Oracle® Utilities Work and Asset Management

ESRI ArcGIS Viewer Configuration Guide

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The ESRI ArcGIS Viewer is a web application that communicates directly with the ESRI ArcGIS Server to display an interactive map. This communication is performed using JavaScript (ArcGIS API for JavaScript) hosted by ESRI on ArcGIS Online. The GIS Viewer displays a single page with tools, the map, themes, and a menu of WAM actions. This page is coded in the ESRI2Viewer.jsp page. Within the ESRI2Viewer.jsp page are the following sections:

- **Tools**: provides operations that can be performed against the map.
- **Map**: the graphical map provided by the ESRI ArcGIS Server.
- **Themes**: Geometry Themes are the graphical representation of objects on the map.
- **Overview Map**: At the lowest zoom level (smaller objects), displays a smaller, center section of the map. At the highest zoom level (larger objects), displays a larger view of the object currently being displayed on the map. A larger view allows you to select other areas of the map quickly without having to use the navigation and/or zoom tool.
- **Menu**: : A menu, which in the case of the WAM integration is used to call operations against modules within the WAM application.

The scope of this document is the ESRI ArcGIS Viewer and does not discuss the configuration or execution of the ESRI ArcGIS Server.

Customizable Options

These files can be replaced with customized versions to display different content. These are all .jsp files that must be running within a Java Application Server that supports Java Server Pages.

- **config.jsp**: contains the configurable settings used by the wamCustom.jsp program. The wamCustom.jsp program is only used for the WAM integration. These configuration options include the WAM URL, and request parameter names passed into the ESRI2Viewer.jsp URL request.

Page Configuration (*.cfg files)

You must specify a .cfg file as a HTTP parameter to the "ESRI2Viewer.jsp" file. The "ESRI2Viewer.jsp" file loads the customized settings contained within the specified .cfg file, and configures the displayed page according to those settings. With this structure, the layout and options on the GIS Viewer page can change for different requirements or different users. Changing the cfg parameter will change the cfg file loaded.

For example, the URL to the GIS Viewer may look like this:

http://server:8080/viewer/esri2viewer?tgt=Main&cfg=esri2_default.cfg

When the GIS Viewer is integrated within the WAM application, the url and cfg files are handled by the architecture. The cfg file is based on the WAM Business Rule settings or User Profile settings

These settings can be specified in the .cfg file:

- **mapService**: the URL to the ArcGIS Server's mapservice. For example, http://server:8080/arcgis/rest/services/StPeteMapService/MapServer
- **centerX**: The location of the center of the map, along the latitudinal axis.
- **centerY**: The location of the center of the map, along the longitudinal axis.
- **maxWidth**: The maximum width of the map display on the GIS Viewer page in pixels.
- **maxHeight**: The maximum height of the map display on the GIS Viewer page in pixels.
- **synergenIDLabel**: The label to be used for the SYNERGENID column added to each associated spatial database table.
- **themeGroup**: This is how Geometry Themes are grouped together, and allows multiple themes to be enabled or disabled. Within each themeGroup are one or more themes. The name of the themeGroup is also the Label displayed within the Themes section of the GIS Viewer page. The "expand" attribute sets whether or not the enclosed themes are displayed by default. If not displayed, the user will have to click on the themeGroup label to display the themes.
- **themes**: Geometry Themes to display on the map. Enabling these themes will display graphical images onto the map, based on the styles defined in the map document. The "name" attribute is the label used to describe the theme. The "lay_id" is the layer id defined by the mapservice. The "enabled" (or displayed) and "selectable" attributes correspond to the default value of the check boxes displayed next to each theme. If "enabled" or displayed, the theme images are displayed. If "selectable", users can drag the GIS Selection tools to select specific items on the map. The "attributeFields" is a comma separated list of column fields of the theme. This list controls the displayed information for each theme in Results of Search and View Attributes dialog window.
- **mapLOD**: Specifies the Level of Details available in the map. This limits the zoom levels of the map image.

Application Integration Configuration

config.properties

To integrate with the WAM application, the GIS Viewer uses a configuration file named config.properties with the "sia_integration_url" as the URL to the WAM application. This config.properties file must be included within the classpath of the application.

Sample Configuration

This document is intended to describe a sample configuration and deployment for the ESRI ArcGIS Viewer application. It is NOT intended to be a comprehensive GIS User's guide or a GIS Training document for implementation teams or users. Clients wanting to upgrade from an an existing GIS integration to the ESRI ArcGIS application integration must configure the ESRI ArcGIS Viewer according to customer requirements and preloaded map symbology standards data. Please use this document as a guideline.

