

# Oracle Public Sector Permitting and Licensing

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**Implementing Your Cloud  
Integrations**

26C



Oracle Public Sector Permitting and Licensing  
Implementing Your Cloud Integrations

26C

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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 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, and watch events.

## 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](mailto:oracle_fusion_applications_help_ww_grp@oracle.com).

Thanks for helping us improve our user assistance!



# 2 Working with Oracle Cloud Infrastructure Process Automation

## Process Automation Overview

This topic provides an overview of how Oracle Permitting and Licensing uses OCI Process Automation and provides links to the OCI Process Automation documentation that is particularly useful for an Oracle Permitting and Licensing implementation.

Oracle Permitting and Licensing uses OCI Process Automation for designing and processing:

- Workflow
- Fee calculations

You use the Processes module to define:

- Structured processes for Permits, Planning and Zoning, and Business Licenses workflow.
- Dynamic process for Code Enforcement workflow.
- Decision models to calculate fees for your transactions.

## OCI Process Automation Documentation and Training

Before you begin implementing workflow and fees using OCI Process Automation, it is *imperative* that you become familiar with the OCI Process Automation features. The documentation in the Oracle Permitting and Licensing guides assume a general knowledge of OCI Process Automation and focus primarily on topics specific to the implementation and doesn't seek to duplicate information covered in OCI Process Automation documentation or training.

For more information on the OCI Process Automation, see [Oracle Cloud Infrastructure Process Automation](#).

The link above provides access to valuable information such as:

- Guides
- Recipes (cookbook examples)
- Training

While all of the information available for OCI Process Automation provide by the Oracle Cloud team is useful, in particular these topics are very valuable to help orient you as you being your implementation.

Topic	Description
<a href="#">Overview of Oracle Cloud Infrastructure Process Automation</a>	Provides introductory information about the workspace, runtime, and use cases.
<a href="#">Applications at a Glance</a>	Describes how to use the interface for setting up process applications, decision models, and roles.
<a href="#">Design Structured Processes</a>	Explains how to create and work with structured workflow processes, which are used by Permits, Planning and Zoning, and Business Licenses.

Topic	Description
<i>Design Dynamic Processes</i>	Explains how to create and work with dynamic workflow processes, which are used by Code Enforcement.
<i>Model Decisions</i>	Explains how to create and work with decision models for fee calculations.

## OCI Process Automation Transition

Beginning with Release 24B, new customers will begin using OCI Process Automation. Existing customers will continue to use OIC Generation 2 for workflow and fees. At a later date, existing customers will receive notification on when they will switch from OIC Generation 2 to OCI Process Automation. For documentation purposes, existing customers should refer to the Release 24A version of the documentation for any OIC Generation 2 information.

Because the transition from OIC to OCI Process Automation can generate questions, a My Oracle Support page has been created to provide new information as it arises.

You can find updated information regarding this transition on My Oracle Support Document ID: 30059691, *Oracle Integration Cloud (OIC) Generation 2 to Generation 3*.

## Migrating Workflow and Fee Models from Oracle Integration Cloud to Oracle Process Automation

As stated in the previous section, Oracle Permitting and Licensing is currently transitioning from Generation 2 to Generation 3 in terms of Oracle Process Automation, used for workflow and fee processing. Customers undergoing this change will need to migrate their fee and process definitions from Generation 2 to Generation 3. There is a set of Enterprise Scheduler Service (ESS) jobs provided to address migration tasks.

Access the migration ESS jobs by selecting **Common > Migrate Workflow and DMN Models** or entering *Migrate Workflow and DMN Models* into the Page Finder.

Use the Migrate Public Sector Workflow and Fee Decision Models Job page to run the jobs (actions) related to the Generation 2 to Generation 3 migration. Select the jobs from the **Actions** list.

Job	Description
Migrate	<p>Run only on the Test pod.</p> <p>The migrate job:</p> <ul style="list-style-type: none"> <li>• Migrates all workflow process and fee (DMN) definitions associated with a transaction type (permit, business license, planning and zoning, code enforcement case, and so on) from Generation 2 on Oracle Integration Cloud to Generation 3 on OCI Process Automation.</li> <li>• Stores internal backups of each definition in case a rollback is required.</li> <li>• Operates on a 100% success criterion. All definitions need to be migrated completely before the migration can be completed. In the event of an error, you must return to the Oracle Integration Cloud Generation 2 definition and fix any issues.</li> <li>• Assigns members (users/groups) to the roles and sets the privilege level to <i>Manage</i> on the roles as needed.</li> </ul>

Job	Description
	<ul style="list-style-type: none"> <li>• Sets the connector credential to the global OAuth credential.</li> </ul> <p><b>Note:</b> If there are validation issues in the migrated workflow processes or fee models, you need to fix the issues in OCI Process Automation Generation 3 and activate the definitions manually. Proceed to the next action of publishing only after verifying validation issues in all migrated definitions are fixed and the definitions have all been activated successfully.</p>
Publish workflow configurations	<p>Run only on the Test pod and only after the Migrate job ran to 100% success.</p> <p>Publishes the newly migrated workflow and fee definitions onto the Oracle Permitting and Licensing transaction type tables, completing the migration process and enabling you to begin using OCI Process Automation Generation 3.</p> <p>After you run the Publish action, you must manually enable the Functional Setup Manager option for <b>Workflow and DMN Source</b> to <i>OCI Process Automation</i>. With this option enabled, you are confirming that the definitions were successfully migrated and published and that you intend to use OCI Process Automation Generation 3 for workflow and fees going forward.</p> <p>After completing this action:</p> <ul style="list-style-type: none"> <li>• The currently in-process transactions for previously submitted applications will continue to use Oracle Integration Cloud Generation 2 for workflow and fees.</li> <li>• Transactions for newly submitted applications will use OCI Process Automation Generation 3 for workflow and fees.</li> </ul>
Rollback workflow configurations	<p>This job can be run on the Test pod, Development pod, or Production pod.</p> <p>Rollback undoes the migration and publishing of the migrated workflow definitions on OCI Process Automation Generation 3 and resets the system to reference Oracle Integration Cloud Generation 2 settings and definitions.</p> <p><b>CAUTION:</b> The rollback action should be used with utmost caution. It is <i>highly</i> recommended to contact an Oracle Support representative to determine if there is a way forward using OCI Process Automation Generation 3. Rolling back to Oracle Integration Cloud Generation 2 for workflow and fees involves performing several manual steps to reconfigure the system.</p> <p><b>Note:</b> If you decide to rollback to Oracle Integration Cloud Generation 2 for workflow and fees, then after the Rollback action is run, you need to set the Functional Setup Manager option for <b>Workflow and DMN Source</b> manually to <i>Oracle Integration Cloud</i>.</p> <p>By running the Rollback action, you are confirming that you will move forward with Oracle Integration Cloud Generation 2 for workflow and fees.</p>
Purge migration data	<p>Run only on the Test pod.</p> <p>Run in the event of a Generation 2 process definition not being able to be migrated to Generation 3. This enables you to halt the migration activity by setting the migration status to <i>Inactive</i> for all entries in migration activity table and then re-run the Migrate action after issues with the Generation 2 definitions have been resolved and they ready for migration.</p>

Job	Description
	<p><b>Note:</b> After running purge, make sure to delete all workflow and fee model definitions from the OCI Process Automation Generation 3 instance. When you re-run the Migrate action, the migration activity will begin fresh.</p>

## Migrating Automated In-Flight Generation 2 to Generation 3 Migration with Parallel Gateway

Agencies must migrate in-flight Generation 2 workflow transactions to Generation 3 using a scheduled, time-boxed job. With the parallel gateway enhancement, the migration can automatically move Generation 3 instances to the correct point in the workflow even when the current Generation 2 task is inside gateways, avoiding the manual step of mapping gateway IDs or tasks.

Before running Generation 2 to Generation 3 in-flight migration, ensure the target Generation 3 workflow definition version is available and activated, and that the Generation 2 source and Generation 3 target definitions are aligned for migration. In particular, the human task list order values must match between source-to-target definitions and gateway node labels.

**Note:** Parallel gateway start or end naming mismatches commonly cause alter-workflow failures.

Let's take a look at the steps for migrating Generation 2 in-flight workflow applications to Generation 3:

1. Run the provided SQL to list the eligible Generation 2 in-flight applications by record type, process definition, and version.
2. Call the REST API to insert a migration schedule row.
3. Run the **Migrate Public Sector Active Applications Workflow Job** process, and set the duration parameter to time-box execution.
4. Verify schedule status outputs through the REST endpoints, because Generation 2 to Generation 3 migration doesn't include a full user interface by design.

**Note:** For large backlogs, run the time-boxed migration job after hours on a recurring schedule and always confirm results via schedule status. The job may complete successfully even when some migrations fail.

After the job completes, verify that a corresponding Generation 3 instance was created for each migrated application and that the workflow is positioned at the correct in-progress task, with placement within parallel gateway branches. Confirm that task ownership and state (assignment, claim, reassign) carry over as expected, and that comments and attachments appear on the correct corresponding tasks in Generation 3.

## Selecting Your Workflow and Fee Decision Model Source

This topic describes how to select the source component of your workflow definitions and fee model decision definitions (DMN models) during the transition from Oracle Integration Cloud Generation 2 to Oracle Cloud Infrastructure (OCI) Process Automation.

During the transition from Oracle Integration Cloud Generation 2 to OCI Process Automation, existing customers will be configured for Oracle Integration Cloud Generation 2 for workflow and fee processing, while new customers will be on OCI Process Automation for workflow and fee processing.

To set the workflow and DMN model source:

1. Navigate to *Setup and Maintenance*.
2. In Functional Setup Manager, click Change Feature Opt In.
3. In the System Administration section, click the Features icon.
4. For the Selecting Workflow and DMN Source feature, click the Features icon.
5. On the Selecting Workflow and DMN Source dialog, select one of these options:
  - o *Oracle Integration Cloud*: Indicates OIC Generation 2 will be used for workflow and fee design and processing.
  - o *OCI Process Automation*: Indicates OCI Process Automation will be used for workflow and fee design and processing.

## Setting Up Workflow and Decision Applications in OCI Process Automation

This topic describes accessing OCI Process Automation from Oracle Permitting and Licensing and provides a brief overview of the user interface.

### Accessing OCI Process Automation

You access OCI Process Automation through Functional Setup Manager.

To access Process Automation:

1. Select the *Setup and Maintenance* tile from the agency springboard.
2. Make sure Functional Setup Manager is displaying the appropriate setup template for your offering, such as *Public Sector Permits*.
3. Select the appropriate functional area for your offering.

Offering	Functional Area
Permits	Permit Types

Offering	Functional Area
Planning and Zoning	Planning Application Types
Business Licenses	Business License Types
Code Enforcement	Incidents and Cases

- In the task list, select *Manage Workflow and Decision Applications in OCI Process Automation*.

This takes you to OCI Process Automation with the Applications node selected, where you can view, create, and modify Process Applications (for workflow) and Decision Applications (for fees).

**Note:** The *Applications* node displays all applications, both workflow and fee applications, or you can select *Process* to show workflow or *Decisions* to show fee decision models.

## Working with Workflow Applications

When you first access a process application, you'll notice the landing page displays the collection of all the elements that can comprise a process application.

The following table describes the key elements and concepts that make up a workflow application. When you set up a type and you choose the appropriate process definition, you need to specify each of these hierarchical objects.

Object	Description
<b>Application</b>	<p>Applications are functional groups of process definitions containing one or more process definitions.</p> <p>Within an application, you can access a variety of features, including processes (workflow) and decisions (fees).</p> <p>Certain configurations, including integrations and roles, are defined at the application level and shared by all of the application's process definitions. Therefore, you can simplify the setup process by grouping related process definitions into a single application.</p>
<b>Process Definition</b>	<p>A process definition is a specific workflow process.</p> <p>When different transaction types have the same workflow, they can use the same process definition.</p> <p>See <a href="#">Reviewing a Sample Process Definition</a> to walk through an example of a process definition for workflow.</p>
<b>UIs</b>	<p>UIs are forms or user interfaces that you can include to display at various points in your workflow if user input is required.</p>
<b>Decisions</b>	<p>Decisions are decision models. Typically in Permitting and Licensing you'll use decisions for calculating fees, but they can be included within workflow processes as well.</p>

Object	Description
<b>Version</b>	<p>When you activate a modified application to make it available for use, you choose a version number to assign.</p> <p>New and modified process definitions can't be associated with a transaction type until you activate a version of the application that includes your changes.</p> <p>For more information on versions, see <a href="#">Preparing the Process Definition for Use</a>.</p>
<b>Connectors</b>	<p>There are a collection of integrations called connectors that enable the process definition to share data with the Permitting and Licensing system.</p>
<b>Roles</b>	<p>Roles map to security roles, or groups, in the Permitting and Licensing system, which you assign to swimlanes in your process models. For instance, only certain tasks would be added to the swimlane for the permit technician role, where as others would be added to the permit supervisor role swimlane.</p>

Another concept to keep in mind when working with process definitions is the version. When you activate a modified application to make it available for use, you choose a version number to assign.

New and modified process definitions can't be associated with a transaction type until you activate a version of the application that includes your changes.

When a transaction type is assigned a process application version, new transactions are assigned that version of the application for its life cycle.

For more information on versions, see [Preparing the Process Definition for Use](#).

For information on working with workflow for Oracle Permitting and Licensing see [Structured Workflow Overview](#) and [Dynamic Workflow Overview](#).

## Working with Decision Applications

When working with fee decision models you:

- Define your input data.
- Configure your decisions.
- Activate the model.

## Setting Up OCI Process Automation Proxy User

OCI Process Automation provides the framework for setting up workflow processes. This topic provides information about using the Security Console to set up a proxy user that OCI Process Automation will use for updating workflow information for Oracle Permitting and Licensing.

In this procedure, you create a user and assign the PSCR Proxy User for OIC (CUSTOM\_PSCR\_OIC\_PROXY\_USER) role to that user. The user you create is the proxy user the OCI Process Automation system uses to connect to Oracle Permitting and Licensing to exchange data during transaction processing (callback). To complete these steps, you will use Fusion Applications Security Console. Security Console enables you to create and manage roles and selected users.

For more information about using the Security Console, see [Using the Security Console](#).

**Note:** In previous releases, Oracle Integration Cloud (OIC) Generation 2 handled workflow and fee processing. Beginning with Release 24B this has changed. OCI Process Automation now handles workflow and fee processing. For the time being the delivered proxy user role name still contains *OIC*.

To create the proxy user:

1. Navigate to the Security Console.

To navigate to the Security Console, you have these options:

- Click Setup and Maintenance on the Agency Springboard, and in Functional Setup Manager, click the task: *Create OCI Process Automation Proxy User* in the Permit Types functional area.
- Click Setup and Maintenance on the Agency Springboard, and on the Fusion Applications home page, select **Navigator > Tools > Security Console**.

2. Click the Users tab.

3. On the User Accounts page, click **Add User Account**.

4. On the Add User Account page in the User Information section, enter a **Last Name** and **User Name** of your choice.

The name given for the proxy user will be displayed on the Status History page of the transaction detail pages, for permits, planning applications, and so on. As such, you may want to use a generic name, such as *System*, *Workflow*, or something similar.

5. Enter a **Password** of your choice and confirm it.

6. Click **Add Role** for the Roles grid, and assign this role to your proxy user:

- Role Name: *PSCR Proxy User for OIC*
- Role Code: *CUSTOM\_PSCR\_OIC\_PROXY\_USER*

7. Click **Save and Close**.

8. Add the proxy user information to the connectors for your workflow process definitions.

For each connector, click the Security icon on the right toolbar to add the proxy user information.

**Note:** Using the *OAuth* or *Global Credential* security type is recommended. You set up the proxy user to use the OAuth and Global Credential security type in the OCI Process Automation administrative Workspace area, where you select *Credentials* from the Navigator menu.

For more information on managing security credentials in Workspace, see [Manage Credentials in Workspace](#).

## Setting Up OCI Process Automation Integration

This topic describes how to set up the integration between Oracle Permitting and Licensing and Oracle Cloud Infrastructure Process Automation.

Before you begin your Oracle Permitting and Licensing implementation, you need to configure the connection between OCI Process Automation and Oracle Permitting and Licensing. OCI Process Automation provides the capability to design and process:

- Workflow for your transactions.

- Decision models for calculating fees.

These steps should be done within the *Initial Set Up* functional category for your offering in the Functional Setup Manager. The process involves setting up the users, groups (roles), and authentication in Oracle Identification Cloud Service (IDCS) required for OCI Process Automation and the Permitting and Licensing system to interact.

**Note:** You need to complete these tasks on each pod (test, development, production, and so on) for each pairing of Oracle Identity Cloud Service and Oracle Cloud Infrastructure Process Automation.

## Create a Trusted User on IDCS

**Note:** This step is required only if you haven't migrated from Identity and Access Management (IAM) to Oracle Cloud Infrastructure Identity and Access Management (OCI IAM). Also note the product name change from Oracle Cloud Identity Service (IDCS) to Oracle Cloud Infrastructure Identity and Access Management (OCI IAM). As part of Oracle's efforts to enhance the technology and capabilities for Fusion Applications, Identity and Access Management (IAM) for your Fusion environment(s) will be upgraded to Oracle Cloud Infrastructure Identity and Access Management (OCI IAM) in the coming months.

1. Sign in to the Identity Cloud Service console.

**Note:** On the sign in dialog, don't sign into the *Default* identity domain. Sign into the specific domain for which you will be running the configuration steps.

2. Select *Identity > Domains* and select your domain.
3. Select *Users*.
4. Click **Create User**.
5. On the Create user page, add these values:
  - a. **First name:** *PSCR*
  - b. **Last name:** *PROXY\_USER*
  - c. **Use the email address as the username:** *Deselect*
  - d. **Username:** *PSCR\_PROXY\_USER*

**Note:** If you copy this value from the guide, paste it into a text editor first to confirm you haven't picked up any random markup characters from the HTML.

- e. **Email:** *no-reply@oracle.com*

**Note:** The First Name, Last Name, and Email values can be any value. The Username value must be *PSCR\_PROXY\_USER*.

6. Click **Create**.

## Create the PSCR Submitter Group

**Note:** This step is required only if you haven't migrated from Identity and Access Management (IAM) to Oracle Cloud Infrastructure Identity and Access Management (OCI IAM). Also note the product name change from Oracle Cloud Identity Service (IDCS) to Oracle Cloud Infrastructure Identity and Access Management (OCI IAM). As part of Oracle's efforts to enhance the technology and capabilities for Fusion Applications, Identity and Access Management (IAM) for your Fusion environment(s) will be upgraded to Oracle Cloud Infrastructure Identity and Access Management (OCI IAM) in the coming months.

1. Sign in to the Identity Cloud Service console.

**Note:** On the sign in dialog, don't sign into the *Default* identity domain. Sign into the specific domain for which you will be running the configuration steps.

2. Select *Identity > Domains* and select your domain.
3. Select *Groups*.
4. Click **Create Group**.
5. On the Create group page, add these values:
  - a. **Name:** *PSCR Submitter Group*
  - b. **Users grid:** select the trusted user you just created.
6. Click **Create**.

## Set Up Cloud Service Application Roles

1. In Functional Setup Manager, complete the *Run User and Roles Synchronization Process* task in the Initial Setup Functional area.
2. In IDCS import users into the identity domain.
3. Sign in to the Identity Cloud Service console.

**Note:** On the sign in dialog, don't sign into the *Default* identity domain. Sign into the specific domain for which you will be running the configuration steps.

4. Select *Identity > Domains* and select your domain.
5. Select Oracle Cloud Services.
6. Open the IDCS app named *Process Automation Service*.
7. Select Application roles under Resources on the left.
8. Expand the *ServiceAdministrator* role and click Manage for Assigned groups.
9. On the Manage group assignments page, click the plus sign in the Show available groups link beneath the Assigned groups grid to expose the Available groups grid.
10. In the Available groups grid, search for and select the following groups individually, and click **Assign**.
  - a. *PSCR Submitter Group*
  - b. *PSC System Administrator*
  - c. *PSC Business Analyst*
  - d. *PSC Custom Manage All Workflow Tasks*
  - e. *PSC Custom Administer Workflow*
11. Click **Close**.
12. In the Application roles list, expand the *ServiceBusinessUser* role and click **Manage** for Assigned groups.
13. On the Manage group assignments page, search for and select the *PSC Agency Staff* group and click **Assign**.

## Confirm OCI Process Automation Authentication

1. Access the OCI Process Automation designer URL.

It will look similar to:

<https://opa-xxx-xxx-xxxxxxx.process.oci.oraclecloud.com/process/designer>

It is recommended to create a bookmark for easy access.

You can get the base URL by accessing the Primary Audience URL, as displayed in the IDCS App for the Process Automation Service.

Assuming you are still on the Manage group assignments page from the previous step, you can also access this URL by clicking OAuth configuration under Resources on the left. In the Configure application APIs that need to be OAuth protected, locate the **Primary audience URL**.

**Note:** Keep the Primary audience URL available as you'll need it in the next task..

2. Enter your user ID and password and confirm you can sign in.

Use a Fusion Application user ID assigned at least to the *PSC System Administrator* role.

## Create OAuth Credentials

1. Sign in directly to the individual identity domain.

By viewing the My Profile menu, you can see if you are signed into a specific domain or through the (default) domain.

If you are logged into the default domain, you can get the URL for an individual identity domain, by selecting Identity > Domains. In the domains grid select the domain you are currently configuring. On the Overview page for that domain click Copy for the **Domain URL** field.

Open a new browser window and copy that URL into the search bar, adding */ui/vi/adminconsole* to the URL.

2. Open your REST client application, such as Postman, Curl, or similar.
3. Add the Domain URL value to the Identity Cloud Service console and select the POST action.

Add */admin/v1/Apps* to your base Domain URL.

The URL will look similar to:

*https://idcs-abc123xxxxxxxxx.identity.oraclecloud.com/admin/v1/Apps*

4. In the body, copy and paste the following JSON, updating the *name* and the *redirectUris* attributes.

The user assigned to *name* should be created in Permitting and Licensing with sufficient privileges to call Oracle Permitting and Licensing from OCI Process Automation through REST APIs. This isn't the user created previously in the step where you created a trusted user on IDCS. This user will be added to your workflow process connectors. This isn't a typical functional user, but a user with elevated access, such as a system administrator.

The *redirectUris* URL should use the URL displayed as the Primary audience URL for your domain to which you add */icsapis/agent/oauth/callback*.

```
{
  "schemas": [
    "urn:ietf:params:scim:schemas:oracle:idcs:App"
  ],
  "displayName": "OPA App for PSCR OAuth Inbound",
  "isOAuthClient": true,
  "description": "OPA App for PSCR OAuth Inbound",
  "active": true,
  "clientType": "confidential",
  "name": "xxxxx",
  "basedOnTemplate": {
    "value": "CustomWebAppTemplateId"
  }
}
```

```
    },
    "redirectUri": [
      "<OCI Process Automation Base URL>/icsapis/agent/oauth/callback"
    ],
    "logoutUri": "",
    "postLogoutRedirectUri": [],
    "allUrlSchemesAllowed": true,
    "allowedGrants": [
      "client_credentials",
      "password",
      "urn:iETF:params:oauth:grant-type:jwt-bearer",
      "authorization_code",
      "refresh_token"
    ]
  }
}
```

5. Retrieve and copy your OAuth token.
  - a. In Oracle Identity Service console, select the Profile menu in the upper right of the header.
  - b. Select *My profile*.
  - c. Under Resources, click My access tokens.
  - d. Under My access tokens, click the **Select app role** field.
  - e. Select *Identity Domain Administrator*.
  - f. Consider the **Token expires in mins** field. You may want to set this to a higher value than the default to provide additional time. Keep in mind that if you need to retry this operation for any reason, your token may have expired, so you'd need to recreate the token.
  - g. Click **Download token**.
  - h. Open the downloaded token in a text editor, such as Notepad.
  - i. Copy the contents of the token file.
6. Return to your REST client, click the Authorization tab, select *Bearer Token* for the **Type** field, and copy the token file contents into the **Token** field.
7. Click **Send**.
8. Return to the Oracle Identity Service console and open your domain.

In the navigation breadcrumbs at the top left, click Identity, then click Domains under Identity on the left, click on your domain in the Domains in... grid.

9. Under Identity domain, select Integrated applications.
10. On the Integrated applications page, select *OPA App for PSCR OAuth Inbound*.
11. Under OAuth configuration, click **Edit OAuth configuration**.
12. On the Edit OAuth configuration page:
  - a. Select Add resources.
  - b. Under Resources click **Add scope**.
  - c. On the Add scope page, select *Oracle Applications Cloud (Fusion)*.
  - d. Expand the *Oracle Applications Cloud (Fusion)* row, and select the scope that appears.

**Note:** The string reflects that your Fusion Application instance is a consumer of all Fusion Application resources.

- e. Click **Add** and **Save changes**.

## Set OAuth Credentials in OCI Process Automation

1. Return to OCI Process Automation designer.

For example:

*<https://opa-xxx-xxx-xxxxxxx.process.oci.oraclecloud.com/process/designer>*

2. Select the Workspace node in the left navigation column.
3. In the Workspace, select Credentials.
4. In the upper right click **Create global credentials**, and select *OAuth credentials*.
5. On the Add new OAuth credential page, add these values:
  - a. **Credential Name:** *OPAL\_OPA\_GLOBAL\_OAUTH*
  - b. **Target URL:** Add the Fusion Application base URL for the current pod, such as *https://fa-xxxx-xx-xx.fa.xx.oraclecloud.com*. This is the base URL when signing on to Oracle Permitting and Licensing.
  - c. **Client Id:** Add the name you added to the JSON in a previous step when creating the OAuth credentials.
  - d. **Client Secret:** Return to your OAuth configuration in the Oracle Identity Service console for the current domain, and under General Information, click **Show secret**.

From the Client secret pop-up window, copy the secret, and paste it into the **Client Secret** field.
  - e. **Scope:** Return to your OAuth configuration in the Oracle Identity Service console for the current domain, and under Token issuance policy, select and copy the **Scope** value for the Oracle Applications Cloud (Fusion) resource. Paste it into the **Scope** field.
  - f. **OAuth Token URL:** Select *Local Identity Domain*.
  - g. **Description:** Add a description, such as, *Global OAuth credentials for callbacks to <your Permitting and Licensing pod>*.
  - h. Click **Submit**.



# 3 Setting Up Structured Workflow

## Workflow Basics

You define your transaction workflow using the Processes feature of OCI Process Automation.

You can incorporate workflow processing for all Oracle Permitting and Licensing offerings, but structured workflow processes apply specifically to these offerings:

- Permits
- Planning and Zoning
- Business Licenses

For Permits, Planning and Zoning, and Business Licenses, you define structured processes to run your workflow. For more information on structured processes, see [Develop Structured Processes](#).

Code Enforcement implements workflow using a different process definition type, which is covered in a separate chapter. See [Dynamic Workflow Overview](#) for more information on Code Enforcement workflow.

**Note:** Oracle provides a Solution Package with sample workflow configurations. It is highly recommended that you clone these samples and use them as starting points to create your own workflow.

**Note:** Currently, in the context of data object parameters, data association parameters, and REST resource attributes, the terms *record*, *transaction*, *permit*, *planning application*, and *business license* are interchangeable.

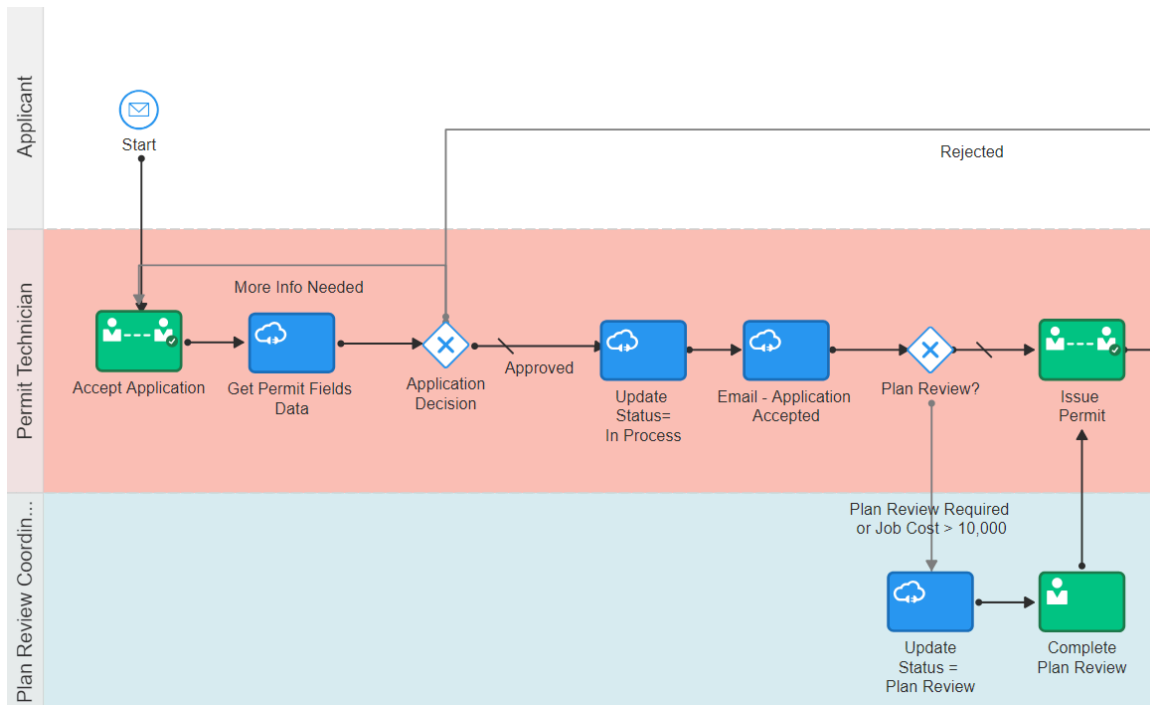
## Reviewing a Sample Process Definition

A process definition provides a defined flow for processes such as the transaction lifecycle of a permit. This flow can include system tasks, human tasks, and decision gateways. You define your flow using the Process feature in OCI Process Automation. The Process feature provides a visual design environment to help you create easily understood workflow process definitions.

**Note:** Currently, in the context of data object parameters, data association parameters, and REST resource attributes, the terms *record*, *transaction*, and *permit* are interchangeable.

Let's look at a sample process definition for a building permit.

This image shows the first half of the sample process, from the time the permit is submitted until it is issued.



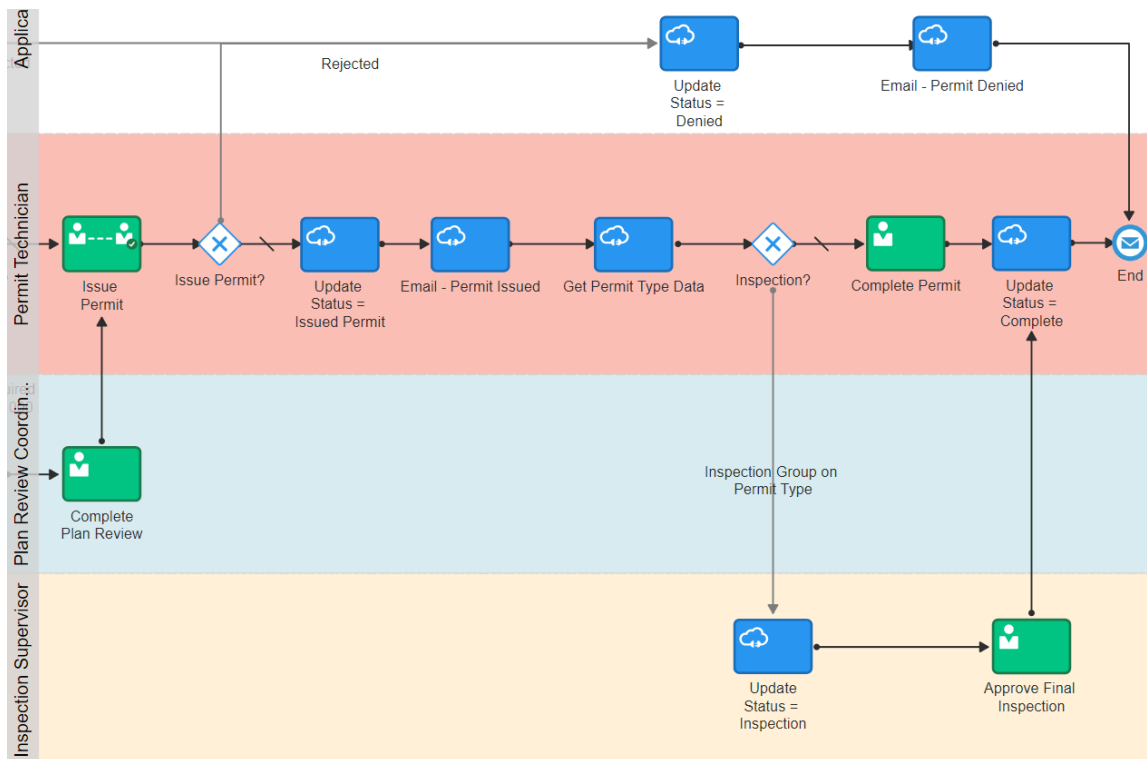
The following table identifies the types of objects shown in the illustration:

Object	Description
Swimlanes	Horizontal bands in the process map represent the roles involved in the process.
Start and End Events	All paths through the workflow process must begin at the Start event and finish at the End event.
Human tasks	Green boxes with an image of a person represent tasks that are performed by humans.  <b>Note:</b> The name of the human task in your workflow definition may differ from the name you display for end users on the Workflow tab or Worklist, for example. Use the <b>Title</b> field in the End User Display section in the Properties dialog box for the workflow activity (task) to set the task name your end users see.
System tasks	Blue boxes with an image of a cloud represent tasks that the system performs.
Gateways	White diamonds represent decision points, where the process flow can branch based on criteria you define.
Arrows	One-directional arrows define flows through the process.  Gateways are the only objects that have multiple exit arrows. The exit arrow with a slash through it represents the default option after a gateway. All other exit arrows contain business logic for defining the conditions when the arrow is used.

With these definitions in mind, let's look at the sample process flow:

1. **Start:** The process starts when a permit application is submitted, which sends a message to OCI Process Automation to instantiate the workflow process.
2. **Accept Application:** A human performs the task of accepting the application and selecting a task status that represents the task outcome.
3. **Get Permit Fields Data:** This system task retrieves permit field data to be used later in the process, when it's time to determine whether a plan review is required.
4. **Application Decision:** Exit arrows from this gateway determine the next step based on the outcome of the Accept Application human task.
  - a. If more information is needed, the application acceptance task is reinstated. This loop continues until the task has a different outcome.
  - b. If the application is rejected, a system task updates the permit status to *Denied*, then another system task sends the applicant an email notification that the permit was denied, then the process ends.
  - c. If the outcome is anything else, the process continues.
5. **Update Status = In Process:** This system task updates the permit status to *In Process*.
6. **Email - Application Accepted:** This system task notifies the applicant that the permit was accepted.
7. **Plan Review:** Exit arrows from this gateway determine the next step based on the outcome of the Accept Application task and based on the job cost that was retrieved by the Get Permit Fields Data task:
  - a. If the Accept Application outcome indicates that a plan review is required, or if the job cost is greater than 10,000, the **Update Status = Plan Review** system task updates the permit status to *Plan Review*, then a human completes the **Complete Plan Review** human task. When the Complete Plan Review is complete, the process continues.
  - b. If a plan review is not required, the process continues.
8. **Issue Permit:** A human performs the task of issuing the permit and enters a task status that represents the task outcome (whether the permit was issued or rejected).

