

```html
<script id="oit-loader" src="http://static-XX.custhelp.com/s/oit/latest/common/v0/oids/oit/loader.js" async></script>
```

Replace the `XX` in the script tag with data center location code that’s geographically closest to you.

<table>
<thead>
<tr>
<th>Data Center Location</th>
<th>Data Center Location Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago</td>
<td>mw</td>
</tr>
<tr>
<td>Washington DC</td>
<td>va</td>
</tr>
<tr>
<td>Phoenix</td>
<td>ph</td>
</tr>
<tr>
<td>Toronto</td>
<td>tr</td>
</tr>
<tr>
<td>Calgary</td>
<td>cg</td>
</tr>
<tr>
<td>Brazil</td>
<td>br</td>
</tr>
<tr>
<td>Amsterdam</td>
<td>am</td>
</tr>
<tr>
<td>Germany</td>
<td>de</td>
</tr>
</tbody>
</table>
### Data Center Location Table

<table>
<thead>
<tr>
<th>Data Center Location</th>
<th>Data Center Location Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>gb</td>
</tr>
<tr>
<td>Japan</td>
<td>jp</td>
</tr>
<tr>
<td>Australia</td>
<td>sy</td>
</tr>
<tr>
<td>Singapore</td>
<td>sg</td>
</tr>
</tbody>
</table>

**Related Topics**
- Inlay Registry Documentation

---

### Add the Chat Inlay to the Digital Customer Service Shell

Use this task to replace chat in the Digital Customer Service shell with the chat inlay.

1. In Visual Builder, click the Web Applications icon, then expand your Digital Customer Service application.
2. Expand the **Root Pages** node, and select **shell**.
3. Click the **Code** button to display the underlying code.
4. Search for the existing `oj-odcs-chat` element and replace it with the inlay markup as shown in the following sample.

   ```html
   <inlay-oracle-chat-embedded id="inlay1" inlay-hidden="false" polling-enabled="false" persistence-enabled="false" site-url="" site-type="ec" class="inlay">inlay-oracle-chat-embedded>
   ```
5. Add the following script to initialize the inlay to `shell-page.js`:

   ```javascript
   PageModule.prototype.initializeInlays = function(faHost){
     $('#inlay1').attr('site-url', faHost);
     $('#inlay1').after('<script id="oit-loader" src="https://static-XX.custhelp.com/s/oit/latest/common/v0/libs/oit/loader.js" async="true">');</n   }
   ```

   **Note:** In the following sample, `static-XX`, substitute `XX` with a data center location from the table in the "Configure Chat Inlay on any HTML Page" task which precedes this task.
6. Add a `vbEnter` event handler that invokes an action chain to call the `initializeInlays` module function and map the `$application.variables.faHost` application variable to the `faHost` input parameter of the function.

Enable Profile Options for the Chat Inlay

Now you enable profile options to enable chat inlays, allow anonymous access and enable the wait time setting.

1. In the Setup and Maintenance work area, click the `Tasks` icon, and then click the `Search` link.
2. In the Search field, enter `Manage Administrator Profile Values`.
3. Click the link for the task.
4. To enable inlay interactions do the following:
   a. In the Manage Administrator Profile Values work area, enter the following in the Profile Option Code field: `SVC_CHAT_INLAYS_ACCESS_ENABLED` and click `Search`.
   b. Set the Profile Value field to `Yes`.
   c. Click `Save`.
5. To enable anonymous access do the following:
   a. In the Profile Option Code field, enter: `SVC_CHAT_ANONYMOUS_ACCESS_ENABLED`, and click `Search`.
   b. Set the Profile Value field to `Yes`.
   c. Click `Save`.
6. To enable the wait time setting do the following:
   a. In the Profile Option Code field, enter: `SVC_CHAT_WAIT_TIME_ENABLED`, and click `Search`.
   b. Set the Profile Value field to `Yes`.
   c. Click `Save`.
7. Click `Save and Close`.

