Oracle Field Service and ESRI ArcGIS Field Maps Configurations for ESRI ArcGIS Field Maps Integration to Oracle Field Service Mobile

Setup Guide

Release 24C

G23353-01

December 2024

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ORACLE

Oracle Field Service and ESRI ArcGIS Field Maps Configurations for ESRI ArcGIS Field Maps Integration to Oracle Field Service Mobile Setup Guide

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Preface

Welcome to the Oracle Field Service and ESRI ArcGIS Field Maps Configurations for ESRI ArcGIS Field Maps Integration to Oracle Field Service Mobile Setup Guide for release 24C. This document covers the ESRI ArcGIS Field Maps and Oracle Field Service configurations, as well as related information required for this integration.

> **Note:** The screenshots and images provided in this document are sample references based on the current release of ESRI ArcGIS Field Maps Integration to Oracle Field Service. They may change based on changes in future releases.

The preface includes the following:

- Audience
- Documentation and Resources
- Updates to Documentation
- Documentation Accessibility
- Conventions
- Acronyms

Audience

This document is intended for anyone implementing the integration of the following products with ESRI ArcGIS Field Maps:

- Oracle Field Service
- Oracle Utilities Work and Asset Cloud Service

Documentation and Resources

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

Product Documentation

Topic	Location
Oracle Field Service and ESRI ArcGIS Field Maps Configurations for ESRI ArcGIS Field Maps Integration to Oracle Field Service Mobile documentation	https://docs.oracle.com/en/industries/energy-water/integrations-index.html
Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service documentation	https://docs.oracle.com/en/industries/energy-water/integrations-index.html
Oracle Utilities Work and Asset Cloud Service documentation	https://docs.oracle.com/en/industries/energy-water/work-asset-cloud-service/index.html
Oracle Field Service documentation	https://docs.oracle.com/en/cloud/saas/field-service/index.html

Additional Documentation

Resource	Location
Oracle Integration Cloud Service documentation	Refer to the OIC documentation at: https://docs.oracle.com/en/cloud/paas/integration-cloud/index.html
Oracle Support	Visit My Oracle Support at https://support.oracle.com regularly to stay informed about updates and patches. Refer to the *Certification Matrix for Oracle Utilities Products (Doc ID 1454143.1)* on My Oracle Support to determine if support for newer versions of the listed products is included.
Oracle University for training opportunities	http://education.oracle.com/

Updates to Documentation

The complete Oracle Field Service and ESRI ArcGIS Field Maps Configurations for ESRI ArcGIS Field Maps Integration to Oracle Field Service Mobile documentation set is available from Oracle Help Center at https://docs.oracle.com/en/industries/energy-water/index.html.

Visit My Oracle Support for additional and updated information about the product.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customers have access to electronic support for the hearing impaired. Visit: http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Acronyms

The following terms are used in this document:

Term	Expanded Form
OFS	Oracle Field Service
ESRI	ESRI ArcGIS Field Maps
OIC	Oracle Integration Cloud
ICS	Integration Cloud Service
DVM	Domain Value Map (Lookup)
WACS	Oracle Utilities Work and Asset Cloud Service

Term	Expanded Form
WAM	Oracle Utilities Work and Asset Management

Chapter 1

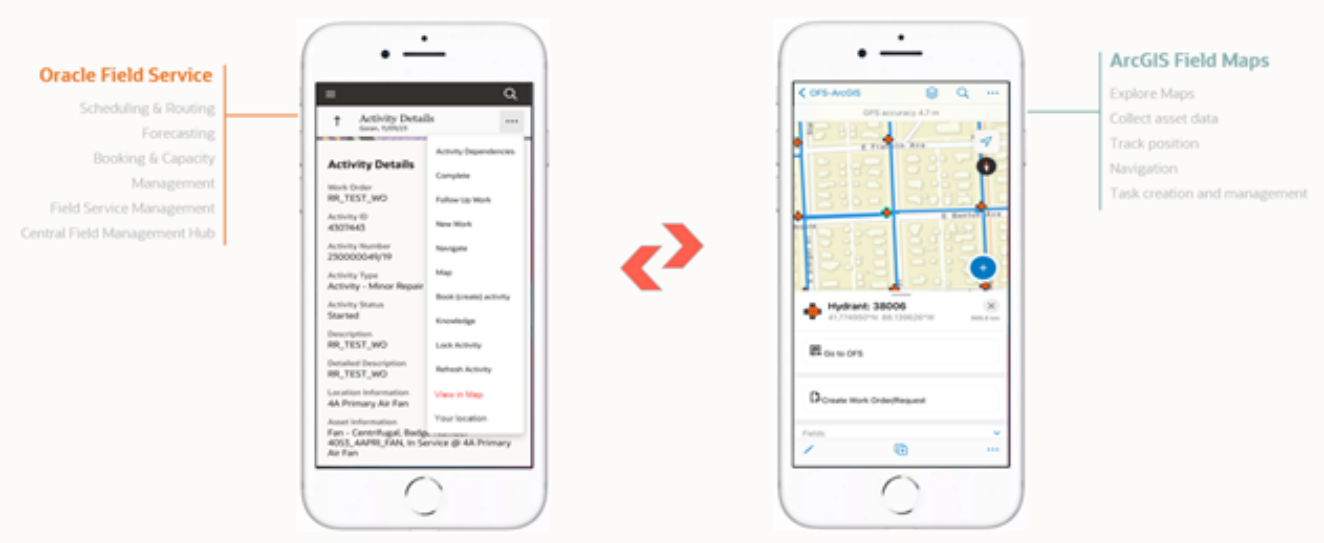
Introduction

This chapter provides an overview of the integration between ESRI ArcGIS Field Maps and Oracle Field Service, field maps, and the ArcGIS artifacts. It includes the following sections:

- ESRI ArcGIS Field Maps to Oracle Field Service Integration Overview
- ArcGIS Artifacts
- Prerequisites
- Required Software

ESRI ArcGIS Field Maps to Oracle Field Service Integration Overview

The ESRI ArcGIS Field Maps to Oracle Field Service pre-built integration extends the capabilities of the Oracle Field Service mobile solution by bridging key GIS functionality from ESRI ArcGIS Field Maps. The solution enables seamless navigation between the two applications using parameterized deeplink calls for key use cases, as well as utility-specific workflows accessible from both the ESRI ArcGIS Field Maps and Oracle Field Service applications. Out of the box, the solution will also provide support for offline scenarios, adding efficiency and significant value to the field operations.



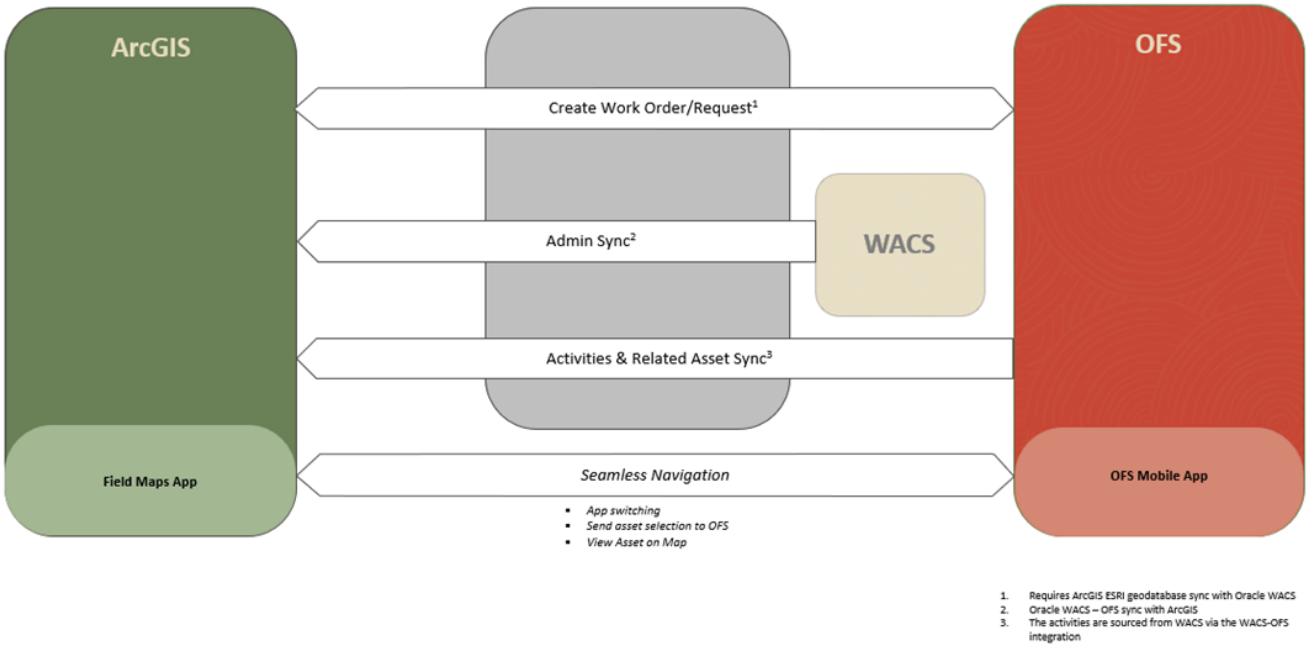
The integration unlocks key use cases for field crews, utilizing mapping functionality and geospatial data to improve efficiency and optimize workflows. Crews will now be able to:

- **Locate and analyze assets in ESRI ArcGIS Field Maps**:
  - Ability to search for assets (poles, transformers, hydrants, etc.) based on pre-defined searchable fields via a text search.
  - Ability to visually identify assets within a particular region on the map.
  - Ability to view and update the asset attributes directly from ESRI ArcGIS Field Maps.
- **Create work orders/requests directly from ESRI ArcGIS Field Maps**:
  - Field technicians can now create both work orders and work requests within ESRI ArcGIS Field Maps. The forms are in synchronization with forms in Oracle Field Service for a streamlined experience.
- **Locate assets in ESRI ArcGIS Field Maps and complete work order/ request workflows in Oracle Field Service**:
  - Alternatively, assets can be selected from the map and the required work request/order can be created in Oracle Field Service. This provides a second option for initiating mission critical work.
- **View work activities in ESRI ArcGIS Field Maps:**
  - Ability to view nearby activities, status, and related assets for additional insights available to field technicians.

- **Limitations/considerations**: The feature is supported by multiple flows and includes a mechanism for configuring historical lookback windows to determine which activities will be synchronized on the map, along with a process to purge older activities (Suspended, Cancelled, Completed passed a defined period threshold - configurable per activity status).
  - Only scheduled activities will be considered in this flow (Pending, Started).
  - Activities must contain coordinates (latitude/longitude) to be included in the synchronization to ESRI ArcGIS Field Maps.
- Related Asset searches (within Activity view) rely on a strict mapping between Oracle Utilities Work and Asset Management/Oracle Utilities Work and Asset Cloud Service asset type and a corresponding ESRI asset type and in turn a specific Feature layer for proper operation.

The integration will be facilitated via Oracle Integration Cloud and include flows for creating work orders/requests, both from ESRI ArcGIS Field Maps and Oracle Field Service. An Admin Synchronization flow will maintain parity between the structure of the work order and work request forms in Oracle Field Service and the forms used in ESRI ArcGIS Field Maps.

The integration will be available for both iOS and Android platforms respectively.



Oracle Field Service is a cloud-based field service management solution that helps businesses schedule, route, and equip mobile workers to complete service activities at a customer's home, office, or installed asset location.

ESRI ArcGIS Field Maps is an all-in-one application that uses data-driven maps and mobile forms to help workers perform data capture and editing, find assets and information, and report their real-time locations.

ArcGIS Artifacts

This integration contains the following:

- Tasks_WorkspaceDocument.xml: This ArcGIS Tasks workspace document represents the Tasks feature class.
- Activities_WorkspaceDocument.xml: This Activities workspace document represents the activities and assets feature class.

These files must be imported in ArcGIS Pro to configure and deploy the Tasks and Activities feature layer.

Prerequisites

The integration requires a data process to ensure that the utility assets and attributes are synchronized between the Asset Management system (Oracle Utilities Work and Asset Cloud Service)***** and the geodatabase (Enterprise ArcGIS 10.9.1). It also requires the Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service to be in place for Oracle Field Service related workflows.

The ESRI ArcGIS Field Maps user must match the Oracle Field Service user external ID. These external ID in Oracle Field Service for a user must be created in uppercase.

The "OU ArcGIS OFS Admin Files Create" Oracle Integration Cloud flow is used to generate csv files to update the domains and contingent values of the Tasks feature class. This integration flow uses OCI Object Storage to store the files generated.

***** Other (non-Oracle Utilities Work and Asset Cloud Service) Asset Management systems are supported with added customizations.

Required Software

The following software is required to configure and deploy the Tasks feature layer:

- **ArcGIS Pro (3.2 or higher)**: A desktop client used to create database connection, server connection, load the domain and contingent values, and publish the Task layers to the server.

  For information on getting started with ArcGIS Online, see: https://doc.arcgis.com/en/arcgis-online/get-started/create-account.htm
- **ArcGIS Online or ArcGIS Enterprise Server**: To publish the Tasks feature layer.

  For information on ArcGIS Enterprise Server, see: https://enterprise.arcgis.com/en/server/10.9.1/install/windows/welcome-to-the-arcgis-for-server-install-guide.htm

Note that if you are using Oracle database, the minimum version of Geodatabase supported is 10.9.1.

Chapter 2

Feature Layers

This chapter talks about the ArcGIS feature layers and the Tasks feature layer in particular. It includes the following:

- Feature Class and Feature Layer
- Tasks Feature Class and Feature Layer
- Using the Task Feature Layer
- Activities Feature Class and Feature Layer
- ActivityAssets Table
- Using Activities and ActivityAssets

Feature Class and Feature Layer

A **feature class** is a collection of common features with same spatial representation, such as a point, line, or polygon. For more information on feature classes, see https://pro.arcgis.com/en/pro-app/latest/help/data/geodatabases/overview/feature-class-basics.htm.

A **feature layer** is a group of similar geographic features mostly used for visualizing data on top of base maps. Feature layers reference feature classes for display and use in maps and scenes. They can represent different geometric data, such as point, line, polygon, etc. Feature classes can reference data from different datasources, such as geodatabase. For more information on feature layers, refer to the following documentation:

https://doc.arcgis.com/en/arcgis-online/reference/feature-layers.htm

https://pro.arcgis.com/en/pro-app/3.1/help/mapping/layer-properties/feature-layers.htm

A feature layer can be a hosted layer published on ArcGIS Online or on ArcGIS Enterprise portal. It can also be published as ArcGIS Server feature service. For more information on feature layers, refer to the following documentation:

https://doc.arcgis.com/en/arcgis-online/reference/feature-layers.htm

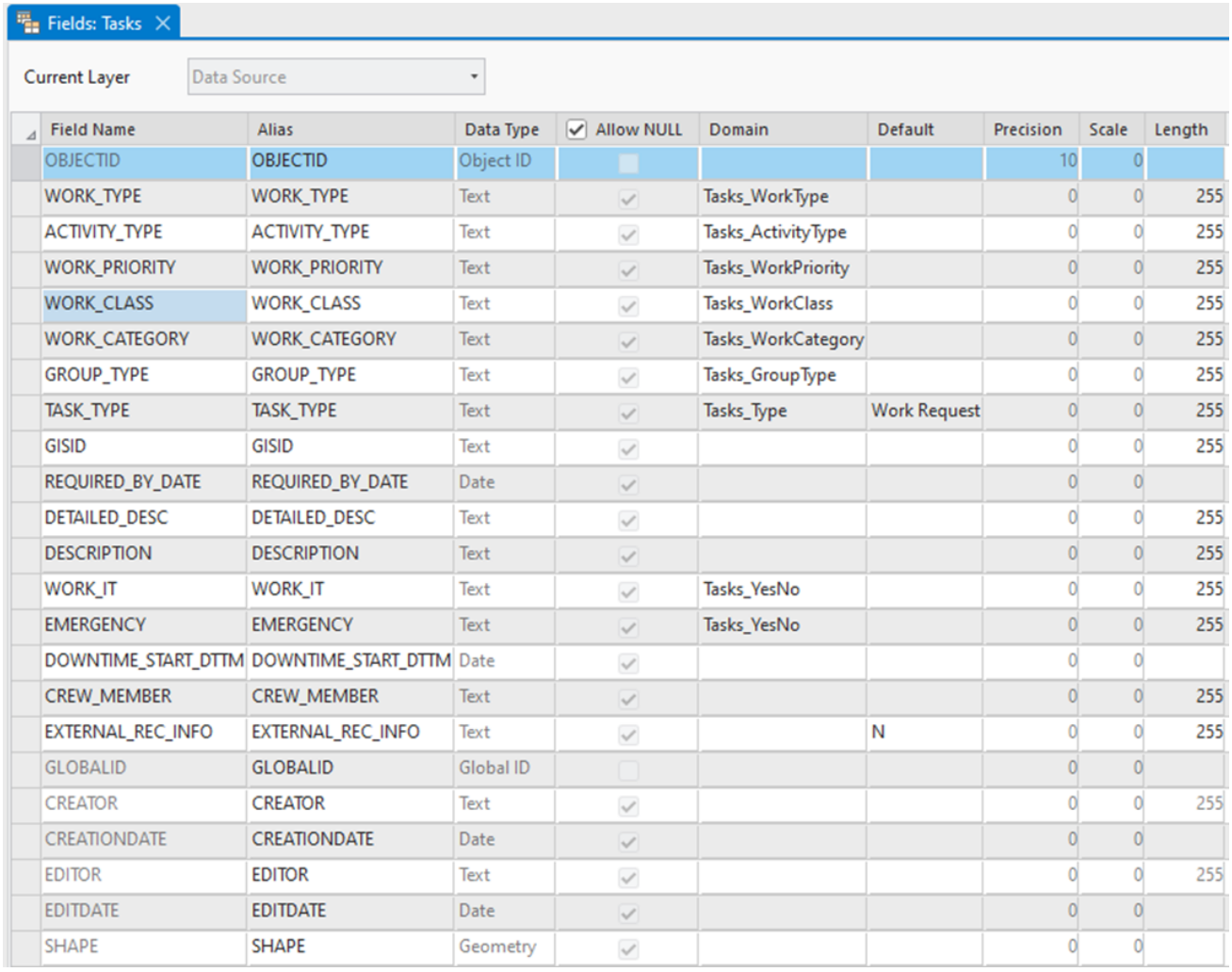
https://enterprise.arcgis.com/en/portal/latest/use/hosted-web-layers.htm

https://enterprise.arcgis.com/en/server/latest/publish-services/windows/what-is-a-feature-service-.htm

Tasks Feature Class and Feature Layer

The Tasks feature class represents the fields required to complete a work order or work request in ESRI ArcGIS Field Maps. The fields correspond to similar fields on the work order and work request form in the "New Work" screens in the Oracle Field Service Accelerator package.

Tasks feature class has a spatial representation of a point. Below is the Tasks fields schema after the Tasks Workspace document is loaded into ArcGIS Pro.



