

**Oracle® Utilities Work and Asset
Management**

GIS Integrations User Guide

Release 1.8.1.5

November 2010

Oracle® Utilities Work and Asset Management User Guide - Release 1.8.1.5

Doc v1 rev.0 11/17/10

Copyright ©1986, 2010, Oracle and/or its affiliates. All rights reserved.

Primary Author: TUGBU Documentation

Contributing Author: n/a

Contributor: n/a

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this software or related documentation is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS

Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are “commercial computer software” or “commercial technical data” pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle America, Inc., 500Oracle Parkway, Redwood City, CA 94065.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications which may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

This software or hardware and documentation may provide access to or information on content, products and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third party content, products and services. Oracle Corporation and its affiliates will not be responsible for any lost, costs, or damages incurred due to your access to or use of third party content, products or services.

Table of Contents

1 Overview of GIS Integration Functionality	4
GIS Functionality.....	4
Daily Use of a GIS Viewer.....	5
Map Viewer.....	5
Viewing and Printing Maps.....	5
Creating Records from Map Objects.....	6
Recording Assets.....	6
Assign/Unassign Assets.....	6
Map Tools.....	7
Details on Each Integrated GIS System.....	8
2 Tutorials.....	10
3 GIS Implementation	16
Overview	16
Synchronize the GIS Schema with SA_Asset	16
Configure System Generated Asset ID	20
Configure the GIS Business Rules	20
Set up the Job Manager.....	22
Add a GIS Viewer Link to the Home Page.....	22
Uninstalling a GIS Product	22
4 GIS Integration Application Programming Interface (API).....	23

Overview of GIS Integration Functionality

The Oracle Utilities Work and Asset Management GIS integrations provide a way to navigate between the Oracle Utilities Work and Asset Management application and external GIS data. This guide provides a general overview of all GIS integrations supported by Oracle Utilities Work and Asset Management.

For detailed information on a specific viewer, please refer to the User Guide for that viewer.

- AutoDesk (MapGuide) User Guide
- Intergraph (Geomedia) User Guide
- ESRI (ArcIMS) User Guide
- ESRI (ArcMap) User Guide
- Oracle GIS Viewer User Guide

GIS Functionality

Use a GIS viewer to view and manipulate asset and maintenance information based on geographic location. Two way communication between the applications allows you to launch a map viewer and “zoom in” on specific Oracle Utilities Work and Asset Management Asset, Work Order, Work Request, PM Master, or Service Request records. You can also launch Oracle Utilities Work and Asset Management from the map viewer. GIS extensions integrate through:

Linked Data - Your system administrator links Oracle Utilities Work and Asset Management Asset and Tax ID records to the appropriate features on the GIS map.

Actions/Menus - The Actions list in Oracle Utilities Work and Asset Management enables you to view and print maps of assets and service request addresses. From the GIS application, a custom Oracle Utilities Work and Asset Management menu enables you to plan work related to assets, create service requests, record assets on service requests, and open Oracle Utilities Work and Asset Management to specific records listed in the map viewer.

Data Sharing - As you work, data is updated in both applications.

Permissions

Settings in the GIS Setup business rule determine which GIS Viewer is used. This setting can be over-ridden in each individual user profile by adding the ACTIVATED GIS OPTION key name. The appropriate additional settings must be defined in the business rule so that users can switch viewers.

Responsibility functions must also be added to the user profile of anyone who will need access to the view and print GIS actions available in modules as well as to have access appropriate viewer:

- GIS VIEWER - Add responsibility function to allow access to the Oracle GIS Viewer.
- VIEW GIS - Add responsibility function to allow access to the print and view GIS actions available in modules. (Must be added regardless of which viewer is used.)

Please refer to [GIS Implementation](#) for more information.

Daily Use of a GIS Viewer

Use GIS functionality in daily work to:

- View and print maps of assets or service request addresses.
- Plan work by viewing existing work records associated with assets. You can also create new Work Order or Service Request records as needed.
- Update asset assignments directly on the map to reflect work done. You can also create Asset records.
- Record assets on service requests to apply service request costs to those assets. You can also create service requests from the map viewer.

Map Viewer

Depending on which viewer your organization uses and how it is configured, you can select GIS Viewer from the home page Actions list, select a link from the home page Links component, or you select View GIS from the Actions list in one of the supported modules.

Users can also [add a link to their home page](#) to launch the map viewer.

Regardless of the viewer you are using, you will find a map display, a toolbar with pan and zoom controls, a menu and a theme selections panel that controls which map features display.

Functionality

As you move the mouse pointer over a feature on the map, the feature is highlighted and a pop-up label displays the Asset number for the object if one has been assigned. The viewer has various controls for manipulating the map image and selecting or deselecting assets.

Regardless of which module you were using when you launched the viewer, asset data is required for the viewer to locate a specific location. If no asset data is available on the record when you select View Map from the Actions list, a large-scale map opens in the viewer. You can then use the viewer's pan, zoom and search controls to locate desired features.

Viewing and Printing Maps

As long as an asset has been assigned to one or more map features, you can view and print a map of the asset. This can be done from any one of the supported modules.

Applicable viewers are best used when launched from the module where the assigned assets are referenced. Use similar procedures to view maps from Assets, Work Orders, Work Requests, PM Masters and Service Requests.

If the asset is not assigned to a feature on the map, the map opens displaying a warning that no item is selected.

Note: If you have previously launched the viewer and it is running in the background behind the Oracle Utilities Work and Asset Management application, clicking on the View Map option will not reopen the viewer. To open the viewer when it is running in the background, click on the map viewer icon on the windows toolbar.

View a single asset

Open the appropriate record then select View GIS Map from the Actions list. The system opens the viewer with the asset selected.

[How to View a Map of an Asset Record](#)

View multiple assets

Create a search in the Asset module then select View GIS Map from the Actions list on the results of search screen. The resulting map shows all of the Assets from the results list, as applicable.

View customer addresses

From the Service Request module you can select View Map (Tax ID) to open a map of the customer's address on the service request.

Printing maps

Select Print GIS Map from any of the eligible modules and the system opens the map and provides prompts to walk you through the process of printing the map. This option is available from the header or the results of search screen so that you can print a single asset or multiple assets.

[How to Print a Map of an Asset Record](#)

Creating Records from Map Objects

To create new records you can select one or multiple objects on the map then click the desired menu item and select Create.

When you create new records from GIS, the system uses the Default Name in the user profile of the logged on user to populate the Dispatcher, Requestor, and Initiator fields on the Service Request, Work Order and Work Request, respectively.

Please refer to the [Details on Each Integrated GIS System](#) to confirm whether or not your viewer can perform the create action as described below.

Asset - The system creates an asset record based on the selected feature on the map. Only ArcView and Geomedia users can create new assets.

PM Master - You can not create new pm masters from a viewer. Only view.