Create an Application for Self-Service Optimization with Pre-20C Template

Enable the Implicit Grant in the Digital Customer Service Application

If you're using a template prior to 20C, you may need to perform this step. Enable the implicit grant in the Digital Customer Service applications security settings by doing the following:

1. In Visual Builder, open the Digital Customer Service application.
2. From the navigator panel, select the `Web Applications` icon.
3. Select `dcs` from the list.
4. Click the `dcs` tab in the work area.
5. Click the Security sub tab, and make sure `Enable implicit grant` is selected.
Create Development and Production Application Profiles

Use this task to create Development and Production application profiles.

1. In Visual Builder, open your Digital Customer Service application.
2. Click the Settings tab, then click the Application Profiles sub tab.
3. For the Default application, click Rename.
4. In the Name field, enter Development.
5. In the Description field, enter Default development profile.
6. Click Save Changes.
7. Click the Duplicate button, and enter the following values:
   - Name: Production
   - ID: Production
   - Description: Default production profile
8. Click Duplicate.
9. Click the menu beside either the Development profile or the Production profile and choose the following options:
   - For Development, choose Make development default.
   - For Production, choose both Make stage default, and Make publish default.
10. Map the user roles for the new Production profile.
11. Complete the Add Mappings to User Roles from chapter 4, adding the Production profile role.

Set Up Service Connections

Now you set up REST API connections.

Configure crmRestApi

First you configure the crmRestApi.

1. Navigate to your Oracle Visual Builder.
2. Open your Digital Customer Service application.
3. Click Service Connections, click crmRestApi, and then click the Servers tab.
4. Click the Copy icon to make a copy the production server. This server has the following values.

<table>
<thead>
<tr>
<th>Field</th>
<th>Enter this information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance URL</td>
<td>vb-catalog://backends/fa/proxy.crmRestApi/resources/11.13.18.05</td>
</tr>
<tr>
<td>Description</td>
<td>Production Server.</td>
</tr>
<tr>
<td>Application Profiles</td>
<td>Production.</td>
</tr>
<tr>
<td>Field</td>
<td>Enter this information</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Add custom header</td>
<td>VB-Alt-Authorization-Header-Name with value Puds-Access-Token.</td>
</tr>
<tr>
<td>Authentication for logged-in</td>
<td>Propagate Current User Identity.</td>
</tr>
<tr>
<td>users</td>
<td>None.</td>
</tr>
<tr>
<td>Authentication for anonymous</td>
<td>Dynamic, the service supports CORS.</td>
</tr>
<tr>
<td>users</td>
<td></td>
</tr>
</tbody>
</table>

5. For the original server (the server you just copied) click the **Edit** icon and enter the required information listed in the following table:

<table>
<thead>
<tr>
<th>Field</th>
<th>Enter this information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance URL</td>
<td>Keep the URL value.</td>
</tr>
<tr>
<td>Description</td>
<td>Development Server</td>
</tr>
<tr>
<td>Application Profiles</td>
<td>Development</td>
</tr>
<tr>
<td>Security</td>
<td>Select the <strong>Allow anonymous access to the Service Connection Infrastructure</strong> check box.</td>
</tr>
<tr>
<td>Authentication for logged-in</td>
<td></td>
</tr>
<tr>
<td>users</td>
<td>a. Select <strong>Basic</strong> from the drop down list.</td>
</tr>
<tr>
<td></td>
<td>b. Click the <strong>Enter User name and password</strong> icon in the User name field, and then enter the developer APPID and password, and then click <strong>Save</strong>.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong></td>
</tr>
<tr>
<td></td>
<td>See Related Topics. In the Set Up Administrators and Developers topic, you will find instructions on setting up the Developer APPID.</td>
</tr>
<tr>
<td>Authentication for anonymous</td>
<td></td>
</tr>
<tr>
<td>users</td>
<td>Click the drop down list, and select <strong>Same as Authenticated User</strong>.</td>
</tr>
<tr>
<td>Connection type</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select <strong>Always use proxy irrespective of CORS support</strong>.</td>
</tr>
</tbody>
</table>

6. Click **Save**.
Configure the fscmRestApi (Optional)

If your Digital Customer Service application has an fscmRestApi then perform the following steps.