Field Name	Alias	Data Type	Allow NULL	Domain	Default	Precision	Scale	Length
OBJECTID	OBJECTID	Object ID				10	0	
WORK_TYPE	WORK_TYPE	Text	✓	Tasks_WorkType		0	0	255
ACTIVITY_TYPE	ACTIVITY_TYPE	Text	✓	Tasks_ActivityType		0	0	255
WORK_PRIORITY	WORK_PRIORITY	Text	✓	Tasks_WorkPriority		0	0	255
WORK_CLASS	WORK_CLASS	Text	✓	Tasks_WorkClass		0	0	255
WORK_CATEGORY	WORK_CATEGORY	Text	✓	Tasks_WorkCategory		0	0	255
GROUP_TYPE	GROUP_TYPE	Text	✓	Tasks_GroupType		0	0	255
TASK_TYPE	TASK_TYPE	Text	✓	Tasks_Type	Work Request	0	0	255
GISID	GISID	Text	✓			0	0	255
REQUIRED_BY_DATE	REQUIRED_BY_DATE	Date	✓			0	0	
DETAILED_DESC	DETAILED_DESC	Text	✓			0	0	255
DESCRIPTION	DESCRIPTION	Text	✓			0	0	255
WORK_IT	WORK_IT	Text	✓	Tasks_YesNo		0	0	255
EMERGENCY	EMERGENCY	Text	✓	Tasks_YesNo		0	0	255
DOWNTIME_START_DTTM	DOWNTIME_START_DTTM	Date	✓			0	0	
CREW_MEMBER	CREW_MEMBER	Text	✓			0	0	255
EXTERNAL_REC_INFO	EXTERNAL_REC_INFO	Text	✓		N	0	0	255
GLOBALID	GLOBALID	Global ID				0	0	
CREATOR	CREATOR	Text	✓			0	0	255
CREATIONDATE	CREATIONDATE	Date	✓			0	0	
EDITOR	EDITOR	Text	✓			0	0	255
EDITDATE	EDITDATE	Date	✓			0	0	
SHAPE	SHAPE	Geometry	✓			0	0	

The table below shows the Tasks feature class schema along with associated domain values:

Field Name	Description	Data Type	Domain Values	Visibility in Work Order /Work Request
OBJECTID	Object Id	Object ID		
WORK_TYPE	WAM Work Types	Text	Tasks_WorkType	
ACTIVITY_TYPE	WAM Activity Types	Text	Tasks_ActivityType	
WORK_PRIORITY	WAM Priority Types	Text	Tasks_WorkPriority	
WORK_CLASS	WAM Work Class	Text	Tasks_WorkClass	
WORK_CATEGORY	WAM Work Category	Text	Tasks_WorkCategory	
GROUP_TYPE	WAM Group Type	Text	Tasks_GroupType	

Field Name	Description	Data Type	Domain Values	Visibility in Work Order /Work Request
TASK_TYPE	Form type to enter. Possible values are 'Work Order' or 'Work Request'. Corresponding values are visible or hidden based on the value selected. Default value: Work Request	Text	Tasks_Type	Work Order/Work Request
GISID	Global ID of the asset for which work order or work request is created.	Text		
REQUIRED_BY_ DATE	Required by date of work order or work request	Date		
DETAILED_DESC	Detailed description	Text		
DESCRIPTION	Description	Text		
WORK_IT	Indicates if the work order is assigned to the fieldworker creating it.	Text	Tasks_YesNo	Work Order
EMERGENCY	If it is an emergency task	Text	Tasks_YesNo	Work Order
DOWNTIME_START_ DTTM	Downtime start date and time	Date		
CREW_MEMBER	Enterprise portal user ID of the user submitting the tasks form	Text		
EXTERNAL_REC_ INFO	This field holds the OFS Activity ID for work order or OFS service request number for work request. Default value: N			
GLOBALID	Global ID of Tasks record	Global ID		
CREATOR	Editor tracking field. Stores the username of the who created the feature record.	Text		
CREATIONDATE	Editor tracking field. Creation date of the feature record.	Date		

Field Name	Description	Data Type	Domain Values	Visibility in Work Order /Work Request
EDITOR	Editor tracking field. Stores the username of the who edited the feature record.	Text		
EDITDATE	Editor tracking field. Edit date of the feature record.	Date		
SHAPE	Geometry of the feature, which is a point.	Geometry		

Attribute Domains

Each domain values correspond to the respective drop-down lists on the work order and work request form configured on the Task feature class.

The domain values which are marked to be updated by "Updated by csv files" can be updated by running the "OU ArcGIS OFS Admin Files Create" Oracle Integration Cloud work flow.

Domain Value Name	Sample Values	Updated by csv files
Tasks_WorkType	Code: W1PM Description: Preventive Maintenance	Yes
Tasks_ActivityType	Code: WD-LeakRepair Description: Activity - Gas Leak Repair	Yes
Tasks_WorkPriority	Code: 01 Description: 01	Yes
Tasks_WorkClass	Code: WDPL Description: Planned	Yes
Tasks_WorkCategory	Code: WDFL Description: Failure	Yes
Tasks_GroupType	Code: WACS Description: WACS	No
Tasks_Type	Code: WR Description: Work Request	No
Tasks_YesNo	Code: N Description: No	No

For more information on attribute domains, refer to https://pro.arcgis.com/en/pro-app/3.1/help/data/geodatabases/overview/an-overview-of-attribute-domains.htm

Contingent Values

A value in the Work Category domain is dependent on the value selected in the Work Class domain values. All the allowed values of work category for a particular value of work class is defined through Contingent values. These Contingent values are defined through FieldGroup WorkClassWorkCategory. The FieldGroup and ContingentValues csv files from a particular Oracle Utilities Work and Asset Management/ESRI ArcGIS Field Maps environment are generated by running the "OU ArcGIS OFS Admin Files Create" Oracle Integration Cloud work flow.

For more information on contingent values, refer to: https://pro.arcgis.com/en/pro-app/3.1/help/data/geodatabases/overview/contingent-values.htm

Using the Task Feature Layer

The Tasks feature layer is used to create work orders and/or work requests in Oracle Field Service and ESRI ArcGIS Field Maps. These requests are created by adding a Tasks feature on the map. Updating and deleting the work order and work request is not supported.

The Tasks feature layer is used as follows:

- The Tasks feature class is updated to include relevant attribute domain values and contingent values.
- The Tasks feature class can be deployed either as a Hosted feature layer on ArcGIS Online or as feature service on the standalone ArcGIS Enterprise Server.
- The Task feature layer is added to Webmaps.
- Forms are created on this Task layer using FieldMaps design.
- Popups are configured with Arcade expression on Asset layers to invoke the Task feature layer.

For information on configuring and deploying the Task feature layer, refer to the Configuring and Deploying the Task Feature Layer chapter.

Activities Feature Class and Feature Layer

Activities Feature class represents the Oracle Field Service activities to be shown on maps. Fields in this feature class represent different data points of the Oracle Field Service activities that are created corresponding to the activities created from Oracle Utilities Work and Asset Cloud Service as part of the integration.

Activities feature class has a spatial representation of a point. Below is the schema of the Activities Feature class.

Field Name	Alias	Data Type	Allow NULL	Domain	Default	Precision	Scale	Length
OBJECTID	OBJECTID	Object ID				10	0	
SHAPE	SHAPE	Geometry	✓			0	0	
ACTIVITY_NUM	ACTIVITY_NUM	Text	✓			0	0	255
ACTIVITY_TYPE	ACTIVITY_TYPE	Text	✓			0	0	255
WORK_ORDER_DESC	WORK_ORDER_DESC	Text	✓			0	0	255
REQUIRED_BY_DATE	REQUIRED_BY_DATE	Date	✓			0	0	
EMERGENCY_INDICATOR	EMERGENCY_INDICATOR	Text	✓			0	0	255
CREW_ID	CREW_ID	Text	✓			0	0	255
CREW_NAME	CREW_NAME	Text	✓			0	0	255
GLOBALID	GLOBALID	Global ID				0	0	
ACTIVITY_ID	ACTIVITY_ID	Text	✓			0	0	255
STATUS	STATUS	Text	✓			0	0	255
WORK_ORDER_ID	WORK_ORDER_ID	Text	✓			0	0	255
ACTIVITY_DESC	ACTIVITY_DESC	Text	✓			0	0	255
LOCATION_INFO	LOCATION_INFO	Text	✓			0	0	255
LINKED_ACTIVITIES	LINKED_ACTIVITIES	Text	✓			0	0	255
CREATED_USER	CREATED_USER	Text	✓			0	0	255
CREATED_DATE	CREATED_DATE	Date	✓			0	0	
LAST_EDITED_USER	LAST_EDITED_USER	Text	✓			0	0	255
LAST_EDITED_DATE	LAST_EDITED_DATE	Date	✓			0	0	
ACTIVITY_DATE	ACTIVITY_DATE	Date	✓			0	0	

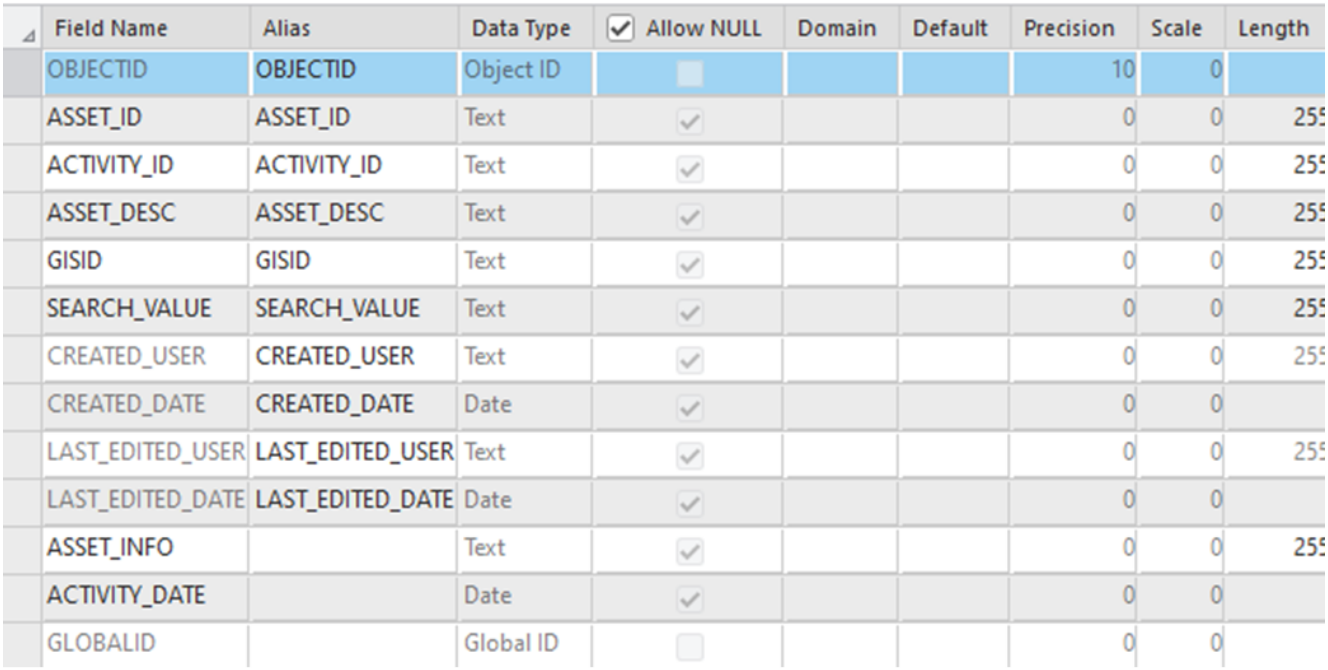
The following table represents the Activities schema:

Field Name	Description	Data Type
OBJECTID	Object Id	Object ID
SHAPE	Shape (Geometry)	Geometry
ACTIVITY_NUM	WACS Activity number	Text
ACTIVITY_TYPE	WACS Activity type	Text
WORK_ORDER_DESC	Work order description	Text
REQUIRED_BY_DATE	Required by date by which the activity must be completed	Date
EMERGENCY_INDICATOR	If this activity is a emergency or not	Text
CREW_ID	OFS Crew ID	Text
CREW_NAME	OFS Crew name	Text
GLOBAL_ID	Global Id	Global Id
ACTIVITY_ID	OFS Activity ID	Text

Field Name	Description	Data Type
STATUS	OFS status of the activity	Text
WORK_ORDER_ID	When integrated with WACS as part of WACS-OFS integration, this field represents the WAM work order ID.	Text
ACTIVITY_DESC	Activity description	Text
LOCATION_INFO	Activity location information	Text
LINKED_ACTIVITIES	Linked activities. This field is not used currently.	Text
ACTIVITY_DATE	Date the OFS activity was assigned.	Date
CREATED_USER	ArcGIS editor field. It represents the ArcGIS user that created this feature record. It will be empty when created through OIC flow.	Text
CREATED_DATE	ArcGIS editor field. It represents the date when the feature record was created in feature class.	Date
LAST_EDITED_USER	ArcGIS editor field. It represents the ArcGIS user that updates this feature record. It will be empty when updated through the OIC flow.	Text
LAST_EDITED_DATE	ArcGIS editor field. It represents the date when the feature record was updated in the feature class.	Date

ActivityAssets Table

The schema of the ActivityAssets table is as follows:



Field Name	Alias	Data Type	Allow NULL	Domain	Default	Precision	Scale	Length
OBJECTID	OBJECTID	Object ID	☐			10	0	
ASSET_ID	ASSET_ID	Text	☑			0	0	255
ACTIVITY_ID	ACTIVITY_ID	Text	☑			0	0	255
ASSET_DESC	ASSET_DESC	Text	☑			0	0	255
GISID	GISID	Text	☑			0	0	255
SEARCH_VALUE	SEARCH_VALUE	Text	☑			0	0	255
CREATED_USER	CREATED_USER	Text	☑			0	0	255
CREATED_DATE	CREATED_DATE	Date	☑			0	0	
LAST_EDITED_USER	LAST_EDITED_USER	Text	☑			0	0	255
LAST_EDITED_DATE	LAST_EDITED_DATE	Date	☑			0	0	
ASSET_INFO		Text	☑			0	0	255
ACTIVITY_DATE		Date	☑			0	0	
GLOBALID		Global ID	☐			0	0	

The following table represents the ActivityAssets details:

Field Name	Description	Data Type
OBJECTID	Object Id	Object ID
GLOBALID	Global Id	Global Id
ASSET_ID	When integrated with WACS as part of WACS-OFS integration, this field represents the WACS asset ID.	Text
ACTIVITY_ID	OFS Activity ID	Text
ASSET_DESC	When integrated with WACS as part of WACS-OFS integration, this field represents the WACS asset description.	Text
GISID	When integrated with WACS as part of WACS-OFS integration, this field represents GISID of the asset which is ArcGIS Global ID of the Asset.	Text
SEARCH_VALUE	Obtained value of the attribute configured on layer level search.	Text
ASSET_INFO	When integrated with WACS as part of WACS-OFS integration, this field represents the asset information of the asset.	Text

Field Name	Description	Data Type
ACTIVITY_DATE	Date the OFS activity was assigned.	Text
CREATED_USER	ArcGIS editor field. It represents the ArcGIS user that created this feature record. It will be empty when created through OIC flow.	Text
CREATED_DATE	ArcGIS editor field. It represents the date when the feature record was created in feature class.	Date
LAST_EDITED_USER	ArcGIS editor field. It represents the ArcGIS user that updates the feature record. It will be empty when updated through OIC flow.	Text
LAST_EDITED_DATE	ArcGIS editor field. It represents the date when the feature record was updated in feature class.	Date

Using Activities and ActivityAssets

The Activities feature class and ActivityAssets table are used to store activities and related assets from Oracle Field Service. These activities are pulled from Oracle Field Service through the OU OFS ArcGIS Activities Sync OIC integration flow. The Oracle Field Service field worker can visualize these activities on maps:

- Activities and ActivityAssets workspace document is imported into the Enterprise geodatabase.
- A relationship class is created between the Activites feature class and ActivityAssets table.
- The Activities feature class is deployed as a feature layer. ActivityAssets table is deployed automatically as part of Activities feature layer.
- The Oracle Field Service activities in different status, created through the integration, are pulled through the scheduled integration flow run periodically.
- These activities and the related assets are created in Activities and ActivityAssets ArcGIS entities.
- The Activities and related assets can then be viewed on Fieldmaps through webmaps.
- A scheduled integration OU OFS ArcGIS Activities Delete is run at intervals to clean up Activities and ActivityAssets after a certain period.

Chapter 3

ArcGIS Pro Configurations

This chapter describes configuring the Task feature layer in ArcGIS Pro and deploying it in ArcGIS Online and ArcGIS Enterprise Server. It includes the following:

- About ArcGIS Pro
- Creating Database Connection in ArcGIS Pro
- Creating Server Connection

About ArcGIS Pro

ArcGIS Pro is a desktop GIS application from ESRI. ArcGIS Pro can be used to create 2D and 3D maps and share your work to ArcGIS Online and ArcGIS Enterprise portal.

ArcGIS Pro is used to configure and publish the Tasks feature class as Task feature layer in ArcGIS Online or ArcGIS Enterpise Server.

While using ArcGIS Pro for the first time, you need to sign in with the ArcGIS Online or ArcGIS Enterprise credentials.