Service Request - The system creates one Service Request record with every selected map object. These assets are then listed in the Service Request Asset List view.

Work Order - When you select Create (multi tasks) the system creates one Work Order record with a separate task for each selected map object. Selecting Create (single task) creates one Work Order record with one task listing all selected assets in the Asset List.

Work Request - The system creates one record for the selected map object. You can only create one Work Request at a time.

[How to Create an Asset Record from the GIS Map](#)

[How to Create a Work Order from the Map Viewer](#)

[How to Create a Service Request from the GIS Map](#)

Recording Assets

When you launch a GIS viewer from a Service Request record, you can select one or more Assets on the map the select Record Assets from the Menu under Service Request. The system adds the selected assets to the Service Request that you were viewing when you launched the viewer.

As work progresses on the service request, costs are applied to the assets according to the percentage split entered. Assets can have parent/child relationships with other assets. Costs associated with a child asset roll-up the asset hierarchy to the parent asset, along with other child asset costs.

[How to Record Assets on a Service Request](#)

Assign/Unassign Assets

After you perform work on assets to repair or upgrade equipment, you may need to modify or update asset assignments on the GIS map. For example, after repairing a broken pipe, you may want to unassign and de-activate the previous asset record, create new asset records, and assign the new asset records to each section of the broken pipe.

Oracle Utilities Work and Asset Management GIS enables you to unassign, de-activate, assign, and create Oracle Utilities Work and Asset Management Asset records from the GIS application.

[How to Assign an Asset ID to a Map Feature](#)

[How to Unassign an Asset ID](#)

[How to Assign a Parent Asset](#)

Map Tools

Hover over the icons in the toolbar to discover the function of each tool. Refer to the product guide for your specific GIS viewer for more detailed information on these tools. These tools only manipulate the image without resulting in any geo-spatial or database changes.

Pan and Zoom

All viewers have a drag or pan tool, zoom in and zoom out tools to allow you to manipulate the visual display of the map. Select the tool then click or drag on the map to reposition or zoom to the desired effect. Some viewers also include a zoom slider which can be used to zoom in and out by moving the slider up or down.

Select

Click one of the features tools, (Select Point, Select Rectangle, or Select Circle) then click or draw the shape around a map feature to select that map feature. Select Rectangle or Circle allow you to select more than one map feature. You can also hold down the shift key and use Select Point to select multiple features. When you release the mouse button, the features are selected.

Search

Click on the Search tool to display a dialog where you can enter search criteria to find a map feature. Search by any combination of criteria such as layer, field or theme and enter a value or leave the value blank to search for all.

Selecting Features from the Map

When the GIS viewer is open, you can select one or multiple objects on the map then select View under the applicable menu option to open a results of search screen listing all of the related records referencing the selected objects.

This can help you to gather information relevant to work you need to perform on assets. You can view details about the assets or view a list of work orders. In this way, you can easily find out if there are existing plans to work on the assets or if a new work order needs to be created. If a work order or service request need to be created, you can also do this from within the map viewer, if the viewer supports this functionality.

[How to View Asset Details from the Map Viewer](#)

[How to View Work Records Associated with a Map Feature](#)

Layer Selections

You can turn layers on and off by clicking the check boxes associated with each layer. After adding or removing a layer, you may need to click the refresh icon to see the change.

Searching the Map

In addition to searching for map features from within the Oracle Utilities Work and Asset Management application, the HTML map viewer also allows you to search for specific addresses, intersections, and parcels directly from the map viewer. The search feature is particularly useful if you launch the map viewer from a link on your home page, rather than from a Oracle Utilities Work and Asset Management asset or work record. The Java map viewer does not support these additional search capabilities.

Note: These are not geospatial searches. Your GIS data must be setup for tabular searches in order to support this functionality.

[How to Search for an Address](#)

[How to Search for an Intersection](#)

[How to Search for a Parcel](#)

Intensity Mapping

You can use Intensity Mapping to display selected assets on the map in different colors based on a particular Oracle Utilities Work and Asset Management context, such as number of Work Orders. Intensity Mapping can supply a quick visual indication of which Assets are incurring the highest incidence of repair. You define ranges used for the three available colors. The colors used in by the Intensity Mapping function are defined system-wide by the administrator.

Intensity Mapping is only used in Intergraph Geomedia to view Work Orders and Service Requests. After performing a Oracle Utilities Work and Asset Management search, launch the viewer from the Results of Search screen and click on the Intensity Map icon.

[How to View Work Order using Intensity Mapping \(Intergraph only\)](#)

Details on Each Integrated GIS System

While these applications function in the same way overall, there are slight differences between the different GIS products which are available to be integrated with Oracle Utilities Work and Asset Management.

Please refer to the specific product guide for user interface details or a description of the available tools and functions.

Comparison of Functionality

The supported GIS products offer similar, but not identical feature sets. A consistent effort is made to support the same functionality in all integrations, however due to the unique characteristics of the GIS products, this is not always possible. The following table summaries the functionality available in each of the current integrations.

	AutoDesk (MapGuide)	ESRI1 (ArcMAP)	ESRI2 (ArcIMS/ ArcGIS)	Intergraph (GeoMedia)	Oracle Viewer
Asset ID displays on map (always visible)		✓	✓		✓
Asset ID displays on map (on mouse over)	✓			✓	✓
Asset: Assign / Unassign to map feature		✓		✓	
Asset: Assign parent asset		✓			
Asset: Create from map		✓		✓	
Asset: Open record from map	✓	✓	✓	✓	✓
Asset: Record on Service Request	✓	✓	✓	✓	✓
Asset: View by Tax ID	✓	✓	✓	✓	✓
Asset: View multiple selected on map	✓	✓	✓	✓	✓
Intensity Mapping				✓	
Map Layers	✓	✓	✓	✓	✓
PM Master: Open record from map	✓	✓	✓	✓	✓
Search/Query the map		✓		✓	
Service Request: Create from map		✓	✓	✓	✓
Service Request: Open record from map	✓	✓	✓	✓	✓
Thematic Mapping					✓
View / Print map from header	✓	✓	✓	✓	✓
View / Print map from results of search	✓	✓	✓	✓	✓
Work Order: Create from map	✓	✓	✓	✓	✓

Details on Each Integrated GIS System

	AutoDesk (MapGuide)	ESRI1 (ArcMAP)	ESRI2 (ArcIMS/ ArcGIS)	Intergraph (GeoMedia)	Oracle Viewer
Work Order: Open record from map	✓	✓	✓	✓	✓
Work Request: Create from map			✓		✓
Work Request: Open record from map			✓		✓

Tutorials

This section shows steps to complete some of the most common GIS features. This is a general guideline for any GIS viewer.

How to View a Map of an Asset Record

1. Open an appropriate Asset record or Asset Results of Search screen.
From the Service Request header record, select View Map (Tax ID) to view a map of the customer's address on the Service Request.