1. In Oracle Visual Builder, open your Digital Customer Service application (if it's not already open).
2. Click Service Connections, click fscmRestApi, and then click the Servers tab.
3. Click the Copy icon to make a copy the production server. This server has the following values.

<table>
<thead>
<tr>
<th>Field</th>
<th>Enter this information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance URL</td>
<td>The URL value of your instance.</td>
</tr>
<tr>
<td>Description</td>
<td>Production Server.</td>
</tr>
<tr>
<td>Application Profiles</td>
<td>Production.</td>
</tr>
<tr>
<td>Add custom header</td>
<td>VB-Alt-Authorization-Header-Name with value Puds-Access-Token.</td>
</tr>
<tr>
<td>Authentication for logged-in users</td>
<td>Propagate Current User Identity.</td>
</tr>
<tr>
<td>Authentication for anonymous users</td>
<td>None.</td>
</tr>
<tr>
<td>Connection type</td>
<td>Dynamic, the service supports CORS.</td>
</tr>
</tbody>
</table>

4. For the original server (the server you just copied) click the Edit icon and enter the required information listed in the following table:

<table>
<thead>
<tr>
<th>Field</th>
<th>Enter this information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance URL</td>
<td>Keep the URL value.</td>
</tr>
<tr>
<td>Description</td>
<td>Development Server.</td>
</tr>
<tr>
<td>Authentication for logged-in users</td>
<td>a. Select Basic from the drop down list.</td>
</tr>
<tr>
<td></td>
<td>b. Click the Enter User name and password icon in the User name field, and then enter the developer APPID and password, and then click Save.</td>
</tr>
<tr>
<td>Note:</td>
<td>See Related Topics. In the Set Up Administrators and Developers topic, you will find instructions on setting up the Developer APPID.</td>
</tr>
<tr>
<td>Authentication for anonymous users</td>
<td>Select Same as Authenticated User.</td>
</tr>
</tbody>
</table>
Create an Application with the Standard Digital Customer Service Configuration with a 20C Template or Later

Create an Application without Self Service Optimization using a 20C Template or Later

To create a standard Digital Customer Service application that's not enabled with Self-Service Optimization, using the 20C template, use these tasks.

Set the Default Application Profile
First, you make the Default application profile the default for development, stage and publish.

1. Sign in to Oracle Visual Builder as an administrator.
2. Click the Menu icon, and select Settings.
3. From the Settings page, click the Application Profiles tab.
4. In the Default entry, expand the menu and do the following:
   a. Select Make development default.
   b. Select Make stage default.
   c. Select Make publish default.

Map the Application User Roles
Now you map the application user roles for the Default application profile.

1. In Visual Builder, ensure the Default application is opened.
2. Click the Menu icon, and select Settings.
3. Click the User Roles tab.
4. Click the Application Profile drop down list, and select Default.
5. Refer to the Add Mappings to User Roles topic in the Mandatory Setup Tasks chapter.
6. Add the Customer Self-Service User mapping:
   a. On the User card, click Assign groups or users.
      The Change Assignments dialog box is displayed.
   b. In the list of available mappings, search for the following string:
Customer Self-Service User
   c. Click the plus sign (+) next to Customer Self-Service User.
   d. Click Save Changes.
7. Add the Customer Self-Service Account Administrator mapping:
   a. On the Account_Administrator card, click Assign groups or users.
      The Change Assignments dialog box is displayed.
   b. In the list of available mappings, search for the following string:
      Customer Self-Service Account Administrator
   c. Click the plus sign (+) next to Customer Self-Service Account Administrator.
   d. Click Save Changes.

Configure Service Authentication
And the final step is to configure service authentication.

1. In the Visual Builder Settings workspace, click the Services tab.
2. From the Backends list, select Oracle Cloud Applications.
4. Click the Enter user name and password icon by the User name field.
5. In the User name field, enter the user name of the APPID user.
6. In the Password field, enter the Fusion Service password for the APPID user.
# 12 Performance

## Performance Tuning Checklist

Here's a collection of performance tuning tips. They're listed in no particular order of importance but can be considered once your Digital Customer Service application is up and running.