The following image shows the remainder of the sample workflow, after a human completes the Issue Permit task.



These steps describe the remainder of the workflow process, after the human task for issuing a permit:

1. **Issue Permit:** Exit arrows from this gateway determine the next step based on the outcome of the task for issuing a permit:
  - a. If the permit is rejected, the **Update Status = Denied** This system task updates the permit status to *Denied*, then the **Email - Permit Denied** system task notifies the applicant that the permit was denied, then the process ends.
  - b. If the outcome is anything else, the process continues.
2. **Update Status = Issued Permit:** This system task updates the permit status to *Issued Permit*.
3. **Email - Permit Issued:** This system task notifies the applicant that the permit was issued.
4. **Get Permit Type Data:** This system task retrieves permit type information for use in determining whether an inspection is needed.
5. **Inspection:** Exit arrows from this gateway determine whether an inspection is needed:
  - a. If the permit type includes an inspection group, the **Update Status = Inspection** system task updates the permit status to *Inspection*. A human then completes the **Approve Final Inspection** task and enters the task outcome. The process then continues.
  - b. If an inspection is not required, a human performs the **Complete Permit** task and enters the task outcome. The process then continues.
6. **Update Status = Complete:** this system task updates the permit status to *Complete*.
7. The process ends.

# Setting Up the Communications Connector

The communications connector enables OCI Process Automation to send data to the communications center in the Oracle Permitting and Licensing system using a POST operation. This connector is used when a workflow process definition includes a communication task, such as sending a permit applicant an email when the permit status changes.

**Note:** Oracle provides a Solution Package with sample process definitions with preconfigured connector configurations. It is recommended to clone these samples and use them as starting points for your own process definitions. The instructions in this procedure explain how to set up the communications connector from scratch and should be considered only a sample for illustration purposes.

The following procedure explains how to set up the communications connector with the specific integration information that is required by the Public Sector system.

**Note:** Currently, in the context of data object parameters, data association parameters, and REST resource attributes, the terms *record*, *transaction*, *permit*, *business license*, or *planning application* are interchangeable.

To set up the communication connector:

1. (Optional) If you are building the process application from scratch, you can download sample JSON from My Oracle Support.

Go to My Oracle Support, access Doc ID 2449735.1, *Public Sector Compliance and Regulation: JSON Files for Transaction Integration*, and download the following files that you will use later in this procedure:

- o RequestCommunications.json
- o ResponseCommunications.json

2. Access the main console in OCI Process Automation.
3. In the list of applications, click the process application with your transaction workflow.
4. Click the **Connectors** node at the top.
5. Click the **Add** button, then in Add component drawer, expand **Connectors > REST API**
6. In the Add component drawer, enter the following:

Page Element	Description
<b>Title</b>	Enter a descriptive name such as <i>CommunicationsConnector</i> .  <b>Note:</b> The name <i>CommunicationsConnector</i> is suggested, however, you can choose your own name if needed. The title is the user friendly term.
<b>Identifier Name</b>	Automatically created by the title you enter but can be changed before saving. This is the internal system ID for the connector.

Page Element	Description
<b>Base URL</b>	Enter the URL for your Oracle Permitting and Licensing REST API resources. The URL follows this pattern, where <i>ServerName</i> is the server name for your instance of the application:  <code>https://ServerName/fscmRestApi/resources/11.13.18.05</code>

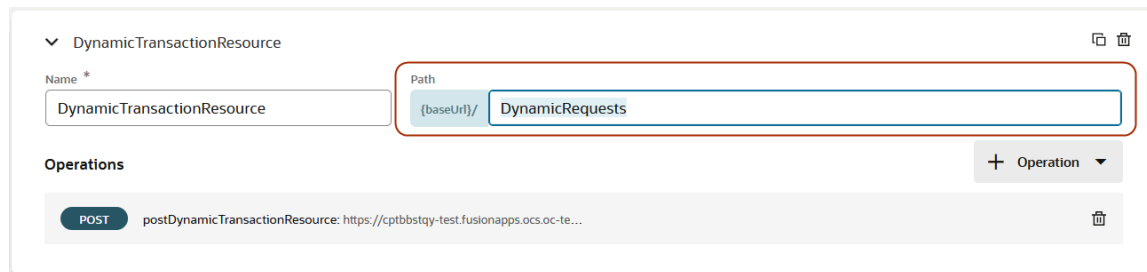
When configuring a delivered connector or a custom connector, and you are specifying the base URL, adding the API endpoint to the base URL isn't recommended. Add the endpoint to the path at either the resource level or the operation level.

OCI Process Automation adds a slash to the base URL automatically, which can cause issues with any additional URL items, such as query parameters. This applies to any endpoint but is always the case with the *DynamicRequests* end point, which doesn't support slashes.

For example, when defining the base URL, don't add the endpoint directly to the base URL path, like *DynamicRequests* in the following example:

`https://xxxxxxx.com:443/fscmRestApi/pscreources/11.13.18.05/dynamic/DynamicRequests`

Instead, add a resource to the connector, and add the endpoint URL to **Path** field for the resource or to the operation(s) within the resource. For example:



7. Click **Create**.
8. Click the **Security** icon on the right.
9. On the Security drawer, for **Security Type** select either *OAuth* or *Global Credential*, the recommend options.

This is where you provide the proxy user information. See [Setting Up OCI Process Automation Proxy User](#).


10. Depending on the security type selected, enter the appropriate information.
11. Click **Save**.
12. Click **Add** in the header.
13. Expand the new Resource section that appears, and enter the following values:

Field	Value
<b>Name</b>	<i>OutboundCommunications</i>
<b>Path</b>	<i>publicSectorCommunicationRequests</i>

Field	Value
	<p>When added to the base URL, this completes the path to the communications-related REST APIs.</p> <p><b>Note:</b> If you need to call a Business Rules Framework event to run a business rule to send a notification only if the scenario meets your criteria, you can set up the connector to call the Business Rules Framework Request API (publicSectorBusinessRulesFrameworkRequests).</p>

14. In the Operations section, click the **Add** button and then select *POST* from the drop-down menu.
15. Click the new POST operation.
16. Enter *Trigger transaction communications* in the **Description** field.


You can leave the default values in the other fields, including leaving the **Path** field blank.

17. Click **Request**
18. Click the **+** icon next to the **Body** field to open the Import Business Object from JSON window.
19. Enter *RequestCommunications* in the **Name** field.
20. Click **Schema**.
21.  Click the **Import from File** icon next to the **Schema** button.
22. Locate and upload the *RequestCommunications.json* file that you downloaded from My Oracle Support.

The imported JSON code appears in the Import Business Object from JSON window.

23. Click the **Import** button at the bottom of the window to save the code and close the window.
24. Ensure that the following values now appear for the POST operation request:

Page Element	Value
<b>Body</b>	<i>BusinessData.RequestCommunications</i>
<b>Media Type</b>	<i>Custom</i>
Media Type details	<i>application/vnd.oracle.adf.resourceitem+json</i>

25. Click **Response**.
26. Click the **+** icon next to the **Body** field to open the Import Business Object from JSON window.
27. Enter *ResponseCommunications* in the **Name** field.
28. Click **Schema**.
29.  Click the **Import from File** icon next to the **Schema** button.
30. Locate and upload the *ResponseCommunications.json* file that you downloaded from My Oracle Support.

The imported JSON code appears in the Import Business Object from JSON window.

31. Click the **Import** button at the bottom of the window to save the code and close the window.

32. Ensure that the following values appear for the POST operation response:

Page Element	Value to Enter
Body	<i>BusinessData.ResponseCommunications</i>
Media Type	<i>application/JSON</i>

33. Click **Apply**.  
34. Click **Save**.

## Setting Up the Transactions Connector

The transactions connector enables OCI Process Automation to exchange transaction-related information with the Oracle Permitting and Licensing system.

**Note:** Oracle provides a Solution Package with sample process definitions with preconfigured connector configurations. It is recommended to clone these samples and use them as starting points for your own process definitions. The instructions in this procedure explain how to set up the communications connector from scratch and should be considered only a sample for illustration purposes.

**Note:** Currently, in the context of data object parameters, data association parameters, and REST resource attributes, the terms *record*, *transaction*, *permit*, *business license*, or *planning application* are interchangeable. In some resource attributes, such as paths or parameters, *trans* is used in place of *transaction* for simplicity.

## Procedure Overview for Setting Up the Transactions Connector

Setting up the Transactions Connector comprises multiple procedures with multiple steps. The following set of steps outline the high-level set of procedures involved with this task. Each item in the following list is explained in more detail in the following sections, in the listed sequence.

1. Download JSON Files for Workflow Integration Configuration (only if you are building from scratch and not using the provided samples in the Solution Package).
2. Create the Transactions Connector
3. Add the Transaction Resource
4. Add the PATCH Operation for Transaction Statuses
5. Add the GET Operation for Transaction Base Data
6. Add the GET Operation for Transaction Fields Data
7. Add the GET Operation for Transaction Data
8. Add the GET Operation for Transaction Assignee
9. Add the GET Operation for Transaction Type Resource
10. Add the Transaction Type Data
11. Add the POST Operation for the Business Rules Request.

## Step 1: Download Required JSON Files for Workflow Integration Configuration

For creating integrations from scratch, Oracle provides a set of JSON files for defining the integration between OCI Process Automation and the Oracle Permitting and Licensing system. Download all of the files first so that you can access them easily while completing the procedures documented in this topic.

To download the required JSON:

1. Sign on to My Oracle Support.
2. Access Doc ID 2449735.1, *Public Sector Compliance and Regulation: JSON Files for Transaction Integration*.
3. Download the following files to a local folder:
  - o RequestTransStatusUpdate.json
  - o ResponseTransStatusUpdate.json
  - o ResponseTransBase.json
  - o ResponseTransFields.json
  - o ResponseTransData.json
  - o ResponseTransAssignee.json
  - o ResponseTransType.json

## Step 2: Creating the Transaction Connector

**Note:** This procedure explains how to create the transaction connector. Additional procedures that follow this one explain how to set up the operations for this connector.

To set up the transactions connector:

1. Access the main console in OCI Process Automation.
2. In the list of applications, click the application for your workflow process.
3. Select the **Connectors** node in the toolbar.
4. Click the **Create** button, then in the pop-up menu under the Create button, select **Connectors > REST API**
5. In the Add component drawer, enter the following:

Page Element	Description
<b>Name</b>	Enter a descriptive name, such as <i>TransactionConnector</i> .  <b>Note:</b> The name <i>TransactionConnector</i> is suggested, however, you can choose your own name if needed. This documentation refers to <i>TransactionConnector</i> .
<b>Identifier Name</b>	Automatically created by the title you enter but can be changed before saving. This is the internal system ID for the connector.

Page Element	Description
<b>Base URL</b>	Enter the URL for your Oracle Public Sector Cloud REST API resources. The URL follows this pattern, where <i>ServerName</i> is the server name for your instance of the application:  <code>https://ServerName/fscmRestApi/resources/11.13.18.05</code>

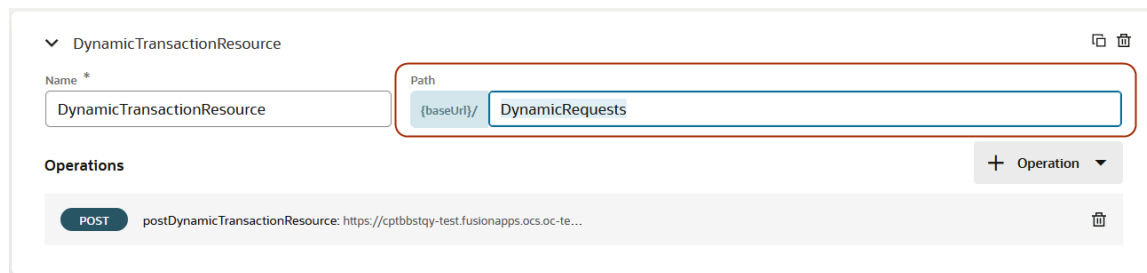
When configuring a delivered connector or a custom connector, and you are specifying the base URL, adding the API endpoint to the base URL isn't recommended. Add the endpoint to the path at either the resource level or the operation level.

OCI Process Automation adds a slash to the base URL automatically, which can cause issues with any additional URL items, such as query parameters. This applies to any endpoint but is always the case with the *DynamicRequests* end point, which doesn't support slashes.

For example, when defining the base URL, don't add the endpoint directly to the base URL path, like *DynamicRequests* in the following example:

`https://xxxxxxx.com:443/fscmRestApi/pscreources/11.13.18.05/dynamic/DynamicRequests`

Instead, add a resource to the connector, and add the endpoint URL to **Path** field for the resource or to the operation(s) within the resource. For example:



6. Click **Create**.
7. Click the **Security** icon from the toolbar on the right.
8. On the Security drawer, for **Security Type** select either *OAuth* or *Global Credential*, the recommend options. This is where you provide the proxy user information. See [Setting Up OCI Process Automation Proxy User](#).
9. Depending on the security type selected, enter the appropriate information. For more information, see the "Set OAuth Credentials in OCI Process Automation" section in [Setting Up OCI Process Automation Integration](#).
10. Click **Save**

## Step 3: Add the Transactions Resource

**Note:** Before starting this procedure, be sure to complete the procedure "Creating the Transaction Connector."

1. Access the main console in OCI Process Automation.
2. In the list of applications, click the application for your workflow process.
3. Click the **Connectors** option.

4. Click the **TransactionConnector** connector.
5. In the Resources section of the Rest Connector Editor, click **Add**.
6. Expand the new Resource section that appears, and enter *TransactionResource* in the **Name** field.


## Step 4: Add the PATCH Operation for Transaction Statuses

Workflow in OCI Process Automation uses the PATCH operation to update the status of a transaction.

To set up the PATCH operation:

1. In the **Operations** section of TransactionResource, click the **Add** button and then select **PATCH operation** from the drop-down menu.
2. Click the new **PATCH** operation.
3. Enter the following information:

Page Element	Value
<b>Name</b>	<i>patchTransactionStatus</i>
<b>Path</b>	<i>{transResource}/{transRecordKey}</i>  Although you can choose different names for the resource name and record key parameters, this procedure assumes that you use the given values.
<b>Documentation</b>	<i>Update transaction status.</i>


4. Click **Request**
5. Click the **+** icon next to the **Body** field to open the Import Business Object from JSON window.
6. Enter *RequestTransStatusUpdate* in the **Name** field.
7. Click **Schema**.
8.  Click the **Import from File** icon next to the **Schema** button.
9. Locate and upload the *RequestTransStatusUpdate.json* file that you downloaded from My Oracle Support. The imported JSON code appears in the Import Business Object from JSON window.
10. Click the **Import** button at the bottom of the window to save the code and close the window.
11. Ensure that the following values now appear for the PATCH operation request:

Page Element	Value to Enter
<b>Body</b>	<i>BusinessData.RequestTransStatusUpdate</i>
<b>Media Type</b>	<i>Custom</i>
Media Type details	<i>application/vnd.oracle.adf.resourceitem+json</i>

12. In each row of the **Parameters** list, click the *Enter a description* text and enter a description.

These are example descriptions:

Parameter	Description
<i>transResource</i>	<i>Transaction Resource Name</i>
<i>transRecordKey</i>	<i>Transaction Record Key</i>

13. Click **Response**.
14. Click the **+** icon next to the **Body** field to open the Import Business Object from JSON window.
15. Enter *ResponseTransStatusUpdate* in the **Name** field.
16. Click **Schema**.
17.  Click the **Import from File** icon next to the **Schema** button.
18. Locate and upload the *ResponseTransStatusUpdate.json* file that you downloaded from My Oracle Support. The imported JSON code appears in the Import Business Object from JSON window.
19. Click the **Import** button at the bottom of the window to save the code and close the window.
20. Ensure that the following values appear for the PATCH operation response:

Field	Value
<b>Body</b>	<i>BusinessData.ResponseTransStatusUpdate</i>
<b>Media Type</b>	<i>application/JSON</i>

21. Click **Apply**.
22. Click **Save**.

## Step 5: Add the GET Operation for Transaction Base Data

**Note:** Before starting this procedure, be sure to complete the procedure “Adding a PATCH Operation for Transaction Statuses.”

The *getTransactionBaseData* operation gets general transaction data that is found in all transactions, such as the permit type, the permit status, and the permit applicant for a permit transaction.

1. Expand the **TransactionResource** resource.
2. In the **Operations** section, click the **Add** button and then select **GET operation** from the drop-down menu.
3. Click the new **GET** operation.
4. Enter the following information:


Field	Value
<b>Name</b>	<i>getTransactionBaseData</i>

Field	Value
<b>Path</b>	<code>{transResource}/{transRecordKey}</code>  Although you can choose different names for the resource name and record key parameters, this procedure assumes that you use the given values.
<i>Description</i>	<i>Get base transaction data, such as applicant information</i>

5. Click **Request**
6. In each row of the **Parameters** list, click the *Enter a description* text and enter a description.

These are example descriptions:

Parameter	Description
<i>transResource</i>	<i>Transaction Resource Name</i>
<i>transRecordKey</i>	<i>Transaction Record Key</i>

7. Click **Response**.
8. Click the **+** icon next to the **Body** field to open the Import Business Object from JSON window.
9. Enter *ResponseTransBase* in the **Name** field.
10. Click **Schema**.
11.  Click the **Import from File** icon next to the **Schema** button.
12. Locate and upload the *ResponseTransBase.json* file that you downloaded from My Oracle Support.

The imported JSON code appears in the Import Business Object from JSON window.

13. Click the **Import** button at the bottom of the window to save the code and close the window.
14. Ensure that the following values appear for the GET operation response:

Page Element	Value to Enter
<b>Body</b>	<i>BusinessData.ResponseTransBase</i>
<b>Media Type</b>	<i>application/JSON</i>

15. Click **Apply**.

## Step 6: Add the GET Operation for Transaction Fields Data

The *getTransactionFieldsData* gets field data from the application intake form configured using the Intake Form Designer.

1. In the **Operations** section of the Transactions Resource, click the **Add** button and then select **GET operation** from the drop-down menu.
2. Click the new **GET** operation.

The new GET operation has the default name of *GetTransactionResources*.


3. Enter the following information:

Field	Value
<b>Name</b>	<i>getTransactionFieldsData</i>
<b>Path</b>	<i>{transResource}/{transRecordKey}/child/FieldGroups</i>  Although you can choose different names for the resource name and record key parameters, this procedure assumes that you use the given values.
<i>Description</i>	<i>Get specific transaction data, such as job cost.</i>

4. Click **Request**.
5. In each row of the **Parameters** list, click the *Enter a description* text and enter a description.

These are example descriptions:

Parameter	Description
<i>transResource</i>	<i>Transaction Resource Name</i>
<i>transRecordKey</i>	<i>Transaction Record Key</i>

6. Click **Response**.
7. Click the **+** icon next to the **Body** field to open the Import Business Object from JSON window.
8. Enter *ResponseTransFields* in the **Name** field.
9. Click **Schema**.
10.  Click the **Import from File** icon next to the **Schema** button.
11. Locate and upload the *ResponseTransFields.json* file that you downloaded from My Oracle Support.

The imported JSON code appears in the Import Business Object from JSON window.

12. Click the **Import** button at the bottom of the window to save the code and close the window.

13. Ensure that the following values appear for the GET operation response:

Page Element	Value to Enter
Body	<i>BusinessData.ResponseTransFields</i>
Media Type	<i>application/JSON</i>

14. Click **Apply**.  
15. Click **Save**.

## Step 7: Add the GET Operation for Transaction Data

The *getTransactionData* combines *getTransactionBaseData* and *getTransactionFieldsData* into a single operation, which you can use instead of using *getTransactionBaseData* and *getTransactionFieldsData* separately.

1. In the **Operations** section, click the **Add** button and then select **GET operation** from the drop-down menu.
2. Click the new **GET** operation.

The new GET operation has the default name of *GetTransactionResources*.


3. Enter the following information:

Field	Value
Name	<i>getTransactionData</i>
Path	<i>{transResource}/{transRecordKey}</i>  Although you can choose different names for the resource name and record key parameters, this procedure assumes that you use the given values.
Description	<i>Combines getTransactionBaseData and getTransactionFieldsData into a single operation.</i>

4. Click **Request**.
5. In each row of the **Parameters** list, click the *Enter a description* text and enter a description.

These are example descriptions:

Parameter	Description
<i>transResource</i>	<i>Transaction Resource Name</i>
<i>transRecordKey</i>	<i>Transaction Record Key</i>

6. Click **Response**.
7. Click the **+** icon next to the **Body** field to open the Import Business Object from JSON window.
8. Enter *ResponseTransactionData* in the **Name** field.
9. Click **Schema**.
10.  Click the **Import from File** icon next to the **Schema** button.
11. Locate and upload the *ResponseTransactionData.json* file that you downloaded from My Oracle Support. The imported JSON code appears in the Import Business Object from JSON window.
12. Click the **Import** button at the bottom of the window to save the code and close the window.
13. Ensure that the following values appear for the GET operation response:

Page Element	Value to Enter
<b>Body</b>	<i>BusinessData.ResponseTransactionData</i>
<b>Media Type</b>	<i>application/JSON</i>

14. Click **Apply**.
15. Click **Save**.

## Step 8: Add the GET Operation for Transaction Assignee

The *getTransactionAssignee* operation gets the assigned planner for transactions within the Planning and Zoning offering. You can configure subsequent tasks in the workflow process to reference the retrieved and stored *getTransactionAssignee* value.

In the sample Planning and Zoning workflow in Oracle Permitting and Licensing, the subsequent human task will be assigned to the Assignee obtained through this call.


1. In the **Operations** section, click the **Add** button and then select **GET operation** from the drop-down list.
2. Click the new **GET** operation.  
The new GET operation has the default name of *GetTransactionResources*.
3. Enter the following information:

Field	Value
<b>Name</b>	<i>getTransactionAssignee</i>
<b>Path</b>	<i>publicSectorTransactionLatestAssignees/{transRecordKey}</i>  Although you can choose different names for the resource name and record key parameters, this procedure assumes that you use the given values.
<i>Description</i>	<i>Get specific transaction data, such as job cost.</i>

4. Click **Request**.

- In each row of the **Parameters** list, click the *Enter a description* text and enter a description. These are example descriptions:

Parameter	Description
<i>transRecordKey</i>	<i>Transaction Record Key</i>

- Click **Response**.
- Click the **+** icon next to the **Body** field to open the Import Business Object from JSON window.
- Enter *ResponseTransactionFields* in the **Name** field.
- Click **Schema**.
-  Click the **Import from File** icon next to the **Schema** button.
- Locate and upload the *ResponseTransAssignee.json* file that you downloaded from My Oracle Support. The imported JSON code appears in the Import Business Object from JSON window.
- Click the **Import** button at the bottom of the window to save the code and close the window.
- Ensure that the following values appear for the GET operation response:

Page Element	Value to Enter
<b>Body</b>	<i>BusinessData.ResponseTransAssignee</i>
<b>Media Type</b>	<i>application/JSON</i>

- Click **Apply**.
- Click **Save**.

## Step 9: Add the Transaction Type Resource

**Note:** Before starting this procedure, be sure to complete the previous procedures.

- Access the main console in OCI Process Automation.
- In the list of OCI Process Automation applications, click the application for your workflow process.
- Click the **Integrations** option in the left frame.
- Click the **TransactionsConnector** integration.
- In the header of the Resources section, click **Add** to create a new transaction type resource.
- Expand the new Resource section that appears, and enter the following information:

Field	Value
<b>Name</b>	TransactionTypeResource
<b>Path</b>	publicSectorRecordTypes

## Step 10: Add the GET Operation for Transaction Type Data

The *GetTransactionTypeData* operation gets data that is associated with the transaction type definition rather than with an individual transaction. For example, this operation can get the overall fee structure for a permit definition, because the fee structure is associated with the permit type.


To set up the GET operations for transaction type data:

1. In the **Operations** section of the Transaction Type Resource, click the **Add** button and then select **GET operation** from the drop-down menu.
2. Click the new **GET** operation.
3. Enter the following information:

Page Element	Value
<b>Name</b>	<i>getTransactionTypeData</i>
<b>Path</b>	<i>{transResource}</i>
<b>Documentation</b>	<i>Get transaction type setup data.</i>

4. Click **Request**
5. In the **Parameters** list, click the *Enter a description* text and enter a description. Here is an example description:

Parameter	Description
<i>transResource</i>	<i>Transaction Resource Name</i>

6. Click **Response**.
7. Click the **+** icon next to the **Body** field to open the Import Business Object from JSON window.
8. Enter *ResponseTransTypeData* in the **Name** field.
9. Click **Schema**.
10.  Click the **Import from File** icon next to the **Schema** button.
11. Locate and upload the *ResponseTransType.json* file that you downloaded from My Oracle Support. The imported JSON code appears in the Import Business Object from JSON window.
12. Click the **Import** button at the bottom of the window to save the code and close the window.
13. Ensure that the following values appear for the GET operation response:

Page Element	Value to Enter
<b>Body</b>	<i>BusinessData.ResponseTransTypeData</i>

Page Element	Value to Enter
Media Type	<i>application/JSON</i>

14. Click **Apply**.
15. Click **Save**.

## Step 11: Add the POST Operation for the Business Rules Request

This step describes how to configure integration with Oracle Permitting and Licensing by calling REST resources directly from workflow process definitions.

Generally, any REST API can be called from your workflow process definition. There are multiple REST API's provided with the Oracle Permitting and Licensing offerings. The sample workflow models provided to get you started include only a handful of the integrations that could be configured, depending on your business requirements.

Each process definition has a set of connectors that you can view on the Integrations tab. In the sample workflow process definitions and documentation the each connector is separated to make it easier to view and describe. However, you may choose to combine all the individual connectors into a single connector.

This procedure outlines how you can configure additional integrations within process definitions to call Oracle Permitting and Licensing REST APIs to incorporate more data to drive your workflow process. This example demonstrates how to configure an integration with a Business Rules Framework API.

For more information on the Business Rules Framework, see [Business Rules Framework Overview](#).

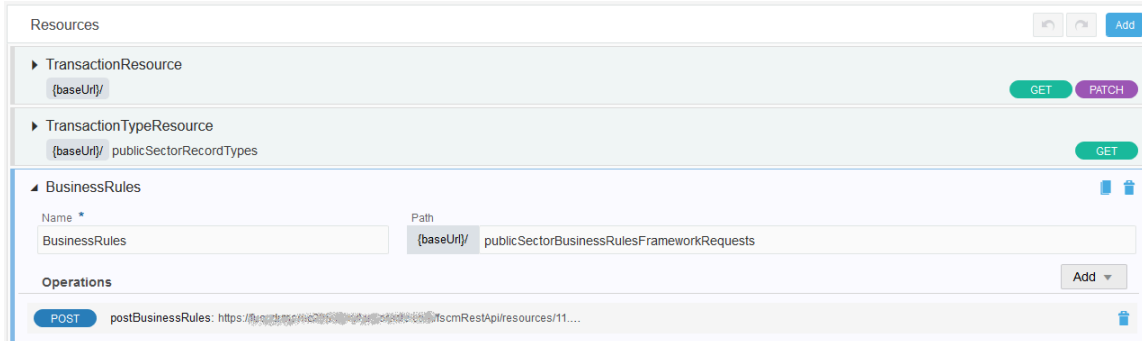
To set up an integration:

1. Open the Transaction Connector.
2. In the Resources box, click **Add**.
3. Expand the added resource and enter these values:

Page Element	Description	Value
Name	The name of the integration or connector. You can enter a custom name as needed.	<i>BusinessRules</i>
Path	The name of the REST resource you intend to call.	<i>publicSectorBusinessRulesFrameworkRequests</i>

Page Element	Description	Value

This example illustrates adding a Business Rules resource.



4. On the new resource, click **Add**, and select the appropriate operation.

In this case, select *POST* operation.

5. Click the newly added operation.
6. (Optional) Add a different name or additional path.
7. Configure the JSON Request.
  - a. In the Response and Request section, select the Request tab, and click **Create business object** under the **Body** field to open the Import Business Object from JSON dialog box.
  - b. For Name enter a recognizable name for the request, such as *RequestBusinessRules*.
  - c. In the Enter the JSON edit box, select **Schema**.
  - d. Copy and paste this JSON:

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "definitions": {},
  "properties": {
    "RecordFirstKeyValue": {
      "$alternative-name": "RecordFirstKeyValue",
      "type": "string"
    },
    "RecordFirstKeyName": {
      "$alternative-name": "RecordFirstKeyName",
      "type": "string"
    },
    "EventCode": {
      "$alternative-name": "EventCode",
      "type": "string"
    }
  }
}
```

```
}
```

This example illustrates the request JSON.

### Create a Type ✕

Type name \*

**Create** ✓

Schema	Model
<pre>1 { 2   "\$schema": "http://json-schema.org/draft-04/schema#", 3   "type": "object", 4   "definitions": {}, 5   "properties": { 6     "RecordFirstKeyValue": { 7       "\$alternative-name": "RecordFirstKeyValue", 8       "type": "string" 9     }, 10    "RecordFirstKeyName": { 11      "\$alternative-name": "RecordFirstKeyName", 12      "type": "string" 13    }, 14    "EventCode": { 15      "\$alternative-name": "EventCode", 16      "type": "string" 17    } 18  } 19 }</pre>	

- e. Click **Create**.
  - f. Close the Import Business Object from JSON dialog box.
8. Configure the JSON Response.
  - a. In the Response and Request section, select the Request tab, and click **Create business object** under the **Body** field to open the Import Business Object from JSON dialog box.
  - b. For Name enter a recognizable name for the response, such as *ResponseBusinessRules*.
  - c. In the Enter the JSON edit box, select **Schema**.
  - d. Copy and paste this response JSON:

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "type": "object",
  "definitions": {
    "RecordIdentifier|ResponseBusinessRules": {
      "type": "object"
    },
    "RecordSecondKeyName|ResponseBusinessRules": {
      "type": "object"
    },
    "RecordSecondKeyValue|ResponseBusinessRules": {
      "type": "object"
    },
    "RecordSubIdentifier|ResponseBusinessRules": {
      "type": "object"
    },
    "RecordFifthKeyName|ResponseBusinessRules": {
      "type": "object"
    },
    "RecordFourthKeyValue|ResponseBusinessRules": {
      "type": "object"
    },
    "RecordThirdKeyName|ResponseBusinessRules": {
      "type": "object"
    },
    "RecordFourthKeyName|ResponseBusinessRules": {
      "type": "object"
    },
    "RecordThirdKeyValue|ResponseBusinessRules": {
      "type": "object"
    },
    "RecordFifthKeyValue|ResponseBusinessRules": {
      "type": "object"
    }
  },
  "properties": {
    "CreationDate": {
      "$alternative-name": "CreationDate",
      "type": "string"
    },
    "RecordSubIdentifier": {
      "$alternative-name": "RecordSubIdentifier",
      "$ref": "#/definitions/RecordSubIdentifier|ResponseBusinessRules"
    },
    "RecordFifthKeyValue": {
      "$alternative-name": "RecordFifthKeyValue",
      "$ref": "#/definitions/RecordFifthKeyValue|ResponseBusinessRules"
    },
    "RecordThirdKeyValue": {
      "$alternative-name": "RecordThirdKeyValue",
      "$ref": "#/definitions/RecordThirdKeyValue|ResponseBusinessRules"
    }
  }
}
```

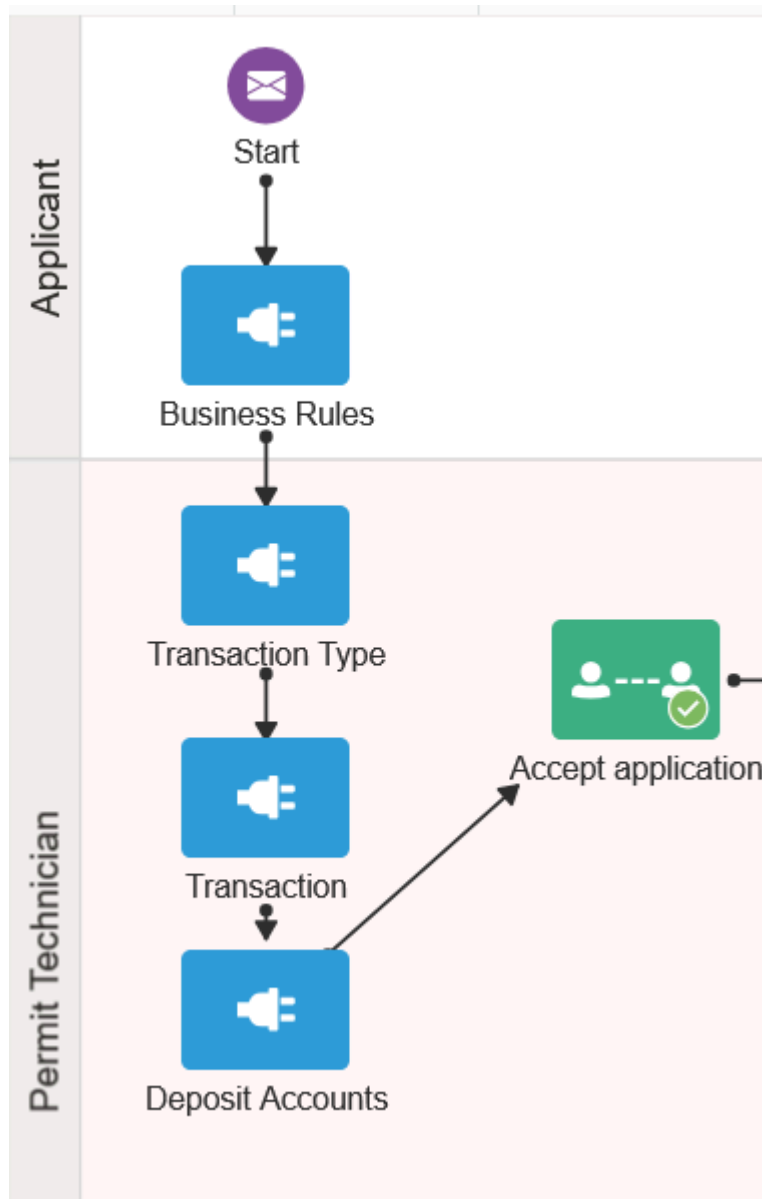
```
"RecordFourthKeyName": {
  "$alternative-name": "RecordFourthKeyName",
  "$ref": "#/definitions/RecordFourthKeyName|ResponseBusinessRules"
},
"RecordSecondKeyValue": {
  "$alternative-name": "RecordSecondKeyValue",
  "$ref": "#/definitions/RecordSecondKeyValue|ResponseBusinessRules"
},
"RecordThirdKeyName": {
  "$alternative-name": "RecordThirdKeyName",
  "$ref": "#/definitions/RecordThirdKeyName|ResponseBusinessRules"
},
"EventCode": {
  "$alternative-name": "EventCode",
  "type": "string"
},
"StopProcess": {
  "$alternative-name": "StopProcess",
  "type": "string"
},
"RecordIdentifier": {
  "$alternative-name": "RecordIdentifier",
  "$ref": "#/definitions/RecordIdentifier|ResponseBusinessRules"
},
"RecordFirstKeyValue": {
  "$alternative-name": "RecordFirstKeyValue",
  "type": "string"
},
"RecordFourthKeyValue": {
  "$alternative-name": "RecordFourthKeyValue",
  "$ref": "#/definitions/RecordFourthKeyValue|ResponseBusinessRules"
},
"ResourceId": {
  "$alternative-name": "ResourceId",
  "type": "number",
  "format": "int"
},
"RecordFirstKeyName": {
  "$alternative-name": "RecordFirstKeyName",
  "type": "string"
},
"EventId": {
  "$alternative-name": "EventId",
  "type": "number",
  "format": "int"
},
"RecordSecondKeyName": {
  "$alternative-name": "RecordSecondKeyName",
  "$ref": "#/definitions/RecordSecondKeyName|ResponseBusinessRules"
},
"NoRules": {
  "$alternative-name": "NoRules",
  "type": "string"
},
"RecordFifthKeyName": {
  "$alternative-name": "RecordFifthKeyName",
  "$ref": "#/definitions/RecordFifthKeyName|ResponseBusinessRules"
},
"LogId": {
  "$alternative-name": "LogId",
  "type": "number",
  "format": "int"
},
"ExecutionId": {
  "$alternative-name": "ExecutionId",
  "type": "string"
}
```

```
    },  
    "LastUpdateDate": {  
      "$alternative-name": "LastUpdateDate",  
      "type": "string"  
    }  
  }  
}
```

- e. Click **Import**.
  - f. Close the Import Business Object from JSON dialog box.
9. Click **Apply** and **Save**.