Edit the Configuration File

In this step you edit the configuration file used by used by MapViewer ESRI ArcGIS Viewer to display the WAM GIS information. This file may be found in SIA application server folders in the following location. The configuration file is deep in the SIA application mid-tier folder structure.

In a typical Work and Asset Management folder structure the correct "config" folder is found in SIA web application folders. You might also find this folder by searching for default.cfg or Honolulu.cfgesri2_default.cfg.

Sample file location: D:\synergen\prod1715x\synergen\config

If you already have a file in the configuration folder, you may copy one and make edits. If there is no default configuration file, the following text provides a sample.

The Thematic Map section is highlighted but no changes are required. This is sample syntax to be used if you create a Thematic Map. You must change the highlighted sections to represent the naming conventions used for you application.

Modify the following as needed:

- **mapServiceurlMapView:** This value must be changed to the correct URL related to the ArcGIS Server's map servicemapviewer.
- **Datasource:** This is the name of the datasource you created when configuring the MapViewer.
- **baseMap**: This is the name of the username.basemap defined in the database. It is recommended that the same naming convention be used as the MapCache below.
- **mapCache**: This is the datasource.basemap defined in the Mapviewer. It is recommended that this be the same naming convention as the one used for the baseMap above.
- **centerX**, and centerY, and SRID: This value should be the center coordinate for a location in the map and the correct SRID.
- **Theme Name, lay_id, and attributeFields:** One theme name entry should be made for each theme you want to appear in the viewer. You name the theme and then point to the username.theme_name created in the database using MapBuilderinput the layer id for the theme as defined in the map service. The value for attributeFields should be a list of selected column fields in the theme's table, separated by a comma.
- **mapLOD**: One detail level entry should be made for each Level of Detail you want to be available in the zoom levels of the map in the viewer. (You can get the available Levels of Detail by opening the mapservice URL in a browser and it's under the Tile Info section of the page.)

```xml
<?xml version="1.0" encoding="UTF-8"?>
<config>
  <map
mapService="http://localhost:7777/arcgis/rest/services/
StPeteMapService/MapServer"
        centerX="291278.12000005"
centerY="1236022.03000005"
        maxWidth="800" maxHeight="600"
synergenIDLabel="WAM Feature"/>
  <themeGroup name="Base" expand="Y">
    <theme name="Streets" lay_id="10" enabled="Y"
selectable="N" attributeFields="FID,GID"/>
    <theme name="Parcels" lay_id="11" enabled="Y"
selectable="N" attributeFields="FID,GID,SDF_NAME"/>
    <theme name="Gravity" lay_id="8" enabled="Y"
selectable="N" attributeFields="FID,GID"/>
    <theme name="Defects" lay_id="1" enabled="Y"
selectable="N" attributeFields="FID,GID"/>
  </themeGroup>
  <themeGroup name="Water" expand="Y">
    <theme name="Mains" lay_id="7" enabled="Y"
selectable="N" attributeFields="FID,GID,COMMENTS"/>
    <theme name="Watsym" lay_id="3" enabled="Y"
selectable="N" attributeFields="FID,GID"/>
    <theme name="Potable" lay_id="5" enabled="Y"
selectable="N" attributeFields="FID,GID"/>
    <theme name="Valves" lay_id="2" enabled="Y"
selectable="Y" attributeFields="FID,GID"/>
  </themeGroup>
  <themeGroup name="Sewer" expand="Y">
    <theme name="Pipes" lay_id="9" enabled="Y"
selectable="N" attributeFields="FID,GID,PIPE_ID"/>
    <theme name="Manholes" lay_id="4" enabled="Y"
selectable="Y" attributeFields="FID,GID,NODE_
ID,SYNERGENID"/>
    <theme name="Sewserv" lay_id="6" enabled="Y"
selectable="N" attributeFields="FID,GID,COMMENTS"/>
    <theme name="Service Point" lay_id="0" enabled="Y"
selectable="N" attributeFields="FID,GID"/>
  </themeGroup>
  <mapLOD>
    <detail level="0" resolution="264.583862501058"
scale="1000000.0"/>
```

```
        <detail level="1" resolution="132.291931250529"
scale="500000.0"/>
        <detail level="2" resolution="66.1459656252646"
scale="250000.0"/>
        <detail level="3" resolution="33.0729828126323"
scale="125000"/>
        <detail level="4" resolution="16.9333672000677"
scale="64000"/>
        <detail level="5" resolution="8.46668360003387"
scale="32000"/>
        <detail level="6" resolution="4.23334180001693"
scale="16000"/>
        <detail level="7" resolution="2.11667090000847"
scale="8000"/>
        <detail level="8" resolution="1.05833545000423"
scale="4000"/>
        <detail level="9" resolution="0.529167725002117"
scale="2000"/>
        <detail level="10" resolution="0.264583862501058"
scale="1000"/>
    </mapLOD>
</config>
```