<table>
<thead>
<tr>
<th>Potential Issue</th>
<th>Performance Tuning Tip</th>
</tr>
</thead>
<tbody>
<tr>
<td>The application is slow because it has not been bundled and minified for deployment.</td>
<td>Refer to the Related Topics area for a link to the Optimize Your Application for Deployment topic.</td>
</tr>
<tr>
<td>Large images take too much time to load and are then scaled down for the section of screen within which they're displayed.</td>
<td>Reduce the size of images to the size needed for the UI presentation. Optimize the image for the usage in the UI presentation either by size or quality, balancing small file size against acceptable quality.</td>
</tr>
<tr>
<td>Application load times are slow when the client region is far from the data center location of the deployment.</td>
<td>Deploy the application to global Content Delivery Network (CDN). Visual Builder's CDN functionality sets the base href of the application to the CDN server to ensure all resources are correctly loaded from the CDN. As a result relative URLs including anchor references will be resolved relative to the base href value. For application navigation it's recommended you use the Visual Builder navigate action and the DCS navigate event. Where href=&quot;#&quot; has been used as a placeholder it should be replaced with href=&quot;javascript:;&quot;. To navigate to an anchor within a page you will need to use <code>&lt;a href=&quot;javascript:;&quot; onclick=&quot;document.location.hash='myanchor';&quot;&gt;</code>. Refer to the Related Topics section for a link to the topic Host an Application on a Content Delivery Network (CDN).</td>
</tr>
<tr>
<td>Page navigation is slow because of URL links and results which are reloading the entire application with each navigation.</td>
<td>Do page navigation with navigation events. For information on using your Navigation Action to assist in tuning navigation between pages in a flow, and to root pages, see the Related Topics section for the Navigate Action topic in the Developer Applications with Oracle Visual Builder guide. For an example of how this works, see these action definitions of the service-request-list-start page: <code>NavigateToServiceRequestCreateActionNavigateToServiceRequestCreateAction</code> and <code>ListNavigateToServiceRequestDetailClickAction</code>.</td>
</tr>
<tr>
<td>REST calls are slowing page navigation.</td>
<td>Reduce the number of REST calls that need to be made on each page. Be careful not to create heavyweight back end triggers that can cause REST APIs to slow down.</td>
</tr>
<tr>
<td>There have been cases when multiple copies of jQuery are being loaded, unnecessarily.</td>
<td>Ensure that there are no files being loaded unnecessarily.</td>
</tr>
</tbody>
</table>
### Potential Issue

<table>
<thead>
<tr>
<th>Performance Tuning Tip</th>
</tr>
</thead>
</table>
| **Service worker scripts cause performance degradation.** Disable service workers if they are enabled. You can completely disable the loading of the service worker script by adding the following to your index.html file:  

```html
<!-- visualBuilderScripts -->:
<script type="text/javascript">
window.vbInitConfig.SERVICE_WORKER_CONFIG = {
  disabled: true
}
</script>
```

Turn off unnecessary responses for POST and PATCH operations. Most create and update operations don't require a response from the server so the responsiveness of both the CSP and CSE applications could be improved by turning them off.

Limit the size of response payloads by using the `fields=` parameter in the request.

Use the `onlyData` parameter and set it to `True`.

Combine multiple API requests into single requests when possible

- When many fields are needed in the response, use the `expand=` parameter on child settings.
- Use the `fields=` parameter to return the children and grandchildren records with identified field of interest.
- Use `Upsert-Mode: true` command to update or insert during POST to avoid multiple calls to check for an update versus an insert operation.

Configure bundle modules

You can minimize what needs to be loaded on initial load by loading only the bundle that contains files needed on initial startup.

For example, define a bundle for files needed for anonymous access, and separate bundle(s) for subsequent flows that require authenticated access.

For more information, see the Related Topics for a link to the Bundle Modules topic from the Developing Applications with Visual Builder guide.