If you view a map from a module other than the Asset module, it will show the mapped Assets associated with that module. A map opened from the Work Order Module, for example, shows the Asset listed on the selected Work Order.

2. Select View GIS Map from the Actions list.
If the Asset is not assigned to a feature on the map, the GIS map opens and displays a warning that no item is selected.

When you select View Map, the map viewer opens a map showing the feature that the Asset is assigned to. If you select View GIS Map from a Results of Search screen, the map viewer opens showing all the mapped assets retrieved by your search.

The first time you open the map viewer in a work session, you will see the following message while the map is updated. After the map loads, click on the OK button to clear the message.

3. Reposition the map as needed.
Rest the mouse pointer over any tool icon to see a popup description of what the tool does.

Use the Pan or Zoom tools from the control panel to reposition the map.

You can then select Print or Print Preview from the File menu to print the map, or you can print the map from as shown in the following steps.

How to View Asset Details from the Map Viewer

1. Select a feature on the map that has an assigned asset ID.
You can select more than one feature by using the viewer's Select by Rectangle or Select by Circle controls. Click the tool to select it from the control panel and then draw the corresponding shape around the map features you want to select.

You can click the Print button to print a list of the Work records displayed, or click the record number to open that record in Oracle Utilities Work and Asset Management.

Some menu selections may be unavailable depending on which map feature(s) are selected.

2. Select View under Asset on the map viewer's Options menu.
The View Asset window opens with details about the Oracle Utilities Work and Asset Management Asset record(s).

You can click the asset ID number on the View Asset screen to open Oracle Utilities Work and Asset Management to that Asset record.

If you have selected more than one asset in the map feature, the Asset module results of search window opens, where you can select the asset record to view.

Remember that map features must have assigned asset IDs in order for them to display in the Oracle Utilities Work and Asset Management window. If you select nine map features, but only five have asset IDs, only those five will display on the results of search page.

How to Print a Map of an Asset Record

1. Open the appropriate Asset record.
2. Select Print GIS Map from the Actions list.
The GIS application launches and opens a print dialog box for printing a map of the assigned asset.
3. Reposition the map if necessary.
Skip this step if you do not need to reposition the map before printing.

To reposition the map, click the Close button to close the Print dialog box. Select the Pan, Zoom In, and Zoom Out controls as needed to reposition the map. When done, select Print from the map viewer's File menu to reopen the print dialog box.

4. Specify a Printer and Print Options and click OK.
The map prints to the printer specified.

You can use similar steps to print maps from the Work Order, Benchmark Work Order, PM Master, and Service Request modules. From the Service Request module, you can also select Print Map (Tax ID) to print a map of the customer's address on the service request.

How to View Work Records Associated with a Map Feature

1. Select one or more features on the GIS map.
The menu option is only available when at least one feature has an assigned Oracle Utilities Work and Asset Management Asset ID.
2. Select PM Master, Service Request, Work Order, or Work Request on the Options menu in the map viewer.
3. Click View.
The corresponding search dialog box opens.
4. Enter search criteria.
The drop-down list for the Selected Assets field includes all the assets selected from the map.
5. Click the Search button.
The search results display.

If only one work record is found, that record opens in the Oracle Utilities Work and Asset Management window.

If more than one corresponding record is found, a results of search window opens showing the appropriate records. matching your view request, You can then select the record you want to view.

If you want to modify your search, click on Search Options button to open the Oracle Utilities Work and Asset Management search screen, where you can edit or delete the Custom SQL statement for the current search. You can also modify your search by returning to the map viewer and selecting other map features you want to view.

You can click the Print button to print a list of the work records displayed. Then open the appropriate module to view more information about specific records.

How to View Work Order using Intensity Mapping (Intergraph only)

1. Select the appropriate Asset(s) on the map display.
2. Select View Work Order or View Service Request from the Oracle Utilities Work and Asset Management menus.
The viewer opens either the View Work Order or the View Service Request selection window.
3. Check the Show Intensity Map box under Options.
4. Define the ranges you want to display.

As you adjust the values for Range 2, the upper value of Range 1 and the lower value of Range 3 adjust accordingly when you click outside the box. Each range will display in a different color on the map.

5. Click on the Search button.

The viewer opens the view results window showing both the standard View Work Order table and the Intensity Map.

If you want to refine the Intensity ranges on this map, click on the Back button to return to the previous screen and make the necessary adjustments in the range definitions. Then click on the Search button to redisplay the map.

How to Create an Asset Record from the GIS Map

1. Select a feature on the map that has not been assigned an asset ID.

Click on the Select Features tool and then click on the map feature you want to select.

Make sure that you select only one feature, and that the feature does not already have an assigned asset. Otherwise the Create option will be greyed out.

2. Select Create Asset from the Oracle Utilities Work and Asset Management Asset menu.
The Create Asset dialog box opens.

3. Enter basic information to create the Asset record.

The system displays a warning if the asset ID that you enter already exists.

The system fills in the Plant field. The Plant, Record Type, Asset ID, and Asset Type fields are required. All information entered here will be included on the Asset record you create.

4. Click on the Create button.

The system confirms that the asset has been created successfully and places the Oracle Utilities Work and Asset Management Asset record in Inactive status.

5. Click OK.

The system asks whether you want to assign the asset to the selected feature.

6. Select Yes or No as appropriate, then click OK.

If you select Yes, the system labels the selected feature with the asset ID.

7. To view or modify the Asset record, open the Asset ID record in Oracle Utilities Work and Asset Management.

The Asset module is located in the Resource subsystem.

How to Create a Work Order from the Map Viewer

1. Select one or more assets on the map.

If you select several assets, the work order will be created with one task for each asset.

2. Select Create from the Work Order options menu.

The Create Work Order dialog box opens with information about the Plant, the Selected Asset(s), and the Current User. This information will be used on the Oracle Utilities Work and Asset Management Work Order record that will be created.

3. Enter a description.

This will be the description on the Oracle Utilities Work and Asset Management Work Order record.

4. Select the Create WO button.

The system creates a Oracle Utilities Work and Asset Management Work Order record in Planning status and provides the new work order number. One task is created for each asset that was selected. You can update the record with additional information as necessary

To modify the work order, open the record in Oracle Utilities Work and Asset Management and make any necessary changes.

Follow similar steps to create a work request from the map viewer. However, you can select only one asset when creating a work request.

You can select several assets on the map to create a service request listing each asset.

How to Create a Service Request from the GIS Map

1. Select one or more assets on the map.
2. Select Create Service Request from the Oracle Utilities Work and Asset Management Service Request menu.

The system displays a message confirming the selected asset(s).

3. Click on the Yes button to create the Service Request.
The Service Request module opens showing the Service Request record created.