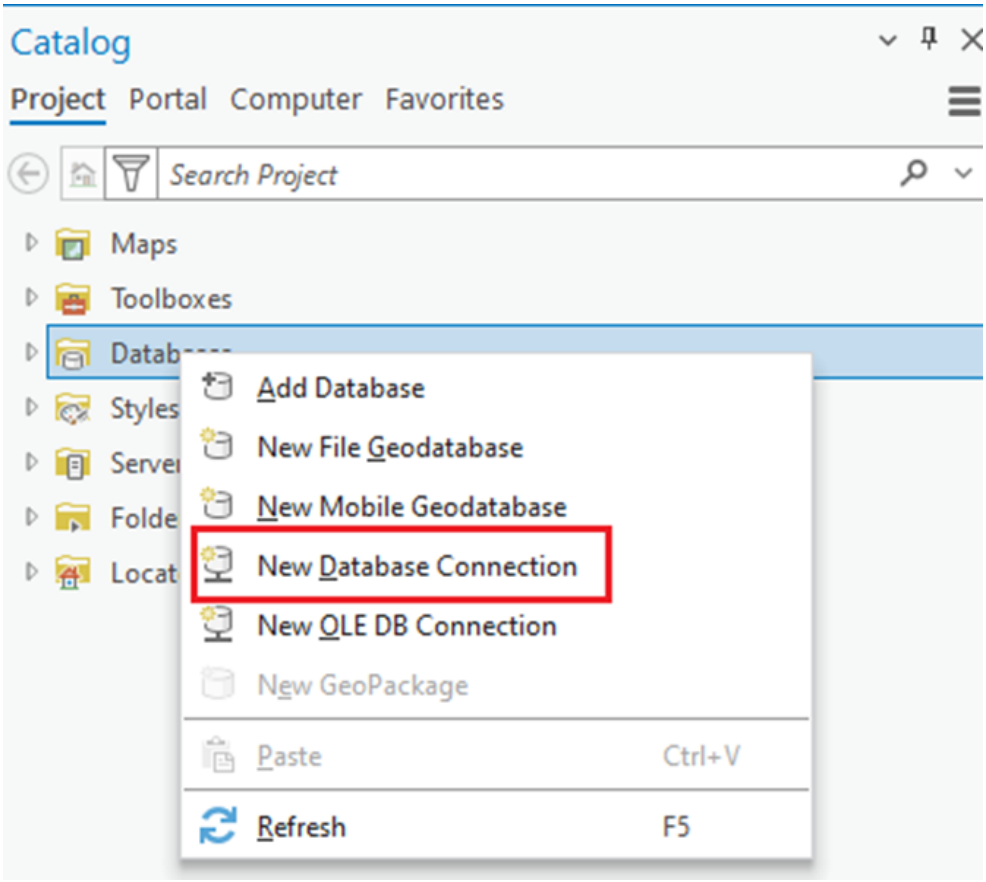
For information about setting up ArcGIS Pro, refer to: https://pro.arcgis.com/en/pro-app/latest/get-started/get-started.htm

Creating Database Connection in ArcGIS Pro

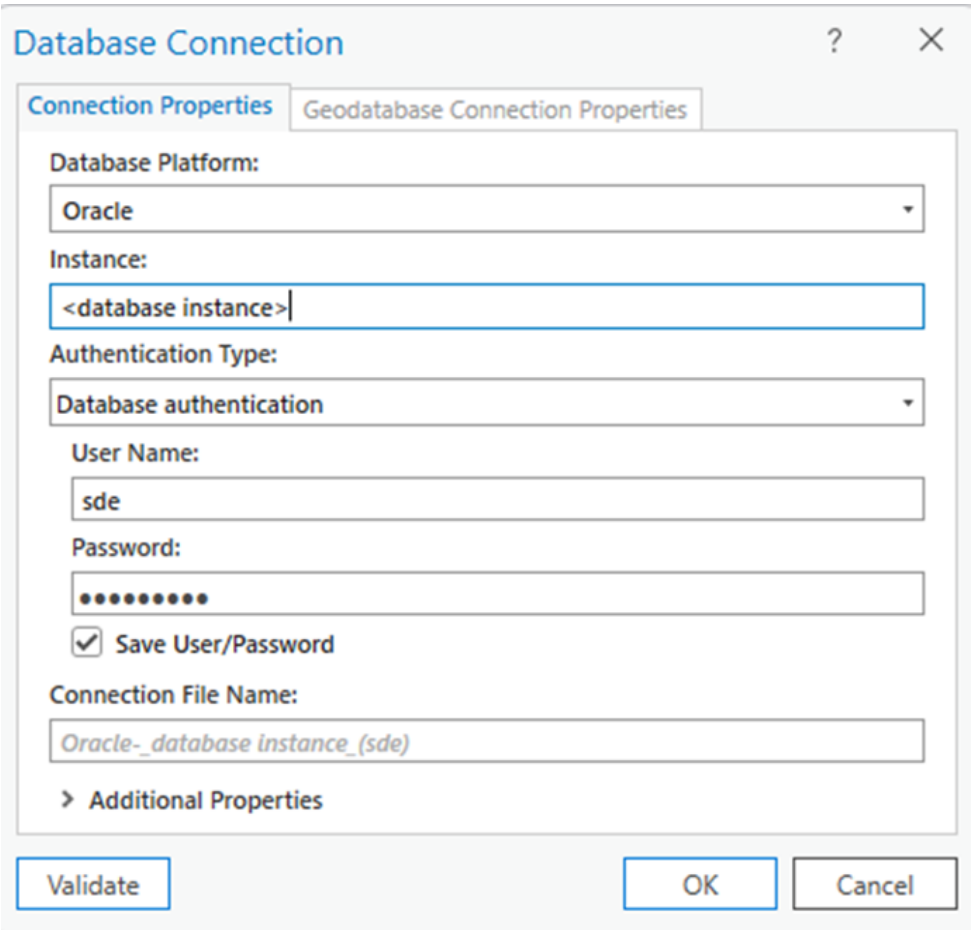
As part of the integration, the Tasks Workspace document is provided as the ArcGIS artifact. This xml file defines the schema of the Tasks feature class. The workspace document will be imported into a geodatabase.

To create a Oracle database connection in ArcGIS Pro for Enterprise geodatabase:

1. Click **New Database Connection**.



2. Enter the connection details, such as Oracle instance, username, and password.

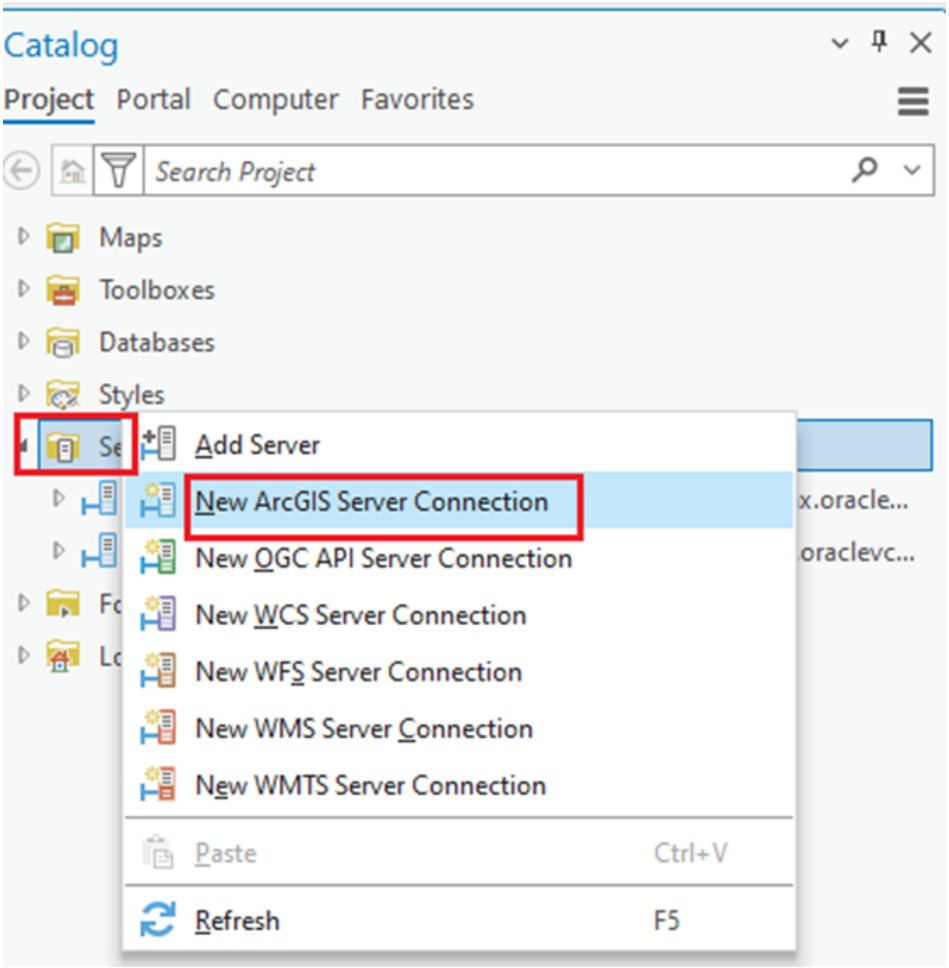


3. Click **Validate**, and then click **OK** to verify the connection is successfully created.

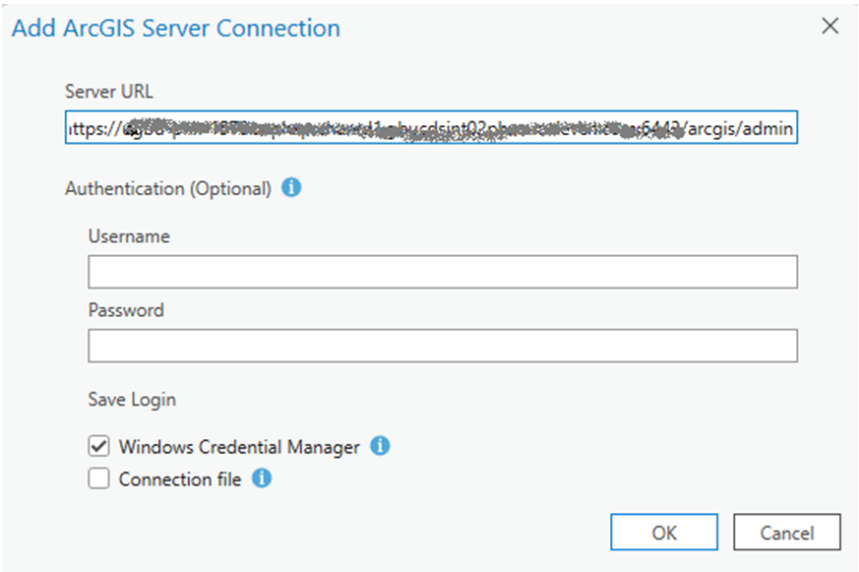
Note that the Oracle database connection requires Oracle database client software to be installed on the machine running ArcGIS Pro. For more information about connecting to Oracle database from ArcGIS Pro, refer to: https://pro.arcgis.com/en/pro-app/latest/help/data/databases/connect-oracle.htm

Creating Server Connection

If the Tasks feature layer is published to a standalone ArcGIS Enterprise Server as a REST feature service, then you need to create a server connection in ArcGIS Pro.



Enter the required URL and credentials.



For more information about connecting to an ArcGIS Enterprise Server from ArcGIS Pro, refer to: https://pro.arcgis.com/en/pro-app/latest/help/projects/connect-to-a-gis-server.htm

Chapter 4

Configuring and Deploying the Task Feature Layer

This chapter describes configuring the Task feature layer in ArcGIS Pro and deploying it in ArcGIS Online and ArcGIS Enterprise Server. It includes the following:

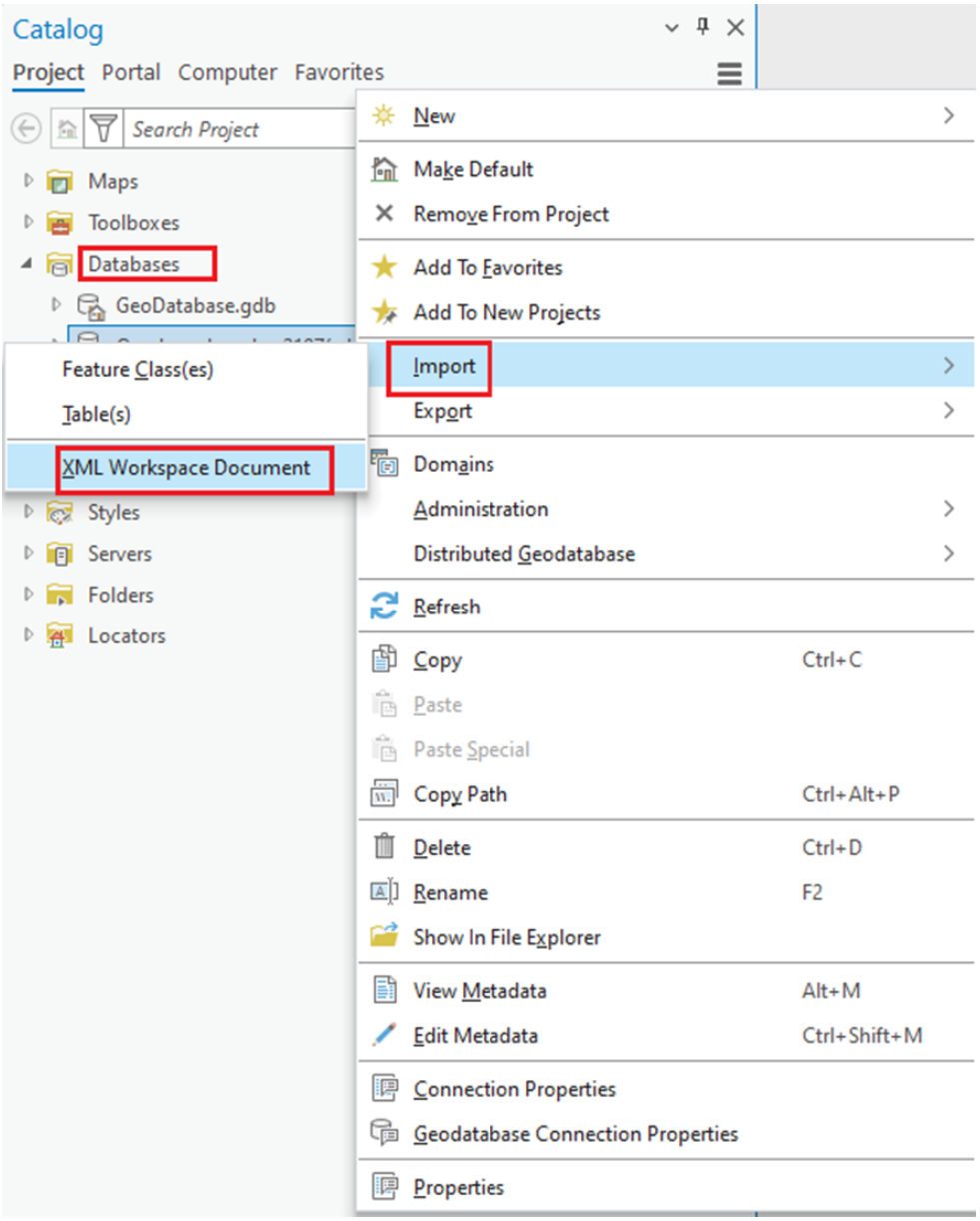
- Importing the Tasks Workspace Document
- Verifying the Schema
- Updating Domains
- Updating Contingent Values
- Adding the Task Feature Class to Map
- Publishing Feature Class on ArcGIS Online
- Publishing Feature Class on Standalone ArcGIS Enterprise Server
- Adding the Activities Feature Layer to Webmap
- Enabling Offline Capability

Importing the Tasks Workspace Document

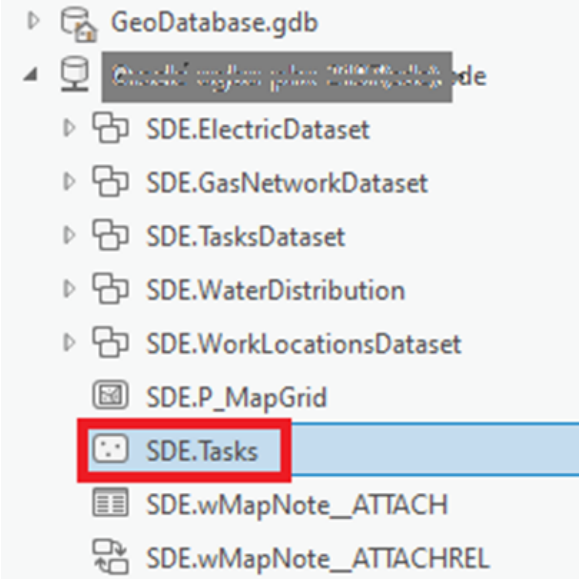
To import the Tasks Workspace document into the database through the database connection created in ArcGIS Pro:

> **Important!** For information about how to create a database connection, refer to Creating Database Connection in ArcGIS Pro section in Chapter 3: ArcGIS Pro Configurations.

1. Click **Databases** > <*database connection created*> > **Import** > **XML Workspace Document**.



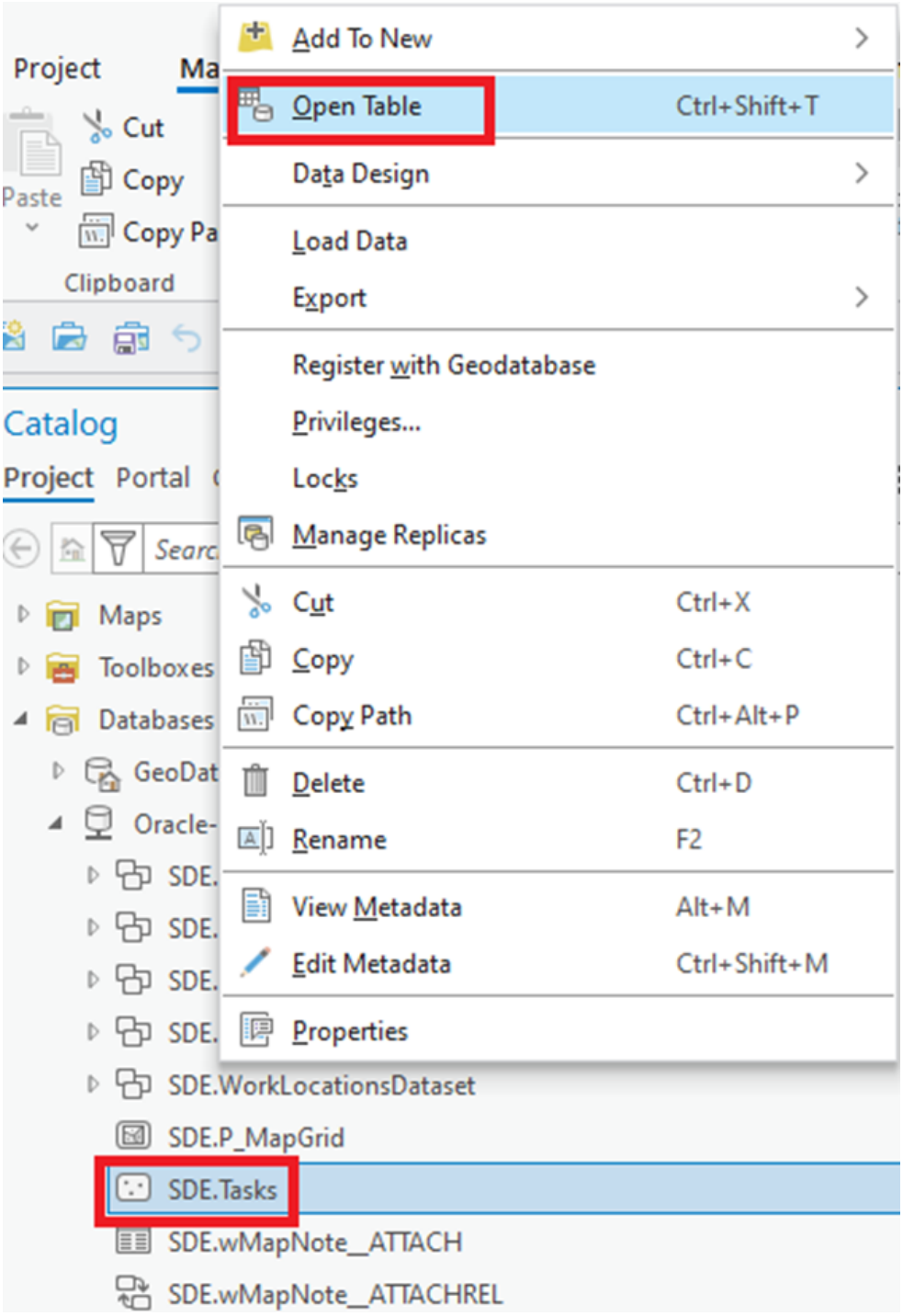
2. Verify the Tasks feature class is added to the geodatabase.