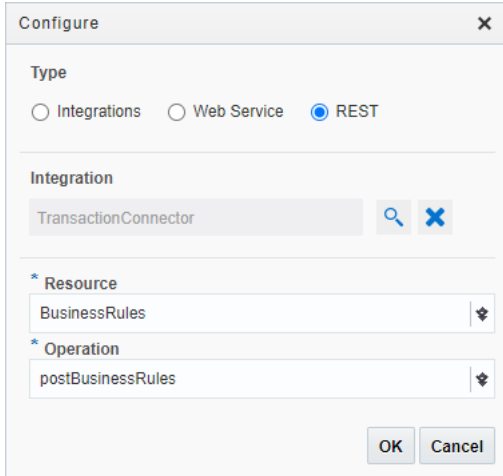
10. Add a task to the process definition to incorporate the integration.
  - a. Open the process definition.
  - b. In the BPMN palette, expand the Integrations section, and drag your integration onto the process definition in the desired location and update the connectors as needed.

This example illustrates adding the Business Rules integration to a process definition.



11. Confirm the integration is referencing the correct operation.
  - a. Select the task and click Open Properties.
  - b. Select Implementation, General and then click **Configure** for the Service Call.

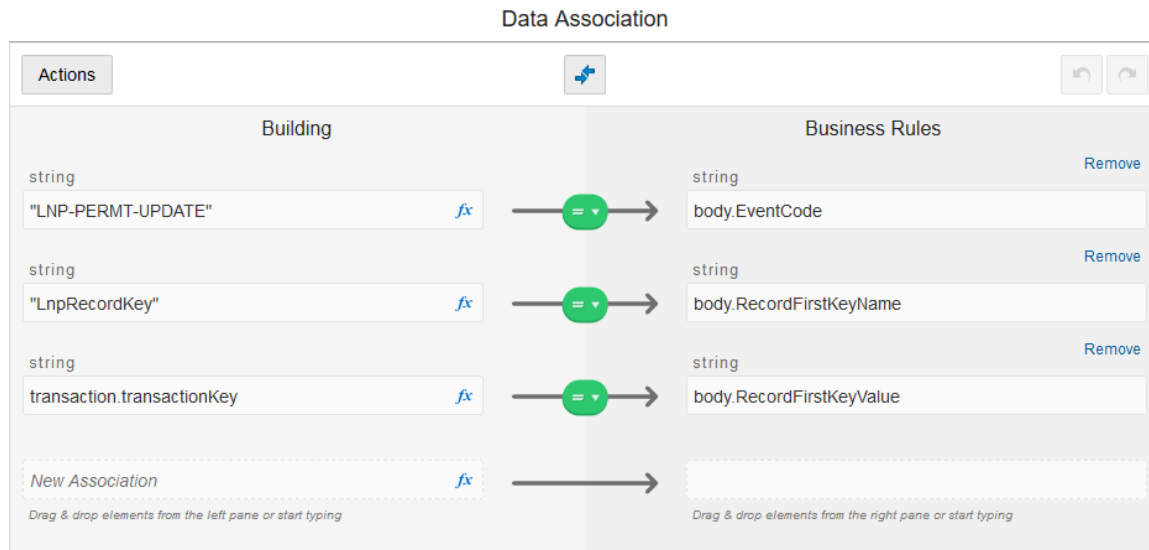
This example illustrates the integration step referencing the REST operation.



12. Configure data associations.
  - a. Select your integration task and select Open Data Association.
  - b. On the Data Association page, select the Input tab.
  - c. Map the following process definition data attributes to your Business Rules integration attributes, and click **Apply** and **Save**.

Data Object	Integration
"LNP-PERMIT-UPDATE"  or  "PZ-PLANNING-UPDATE"  Enter these values manually, depending on whether this process definition is being used for Permits or Planning and Zoning.	body.EventCode
"LnpRecordKey"  Enter this value manually.	body.RecordFirstKeyName
transaction.transactionKey	body.RecordFirstKeyValue

This example illustrates that data associations between the transaction and the business rules integration.



## Setting Up the Sandbox Connector

This topic describes how to configure process definitions to handle requests from transaction types when they are being tested in a development sandbox.

### Sandbox Connector Overview

Sandbox connectors enable you to test transaction types, such as permits, planning application types, and business license types, while they are still in draft-mode being designed and tested within the development sandbox. With the Sandbox Connector, you can design an intake form and test it, end-to-end, without needing to publish it. Without the Sandbox Connector, the transaction type intake form will not be able to trigger interaction with the associated workflow process definition.

To complete the integration of the Sandbox Connector, you need to perform these tasks for all existing process definitions:

- Create a Sandbox Connector.
- Update the process definition to use the Sandbox Connector.

**Note:** This process will need to be completed for all new and existing process definitions.

For more information on sandboxes and testing draft intake forms in the sandbox, see [Working with Sandboxes](#) and [Testing Intake Forms](#).

### Creating the Sandbox Connector

To create the Sandbox Connector:

1. Open the process definition.
2. Select **Create > External > REST**.

3. On the Create REST Connector dialog box, enter these values.

Page Element	Value
Name	<i>SandboxConnector</i>
Base URL	Enter <i>{your host}/fscmRestApi/pscresources/11.13.18.05/dynamic</i>  Then add a resource and add <i>DynamicRequests</i> to the Path field.

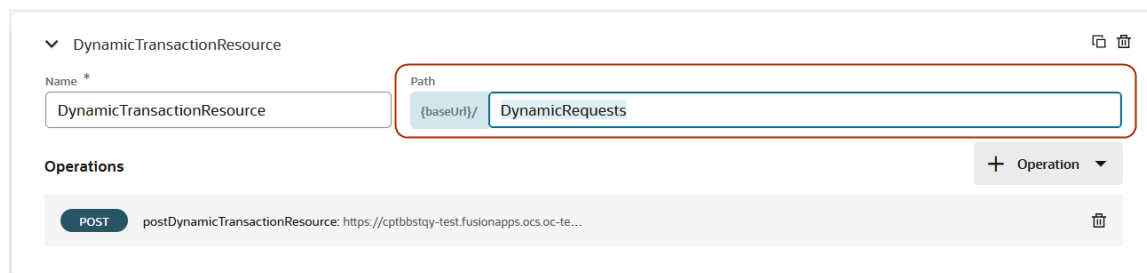
When configuring a delivered connector or a custom connector, and you are specifying the base URL, adding the API endpoint to the base URL isn't recommended. Add the endpoint to the path at either the resource level or the operation level.

OCI Process Automation adds a slash to the base URL automatically, which can cause issues with any additional URL items, such as query parameters. This applies to any endpoint but is always the case with the *DynamicRequests* end point, which doesn't support slashes.

For example, when defining the base URL, don't add the endpoint directly to the base URL path, like *DynamicRequests* in the following example:

*https://xxxxxxx.com:443/fscmRestApi/pscresources/11.13.18.05/dynamic/DynamicRequests*

Instead, add a resource to the connector, and add the endpoint URL to **Path** field for the resource or to the operation(s) within the resource. For example:



4. Click **Create**.
5. Click Edit to display the Configuration section.
6. On the General tab, make sure the base URL is correct.
7. Select the Security icon, and enter the proxy user created to access the Oracle Permitting and Licensing data.

Select either *OAuth* or *Global Credential*, the recommend options. For more information on the proxy user and credentials, see [Setting Up OCI Process Automation Proxy User](#).

8. Select the Visibility tab and choose how you want the integration to appear.

*Show operations* is recommended.

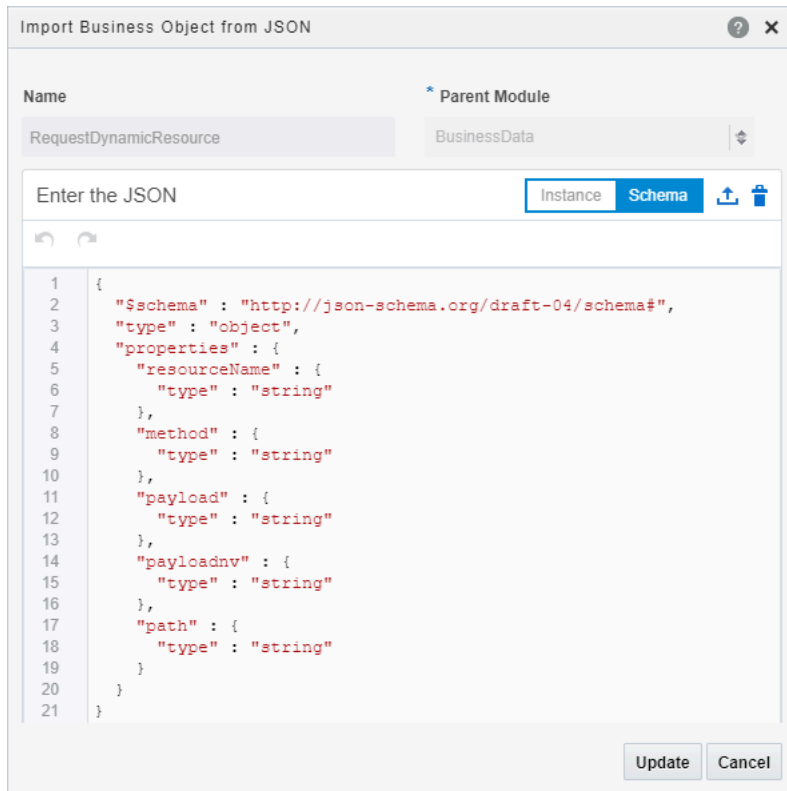
9. In the Resources box, click **Add**.

10. Enter these values for the resource.

Page Element	Value
Name	<i>DynamicTransactionResource</i>
{baseUrl}	Blank

11. At the top of the Operations grid, click **Add**, and select *POST operation*.
12. Select the row for the *postDynamicTransactionResource* operation.
13. In the Resources > Resource box, scroll to the Request/Response area, the Request button will already be selected. Click the plus sign (Create a business object).
14. In the Import Business Object from JSON dialog box, enter these values and click **Import**:

This example illustrates adding the JSON payload for the Sandbox Connector. Details are in the surrounding text.



Page Element	Value
Name	<i>RequestDynamicResource</i>
JSON	Select <b>Schema</b> and add the following JSON.

Page Element	Value
	<pre> {   "\$schema" : "http://json-schema.org/draft-04/schema#",   "type" : "object",   "properties" : {     "resourceName" : {       "type" : "string"     },     "method" : {       "type" : "string"     },     "payload" : {       "type" : "string"     },     "payloadnv" : {       "type" : "string"     },     "path" : {       "type" : "string"     }   } }                 </pre>

15. Click the **Response** button, and from the **Body** drop-down list, select *BusinessData.ResponseTransactionData*.
16. Click **Apply** to save your changes.

## Update the Process Definition

In this task you will update:

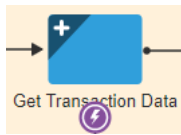
- All calls from the `getTransactionData` and `patchTransactionStatus` operations of the Transaction Connector have to include the `postDynamicTransactionData` operation of the Sandbox Connector.
- All corresponding data associations.

To update `getTransactionData` calls:

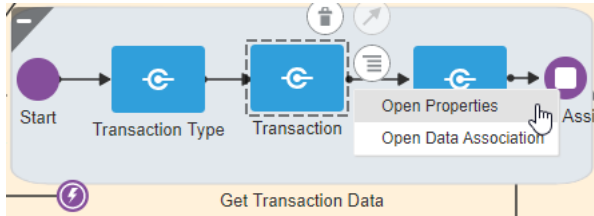
1. Select Processes in the left-hand navigation to display the process.

- Expand the Get Transaction Data node in the process definition, select the transaction data node, and select Open Properties.

This example illustrates a collapsed process definition node. Details are in the surrounding text.



This example illustrates an expanded process definition node. Details are in the surrounding text.



**Note:** This node can have other names, such as Get Application, Get Permit Data, and so on. It is typically the first system task in the process definition, where the process definition gets the required initial data, including transaction type, transaction data, and so on.

- From the **Type** drop-down list, select *Service Call*, and click the Configure button.
- On the Configure dialog box, click the search icon for the **Integration** field, and select *SandboxConnector*.
- With *SandboxConnector* displayed in the **Integration** field, update these values, and click **OK**:

Page Element	Value
Resource	<i>DynamicTransactionResource</i>
Operation	<i>postDynamicTransactionResource</i>

- Return to the process definition by collapsing the properties pane, select the same node you selected in the steps above, and this time select *Open Data Associations*.

**Note:** You may notice warning text referring to undefined variables, which is what you will resolve in the following step.

- On the Data Association page, make sure the Input tab is selected, and for the field that reads New Association, enter “GET” and then update the data associations accordingly:

This example illustrates how to map data associations for process definitions. Details are in the surrounding text.



Page Element	Value
<i>transaction.resourceName</i>	<i>body.resourceName</i>
<i>transaction.transactionKey</i>	<i>body.path</i>
<i>"GET"</i>	<i>body.method</i>

- Select the Output tab and add these values:

Page Element	Value
<i>bodyOutput</i>	<i>transactionData</i>

- Repeat these steps for all calls to the `getTransactionData` in the process definition.

To update `patchTransactionStatus` calls:

- Use same steps above for updating the properties and data associations.
- Enter these input data associations:

Page Element	Value
<i>transaction.resourceName</i>	<i>body.resourceName</i>
<i>transaction.transactionKey</i>	<i>body.path</i>

Page Element	Value
"Status:Accepted"	body.payloadnv
"PATCH"	body.method

3. Enter these output data associations:

Page Element	Value
bodyOutput	transactionData

Use the

## Integration JSON Payload Attributes

The integration requires a POST operation request from the OCI Process Automation process definitions.

The payload attributes are:

Attribute	Description
<b>resourceName</b>	Dynamic resource name, such as the permit type.
<b>method</b>	REST method for the dynamic resource, such as GET, POST, PATCH.
<b>path</b>	To access a specific row and child rows of the dynamic resource.
<b>payload</b>	Standard REST payload to pass to POST/PATCH requests. Use either <b>payload</b> or <b>payloadnv</b> .
<b>payloadnv</b>	Comma delimited key value pairs to pass to the POST/PATCH request. Use either <b>payload</b> or <b>payloadnv</b> .
<b>sandbox</b>	Optional property if the sandbox context is needed. By default it is true, which means the sandbox exists for the resource. The integration always gives the sandbox context by default unless this property is set to "N".

## Setting Up Process Definitions for Workflow

Workflow manages status updates throughout the transaction lifecycle and is an essential part of your setup. This topic provides information for creating your workflow process definitions.

**Note:** Currently, in the context of data object parameters, data association parameters, and REST resource attributes, the terms *record*, *transaction*, and *permit*, *business license*, or *planning application* are interchangeable. The abbreviation *trans* is often used to represent *transaction*.

### Setting Up Data Objects for a Process

Data objects provide a structure for storing data sent from the Oracle Permitting and Licensing system. Every process definition that you create needs the same data objects, including:

- Simple string data definitions to store identifying information about the transaction and transaction type.
- Business object data definitions to store transaction base data, field data, and transaction type data.

The data definition for fields includes *all possible* fields that can be added to an intake form, even though the transaction may use only a subset of fields that are appropriate for the type of transaction. Any fields that are not part of a specific transaction type remain blank when the workflow process retrieves the field data.

You must set up your data objects before you continue to this topic’s additional procedures for defining data associations.

**Note:** Before you set up your data objects, you need to set up the transaction connector for the application. This is because the transaction connector’s GET operations provide the underlying schema for the data. Setting up the transaction connector is described in the topic *Setting Up the Transactions Connector*.

To set up data objects for a process definition:

1. Access the process definition in OCI Process Automation.
2. Click **Data Objects**.
3. Set up the data definition for transaction base data:
  - a. In the Data Objects window, click **Add**.
  - b. In the Create Process Data Object window, enter the following information:

Page Element	Value
<b>Name</b>	<i>transactionBaseData</i>
<b>Data Type</b>	<i>Business</i>
The drop-down list for data types	<i>BusinessData.ResponseTransBase</i>

- c. Click **Create** to create the data definition and return to the Data Objects window.
- 4. Set up the data definition for transaction field data:
  - a. Click **Add**.
  - b. Enter the following information:

Page Element	Value
<b>Name</b>	<i>transactionFieldsData</i>
<b>Data Type</b>	<i>Business</i>
The drop-down list for data types	<i>BusinessData.ResponseTransFields</i>

- c. Click **Create**.
- 5. Set up the data definition for transaction type data:
  - a. Click **Add**.
  - b. Enter the following information:

Page Element	Value
<b>Name</b>	<i>transactionTypeData</i>
<b>Data Type</b>	<i>Business</i>
The drop-down list for data types	<i>BusinessData.ResponseTransType</i>

- c. Click **Create**.
- 6. Click **Close** to close the Data Objects window.
- 7. Click **Save**.

## Creating a Data Object to Store Start Event Arguments

In the next task you will define the start arguments for the Start event. In this procedure, you create the structure to store the arguments.

This procedure involves:

- Creating a business type using the business object option.
- Creating a data object and associating it with the business object.

To create the data object for start event arguments:

1. Open the process definition.

2. Select Business Types from the left panel.
  - Note:** Notice the other business types created automatically when importing the downloaded JSON, such as ResponseTransactionData.
3. Click **Edit** in the header, which causes the **Create** button to appear.
4. Click **Create**, and select *New Business Object*.
5. On the Create Business Object dialog box, enter the business object name, such as *InitTransaction*, and select the Parent Module as *BusinessData*.
6. Click **Next**.
7. Use the **Add Attribute** button to add these string data types to the business object.

Attribute Name	Data Type
<i>transactionKey</i>	<i>String</i>
<i>transactionType</i>	<i>String</i>
<i>externalBaseURL</i>	<i>String</i>
<i>resourceName</i>	<i>String</i>
<i>transactionOwner</i>	<i>String</i>
<i>transactionId</i>	<i>String</i>
<i>classification</i>	<i>String</i>
<i>subclassification</i>	<i>String</i>

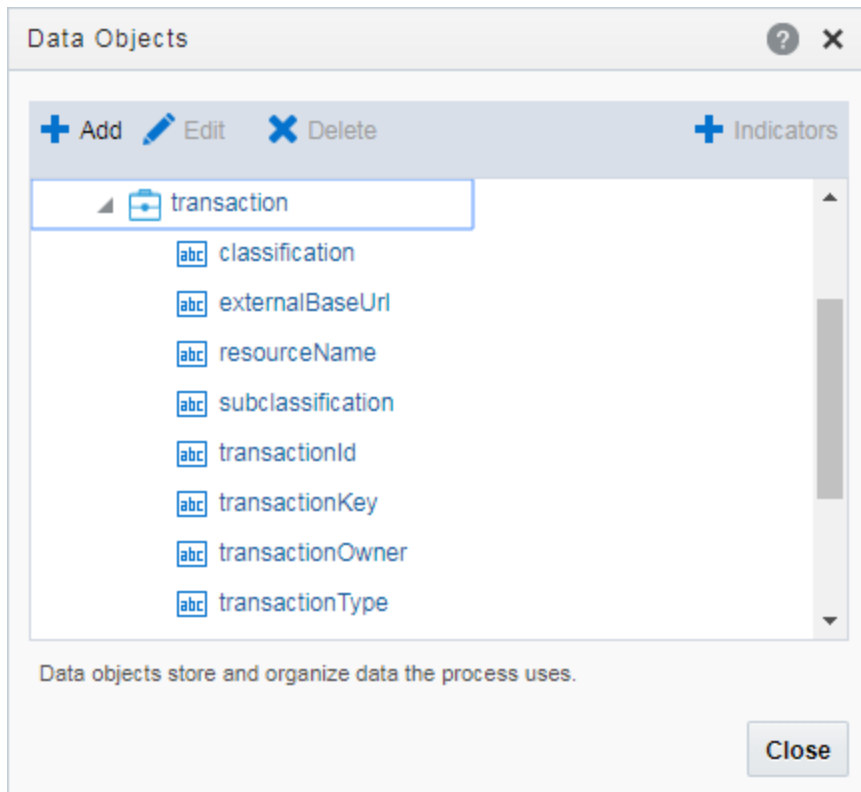
8. Click **Finish**.
9. Return to your process definition diagram.
10. Click the **Data Objects** button.
11. Click **Add**.
12. On the Create Process Data Object dialog box, make these changes:

Field	Value
<b>Name</b>	<i>transaction</i>
<b>Data Type</b>	<i>Business</i>
drop-down list	<i>BusinessData.InitTransaction</i>

Field	Value

13. Click **Create**.

This example illustrates the expanded transaction business data object, with the required string data within it.



## Defining Arguments for the Start Event

When a transaction, such as a permit intake application, is submitted, the software instantiates that transaction’s workflow process by passing parameters, such as the transaction ID, to OCI Process Automation. The Start event in your process diagram must have arguments defined for these parameters.

To set up the arguments for the start event:

1. Select the Start event in the process definition.
2. Click the Start event, and select *Open Properties*.

The default view is the General section of the Implementation Properties.

3. In the **How do you want to implement it?** section, select *Define Interface* as the **Type**.
4. Click the pencil icon next to the **Type** field to open the Configure window.
5. Enter an operation name, such as *start*.

**6. Add the following rows to the Arguments Definition.**

- a. Use the **Add** button to add these strings using the values in this table, where each row represents a separate argument you need to create:

Name	Type
<i>TransactionKey</i>	<i>string</i>
<i>TransactionType</i>	<i>string</i>
<i>ExternalBaseURL</i>	<i>string</i>
<i>ResourceName</i>	<i>string</i>
<i>TransactionOwner</i>	<i>string</i>
<i>TransactionId</i>	<i>string</i>
<i>Classification</i>	<i>string</i>
<i>Subclassification</i>	<i>string</i>

**Note:** Arguments added to the Start event must be named *exactly* as documented.

**Note:** You need to complete the output data association if you want the argument values stored in a Data Object.

- b. Click **OK**.

**7. Close the properties panel and click Save.**

## Defining Data Associations for the Start Event

The data associations for the Start event capture identifying information about the transaction for initiating the process instance.

In this task, you map the arguments for the Start event to the data object values you entered for the *transaction* object.

To set up the data associations:

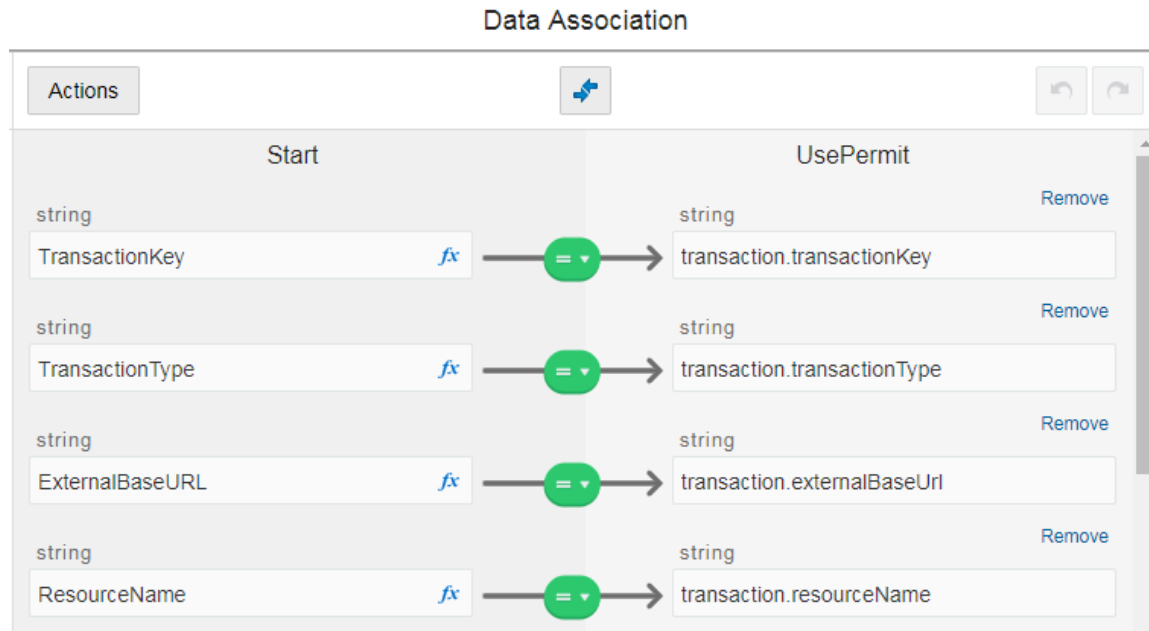
1. Open the process definition and select the Start event.
2. Click the **Data Association** button.

3. Set up the following data associations, mapping the Start event arguments to the appropriate attributes in transaction business object.

Source Data (Left side of the map)	Target Data (Right side of the map)	Description
<i>TransactionKey</i>	<i>transaction.transactionKey</i>	The transaction ID.
<i>TransactionType</i>	<i>transaction.transactionType</i>	The transaction type ID.
<i>ExternalBaseURL</i>	<i>transaction.externalBaseURL</i>	The URL for the Oracle Permitting and Licensing system.
<i>ResourceName</i>	<i>transaction.resourceName</i>	The name of the REST API resource.
<i>TransactionOwner</i>	<i>transaction.transactionOwner</i>	The owner of the transaction.
<i>TransactionId</i>	<i>transaction.transactionId</i>	The transaction ID.
<i>Classification</i>	<i>transaction.classification</i>	The classification of the transaction.
<i>Subclassification</i>	<i>transaction.subClassification</i>	The subclassification of the transaction.

Source Data (Left side of the map)	Target Data (Right side of the map)	Description

This example illustrates mapping the Start event arguments to the associated data attributes in the transaction business object.



4. Click **Apply**.
5. Click **Save**.

## Defining Data Associations for Sending Notifications

The data associations for a notification task define the information that the task sends to the public sector communications center.

**Note:** Create your email templates in the communications center before you set up integration for notification workflow tasks.

For more information about the communications center, see [Setting Up Communication Templates](#).

To set up the data associations:

1. Access the process definition and select the system task.
2. Click the **Data Association** button.

3. Set up the following input data associations:

Source Data (Left side of the map)	Target Data (Right side of the map)	Description
[event name]  For example, "LNP_WORKFLOW_001"	<i>body.eventCode</i>	<p>The event as defined in the Communications Framework.</p> <p><b>Note:</b> If you have configured the communications connector to call Business Rules Framework to send communications depending on a business rule, the event code refers to the Business Rules Framework event code for the event containing your business rule.</p> <p>The source data string must be in quotation marks, and it must exactly match the identifier of an event.</p> <p>Oracle delivers these communication events, &lt;Offering&gt;_WORKFLOW_001 through &lt;Offering&gt;_WORKFLOW_005. Where "Offering" refers to your offering code, such as LNP for Permits or PNZ for Planning and Zoning.</p>
[template name]  For example, "Application_Accepted"	<i>body.templateCode</i>	<p>The identifier for the template to be used for the email.</p> <p>The source data string must be in quotation marks, and it must exactly match the name of a template in the transaction application.</p>
"LnpRecordKey"	<i>body.recordFirstKeyName</i>	The name of the key field.
<i>transaction.transactionKey</i>	<i>body.recordFirstKeyValue</i>	The transaction ID.
<i>true or false</i>	<i>body.email</i>	<p>This Boolean field indicates whether the notification is sent as an email.</p> <p>Enter <i>true</i> only if the template is an email template.</p>
<i>true or false</i>	<i>body.notification</i>	This Boolean field indicates whether the notification is sent as an in-product notification.

Source Data (Left side of the map)	Target Data (Right side of the map)	Description
		. Enter <i>true</i> only if the template is an in-product notification template.

**CAUTION:** Templates are associated with either email or in-system notifications. Be sure to set up the `body.email` and `body.notification` values properly. Exactly one of the values must be true. If you want to send both types of notifications, you need to create two notification tasks.

4. Click **Apply**.
5. Click **Save**.

## Defining Data Associations for Sending Status Updates

The data associations for a status update task define the information that the task sends to the Oracle Permitting and Licensing system.

To set up the data associations:

1. Access the process definition and select the system task that updates the transaction status.
2. Click the **Data Association** button.
3. Set up the following input data associations:

Source Data (Left side of the map)	Target Data (Right side of the map)	Description
<i>transaction.resourceName</i>	<i>resourceName</i>	The unique system identifier for the transaction type.
<i>transaction.transactionKey</i>	<i>transactionKey</i>	The transaction ID
[new transaction status]  For example: "Accepted"	<i>body.status</i>	The status to be assigned to the transaction.  The source data string must be in quotation marks, and it must exactly match one of the valid statuses for the transaction application.

4. Click **Apply**.
5. Click **Save**.

## Defining Data Associations for Retrieving Transaction Base Data

The data associations for a task that retrieves transaction base data provides a structure for storing the retrieved data. In this task you create both input and output data associations.

To set up the data associations:

1. Access the process definition, and select the system task that retrieves transaction base data.
2. Click the **Data Association** button.
3. Set up the following input data associations:

Source Data (Left side of the map)	Target Data (Right side of the map)	Description
<i>transaction.resourceName</i>	<i>Resource</i>	The unique system identifier for the transaction type.
<i>transaction.transactionKey</i>	<i>TransactionKey</i>	The transaction ID

4. Click **Output**.
5. Set up the following output data associations:

Source Data (Left side of the map)	Target Data (Right side of the map)	Description
<i>body</i>	<i>BaseData</i>	This business object contains all of the base data.  Mapping individual fields would be much more complex and is not necessary.

6. Click **Apply**.
7. Click **Save**.

## Defining Data Associations for Retrieving Transaction Field Data

The data associations for a task that retrieves transaction field data provides a structure for storing the retrieved data. In this task you create both input and output data associations.

To set up the data associations:

1. Access the process definition, and select the system task that retrieves transaction field data.
2. Click the **Data Association** button.
3. Set up the following input data associations:

Source Data (Left side of the map)	Target Data (Right side of the map)	Description
<i>transaction.resourceName</i>	<i>transactionResource</i>	The unique system identifier for the transaction type.
<i>transaction.transactionKey</i>	<i>TransactionKey</i>	The transaction ID.

Source Data (Left side of the map)	Target Data (Right side of the map)	Description

- Click **Output**.
- Set up the following output data associations:

Source Data (Left side of the map)	Target Data (Right side of the map)	Description
<i>body</i>	<i>transactionFieldsData</i>	<p>This business object contains all of the transaction fields. This includes all fields that can be included on the application intake form, whether or not the field exists for a specific transaction.</p> <p>Individual fields are nested within the <i>items</i> object. You can't expand the <i>items</i> object on this page, but they are available in the expression editor that you use when creating business logic based on transaction data.</p> <p>Mapping individual fields would be much more complex and is not necessary.</p>

- Click **Apply**.
- Click **Save**.

## Defining Data Associations for Retrieving Transaction Type Data

The data associations for a task that retrieves transaction type data provides a structure for storing the retrieved data. In this task you create both input and output data associations.

To set up the data associations:

- Access the process definition, and select the system task that retrieves transaction type data.
- Click the **Data Association** button.
- Set up the following input data associations:

Source Data (Left side of the map)	Target Data (Right side of the map)	Description
<i>transaction.resourceName</i>	<i>transactionResource</i>	The unique system identifier for the transaction type.

- Click **Output**.
- Set up the following output data associations:

Source Data (Left side of the map)	Target Data (Right side of the map)	Description
<i>body</i>	<i>transactionTypeData</i>	This business object contains all transaction type fields.

6. Click **Apply**.
7. Click **Save**.

## Defining Statuses (Outcomes) for Human Tasks

The **Action** property for a human task lists the possible outcomes of the task. The actions you define appear as values in the **Task Status** drop-down list box on the Workflow page where agency staff manages workflow tasks. When the task status is updated on the Workflow page, OCI Process Automation recognizes it as the task outcome and continues to the next step or gateway.

To define status values representing the outcomes of human tasks:

1. Access the process definition and select the human task.
2. Open the task properties.
3. In the **Action** field, enter a comma-delimited list of status values.  
Do not put a space before or after the comma. For example, if the status are *Accept*, *Reject*, and *More Information*, enter *Accept,Reject,More Information* in the **Action** field.
4. Close the properties window and save.

## Defining Conditional Logic for Gateways

In a process map, gateways represent decision points where there is a branch in the process flow. The logic for taking different paths after the gateway is associated with the arrows to the possible subsequent tasks.

An arrow that represents a default branch does not require any logic.

For all other arrows, you need to set up the conditions under which the branch is used. To do this:

1. Access the process definition and select the arrow.
2. Click the pencil icon for the arrow to open the arrow properties.
3. Select the **Conditional Flow** checkbox.  
This checkbox is selected for all arrows other than the default arrow after a gateway.
4. Click the pencil icon for the **Condition** field.
5. Use the Expression Editor window to specify the conditions for using this branch.