If you selected more than one asset in Step 1, you can open the Service Request Asset List view to see a listing of the assets included and the percentage split between assets.

4. Review and update the record as necessary.
Once the record is open in Oracle Utilities Work and Asset Management, all Oracle Utilities Work and Asset Management functionality is available. In addition to adding additional data to the record, you can also check for duplicate service requests, adjust the percentage split between assets, and do other work as appropriate.
5. Click on the Save icon.

How to Assign an Asset ID to a Map Feature

You can assign an asset to one or more features on the map, but you must assign the asset to one feature at a time.

1. Select a feature on the map that has not been assigned an asset ID.
Make sure that you select only one feature, and that the feature does not already have an assigned asset. Otherwise the Assign option will be greyed out.

2. Select Assign Asset from the Oracle Utilities Work and Asset Management Asset menu.
The Assign Asset dialog box opens.

3. Enter criteria to search for the Oracle Utilities Work and Asset Management Asset record.
You can enter search criteria in the fields in the upper portion of the window. List of Values are available.

4. Click the Search button.
If you need to modify the search criteria, select the Clear button to clear the fields in the upper portion of the window, enter new search criteria, and click the Search button again.

Search results display in the lower portion of the window.

5. Highlight the Asset record you want to assign.
6. Click the Assign button.
The system displays a message requesting confirmation.
7. Click on the Yes button to confirm.
8. Click on the OK button.
The system closes the dialog box and labels the map feature with the Asset record ID as shown below.

How to Unassign an Asset ID

1. Select a feature on the map that has been assigned an Asset record.
2. Select Unassign Asset from the Oracle Utilities Work and Asset Management Asset menu.
If an Asset record has not already been assigned to the selected feature, the Unassign option on the menu is greyed out.

The system displays a message asking you to confirm removal of the asset ID.

3. Select Yes to confirm.
The system asks if you want to change the status of the asset record to Inactive.
4. Select Yes or No as appropriate.
The system confirms that the removal is complete and removes the asset ID label from the selected feature on the map. The feature remains selected.

How to Assign a Parent Asset

1. Select a feature on the map that has been assigned an Asset record.
Select the asset that you want to be the child asset.
2. Select Assign Parent from the Oracle Utilities Work and Asset Management Asset menu.
The Assign Parent window opens.
3. Enter the Record Type and Asset ID for the Parent Asset.
4. Click on the Assign button.
The system confirms the assignment of the parent asset.

Click on the OK button.

How to Record Assets on a Service Request

1. Open the appropriate Service Request record in Oracle Utilities Work and Asset Management.
To use GIS functionality for service requests, you must launch the GIS map from the service request module.
2. Select View Map from the Actions list.
You must launch the GIS application from the Service Request record to record assets in this way.

The GIS application launches, opens the map in Data View, zooms in and selects all features with assigned assets associated to the service request. There can be zero, one or more features selected.
3. Select additional features on the GIS map with assigned asset IDs.
Make sure to hold down the Shift key as you select additional features if you want the current features to remain selected. Otherwise, the currently associated assets will be replaced with the new assets you are selecting.
4. Select Record Assets under Service Request on the Options menu.
The Record Assets screen displays showing the service request number and the selected assets.

If you did not open GIS from the Service Request record, the Record Assets options is not available.
5. Click to confirm that you want to record the asset(s).
The system records the assets on the Service Request Asset List view, dividing the percentage split equally between the assets. Any previous assets that were on this list are replaced.

You may need to click the Refresh icon to update the record with the new asset information.

Open the Service Request record Asset List view in Oracle Utilities Work and Asset Management to make any changes to the percentage split between assets.

How to Search for an Address

1. Select Find Address from the Oracle Utilities Work and Asset Management toolbar.
The system opens the Find dialog box below the map.
2. Enter an exact or a partial address in the Address field.
You can use the “%” wildcard character to substitute for street numbers. For example, you could enter “% Taylor” (or just “% tay”) to search for all addresses on Taylor Street, or “24% Taylor” to find 242 Taylor, 246 Taylor, 248 Taylor, etc.
3. Click Search.
The viewer displays a list of the addresses found below the map.
4. Click on a record number to see that address on the map.
Or click the “Zoom to these records” link to open a map showing all of the found addresses.

How to Search for an Intersection

1. Select the Intersection Wizard from the Oracle Utilities Work and Asset Management toolbar.
The viewer opens the Find dialog box below the map.
2. Enter the first street name and click Search.
You don’t need to use the “%” wildcard character as the system will find the string you enter anywhere in the street name. You can enter “bay” to find Bayou, Bayside, Coquina Bay, etc.

The viewer opens a list of the street segments matching your search. The exact information shown varies depending on how your map data is set up.

This search for “bay” returned Bay Street, Bayshore Drive, East Bay Isle Drive, and others.

3. Click on a record number for the correct street.
In the example above, records 3-6 are for Coquina Bay Drive. Clicking on any of those record numbers opens the complete listing of all intersections where Coquina Bay Drive is either the named street or a crossing street.
4. Click on a record number to display the map of the intersection.

How to Search for a Parcel

1. Select Find Parcel from the Oracle Utilities Work and Asset Management toolbar.
The system opens the Find dialog box below the map.
2. Enter the ID for the parcel you want to find in the Parcel field.
You must enter the entire Parcel ID and cannot use the wildcard. Since Parcel ID numbers are usually very similar, wildcard searches would typically result in too many records.
3. Click Find String.
The viewer displays the parcel on the map.
4. Verify the Parcel ID.
You can verify that the correct parcel was found by checking the Parcel ID number.
Click the Identify tool and then click on the map to display parcel information below the map.
Scroll to the right and confirm the Parcel ID number.

GIS Implementation

Regardless of which GIS viewer you use, implementation of the Oracle Utilities Work and Asset Management interface to GIS requires that you map GIS features to the Oracle Utilities Work and Asset Management sa_asset table then complete additional configuration steps. This document provides sample generic implementation information to use as a guideline.

Overview

The primary configuration goals are to:

1. Synchronize the GIS Schema with sa_asset
2. Configure the GIS Setup business rule in Oracle Utilities Work and Asset Management
3. Set up the Job Manager in Oracle Utilities Work and Asset Management

Synchronize the GIS Schema with SA_Asset

When new GIS feature data is added to a GIS schema, the Asset ID cross-reference field (SynergenID) is left blank. The interface must find all of these new records and create corresponding Oracle Utilities Work and Asset Management asset records.

To synchronize the tables you must complete the following:

1. Create database views for the Oracle Utilities Work and Asset Management asset data
2. Define Constants for the GIS Interface
3. Create database views for the GIS feature data
4. Create a database sequence number in the Oracle Utilities Work and Asset Management schema to be used to generate the Asset ID

Once the setup is completed, the interface reads all records from the GIS views, creates a new sa_asset record based on the GIS view, and updates the SynergenID back in the GIS schema with the new Oracle Utilities Work and Asset Management Asset ID.