Verifying the Schema

To verify the schema:

1. Open the **Tasks** table to verify the fields, attribute domains, and default domain and contingent values.

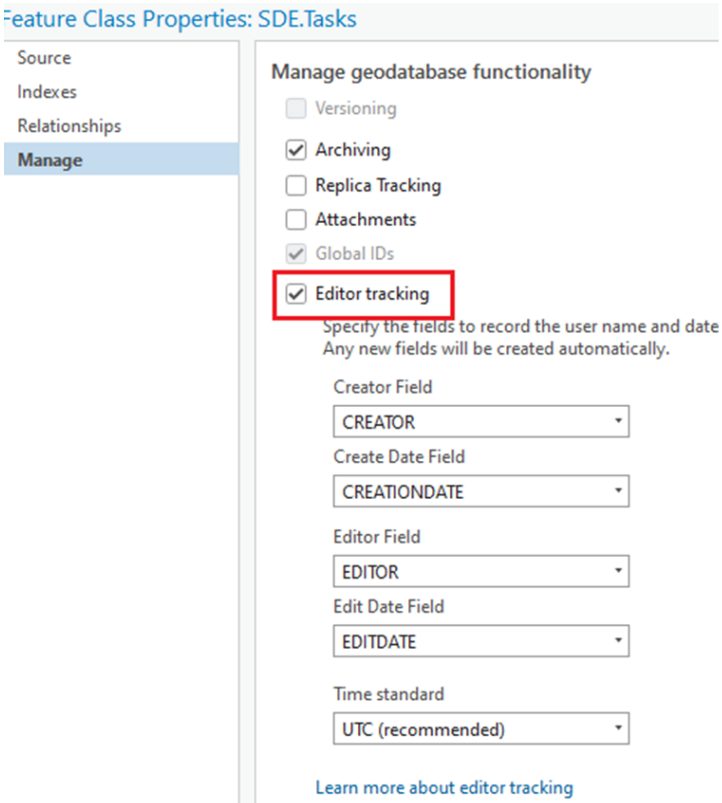


SDE.Tasks | Fields: Tasks

Current Layer: Data Source

Field Name	Alias	Data Type	Allow NULL	Domain	Default	Precision	Scale	Length
OBJECTID	OBJECTID	Object ID				10	0	
WORK_TYPE	WORK_TYPE	Text	✓	Tasks_WorkType		0	0	255
ACTIVITY_TYPE	ACTIVITY_TYPE	Text	✓	Tasks_ActivityType		0	0	255
WORK_PRIORITY	WORK_PRIORITY	Text	✓	Tasks_WorkPriority		0	0	255
WORK_CLASS	WORK_CLASS	Text	✓	Tasks_WorkClass		0	0	255
WORK_CATEGORY	WORK_CATEGORY	Text	✓	Tasks_WorkCategory		0	0	255
GROUP_TYPE	GROUP_TYPE	Text	✓	Tasks_GroupType		0	0	255
TASK_TYPE	TASK_TYPE	Text	✓	Tasks_Type	Work Request	0	0	255
GISID	GISID	Text	✓			0	0	255
REQUIRED_BY_DATE	REQUIRED_BY_DATE	Date	✓			0	0	
DETAILED_DESC	DETAILED_DESC	Text	✓			0	0	255
DESCRIPTION	DESCRIPTION	Text	✓			0	0	255
WORK_IT	WORK_IT	Text	✓	Tasks_YesNo		0	0	255
EMERGENCY	EMERGENCY	Text	✓	Tasks_YesNo		0	0	255
DOWNTIME_START_DTTM	DOWNTIME_START_DTTM	Date	✓			0	0	
CREW_MEMBER	CREW_MEMBER	Text	✓			0	0	255
EXTERNAL_REC_INFO	EXTERNAL_REC_INFO	Text	✓		N	0	0	255
GLOBALID	GLOBALID	Global ID				0	0	
CREATOR	CREATOR	Text	✓			0	0	255
CREATIONDATE	CREATIONDATE	Date	✓			0	0	
EDITOR	EDITOR	Text	✓			0	0	255
EDITDATE	EDITDATE	Date	✓			0	0	
SHAPE	SHAPE	Geometry	✓			0	0	

Note: The CREATOR, CREATIONDATE, EDITOR, and EDITDATE fields are editor tracking fields. If these fields are not seen in the **Fields** tab, enable the **Editor tracking** field as shown below.

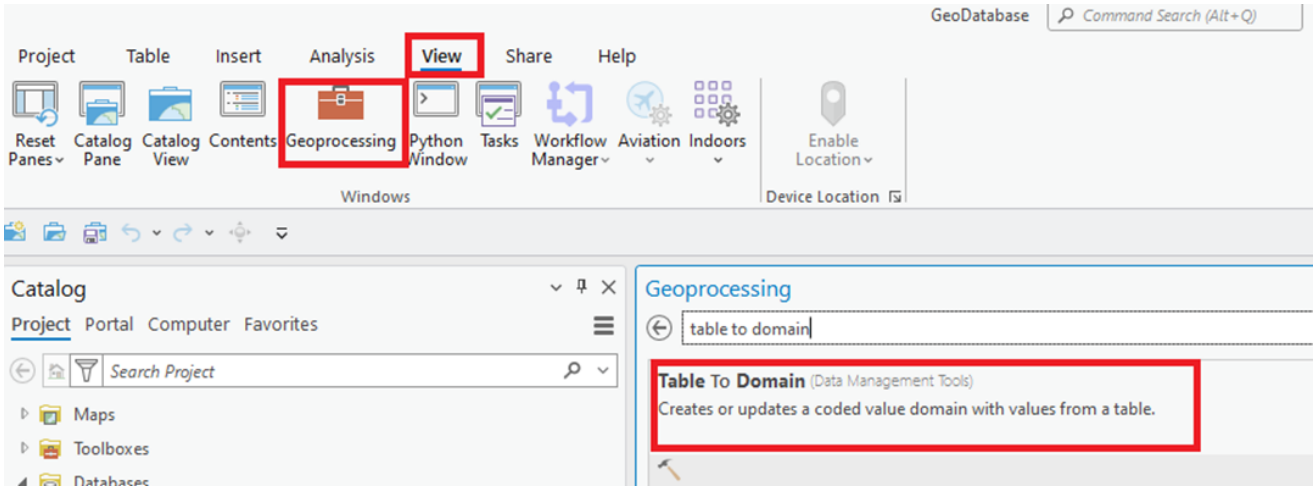


2. Verify **Domains** and **Contingent Values**. Use the options shown in the figure below.

Updating Domains

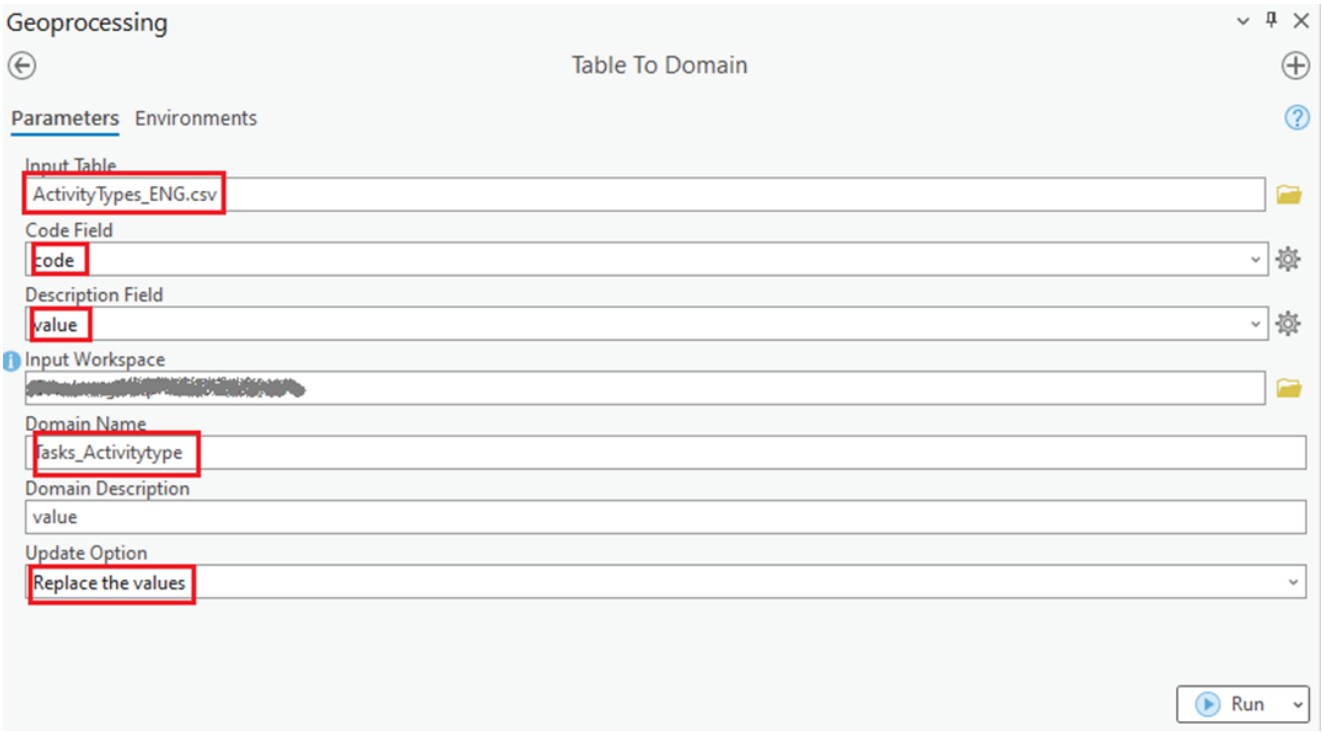
The "OU ArcGIS OFS Admin Files Create" Oracle Integration Cloud integration work flow generates the required CSV files from the corresponding Oracle Utilities Work and Asset Management/ESRI ArcGIS Field Maps environment for domain and contingent values of the Task feature layer. The files generated are dropped in the OCI Object Storage location. These files are retrieved from Object Storage buckets and used in ArcGIS Pro to update the domains and contingent values.

To update the domain values in ArcGIS Pro, use the **Table to Domain** geoprocessing tool.



Enter the necessary information and run this geoprocessing tool for each generated CSV file and the corresponding domain.

Following is a sample entry for Tasks_Activitytype domain:



For more information, refer to: https://pro.arcgis.com/en/pro-app/3.1/tool-reference/data-management/table-to-domain.htm

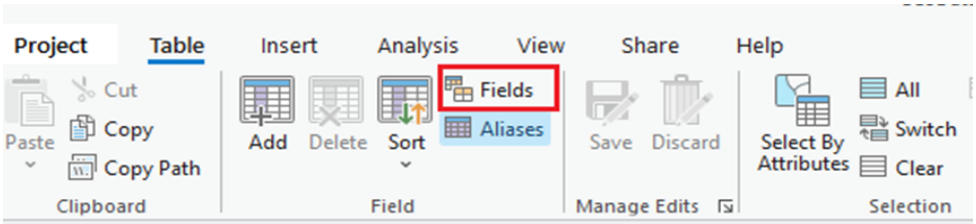
After the domain values are updated, ArcGIS Pro may need to be restarted for the domain values to take effect.

Updating Contingent Values

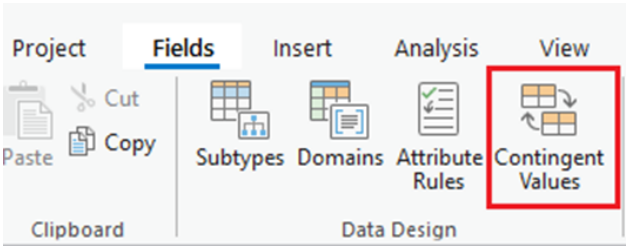
The "FieldGroup" and "ContingentValues" CSV files are generated using the "OU ArcGIS OFS Admin Files Create" Oracle Integration Cloud workflow. These files are stored in the OCI Object Storage in the configured buckets. After the files are downloaded from the buckets, they can be imported into the Tasks feature class using ArcGIS Pro.

To load the Tasks feature class:

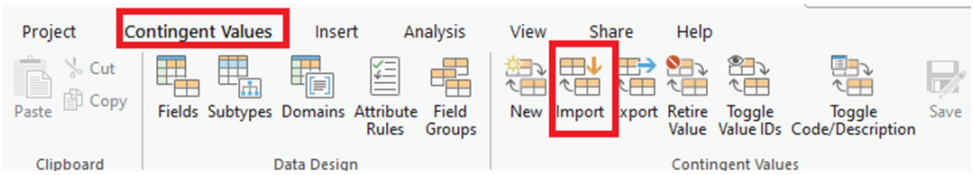
1. Right-click the **Tasks feature class** in the geodatabase, and then click **Open Table**.
2. Click **Fields** to view the options related to **Table Fields**.



3. Click **Contingent Values** to view the options related to contingent values.



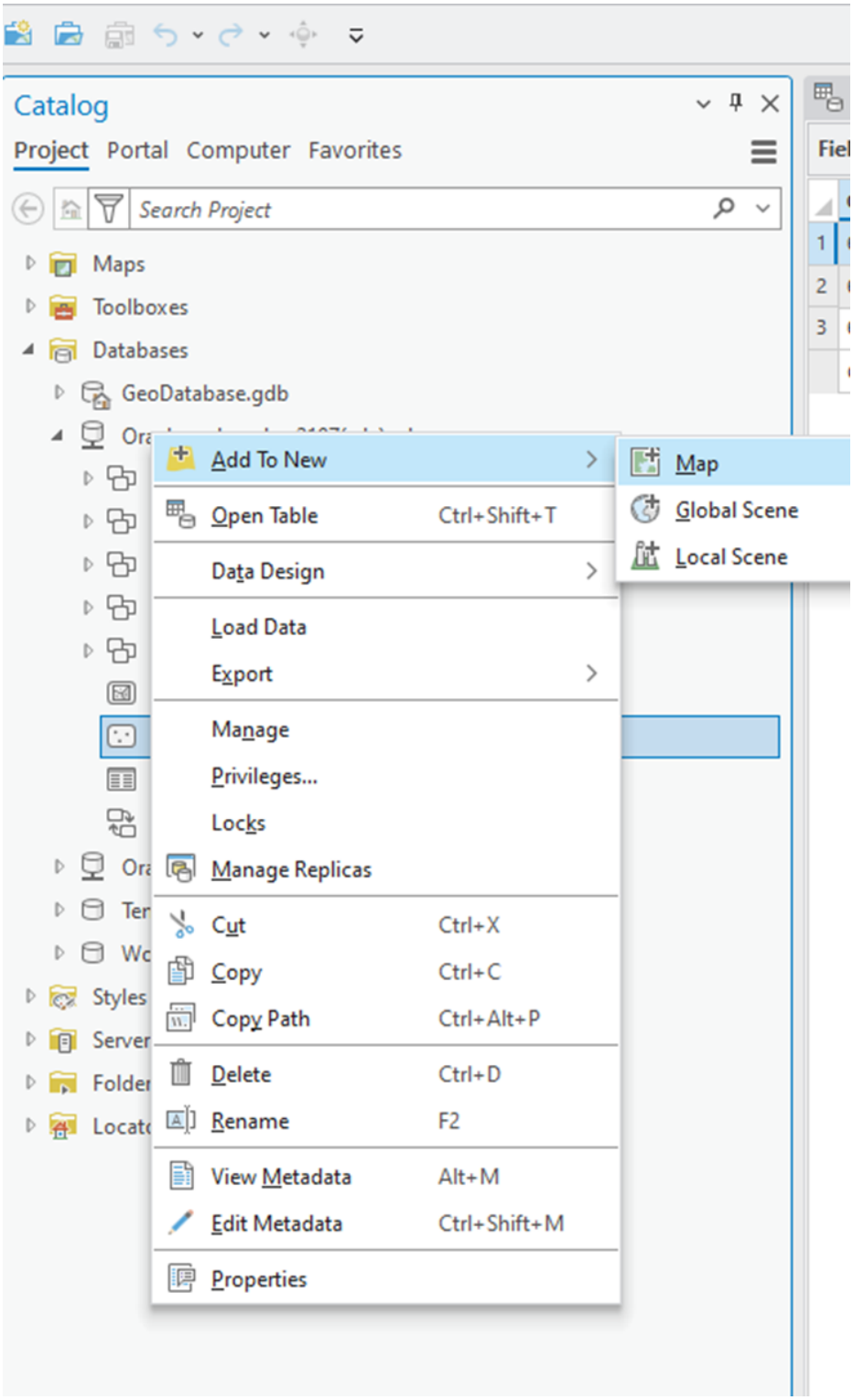
4. Click **Import**.



5. Select the **FieldGroup** and **ContingentValue** files. Make sure the **Replace Values** field is selected.
6. Save the changes.

Adding the Task Feature Class to Map

The Task feature class is added to Map before sharing it in ArcGIS Online or publishing as a REST service in the ArcGIS Enterprise Server.

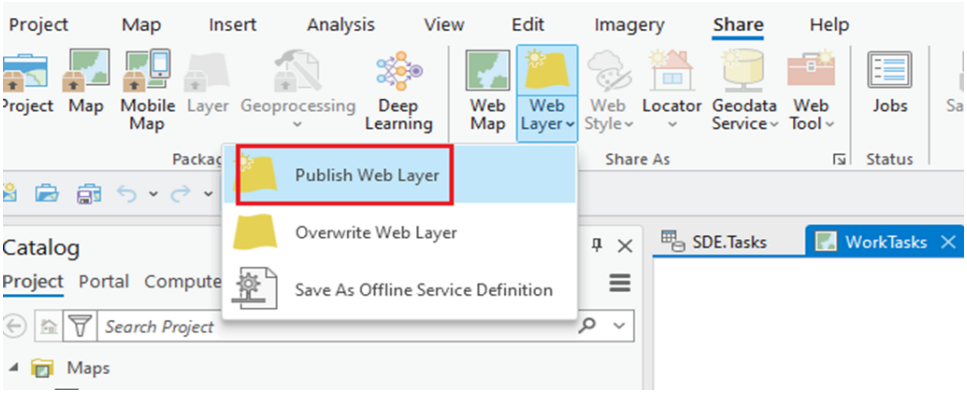


Note: Make sure the contents of this Map include only the feature class and not any base maps.

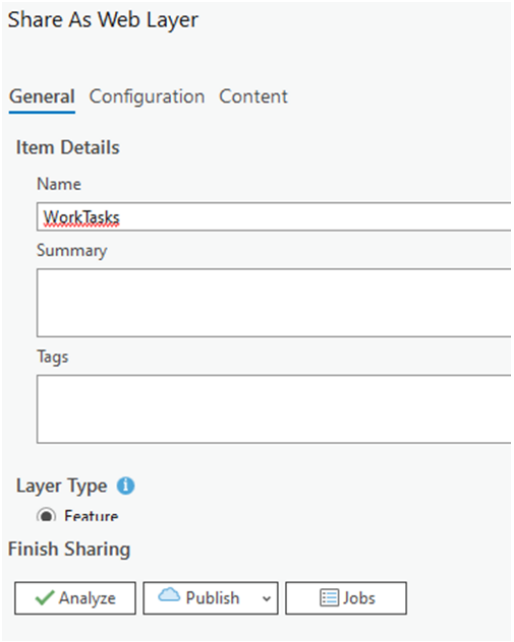
Publishing Feature Class on ArcGIS Online

To publish the Tasks feature class either on ArcGIS Online or on ArcGIS Enterpriser Server:

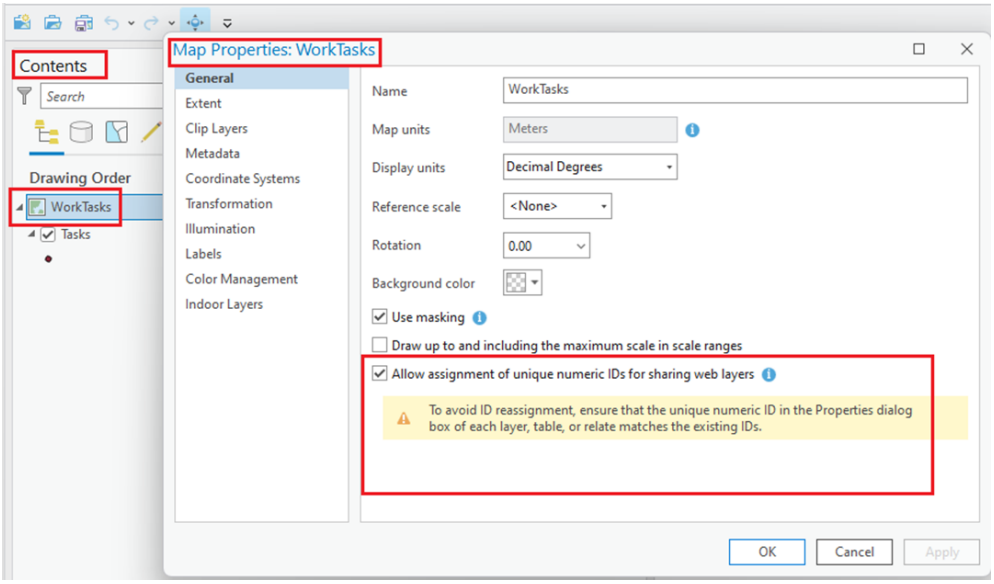
1. Navigate to **Share** > **Web Layer** > **Publish Web Layer**.