The Data Objects tab provides access to the data elements that you can evaluate. Transaction field data (the data from the intake form) is nested within the *items* element under *TransactionFieldsData*.

In expressions that look for an exact match, take extra care with the spelling, capitalization, and punctuation of values that the expression evaluates.

6. Select the gateway and open the gateway properties.
7. Use the **Order** property to specify the order in which the previous task's outcomes are evaluated for purposes of determining which arrow to follow.

## Configuring a Planning and Zoning Human Task to Reference the Assigned Planner Value

If you want to assign the user to a human task, you need to have first setup the Transaction Connector to use the `getTransactionAssignee` operation.

For more information on setting up the Transaction Connector, see [Setting Up the Transactions Connector](#).

To associate the transaction assignee data to your workflow process:

1. When configuring the workflow process data object, create a data object to store the output of the service call to `getTransactionAssignee`.
2. Locate the first human task in the process after the service call (Start event), and open the Data Association interface.
3. On the Input Data Association, map the assignee data object to `execData.customAttributes.customAttributeString1`.

4. For subsequent human task to which you want to reference the assigned planner, set the Assignee(s) value in the General Properties to `customAttributes.customAttributeString1`.
  - a. Open the properties for the human task.
  - b. Select Implementation > General.
  - c. Click the Edit icon for the Assignee(s) field.
  - d. Select *Names and Expressions* in the **Build a list of participants using** list.
  - e. Click Add for the List Assignees edit box.,
  - f. Select *Add User*.
  - g. Click in the Data Type column, and select *By Expression*.
  - h. Click the **fx** button in the Value column, and select `customAttributes.customAttributeString1`.
  - i. Click **OK**.

This example illustrates the settings on the List assignees who receive the task window.

List assignees who receive the task

**Build a list of participants using:** Names and Expressions

*List the people that will be able to take action on the task*

**Exclude the Following Participants**

Creator *the user who started the process*

Previous Participants *users who have already acted within this task instance*

Expression  fx

**List Assignees** + ×

Participant Type	Data Type	Value
User	By Expre:	customAttributes.customAttri <span style="border: 1px solid #ccc; padding: 2px;">fx</span>

OK

5. Click **Save**.

## Implementing the Expiration Feature

If you are implementing the expiration feature for Permits or Planning and Zoning, you need to add these system tasks to the workflow process definition in Oracle Integration Cloud:

System Task	Description
Accepted	Updates the transaction status to <i>Accepted</i> . This task should be placed early in the process flow.
Completed	Updates the transaction status to <i>Completed</i> or <i>Certified</i> . This task should be placed at the end of the process flow.

## Using Custom Properties

When you set up workflow, a variety of custom properties are available for implementing various features. This topic describes how to use the custom properties.

### Making Custom Properties Available in a Process Definition

The sample definitions provided in the solution package come with custom properties already added. If you are adding custom properties to a custom definition, follow these steps.

To add a custom property to a process definition:

1. Access the Custom Properties dialog box using either of these ways.
  - o Open a process definition and click the Custom Properties icon on the right toolbar.
  - o Open a process definition, select a task, click the Custom Properties icon on the right toolbar, and click **Add custom property**.
2. Enter the property information in the **Property Name** and **Description** fields in the Custom Properties list:

**Note:** You must use the *exact* property names as they appear in the following section. You can provide your own descriptions.

3. Click **OK**.
4. Click **Save**.

### Custom Properties

These custom properties are available for Oracle Permitting and Licensing process definitions.

Property	Usage
PSC_LIST_ORDER	<p>Use this property to set the order for human tasks when there are multiple possible paths through the process definition.</p> <p>The order does not affect the workflow process, but it allows users to see the possible future workflow tasks in a logical order. Enter an integer value to indicate the sequence.</p> <p>For example: 2</p> <p>The Workflow page for a transaction includes an option to view a list of all past, present, and not started human tasks for the permit. The list displays past and present tasks in chronological order. However, the chronology for tasks that haven't been started is not necessarily fixed. The branching logic in a process means that some tasks might be omitted or might occur in a different order depending on permit data or on the outcome of previous tasks.</p> <p>To control the order in which not started human tasks appear, use the PSC_LIST_ORDER custom property. On the Workflow page's list view, tasks that have not yet started are listed in the order you specify. If multiple not started tasks have the same number, they appear in the list in random order.</p>
PSC_FINAL_ACTIVITY	<p>Use this property to identify a human task that isn't allowed to progress when the transaction has a condition that applies the <i>Prevent Issue or Final</i> condition rule.</p> <p>Typically, this property is used to identify the final human task in the process definition.</p> <p>You can also use this property on the human task for issuing an application to prevent the application issuance.</p> <p>Yes identifies the final activity.</p> <p>A blank value or a <i>No</i> value means the <i>Prevent Issue Final</i> or condition rule won't be checked.</p> <p>See <a href="#">Setting Up Conditions</a> and <a href="#">Working with Application Conditions</a> or <a href="#">Applying Conditions to Licenses</a>.</p> <p>For information about using this property for required documents, see the section, "Custom Properties for Required Documents," in this topic.</p>
PSC_ACTIVITY_TYPE	<p>Use this property to identify the final inspection task in the process. Setting this property is necessary to support the transaction business logic that auto-advances the inspection task when the last inspection is closed.</p> <p><i>Inspection</i> is the only value with related business logic.</p> <p>Leave this property blank for other types of activities.</p> <p>Permit processing includes logic to automatically progress past the final inspection step in the process definition when permit inspections are complete. To enable this functionality, you must identify the final inspection task in the process definition using the PSC_ACTIVITY_TYPE custom property. Further, you must identify the workflow action to apply to that task using the PSC_AUTO_UPDATE_ACTION custom property.</p> <p>This property is also used for plan review completion, planning activities, and assigning or reassigning planners.</p> <p>For information about using this property for required documents, see the section, "Custom Properties for Required Documents," in this topic.</p> <p>The value entered for the Assign Planner task should match what's entered on the Update Workflow action in the Business Rules Framework rule.</p>
PSC_AUTO_UPDATE_ACTION	<p>Use this property to identify the action to take when auto-advancing a task in a process.</p>

Property	Usage
	<p>Setting this property is necessary to support the transaction business logic that auto-advances the inspection task when the last inspection is closed. It's also used to auto-advance an assigned planner.</p> <p>Use the exact action name as specified in the Action property for the human task. Take extra care with the spelling, capitalization, and punctuation of the action name.</p> <p>For example: <i>Approve</i> or <i>Assign Planner</i>.</p> <p><b>Note:</b> Security roles related to the Mobile Inspector app and the Plan Reviewer should be included in the task swimlane mapping.</p>
PSC_UNRESTRICTED_ACTIONS	<p>Identifies actions that can be taken for the task even if there is logic preventing the task from advancing.</p> <p>Use this property when the task includes possible outcomes that return to a previous task rather than advancing.</p> <p>For example, if the final inspection can be advanced with an action of "Approve" or returned with an action of "Needs More Information," then use the PSC_UNRESTRICTED_ACTIONS property to make "Needs More Information" an unrestricted action. This allows users to take the "Needs More Information" action, even though the logic that prevents the final inspection task from advancing disallows other actions.</p> <p>When there are multiple unrestricted actions, separate the actions with commas but no spaces. This is the same format used in the Actions property where you define all of the available actions for a human task.</p> <p>For example: <i>Needs more Info, Proceed, OK</i></p>
PSC_MIGRATION_TASK	<p>Use this property to map the transaction statuses of your migrated legacy data to the correct Oracle Permitting and Licensing workflow user tasks. You must set this property for your process definition workflow user tasks before running the Prepare Migrated Data for PSCR process.</p> <p>See <a href="#">Generating Workflow Status for Migrated Transactions</a>.</p> <p>The status of the migrated legacy transaction.</p> <p>For example: <i>SUB</i></p>
PSC_REQUEST_ACCEPT_INFO_HIDE	<p>Use this property on human tasks to hide the Request Details button on the two-panel workflow tab in the transaction details pages. Setting the value to <i>True</i> or <i>TRUE</i> hides both the Request Details button and the Accept Info button.</p> <p>Example:</p> <p><i>True</i></p> <p>For more information on the Request Details button and Accept Info button see <a href="#">Using Workflow</a>.</p>
PSC_REQUEST_INFO_LABEL	<p>Use this property on human tasks to provide a custom label for the <b>Request Info</b> button that appears by default on the two-panel workflow tab in the transaction details pages.</p> <p>Example:</p> <p><i>Request Details</i></p>

Property	Usage
	<p><b>Note:</b>                      You can request more information at different stages of the workflow by configuring the <b>Request Info</b> drop-down list with various options. When the drop-down list is configured, you cannot customize the <b>Request Info</b> label. You will also have an option of sending an e-mail to interested parties for more information.</p> <p>To enable the drop-down list, you need to provide the menu items for the list, and whether the email option will be enabled. Use the following syntax:                      (&lt;menu item&gt;, ENABLE_COMM/DISABLE_COM)</p> <p>Where ENABLE_COMM enables the email communication to be invoked, and DISABLE_COM does not display the email option.</p> <p>For example:                      (Pending Deposit, ENABLE_COMM),(Missing Details, DISABLE_COMM),(Revision Required, DISABLE_COMM)</p>
PSC_ACCEPT_INFO_LABEL	<p>Use this property on human tasks to provide a custom label for the <b>Accept Info</b> button that appears by default on the two-panel workflow tab in the transaction details pages.</p> <p>Example:  <i>Accept Details</i></p> <p><b>Note:</b>                      After you configure the <b>Request Info</b> and <b>Accept Info</b>ed only when the information is accepted using the <b>Accept Info</b> option. When the drop-list is enabled, you cannot customize the <b>Accept Info</b> label. You will also have an option of sending an e-mail to interested parties for more information.</p> <p>To enable the drop-down list, you need to provide the menu items for the list, and whether the email option will be enabled. Use the following syntax:                      (&lt;menu item&gt;, ENABLE_COMM/DISABLE_COM)</p> <p>For example:                      (Deposit Received, ENABLE_COMM), (Details Received, DISABLE_COMM) , (Revision Complete, DISABLE_COMM)</p>
PSC_WFACTION_COMMENT	<p>Set this for any human task in the process definition.</p> <p>This property enables you to control whether comments are required when updating the <b>Status</b> drop-down list for a human task on the Workflow tab of the transaction details.</p> <p><b>Note:</b>                      The <b>Status</b> drop-down list is populated by the <b>Action</b> field in the General properties of a human task.</p> <p>Options are:</p> <ul style="list-style-type: none"> <li>• <b>MANDATORY:</b> Any status update requires a comment to be entered.</li> <li>• <b>OPTIONAL:</b> A comment can be added if desired but not required for any status update.</li> </ul>

Property	Usage
	<ul style="list-style-type: none"> <li><i>SELECTIVE</i>: A comment is required for one or more particular status values. For example, if you only want to require a comment when the task status has been set to <i>Reject</i> to explain why the application did not meet requirements. You specify the status values requiring a comment using the <code>PSC_WFACTION_SELECTIVE</code> property.</li> </ul>
<code>PSC_WFACTION_SELECTIVE</code>	<p>Set this for any workflow human task in the process definition where the <code>PSC_WFACTION_COMMENT</code> property has been set to <i>SELECTIVE</i>.</p> <p>Add status value(s) for the selected workflow task where you want the agency user to provide a comment. When the specified task status value is selected, a comment becomes required.</p> <p>If there are multiple statuses for which you want to require a comment, enter a comma-separated list. For example:</p> <p><i>Reject,Requires More Information</i></p>
<code>PSC_BRF_EVENT_CODE</code>	<p>Specify the event code for the Business Rules Framework event to call for validating the transaction information to ensure that all requirements are met for the workflow process to advance to the next task or to trigger other business rule actions for that event. For example, include the event code for the event where the business rule triggering a Stop Process action determines if a permit or business license should be issued.</p> <p>The event codes for the permit and business license issuance events are:</p> <ul style="list-style-type: none"> <li><i>Before Permit Issuance</i> (LNP-BEFORE-ISSUANCE)</li> <li><i>Before Business License Issuance</i> (BL-BEFORE-ISSUANCE)</li> </ul>
<code>PSC_BRF_ALL_WF_ACTIONS</code>	<p>When you specify <code>PSC_BRF_EVENT_CODE</code>, <code>PSC_BRF_ALL_WF_ACTIONS</code> determines whether to invoke the Business Rule Framework event in all situations or selected. Enter values <i>Yes</i> or <i>No</i>.</p> <ul style="list-style-type: none"> <li><i>Yes</i>: to invoke for all workflow actions (the default).</li> <li><i>No</i>: to invoke only if the workflow status isn't listed in the <code>PSC_UNRESTRICTED_ACTIONS</code> custom property.</li> </ul>
<code>PSC_ALTERWF_OPT</code>	<p>Enables a workflow task to be available to be selected during the alter workflow process.</p> <p>For more information on this option see, <a href="#">Enabling Tasks for Altering Workflow and Reopening Applications</a></p>
<code>PSC_REOPENWF_OPT</code>	<p>Enables a workflow task to be available to be selected during the reopen application process.</p> <p>For more information on this option see, <a href="#">Enabling Tasks for Altering Workflow and Reopening Applications</a></p>

## Custom Properties for Required Documents

Agencies can set up business license, permit, and planning applications to require documents at different steps throughout the application process. To enable validations of required documents at the Application Acceptance, Application Issuance, and Application Completion workflow tasks, use the custom properties as described here. For more information about settings to enforce document requirements, see [Setting Up Required Documents](#).

Example Workflow Task	PSC_ACTIVITY_TYPE	PSC_FINAL_ACTIVITY
Application Acceptance	<i>Accept Application</i>	Yes or No
Application Issuance	<i>Issue</i>	Yes or No
Application Completion	Enter any value.	Yes

## Mapping Workflow Swimlanes to Roles

This topic describes how to assign security roles to the swimlanes in your workflow process definition.

In workflow process definitions, swimlanes represent roles. The swimlanes are the horizontal rows in your diagram indicating which user is responder for various tasks. After the OCI Process Automation application containing the process definition is activated, use the Roles functionality in OCI Process Automation to map the swimlanes to roles. The mapping applies to all process definitions within the OCI Process Automation application. In a typical configuration, each swimlane is mapped to a role.

A swimlane is typically associated with security roles, and it can be associated with multiple roles if needed. It can also be associated with one or more individual users if that approach is more applicable. A swimlane determines who is responsible for carrying out a task.

For example, if a swimlane is for plan review, you would add the PSC Plan Reviewer role to that swimlane. Likewise, if another swimlane is for inspecting, you would add all the roles that apply to that swimlane, such as PSC Building Inspector and any roles related to the Mobile Inspector app.

**Note:** When supervisors assign or reassign tasks, they can only assign the task to agency staff associated with security roles that are assigned to the swimlane in the underlying workflow process definition. The swimlane that contains the Start event node needs to be mapped to the PSCR Submitter Group. The procedure below uses that scenario as an example to illustrate the process used to map a security role to a swimlane.

**Note:** If a task is calling the Business Rules Framework and a business rule includes an action to update workflow, then the swimlane the task resides in *must* be assigned the *PSCR Submitter Group* or an individual user associated with this group.

To map swimlanes to roles:

1. Access the Workspace area of OCI Process Automation by selecting *Workspace* from the Navigator menu.
2. In the Workspace, select *Roles* from the Navigator menu.
3. At the top of the work area, select *Application*, to display the roles (swimlanes) for the applications.
4. In the Scope column, locate your process application and view all the roles included in that application.

The *Process Owner* and *Process Reviewer* roles are part of all applications. They aren't specific to Oracle Permitting and Licensing functionality and you don't need to map roles to them. Other roles in the list for your application are the swimlanes in your process definitions. You will need to map the swimlane to an OPAL (PSCR) role (or *groups* as they are referred to in OCI Process Automation).

5. Add the delivered role *PSCR Submitter Group* to the swimlane that contains the Start event for your process model:
  - a. Select the swimlane that contains the Start task in your process definitions.  
 In the delivered Solution Packages that Oracle provides, this swimlane is labeled *Applicant*. This swimlane applies to the user submitting a transaction, such as a permit application.
  - b. In the **Add members to this role** list for the selected swimlane, select Groups in the **Search by** field.
  - c. In the dialog box for adding members, search by *Groups* for *PSCR Submitter Group*.  
 A group in OCI Process Automation is equivalent to a role in the Oracle Permitting and Licensing system.
  - d. In the search results, select *PSCR Submitter Group* and then click to assign the role to the swimlane and return to the list of swimlanes.
  - e. Expand the Permissions section, and confirm the Action column is set to *Manage*.
6. Click **Save**.
7. Repeat these steps for all required roles per swimlane.

For example, in addition to the PSCR Submitter Group being added to the swimlane with the Start event (Applicant), the following identify some samples of how other swimlanes might be mapped, depending on the offering and the process definition.

Offering	Swimlane Mapping
Permits	Applicant: <ul style="list-style-type: none"> <li>• PSCR Submitter Group (group)</li> <li>• PSCR Proxy User for OIC</li> </ul> Inspection Supervisor: <ul style="list-style-type: none"> <li>• PSC Inspections Supervisor (group)</li> <li>• PSC System Administrator (group)</li> </ul> Permit Technician: <ul style="list-style-type: none"> <li>• PSC Permit Technician (group)</li> <li>• PSC System Administrator (group)</li> </ul> Plan Review Coordinator: <ul style="list-style-type: none"> <li>• PSC Plan Reviewer (group)</li> <li>• PSC Planning Coordinator (group)</li> <li>• PSC System Administrator (group)</li> </ul>
Planning and Zoning	Applicant: <ul style="list-style-type: none"> <li>• PSCR Submitter Group (group)</li> <li>• PSCR Proxy User for OIC</li> </ul> Planning Assistant: <ul style="list-style-type: none"> <li>• PSCR Submitter Group (group)</li> <li>• PSC Planning Assistant (group)</li> <li>• PSC System Administrator (group)</li> </ul> Principal Planner:

Offering	Swimlane Mapping
	<ul style="list-style-type: none"> <li>• PSCR Submitter Group (group)</li> <li>• PSC Principal Planner (group)</li> <li>• PSC System Administrator (group)</li> </ul>

## Preparing the Process Definition for Use

This topic describes how to publish and activate the process definition so that it can be referenced and used for intake forms.

Preparing process definitions for use involves:

- Versions
- Activation
- Linking to a transaction type

### Working with Versions

Your first iteration of a process definition is version 1.0. After you activate that process definition, you would then need to create a new version explicitly before rolling out new changes. The new version would be 1.0, 2.0, or whatever your numbering scheme is at your agency. You can have numerous versions of an application in design mode if needed. You create a new version by clicking the version number for that process application to display a drop-down menu and clicking **New version**.

**Note:** The version you reference for your transaction type (such as in the Workflow Setup section on the Permit Type page) applies to all new submitted transactions, while the previous version will continue to apply to the transactions that were submitted while that version was referenced by the transaction type.

For more information on OCI Process Automation versions, see [Work with Versions](#).

When working with versions, keep these items in mind:

- Do not reuse the same version number used on a previous version of the process definition. If you reuse the same version number when you activate the application, *all open process instances* using that version will be terminated and sent to a status of *complete* regardless of where they actually are in the workflow. To prevent this, make sure to use a new version number for each newly activated version.
- When you activate and associate a new version number to a transaction type definition, such as a permit, only the transactions submitted *after* the new version of the workflow process definition has been applied can take advantage of the changes made in the newest version of the process definition. All in-process transactions continue to use the workflow process definition version number in place when those applications were submitted. For example, if you make a change to the role or user ID assigned to a swimlane in version 2 of a process definition, only the intake forms submitted *after* version 2 has been associated with the transaction type can take advantage of the swimlane assignment change. All intake forms currently being processed continue to use swimlane assignments defined in version 1 of that workflow process definition.

- Do not deactivate a previous version of a process definition because in-process transactions may still be using it.

## Activating Process Definitions

Activating an application makes any new or modified process definitions within that application available to associate with an intake form for a transaction type definition. When you've completed your changes to a version, click **Activate**.

For more information see [Activate Applications](#).

## Linking a Process to a Transaction Type

When an application has been published and activated, you can link it to a transaction type. On the transaction type page, such as the Permit Type page, use the Workflow Setup section to specify the workflow process definition to use for that transaction type. There you specify the:

- Application
- Version
- Process Definition

For more information, see:

- [Setting Up Permit Types](#)
- [Setting Up Planning Application Types](#)
- [Setting Up Business License Types](#)

## Monitoring Workflow Transactions

This topic describes how to use the Manage Process Instances page to resolve discrepancies between the Oracle Permitting and Licensing and OCI Process Automation.

## Working with Workflow Transaction Logs

During normal transaction processing, it's possible that either OCI Process Automation or Oracle Permitting and Licensing can become momentarily unresponsive. While a rare occurrence, you need to be able to resolve any transactions that occurred during the down time to make sure the workflow engine instance and your Oracle Permitting and Licensing offering are synchronized.

For example, if OCI Process Automation is unresponsive for a five minute period according to your system logs and notification system, you can use the Manage Process Instances page to isolate any transactions that occurred specifically during that time to make sure individual transaction statuses are in sync with the associated workflow process.

**Note:** In some cases, if OCI Process Automation is momentarily unavailable, a process instance won't be assigned to an application. In this situation, a background process periodically checks for missing process instances and assigns them accordingly. While the application has no process instance assigned, its status will be set to *Pending Submittal*. For more information on the Pending Submittal status see "Managing Application Activity" in [Managing Applications](#) and [Managing License Applications](#).

## Using the Manage Process Instances Page

Use the Manage Process Instances page to search for transactions created during a specific time range.

Access the Manage Process Instances page by selecting **Workflow and Transaction Log > Manage Process Instances**.

Page Element	Description
<b>Which system is restored</b>	<p>Select the system that was not available for a period of time and needed to be restored from a back up. Options are:</p> <ul style="list-style-type: none"> <li>• <i>PSCR</i>: Select if the Oracle Permitting and Licensing system was down.</li> <li>• <i>OIC</i>: Select if the Oracle Integration Cloud instance was down.</li> </ul> <p>If one of the systems is unavailable for a given period and needed to be restored, then the other system becomes the most current source of transaction status for any manual synchronization.</p>
<b>From/To</b>	Use the date/time controls to specify a time range for isolating the affected transactions. Click <b>OK</b> to run your search.
<b>Select Multiple</b>	<p>Enables you to select multiple rows of your returned search values.</p> <p><b>Note:</b> Currently, only active Code Enforcement processes enable the section of multiple items. Only those rows display a checkbox to select.</p>
<b>Mark Inconsistent</b>	<p>View by pressing the <b>Select Multiple</b> button. This applies only to active Code Enforcement transactions.</p> <p>Press to indicate the selected active transactions are inconsistent due to system downtime or outage.</p> <p>For the selected processes, a message appears on the Workflow tab letting the agency user know that a discrepancy needs to be resolved.</p> <p>A <b>Details</b> button will also appear on the Workflow tab for privileged users to click to display the Manage Process Instances page, which can be used to resolve the issue, such as by resubmitting, altering workflow, and so on.</p>
<b>Mark Resolved</b>	<p>View by pressing the <b>Select Multiple</b> button. This applies only to active Code Enforcement transactions.</p> <p>After a process has been marked as inconsistent, and later resolved, click <b>Mark Resolved</b> to indicate the process issue is taken care of. Doing so removes the inconsistent message on the Workflow page and the <b>Details</b> button.</p>
<b>Workflow Instance ID</b>	The workflow instance ID assigned for a specific transaction by the OCI Process Automation system when that transaction is submitted.
<b>Process Status</b>	The current status of the process, such as <i>CANCELLED</i> , <i>OPEN</i> , <i>COMPLETED</i> , and so on.
<b>Transaction</b>	The unique ID of a specific submitted transaction, which is comprised of the topic type and the auto number rule.

Page Element	Description
<b>Transaction Status</b>	The current status of the individual transaction according to the corresponding workflow process definition, such as <i>Submitted</i> , <i>Inspection</i> , <i>Plan Review</i> , and so on.
<b>Process Definition</b>	The workflow process definition in OCI Process Automation to which the specific transaction is associated. This value is comprised of the instance name and the workflow process application name.
<b>Transaction Update Date</b>	The last time the transaction was updated.
<b>Process Update Date</b>	The last time the process was updated.

## Using the Details Page

Use the Details page to drill into a specific transaction and take action to resolve any discrepancies between the OCI Process Automation and Oracle Permitting and Licensing systems. The Details page contains the transaction history in sequential order between the two systems for a given transaction.

Access the Details page by clicking on any row in the grid on the Manage Process Instances page.

At the top of the Details page the Oracle Integration Cloud and the Oracle Permitting and Licensing sections display a high-level view of the current status for that transaction in the respective systems.

Depending on the information displayed, you may elect to perform different actions, which appear as buttons on the right hand side of the Details page.

Page Element	
<b>Done</b>	Closes the Details page with no action taken. Equivalent to Cancel.
<b>Cancel Workflow</b>	<p>Cancels the transaction associated with the underlying workflow so the transaction can be resubmitted. All previous work would be lost.</p> <p>This button would appear for a structured process if the Oracle Permitting and Licensing system has been restored from outage and had lost application details associated with a given OIC process instance. As in, the transaction record ID is not known.</p>
<b>Alter Workflow</b>	<p>Enables the system administrator to alter the workflow manually to ensure both systems are in sync in the event of an momentary unavailability of either system.</p> <p>For example, this button may appear when OCI Process Automation has been restored from outage and it has lost the details related to one or more tasks or stages.</p> <p>For the structured processes, such as those used for permits, you can select the desired activity name and set its status. For dynamic processes, such as those used for Code Enforcement, select the event, such as the global task, to reactivate the process stage.</p> <p>For more information on the options when altering workflow, see the section below "Altering Workflow."</p>
<b>Resubmit Application</b>	Enables the system administrator to resubmit an application.

Page Element	
	Appears if OCI Process Automation has been restored from outage and it has lost the process instance belonging to the transaction, as in the OCI Process Automation process ID is not found.

Page Element	Description
<b>Process ID</b>	The workflow instance ID assigned for a specific transaction by the OCI Process Automation system when that transaction is submitted.
<b>Transaction ID</b>	The unique ID of a specific submitted transaction, which is based on the auto number rule.
<b>Applicant ID</b>	The unique ID of the applicant who submitted the transaction intake form.
<b>Transaction Type</b>	The transaction type as defined on the Transaction Type page. For example, for a permit this will be the Permit Type value.
<b>Last Task</b>	The last task in the workflow process definition that the transaction has reached. (Applies only to the OCI Process Automation system.)
<b>Last Action Taken</b>	The action taken on the last task. (Applies only to the OCI Process Automation system.)
<b>Transaction Status</b>	The current status of the transaction reflected in the Oracle Permitting and Licensing system, such as <i>In Process</i> , <i>Accepted</i> , and so on.
<b>Inconsistent</b>	<p>Applies to Code Enforcement processes only.</p> <p>Use to mark a process as inconsistent because of discrepancies caused by downtime or system outage.</p> <p>A message appears on the Workflow tab letting the agency user know that a discrepancy needs to be resolved.</p> <p>A <b>Details</b> button will also appear on the Workflow tab for privileged users to click to display the Manage Process Instances page, which can be used to resolve the issue, such as by resubmitting, altering workflow, and so on.</p>

Page Element	Description
<b>Service Type</b>	<p>Indicates what service handled the request. Options are:</p> <ul style="list-style-type: none"> <li>• <i>Oracle Permitting and Licensing</i>: Indicates the Public Sector system.</li> <li>• <i>IOC</i>: Indicates the Oracle Integration Cloud instance.</li> </ul>
<b>Event</b>	<p>Applies to Code Enforcement only.</p> <p>Displays the information for the event that activated the current stage, such as the global task.</p>
<b>Task Information</b>	The task information associated with the task defined in the workflow process definition.

Page Element	Description
<b>Assigned By</b>	The user name of the individual to who assigned the current task to the assignee.
<b>Assigned To</b>	The user name of the individual to whom the current task is assigned.
<b>Updated By</b>	The user name of the individual who updated the task.
<b>Task Creation Date</b>	The date and time the task in the workflow process definition was initiated for the current transaction.
<b>Last Action Taken</b>	The last action taken as reflected in the workflow system.
<b>Transaction Status</b>	The status of the transaction reflected in the Oracle Permitting and Licensing system.
<b>Last Updated Date</b>	The date and time when the transaction was last updated.

## Altering Workflow

Click **Alter Workflow** when you need to intervene in the process flow manually. You can change the process flow of an instance that is currently suspended because of a problem, or move an instance that is running to another activity because of a specific reason.

For example, if an activity is failing because of the value of the data objects and instance attributes, then you can modify them and retry running the current activity again. Or, if either OIC or Oracle Permitting and Licensing is down at some time, you may need to analyze and resubmit the process instance or move it along as needed.

When working with a structured process, such as those used in Permits, Planning and Zoning, and Business Licenses, you can use the Alter Workflow dialog box to select a new activity to switch to from the current activity and set the transaction status. To see the workflow process diagram, click **View Workflow**.

Alter Workflow

Accept application

New Workflow Activity Name Complete Plan Review

Comments Plan needs to be reviewed again.

Update Transaction Status In process

View Workflow Save Cancel

When working with a dynamic process, such as those used in Code Enforcement, you can use the Alter Workflow dialog box to select the event that will trigger the desired stage.

Alter Workflow

Select Events to Activate Stage Violation - 2

Save Cancel

## Using the Workflow List

Supervisors and system administrators can use the Workflow List page to review in-process workflow instances and manage the process as needed, such as altering workflow.

To access the Workflow List page, select the **Workflow List** tile on the agency springboard.

## Managing Worklists

This topic describes how to set up and manage various worklist features.

## Displaying Faulted Processes and Alerted Tasks

You can display workflow processes with issues and alerted tasks in the agency user's worklist. Using the Faulted Transactions and Alerted Tasks tabs, the agency users gain quick access to this information, and they can take action as needed. Populating these worklist tabs requires running an ESS job on a regular basis.

To populate the Faulted Transactions and Alerted Tasks tabs:

1. Navigate to Setup and Maintenance.
2. Select the offering, such as *Public Sector Permits*.
3. Go to the System Administration functional area for the offering.
4. Select this task: *Managing Faulted Workflow Processes*.
5. On the Load Public Sector Faulted Workflow Processes Job page, select the Schedule tab and set up a schedule to run the ESS job to suit your business requirements.
6. Click **Submit**.

## Enabling the Enhanced Worklist

You can enable the enhanced worklist feature, which flattens the worklist layout and task lists so each data element occupies its own column. The enhanced list layout improves searching capabilities and allows you to use any column for sorting.

To enable the enhanced worklist:

1. Navigate to Setup and Maintenance.
2. Select the offering, such as *Public Sector Permits*.
3. Click the Change Feature Opt In link.
4. Select the Features icon for System Administration.
5. Select the **Enable** checkbox for the Enhanced Worklist feature.
6. Go to the Initial Setup functional area for the offering.
7. Select this task: *Run Load Public Sector Workflow Tasks Job*.

## Synchronizing the Worklist

There is a new Enterprise Scheduler Service (ESS) job that you can run to synchronize the display of the worklist so that completed tasks no longer appear in the worklist and only those tasks that are still open display for the agency user. This job synchronizes and refreshes the entire worklist for all users.

To schedule the ESS job, you can:

- Access Functional Setup Manager, select the System Administration functional area for your offering, click the Run Schedule Worklist Sync Process task.
- Or, select Navigator > Common > Schedule Worklist Sync.

The job needs to be run by a system administrator.

When the job is running, the worklist page will not be accessible. It is recommended to schedule the job to run after agency working hours. Depending on how frequently your agency needs to refresh the worklist, you can set the recurrence for this job to run daily at an appropriate downtime, such as midnight.

## Enabling Tasks for Altering Workflow and Reopening Applications

This topic describes how to enable and configure the ability to display workflow tasks selectively for users when altering workflow or reopening applications.

When altering workflow or reopening applications, agency users can have difficulty selecting and assigning the appropriate workflow task and transaction status. By default, numerous workflow tasks display for the user to select.

The screenshot shows a dialog box titled "Alter Workflow" with a close button (X) in the top right corner. The dialog is divided into two main sections. The top section is titled "Accept application" and contains two fields: "New Workflow Activity Name" and "Comments". The "New Workflow Activity Name" field has a dropdown menu open, showing a list of options: "Start", "Accept application", "Application Accepted?", "Plan Review?", "Issue Permit", "Issue Permit?", and "Complete Plan Review". The "Comments" field is a text input box with a search icon. The bottom section is titled "Update Transaction Status" and contains a "Save" button and a "Cancel" button.

Likewise, users can select from all available transaction statuses.

To reduce the possibility of human error while streamlining the user experience, you can:

- Enable tasks to display selectively for the users to select from the **New Workflow Activity Name** drop-down list when altering workflow or reopening an application.
- Hide the **Update Transaction Status** drop-down list from appearing by updating required transaction statuses within the workflow process definition.

Setting up this configuration option involves:

1. Enabling the Functional Setup Manager opt-in feature *Selective Enablement of Alter Workflow*.
2. Updating your structured workflow process definitions to incorporate these custom properties:
  - PSC\_ALTERWF\_OPT for selected tasks to be enabled for alter workflow.
  - PSC\_REOPENWF\_OPT for selected tasks to be enabled for reopening applications.

**Note:** This feature applies only to structured workflow processes. It doesn't apply to dynamic processes used by Code Enforcement.

## Enabling Selective Workflow for Alter and Reopen

To enable selective workflow for alter and reopen:

1. Open Functional Setup Manager.  
For example, select *Setup and Maintenance*.
2. Select your offering and click the Change Feature Opt In link in the Functional Areas box.
3. On the Opt In page for your offering, click the Features icon for the top-level offering in the features grid.  
For example, for Permits click the Features icon at the *Public Sector Permits* level.
4. In the feature grid, select **Selective enablement of alter workflow**.

**Note:** Selecting this option turns this option on for alter workflow *and* reopen application.

5. Click **Done**, then click **Done** again.

## Modifying Process Definitions for Selective Workflow for Alter and Reopen Display

Add these custom properties to workflow tasks to enable a task for alter workflow or reopen application.

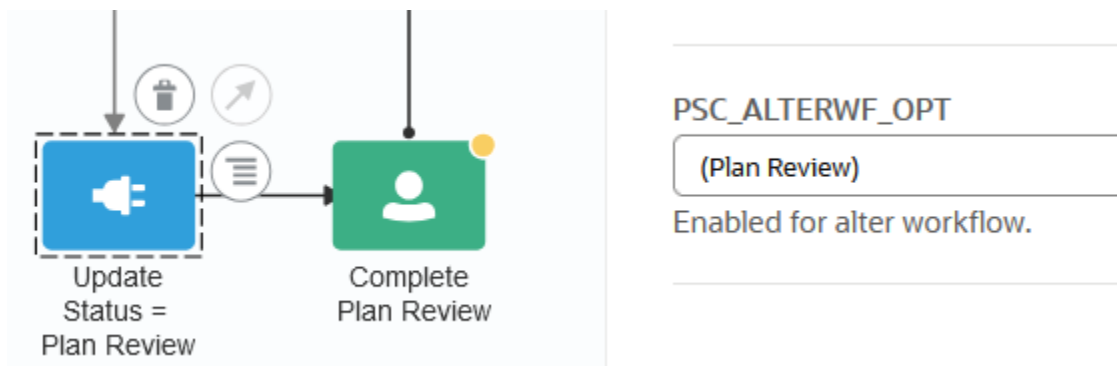
Custom Property	Description
PSC_ALTERWF_OPT	Enables a workflow task to be available to be selected during the alter workflow process.
PSC_REOPENWF_OPT	Enables a workflow task to be available to be selected during the reopen application process.