Save this file and test the viewer configuration file.

Edit the config.jsp File

This file can also be found in the SIA Mid-Tier folders on the application server called CUSTOM.   It is important to find the correct configuration file as there are several folders that are similar.   The information is found at the bottom of the correct config.jsp file.

Sample file location: D:\synergen\prod1715x\synergen\ESRI2Viewer\custom

Modify the following as needed:

- **configAssetField**: This attribute is used to define the Work and Asset Management column used as the GIS Feature cross-reference.   It should always be Asset ID as shown here.
- **configWODesc, configWRDesc, configSRDesc, configSRType, and configSRProblemCode:** These attributes are the default values used when creating records in WAM.

GIS SETUP Business Rule

The GIS SETUP business rule must be configured to point to the ESRI ArcGIS Viewer. There are several parameters in this rule, but only two apply to the ESRI ArcGIS Viewer.

- **ACTIVATED GIS OPTION** - this parameter must contain ESRI2 in the first value column (the key_value column in the database).
- **ESRI2** - this parameter must contain a string pointing to the configuration file created above. No file path is required in this setting. Enter the keyword string "cfg=" followed by the filename of the configuration file.

Configuring these business rule settings define the "default" viewer for the GIS integration. These settings are used unless the User Profile data is configured to override the defaults.

Configuring the User Profile

You may also choose to only make this view available to specific users. You accomplish this by entering the same information in the User Profile module.

The same two parameters discussed in the Business Rule setup are simply added to the user profile data.

The same feature may also be used to point a specific user to the same GIS Option but to a different configuration file. This allows you to provide different maps to different user communities.

By directing a user to a new configuration file, you may also manage which layers are available to the user. For example, you may have the same map, but one user is only allowed to see Streets and Parcels, while another user might have access to Water and Wastewater infrastructure.

Maps and Theme UI options are all managed using the configuration files.

Add Responsibility Functions

All users who will require access to the ESRI ArcGIS Viewer must have the following responsibility functions added to their user profile:

- **ESRI2 VIEWER** - Added responsibility function to allow access to the ESRI2 Viewer.
- **VIEW GIS** - Added responsibility function to allow access to the print and view GIS actions available in modules. (Must be added regardless of which viewer is used.)

Set Up a GIS Server in an OC4J Instance

(Sample from Oracle AS Documentation) - Deploying to 10.1.3

To deploy your UIX application to a 10.1.3 application server you must create an ear file using JDeveloper and deploy the file to the OC4J instance using the Application Server Control. To generate the ear file, right-click the ADFToyStore.deploy profile in the application navigator of your JDeveloper 10.1.2 install and choose Deploy to Ear file from the context menu. An ADFToyStore.ear file will be created in the <Project directory>\adftoystore\deploy directory.

Deployment directly from JDeveloper 10.1.2 to the 10.1.3 application server is not supported.

Deploying the Ear File

Deploy the ear file to the 10.1.3 OC4J instance by using the Application Server Control by opening http://<server name>:<port>/em in a web browser.

1. After logging into the administration console, click the **Applications** tab and click **Deploy**.
2. In Step 1 of 3, choose the **Archive is present on local host. Upload the archive to the server where Application Server Control is running** radio button.
3. Click **Browse** and use the file system navigator to select the ear file in the <Project directory>\adftoystore\deploy directory.
4. Click **Next**. In Step 2 of 3, set the **Application Name** to ADFToyStore, accept all defaults, and click **Next**.
5. Accept all of the defaults in Step 3 of 3 and click **Deploy**.
    After the deployment completes click **Return** and you will be forward back to the main screen of the Application Server Control. The ADFToyStore application should have a green arrow under the status column.

6. Test the application by accessing the following url via a web browser: http://<server name>:<port>/ADFToyStore.