2. Enter the necessary information and configuration, analyze, and then publish the feature layer.



3. Make sure the assignment of unique IDs is enabled for the **WorkTasks** maps. Navigate to **Contents** > <*Maps for WorkTasks*> > **Properties**.



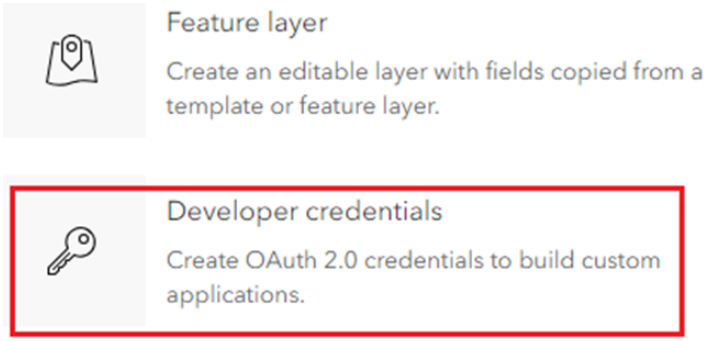
For more information, refer to: https://pro.arcgis.com/en/pro-app/latest/help/sharing/overview/web-feature-layer.htm

OAuth Security

The Tasks feature layer on ArcGIS Online can be accessed using OAuth 2 Client Credentials in the "OU REST ArcGIS for ArcGIS-OFS" Oracle Integration Cloud connection for the "OU ArcGIS OFS Work Tasks Process" integration work flow.

To create an OAuth2 application:

1. Login to ArcGIS Online.
2. Create a **New Item** of type **Developer Credentials**.



3. Navigate to **Settings** to fetch the **ClientId** and **Client secret** of the application to use in the Oracle Integration Cloud connection.

For more information, refer to: https://community.esri.com/t5/developers-blog/how-to-implement-oauth-2-0-for-arcgis/ba-p/891853

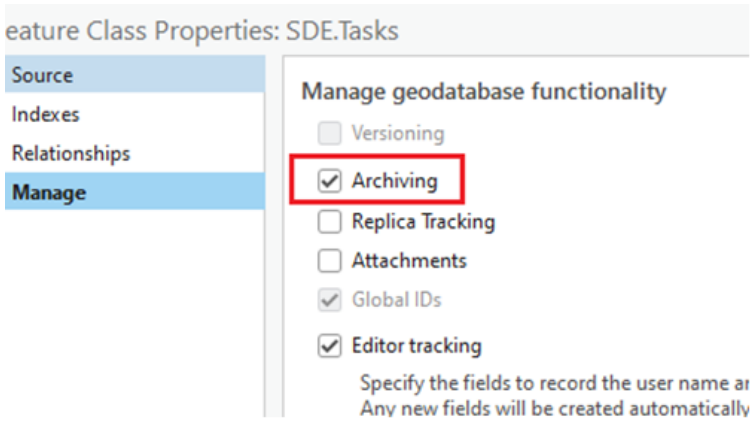
Publishing Feature Class on Standalone ArcGIS Enterprise Server

The Tasks feature class can be published as a REST service on the standalone ArcGIS Enterprise Server.

Note that the Task feature class does not need versioning enabled for its functionality.

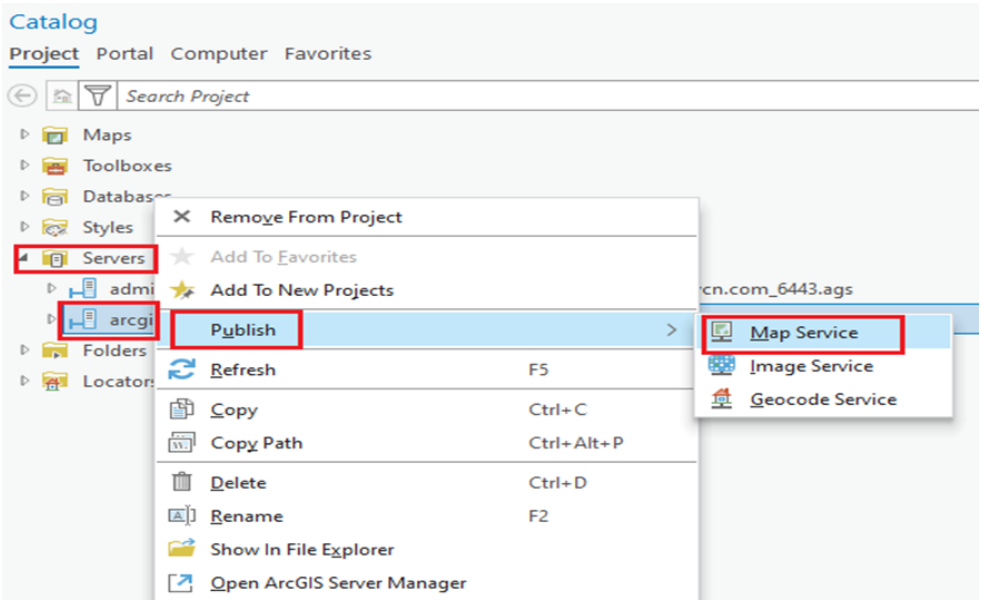
To disable versioning and still have synchronization capability:

1. On the Tasks feature class properties, navigate to **Manage** > **Archiving**.

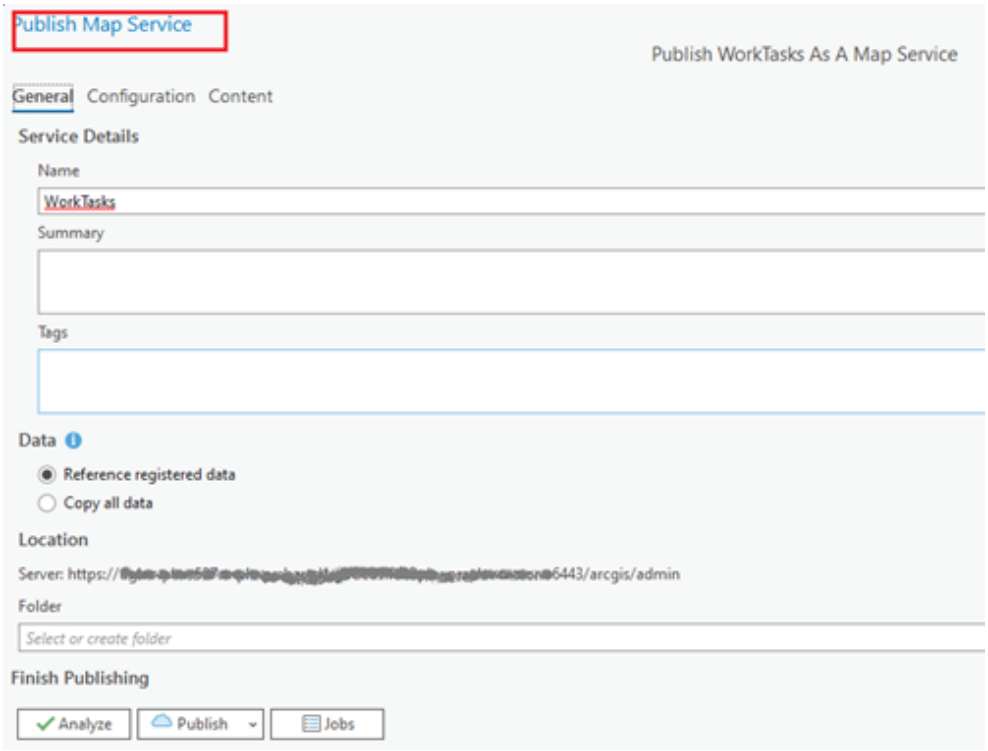


2. Make sure the **Editor tracking** checkbox is selected and the corresponding editor fields are mapped accurately.
3. Select the server connection that points to the Enterprise server to which the Task feature service needs to be deployed.

   Refer to the Creating Server Connection section in Chapter 3: ArcGIS Pro Configurations for information about how to create server connection in ArcGIS Pro.
4. Click **Publish** and select the map to which the Tasks feature class has been added.



5. Enter the necessary information and publish the feature service in the Enterprise Server.



For additional information, refer to the following documentation:

https://enterprise.arcgis.com/en/server/latest/publish-services/windows/what-is-a-feature-service-.htm

https://enterprise.arcgis.com/en/server/10.9.1/publish-services/windows/what-is-a-map-service.htm

Adding the Activities Feature Layer to Webmap

The webmap must be created either on ArcGIS Online or ArcGIS Enterprise Server portal with all the required asset layers. The Tasks feature layer must be added to the webmap to be able to access from the Asset feature layers.

For information on how to create a webmap and add feature layers to the webmap, refer to the following documentation:

https://doc.arcgis.com/en/arcgis-online/get-started/get-started-with-maps-mv.htm

https://doc.arcgis.com/en/arcgis-online/reference/add-layers.htm

https://enterprise.arcgis.com/en/portal/latest/use/create-maps-and-apps.htm

Enabling Offline Capability

To work in disconnected mode, webmaps can be configured offline in Fieldmaps. To take webmaps offline, all the layers of the webmaps must be enabled for offline use.

To enable offline feature layer on ArcGIS Online, refer to: https://doc.arcgis.com/en/arcgis-online/manage-data/take-maps-offline.htm#ESRI_SECTION1_C0331D55CAE14D4FAB1B54354A9246F2

To enable offline feature layer on the portal for ArcGIS Enterprise Server, refer to: https://enterprise.arcgis.com/en/portal/10.9.1/use/take-maps-offline.htm

Chapter 5

Configuring and Deploying the Activities Feature Layer

This chapter describes configuring the Activities feature layer in ArcGIS Pro and deploying it in ArcGIS Online and ArcGIS Enterprise Server. It includes the following:

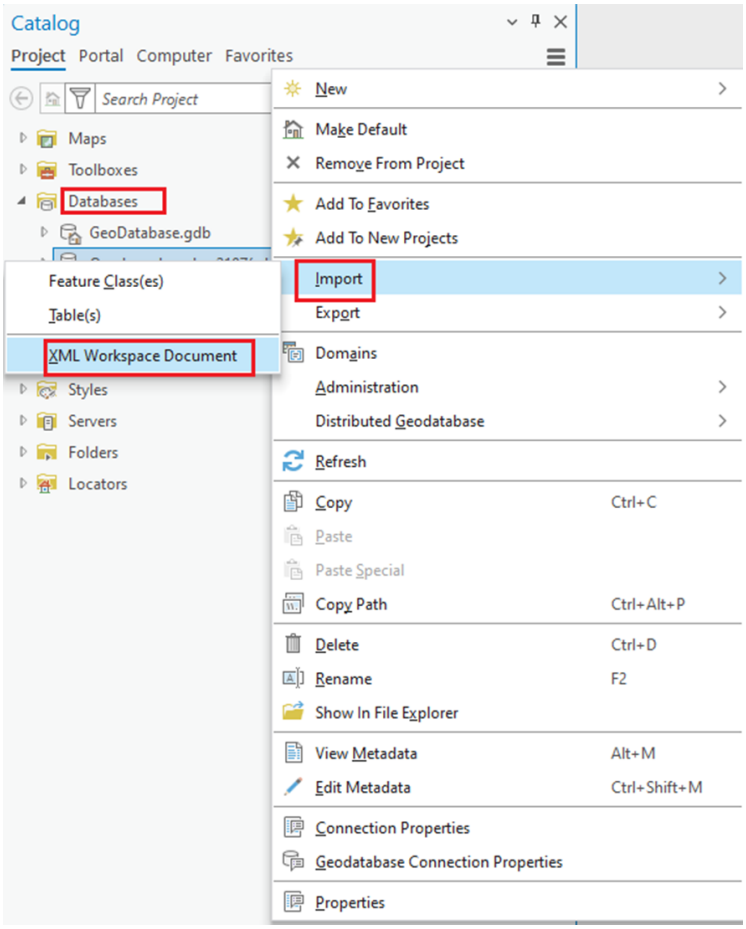
- Importing the Activities Workspace Document
- Verifying the Schema
- Adding the Activities Feature Class and ActivityAssets Table to Map
- Publishing Feature Class on ArcGIS Online
- Publishing Feature Class on Standalone ArcGIS Enterprise Server
- Adding the Activities Feature Layer to Webmap
- Enabling Offline Capability

Importing the Activities Workspace Document

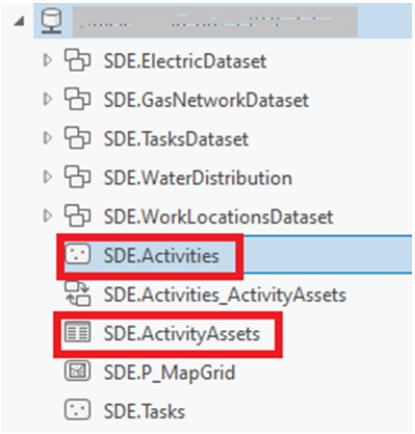
To import the Activities Workspace document into the database through the database connection created in ArcGIS Pro:

> **Important!** For information about how to create a database connection, refer to Creating Database Connection in ArcGIS Pro section in Chapter 3: ArcGIS Pro Configurations.

1. Click **Databases** > <*database connection created*> > **Import** > **XML Workspace Document**.



2. Verify the Activities and ActivityAssets feature classes are added to the geodatabase.

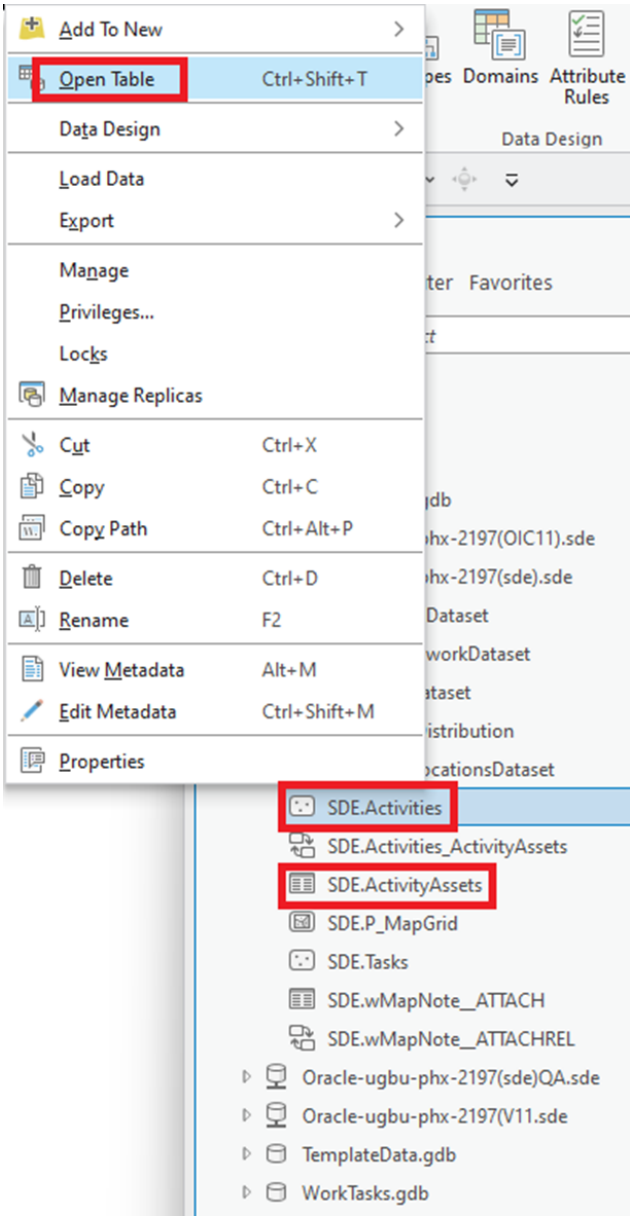


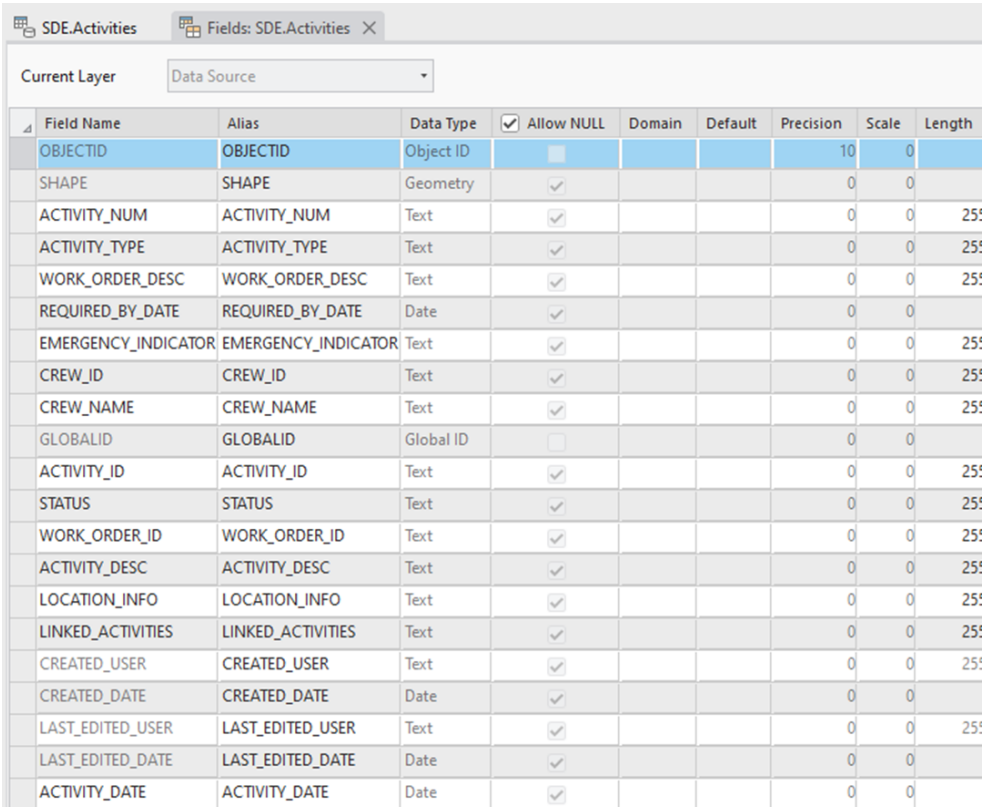
3. Verify if the Relationship class is imported as part of import of Activities workspace document.