After you enable your system for this feature, you need to add the PSC\_ALTERWF\_OPT and PSC\_REOPENWF\_OPT custom properties to each task you want to display for users to select.

If a human task has a system task before it that sets the transaction, you can add the custom property to that system task, setting the appropriate transaction status, such as *Plan Review*, and the workflow engine will update the status and restart the workflow automatically at the next human task. Use the following syntax:

`(transaction status)`

For example:

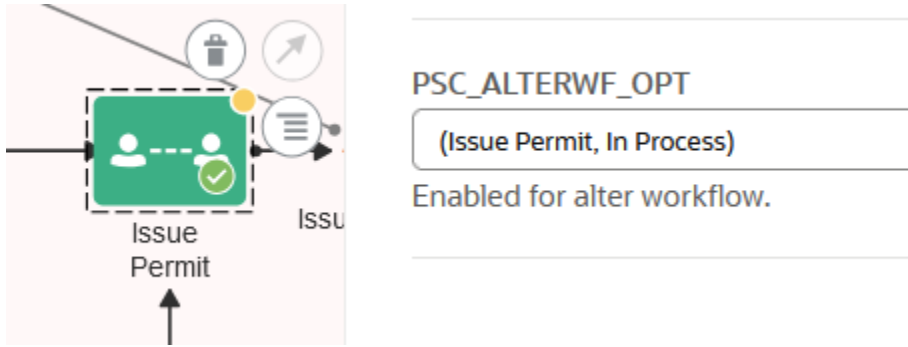


This approach also applies if a human task doesn't require a transaction status update.

If a human task doesn't have a system task before it and a transaction status update is required, you can set both the task name and the transaction status, using the following syntax:

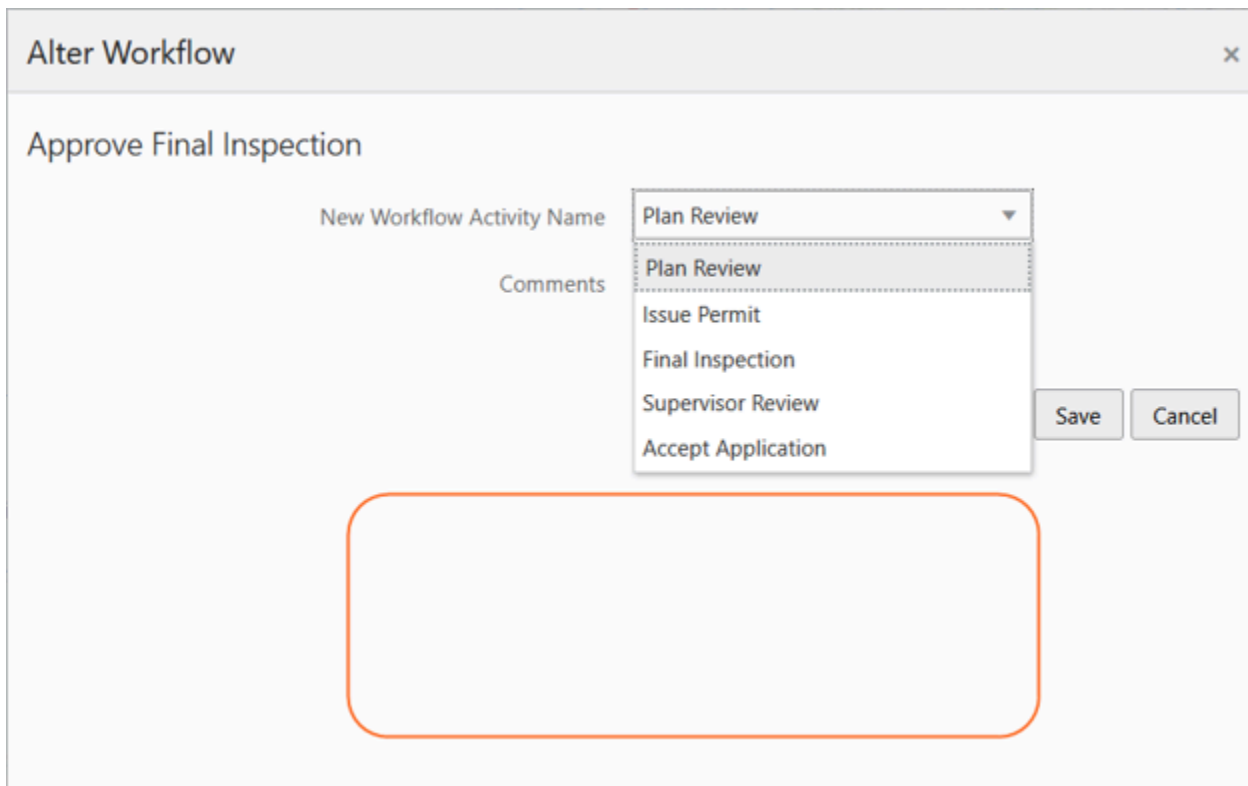
`(task name, transaction status)`

For example:



Only the tasks to which you add values for the PSC ALTERWF OPT and PSC REOPENWF OPT custom properties are enabled for either alter workflow or reopen application. Any task with a blank PSC ALTERWF OPT or PSC REOPENWF OPT custom property is ignored by alter workflow and reopen application.

At run time, the selected list displays for the user in the **New Workflow Activity Name** drop-down list, and because the transaction status has been set within the process definition itself, the **Update Transaction Status** drop-down list doesn't appear.



**Note:** The custom properties PSC ALTERWF OPT and PSC REOPENWF OPT use the same syntax and behave the same within the respective features.

## Working with Parallel or Inclusive Gateways

When working with parallel/inclusive gateways:

- During alter workflow, tasks inside parallel/inclusive gateways won't be visible from outside the gateway. To alter workflow to tasks inside parallel/inclusive gateways, set the alter to the gateway start node.
- Once inside the Parallel/Inclusive gateway, tasks outside the gateway won't be available until the gateway is exited.

## Migrating In-flight Workflow Applications

This topic describes how an agency users migrate in-flight permit and license applications from an earlier workflow version to a newly activated workflow version within the same Gen3 environment by using **Manage Workflow Applications** page.

Permit and license applications are associated with a specific workflow process definition and version in OCI Process Automation (OPA). When workflow logic is updated and a new workflow version is activated, newly submitted applications use the updated workflow, while applications that are already in progress continue to run on the earlier version. Use the **Migrate In-flight Process Instances** option in the **Manage Workflow Applications** page, to identify in-flight applications and migrate them, so they continue processing with the latest activated workflow.

### Using the Manage Workflow Applications Page

From the Fusion Application Permitting and Licensing home page, navigate to **Manage Workflow Application** page by selecting **Workflow Instances**.

Follow these steps to search for in-flight workflow applications that are eligible for migration.

1. Select **Source Workflow Application ID** from the drop-down list by identifying the workflow of in-flight applications you want to migrate.
2. You can optionally enable **Select by Application Type** option to filter search to narrow the list further by **Application Type**.
3. Click **Search** to view the in-flight workflow applications that are eligible for migration.
4. Review the list of applications and information available for each application.

The following table describes information shown for each in-flight application.

Page Element	Description
<b>Application ID</b>	Displays the workflow application ID associated with in-flight applications.
<b>Application Type</b>	Displays the application type based on selected <b>Source Workflow Application ID</b> .
<b>Classification</b>	Indicates whether the application is a permit or license.
<b>Current Process Definition</b>	Shows the workflow process currently used by application.

Page Element	Description
<b>Current Version</b>	Displays the workflow version the application is currently running on.
<b>Target Version</b>	Displays the newer activated workflow version available for migration.
<b>Total Applications</b>	Shows the total number of in-flight applications eligible for migration under selected workflow.
<b>Selected Applications</b>	Shows the number of applications selected for migration.
<b>Action</b>	Allows you to view individual application details in a drawer at the right.

5. Select the applications you want to migrate and click **Migrate**. This starts in-flight migration to the target workflow version.
6. To track migration jobs, use the **Migration Status** button.

**Note:** You cannot perform in-flight migrations for major workflow changes such as removal of required steps or activities, deletion of events, or changes to routing logic that cannot be reconciled in the OCI Process Automation (OPA).

## Scheduling In-flight Migration Jobs

You can run a migration job right away or schedule it for later from the **Process Monitor** page on the agency springboard. If there are many in-flight applications, it is usually better to schedule the job during non-working hours so active users and processes are not affected.

Migration runs as an ESS job. While scheduling it, you can set a duration (in hours) to control how long the job runs in one go. For example, setting the duration to 6 hours allows the job to run for six hours and migrate as many applications as possible in that time. If some applications are still left, the next scheduled run automatically continues the migration and picks up the remaining applications.

To schedule an in-flight migration, open the **Schedule New Process** drawer and select **Migrate Public Sector Active Applications Workflow** option. For more details about scheduling and tracking these jobs, see *Using the Process Monitor*.

## Viewing Details of In-flight Migrations

You can use the **Migration Status** page to view a list of migrated in-flight applications.

The following table describes information shown for each migration job.

Page Element	Description
<b>Application ID</b>	Identifies the workflow applications for which in-flight applications were migrated.

Page Element	Description
<b>Application Type</b>	Displays the permit or license application type associated with the workflow.
<b>Classification</b>	Indicates whether the workflow applies to permits or licenses.
<b>Current Process Definition</b>	Displays the workflow process definition used before migration.
<b>Current Version</b>	Shows the workflow version used by in-flight applications before migration.
<b>Target Version</b>	Shows the workflow version used after migration.
<b>Status</b>	Displays the overall migration job status, such as in Progress, Completed, or Completed with Errors.
<b>Selected Applications</b>	Shows the number of applications selected for migration.
<b>Total Error</b>	Displays the number of applications that failed during migration.
<b>Job Start Date</b>	Shows the date and time when the migration job started.
<b>Job End Date</b>	Shows the date and time when the migration job completed.
<b>Actions</b>	<p>Allows you to view details in a drawer for applications included in the selected migration job.</p> <p><b>Note:</b> The Application ID on the <b>Migration Status</b> page represents the source workflow, while the Application ID in the drawer represents an individual application.</p>

# 4 Setting Up Dynamic Workflow

## Code Enforcement Workflow Basics

This topic introduces you to the elements in a OCI Process Automation dynamic process definition used in Oracle Permitting and Licensing Code Enforcement offering.

### Code Enforcement Workflow Overview

Adding workflow to Code Enforcement transactions enables you to automate the progression through the stages and activities and incident or case process flow. Oracle Permitting and Licensing offerings use the OCI Process Automation for designing workflow process definitions and running the workflow engine that drives transaction automation. Before you begin implementing workflow for Code Enforcement, it is imperative that you become familiar with the *Processes* feature in OCI Process Automation.

For more information on the OCI Process Automation Processes feature, see [Using Processes in Oracle Integration](#).

How Code Enforcement implements workflow is a little different than the way other Oracle Permitting and Licensing offerings do. Permits, Planning and Zoning and Business Licenses use a *structured* process design, which is suitable for more linear, sequential transaction flows. The Code Enforcement transaction flows can contain stages and activities that don't necessarily occur in a set order, with some may occurring at the same time, while others may not occur at all.

Because of the non-sequential nature of a typical Code Enforcement transaction flow, you will create a *dynamic* process design. The dynamic process design is a departure from the structured "step 1, step 2, step 3" approach to process design. With a dynamic process definition, you define the stages and activities of the process flow, but you don't define any particular order. You define conditions that drive *when* or *if* a particular stage or activity becomes activated, providing the flexibility the Code Enforcement offering requires.

For more information on dynamic processes, see [Develop Dynamic Processes](#).

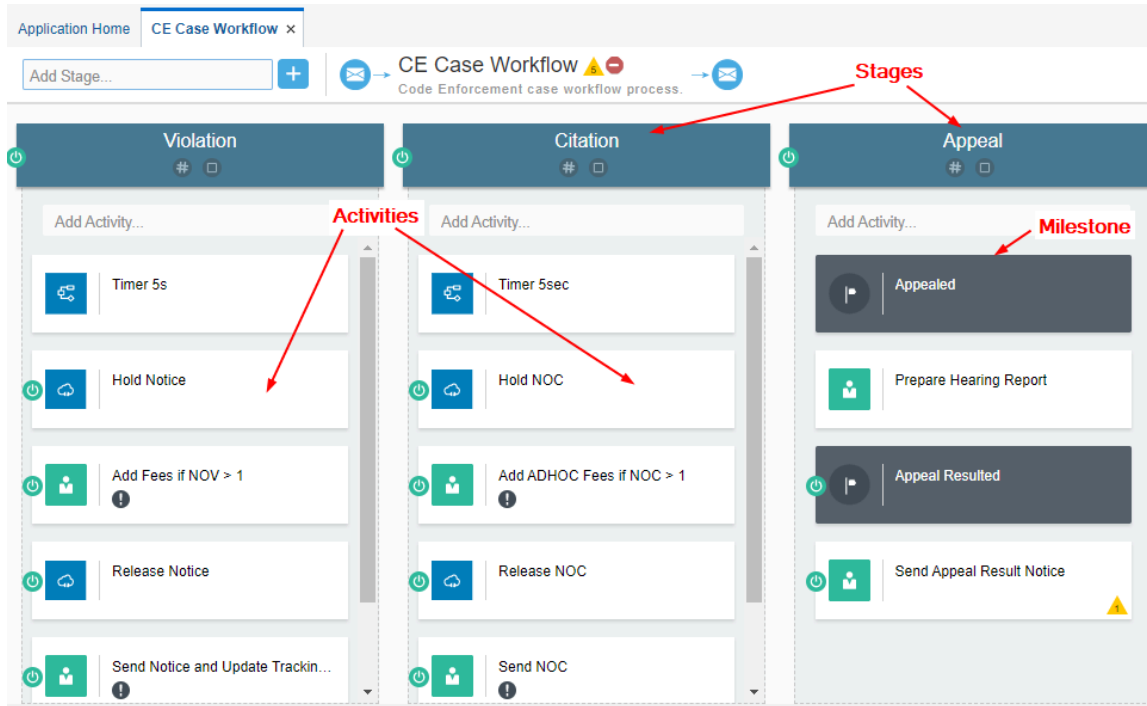
**Note:** Oracle provides a Solution Package with sample workflow configurations. It is highly recommended that you clone these samples and use them as starting points to create your own workflow.

## Working with a Dynamic Process Definition

This topic provides an overview of the main elements in the dynamic process design used for the Code Enforcement offering and describes the top-level configurations you can make.

The sample process definitions provided in the solution package contains examples of all the elements that can be used for a Code Enforcement. The topics in this chapter go into more detail on each element and describe how to configure the element within the process, while pointing out what you should not change. With all of the elements, the power and flexibility they provide can be achieved by configuring the conditions that determine when they become active.

This example illustrates the main elements of a Code Enforcement dynamic workflow process. Details are in the surrounding text.



## Process-Level Settings

In the process-level settings, which you can access in the header of the process definition should be used as delivered in the solution package samples.

The input data is mapped to the data stored in the business type. Click the **Input Data** button to display the Start the Dynamic Process window. The process for Code Enforcement should be started with the **With Data Only** option selected. The Interface Arguments reflect the data stored in the business type.

When editing the process-level settings, you can change:

- Name (which you create when cloning the sample)
- Description
- Roles

The Termination condition set at the process level enables the entire process instance to be stopped in the event that the case status is set to closed.

The roles that you include at the process level will be inherited and can be used in all of the elements within that process, such as stages or activities. At the stage and activity level, you can add more specific security settings (roles and users) as needed. You can create roles for the process and map them to existing PSC roles, such as *PSC Code Enforcement Officer* or to specific users if required.

## Stages

Stages enable you to organize activities into phases of a process. Stages can run at the same time or one after another. Examples of stages in the Code Enforcement process definition include Violation, Citation, Appeal, and so on. Each stage represents a different phase of the workflow with its own set of activities.

See *Setting Up Stages*.

## Activities

Activities represent actions or tasks that need to be completed within the process. Activities can be carried out by a human, or they can be automatically completed by calling another process or integration, such as a REST service.

See [Setting Up Process Activities](#).

## Milestones

Milestones represent a sub-goal within a process. Milestones are typically defined to track progress of a process.

See [Setting Up Milestones](#).

## Global Trigger Activity

The "global trigger activity" is an activity that appears in the process definition below the stages. It is used internally by the process to receive the incoming payload to instantiate the process instance. Updates in the transaction system flow through the global trigger activity, which in turn provide data for the conditions defined within the stages to advance the workflow. You can rename the global trigger activity and modify role assignments but otherwise you should not modify or remove it from the process definition.

**Note:** If you remove the global trigger activity, the workflow can't be instantiated.

See [Setting Up Process Activities](#).

# Setting Up Connectors for Code Enforcement

In this topic we describe the process definitions connectors, or integrations, that enable Code Enforcement and OCI Automation to share data.

To access the integrations for a process definition, select **Integrations** in the left panel of the user interface. The Case Data integration combines these REST resources to enable the exchange of information about Code Enforcement cases:

- Cases (publicSectorCases)
- Case Notices (publicSectorCaseNotices)

When migrating from environment to another, such as from the Test to Production migration, make sure to update the base URL for the integration to match the URL of the new environment.

## Cases

Resource Element	Value
Name	Cases
Resource	publicSectorCases
Operations	GET (getCases)

Resource Element	Value
<b>Response</b>	<i>BusinessData.ResponseCaseData</i>

## Case Notices

Resource Element	Value
<b>Name</b>	<i>CaseNotices</i>
<b>Resource</b>	<i>publicSectorCaseNotices</i>
<b>Operations</b>	<i>PATCH</i>
<b>Path</b>	<i>{noticeKey}</i>
<b>Request</b>	<i>CaseNotice.CaseNotice</i> <i>Parameters (noticeKey)</i>
<b>Response</b>	<i>CaseNoticeResponse.CaseNoticeResponse</i>

## Setting Up Data Storage

This topic describes how the process definition for Code Enforcement receives data and stores it for usage during the life cycle of the process instance.

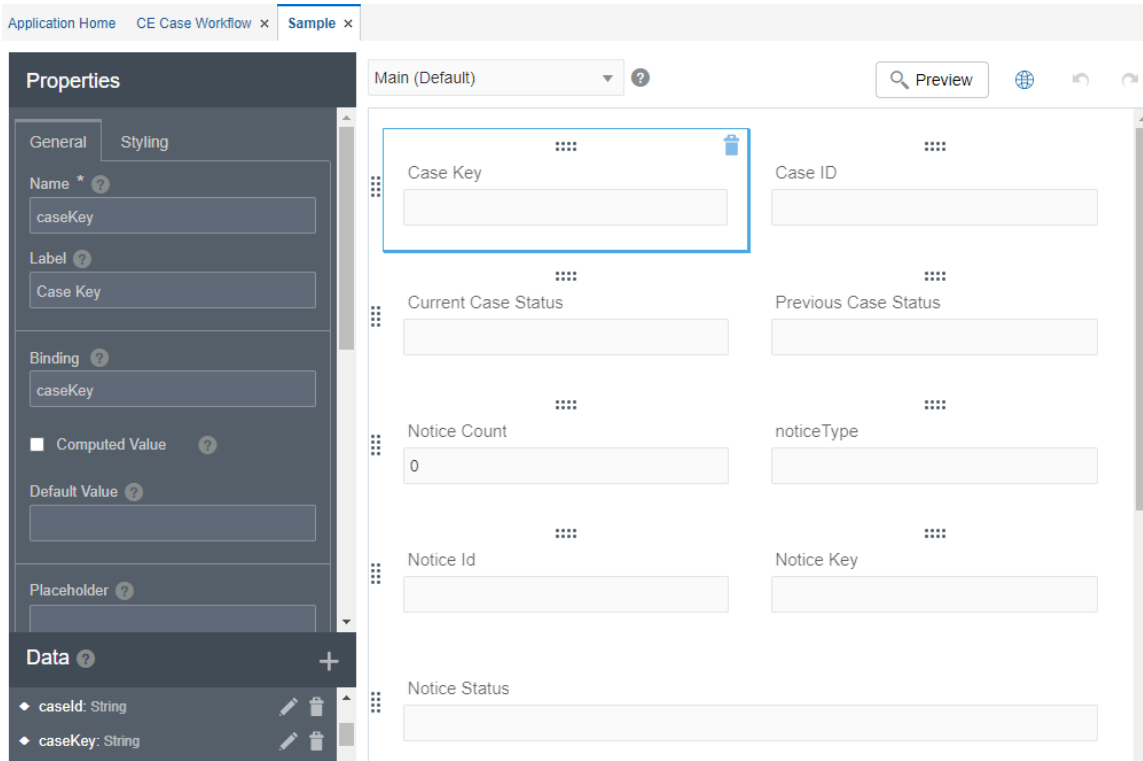
### Working with Forms

When the process instance gets instantiated, the Code Enforcement system sends the required data to OCI Process Automation through a web form. The web form captures the data sent in the Code Enforcement payload.

**Note:** Do not remove any attributes from the web form, but you can add additional attributes if your use case requires additional attributes.

Access the web form by selecting the **Forms** tab in the left panel.

This example illustrates the Forms configuration user interface.

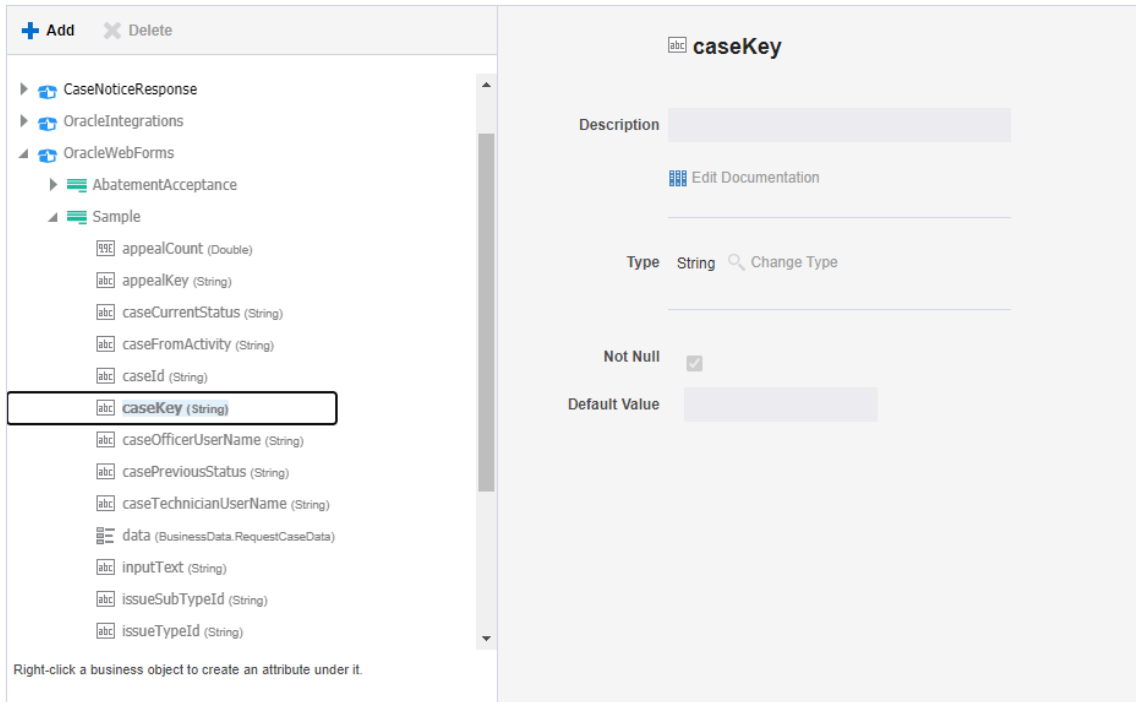


## Working with Business Types

There is a one-to-one relationship between the form and the business type. The data collected through the form is then stored in the business type object. During the life cycle of the process instance, the stored data is used by the criteria you define to evaluate and carry out the workflow automation, such as activating various activities or stages when specific events occur or statuses have been set.

**Note:** Do not remove any attributes from the business type, but you can add additional attributes if your use case requires additional attributes.

This example illustrates the Business Type configuration user interface



## Setting Up Stages

This topic describes how to set up stages to group process activities and milestones.

The following topics describe the settings you can use to modify stages. For more information on stage properties, see [Define Stage Properties](#).

### General Settings

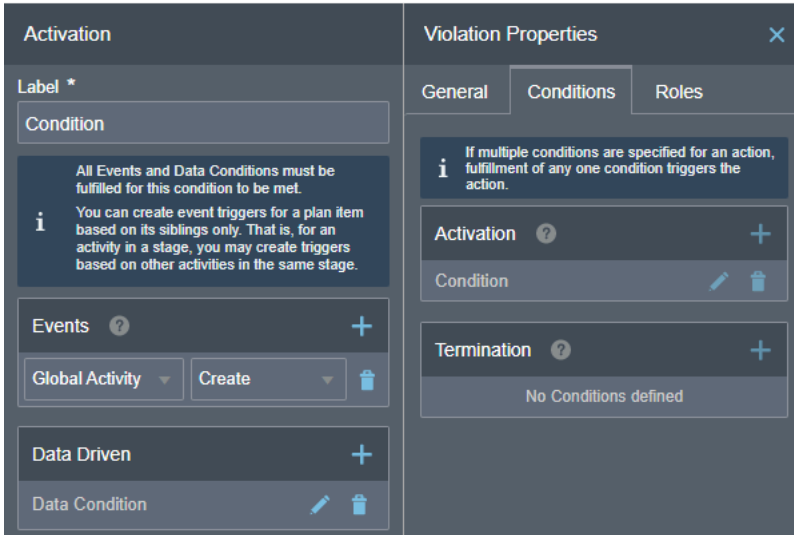
You can update:

- Name
- Description
- Markers

### Conditions

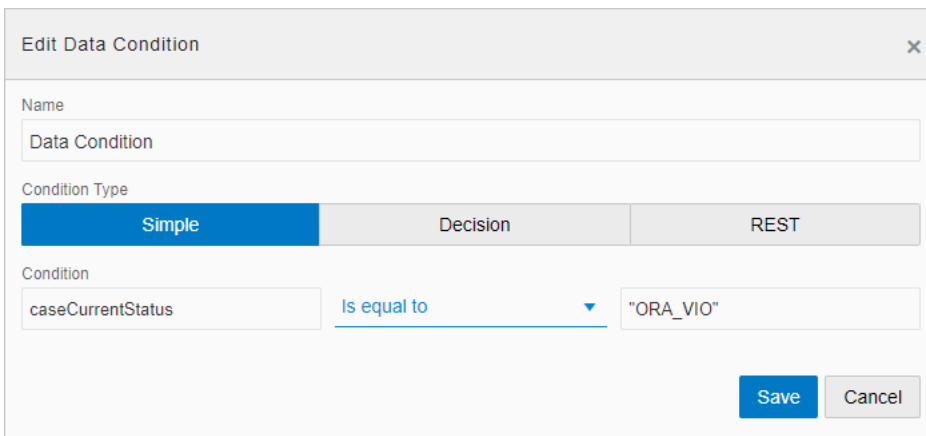
You can add additional events and conditions as needed. However, keep the initial events and conditions as is. The delivered events and conditions enable the expected activation and processing of the stages.

This example illustrates a delivered activation event and data driven condition. Details are in the surrounding text.



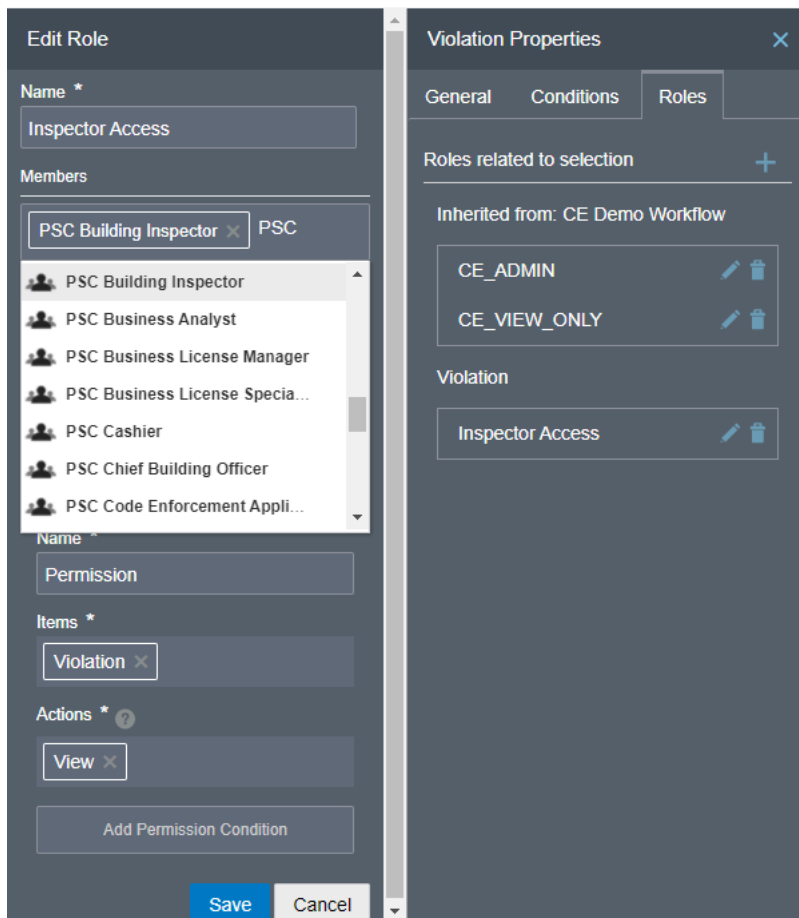
The event is based on the activation of the Global Activity, and the data driven condition is based on a specific status of an attribute in the business type. For example, for the Violation stage to activate, caseCurrentStatus must have been set to *ORA\_VIO*.

This example illustrates the settings for the data driven activation condition. Details are in the surrounding text.



## Roles

This example illustrates modifying roles at the stage level. Details are in the surrounding text.



On the Roles tab, notice the roles that are inherited from the top-level process definition in the **Inherited from:** **<Process Name>** box. Any roles you add appear below the inherited roles.

Page Element	Description
<b>Name</b>	Name of the role.
<b>Members</b>	Select PSC roles or specific users to associated with the dynamic process system. Enter partial values, such as <i>PSC</i> , to display the synchronized roles with the Code Enforcement system.
<b>Permissions</b>	Click <b>Create Permission</b> to add a new permission.
<b>Name</b>	Enter a permission name.
<b>Items</b>	Click in the field to display a list of items to which you can select to grant access, such as to various stages, activities, or to the entire process by selecting <i>Process</i> .
<b>Actions</b>	Select the access to enable for the item, such as <i>Update</i> , <i>All</i> , <i>None</i> , and so on.

The stages you define will appear at the top of the Workflow page when view case or incident details. For more information, see [Using Workflow](#).

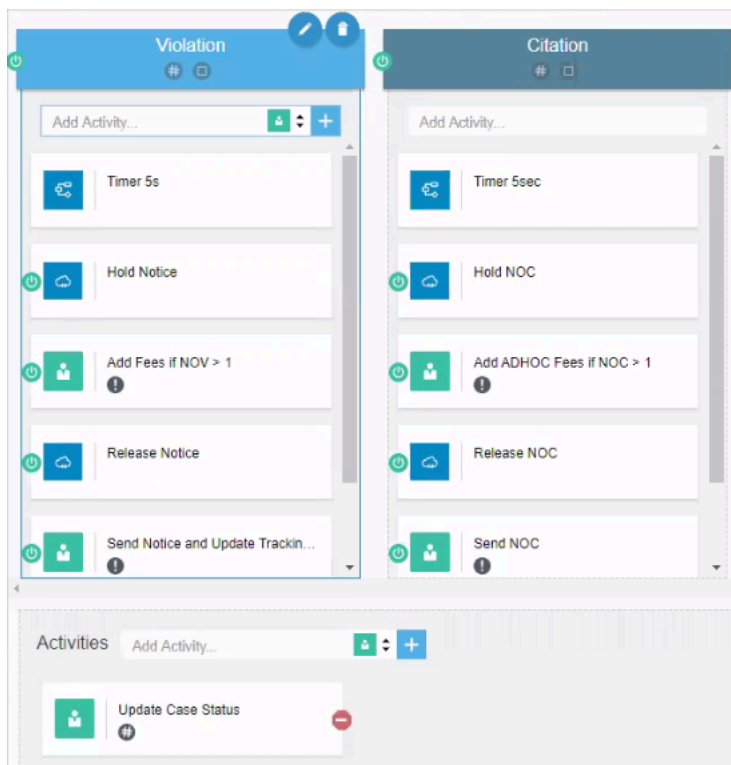
## Setting Up Process Activities

This topic describes how to configure activities to reflect the human and system actions in the workflow process.

You can add as many activities as you need to meet your business requirements.

**Note:** Do not remove the global activity at the bottom of the workspace below the stages. It is required to instantiate the process instance. You can create additional global activities if required. Global activities do not display in the run-time user interface.

This example illustrates activities within stages above the global activity at the bottom of the workspace. Details are in the surrounding text.



You can configure the General settings, Conditions settings, and Roles settings similar to stages. For more information on activity settings, see [Define Activity Properties](#), and for more information on stages see [Setting Up Stages](#).

**Note:** If the first activity in a stage is a Service activity, you need to include a Process activity that calls a structured process defined with a 5 second interval (5s). In the examples, this activity is named *Timer 5s*. This creates a 5-second delay to ensure all initialization and activation processing has completed prior to starting the stage.

The activities defined for a stage appear on the Workflow tab when viewing case or incident details. For more information, see [Using Workflow](#).