Create the SA_ASSET View

A new view related to the GIS interface must be created. This view is not delivered as part of the base application so that it can be configured by each customer without fear of having it overwritten by an upgrade.

The view name must be: `SV_GIS_ASSET_LAYOUT`

Note: A view is used for this process to allow the sa_asset table to be modified without affecting the GIS integration. If the full sa_asset table had been mapped, the views created to map to the GIS feature data would need to change each time a new column is added to the sa_asset table.

Identify GIS Feature Asset Columns

The view can only contain columns from sa_asset, but should contain a superset of asset information containing all asset columns from the sa_asset table that meet the following characteristics.

- Any columns that will be mapped to any of the GIS feature data
- Columns that are represented as pop-lists on the Asset window in Oracle Utilities Work and Asset Management
- Columns that are Yes/No indicators in the sa_asset table
- Columns that are required for the interface

For example, if you are setting up the interface to synchronize GIS Street and GIS Pipe information, you might want to copy the following fields into the sa_asset table.

<u>Streets</u>	<u>Pipes Information</u>
Asset Record Type	Record Type
Asset Description	Asset Description
Street Number	Manufacturer
Street Name	Manufacturer Model Number
City	

In this example, the new view must contain the following information from both GIS feature tables.

SV GIS ASSET LAYOUT Columns

Asset Record Type
 Asset Description
 Street Number
 Street Name
 City
 Manufacturer
 Manufacturer Model Number

If you have “*n*” GIS feature tables to map into the sa_asset table, you must perform the mapping for each table and then define the superset of information related to all of the features.

Define Constants for the GIS Interface

There are also some constants that are required by the GIS interface. These fields are used to pass information from the GIS feature tables to the interface.

- The ASSET_ID column must be in this view.
- The ASSET_KEY_SEGMENT column must be in this view.

Other Required Columns

There are also other columns that must be in the view because Oracle Utilities Work and Asset Management requires this information for the Asset screen to display correctly.

SA_ASSET Column	Description of Data that will be Required from GIS Views
plant	Will be used to default the plant.
asset_status	ACTIVE, INACTIVE, PLANNED, or RETIRED. Must be uppercase.
location_basis	FACILITY, ADDRESS, or ADDRESS WITH NODES. Must be uppercase.

SA_ASSET Column	Description of Data that will be Required from GIS Views
safety_critical_ind safety_notes_ind notes_ind future_retirement_ind radio_ind air_condition_ind cruise_control_ind car_phone_ind stereo_ind environmental_ind health_ind sent_to_interface_ind	Any single character indicator in the table will be defaulted to Y or N. These columns are typically presented in the User Interface as check boxes and usually require a value to display correctly.
last_update_date	SYSDATE
last_update_user	Will either be set to the keyword USER or a constant such as GIS INTERFACE. A constant will allow you to easily identify those records created by the GIS interface.
creation_date	SYSDATE.
created_by	Will either be set to the keyword USER or a constant such as GIS INTERFACE. A constant will allow you to easily identify those records created by the GIS interface.
asset_key_segments	This field will be used to pass the ROWID information for the GIS feature data. This data will be used to update the GIS Feature with the new Asset ID cross-reference.

Example

The following Create View statement provides a sample of a possible view that can be used by the interface.

```

Create or replace view sa_gis_asset_layout
as
select
plant,asset_record_type,asset_id,asset_status, location_basis,
asset_key_segments,last_update_date, last_update user,
creation_date, created_by,safety_critical_ind, safety_notes_
ind, notes_ind,future_retirement_ind, radio_ind, air_
condition_ind,cruise_control_ind, car_phone_ind, stereo_
ind,environmental_ind, health_ind, sent_to_interface_ind,
asset_type, asset_desc, street_number,street_name,
manufacturer_code, manufacturer_model_no
from sa_asset
where 1=2

```

Note: "where 1=2" sets it so that the view does not contain any data other than contain no data other than the structure of the view. This view is only used for column mapping

Create the GIS Feature Views

Create one new view for each GIS feature table that is being mapped to the sa_asset table. Each of these views must match the new sa_asset view described above exactly. The interface simply matches column for column between the two views to synchronize the information.

You only want the GIS feature views to contain the records in the feature table where the cross-reference is null. You must have a condition in the "where" clause defining this predicate. If this clause is left out, you will create duplicate assets in Oracle Utilities Work and Asset Management.

You may have to create a database link to access the GIS data if the data exists in a different database instance.

Example

The example below presents sample street information. This information will be used to match to the SV_GIS_ASSET_LAYOUT view created above.

```

GIS_STREETS
Name                               Type
-----
FNODE_                             NUMBER (38)
TNODE_                             NUMBER (38)
LENGTH                             NUMBER
OBJECTID                           NUMBER
GID                                 NUMBER
STR_CODE                           VARCHAR2 (10)
STR_NAME                           VARCHAR2 (40)
SEG_OWNER                          VARCHAR2 (20)
SEG_CLASS                          VARCHAR2 (20)
SEG_TYPE                           VARCHAR2 (20)
ADDR_LEFT_                         NUMBER
EVAC_ROUTE                         VARCHAR2 (1)
SYNERGENID                         VARCHAR2 (20)
GEOMETRY                           MDSYS.SDO_GEOMETRY

```

The columns defined above may not all need to be mapped to the sa_asset table. The view below represents a possible mapping to the SV_GIS_ASSET_LAYOUT view.

```

Create view sv_gis_feature_streets
(
plant, asset_record_type, asset_id, asset_status, location_
basis, asset_key_segments, last_update_date, last_update_user,
creation_date, created_by, safety_critical_ind, safety_notes_
ind, notes_ind, future_retirement_ind, radio_ind, air_
condition_ind, cruise_control_ind, car_phone_ind, stereo_ind,
environmental_ind, health_ind, sent_to_interface_ind, asset_
type, asset_desc, street_number, street_name, manufacturer_
code, manufacturer_model_no, parent_asset_record_type, parent_
asset_id, department, area, account_no
)
as
SELECT
'01', 'S', null,
'ACTIVE', 'ADDRESS', rowid,
sysdate, user,
sysdate, 'GIS INTERFACE',
'N','N','N',
'N','N','N',
'N','N','N',
'N','N','N'
'STREET', 'Street Segment from GIS: '||str_code||' '||str_
name, str_code,
str_name, null, null,
'S', '4507', 'PUBLICWORK', 'STREETS', '123-000-456'
from gis_schema.gis_streets
where SynergenID is null

```

Literals	Note that many of the parameters in the views are hard coded to literals. This allows you to apply your local mapping requirements to the fields in question.
Asset_desc	Note that the asset_desc field is passed as a combination of literals and database columns. You may create any combination of information needed to represent the GIS data.
Rowid	Rowid is always passed into the asset_key_segments column. ROWID must be passed in the asset_key_segments column.
Null Columns	Some fields are passed as null values. These are often the columns in the view that relate to data for a different GIS feature table. In this example, manufacturer_code and manufacturer_model_no do not apply to streets so are passed as nulls in this view.

gis_schema	This contains the name of the schema that owns the GIS feature table. Note that this may have to be shown as a database link if the feature table is in a database instance different than the Oracle Utilities Work and Asset Management schema.
parent_asset, account info	The parent asset information and the accounting information are typically the same for every feature in a GIS layer. This information may be passed in as literal strings based on data from Oracle Utilities Work and Asset Management.
SynergenID	This is the name of the column that is added to the GIS Feature table as a cross-reference to the sa_asset Asset ID.