Verifying the Schema

To verify the schema:

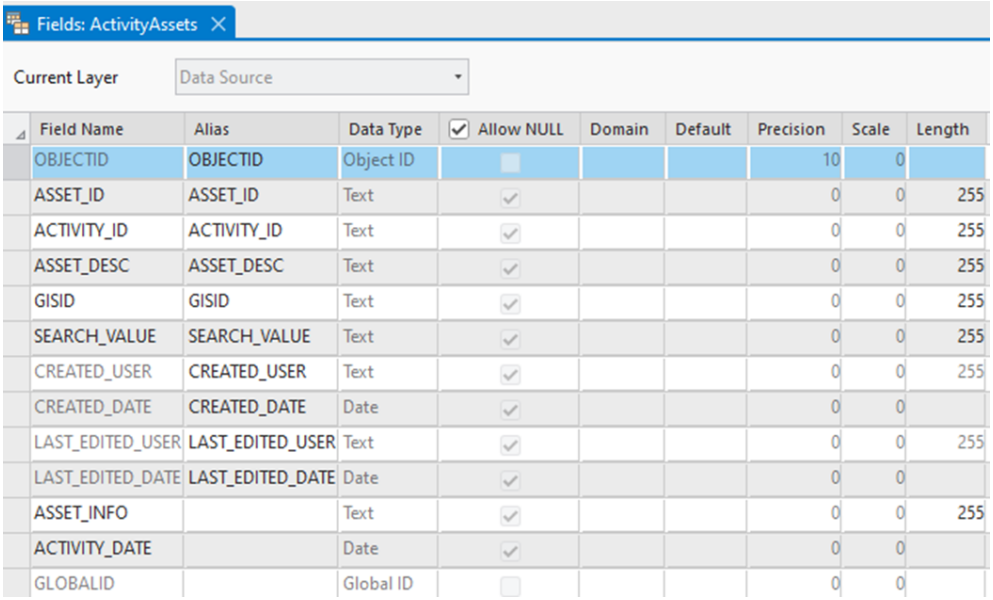
1. Open the **Activities and ActivityAssets** table to verify the fields, attribute domains, and default domain and contingent values.




SDE.Activities | Fields: SDE.Activities

Current Layer: Data Source

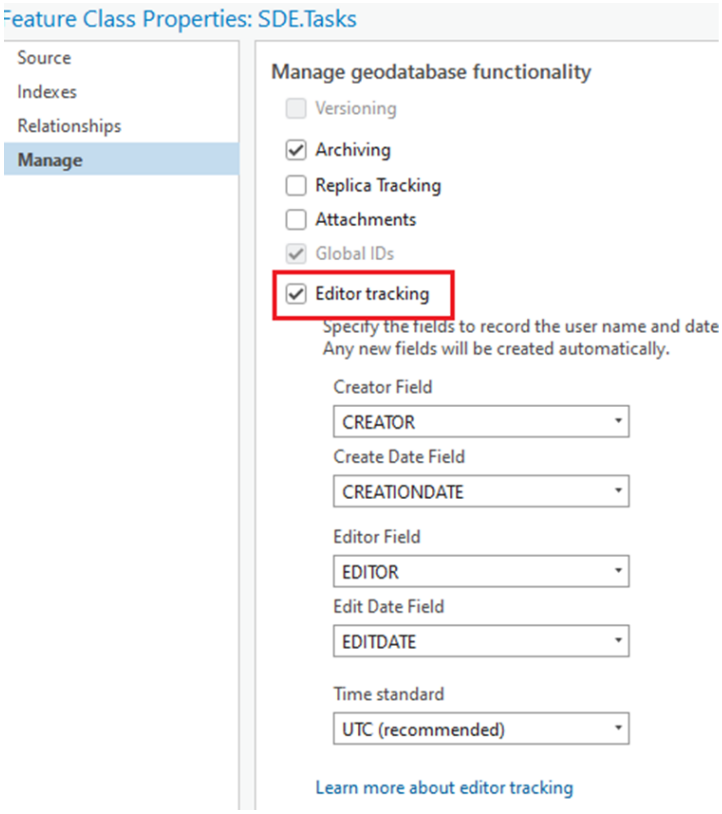
Field Name	Alias	Data Type	Allow NULL	Domain	Default	Precision	Scale	Length
OBJECTID	OBJECTID	Object ID				10	0	
SHAPE	SHAPE	Geometry	✓			0	0	
ACTIVITY_NUM	ACTIVITY_NUM	Text	✓			0	0	255
ACTIVITY_TYPE	ACTIVITY_TYPE	Text	✓			0	0	255
WORK_ORDER_DESC	WORK_ORDER_DESC	Text	✓			0	0	255
REQUIRED_BY_DATE	REQUIRED_BY_DATE	Date	✓			0	0	
EMERGENCY_INDICATOR	EMERGENCY_INDICATOR	Text	✓			0	0	255
CREW_ID	CREW_ID	Text	✓			0	0	255
CREW_NAME	CREW_NAME	Text	✓			0	0	255
GLOBALID	GLOBALID	Global ID				0	0	
ACTIVITY_ID	ACTIVITY_ID	Text	✓			0	0	255
STATUS	STATUS	Text	✓			0	0	255
WORK_ORDER_ID	WORK_ORDER_ID	Text	✓			0	0	255
ACTIVITY_DESC	ACTIVITY_DESC	Text	✓			0	0	255
LOCATION_INFO	LOCATION_INFO	Text	✓			0	0	255
LINKED_ACTIVITIES	LINKED_ACTIVITIES	Text	✓			0	0	255
CREATED_USER	CREATED_USER	Text	✓			0	0	255
CREATED_DATE	CREATED_DATE	Date	✓			0	0	
LAST_EDITED_USER	LAST_EDITED_USER	Text	✓			0	0	255
LAST_EDITED_DATE	LAST_EDITED_DATE	Date	✓			0	0	
ACTIVITY_DATE	ACTIVITY_DATE	Date	✓			0	0	


Fields: ActivityAssets

Current Layer: Data Source

Field Name	Alias	Data Type	Allow NULL	Domain	Default	Precision	Scale	Length
OBJECTID	OBJECTID	Object ID				10	0	
ASSET_ID	ASSET_ID	Text	✓			0	0	255
ACTIVITY_ID	ACTIVITY_ID	Text	✓			0	0	255
ASSET_DESC	ASSET_DESC	Text	✓			0	0	255
GISID	GISID	Text	✓			0	0	255
SEARCH_VALUE	SEARCH_VALUE	Text	✓			0	0	255
CREATED_USER	CREATED_USER	Text	✓			0	0	255
CREATED_DATE	CREATED_DATE	Date	✓			0	0	
LAST_EDITED_USER	LAST_EDITED_USER	Text	✓			0	0	255
LAST_EDITED_DATE	LAST_EDITED_DATE	Date	✓			0	0	
ASSET_INFO		Text	✓			0	0	255
ACTIVITY_DATE		Date	✓			0	0	
GLOBALID		Global ID				0	0	

Note: The CREATOR, CREATIONDATE, EDITOR, and EDITDATE fields are editor tracking fields. If these fields are not seen in the **Fields** tab, enable the **Editor tracking** field as shown below.

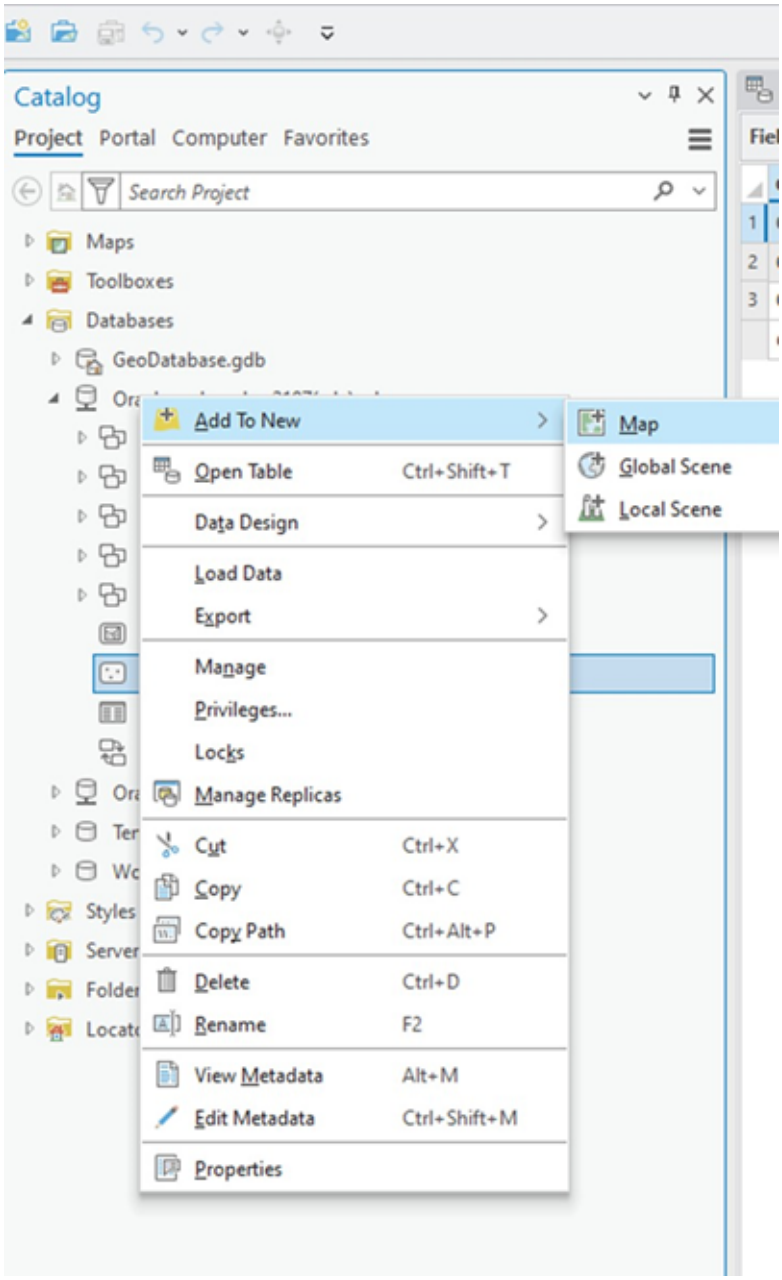


Adding the Activities Feature Class and ActivityAssets Table to Map

Make sure to add the Activities feature class to the map before sharing it in ArcGIS Online or publishing as a REST service in the ArcGIS Enterprise Server. Add the ActivityAssets table to the same map as the Activities feature class.

Note the following:

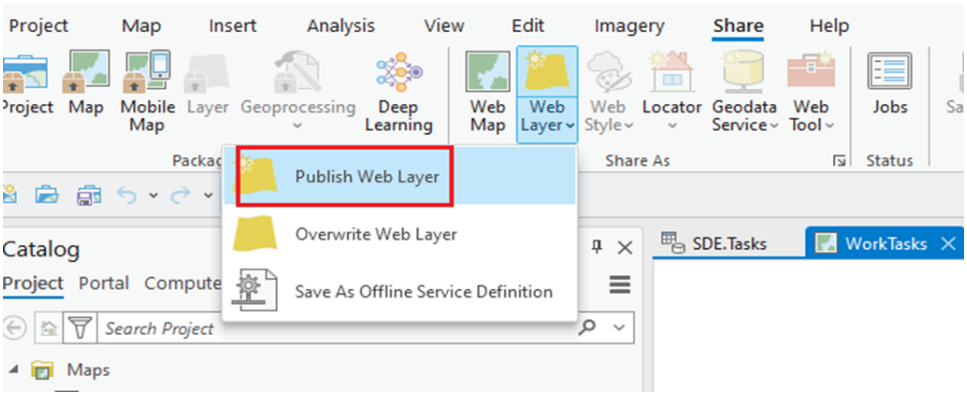
- Once the ActivityAssets table is added to the map, the relationship class is automatically established between them.
- Make sure the contents of the map include only the feature class and not any base maps.



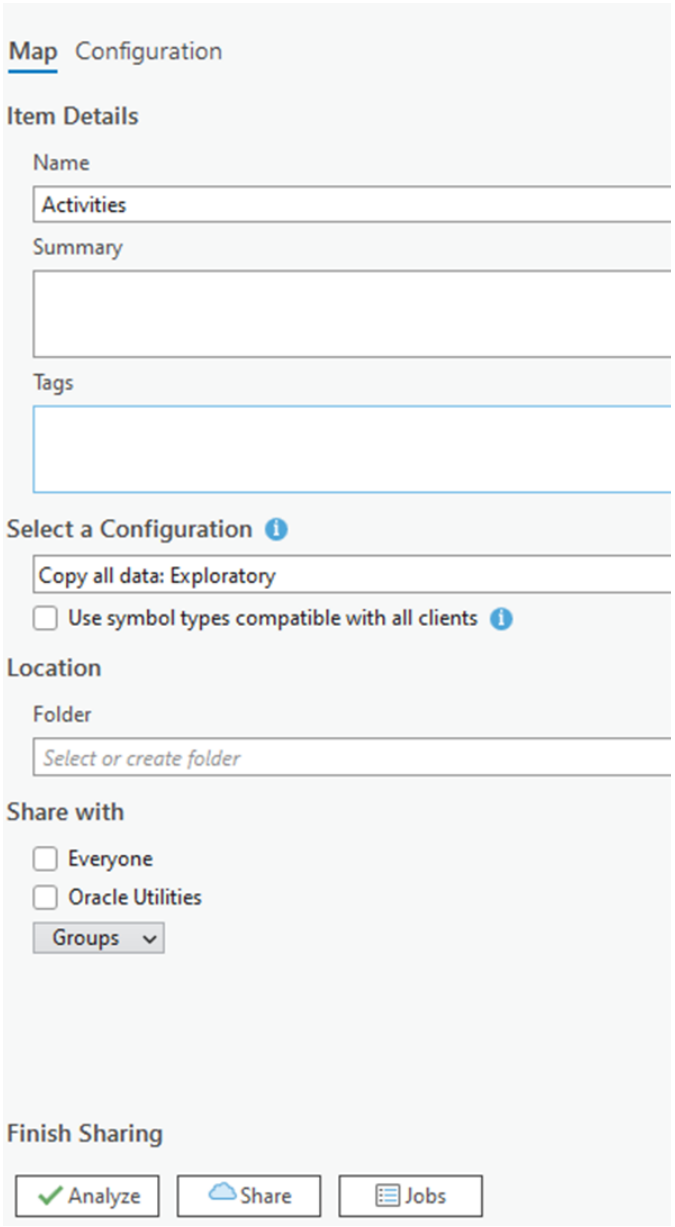
Publishing Feature Class on ArcGIS Online

To publish the Activities feature class either on ArcGIS Online or on ArcGIS Enterpriser Server:

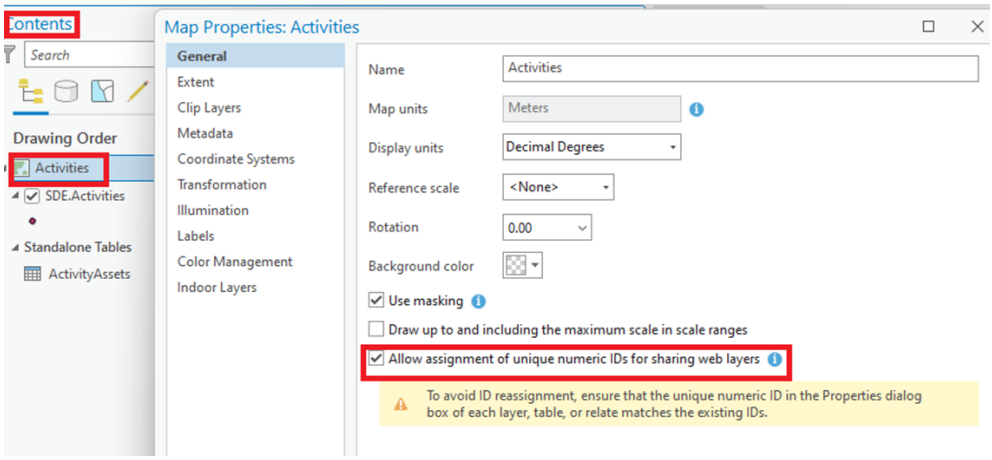
1. Navigate to **Share** > **Web Layer** > **Publish Web Layer**.



2. Enter the necessary information and configuration, analyze, and then publish the feature layer.



3. Make sure the assignment of unique IDs is enabled for the <*Activities*> maps. Navigate to **Contents** > <*Maps for Activities*> > **Properties**.



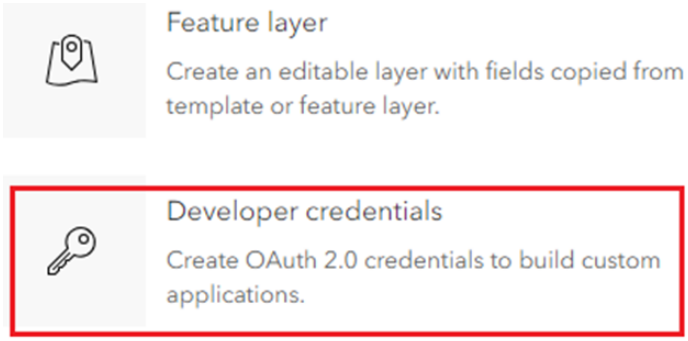
For more information, refer to: https://pro.arcgis.com/en/pro-app/latest/help/sharing/overview/web-feature-layer.htm

OAuth Security

The Activities feature layer on ArcGIS Online can be accessed using OAuth 2 Client Credentials in the "OU REST ArcGIS for ArcGIS-OFS" Oracle Integration Cloud connection.

To create an OAuth2 application:

1. Login to ArcGIS Online.
2. Create a **New Item** of type **Developer Credentials**.



3. Navigate to **Settings** to fetch the **ClientId** and **Client secret** of the application to use in the Oracle Integration Cloud connection.

For more information, refer to: https://community.esri.com/t5/developers-blog/how-to-implement-oauth-2-0-for-arcgis/ba-p/891853

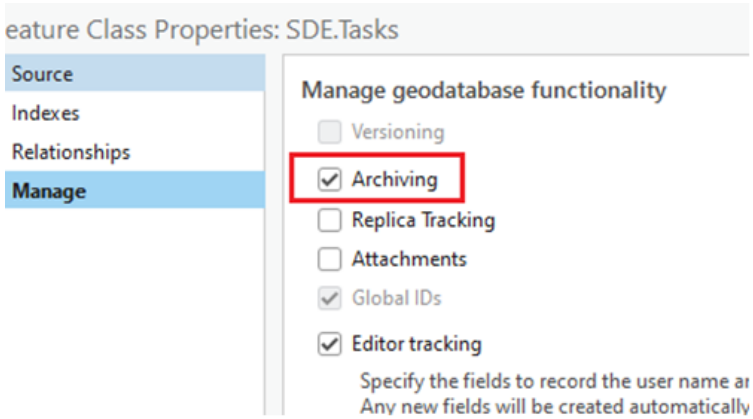
Publishing Feature Class on Standalone ArcGIS Enterprise Server

The Activities feature class can be published as a REST service on the standalone ArcGIS Enterprise Server.

Note that the Activities feature class does not need versioning enabled for its functionality.