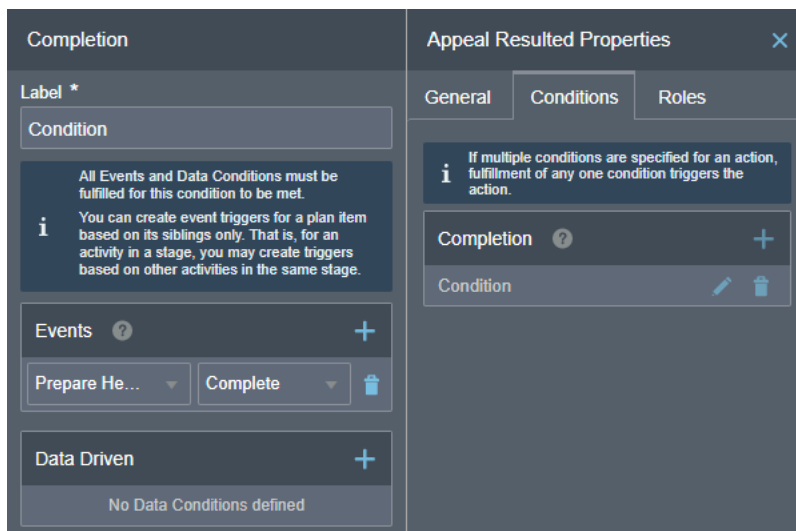
**Note:** The name of the human task in your workflow definition may differ from the name you display for end users on the Workflow tab or Worklist, for example. Use the **Title** field in the End User Display section in the Properties dialog box for the workflow activity (task) to set the task name your end users see.

## Setting Up Milestones

This topic describes how to include milestones within the stages of your process definition.

A milestone is a type of activity that represents a sub-goal within a process. Milestones are typically defined to track progress of a process. The process reaches a milestone when the status of an activity has been completed, for example.

This example illustrates a milestone. Details are in the surrounding text.



In this example, the milestone is reached when the Prepare Hearing activity has been completed.

At runtime, agency staff can view the workflow using the milestone view or the stage view. For more information, see [Using Workflow](#).

## Linking Process Definitions to Issue Subtypes

This topic describes how to prepare process definitions for use and how you reference them from your issue subtypes.

After you have defined your dynamic workflow process, you then need to publish and activate it so that it can be accessed and referenced by Code Enforcement. Then, you can reference it in the Code Enforcement setup pages to associate the definition with one or more issue subtypes.

Step	Link
Create a process definition group.	<a href="#">Setting Up Process Definition Groups</a>
Reference the process definition group in the issue subtype.	<a href="#">Setting Up Issue Subtypes</a>



# 5 Configuring Fee Decision Models

## Fee Decision Model Overview

You create decision models using the Oracle Integration Cloud (OIC) decision modeling feature. Use this feature to create decision models to automate the decision logic in your business processes. As part of creating a decision model, add and order decisions, define decision inputs, and model the logic. The decision model editor supports the Decision Modeling and Notation (DMN) standard for you to create your models.

For more information on decision models refer to your OCI Process Automation documentation: [Model Decisions](#).

In the Oracle Permitting and Licensing services, a decision model enables you to automate the calculation of fees based on your business process criteria.

For example, assume your agency applies varying fees based on the total cost of a building project for which a permit is being requested. A decision model enables you to automate this business logic:

- If the project value is less than or equal to \$500, then the application fee is \$50.
- If the project value is more than \$500 but less than or equal to \$1,000, then the application fee is \$75.
- If the project value is more than \$1,000 and \$5,000, then the application fee is \$125.
- For any project value over \$5,000, then the application fee is \$200.

Before you create a decision model, you must first create a fee item. After creating the decision models, you can then associate the decision model with a fee schedule. The fees workflow generally follows these main steps and events:

1. Create fee item(s).
2. Create decision model based on existing fee item(s).
3. Create a fee schedule incorporating fee items and decision model.
4. Associate a fee schedule with a transaction type.
5. Map intake form fields to the decision model in the Intake Form Designer.
6. When an end user is submitting an intake form the system applies fees and fee logic based on input.

## Creating Decision Models for Fees

This topic describes the requirement of creating a decision model after creating fee items and before creating a fee schedule. You use OCI Process Automation to create decision models.

### Prerequisites

Before you create a decision model, you need to create any required fee items that will be associated with the decision model.

For more information on fee items, see [Setting Up Fee Items](#).

## Configuring Decision Models

You can set up inputs and decisions any way you like following the guidelines provided in the documentation for OCI Process Automation. For more information on using OCI Process Automation to create decision models, see *Model Decisions*.

The configuration discussed here for output data types is required for setting up the interaction between the decision model and the fee schedule in Oracle Permitting and Licensing.

To configure decision models:

1. Create a fees list of values (LOV) with the fee item names.

Currently, there is no direct integration of configuration data, such as fee items, between OCI Process Automation and Oracle Permitting and Licensing. Although creating an LOV is optional, any fee item names added to a decision model output need to be entered exactly as they appear in Oracle Permitting and Licensing. When you use the LOV and enter values in a decision output, OCI Process Automation validates the entry and displays a warning if your entry does not match an item in the LOV.

This example illustrates the list of values used to validate fee items entered in the **Decision Table**. Select *list of values* in the **Constraint** options when you're adding the data type definition.

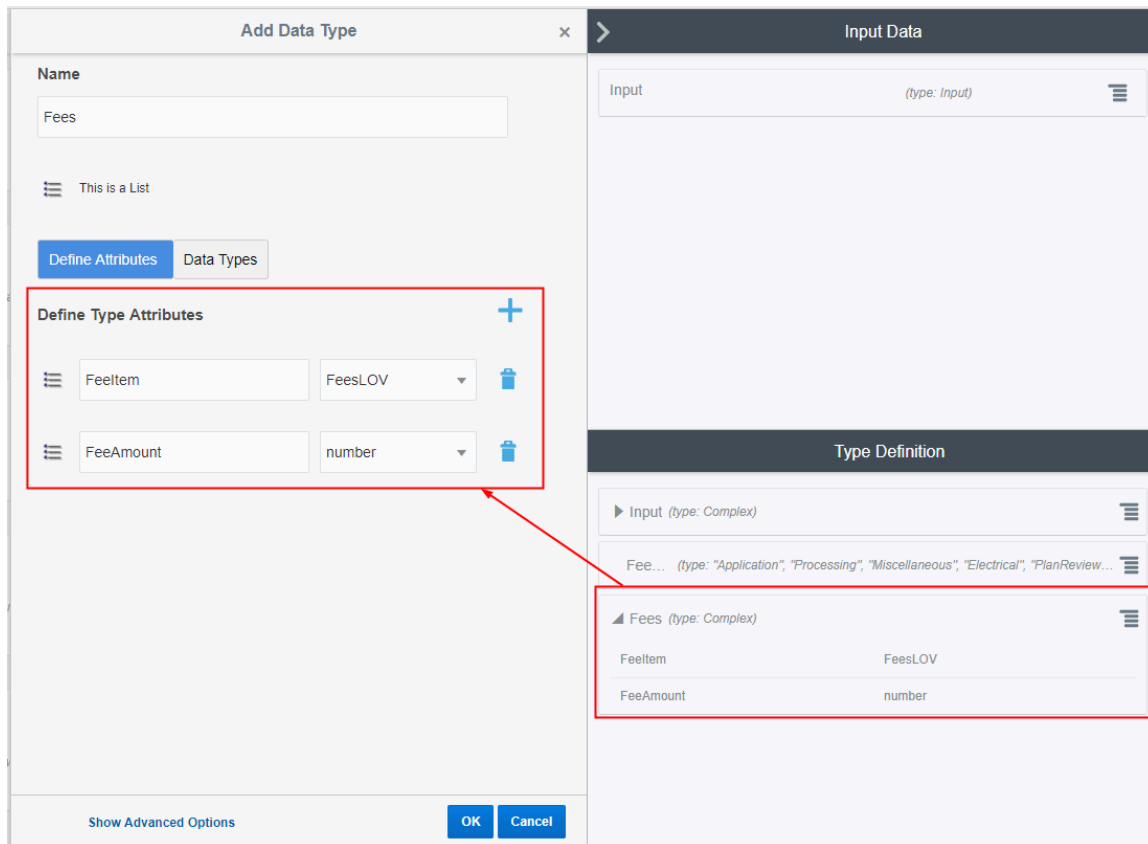
**Note:** If the field type in the application intake form is a Check box set or a Multi-select list and the field will be used to drive fee calculations, then the fee model input should be configured as a list type. As in, select the **is List?** checkbox when defining the decision model input data.

2. (Required) Set up the complex data type output to include these attributes: *FeeItem* and *FeeAmount*.

The *FeeItem* attribute should use the fees LOV that you created. The *FeeAmount* attribute uses numbers that you enter on the decision model.

**Note:** This step is important because the *FeeItem* and *FeeAmount* attributes are used to map the fee items on the fee schedule to the decision model.

This example illustrates the complex data type output that you set up for your decision model. You must define *FeeItem* and *FeeAmount* attributes.

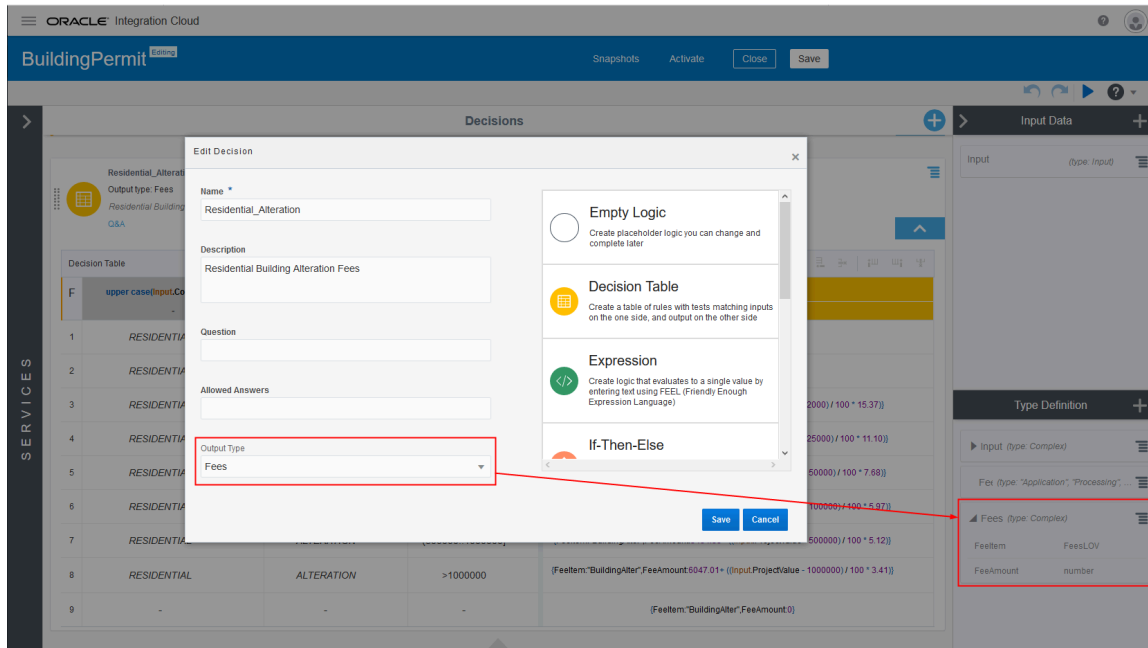


3. (Required) Add the output data type name to every decision and use allowed values in the **Decision Table** grid.

To edit a decision, click the decision menu button and select **Edit**.

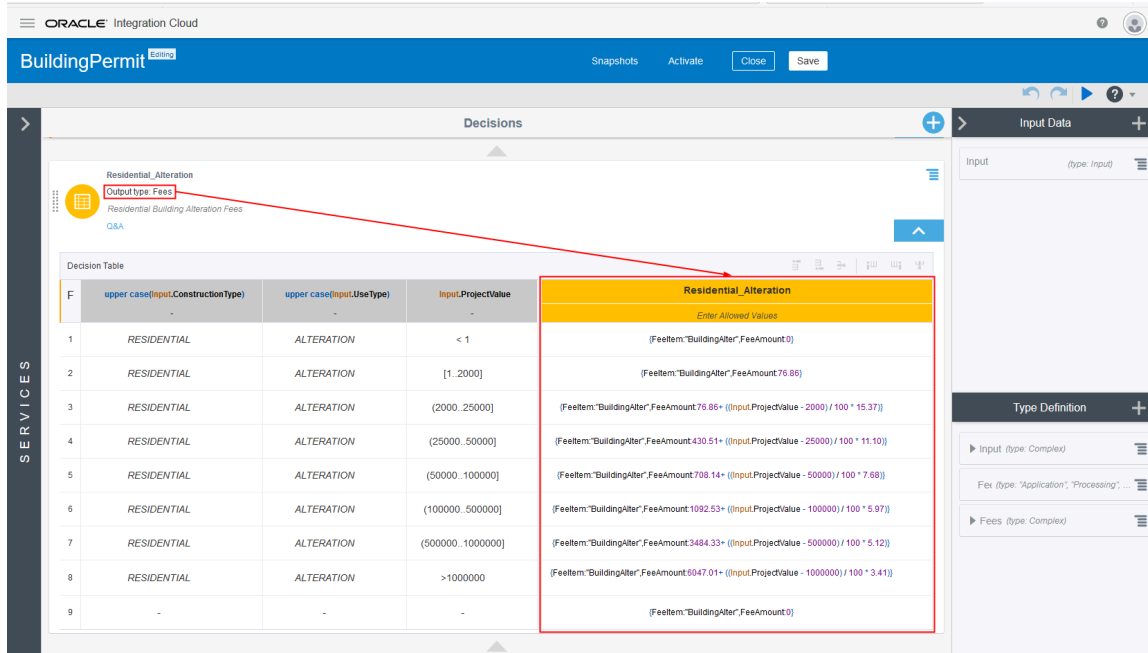
Select the defined output type from the **Output Type** list.

This example illustrates the output data type name *Fees* added to the Residential\_Alteration decision. The output type provides constraints on which values are allowed in the decision model.



This is an example of the final decision values based on the output type.

The decision output type in the Residential\_Alteration decision is *Fees*. The validation ran on the Fees values entered in the Decision Table, and no errors were returned.



- (Required) You must also configure the services in the **Services** panel to the left of the decisions, and activate the model.

For more details, see [Exposing Decisions as Services](#).

When the Oracle Permitting and Licensing service submits a request to OCI Process Automation, after running the request against the decision model, the application returns the fee item name and the fee item amount.

After you have set up your decision model, you need to reference the decision model from the appropriate fee schedule. For more information on fee schedules, see [Setting Up Fee Schedules](#).

## Configuring Late or Recurring Fees for Code Enforcement

If the mapping source on a fee schedule line is set to either *Code Enforcement Violation Fees* or *Code Enforcement Overdue Fees*, you need to associate the fees generated by the decision model to a reference transaction, like an existing fee item. For an existing fee, you can link additional late fees to the existing fee through the associated reference transaction. When either of these mapping sources are selected, an additional field, **Map Fee Reference**, will appear, where you can select *ReferenceID*, for example.

The decision model will also need input and output attributes for your ReferenceID. The following example illustrates how you can use the fee ReferenceID in your calculations.

Operation	DMN Code
if	<code>Violation.Days Overdue &gt;= 7</code>
then	<code>{FeeItem: "CE_RECR_FINE", FeeAmount: floor(Violation.Days Overdue / 7) * Violation.Rate * CheckPct(PenaltyPct), ReferenceID:Violation.ReferenceID}</code>
else	<code>FeeItem: "N/A", FeeAmount: 0, ReferenceID:Violation.ReferenceID}</code>

## Configuring GIS-Based Fees

You can define fee calculation criteria using spatial data coming from the Map Layer Content field group in your intake forms. For example, agency staff can define in a decision model that a district improvement fee is required if the project location falls within a specific district.

To incorporate GIS attributes into your fee decision models, you need to:

- Include these field groups in your intake form:
  - Property or Business Location
  - Map Layer Content
- Create a DMN model that includes GIS-related inputs configured as a "list," which can accept multiple input values.
- Map the attributes to intake form fields as usual within the Intake Form Designer.

### Edit Type

InputFields

Name: InputFields

Mode: Complex

Make a list

Define Type Attributes

Name	Type
Map Service ID	Text
Map Service Name	Text
Map Layer	Text
Attribute Name	Text
Attribute ID	Text
Attribute Value	Text
Location Type	Text
Location Reference	Text

### Types

Available Types

- { } InputFields: Complex []
  - Map Service ID: Text
  - Map Service Name: Text
  - Map Layer: Text
  - Attribute Name: Text
  - Attribute ID: Text
  - Attribute Value: Text
  - Location Type: Text
  - Location Reference: Text



# 6 Working with Oracle Integration Cloud

## Oracle Integration Cloud Overview

This topic describes how Oracle Integration Cloud (OIC) is used within Oracle Permitting and Licensing.

Oracle Integration Cloud (OIC) is used differently in Oracle Permitting and Licensing, depending on whether you are a new customer or an existing customer.

Existing customers will remain on OIC Generation 2, which is used for defining:

- Integrations
- Workflow
- Decision models (for fees)

New customers will use OCI Process Automation for workflow and decision models, while being able to license separately OIC Generation 3 for integrations. Existing customers will transition and migrate to OCI Process Automation and OIC Generation 3 in a future release.

For more information on OIC Generation 2, see [Oracle Integration Generation 2](#).

For more information on OIC Generation 3, see [Oracle Integration 3](#).

If using OIC Generation 3, you will need to:

- Enable OIC.  
See [Enabling Oracle Integration Cloud](#).
- Create an identity domain application for OIC.  
See [Creating an Identity Domain Application for Oracle Integration Cloud](#).
- Specify the identity domain application URL.  
See [Providing the Identity Domain Application URL for Oracle Integration Cloud](#).
- Specify the identify domain credentials.  
See [Providing Identity Domain Credentials for Oracle Integration Cloud](#).

## Enabling Oracle Integration Cloud

To enable OIC:

1. Navigate to Functional Setup Manager by entering Setup and Maintenance in Page Finder.
2. Select the appropriate offering.
3. Click the Change Feature Opt In link.
4. Click the Features icon for System Administration.

5. Select **Enable** for Oracle Integration Cloud.
6. Click **Done**.

## Creating an Identity Domain Application for Oracle Integration Cloud

Create an identity domain for OIC in IDCS.

The steps are the same for creating an identity domain for using IDCS as an identity provider.

See *Creating an Identity Domain Application for Identity Provider*.

## Providing the Identity Domain Application URL for Oracle Integration Cloud

To provide an identity domain application URL for OIC:

1. In the System Administration functional area of the Functional Setup Manager, click the task: Provide Identity Domain Application URL for Oracle Integration Cloud.
2. On the Provide Identity Domain Application URL for Oracle Integration Cloud page, enter the URL for the identity domain application you created.

You find this URL on the Identity Domain > Overview tab, in the Domain Information tab. Look for the Domain URL value. It will look similar to:

`https://idcs-12345abc.identity.xyz.<domain_name>.com`

Enter just the base URL.

3. Click **Save and Close**.

## Providing Identity Domain Credentials for Oracle Integration Cloud

After you have set up an identity domain for OIC, you need to enter the domain credentials so that Permitting and Licensing can access OIC.

1. Navigate to the Identity Domain Credentials page.  
In Functional Setup Manager, select System Administration and click Provide Identity Domain Credentials for Oracle Integration Cloud.
2. On the Identity Domain Credentials page click the row for Oracle Integration Cloud.
3. Provide the following:

Page Element	Description
Client ID	The client ID of the identity domain you created in IDCS.
Client Secret	The client secret of the identity domain you created in IDCS.

4. Click **Save**.



# 7 Setting Up GIS

## Implementing Delivered Maps

Oracle Permitting and Licensing delivers a variety of maps for use in the agency’s permit, planning application, license, project, code enforcement, and transaction pages. There are separate maps for different users and you associate maps with a map profile based on the target audience.

For information about the delivered maps, users, navigation to maps in the system, and how the maps are used, see [Overview of Delivered Maps](#).

### Overview of Map Pages

This table provides information about the available map pages and their usage in Oracle Permitting and Licensing, including these offerings: Business Licenses, Code Enforcement, Permits, and Planning and Zoning. If your agency's map server is deployed on a local network, you might be prompted by your browser to grant access to a map.

Map Page and ID	Offerings	Navigation	Notes
Agency main map PSC_AGENCY_MAIN_MAP	All	<b>Navigator &gt; Main Map</b>  In the global header: <b>Maps (icon) &gt; Main Map</b>	Available for agency staff.
Application intake PSC_APO	All	Start an application that includes the <b>Property</b> field group in the form design. Click the <b>Map View</b> icon to open the Property page.	This map is embedded in the Property page on the application form for address, parcel, and owner (APO) selection.
Guest/anonymous user map PSC_GUEST_MAIN_MAP	All	Click the <b>Explore Your City</b> tile on the guest landing page.	Available for guests without logging in.
Registered public user map PSC_PUBLIC_MAIN_MAP	All	Click the <b>Explore Your City</b> tile on the registered public user landing page.	Available for registered public users after logging in.
Transaction header PSC_DEFAULT_EXTENT	All	View the map in the header on the detail pages for a transaction: <ul style="list-style-type: none"> <li>• Business License (not business license transactions)</li> <li>• Case</li> <li>• Inspection</li> <li>• Permit</li> <li>• Planning Application</li> </ul>	Agencies can provide one transaction header map for everyone or separate transaction header maps for public users and agency users.  The configured transaction header map applies to all offerings.

Map Page and ID	Offerings	Navigation	Notes
Agency - code enforcement PSC_CE_AGENCY_VW_MAP	Code Enforcement	Click the <b>Code Technician Worklist</b> tile on the agency springboard then click the <b>Map View</b> icon on the worklist pages.	Available for Code Enforcement administrators and technicians.
Code enforcement issue intake PSC_CE_INTAKE_MAP	Code Enforcement	Select Report an Issue in the <b>I Want To</b> field and click <b>Go</b> .  Or click the <b>Report an Issue</b> tile on the Code Enforcement landing page. Then select <b>Select an Issue Type Provide the Location of the Issue</b> .	Available for agency staff and registered users who have logged in as well as guests.
Mobile code enforcement inspections PSC_CE_MOBILE_MAP	Code Enforcement	Click the <b>Code Officer Worklist</b> tile on the Code Enforcement landing page.  Or view the <b>Inspections</b> list page upon opening the Code Officer mobile application.	The worklist is available for Code Enforcement administrators and officers. The Code Enforcement mobile app is available for code officers.
Public - code enforcement PSC_CE_PUBLIC_VW_MAP	Code Enforcement	Click the <b>View Recent Issues</b> tile on the Code Enforcement landing page.	Available for registered public users or guests.
Permit list PSC_PERMIT_LIST	Business Licenses Permits Planning and Zoning	From the agency springboard, click a tile: <b>Business License Transactions, Permits, or Planning Applications</b> . Click the <b>Map View</b> icon on the Transactions page.  From the registered public user landing page, click the <b>Applications</b> tile. Click the <b>Map View</b> icon on the Applications page.	Available for agency staff on the Transactions page and for registered public users on the Applications page.
Mobile inspection PSC_MOBILE_INSPECTION	Business Licenses Permits	Open the Inspector Application for mobile devices: <b>Mobile Inspection &gt; Inspection Tasks</b> . The map of inspection locations appears on the right panel. Click the inspection task row in the left panel to zoom in to the inspection location on the map.	Available for inspector supervisors and building inspectors.
Public notification PSC_PUBLIC_NOTIFICATION	Planning and Zoning	In the global header: <b>Maps (icon) &gt; Public Notification</b>  Or click the <b>Planning Applications</b> tile on the agency springboard and <b>Hearing</b> . Click the <b>Generate Notifications List</b> action to view the Public Notification page.	Available for agency staff.

Map Page and ID	Offerings	Navigation	Notes

## Selecting Maps for Profiles

The available maps for a profile are filtered by the map profile users defined on the Map Profile Details page. If the profile is for *All Users*, any of the delivered maps can be selected for the profile. If the profile is for agency users or public users, a subset of maps can be selected for the profile.

**Note:** Make sure that every map used is associated with a profile. See [Setting Up Map Profiles](#). If your agency defines a new map page, the new map must be added to the Map Page lookup (ORA\_PSC\_COM\_SYS\_MAP\_PROFILE) so that it is available to be associated with a map profile.

This table describes the map profile users for each of the delivered maps.

Map Page	Agency User Profile	Public User Profile	All Users Profile
Agency main map	Yes	No	Yes
Application intake	Yes	Yes	Yes
Agency - code enforcement	Yes	No	Yes
Code enforcement issue intake	Yes	Yes	Yes
Guest/anonymous user map	No	Yes	Yes
Mobile code enforcement inspections	Yes	No	Yes
Mobile inspection	Yes	No	Yes
Permit list	Yes	Yes	Yes
Public - code enforcement	No	Yes	Yes
Public notification	Yes	No	Yes
Registered public user map	No	Yes	Yes
Transaction header	Yes	Yes	Yes

If your agency wants to display separate Transaction header maps for agency and public users, you can do this:

1. Remove the Transaction header map page set up for **All Users** from the map profile where it is used.
2. Add the Transaction header map page set up for **Public Users** to a map profile.
3. Add the Transaction header map page set up for **Agency Users** to a different map profile.

Now when you log in as agency staff, you see a map in the header of the application detail pages that's different from the map in the header that you see when you're logged in as a public user.

**Note:** Transactions that are missing shape or geometry information can't be displayed on the map. Oracle recommends that your agency run the Update Shape on Transactions process after migrating transactions from the legacy system and after restarting the GIS servers due to maintenance. For more information, see [Using the Process Monitor](#).

## Setting Up GIS Feature Services

You add URLs to editable feature services on the GIS Feature Service setup page. The feature service allows editing using REST APIs.

An editable feature service is required for Oracle Permitting and Licensing to write on Esri maps. You set up GIS feature services to reference before you set up GIS mapping.

If you add and want to secure an editable feature service on the GIS Feature Service page, you also need to add a proxy user for secure web map access. For more information, see [Setting Up Authorization to Access Secure Web Maps](#).

You need an editable feature service to display transaction data exported to the map when the feature service is associated with the transaction to GIS attributes mapping definition. For more information, see [Setting Up Transaction to GIS Attributes Mapping](#) and [Setting Up Export GIS Data Actions](#).

Here's how to add GIS feature services:

1. Access setup through the Functional Setup Manager by selecting **Setup and Maintenance > Setup: Public Sector <Offering> > GIS > Manage GIS Feature Service**.
2. On the GIS Feature Service setup page, click the **+ Add** button.
3. On the **New GIS feature service** drawer, enter this information:

Page Element	Description
<b>ID</b>	Enter an identifier or ID for the feature service.
<b>Name and Description</b>	Enter the short name and description of the feature service.
<b>URL</b>	Enter the unique server URL (uniform resource locator) to an editable feature service.

4. Click **Save**.

You can also manage the feature services listed on the GIS Feature Service setup page like this:

- Click the feature service row in the table to open the **GIS feature service details** drawer. You can save changes or delete the feature service.
  - Note:** If the feature service is already associated with a mapping definition, updating or removing the feature service will affect the associated map.
- Enter key words in the **Search** field to find matching feature services.
- Click the **Export** button to download a list of feature services on the page.

## Setting Up Map Profiles

Use map profiles to configure specific instances of map functionality in the system. Profiles set the default extent of the map (the area shown by default) as well as controlling the availability of certain map options.

A profile can be linked to multiple maps. All of a profile's maps share the same map service URL, default map extent, and default base map, but the maps have individual configuration options to control end-user options for the map.


Every map must be associated with at least one map profile. In most cases, a **Switch Map Profile** button appears on the map toolbar if a map has multiple profiles, and end users can choose which profile to use. The button doesn't appear on the Transaction Header map, because you can't link to the Transaction Header map on multiple map profiles.

This example illustrates the Map Profile list page. Each row includes a thumbnail map, lists up to three maps that are associated with the profile, and states how many additional maps (if any) are associated with the profile.

### Map Profile

Add Map Profile
↕ ▾

---




Base Maps

Profile for base maps

<https://yue.maps.arcgis.com/home/webmap/viewer.html?webmap=175d37fabedb47a9992099aa6efc48c>

Enabled On Agency main map Application intake Agency - code enforcement 3 more

---



Code Enforcement

Profile for code enforcement maps

<https://yue.maps.arcgis.com/home/webmap/viewer.html?webmap=2a5b400ab50146d2a5be3c3e5c874231>

Enabled On Agency - code enforcement Code enforcement issue intake

## Prerequisite

Mapping capabilities depend on integration with a map service such as Esri's Geographic Information Systems (GIS). Before you set up map profiles, publish your map service so that it can be referenced from within the Oracle system.

## Adding a Map Profile

1. Select **Setup and Maintenance > GIS > Manage Map Profiles**.

If no profiles exist, the Map Profile Details page opens so that you can create the first profile. If at least one profile exists, the Map Profile list page appears.

2. If the Map Profile list page appears, click **Add Map Profile**.

The Map Profile Details page appears.

3. Enter the basic profile information:

Page Element	Description
<b>Profile ID</b>	Enter a unique identifier for the map profile.
<b>Profile Name</b>	Enter a descriptive name for the map profile. This identifies the profile on the Map Profile list page.  When end users view a map with multiple profiles, they can switch profiles by choosing from a list that displays this name along with a map thumbnail.
<b>Description</b>	Enter a more detailed description of the map profile. This also appears on the Map Profile list page to help identify the profile.
<b>Map Profile Users</b>	Select the type of user who can access this map profile: <ul style="list-style-type: none"> <li>○ <i>All Users</i></li> <li>○ <i>Agency User</i></li> <li>○ <i>Public User</i></li> </ul> <p>Only map pages that can be accessed by this type of user can be linked to the profile.</p> <p>For more information about which maps are available for agency, public, or all users, see <a href="#">Implementing Delivered Maps</a>.</p>

4. Enter the URL for your map service in the **Map Service URL** field.

The URL to the profile provides default values for the map extent, which you will confirm or change later in this procedure.

5. If the **Base Map** field is editable, choose the type of map to display.

The Esri server settings control whether this field is editable.

The options are *Dark gray canvas*, *Light gray canvas*, *Imagery with labels*, *National Geographic*, *Topographic*, *Open Street Map*, *Imagery*, *Streets*, *Terrain with labels*, and *Oceans*.

When you link specific maps to the profile, you will configure whether users can change the map type.

6. If your agency is configuring the Esri print widget, enter the URL to the print service in the **Print Service URL** field.

If you leave this field blank, the print service URL defined on the GIS Attribute Mapping page is used.

Proxy user setup is needed for access if the print service is secured.

7. Set the map extent.

The map extent defines the geographical area that the map initially displays. When you create a new map profile, a generic map illustration appears above the **Choose Map Extent** option. After you choose the map extent, a preview thumbnail of your actual map extent replaces the generic illustration.

Although the map service URL provides a default map extent, you still need to click **Choose Map Extent** to load the default extent into the profile and optionally modify it.

**Note:** Maps in transaction headers are initially centered on the transaction location. Therefore, the transaction header map uses the default extent from the map profile only if the transaction is not associated with a specific location.

- a. Click **Choose Map Extent**.

The Choose Map Extent page appears. The map service URL that you previously provided sets the default map extent, and the page displays a map with that default extent.

- b. If necessary, modify the default map extent supplied by the map service URL.

Oracle provides the ability to easily set a new map extent without making any changes to the GIS service. To change the extent, pan and zoom until you can see the desired extent, then use the **Choose Map Extent** toolbar button to draw a selection rectangle. This sets the new extent.

The following fields describe the map extent by identifying a coordinate system and listing the minimum and maximum X and Y values on the coordinate system.

Page Element	Description
<b>X-Min of Default Map View</b>	The top-left X-coordinate of the initial map extent.
<b>X-Max of Default Map View</b>	The bottom-right X-coordinate of the initial map extent.
<b>Y-Min of Default Map View</b>	The bottom-left Y-coordinate of the initial map extent.
<b>Y-Max of Default Map View</b>	The top-right Y-coordinate of the initial map extent.
<b>Spatial Reference</b>	The geographic coordinate system or map projection used by the mapping service to display the map. The map service URL that you previously supplied sets this value.

- c. Click **OK** to close the Choose Map Extent window.

The thumbnail map on the Map Profile Details page is updated to match your map extent.

8. Click **Save** to save the map profile.

## Linking Maps to the Profile

To link maps to a profile and define settings:

1. Click **Add Map Page** in the Linked Map Pages section.
2. In the **Map Page** field, select a map to link to the profile.

The maps are *Agency main map, Application intake, Agency - code enforcement, Code enforcement issue intake, Mobile code enforcement inspections, Public notification, Transaction header, Guest/anonymous map, Mobile inspection, Permit list, Registered public user map, and Public - code enforcement.*

**Note:** The maps available to link to the profile are filtered by the profile users selected on the Map Profile Details page. You can set up one transaction header map for everyone or separate transaction header maps for public users and agency users. For more information, see [Implementing Delivered Maps](#).

3. Configure map-specific options.

Depending on the map that you are configuring, some map options might not be available to enable or disable. For example, you cannot enable selection tools or window docking on the maps for mobile devices, and zoom tools are the only widgets available in the transaction header map.

If you create any custom maps, there are no restrictions on which widgets you can enable, so take extra care when configuring those maps.

Use these fields to configure map options:

Page Element	Description
<b>Enable Zoom</b>	Indicate whether the map toolbar includes <b>Zoom In</b> and <b>Zoom Out</b> tools.
<b>Enable Default Map View</b>	Indicate whether the map toolbar includes the <b>Show Default Map View</b> tool. This tool restores the map to its initial extent after a user zooms or pans to change the display area.
<b>Enable Base Map Gallery</b>	Indicate whether the map toolbar includes the <b>Select Base Map</b> tool. This tool lets users change the base map from the one specified in the profile. For example, if the profile's base map is topographic, users can change to a map with satellite imagery.
<b>Enable Map Layers</b>	<p>Indicate whether the map toolbar includes the <b>Select Layers</b> tool and, depending on your GIS configuration, the <b>Identify GIS Information</b> tool.</p> <p>The <b>Select Layers</b> tool lets users see the list of layers and switch layer visibility on and off. Examples of layers include environmental, zoning, or infrastructure information provided by the map service. You can also turn off and turn off the sketch layer when this option is enabled.</p> <p>When you add the Property field group during intake form design, you can link to two separate map profiles, one for agency users and one for public users. For more information, see <a href="#">Using Predefined Field Groups</a>.</p>

Page Element	Description
	The <b>Identify GIS Information</b> icon gives users the ability to click map objects such as parcels to display a pop-up window with object information. This option is available if the GIS administrator has configured the GIS service to provide this information.
<b>Enable Selection Tools</b>	<p>Indicate whether the map toolbar includes the <b>Show/Hide Selection Tools</b> icon. Clicking this icon opens a separate toolbar with tools for selecting and deselecting parcels on a map.</p> <p>The ability to select parcels on the agency main map, the registered public user map, and the guest/anonymous user map enables users to view associated transactions. Registered users and agency staff can additionally start an application for selected parcels.</p> <p>The ability to select parcels on the public notification map enables users to create a notification area around the selected parcels.</p>
<b>Enable Print</b>	Turn on this switch to enable the print widget on this map. You can't enable the print widget on a transaction header map. You must also enter a print service URL on the map profile or on the GIS Attribute Mapping page.
<b>Enable Sketch</b>	Turn on this switch to enable the sketch widget on this map. You can't enable the sketch widget on a transaction header map.
<b>Enable Detail Window Docking</b>	Indicate whether the map detail window is docked to the side of the view. The detail window is the pop-up window that appears when a user clicks a map marker or other GIS feature such as a parcel.
<b>Detail Window Dock Position</b>	<p>Specify the position where the map detail window is initially docked: <i>Auto, Bottom left, Bottom center, Bottom right, Top left, Top center, or Top right.</i></p> <p>This field is relevant only if you enable detail window docking.</p> <p>This field does not apply to mobile devices, where the detail window always appears at the bottom of the screen.</p>

- Configure the map layer display options for the Application Intake page. The Map Layer Display Options section of the page displays all of the layers defined with the map service associated with the map profile. Administrators use this section to enable layers for GIS object selection.