Note that you only want this view to contain the records in the feature table where the cross-reference is null. If this clause is left out, you will create duplicate assets in Oracle Utilities Work and Asset Management. SynergenID is used as an example here but may be named any name you want. If you change the column from SynergenID, you will also have to configure the GIS integration to look for the new column name.

Configure System Generated Asset ID

The Asset ID must be generated automatically using the Sequence Number module in the Oracle Utilities Work and Asset Management Administration Subsystem. The interface will not work correctly without the sequencing enabled.

The following sequence number must be created in the Oracle Utilities Work and Asset Management schema.

```
create sequence sseq_gis_interface start with 1
```

Configure the GIS Business Rules

GIS Setup Business Rule

The GIS Setup business rule controls the type of GIS viewer used for your organization and defines the additional settings required to enable the GIS viewer and functionality.

Select one type of GIS viewer as the ACTIVATED GIS OPTION then configure settings in the columns next to the indicated rule keys for that viewer. Only the viewer that is selected as the activated option needs to be configured.

Rule Key	Activated GIS	Description
ACTIVATED GIS OPTION	N/A	Specifies the GIS System that requests from Oracle Utilities Work and Asset Management will be sent to.
AUTODESK1 VIEWER value 4	AUTODESK1	Specifies the URL to the SynergenMapView.asp page. This is a Oracle Utilities Work and Asset Management web page that processes the HTTP GIS Integration request
DISPLAY CHILD ASSETS	all	A "YES" or "NO" value indicating if the selected Asset and its Children Assets will be displayed on the map or only the selected Asset will be displayed on the map.
ESRI1 ALT SEARCH FIELD value 1	ESRI1	An optional, client-specific search field

Rule Key	Activated GIS	Description
ESRI1 DSN value 1	ESRI1	The Data Source Name that will be used when configuring the ODBC connection on the client's workstation.
ESRI1 GIS SEARCH FIELD value 1	ESRI1	The map search field that will be used to store the Asset ID.
ESRI1 INITGIS value 4	ESRI1	The file path and folder where the Oracle Utilities Work and Asset Management GIS program is installed on the client's workstation. example is c:\program files\SynergenGIS\INITGIS.EXE
ESRI1 MAP value 4	ESRI1	The location and file name of the map (mxd). example C:\GISData\syntropolis\syntropolis.MXD
ESRI1 MIN SCALE FACTOR value 1	ESRI1	Minimum scale factor (number) that the map will be allowed use.
ESRI1 PRINT VIEW value 1	ESRI1	View used when the map is printing (LAYOUT/DATA).
ESRI1 TRACE value 1	ESRI1	Used only for problem tracking (ON/OFF)
ESRI1 VIEWER value 4	ESRI1	The file path and location of the ESRI viewer that is installed on the client's workstation
INTERGRAPH1 VIEWER value 1 and value 2	INTERGRAPH1	The path and file name of the map viewing tool. Example: http://servername/website/viewername/SynergenMapView.asp ?
ORACLE1 VIEWER value 4	ORACLE1	The configuration file (cfg) containing GIS preferences. Example cfg=honolulu.cfg

GIS Asset Interface

This rule shows the list of GIS Views to be processed by the GIS Asset Interface. The GIS View must match SV_GIS_ASSET_LAYOUT. GIS View records will be copied directly to SA_ASSET. GIS Table will be updated with the newly created Asset ID (ASSET_RECORD_TYPE - ASSET_ID).

WIFP_GIS_ASSET uses this rule to execute the mapping between GIS data and Oracle Utilities Work and Asset Management Assets.

GIS Specification Interface

This rule shows the list of GIS Views to be processed by the GIS specification interface. The GIS View must match SV_GIS_SPECIFICATION_LAYOUT. GIS View records will be copied directly to SA_SPECIFICATION. Then the GIS Table will be updated with the newly created Specification ID (SPECIFICATION_RECORD_TYPE - SPECIFICATION_ID).

The GIS View must contain SYNERGENID. All other fields should have the following format: "spec_seq_no-" || GIS_FIELD Example: "1-" || pipe_length

SAIF_GIS_SPECIFICATION_XREF uses this rule to execute the mapping between GIS data and Oracle Utilities Work and Asset Management Specifications.

Control GIS Settings through the User Profile

Users can also set the ACTIVATED GIS OPTION key name in the User Profile to provide access to different GIS viewers. Since there are several configuration and data requirements needed to enable

accurate and useful GIS functionality, user specific alteration of this setting is not recommended. However, it can be used if testing or other non-production use needs to be completed.

Set up the Job Manager

The final configuration step is to add the interface to the job manager for execution.

Open the Job Manager module and create a new batch job with the following parameters:

```
wifp_gis_asset.gis_asset(job_number, plant, gis_xref_column);
```

job_number	This is the Oracle Utilities Work and Asset Management Job Number assigned by the Job Manager when a new job is entered into the scheduler.
plant	This is the plant code that is related to the Asset data being created.
gis_xref_column	This is the name of the column in the GIS Feature tables that is used to store the asset cross-reference. It is typically known as SYNERGENID but may be changed here to be any name.

Note that changing the name from SYNERGENID here and in the GIS feature tables also requires configuration changes to the GIS integration and related map viewer configuration files.

Example: `wifp_gis_asset.gis_asset(85, '01', 'SYNERGENID');`

Add a GIS Viewer Link to the Home Page

(Optional) It may be beneficial to users to have a GIS Viewer link added to their home page so that they have easier access to the functionality. If you use Oracle Viewer as your GIS program, the link is automatically available in the Actions list if the GIS VIEWER function is added to user's responsibilities.

- In the Links component on the home page, click Options.
If you do not have the Links component, add it using the Personalize Page link.
- Click Advanced Edit > Add.
- Enter the title "Open GIS Viewer" or similar.
- Enter the link
"http://[servername]:[port]/synergen/OpenGISViewer.jsp"
where "servername" and "port" are the appropriate values for your server and port.
Example: <http://paris:1710/synergen/OpenGISViewer.jsp>
- Click Finish > Save > Close.
- Add the server as a trusted site if necessary.
You can do this by clicking the Charts icon on the home page and then clicking the "Add Chart Server as a Trusted Site" link.