Use `preconnect` to establish early connections to important secondary servers, such as the Fusion Service and the CDN server if one is used, by adding a directive to `index.html`.

For example, `<link rel="preconnect" href="https://example.com">`

### Related Topics

- Optimize Your Application for Deployment
Optimize Your Application for Deployment

It’s strongly recommended that you optimize your Digital Customer Service application for Production deployment.

You can optimize the performance of your published Digital Customer Service application by using node and Grunt to build them locally or to set up build jobs on Oracle Developer Cloud Service. For more information about optimizing your application, refer to the Optimize Your Builds topic in the Developing Applications with Oracle Visual Builder guide.

For more information on :ce values, refer to the Manage Your Component Exchange link in Related Topics.

The instructions listed here reflect a Windows deployment. If you are using Unix, change the path appropriately. For example: ./node_modules/.bin/grunt.

1. You must first install the Node.js. (npm is included in the Node.js installation).
   To download the appropriate installation package for your operating system, and for more information on the installation and configuration of it, refer to: https://nodejs.org.
2. Run the following one-time command from a Command Prompt in Windows or Shell window in Unix to install grunt CLI globally:
   ```
   npm install -g grunt
   ```
4. Each time you want to optimize the VB app you’ve created, run the following:
   a. Export the VB app from VB Designer to the local machine.
   b. Unzip VB app to your local directory.
   c. From the Command Prompt, change the directory to the top level where the application is expanded and the Gruntfile.js file located.
   d. Install a local copy of grunt by running the following command: npm install
   e. Run the following processes using these examples:
      ```
      - .\node_modules\bin\grunt vb-clean
      - .\node_modules\bin\grunt vb-process-local vb-package --url:ce=<component exchange URL> --username:ce=<component exchange username> --password:ce=<component exchange password>
      - .\node_modules\bin\grunt --url=https:<VBCS host>/ic/builder> --username=<VBCS username> --password=<VBCS password> --id=<VBCS application ID> -ver=<VBCS app version> --publish
      ```

   **Note:** To obtain the VBCS application ID open the app in the VBCS designer and see it in the address bar. For example, for the application My App 1, typically the following address is shown: https://<host>:<port>/ic/builder/?root=application&application=My_App_1-1.0&artifact=Welcome Where My_App_1 is the application ID, and 1.0 is the application version. Visual Builder design time replaces certain special characters in the application name such as space and hyphen with underscores to generate the application ID, so they are not always the same. Another way to get the application ID is from the published (live) application’s URL. In our example, when the application is published, its URL would be: https://<host>:<port>/ic/builder/rt/My_App_1/live/webApps/dcs/, Where My_App_1 section of the URL is the application ID.

If your VB App is in Source Control in VB Studio, you can use the pipelines to automate the optimization tasks and reference.
Related Topics

- Manage Your Component Exchange
- Grunt Getting Started Guide
- Optimize Your Builds and Audit Your Code Using Grunt
- Create and Set Up the Project for Development
- Set Up the Project to Deploy for Production
## 13 Troubleshooting

**Troubleshooting**

The following table lists issues to consider when troubleshooting your implementation.

<table>
<thead>
<tr>
<th>Problem Description</th>
<th>Solution</th>
</tr>
</thead>
</table>
| There's an issue with the Google Chrome browser and user log in continually looping. Chrome has a 4k limit on cookie sizes. If the user has a very long first and last name that combination can cause the cookie that's generated to be larger than 4k. Chrome will only accept the first 4k of the cookie, making it incomplete. This results in the login process continually looping. Firefox doesn't have the 4k cookie limit and can be used to verify that this is the issue. | Reduce the size of the First and last names. For example  
• First name: Self  
• Last name: user  
• Email address: selfserviceuser@mycompany.com  
**Note:**  
The email address can stay the same. This is performed in Identity Cloud Service by updating the user facing the issue. |
| For example the following details would cause the cookie to be too large:  
• First name: selfserviceuser@mycompany.com  
• Last name: selfserviceuser@mycompany.com  
• Email address: selfserviceuser@mycompany.com |  

**Related Topics**
- Add Visual Builder Roles