**Note:** The Map Layer Display Options section appears only for the Application Intake map page.

Page Element	Description
<b>Unique Identifier and Display Attributes</b>	Enter the identifiers and attributes that display for GIS objects when you select them on the map.

Page Element	Description
<b>Enable Selection</b>	When this switch is turned on for a layer, the GIS objects associated with that layer can be selected on the map.
<b>Parcel Layer</b>	<p>Turn on the switch for the parcel layer. You must identify the parcel layer if you want the option to select reference parcel data independently of enabled GIS objects on the application intake map.</p> <p>If a parcel layer is not defined, the parcel layer on the Attribute Mapping page is used to automatically select the intersecting parcel using the map selection tools. The same is true if the parcel layer is defined and the layer is enabled.</p> <p>If the parcel layer is defined but the <b>Enable Selection</b> switch is turned off, intersecting parcels will not be selected when using the map selection tools. The applicant must use the Property page search box to select a parcel.</p>

**Note:** If you change the map service in Esri to add, update, or delete the associated layers that were enabled for GIS object selection on the map page, you need to update this setup. Delete the map page and add it again. This ensures that the latest layer information is loaded when the administrator enables layers for selection and enters attributes.

5. Click **Save** to close the Add Map Page window.
6. If necessary, click a linked map to re-open the Add Map page.
  - o To edit settings, make your changes and then click **Done**.
  - o To remove the map from the profile, click **Delete**.
7. Click **Save** to save the map profile.

## Modifying a Map Profile

1. On the Map Profile list page, click the row for the profile that you want to modify.
2. Update the settings as needed.
3. Click **Save**.

## Deleting Map Profiles

To delete a map profile:

1. On the Map Profile list page, click the row for the profile that you want to delete.
2. On the Map Profile Details page, click **Delete**.

# Setting Up GIS Attribute Mapping

Use Geographic Information Systems (GIS) attribute mapping to specify property and location information about your map service parcel layer. You can also identify map layer content to collect GIS information during the application process and configure the negative buffer distance used when making selections on a map. The GIS Attribute Mapping page also stores the API key used for the routing service in the Inspector Application.

In the Functional Setup Manager, select **Setup: Public Sector <Offering> > Functional Area: GIS > Task: Manage GIS Attribute Mapping** to open the GIS Attribute Mapping page.

## Prerequisites

Before you enter the information about your map service layers, you must:

- Publish the map service, which must have parcel, address, and owner layers.  
 When you save the URL for a map service layer, an error message appears if the layer isn't available.
- Ensure that the parcel layer has a field with parcel IDs that match the parcel IDs in the Oracle system.  
 Parcel IDs must match exactly, with no formatting differences.

## Setting Up the Service Layer URLs

Here's how to set up the layer service URLs:

1. On the GIS Attribute Mapping page, click the **Property and Location** tab. Enter information in these sections:
  - Parcel Mapping
  - Address Mapping
  - Owner Mapping
  - Neighborhood Group Mapping
  - Boundary Mapping
  - Print Service
  - Custom Geocoding Service
  - API Key for Route Service
2. Enter parcel layer information:

Page Element	Description
Parcel Layer Service URL	Enter the URL for your parcel layer feature service.  The URLs for the different layers of an Esri map service have numeric identifiers. The URL that you enter here ends with the number for the parcel layer. For example, <code>https://servername/arcgis/rest/services/Your_City/MapServer/4</code> .

Page Element	Description
	You must publish your parcel layer feature service before you enter the URL here.
<b>Parcel Number in Parcel Layer</b>	<p>Select the parcel layer GIS attribute that provides the unique identifier for each parcel.</p> <p>The values in the drop-down list come from the parcel layer that you specify. Select the GIS attribute that provides the same identifiers that are used in the parcel table in the Oracle system.</p> <p>For information about setting up the parcel table, see <a href="#">Setting Up Parcels</a>.</p> <p>On maps used as property pickers, clicking a parcel on a map retrieves the parcel identifier from the map service. This value is used as criteria for searching the Parcel table, and the search results appear in a modal window. As long as the same parcel number exists in the Parcel table, the search results include just one value, representing the selected parcel.</p>

3. Enter address layer information:

Page Element	Description
<b>Address Layer Service URL</b>	<p>Enter the URL for your address layer feature service. The URL ends with the number for the address layer.</p> <p>You must publish your address layer feature service before you enter the URL here.</p>
<b>Parcel Number in Address Layer</b>	Select the address layer GIS attribute that provides the unique identifier for each parcel.

4. Enter owner layer information:

Page Element	Description
<b>Owner Layer Service URL</b>	<p>Enter the URL for your owner layer feature service. The URL ends with the number for the owner layer.</p> <p>You must publish your owner layer feature service before you enter the URL here.</p>
<b>Parcel Number in Owner Layer</b>	Select the owner layer GIS attribute that provides the unique identifier for each parcel.

5. Enter neighborhood layer information:

Page Element	Description
<b>Neighborhood Group Service URL</b>	<p>Enter the URL for your neighborhood group layer feature service. The URL ends with the number for the neighborhood group layer.</p> <p>This layer identifies neighborhood groups so that the system can check whether a location on a map intersects those neighborhood groups. For example, when generating public notification lists, attributes are downloaded for all neighborhood groups that intersect the defined public notification area.</p> <p>Your GIS administrator must create and publish your neighborhood group layer feature service before you enter the URL here.</p>

6. Enter boundary layer information:

Page Element	Description
<b>Boundary Layer Service URL</b>	<p>Enter the URL for your boundary layer feature service. The URL ends with the number for the boundary layer.</p> <p>This layer identifies the agency's boundaries so that the system can check whether a location on a map is within those boundaries. For example, in the code enforcement system, issue locations must be within the agency's boundaries.</p> <p>Your GIS administrator must create and publish your boundary layer feature service before you enter the URL here.</p>

7. Enter print service information:

Page Element	Description
<b>Print Service URL</b>	<p>Enter the URL for the default print service used with print widgets on maps. This print service URL is used if the print URL isn't defined on the Map Profile for the map page.</p>

8. Enter your agency's custom geocoding locator:

Page Element	Description
<b>Agency's Geocoding Locator</b>	<p>Enter the URL that points to the customized geocoding locator service published by your agency. If you want to use the default Esri locator, leave this field blank.</p>

Page Element	Description

The agency's custom geolocator only affects maps or pages that currently use the Esri World Geocoder to collect a location, such as case, incident, or reference entity location.

9. Enter the API key used for routing on the inspections map:

Page Element	Description
<b>Credential Store Key</b>	Enter the credential store key used for map access in the map routing of inspection tasks.  For more information, see <a href="#">Setting Up Map Routing</a> and <a href="#">Working with Inspection Routing</a> .

The ArcGIS Online API Key is your authentication credential for accessing Esri's cloud-based services, including routing. For more information about the third-party subscription service, see Esri documentation.

10. Click **Save**.

## Identifying Map Layer Attributes

Agencies can collect GIS information from map layer objects and save it with the application during the intake process. The agency defines a map service along with its service layers and service layer attributes on the Map Layer Content tab of the GIS Attribute Mapping page. The agency can have multiple map services, layers, and attributes. After defining the map layer content, you can select attributes to capture from all of the map services when designing the application form for a transaction type.

1. On the GIS Attribute Mapping page, click the **Map Layer Content** tab to add one or more map services.
2. Click the **Add** button.
3. On the GIS Attributes to Capture page, define the map service:

Page Element	Description
<b>Map Service ID</b>	Enter a unique alphanumeric ID.
<b>Map Service Name and Description</b>	Enter a map service name and description.
<b>Map Service URL</b>	Enter a feature service URL or enterprise map service URL only.

4. Click **Add** define a map service layer and attribute information:

Page Elements	Description
<b>Layer</b>	Select a map layer identifier from the drop-down list of map layers within the map service.

Page Elements	Description
<b>Layer Label</b>	Enter a label for the layer that the map service attributes belong to. This label identifies the map layer when you select attributes to capture during the application form design.
<b>Attribute</b>	Select an attribute from the drop-down list that you want to capture from the map layer attribute table within the map service.
<b>Attribute ID</b>	Enter an attribute ID to uniquely identify the attribute from the map service in the Oracle system.
<b>Attribute Label</b>	<p>Enter a label for the GIS object attributes to be displayed when a GIS object is selected. This label identifies the attribute in a map layer when you select attributes to capture when designing an application form. Depending on the application design, this label also appears when the applicant adds a property to the intake form and in application details after submittal.</p> <p><b>Note:</b> Oracle recommends entering relevant and unique attribute labels to make them distinguishable from each other while choosing attributes for a specific application form.</p>

5. Delete and add attributes row by row using the **Add** and **Delete** actions. You can't delete an attribute row if the attribute is used on an application form.
6. Click **Save**.

For information about selecting the attributes to collect on an application form, see "Working with Property Field Groups" in *Using Predefined Field Groups*.

## Configuring the Negative Buffer Distance

When you select a property on a map, the system finds all of the GIS attributes in the agency setup that intersect the selected geometry. You can use the negative buffer distance to subtract the specified distance from each side of the geometric shape of the selected property, which helps to reduce capturing extra attribute values that may be associated with the neighboring properties. The default negative buffer distance is 2 feet.

1. On the GIS Attribute Mapping page, click the **Map Layer Content** tab.
2. Click the **Update Negative Buffer Distance** pencil icon next to the value for the negative buffer distance.
3. Enter a number in the distance field. The default value is 2, but you can enter a different number, including 0 (zero) or a decimal value.
4. In the unit of distance field, the default unit of measure is feet, but you can select one of the available units: Feet, Kilometers, Meters, or Miles.
5. Click **Save**.

## Setting Up Transaction to GIS Attributes Mapping

Your agency can export transaction and inspection location information for display on an ESRI map. Define and manage the mapping of transaction and inspection attributes to GIS attributes to export data to the map layer on the Transaction to GIS Attributes Mappings page.

The agency sets up the system like this to export transaction and inspection attributes to the map layer:

1. Your agency must use an editable feature service so that exported data can be written on the map layer. Set up the feature service on the GIS Feature Services page.

For more information, see [Setting Up GIS Feature Services](#).

2. Use the Transaction to GIS Attributes Mappings setup pages to map the GIS attributes that you want to get transaction and inspection data for.

See the next section in this topic, "Mapping Required Attributes."

3. A scheduled action in the Business Rules Framework exports the data to the GIS layer using the latest mapping definitions. Set up a GIS export action in the Business Rules Framework to export the mapped data.

For more information, see [Setting Up Export GIS Data Actions](#).

### Mapping Required Attributes

Your agency defines the mapping between the transaction attributes and respective GIS attributes so that the agency can send the permit transaction data to an Esri map layer.

Here's how to define and manage the mapping of transaction data to GIS attributes:

1. Access setup through the Functional Setup Manager by selecting **Setup and Maintenance > Setup: Public Sector <Offering> > GIS > Manage Transaction to GIS Attributes Mappings**.
2. On the Transaction to GIS Attributes Mappings page, click the **+ Add** button.
3. On the **New transaction to GIS attributes mapping** drawer, enter this information:

Page Element	Description
<b>Offering</b>	Select the offering for mapping attributes: <ul style="list-style-type: none"> <li>○ Business Licenses</li> <li>○ Code Enforcement</li> <li>○ Permits</li> <li>○ Planning and Zoning</li> </ul>
<b>Mapping Name and Description</b>	Enter a short name and description for the mapping.
<b>Feature Service</b>	Enter an editable feature service so that exported data can be written on the map layer.

Page Element	Description
<b>Layer</b>	Select a specific layer from the list of layers associated with the feature service. Use this layer to map the respective GIS attributes to transaction or inspection attributes. This is the layer where the attribute data resides after it has been exported using the transaction to GIS attributes mapping definition.
<b>Resource</b>	Select a resource associated with the selected offering for mapping definitions. These resources are used by the Business Rules Framework to export GIS data: <ul style="list-style-type: none"> <li>○ Business Licenses offering: Business License Inspection or Business Licenses</li> <li>○ Permits offering: Permit Inspection or Permits Workflow Communications</li> <li>○ Code Enforcement offering: Code Enforcement Case or Code Enforcement Incident</li> <li>○ Planning and Zoning offering: Planning and Zoning Workflow Communications</li> </ul> For more information, see <a href="#">Setting Up Export GIS Data Actions</a> .
<b>Transaction Type</b>	Select from the available transaction types based on the selected offering. Use this option to select a transaction type if you want to map custom attributes defined for that transaction type along with the standard transaction attributes.  This option isn't available when you select the inspection-related resource for the Business Licenses or Permits offering.

4. Each mapping must identify the record key or inspection key, latitude, and longitude values for the location of the transaction or inspection.

In the **Map required attributes** section, enter GIS attributes for these required attributes:

- Record Key or Inspection Key
  - Latitude
  - Longitude
5. Once you click **Save** to save the required attributes that you entered, the **Map additional attributes** section appears. You can map transaction attributes from all of the standard and global or reusable attributes exposed by the selected resource to a GIS attribute.
  6. Turn on the **Show only mapped attributes** switch to hide attributes that aren't mapped. Turning off the switch displays all of the GIS attributes from the map layer whether they are mapped or not.
  7. Turn on the **Enable** switch in the **Map additional attributes** section to enable the mapping for use in the Business Rules Framework, where you configure the action to export the attribute data to the GIS layer.
  8. Click **Save**.

Saved mapping definitions appear on the Transaction to GIS Attributes Mappings page. You can also manage the mapping definitions like this:

- Click the mapping row in the table to open the **Transaction to GIS attributes mapping details** drawer. You can save updates to attributes in the mapping definition.
- Although you can't delete a mapping, you can disable it.

- Enter key words in the **Search** field to find matching mapping definitions.
- Click the **Export** button to download a list of mapping definitions on the page.

**CAUTION:** Oracle highly recommends not deleting GIS attributes in the respective map layer after transaction to GIS attribute mapping. If the feature service is already associated with a mapping definition, updating or removing the feature service will affect the associated map. If you delete a GIS attribute on the ESRI layer after mapping and the GIS attribute was already mapped to a transaction attribute, then when you access the mapping again, the respective row indicates that the attribute is deleted in GIS.

## Setting Up Access to Secure Map Services

This topic discusses how to set up access to the agency's secure private maps.

### Overview of Secure Map Access

Giving users access to non-public maps (maps that can't be accessed directly through a browser) involves setup in both the Esri and Oracle systems:

**Note:** Access to secure map is only through proxy users in the Redwood Experience user interface.

1. In the Esri system, set up proxy users with access to the maps.

You can set up proxy users with access to one or multiple secure map services.

2. In Oracle, create a secure access definition that includes the user ID and password for the proxy.

The secure access definition also includes a URL for the map service to be accessed and a URL for the web service that generates an authentication token for accessing the map services.

On the Oracle side, create separate secure access definitions for each of the map service URLs that you need to access. You can create definitions for specific map services, such as *https://portal.city.net/arcgis/rest/services/TaxParcels/MapServer*, or for generic services such as *https://portal.city.net/arcgis/rest/services*.

When an Oracle user attempts to access a secured map, the authentication process checks first for access information for the specific map service, then for access information for the generic service.

### Prerequisites

To enable access to secure map services, you must:

1. Set up proxy users in the Esri system.
2. Give these proxy users appropriate access to the secure maps services that will be accessed from the Oracle system.

### Setting Up Secure Map Access

To set up secure map access:

1. Select **Setup and Maintenance** > **Setup: Public Sector <Offering>** > **GIS** > **Manage Secure Map Access**.

The GIS Secure Map Access page appears in the classic user interface.

2. In the **Secure Map and Feature Server** section, click the **Add Proxy User** button to create a new secure access ID.
3. Enter the following information:

Page Element	Description
<b>Secure Access ID</b>	Enter an identifier for this configuration.
<b>Description</b>	Enter a description for this configuration.
<b>GIS Service URL</b>	Enter the URL to the secured map service that will be accessed with this configuration.
<b>Token Service URL</b>	Enter the URL to the web service that generates an authentication token for accessing secure map services.
<b>User Name</b>	Enter the user name for the proxy user that is used to access secure map services.
<b>Password</b>	Enter the password that the proxy user uses to access secure map services.
<b>Confirm Password</b>	Re-enter the password. The re-entered password is compared to the originally entered password to help catch data entry errors.

4. Click **Save**.

Saving tests the access information that you provided. If the test fails, you aren't able to save.

You can also modify and delete map profiles.

1. In the **Secure Map and Feature Server** section, click the row for the proxy user access that you want to modify.
2. On the Secure Map and Feature Server detail page, you can update the field values as needed and click **Save**, or click **Delete**.

## Setting Up Authorization to Access Secure Web Maps

Agencies can extend their GIS integration to support OAuth 2.0 authorization, which allows Oracle Permitting and Licensing to access secure ArcGIS Online or Enterprise portal web maps. After registering the application with the Esri system, you configure access to the secured web map in the Oracle system.

For OAuth 2.0 authorization to work, you must register the Oracle Permitting and Licensing application on ArcGIS Online or ArcGIS Enterprise Portal.

During registration, enter the Redirect URL on the Register modal as follows:

Base URL appended with `?root=PSCCOM_OAUTH_REDIRECT& context=ClientName=ESRI`

The registration information includes the **Application ID** and **Application Secret**, which are needed for the configuration.

**Note:** OAuth2 is supported in the classic user interface only.

## Configuring the Secure Web Map

After registering the application, you configure the access to the secured web map in the application:

1. Select **Setup and Maintenance > Setup: Public Sector <Offering> > GIS > Manage Secure Map Access**.
2. On the GIS Secure Map Access page, click the **Add Secure Web Map Access** button to configure authorization for a secure web map.

Enter this information in the **Secure Web Map** section:

Page Element	Description
<b>Secure Access ID</b>	Enter an identifier for this configuration.
<b>Description</b>	Enter a description for this configuration.
<b>OAuth 2 Authorize URL</b>	Enter the URL to the secured web map that is accessed using the application ID.
<b>OAuth 2 Token URL</b>	Enter the URL to the web map that generates an authentication token for accessing the secure web map.
<b>Application ID</b>	Enter the application ID used to retrieve the web map security information. This information is provided by the authorization server during registration.
<b>Application Secret</b>	Enter the secret for the application ID. This information is provided by the authorization server during registration.
<b>Confirm Application Secret</b>	Reenter the application secret to help catch any data entry errors.
<b>Expiration in Minutes</b>	Enter the time the access token for a custom API is valid, up to 14 days (20,160 minutes).

3. Click **Save**.

## Modifying Secure Web Map Access

1. In the **Secure Web Map** section, click the row for the authorization details that you want to modify.
2. Update the settings as needed.

3. Click **Save**.

## Deleting Secure Web Map Access

1. In the **Secure Web Map** section, click the row for the authorization details that you want to modify.
2. On the Secure Web Map detail page, click **Delete**.

# Setting Up GIS to Property Import Mapping

Your agency can integrate the Esri service with Oracle Permitting and Licensing to enable real-time import of Address, Parcel, Owner, and Parcel District information.

When configuring import mappings for Address, Parcel, and Owner information, your agency must do this:

1. Turn on the **Identify and import property information using GIS** switch. For more information, see [Setting Up Agencies](#).
2. Use the GIS to Property Import Mapping page to map GIS attributes for Address, Property, and Owner. If your agency has defined GIS layers for Parcel Districts, then the respective mapping can be done to import that information to the parcel reference.

**Note:** Oracle recommends defining the address, parcel, and owner layers with pagination enabled on the Esri service for performance reasons.

Here's how to add GIS to property import mappings:

1. Access setup through the **Setup and Maintenance > GIS > Manage GIS to Property Import Mapping**.
2. On the GIS to Property Import Mapping setup page, click the Add (+) button.
3. On the New GIS to property import mapping details drawer, enter this information:

Page Element	Description
<b>Mapping Name</b>	Select a mapping name for the property import you want to map: Address, Parcel, Owner, or Parcel Districts.  For Parcel Districts, you must have already set up Districts and District Types. For more information about Districts, see <a href="#">Setting Up District Types</a> .
<b>Description</b>	Enter a description of the property import mapping.
<b>Mapping Service URL</b>	The unique server URL (uniform resource locator) is automatically populated based on the attributes defined on the GIS Attribute Mapping page.  <b>Note:</b> If the respective Mapping Service URL on the GIS Attribute Mapping page is changed after this mapping is set up, the administrator must reopen this mapping and map the correct attributes based on the new Mapping Service URL.

Page Element	Description
	For more information, see <a href="#">Setting Up GIS Attribute Mapping</a> .
<b>Enabled</b>	Turn on this switch to enable property import mapping for this mapping name.
<b>Map attributes</b>	<p>The two columns of map attributes displayed on the left-hand side are read-only.</p> <p>The Map attributes section lists all the Property Reference attributes and their types. The drop-down on the right lists all the GIS Attributes for the Mapping Service URL.</p> <p>Select the appropriate GIS Attribute to import into the respective Property Reference attribute. Only the mapped attributes will be imported, and the rest will be ignored.</p>

4. Click **Save**.

## Keeping Address and Parcel Information Updated

After configuring import mappings for Address, Parcel, and Owner, you can keep the data updated by running *Load Property Information from GIS*. This scheduled process enables agencies to quickly keep property records accurate and up-to-date by bulk loading and refreshing addresses, parcels, owners, and districts from GIS layers.

When you run this scheduled process, you can specify the duration in hours for loading the data from GIS. After the duration is reached, the process will stop and then restart per your schedule from where the previous instance stopped. If you leave the duration parameter at 0 (zero), the process monitor will run until all rows of data are processed.

Turn on the **Detailed logging** switch if you want to see a log of all of the objects that were updated. If you only want to see overall totals, leave the switch off. The log files can be helpful if you want to search for specific parcel district numbers, for example.

The Elastic Search ingestion needs to be run after each import for these two indexes: fa-psc-apo-parcel and fa-psc-apo-address. For more information, see [Setting Up Oracle Search Cloud Service](#).

For more information about using the Process Monitor, see Working with Processes in [Using the Process Monitor](#).

# 8 Configuring Oracle Intelligent Advisor

## Overview of Oracle Intelligent Advisor Configuration

This topic provides an overview of how Oracle Intelligent Advisor is used within Oracle Permitting and Licensing and how it is configured.

If your site already has an installation of Oracle Intelligent Advisor, you can integrate its functionality with the permits service. The policy models created in Oracle Intelligent Advisor can act as the logic models running behind questionnaires that public users fill out to determine which permits they need to apply for depending on the nature of the project they are planning.

The topics in this chapter describe the setup pages that an administrator would view and use to configure the mapping of metadata between the permits service and the Oracle Intelligent Advisor application.

**Note:** Most of the data displayed on the pages within the Policy Modeling menu folder are read-only. In the current release, you do not create or update the definitions such as entity models, metadata models, or enumerations. These definitions are provided for your implementation in the form of delivered seed data. This documentation is provided to describe the visible information related to the policy modeling feature. Only the Metadata Models page contains fields that can be updated.

## Setting Up Entity Models

This topic describes the settings used to configure entity models used when implementing Oracle Intelligent Advisor for use with the permits application.

### Adding an Entity Model

**Note:** Most of the data displayed on the pages within the Policy Modeling menu folder are read-only. In the current release, you do not create or update the definitions such as entity models, metadata models, or enumerations. These definitions are provided for your implementation in the form of delivered seed data. This documentation is provided to describe the visible information related to the policy modeling feature. Only the Metadata Models page contains fields that can be updated.

1. Select **Policy Modeling > Entity Models**.
2. Click **Add**.
3. On the Entity Model Details page, enter these values:

Page Elements	Description
<b>Name</b>	Enter a name to identify the model within the application.

Page Elements	Description
<b>Description</b>	Provide additional information regarding the purpose of the model.
<b>Enabled</b>	Use to enable or disable a model by turning the control on or off.

- Click **Add** in the Entities grid.
- On the Entity Details page, enter these values:

Page Elements	Description
<b>Name</b>	Name of the entity.
<b>Description</b>	Additional information to identify the entity and describe its purpose.
<b>Hidden from Policy Modeling</b>	If set to true, then this entry will not be present in the Get MetaData response to Oracle Intelligent Advisor.
<b>Top-Level Entity</b>	Indicates if the object is the highest level entity object.
<b>Policy Modeling Name</b>	The functional name for an entity or attribute as it appears within Oracle Intelligent Advisor.
<b>Use as Mapped in Entity</b>	Defines if the entity object can be selected as an input entity.
<b>Use as Mapped Out Entity</b>	Determines if the entity object can be selected as an output entity.
<b>Parent Entity Name</b>	The name of the parent entity object of a child object.
<b>Cardinality with Parent Entity</b>	Indicates the cardinality relationship with the parent entity object, such as one-to-one, one-to-many, many-to-one, or many-to-many.
<b>Policy Modeling Relationship Name</b>	The name of the relationship between two entities as it appears in Oracle Intelligent Advisor.
<b>Supports Attachment</b>	Determines if attachments can be collected for rows of the entity object.

- Click **Add** in the Entity Attributes grid to add attributes for the entity.

7. On the Entity Attribute Details page, enter these values:

Page Elements	Description
<b>Name</b>	The system name of the entity attribute.
<b>Data Type</b>	The data type of the attribute as it is defined in Oracle Intelligent Advisor. For example: <ul style="list-style-type: none"> <li>○ java.lang.String</li> <li>○ java.lang.Long</li> </ul>
<b>Primary Key</b>	The primary key of the underlying view object.
<b>Policy Modeling Name</b>	The functional display name for an entity or attribute as it appears in Oracle Intelligent Advisor.
<b>Hidden from Policy Modeling</b>	If set to true, then this entry will not be present in the Get MetaData response to Oracle Intelligent Advisor.
<b>Mandatory</b>	Determines if the field <i>must</i> be mapped from an attribute in a policy model.
<b>Policy Modeling Data Type</b>	Describes the data type of the field defined in Oracle Intelligent Advisor. It must be specified if no enumeration-type attribute is provided, and it cannot be specified if an enumeration-type attribute is provided. <p>Options are:</p> <ul style="list-style-type: none"> <li>○ String</li> <li>○ Boolean</li> <li>○ Decimal</li> <li>○ Date</li> <li>○ Date-time</li> <li>○ Time-of-day</li> </ul>
<b>Use as Mapped In Attribute</b>	Determines if the field can mapped from an attribute for the purpose of submitting data.
<b>Use as Mapped Out Attribute</b>	Determines if the field can mapped from an attribute for the purpose of submitting data.
<b>Default Value</b>	Enter a default value for this attribute. If added, the application includes the value in the load response to Oracle Intelligent Advisor.
<b>Enumeration Name</b>	Specifies the ID of the enumeration that defines a field's data type.

Page Elements	Description

8. Click Save.
9. Click Save on the Entity Details page.
10. Click Save on the Entity Model Details page.

## Setting Up Metadata Models

This topic describes how to set up Oracle Intelligent Advisor metadata models and define entity relationships.

**Note:** Most of the data displayed on the pages within the Policy Modeling menu folder are read-only. In the current release, you do not create or update the definitions such as entity models, metadata models, or enumerations. These definitions are provided for your implementation in the form of delivered seed data. This documentation is provided to describe the visible information related to the policy modeling feature. Only the Metadata Models page contains fields that can be updated.

To set up Oracle Intelligent Advisor metadata models:

1. Select **Policy Modeling > Metadata Models**.
2. Click Add for the Metadata Models grid.
3. On the Metadata Models Details page, add enter these values:

**Note:** You can update the following fields for a metadata model definition: **Supports Policy Modeling Checkpoints**, **Anonymous Users Can Save Data**, and **Active Model**. By default these fields are turned-off. You can turn them on according to your business requirements.

Page Element	Description
<b>Name</b>	Enter the functional display name of the metadata model.
<b>Description</b>	Provide additional description to identify the purpose of the metadata model.
<b>Supports Policy Modeling Checkpoints</b>	Turn on to indicate that the metadata model is designed to support checkpoints.
<b>Anonymous Users Can Save Data</b>	Turn on to enable the anonymous (non-signed-in user) to save data.
<b>Active Model</b>	Turn on to activate or deactivate the model.

- Click Add for the Metadata Entity Relationships grid, and enter these values:

Page Element	Description
<b>Name</b>	Enter the entity relationship name.
<b>Mark as Global Entity</b>	Turn on if the entity is global.
<b>Cardinality with Global Entity</b>	Indicate the cardinality with the global entity (one-to-many, many-to-one, and so on).
<b>Policy Modeling Relationship Name</b>	The name of the relationship between two entities as it defined within in Oracle Intelligent Advisor.

- Click Add for the Metadata Entity Links grid, and enter these values:

Page Element	Description
<b>Source Entity Policy Modeling Name</b>	Represents the policy modeling name for the entity in the source entity model.
<b>Target Entity Model Name</b>	Enter the target entity model.
<b>Target Entity Policy Modeling Name</b>	Represents the policy modeling name for the entity in the target entity model for this link.
<b>Description</b>	Provide any additional details to describe the purpose of metadata entity link.
<b>Cardinality with Target Entity</b>	Indicate the cardinality with the target entity (one-to-many, many-to-one, and so on).
<b>Policy Modeling Relationship Name</b>	The name of the relationship between two entities as it appears in Oracle Intelligent Advisor.

- Click **Save**.
- Click **Save** on the Metadata Entity Relationship Details page.
- Click **Save** on the Metadata Model Details page.

## Setting Up Enumerations

This topic describes how to configure enumerations for policy modeling. An *enumeration* is a tool for managing lists of potential values for a non-boolean attribute in your policy model. Enumeration are also referred to as value lists.

**Note:** Most of the data displayed on the pages within the Policy Modeling menu folder are read-only. In the current release, you do not create or update the definitions such as entity models, metadata models, or enumerations. These definitions are provided for your implementation in the form of delivered seed data. This documentation is provided to describe the visible information related to the policy modeling feature. Only the Metadata Models page contains fields that can be updated.

To add an enumeration:

1. Select **Policy Modeling > Enumerations**.
2. On the Enumerations page, click **Add**.
3. On the Enumerations Details page, enter these values:

Page Element	Description
<b>Enumeration Name</b>	The functional display name of the enumeration.
<b>Enumeration Type</b>	The data type of the enumeration, such as: <ul style="list-style-type: none"> <li>○ String</li> <li>○ Number</li> <li>○ Boolean</li> <li>○ Time</li> </ul>
<b>Description</b>	Provide additional information to help describe the purpose of the enumeration.
<b>Child Enumeration Name</b>	Specify the name of a linked child enumeration, as needed.

4. Click **Add** for the Enumeration Values grid.
5. On the Enumeration Value Details page, enter these values:

Page Element	Description
<b>Enumeration Value</b>	Enter the function display name of the enumeration value.
<b>Description</b>	Provide additional information to describe the purpose of the enumeration value.

6. Click **Add** for the Child Enumeration Values grid for any child enumeration values.

Page Element	Description
<b>Child Enumeration Value</b>	Enter the function display name of the child enumeration value.
<b>Description</b>	Provide additional information to describe the purpose of the child enumeration value.

Page Element	Description

7. Click **Save**.
8. Click **Save** on the Enumeration Value Details page.
9. Click **Save** on the Enumeration Details page.

## Mapping Enumerations to Metadata Models

This topic describes how to map defined enumerations to existing metadata models.

**Note:** Most of the data displayed on the pages within the Policy Modeling menu folder are read-only. In the current release, you do not create or update the definitions such as entity models, metadata models, or enumerations. These definitions are provided for your implementation in the form of delivered seed data. This documentation is provided to describe the visible information related to the policy modeling feature. Only the Metadata Models page contains fields that can be updated.

To map an enumeration to a metadata model:

1. Select **Policy Modeling > Enumeration Mapping**.
2. Click **Add** for the Metadata Models grid.
3. On the Metadata Model Details page, enter the name and description of the existing metadata model to which you want to map the enumeration.

**Note:** Once added, the remaining attributes, such as **Supports Policy Modeling Checkpoints**, **Anonymous Users Can Save Data**, and **Active Model** are read from the metadata model definition.

4. Click **Add** for the Metadata Enumeration Relationships grid.
5. On the Metadata Enumeration Relationship Details page, enter the enumeration name.
6. Click **Save**.
7. Click **Save** on the Metadata Model Details page.

## Managing Proxy Users

This topic describes how to manage proxy users for enabling integration between Oracle Intelligent Advisor and your Oracle Permitting and Licensing service.

Oracle Intelligent Advisor connects to your Oracle Permitting and Licensing service through a provided web service connector named pscOpaWSConnector.

This connector requires proper WS-Security credentials to handle the transactions between the Oracle Permitting and Licensing service and the Oracle Intelligent Advisor service.

When configuring the connection within the Oracle Intelligent Advisor hub, in the WS-Security section of the New Connection page, a user ID and password is required.

The user ID entered must have the following role within their role hierarchy:

### PSC Oracle Intelligent Advisor Proxy User (ORA\_PSC\_OPA\_PROXY\_USER\_DUTY)

This duty role contains the following privilege:

Access Oracle Intelligent Advisor Web Service Connector Privilege (PSC\_OPA\_WSC\_PRIV)

This privilege allows the proxy user to integrate Oracle Intelligent Advisor with your Oracle Permitting and Licensing service.

By default, the delivered SYSTEM\_ADMIN has the PSC System Administrator job role, which inherits the PSC Oracle Intelligent Advisor Proxy User duty role. Any custom (cloned) role or created user must have PSC Oracle Intelligent Advisor Proxy User duty role if you intend to use that user ID as the proxy user for the Oracle Intelligent Advisor WS-Security credentials.

## Managing the Oracle Intelligent Advisor Hub Endpoint

Administrators set up the Oracle Permitting and Licensing services that are required to integrate with the Oracle Intelligent Advisor using the topology entries.

To set up the Oracle Intelligent Advisor Hub endpoint:

1. Select the **Setup and Maintenance** tile on the Agency Springboard. On the Setup page, select the offering: Public Sector Permits or Public Sector Planning and Zoning and then select the OPA Questionnaire functional area.
2. On the right panel, select the task named Manage OPA Hub Endpoint to open the setup page.
3. Expand the Server Details section and fill up the following fields, with the values you received while setting up Oracle Intelligent Advisor.

Page Elements	Description
<b>Server Protocol</b>	Select the protocol of the Oracle Intelligent Advisor service.
<b>External Server Host</b>	Enter the host of the Oracle Intelligent Advisor service.
<b>External Server Port</b>	Enter the port of the Oracle Intelligent Advisor service.