Uninstalling a GIS Product

- Start the GIS tool.
This may be ArcMap, ArcIMS, ArcGIS\, etc.
- Open the map used for the integration.
- Remove the custom menu.
Select Customize from the Tools menu.
Click on and delete the menu and all of its submenus.
- Delete the GIS Search Field from its data table(s).
- Remove and delete the ODBC DSN for the Oracle Utilities Work and Asset Management database.

GIS Integration Application Programming Interface (API)

Integrations between Oracle Utilities Work and Asset Management and GIS systems are two-way communications where Oracle Utilities Work and Asset Management sends information to the GIS system and the GIS system sends information back to Oracle Utilities Work and Asset Management. This communication is completed via HTTP URL requests made to the Oracle Utilities Work and Asset Management browser.

This document describes the application programming interface used in these integrations.

Supported Systems

Oracle Utilities Work and Asset Management can currently be integrated with the following GIS products:

- **AutoDesk - MapGuide**
AutoDesk's MapGuide, a web-based system.
- **ESRI - ArcMap**
ESRI's ArcView desktop software suite. In this interface, the Oracle Utilities Work and Asset Management application uses a Oracle Forms webutils programs to execute the GIS software running on the client machine.

Note: ARCView consists of several desktop applications, including ARCMAP. Only ARCMAP is required for the Oracle Utilities Work and Asset Management integration.
- **ESRI - ArcIMS**
ESRI's ArcIMS System. This is a web-based system requiring an ArcIMS map server.
- **ESRI ArcGIS Viewer**
ESRI's ArcGIS system. This is a web-based system requiring an ArcGIS map server.
- **Intergraph - Geomedia**
Intergraph's Geomedia Web Enterprise software suite, a web-based GIS viewer system.
- **Oracle GIS Viewer**
Oracle's Spatial viewer, a web-based viewer. The viewer page is currently embedded into the Oracle Utilities Work and Asset Management application, although an Oracle Spatial MapViewer server is still required.

These integrations use common Oracle Utilities Work and Asset Management components and share the same tables, actions, views, and stored procedures. A single business rule, GIS Setup, is used to specify which GIS product is deployed and to specify additional parameters as needed.

Integration Points

As discussed, GIS integrations involve a two way communication between Oracle Utilities Work and Asset Management and the GIS system.

Oracle Utilities Work and Asset Management to GIS

Users can select View GIS or PPrint GIS Map from the Actions list in one of the following modules to launch the GIS viewer:

- **Asset (ASSET):** The asset currently displayed in the Asset module.
- **PM Master (PMMASTER):** All assets associated with the work orders created from the current pm_master_no record's benchmark_no.
- **Service Request (SERVREQ):** All assets associated with the current service_request_no.
- **Work Order (WORKORD) or Benchmark Work Order (BENCHWO):** All assets associated with the current work_order_no.
- **Work Order Task (WOTASK):** All assets associated with the current work_order_no and work_order_task_no.
- **Work Request (WORKREQ):** All assets associated with the current work_request_no.

Requests

Requests from Oracle Utilities Work and Asset Management to the GIS system depend on the underlying architecture of the GIS System. Browser-based solutions require HTTP URL requests whereas desktop computer software requires specialized arguments passed to the GIS software executable.

GIS to Oracle Utilities Work and Asset Management

The GIS system opens Oracle Utilities Work and Asset Management when one of the following options is selected:

- View Asset
- View PM Master
- View Service Request
- Record Assets
- View Work Order
- Create Work Order
- View Work Request
- Create Work Request

Requests

Requests to navigate to a specific Oracle Utilities Work and Asset Management record or to perform a specific action are made from the GIS System to a Oracle Utilities Work and Asset Management servlet. This is done by using the existing Oracle Utilities Work and Asset Management browser window with specific URL requests depending on the type of request.

Add-Ons

Oracle Utilities Work and Asset Management GIS System Integrations include add-on packages to the web-based GIS Systems. These add-ons provide embedded Oracle Utilities Work and Asset Management menu options for querying the Oracle Utilities Work and Asset Management data and sending requests to Oracle Utilities Work and Asset Management. When the user selects one of these menu options, the system displays a dialog box to where the user chooses a single item. Then the request is made to the Oracle Utilities Work and Asset Management application. This request is in the form of an HTTP URL request that targets the main Oracle Utilities Work and Asset Management browser window.

Opening Application Windows

In the integration process, the Oracle Utilities Work and Asset Management application may or may not already be open. To complete the integration cycle, the integration code must find any existing Oracle Utilities Work and Asset Management application SIA window so that the Oracle Utilities Work and Asset Management modules can open the GIS System window, and the GIS System can open the same Oracle Utilities Work and Asset Management module.

This “find” is done using the JavaScript command “window.open()” using the following algorithm for the window name.

```
"synMain" + username + "_" + forms_tnsname + "_" + user_entry_
number
```

where:

username = the user logged into the Oracle Utilities Work and Asset Management application

forms_tnsname = the config.properties configuration setting associated with the Forms database TNS name. The TNS name corresponds to the database TNS name used by the Oracle Forms portion of Oracle Utilities Work and Asset Management.

user_entry_number = a sequential number that starts at 1 and increments every time the same username logs into the Oracle Utilities Work and Asset Management application. This number is reset to 1 when a maximum threshold is reached. The threshold is set within the config.properties file as "max_user_windows"

Example

```
synMainLELLISON_PROD1_1
```

If an existing Oracle Utilities Work and Asset Management application window is not found, the JavaScript window.open() command starts a new window before opening the requested form. The user must logon to the Oracle Utilities Work and Asset Management application unless the "Save My Logon" option is enabled.

HTTP URL Requests

The following sections detail the URL requests used for the Views accessed from the GIS map.

sia_url = the HTTP path to the Oracle Utilities Work and Asset Management application derived from the sa_internet_integration Oracle Utilities Work and Asset Management table.

View Asset

The format of the URL request is as follows:

```
sia_url + "DrillDown?tgt=Drilldown&drilldownItem=asset_
id&primekey_name_1=asset_record_type&asset_record_type=" +
asset_record_type_value + "&primekey_name_2=asset_id&asset_
id=" + asset_id_value + "&sRp=1"
```

asset_record_type_value = the asset_record_type of the asset selected from the integration dialog

asset_id_value = the asset_id of the asset selected from the integration dialog.

View PM Master

The format of the URL request is as follows:

```
sia_url + "DrillDown?tgt=Drilldown&drilldownItem=pm_master_
no&primekey_name_1=pm_master_no&pm_master_no=" + pm_master_no_
value + "&sRp=1";
```

pm_master_no_value = the pm_master_no selected from the integration dialogs.