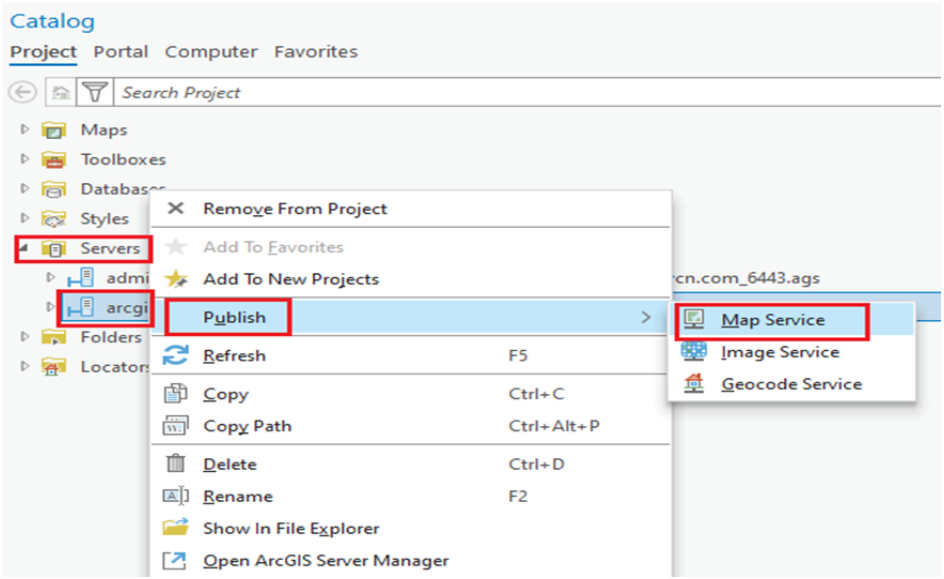
To disable versioning and to keep the Synchronization feature enabled for offline access:

1. On the Activities feature class properties, navigate to **Manage** > **Archiving**.

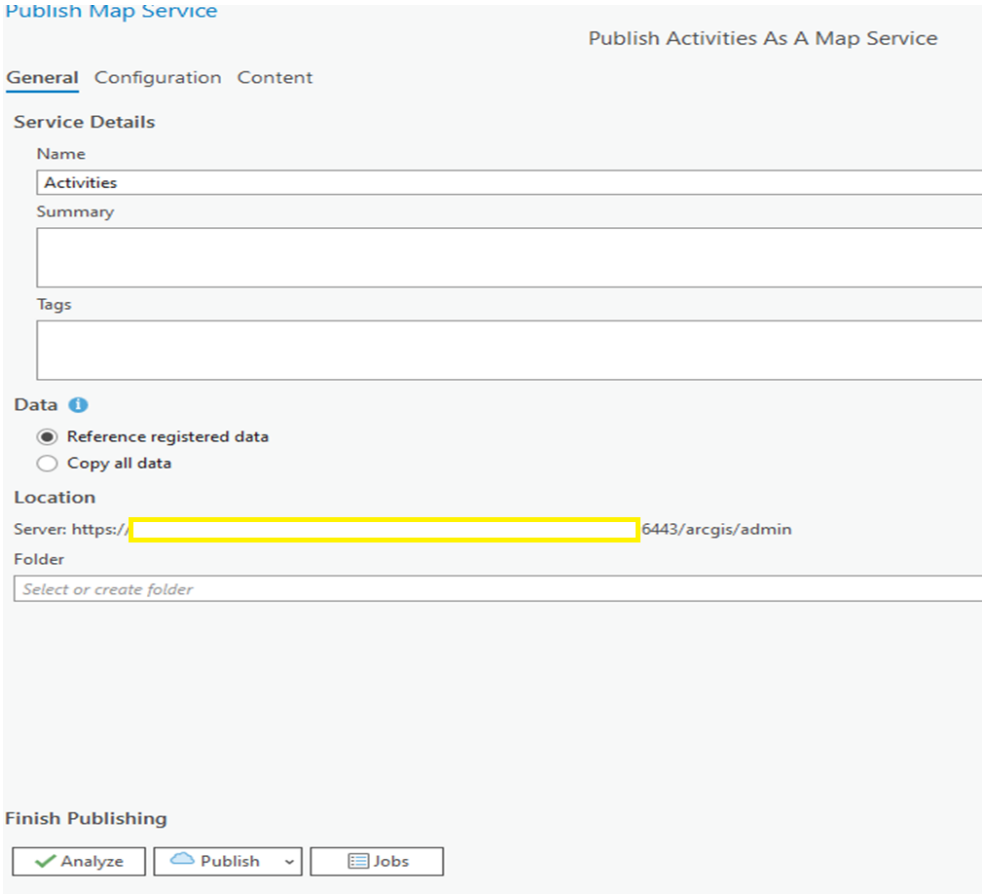


2. Make sure the **Editor tracking** checkbox is selected and the corresponding editor fields are mapped accurately.
3. Select the server connection that points to the Enterprise server to which the Activities feature service needs to be deployed.

   Refer to the Creating Server Connection section in Chapter 3: ArcGIS Pro Configurations for information about how to create server connection in ArcGIS Pro.
4. Click **Publish** and select the map to which Activities feature class has been added.



5. Enter the necessary information and publish the feature service on the Enterprise Server.



For additional information, refer to the following documentation:

https://enterprise.arcgis.com/en/server/latest/publish-services/windows/what-is-a-feature-service-.htm

https://enterprise.arcgis.com/en/server/10.9.1/publish-services/windows/what-is-a-map-service.htm

Adding the Activities Feature Layer to Webmap

The webmap must be created either on ArcGIS Online or ArcGIS Enterprise Server portal with all the required asset layers. The Activities feature layer must be added to the webmap to be able to visualize activities and search assets.

For information on how to create a webmap and add feature layers to the webmap, refer to the following documentation:

https://doc.arcgis.com/en/arcgis-online/get-started/get-started-with-maps-mv.htm

https://doc.arcgis.com/en/arcgis-online/reference/add-layers.htm

https://enterprise.arcgis.com/en/portal/latest/use/create-maps-and-apps.htm

Enabling Offline Capability

To work in the disconnected mode, webmaps can be configured offline in Fieldmaps. To take webmaps offline, all the layers of the webmaps must be enabled for offline use.

To enable offline feature layer on ArcGIS Online, refer to: https://doc.arcgis.com/en/arcgis-online/manage-data/take-maps-offline.htm#ESRI_SECTION1_C0331D55CAE14D4FAB1B54354A9246F2

To enable offline feature layer on the portal for ArcGIS Enterprise Server, refer to: https://enterprise.arcgis.com/en/portal/10.9.1/use/take-maps-offline.htm

Chapter 5

Creating Forms

This chapter describes how to create forms on the Tasks feature layer. It includes:

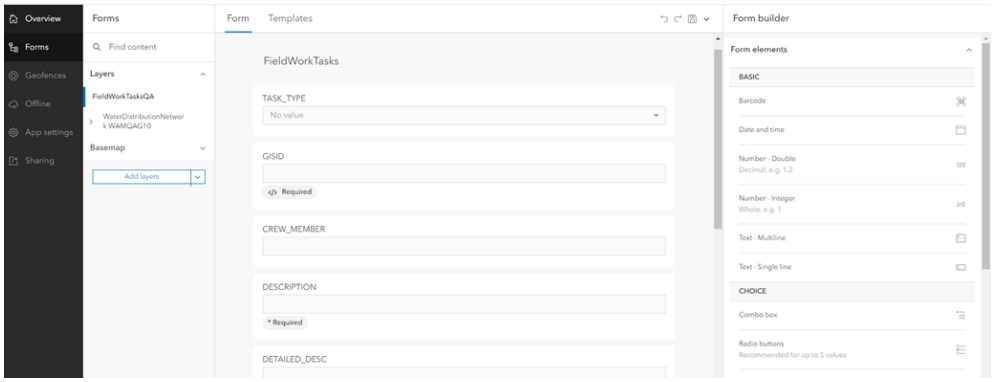
- Creating a Work Order/Work Request Form using Webmaps

Creating a Work Order/Work Request Form using Webmaps

A form can be created on the Tasks layer to capture the work order and work request details. The details captured on this form are then picked up by the "OU ArcGIS OFS Work Tasks Process" Oracle Integration Cloud integration flow.

To create a form using webmaps:

1. Navigate to the **Field Maps Designer** menu option in ArcGIS Online. If in ArcGIS Enterprise portal or Map Viewer, navigate to the **Field Maps** menu option.
2. Add the fields in Tasks feature layer to the form to capture work request or work order.



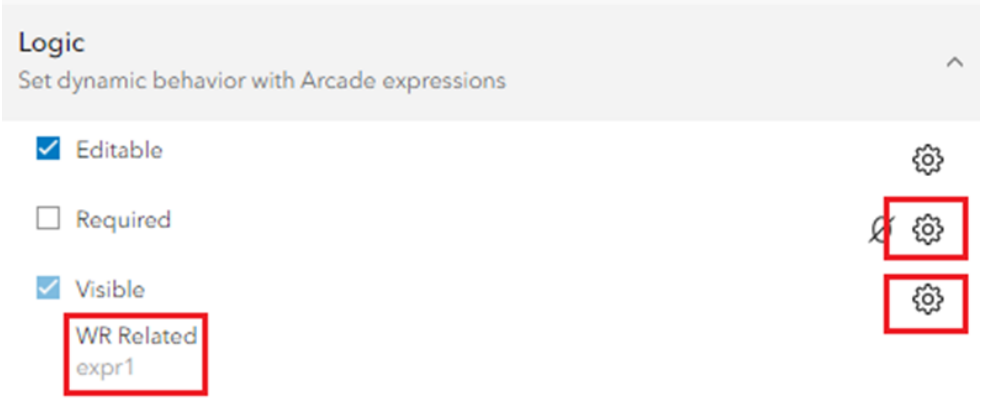
3. Make sure the following fields are created in the form while creating work order and work request.

Field	Conditions
DESCRIPTION	Mandatory for Work Order and Work Request
DETAILED_DESC	
ACTIVITY_TYPE	• Relevant for Work Order only • Mandatory for Work Order
WORK_PRIORITY	Mandatory for Work Order and Work Request
WORK_CLASS	
WORK_CATEGORY	
WORK_TYPE	• Relevant for Work Order only • Mandatory for Work Order
REQUIRED_BY_DATE	**Note**: The date entered should be a future date. Else, will fail to create a work request in WAM.
DOWNTIME_START_DTTM	Relevant for Work Request only **Note**: The date entered should be a future date. Else, will fail to create a work request in WAM.
WORK_IT	Relevant for Work Order

Field	Conditions
EMERGENCY	Relevant for Work Order
CREW_MEMBER	This field can be used to enter the field worker userID or the Crew userId if the work order needs to be assigned to the crew. If the CREW_MEMBER field is empty, the crew member user ID is taken from CREATOR field to create work order and work request in OFS. **Note:** • If the CREW_MEMBER field is used, the field worker who is creating the work order or work request must input userId of self or the userId of the crew. While there is no validation on the field itself, the field worker cannot input userId of another worker as it is not supported functionally. • In the standalone ArcGIS Enterprise server, if the Task feature layer is deployed as REST feature service, the CREATOR field will store the Enterprise Server manager user through which the REST Service is protected.
GISID	This is the Global Id of the Asset on which Work Order or Work Request is created. This value is searched in WAM/ WACS system to retrieve asset related information to create Work Order or Work request against. This value should not be updated manually and so this field can be made read only. This is required for Work Order. Work request can be created on a non asset. Work Order can be created only on a asset. Required can be enforced by making it visible and applying Work Order related required condition.
TASK_TYPE	The value of this field is a Work Order or Work Request. The selection on this field can be used to show or hide Work Order and Work related fields. The selection can also be used to enforce required fields for Work Order or Work request. The value of this field is not used in Work Order or Work request creation as such.

4. **Important!** Make sure the form is saved on the map and not on the layer. This ensures that the form is not overwritten when the Task layer is republished after updating any domain values or contingent values.

5. Set the expressions for conditions visibility or required on fields.



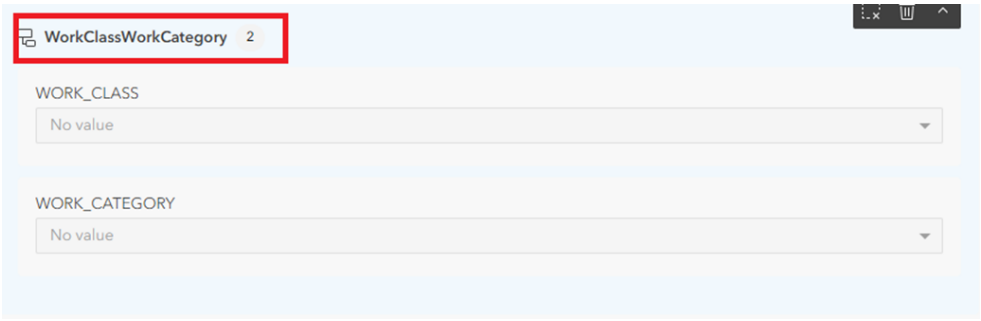
Expression relation to Work Order can be as below:

```
DomainName($feature, "TASK_TYPE") == "Work Order"
```

Expression relation to Work Request can be as below:

```
DomainName($feature, "TASK_TYPE") == "Work Request"
```

6. Add the fields related by Field Group to the form. Drag and drop the entire Field Group and not individual fields within the Field Group.



7. Note that the following fields are used for processing purposes and are not required to be visible and updated on the form.

Field	Purpose
EXTERNAL_REC_INFO	Default value is 'N'. All records marked with 'N' are picked up for processing by OU ArcGIS OFS Work Tasks. After processing successfully, this field has the work request ID or mobile activity ID for work orders.
CREATOR	Editor tracking field. If the CREW_MEMBER field is empty, value from this field is picked up to pass as resource to OFS during work request creation.
CREATIONDATE	Editor tracking field.
EDITOR	Editor tracking field.
EDITDATE	Editor tracking field.

For more information about creating forms, refer to: https://doc.arcgis.com/en/field-maps/latest/prepare-maps/configure-the-form.htm

Chapter 7

Creating Popups

This chapter describes how to configure popups in the Asset features layers added to the webmap, to access Tasks layers and navigate to Oracle Field Service. It includes the following:

- Configuring Popups on Asset Feature Layers
  - Arcade Expressions
- Configuring Popups on Activity Feature Layers
  - Adding Field Information
  - Arcade Expressions

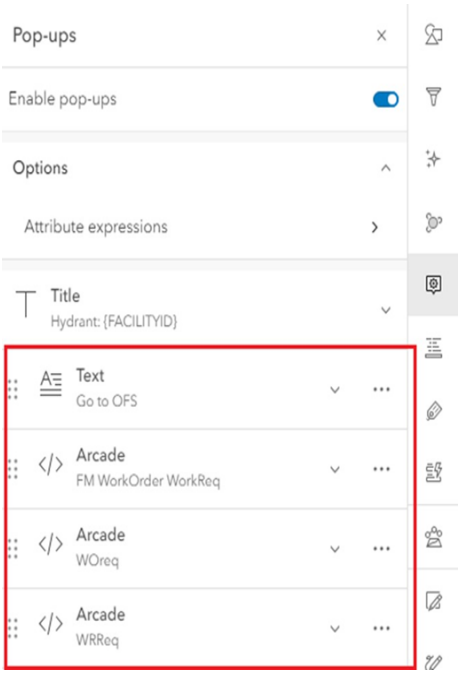
Configuring Popups on Asset Feature Layers

You can configure popups in a webmapin either of the following ways:

- MapViewer in ArcGIS Online

  For more information, refer to: https://doc.arcgis.com/en/arcgis-online/create-maps/configure-pop-ups-mv.htm

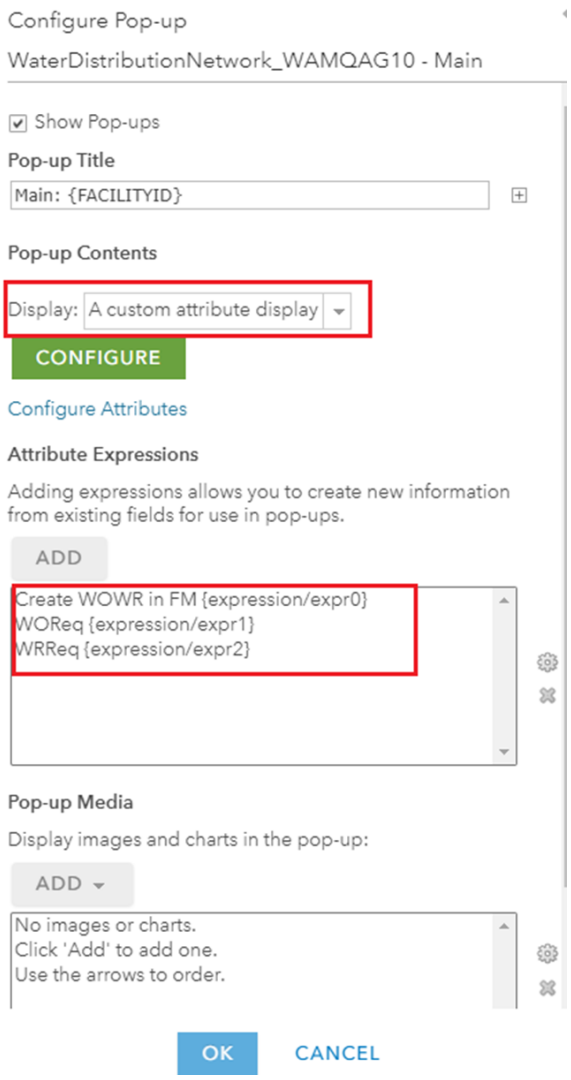
  The popup configuration screen in ArcGIS Online is as shown below:

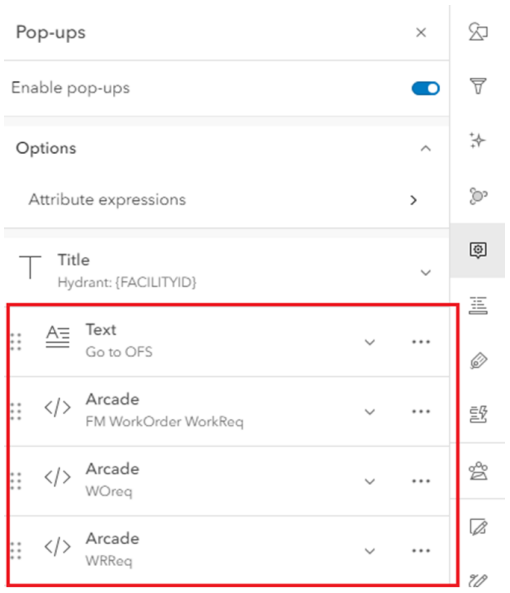


- MapViewer Classic for Portal for ArcGIS

  For more information, refer to: https://enterprise.arcgis.com/en/portal/10.9.1/use/configure-pop-ups.htm

  Note: The portal for ArcGIS Enterprise 10.9.1 MapViewer does not support many of the Arcade expressions options. It is recommended to configure popups using MapViewer Classic in such scenarios. Popup Contents can be set as "A custom attribute display". Arcade expressions can be defined as Attribute expressions.