4. Click **Save and Close**.

## Managing the Oracle Intelligent Advisor Hub

Administrators set up the Oracle Intelligent Advisor hub that is required to integrate with Oracle Permitting and Licensing services.

# Oracle Intelligent Advisor Setup for Integrating with Oracle Permitting and Licensing

This is a two-step process:

1. Authorizing Embedded Interviews
2. Creating Connections

## Authorizing Embedded Interviews

1. Log in to the Policy Automation Hub web interface with the user credentials of *Deploy Admin*.
2. Click the Permissions tile to open the Permissions page. Click the menu in the right top of the page and select **Access Settings**.
3. On the Access Settings page, click **Add Host** under Interview Access Control.
4. In the CORS Hosts field, enter the Oracle Permitting and Licensing application host address.
5. Click **Apply**.

## Creating Connections

1. Log in to the Policy Automation Hub web interface with the user credentials of *Deploy Admin*.
2. Click the **Connections** button on the banner to open the Connections page.
3. On the Connections page, click the Actions drop-down menu and select Create a new Connection option to open the New Connection page and enter values for the various fields:

Page Element	Description
Name	Enter a name for the connection.
Type	Select <b>Web service</b> .
Collection Access	Select the collection that you have created, to gain access to the connection. Click <b>Allow</b> .  The default value for this field is <b>Default Collection</b> . You can include any additional collections that you want to allow access to.
URL	Enter the URL of the connector, which is deployed with other services – the FSCM base URI from the topology manager. Append the below string to the URL of the connector as shown here:  <FSCM base URI>/fscmPojoService/pscOpaWSCconnector?MDMN=OPAResult
Use Custom Certificate (optional)	Select to use a custom certificate defined in Policy Automation Hub. These custom certificates will be recognized by outbound <i>https</i> calls made by a Policy Automation site. If not selected, the connection will only trust the built-in root certificates.
Version	Select the following web service version:

Page Element	Description
	12.2.13
SOAP ActionPattern (optional)	Specify the <i>soap:operation soapAction</i> name expected by the web service.

### OAUTH for Data Operations:

Page Element	Description
Provide OAUTH bearer token in HTTP header on Load and Save actions	<p>Select to allow you to enter a URL parameter and enter the value <i>jwt</i> in the URL Parameter field.</p> <p>The token's value is passed by specifying the parameter in the query string of the interview's start session URL. This value is then passed to the Web Service connector as an <b>OAuth 2.0 HTTP Authorization</b> header whenever a Load or Save request is sent.</p>

### WS-Security:

Page Element	Description
Provide WS-Security Username token in SOAP actions.	Select the option to allow you to enter values for the fields in the section.
Applies to	Select applies to <b>All</b> .
Username	<p>Enter a username for the purpose of connecting securely to the web service. Note that this is not related to the username of the logged-in Policy Automation Hub user.</p> <p>If you have installed Oracle Intelligent Advisor, then as part of the Fusion Onboarding process you must have created a user having the following Oracle Intelligent Advisor proxy user Duty role: <b>ORA_PSC_OPA_PROXY_USER_DUTY</b>. Use the same user name in this field.</p>
New Password	Enter a password.
Include timestamp with a 5 minute expiration (optional).	Select to include a timestamp with a validity of 5 minutes. Note: The web service connector time must be synchronized to the Oracle Intelligent Advisor server.

4. Click **Save and Close** to complete the process of creating a new connection.

# Managing Oracle Intelligent Advisor Policies for your Agency

This topic describes how to set up Oracle Intelligent Advisor policies for your Agency.

You can enter an Oracle Intelligent Advisor policy model at the agency level or at the offering level (for example, for the Permits offering). When the policy is used by a specific offering, the offering-specific policy model takes priority over the agency-level policy model.

**Note:** To identify a policy model, you enter the deployment name listed in the Deployment page. The Deployment page is where the deployment and activation of policy models is managed. To access the Deployment page, log in to the Policy Automation Hub web interface with a user role of *Policy Author* or *Deploy Admin*. On the Dashboard page, click the deployments tile to open the Deployments page. From the list of all projects currently deployed, select the desired deployment name.

To define the Oracle Intelligent Advisor policies for your agency:

1. Select **Common Setup > Agency**.
2. Click a row on the Agency Information tab.
3. To define an agency-level policy model:
  - a. Enter the policy information in the **Oracle Policy Automation ID** field on the Agency Information tab.
  - b. Click **Save**.
4. To enter an offering-level policy model:
  - a. Click the Features tab.
  - b. Click the **Options** link for the offering you are configuring.
  - c. On the Permit Options page, enter the policy information in the **Oracle Policy Automation ID** field.
  - d. Click **Save**.

**Note:** You must repeat the steps outlined in this topic and in the *Setting Up Metadata Models* topic when you are moving the content from the Test environment to your Production environment.

## Purging Checkpoint Data

This topic describes how to purge checkpoint data to synchronize model definitions and maintain performance.

Periodically, it is recommend to purge the checkpoint data to maintain the integrity of the checkpoint data. When changes are made to a policy model, the stored checkpoint data can become corrupt. Also, over time, the accumulation of checkpoint data can impede performance.

To purge the current checkpoint data, administrators can run the following Enterprise Scheduler Service job: *Purge Public Sector Interview Checkpoints Job*.

This process runs a full purge for the user checkpoints for the interview specified in the Oracle Policy Automation ID field within the Agency Information page. The purge process clears all existing checkpoints for all interviews saved by all users.

To purge check point data:

1. Navigate to the Fusion Applications homepage, such as by selecting **Navigator > Setup and Maintenance**.
2. Select **Tools > Scheduled Processes**.
3. Click **Schedule New Process**.
4. Search for and select the following job: *Purge Public Sector Interview Checkpoints Job*.
5. Click **OK** and then **Submit**.

# 9 Implementing AI Agents

## Understanding AI Agent Studio

AI Agent Studio is a design-time environment where you can create, configure, validate, and deploy AI agents to meet your organization's needs.

With AI Agent Studio, you can extend preconfigured agent templates, and even build new agents and multiagent workflows from scratch. AI Agent Studio is fully integrated into Oracle Fusion Cloud Applications, providing secure and seamless access to the knowledge stores, tools, and APIs of Fusion Applications, like Oracle Permitting and Licensing. This integration enables agents to be deployed directly into the workflow, ensuring an efficient process.

For information about access requirements for AI Agent Studio, see [Provide Access to Configure AI Agents in Oracle Permitting and Licensing](#).

### Related Topics

- [Oracle AI for Fusion Applications: How do I use AI Agent Studio?](#)

## Integrating with AI Agents

This topic describes how to extend the pages in Oracle Permitting and Licensing to add AI agent functionality.

Your agency can use AI functionality including AI agents on pages to help users with various tasks.

## Steps for Enabling AI Agents

Let's take a look at the steps for getting started with AI agents:

1. Enable AI functionality at the offering level in Functional Setup Manager.
2. In the AI Agent Studio, find the AI agent that you want to make available to agency staff.
3. Click the **Copy Template** button or use the AI agent as delivered. Click **Publish**.
4. On the Agent Teams page, note the **Agent Team Code** for the published agent team.
5. Go to an AI-ready page for the offering in the Redwood Experience interface. For example, you can embed an **AI Assist** button on these pages for agency staff: list and detail pages for Addresses, Parcels, Businesses, and Contractors.
6. In the lower right corner of the page, hover over the Ask Oracle icon to view the **Edit Page in Visual Builder Studio** pencil icon. Click the pencil icon button on the left:



7. Associate the desired agent with the **AI Assist** button.

In express extensibility, update parameters with the agent team code as it appears on the Agent Teams page. For example, you can add a value like this to the agent constant:

```
{  
  "showAgent": true,  
  "agentTeamCode": "PUBLIC_SECTOR_CONTRACTOR_LICENSE_AGENT_COPY"  
}
```

The **AI Assist** button appears on the page and any other existing actions are moved to the three-dot **Actions** menu.

See details in the next sections for more information.

## Enabling AI Functionality By Offering

Your agency enables AI functionality for each offering in Functional Setup Manager prior to use within Oracle Permitting and Licensing. Agencies must enable AI functionality for each offering where you want to enable an **AI Assist** button to access AI agents on pages.

Here's how to enable AI functionality for agency staff for each offering:

1. Go to the Functional Setup Manager by entering and selecting **Setup and Maintenance of Offerings** on the Home with Ask Oracle.
2. Select the offering in the drop-down list: **Setup: Public Sector <Offering>**.
3. On the Setup page, click the **Change Feature Opt In** link.
4. On the Opt In page, click the **Features** pencil icon in the top Public Sector <Offering> row.
5. Select the **Enable** check box for the **Enable AI Functionality for <Offering>** feature.
6. Click **Done**.

## Adding AI Agents to Pages

Here's how to add AI Agents to pages in Oracle Permitting and Licensing.

To support extensibility out-of-the-box, the page or fragment needs to have one of these dynamic components implemented and enabled for extensibility:

- Dynamic Container
- Dynamic Table
- Dynamic Form

AI agent functionality for specific products can also be extensible using extensible constants.

As an agency, you can also create your own page using advanced extensibility, and after deployment, you can create root menu tiles or quick action links to access the page.

## Extensibility Steps

You can use express mode or advanced mode to add a button or link to use an AI agent directly on a page. A page must be extensible to embed the AI functionality.

This is what express mode looks like:

1. Navigate to the page and click **Edit Page in Visual Builder**.
2. Select **Express Mode**.

3. Locate a constant for the AI agent on the page.

Here's an example; the constant will have a format like this:

```
{  
  "showAgent": true,  
  "agentTeamCode": "AGENCY_BUSINESS_LICENSE_ASSISTANT",  
  "agentParameters": {"LnpRecordKey": $base.variables.recordKey}  
}
```

4. Preview the changes and test.

5. Publish the changes.

Here's how to use advanced mode:

1. Navigate to the page and click **Edit Page in Visual Builder**.
2. Select **Advanced Mode**.
3. Through documentation, search the extensible fragment and open it.
4. Locate a constant for the AI agent on the page.

Here's an example; the constant will have a format like this:

```
{  
  "showAgent": true,  
  "agentTeamCode": "AGENCY_BUSINESS_LICENSE_ASSISTANT",  
  "agentParameters": {"LnpRecordKey": $base.variables.recordKey}  
}
```

5. Preview the changes and test.

6. Publish the changes.

## Extensible Pages

Agencies use express mode to show or hide the **AI Assist** button in page header regions.

Here are some of the available pages that can be extended with AI agent functionality using the extensibility steps provided in this topic:

- Permit Applications list page and detail page header
- Planning Applications list page and detail page header
- License Applications list page and detail page header
- Incidents list page and detail page header
- Cases list page and detail page header
- Addresses list page and detail page header
- Parcel list page and detail page header
- Apply page (What would you like to apply for? page)

Agencies can also add the assist button to these pages for use by agency staff:

- Addresses list and detail pages
- Parcels list and detail pages
- Businesses list and detail pages
- Contractors list and detail pages

In the Inspector Application for inspectors performing permit and business license inspections on their mobile devices, these pages are extensible:

- Inspection Tasks page
- Inspection overview panel in the inspection details
- Inspection Result page

## Delivered AI Agents

The delivered AI agents provide predefined AI functionality using Oracle AI for Fusion Applications.

Your agency can use delivered agents out-of-the-box or as templates to create your own. For more information about setup, including embedding the AI Assist button for access to agents, see *Integrating with AI Agents*. Some agents require the agency to provide a Retrieval-Augmented Generation (RAG) document, which enhances a large language model's (LLM) responses by providing it with external, factual information.

In the AI Agent Studio, select the PSC family in the search bar to view the available AI agents. Agents in Common Components retrieve application-related information from multiple products.

Let's take a look at the delivered AI agents for Oracle Permitting and Licensing, listed under the Family **PSC**:

### **Product: Common Components**

AI Agent	Product	Pages	Agent Delivery Type	Description
<b>Ad hoc Message Communication Generator</b>	Common Components	Requires agency setup on extensible pages.	Template	Enables users to quickly and easily insert AI-generated text into ad hoc messages.
<b>Inspection Summary</b>	Common Components	Requires agency setup on extensible pages.	Template	Summarize a permit or business license inspection and output in formatted HTML.
<b>Plan Review PreScreener</b>	Common Components	Requires action tile setup on registered public user landing page for Permits and Planning and Zoning	Template Runnable or Packaged	Features AI image recognition and code comparison to assess the completeness and currency of a submitted plan set.

AI Agent	Product	Pages	Agent Delivery Type	Description
				For more information about runnable agents, see <i>Using Packaged AI Agents</i> .
<b>Public Document Agent</b>	Common Components	Registered User Landing Page Guest User Landing Page Apply Page	Template	Designed to provide precise, reliable answers strictly based on the contents of the provided documents. The assistant references specific sections or excerpts when possible. If an answer can't be found within the provided materials, the assistant clearly states that the information is unavailable.  The agency provides the Retrieval-Augmented Generation (RAG) document for this agent.
<b>Reference APO Assistant</b>	Common Components	Requires agency setup on extensible pages	Template	Retrieves APO (address, parcel, and owner) and district information. This agent has access to reference parcels, reference addresses, reference owners, and reference districts tools.

**Product: Business Licenses**

AI Agent	Product	Pages	Agent Delivery Type	Description
<b>Agency Business License Assistant</b>	Business Licenses	Requires agency setup on extensible pages:  Licenses list page and license details	Template	Retrieves business license application-related information.

**Product: Code Enforcement**

AI Agent	Product	Pages	Agent Delivery Type	Description
<b>Code Enforcement Case Assistant</b>	Code Enforcement	Requires agency setup on extensible pages	Template	Helps agency staff to do quick inquiries on cases like unassigned cases, active cases, all cases, and case time lines.

AI Agent	Product	Pages	Agent Delivery Type	Description
<b>Code Enforcement Reported Incident Checker</b>	Code Enforcement	Requires agency setup on extensible pages	Template	Leverages an agentic workflow to automate the incident review process, including identifying duplicate incidents, assigning cases based on workload, and sending assignment emails.
<b>Incident Analyzer</b>	Code Enforcement	Requires agency setup on extensible pages	Template Runnable or Packaged	Analyzes incidents to provide a summary to agency staff based on questions asked about incoming, overdue, and unassigned incidents.

**Product: Permits**

AI Agent	Product	Pages	Agent Delivery Type	Description
<b>Agency Permit Assistant</b>	Permits	Requires agency setup on extensible pages:  Permit Applications list page and permit details	Template	Uses the Permit Application Finder tool to retrieve permits and permit-related information.
<b>Contractor License Assistant</b>	Permits	Requires agency setup on extensible pages:  Contractors list page and contractor license details	Template	Retrieves contractor licenses and related information, including contractor license facts.
<b>Permit Inspection Assistant</b>	Permits	Requires agency setup on extensible pages:  Pages in the Inspector Application, including Inspection Tasks, Inspection Overview, Inspection Result	Template	Retrieves inspections, inspection comments, inspection checklists, inspection checklist items, and instructions. The agent has access to inspections, inspection comments, checklist and checklist items, and business objects to provide users with inspection details.

**Product: Planning and Zoning**

AI Agent	Product	Pages	Agent Delivery Type	Description
<b>Agency Planning Assistant</b>	Planning and Zoning	Requires agency setup on extensible pages:	Template	Retrieves planning application-related information.

AI Agent	Product	Pages	Agent Delivery Type	Description
		Planning Applications list page and planning application details		
<b>Assign Planner</b>	Planning and Zoning	Requires agency setup on extensible pages:  Planning Applications list page	Template	Helps agency staff find the best planner for a planning and zoning application.
<b>Planning Activity Assistant</b>	Planning and Zoning	Requires agency setup on extensible pages.	Template	Retrieves planning activities associated with a planning and zoning application.
<b>Preapplication Agent</b>	Planning and Zoning	Preapplication Outcome Page	Template	Combines the application data, zoning district information, and requirements from the municipal codes to deliver the preapplication outcome response in natural language to the user.  The agency provides the Retrieval-Augmented Generation (RAG) document for this agent.

## Preapplication Agent Team

Oracle delivers the Preapplication Agent Team in the AI Agent Studio and embedded on the Preapplication Outcome page. You can use this template or copy the template to create an agent of your own. The Preapplication Outcome AI Agent helps to analyze the Resource Advisory Council’s (RAC) documents and provide zoning preapplication outcomes. It helps to validate whether the applications and projects meet the local or state government requirements.

For more information about the Preapplication Outcome page, see [Working with Preapplication Outcome](#).

## Incident Analyzer

The Incident Analyzer analyzes incidents to provide details to agencies based on questions asked about incoming, overdue, and unassigned incidents.

Oracle delivers the Incident Analyzer in the AI Agent Studio. Use the template to create an agent of your own.

You will need to first enable the AI functionality in Permitting and Licensing for Code Enforcement. After you select **Change Feature Opt In** for the Code Enforcement offering, select the Enable checkbox for "Enable AI Functionality for Code Enforcement."

## Using Packaged AI Agents

Packaged AI agents come fully delivered and enabled; they're also known as runnable agents. This topic provides some information about the packaged or runnable agents you can find in Oracle Permitting and Licensing.

For more information about AI functionality including runnable agents that don't require AI Agent Studio configuration, see the documentation for the applicable usage.

For more information about enabling runnable AI agents, see *Provide Access to Configure AI Agents in Oracle Permitting and Licensing*. For each runnable AI agent, the agency enables AI functionality in the Functional Setup Manager and adds appropriate security assignments.

## AI Summary of Inspection Comments

The checklist result summary uses AI agents, and by default it's enabled if you have the FSM option enabled for AI functionality for Permits or Business Licenses.

To enable the FSM option:

1. Navigate to Setup and Maintenance of Offerings > Offering: Permits or Business Licenses > Change Feature Opt In.
2. Click the pencil icon in the **Features** column in the Public Sector Permits or Public Sector Business License row.
3. In the Enable AI Functionality for Permits or Enable AI Functionality for Business Licenses row select the checkbox in the **Enable** column.
4. Click **Done**.

This enables AI functionality within the entire offering. If you want this inspections feature functionality in both Permits and Business Licenses you must enable this in both offerings.

Before you can use AI functionality including the Inspection Result Summary and Inspection Prior History seeded agents in the Inspector Application, add the duty role `ORA_DR_PSC_INSPECTIONS_AI_ASSISTANT_DUTY` to the Roles and Permission groups of both `CUSTOM_PSC_MANAGE_PERMITS_AGENCY` and `CUSTOM_PSC_MANAGE_BL_AGENCY`. See *Security Details for Using the Inspector Application*.

The AI-generated checklist result summary on the Inspection Result page in the Inspector Application works on permit and business license inspections to consolidate inspection data, checklist and checklist item outcomes, and all related comments into a concise narrative. For more information about using the checklist result summary in the Inspector Application for permits and business licenses, see *Submitting Inspection Results*.

The summary highlights major violations, failed items, and—when reference entities are used for permits—the impacted entities (for example, specific building floors) as indicated in comments. Inspectors can optionally save the generated summary as an editable inspection comment.

## Plan Review Prescreening Assistant

The AI-driven analysis for plan reviews enables registered public users to check their plan documents. The Check My Plan Documents action tile on the registered public user landing page is preconfigured with the Plan Review PreScreener agent template so that users can upload plan files and receive email results before proceeding with plan review activities.

The Plan Review PreScreener agent template offers AI image recognition and code comparison to assess the completeness and currency of a submitted plan set. Depending on your agency's needs, the agent can inspect

common plan package elements such as cover sheet details, professional seals and signatures, owner and project information, code references, site plans, and supporting documentation. It can also cross-reference these items against a standardized preliminary checklist to identify gaps or issues.

The Check My Plan Documents action tile is available to registered public users in the **More actions** section. When selected, the tile opens an AI prompt drawer over the landing page. From the drawer, registered users upload one or more plan documents using the paper clip attachment icon. After upload, the AI agent evaluates the documents, displays a success indicator, and generates an email notification with results.

Upon successful processing, the AI agent workflow sends a notification, the look of which depends on the agency's implementation of the AI agent.

**Note:** Processing larger plan files may take several minutes. Users may close the drawer after uploading and entering any text in the Ask Oracle prompt or wait until a Success status is shown.



# 10 Setting Up Additional Integrations

## Setting Up a Proxy Role and User for Interactive Voice Response

Set up a proxy user in the Oracle Security Console to give your Interactive Voice Response (IVR) system access to Oracle Permitting and Licensing.

The IVR system accesses permit information via REST, using the proxy user credentials. During a call, a public user provides the IVR system with both a permit number and their personal IVR code. The IVR system sends that code along with any request to access the permit information in the Oracle Permitting and Licensing system. Oracle Permitting and Licensing verifies that the code matches the IVR code that’s stored in the permit owner’s account. If the code matches, the request is honored.

In this procedure you will use the Security Console to:

1. Create a custom role for the IVR access.
2. Assign a delivered duty role to the custom role.
3. Create the IVR proxy user.
4. Assign the custom IVR role to the IVR proxy user.

For more information about using the Security Console, see: [Using the Security Console](#).

### Creating the IVR Custom Role

To create the PSC IVR Proxy User role:

1. Navigate to the Security Console.  
 To navigate to the Security Console, you have these options:
  - o In Functional Setup Manager, click the task: *Create Integrated Voice Response Proxy User*.
  - o Click Setup and Maintenance on the Agency Springboard, and on the Fusion Applications home page, select **Navigator > Tools > Security Console**.
2. Select the Roles tab.
3. Click **Create Role**.
4. On the Create Role: Basic Information page enter the following:

Page Element	Value
Role Name	<i>PSC IVR Proxy User</i>
Role Code	<i>CUSTOM_PSCR_IVR_PROXY_USER</i>
Role Category	<i>Financials — Job Roles</i>

5. Click the Role Hierarchy step, and add the following duty role: *PSC Interactive Voice Recognition Proxy User* (*ORA\_PSC\_IVR\_PROXY\_USER\_DUTY*).
6. Click the Summary step and click **Save and Close**.

## Creating the IVR User

To create the IVR proxy user:

1. In the Security Console, click the Users tab.
2. On the User Accounts page, click **Add User Account**.
3. On the Add User Account page in the User Information section, enter a **Last Name** and **User Name** of your choice.

**Note:** The name given for the proxy user should be generic, such as *IVR Proxy User*.

4. Enter a **Password** of your choice and confirm it.
5. Click **Add Role** for the Roles grid, and assign this role to your proxy user:
  - o Role Name: *PSC IVR Proxy User*
  - o Role Code: *CUSTOM\_PSCR\_IVR\_PROXY\_USER*
6. Click **Save and Close**.

## Setting Up Oracle Search Cloud Service

This topic describes how to enable Oracle Search Cloud Service (OSCS) for use with Oracle Permitting and Licensing offerings.

### Using Search Cloud Service for the Parcel Page Overview

You can enable Search Cloud Service for the Parcel page. With Search Cloud Service enabled and the search index populated, when you click Filter By for the Parcel page, you can use an enhanced set of search criteria to run more flexible searches. Users can apply search criteria and save configured criteria for future use.

This example illustrates the search criteria displayed for the Parcel page when Search Cloud Service has been enabled and configured. Details are in the surrounding text.

**Filter By**  ▼

---

**Parcel Number**

**Primary Address**

**Primary Owner**

**Land Value**

**Improvement Value**

**Zoning Code**

**Status**

Active

Provisional

Retired

**Enabled**

No

Yes

## Enabling Search Cloud Service

You opt in to the Search Cloud Service feature using the Functional Setup Manager.

To enable Search Cloud Service:

1. Access the Functional Setup Manager.
2. Select your Oracle Permitting and Licensing offering.
3. Click **Change Feature Opt in**.
4. For System Administration, click the edit icon in the Features column.
5. Select the **Enable** check box for Search Cloud Service.
6. Click **Done**.

## Configuring Security

To setup access to resources required for running jobs to populate indexes, make sure that the following role has been added to the PSC System Administrator job role (ORA\_PSC\_SYSTEM\_ADMINISTRATOR\_JOB): *Application Administrator* (ORA\_FND\_APPLICATION\_ADMINISTRATOR\_JOB).

## Enabling Search Framework Extensions

To enable search framework extensions:

1. From the Fusion Applications homepage, navigate to Manage Applications Core Administrator Profile Values.
2. In the **Profile Option Code** field enter `ORA_FND_SEARCH_EXT_ENABLED`.
3. In the Profile Values grid, set Site to Yes.

For more information on profile values, see the Oracle Applications Cloud documentation: "Profile Options" in *Implementing Applications*.

## Creating the Parcel Search Index

Before you can use the Oracle Search Service features, you need to create and populate the parcel index by running an Enterprise Scheduler Service job.

To populate the search index:

1. From the Fusion Applications homepage, select **Navigator > Scheduled Processes**.
2. Click **Schedule New Process**.
3. On the Schedule New Process page, search for and select this process: *ESS job to create index definition and perform initial ingest to OSCS*.
4. Click **OK**.
5. On the Process Details dialog box, for the **Index Name to Reingest** field, enter *fa-psc-apo-parcel* to create and populate the parcel index.

**Note:** You only need to run the job to create and load the index once. After the initial run, the Search Cloud Service recognizes when new parcels have been added to the underlying view object and updates the index as needed.

**Note:** If you insert data directly into parcel tables using SQL scripts, for example, then for that data to be ingested into the index, you will also need to run the following job on an as-needed basis: *ESS job to run Bulk ingest to OSCS*.

## Managing Search Indexes

This topic describes how to generate search indexes required to display data on Redwood Experience pages and to run search queries to filter and find information quickly.

Redwood Experience pages displaying lists of information, such as the pages that display the list of submitted applications, use the Oracle Search Cloud Service (OSCS). Before data can be displayed on these page and searched against, you must first build the associated search index for that page.

**Note:** Typically, if the search index doesn't exist for a Redwood Experience page displaying a list of information, the page will display no rows of data.

## Enabling Global Search for the Redwood Experience

Here's how to enable global search.

1. In the Functional Setup Manager, select **Setup: Public Sector <Offering>**.
2. Click the **Change Feature Opt In** link.
3. Click the **Edit** pencil icon in the System Administration row.
4. Select the **Enable** check box for Redwood Experience for Global Search.
5. Click the **Done** button.

## Identifying Search Indexes

Oracle Permitting and Licensing delivers a set of search indexes, each associated with a specific Redwood Experience page. You'll need to build the search index for each page as described in the next section.

Index	Offering	Description
fa-psc-applications	Permits Planning and Zoning Business Licenses	Displays data on the page displaying submitted applications.
fa-psc-business-entity	Business Licenses	Displays data on the businesses list page.
fa-psc-ce-case	Code Enforcement	Displays data on the case list page.
fa-psc-ce-citation	Code Enforcement	Displays data on the citation list page.
fa-psc-ce-incident	Code Enforcement	Displays data on the incident list page.
fa-psc-inspections	Permits Planning and Zoning Business Licenses	Displays data on the inspections list page.
fa-psc-apo-parcel	Permits Planning and Zoning Business Licenses	Displays data on the parcel list page.
fa-psc-apo-address	Permits Planning and Zoning Business Licenses	Displays data on the address list page.

## Building a Search Index

Using the table in the previous section as a guide, build each search index you need depending on the offerings you are implementing. Repeat these steps for each search index. Use Fusion Cloud Scheduled Processes to run the ESS job. For more information, see *Best Practices for Scheduled Processes*.

Here's how to build a search index as an administrator.

1. On the Permitting and Licensing home page, select Monitor Processes.
2. In the Scheduled Processes work area, click the **Schedule New Process** button.
3. Search for and open the Enterprise Scheduling Service (ESS) process with this name: *ESS job to create index definition and perform initial ingest to OSCS*. Click **OK**.
4. On the Process Details page, enter the name of the index as the job parameter in the **Index Name to Reingest** field.

For example, enter `fa-psc-applications`.

5. Click **Submit**.

# 11 Working With Oracle Identity Cloud Service

## Overview of Identity Providers

This topic provides an overview of setting up and managing Oracle Identity Cloud Service (IDCS) as an identity provider for managing user signon and authentication.

You can use third party identity providers, such as Active Directory, or you can use Oracle Identity Cloud Service (IDCS). These topics relate to IDCS.

You will need to:

- Enable IDCS as your identity provider. See [Enabling an Oracle Identity Domain as an Identity Provider](#).
- Set up an identity domain application as an identity provider. See [Providing an Identity Domain Application URL for an Identity Provider](#).
- Reference the identity domain application from your Permitting and Licensing implementation. See [Providing an Identity Domain Application URL for an Identity Provider](#) and [Providing Identity Domain Credentials for Identity Provider](#).

**Note:** Currently, there are other steps that must be completed by the Oracle Team within your pods to ensure all internal configurations are in place. Contact Oracle Support for assistance.

When configuring Permitting and Licensing to use IDCS, consider the following:

- If you are currently using IDCS as your identity provider using the *hybridized* instance of IDCS, you just need to enable the feature in Fusion Setup Manager.
- If you are adopting IDCS as an identity provider beginning with Update 23D, you will need to perform all the steps on a *non-hybridized* instance of IDCS.

The *hybridized* instance of IDCS is the instance that is delivered with Permitting and Licensing for managing roles and authentication between the delivered components, such as OCI Process Automation for workflow.

A *non-hybridized* instance of IDCS would be the instance you add as a separate instance to be used primarily as an identity provider.

Also, for the hybridized instance of IDCS and Permitting and Licensing, you will need to configure a similar setup for keeping roles synchronized between, for example, Security Console and IDCS. See [Creating an Identity Domain Application for Role Synchronization](#).

## Enabling an Oracle Identity Domain as an Identity Provider

Before you can configure an identity domain as an identity provider, you must first enable the feature in Functional Setup Manager. Once enabled, the associated setup steps will appear in the System Administration functional area in your Functional Setup Manager setup template.

To enable an Oracle Identity Domain as an Identity Provider:

1. Access Setup and Maintenance.
2. Open the appropriate setup template for your offering in Functional Setup Manager.
3. Click the *Change Feature Opt In* link.
4. For System Administration, click the *Features* link.
5. For Oracle Identity Domains as Identity Provider, select the Enable check box.

**Note:** If you are already using the hybridized instance of IDCS as your identity provider prior to Update 23D, this is the only task you need to complete. Otherwise, you will need to create an identity domain as described in the next topic.

## Creating an Identity Domain Application for Identity Provider

You will need to set up an identity domain for being an identity provider in IDCS and create a confidential application within that domain.

For information on identity domains, see the IDCS documentation here:

- <https://docs.oracle.com/en-us/iaas/Content/Identity/home.htm>
- <https://docs.oracle.com/en-us/iaas/integration/doc/adding-oracle-identity-cloud-service-identity-provider.html>
- <https://docs.oracle.com/en-us/iaas/Content/Identity/resources/manage-iam-resources.htm>

The following steps outline the main steps as an example for setting up an identity domain to be used for Permitting and Licensing. These steps need to be completed on a *non-hybridized* instance of IDCS after creating your own stripe.

To create a confidential domain application:

1. Sign in to Oracle IDCS as an administrator.

**Note:** On the sign in dialog, don't sign into the *Default* identity domain. Sign into the specific domain for which you will be running the configuration steps.

2. From the Navigation Menu, select *Identity & Security*.
3. Under Identity click Domains.
4. Click Integrated applications (or Applications, depending on your version).
5. Click **Add application**.
6. Select *Confidential Application* and click **Launch workflow**.
7. Provide a name for the application.
8. On the Configure OAuth step, select *Configure this application as a client now* under Client Configuration.
9. Under Authorization select *Client credentials*.
10. Under Token issuance policy select *Add app roles*.
11. Click **Add roles**.
12. Select and add the *User Administrator* role.

**Note:** All other selections aren't required and can remain with default selections.

13. In the application page:
  - a. Activate the application.
  - b. Get the Client ID.
  - c. Get the Client secret.
14. Get the **Domain URL** from the identity domain Overview page.

**Note:** You will need to provide the domain URL, client ID, and client secret values in subsequent steps.

## Providing an Identity Domain Application URL for an Identity Provider

To provide an identity domain application URL:

1. In the System Administration functional area of the Functional Setup Manager, click the task: Provide Identity Domain Application URL for Identity Provider.
2. On the Provide Identity Domain Application URL for Identity Provider page, enter the URL for the identity domain application you created.

You find this URL on the Identity Domain > Overview tab, in the Domain Information tab. Look for the Domain URL value. It will look similar to:

*https://idcs-12345abc.identity.xyz.<domain\_name>.com*

Enter just the base URL.

3. Click **Save and Close**.

## Providing Identity Domain Credentials for Identity Provider

After you have set up an identity domain as an identity provider, you need to enter the domain credentials so that Permitting and Licensing can access the identity provider data.

1. Navigate to the Identity Domain Credentials page.
  - o In Functional Setup Manager, select System Administration and click Provide Identity Domain Credentials for Identity Provider.
  - o In Permitting and Licensing, select **Common Setup > Identity Domain Credentials**.
2. On the Identity Domain Credentials page click the row for Identity Provider Domains.
3. Provide the following:

Page Element	Description
Client ID	The client ID of the identity domain you created in IDCS.

Page Element	Description
<b>Client Secret</b>	The client secret of the identity domain you created in IDCS.

4. Click **Save**.

## Creating an Identity Domain Application for Role Synchronization

**Note:** Setting up an identity domain for IDCS role synchronization is mandatory.

Create an identity domain for role synchronization in IDCS.

These steps must be completed on the *hybridized* instance of IDCS.

The steps are the same for creating an identity domain for using IDCS as an identity provider.

See [Creating an Identity Domain Application for Identity Provider](#).

## Providing the Identity Domain Application URL for Role Synchronization

To provide an identity domain application URL:

1. In the System Administration functional area of the Functional Setup Manager, click the task: Provide Identity Domain Application URL for Role Synchronization.
2. On the Provide Identity Domain Application URL for Role Synchronization page, enter the URL for the identity domain application you created.

*Enter just the base URL.*

3. Click **Save and Close**.

## Providing Identity Domain Credentials for Role Synchronization

After you have set up an identity domain for role synchronization, you need to enter the domain credentials so that Permitting and Licensing can access the identity provider data.

1. Navigate to the Identity Domain Credentials page.

- In Functional Setup Manager, select System Administration and click Provide Identity Domain Credentials for Role Synchronization.
  - In Permitting and Licensing, select **Common Setup > Identity Domain Credentials**.
2. On the Identity Domain Credentials page click the row for Role Sync.
  3. Provide the following:

Page Element	Description
<b>Client ID</b>	The client ID of the identity domain you created in IDCS.
<b>Client Secret</b>	The client secret of the identity domain you created in IDCS.

4. Click **Save**.

## Synchronizing Roles Manually

Most of the role synchronization between Permitting and Licensing occurs automatically, but if, for example, an implementer updates role assignments directly in Security Console. In that case, that change wouldn't be reflected automatically in IDCS. As needed, it is recommended to run the Enterprise Scheduler Service job *Synchronize Agency Staff Roles*.