View Service Request

The format of the URL request is as follows:

```
sia_url + "DrillDown?tgt=Drilldown&drilldownItem=service_
request_no&primekey_name_1=service_request_no&service_request_
no=" + service_request_no_value + "&sRp=1";
```

service_request_no_value = the service_request_no selected from the integration dialogs.

Record Assets

This process starts with a Service Request record in the Oracle Utilities Work and Asset Management application. From the module menu, the user selects "View GIS Map" to display the GIS System map page. After selecting all assets to assign to the service request, the user clicks the "Record" button to and the integration architecture executes the "sdbp_gis_record_assets" stored procedure passing the plant, service_request_no, list of assets, and the username.

After the procedure is called, the service request page is redisplayed using the following URL request to the Oracle Utilities Work and Asset Management application.

```
sia_url +
"DrillDown?tgt=Drilldown&drilldownItem=service_request_
no&primekey_name_1=service_request_no&service_request_no=" +
service_request_no_value + "&sRp=1";
```

service_request_no_value = the service_request_no originally selected in the Oracle Utilities Work and Asset Management application.

View Work Order

The format of the URL request is as follows:

```
sia_url +  
"DrillDown?tgt=Drilldown&drilldownItem=work_order_no&primekey_  
name_1=work_order_no&work_order_no=" + work_order_no_value +  
&primekey_name_2=work_order_task_no&work_order_task_no=" +  
work_order_task_no_value + "&sRp=1";
```

If the Work Order is in HISTORY status, the following URL is used instead

```
sia_url +  
"DrillDown?tgt=Drilldown&drilldownItem=work_order_no&primekey_  
name_1=work_order_no&work_order_no=" + work_order_no_value +  
&primekey_name_2=work_order_task_no&work_order_task_no=" +  
work_order_task_no_value + "&work_status=HISTORY&sRp=1";
```

work_order_no_value = the work_order_no selected from the integration dialogs

work_order_task_no_value = the work_order_task_no from the integration dialogs

Create Work Order

Selecting this option will display all the assets selected, and allow the user to enter the Work Description value for the new work order. Clicking the "Create" button will execute the "sdbp_gis_create_wo" stored procedure passing the plant, list of assets (asset_record_type and asset_id), work description, and the current username of the Oracle Utilities Work and Asset Management user.

Once created, the user is navigated to the Work Order module of the Oracle Utilities Work and Asset Management application (WORKORD) using the following request URL.

```
sia_url +  
"DrillDown?tgt=Drilldown&drilldownItem=work_order_  
no&page=WORK_DEMAND&work_demand_type=Z&primekey_name_1=work_  
order_no&work_order_no=" + work_order_no_value + "&sRp=1";
```

work_order_no_value = the work_order_no selected from the integration dialogs.

View Work Request

The format of the URL request is as follows:

```
sia_url +  
"DrillDown?tgt=Drilldown&drilldownItem=work_request_  
no&primekey_name_1=work_request_no&work_request_no=" + work_  
request_no_value + "&sRp=1";
```

work_request_no_value = the work_request_no selected from the integration dialogs.

Create Work Request

Selecting this option will display all the assets selected, and allow the user to enter the Work Request Description value for the new work request. Clicking the "Create" button will connect to the database using the configured ODBC DSN, and execute the "sdbp_gis_create_wr" stored procedure passing the plant, list of assets (asset_record_type and asset_id), work request description, and the current username of the Oracle Utilities Work and Asset Management user.

Once created, the user is navigated to the Work Request module of the Oracle Utilities Work and Asset Management application (WORKREQ) using the following request URL.

```
sia_url +  
"DrillDown?tgt=Drilldown&drilldownItem=work_request_  
no&primekey_name_1=work_request_no&work_request_no=" + work_  
request_no_value + "&sRp=1";
```

work_request_no_value = the work_request_no selected from the integration dialog.

Browser Based Systems

All of the integrated GIS systems are browser based except for ESRI ArcMap.

HTTP URL Parameters

Configuration settings in the GIS Settings business rule determine which interface is active, and define the url to open the integrated GIS viewer.

The parameters indicated below are used for the integration when AUTODESK1, ESRI2, or INTERGRAPH1 are activated. The "ORACLE1" (Oracle Spatial integration) uses the same parameters except the "ID".

Parameter	Description
ID	Encrypted username/password of the current Oracle Utilities Work and Asset Management user
aid	Asset key list where the asset key is the asset_record_type and asset_id separated by the "-" character. This list may include child assets if the DISPLAY CHILD ASSETS setting of the GIS SETUP business rule is activated. Individual asset keys are enclosed by starting and ending quote (") characters and separated by the "," character. All characters are in uppercase.
cnt	Count of assets in the asset list (aid)
plt	Plant of the current logged in Oracle Utilities Work and Asset Management user
prt	Y if the "PRINT GIS MAP" action was selected

Desktop Based System

The only GIS integration that uses a desktop interface is ArcMap.

When the "View GIS Map" or "Print GIS Map" actions are selected from Oracle Utilities Work and Asset Management, the integration architecture launches the desktop GIS software passing the current asset values.

Desktop Software Parameters

As noted in the business rule description, the ESRI INITGIS value indicates the executable program that will be called by the Oracle Utilities Work and Asset Management application.

The following parameters are passed and listed in name/value pairs with the name and value separated by the "=" sign. Individual name/value pair are separated by the space character.

Note: the length of the entire parameter string is limited to 2000 characters

Parameter	Description
usr	from the current Oracle Utilities Work and Asset Management application user's username. This is needed so that the desktop software can make database queries with the appropriate permissions.
pwd	from the current Oracle Utilities Work and Asset Management application user's password. This is needed so that the desktop software can make database queries with the appropriate permissions.
dsn	ESRI1 DSN business rule value
dap	ESRI1 MAP business rule value
gsf	GIS Search Field from ESRI1 GIS SEARCH FIELD business rule value
vwr	ESRI1 VIEWER business rule value
pvw	ESRI1 PRINT VIEW business rule value
msf	ESRI1 MIN SCALE FACTOR business rule value
aid	asset key list where the asset key is the asset_record_type and asset_id separated by the "-" character. This list may include child assets if the DISPLAY CHILD ASSETS setting of the GIS SETUP business rule is activated. Individual asset keys are enclosed by starting and ending quote (") characters and separated by the "," character. All characters are in uppercase.

Parameter	Description
plt	plant of the current logged in Oracle Utilities Work and Asset Management user
prt	Y if the "PRINT GIS MAP" action was selected
ldt	for a request with a single asset, this is the truncated version of the asset description with all spaces replaced by the "~" characters so that individual words are not mistaken for separate parameters.

Example

```
c:\program files\SynergengIS\INITGIS.EXE aid=M-1520 plt=01
ldt=Main~Water~Pipe
```