Configure Pop-up
WaterDistributionNetwork_WAMQAG10 - Main
Show Pop-ups
Pop-up Title
Main: {FACILITYID}
Pop-up Contents
Display: A custom attribute display
CONFIGURE
Configure Attributes
Attribute Expressions
Adding expressions allows you to create new information from existing fields for use in pop-ups.
ADD
Create WOWR in FM {expression/expr0}
WOReq {expression/expr1}
WRReq {expression/expr2}
Pop-up Media
Display images and charts in the pop-up:
ADD
No images or charts.
Click 'Add' to add one.
Use the arrows to order.
OK
CANCEL


Pop-ups
Enable pop-ups
Options
Attribute expressions
Title
Hydrant: {FACILITYID}
Text
Go to OFS
Arcade
FM WorkOrder WorkReq
Arcade
WOreq
Arcade
WRReq

Arcade Expressions

1. To invoke the Task layer, the sample Arcade expression is as below:

```
var fM = "https://fieldmaps.arcgis.app?"

var refC = "referenceContext=addFeature"

var itemID ="itemID=<enter webmapId>"

//Tasks feature layer url//Tasks feature layer url.
var featSource = "featureSourceURL=https://
services8.arcgis.com/ /arcgis/rest/services/WorkTasks/
FeatureServer/0"

//To create work order at the coordinates of the asset,use below
command to get the geometry.
var geometryVar = UrlEncode(Geometry($feature));

//Populate GISID Field through arcade expression, getting
the global Id of the asset.

var featAttparams = '{"GISID":"' +
Mid($feature.GlobalID,1,36)+'"}'

var encodeFeat =UrlEncode(featAttparams)

// Construct the url including the necessary feature attributes.
var urlFormed =
Concatenate([fM,refC,"&",ItemID,"&",featSource,"&","featureA
ttribu tes=", encodeFeat ,"&","geometry=",geometryVar])

//Return the urlFormed as a dictionary object.
return {
              type : 'text',

              text : `<a href=${urlFormed}><img src="https:/
/static.oracle.com/cdn/fnd/gallery/2401.0.3/images/ico-add-
edit-page.svg"></a>Create Work Order/Request`
}
```

Note: Mapviewer Classic in Enterprise version 10.9.1 does not support return of dictionary object. So, urlFormed variable should be returned as is. Example: return urlFormed;

2. To create a work request in Oracle Field Service with the global ID of the asset passed from Field maps, the navigation link should be of the following format:

Note: The requestType should be GISWR.

```
https://<OFS instance>/mobility/
#plugin=pickUpWork&contextScreen=activity_list&requestType=G
ISWR&gisId=<asset global Id>
```

The Arcade expression to add this link can be:

```
var WRURL = "https://ofsinstance.fs.ocs.oraclecloud.com/
mobility/
```

```
#plugin=pickUpWork&contextScreen=activity_list&requestType=G
ISWR&gisId="+Mid($feature.GlobalID,1,36)
return {
                type : 'text',
                text : `<a href=${WRURL}><img src="https://
static.oracle.com/cdn/fnd/gallery/2401.0.3/images/ico-batch-
edit.svg"></a>Create Work Request in OFS`
}
```

3. To create a work order in Oracle Field Service with the global ID of the asset passed from Field maps, the navigation link should be of the following format:

   Note: The requestType should be GISWO.

   ```
   https://<OFS instance>/mobility/
   #plugin=pickUpWork&contextScreen=activity_list&requestType=G
   ISWO&gisId=<asset global Id>
   ```

   The Arcade expression to add this link can be:

   ```
   var WRURL = "https://ofsinstance.fs.ocs.oraclecloud.com/
   mobility/
   #plugin=pickUpWork&contextScreen=activity_list&requestType=G
   ISWO&gisId="+Mid($feature.GlobalID,1,36)
   return {
                   type : 'text',
                   text : `<a href=${WRURL}><img src="https://
   static.oracle.com/cdn/fnd/gallery/2401.0.3/images/ico-batch-
   edit.svg"></a>Create Work Order in OFS`
   }
   ```

4. To navigate to Oracle Field Service from Field Maps, add a text link.

   ```
   <div>
   <a target="_blank" rel="noopener noreferrer" href="https://
   <ofscinstance>.fs.ocs.oraclecloud.com/mobility/"><img
   src="https://static.oracle.com/cdn/fnd/gallery/2401.0.3/
   images/ico-bank-file-return.svg"></a> Go to OFS
   </div>
   ```

5. To configure in Mapviewer classic for Portal for Enterprise, configure the popup content with Arcade expression links as below:

   ```
   <div>
   <a href="https://<ofscinstance>.etadirect.com/mobility/"
   rel="nofollow ugc" target="_blank"><img src="https://
   static.oracle.com/cdn/fnd/gallery/2401.0.3/images/ico-bank-
   file-return.svg" /></a> Go to OFS
   </div>

   <div>
   <a href="{expression/expr0}" rel="nofollow ugc"><img
   src="https://static.oracle.com/cdn/fnd/gallery/2401.0.3/
   images/ico-add-edit-page.svg" /></a>Create Work Order/
   Request in Field Maps
   </div>
   ```

```
<div>
<a href="{expression/expr1}" rel="nofollow ugc"><img
src="https://static.oracle.com/cdn/fnd/gallery/2404.0.1/
images/ico-activities.svg" /></a>Create Work Order in OFS
</div>

<div>
<a href="{expression/expr2}" rel="nofollow ugc"><img
src="https://static.oracle.com/cdn/fnd/gallery/2401.0.3/
images/ico-batch-edit.svg" /></a>Create Work Request in OFS
</div>
```

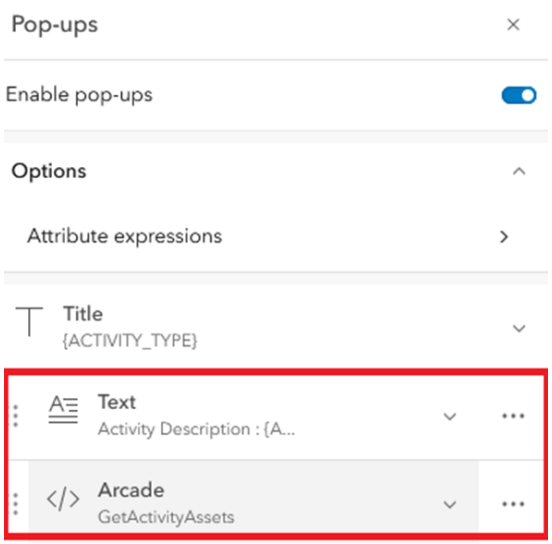
Configuring Popups on Activity Feature Layers

Popups in the Activities feature layer can be configured to show activities and related asset information. The related assets can be linked with a Field Maps link. This link can be configured to pass the search value to pull up a particular asset.

You can configure popups in a webmap in any of the following ways:

- On MapViewer for ArcGIS Online

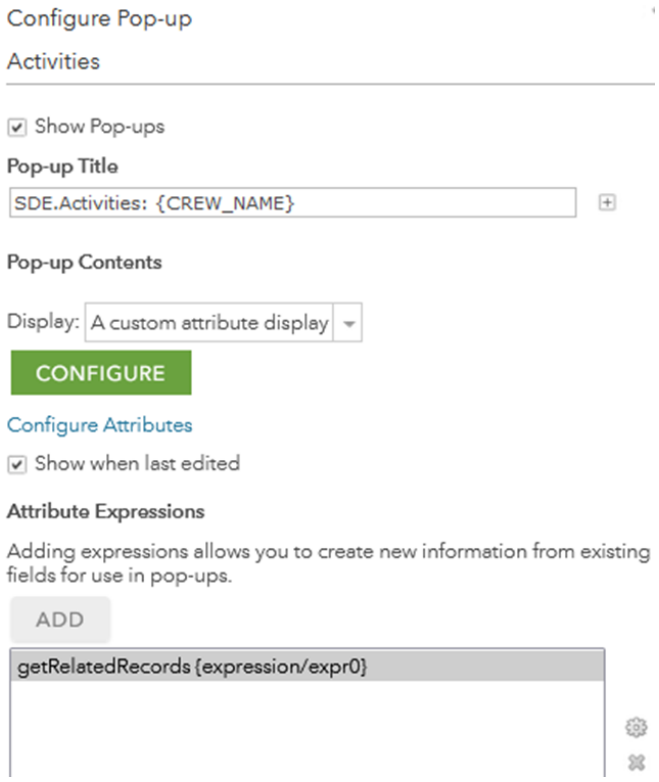
  For more information, refer to: https://doc.arcgis.com/en/arcgis-online/create-maps/configure-pop-ups-mv.htm



- On MapViewer Classic for Portal for ArcGIS

  For more information, refer to: https://enterprise.arcgis.com/en/portal/10.9.1/use/configure-pop-ups.htm

  Note: The portal for ArcGIS Enterprise 10.9.1 MapViewer does not support many of the Arcade expressions options. It is recommended to configure popups using MapViewer Classic in such scenarios. Popup Contents can be set as "A custom attribute display". Arcade expressions can be defined as Attribute expressions.



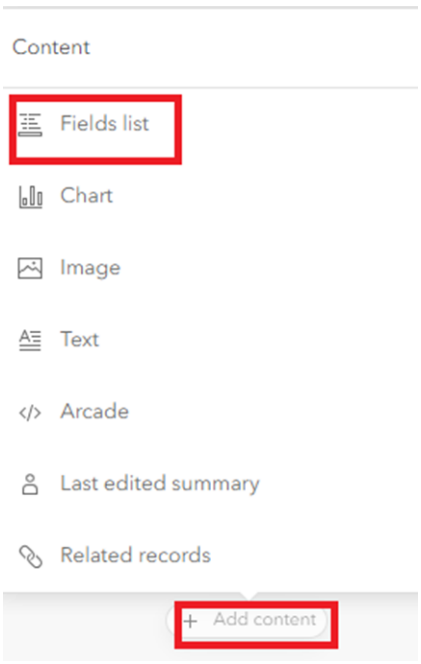
You can configure popup to show any field information.

```
<p>
    Activity Description : {ACTIVITY_ID} , {ACTIVITY_DESC} ,
{REQUIRED_BY_DATE} 
</p>
<p>
    Asset Description :{LOCATION_INFO} 
</p>
<p>
    Assigned Crew Name: {CREW_NAME} 
</p>
<p>
   Related Assets : {expression/expr0}//This corresponds to the
Arcade expression
</p>
```

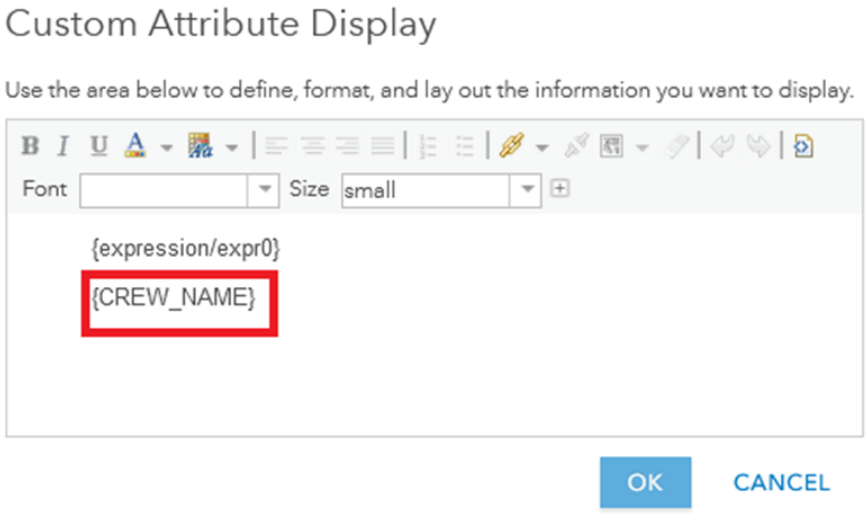
Adding Field Information

If desired, field information can be shown on the popup as well.

In MapViewer, the fields list can be shown by adding the **Fields list** as another content in the popup.



In MapViewer classic, when **Popup contents** is set to custom attributes display, fields can be added as expression in the popup editor.



Arcade Expressions

Activities popup can be configured with Arcade expression to display and link the related Activity Assets with a Field Map search link providing the search value from the ActivityAssets related table. If a search value is not found, the asset description will not be linked.

A sample arcade expression to achieve this is shown below.

```
var relatedRecords = FeatureSetByRelationshipName($feature,
"SDE.ActivityAssets")

var relatedInfo ="";
```

```
var infoString = "";
var recInfoString=""
var searchVal="";
var featureURL= "https://
fieldmaps.arcgis.app?referenceContext=search&itemID=<enter
webmap Id>&search="
for(var rec in relatedRecords)
{
  relatedInfo = rec.ASSET_DESC;
  searchVal = rec.SEARCH_VALUE;
  recInfoString ="";
  if(searchVal != null)
  {
   recInfoString = "<li><a
href='"+featureURL+searchVal+"'>"+relatedInfo+"</a></li></
br>";
   }
  else {
    recInfoString = "<li>"+relatedInfo+"</li></br>";
  }

  infoString = infoString+recInfoString;

}

return {
  type : 'text',
  text : `<ul>${infoString}</ul>` //this property supports
html tags
}
```

Note: MapViewer Classic in Enterprise version 10.9.1 does not support the return of dictionary object. So, infoString variable should be returned as a String. Example: `return infoString;`

Chapter 8

Updating Domain and Contingent Values

This chapter describes how to update the domain and contingent values periodically after the Tasks layer is published. It includes:

- Regenerating CSV Files
- Updating on Standalone ArcGIS Enterprise Server
- Updating on ArcGIS Online

Regenerating CSV Files

If the admin data associated with various dropdowns on work order and work request needs to be updated, run the the "OU ArcGIS OFS Admin Files Create" Oracle Integration Cloud integration flow. It generates a new set of CSV files. Download the files to your machine where ArcGIS Pro is installed.

Updating on Standalone ArcGIS Enterprise Server

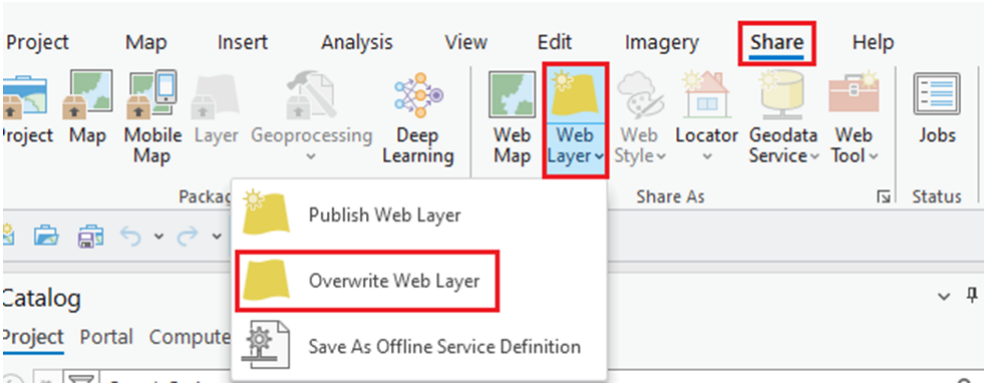
If the Tasks feature layer is published as REST service on a standalone ArcGIS Enterprise feature, stop the Tasks feature service on the Enterprise Server Manger. Update the domain and contingent values using ArcGIS Pro. For more information, see Updating Domains and Updating Contingent Values sections in the Configuring and Deploying the Task Feature Layer chapter.

Start the REST service on the Enterprise Server after the update. The forms should reflect the new value.

Updating on ArcGIS Online

If the Tasks feature layer is published as a hosted layer on ArcGIS Online, then the feature web layer has to be overwritten on ArcGIS Online. Update the domain and contingent values using ArcGIS Pro. For more information, see Updating Domains and Updating Contingent Values sections in the Configuring and Deploying the Task Feature Layer chapter.

Publish the Tasks feature layer, overwriting the original web layer with the new updated values.



Note: The form on the Tasks feature layer must be saved on the Map and not on the layer. This will prevent the form to be overwritten when the Tasks web layer is published to be overwritten.

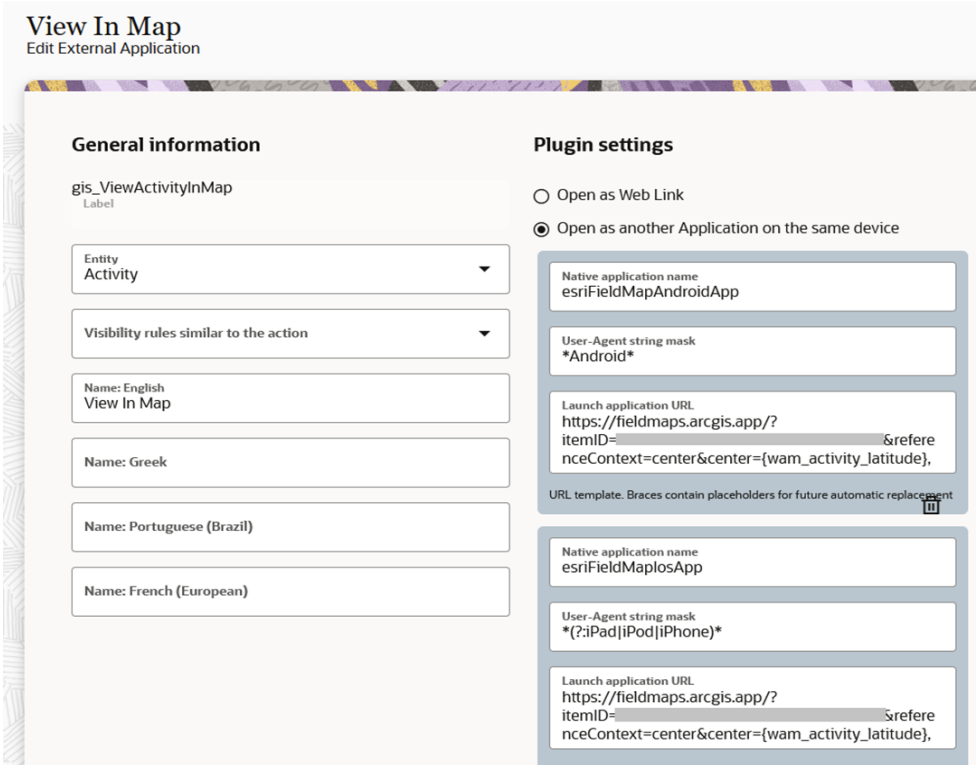
Chapter 9

Configuring the Oracle Field Service Plugin

This chapter describes the Oracle Field Service plugin configurations needed to navigate to Field maps from Oracle Field Service.

You can navigate from the Oracle Field Service mobile application to ArcGIS Field Maps through external plugins configured in Oracle Field Service. Field Maps deep links with required parameters can be configured through these external plugins in Oracle Field Service.

Below is a sample configuration of this scenario. In this example, wam_activity_latitude and wam_activitiy_longitude are passed as parameters to the attributes.



For more information:

- On the Field Maps deep links, refer to https://doc.arcgis.com/en/field-maps/latest/prepare-maps/deploy-your-map.htm
- On the Oracle Field Service external plugins, refer to https://docs.oracle.com/en/cloud/saas/field-service/ fapcf/t-add-external-plug-in.html

- Menu items can be added to the user types and can be linked to the external plugins created with Field Maps deep links. On configuring menu items, refer to: https://docs.oracle.com/en/cloud/saas/field-service/faadu/t-configureMainMenuMobility.html#ConfigureTheMainMenu-3F2AEEE8

  Note that the plugin to navigate to Field Maps and the corresponding menu item configuration on user types are already part of the Oracle Utilities Work and Asset Cloud Service Integration to Oracle Field Service accelerator package.