Copyright Notice

Copyright 2003 *ESRI*

The companies and organizations listed above have granted the Open GIS Consortium, Inc. (OGC) a nonexclusive, royalty-free, paid up, worldwide license to copy and distribute this document and to modify this document and distribute copies of the modified version.

This document does not represent a commitment to implement any portion of this specification in any company's products.

OGC's Legal, IPR and Copyright Statements are found at http://www.opengis.org/legal/ipr.htm.

Permission to use, copy, and distribute this document in any medium for any purpose and without fee or royalty is hereby granted, provided that you include the above list of copyright holders and the entire text of this NOTICE.

We request that authorship attribution be provided in any software, documents, or other items or products that you create pursuant to the implementation of the contents of this document, or any portion thereof.

No right to create modifications or derivatives of OGC documents is granted pursuant to this license. However, if additional requirements (as documented in the Copyright FAQ at http://www.opengis.org/legal/ipr_faq.htm) are satisfied, the right to create modifications or derivatives is sometimes granted by the OGC to individuals complying with those requirements.

THIS DOCUMENT IS PROVIDED "AS IS," AND COPYRIGHT HOLDERS MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR TITLE; THAT THE CONTENTS OF THE DOCUMENT ARE SUITABLE FOR ANY PURPOSE; NOR THAT THE IMPLEMENTATION OF SUCH CONTENTS WILL NOT INFRINGE ANY THIRD PARTY PATENTS, COPYRIGHTS, TRADEMARKS OR OTHER RIGHTS.

COPYRIGHT HOLDERS WILL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY USE OF THE DOCUMENT OR THE PERFORMANCE OR IMPLEMENTATION OF THE CONTENTS THEREOF.

The name and trademarks of copyright holders may NOT be used in advertising or publicity pertaining to this document or its contents without specific, written prior permission. Title to copyright in this document will at all times remain with copyright holders.

RESTRICTED RIGHTS LEGEND. Use, duplication, or disclosure by government is subject to restrictions as set forth in subdivision (c)(1)(ii) of the Right in Technical Data and Computer Software Clause at DFARS 252.227.7013

OpenGIS® is a trademark or registered trademark of Open GIS Consortium, Inc. in the United States and in other countries.

Note: This document is not an OGC Standard. Internal and external documents cannot refer to it as such. Drafts are distributed for review and comment and are subject to change without notice.

The ArcIMS OGC WMS Connector

The ArcIMS OGC WMS Connector enables the ArcIMS GIS server to provide Web Map Services that adhere to the OGC WMS interfaces implementation specification. This connector allows any OGC WMS compliant "Viewer Client" (any WMS compatible Web browser or client) the ability to access an ArcIMS MapService. MapServices reside on the ArcIMS Spatial Server, which is called the Map Server by the OGC.

The ArcIMS OGC WMS Connector:

- Produces maps of georeferenced data (maps are rendered in an image format such as PNG, GIF, or JPEG).
- Creates a standard means for users to request maps on the Web using the OGC WMS interface. The request in converted into an ArcXML format, the XML communication protocol for ArcIMS. In a response, the ArcXML response is converted back to a format understood by an OGC WMS View Client.
- Creates a standard means for servers to describe data holdings by the use of the OGC WMS interface Get_Capabilities parameter.

Note: the OGC WMS Connector is separate from and not an upgrade to the WMS connector that is included with ArcIMS 3.2. ESRI is continuously improving the OGC WMS connectors. Check the ESRI Interoperability and Standards page for the latest updates. However, the WMS connector that comes with ArcIMS 4 is compliant with the earlier OGC spec (WMS 1.0.0).

Step 1: Preliminary Requirements

The following preliminary requirements are needed to run the ESRI OGC WMS Connector:

- ArcIMS should be installed, configured and running. To do so, follow the detailed instructions in the ArcIMS Install Guide[1] or see below for main steps.
- Install Apache 1.3.26 with Tomcat 3.2.3 and ArcIMS 4.0 (on Windows). ESRI's support page includes the necessary instructions[2]. The online-version of the installation documents included with ArcIMS 4.0 can be found on ArcOnline[3].
- Download the OGC WMS connector from ESRI Interoperability and Standards page (ArcIMS 4 comes with the Connector already)

NOTE: The User Experience section in Chapter 2 from CSP Ploenzke (Example 1) points out some additional recommendations regarding ArcIMS.

Step 2: Installation of the ESRI OGC WMS Connector

Note: This step is ONLY necessary if your ArcIMS version is earlier than version 4. If you have ArcIMS version 4, you can skip this step.

ArcIMS handles WMS requests through the so-called "ESRI WMS Connector for ArcIMS". Versions before ArcIMS 4 had to install this connector separately. In ArcIMS 4, the WMS

---

[1] *ArcIMS Install Guide: http://arconline.esri.com/arconline/installation.cfm?PID=6*
[2] *Installation of Apache and Tomcat: http://support.esri.com/Search/kbDocument.asp?dbid=23232*
[3] *ArcOnline: http://arconline.esri.com/installation.cfm?PID=6*

Connector is built-in to the required Servlet Connector, meaning you do not to have to install it separately. In either case, you still have to configure it to use it properly on your system.

Unzip the donwloaded zip file to c:\esriwms (the zip file contains 5 directories)

- classes
- config
- docs
- jars
- test_files

Edit C:\esriwms\config\ogc_wms.properties

- Change host=HOSTNAME, and replace HOSTNAME with your website domain name or ip address.
- Change servicename=world, world will be used as default map service for wms connector.
- If you prefer to use other map service as default, change "world" to other map service name.
- In the MapService AXL file setup Default Projection Coord System ID: e. g.(Geographic Coordinates)

```
<PROPERTIES>
 <FEATURECOORDSYS id="4326" />
 <FILTERCOORDSYS id="4326" />
 ....
</PROPERTIES>
```

- Setup WMS Map Service Default Projection Coord System ID based on dataset projection:

```
# Geographic Coordinates ID=4326;
# Robinson ID=54030;
# Sinusoidal ID=54008;
e.g.
wms_filtercoordsys_ID=4326
```

- Edit c:\esriwms\config\wms_capabilities_100.xsl

```
c:\esriwms\config\wms_capabilities_110.xsl
```

- Change "http://www.esri.com", and replace "www.esri.com" with your website domain name or IP address.
- Copy folder to appropriate location:
- Copy content of classes directory (i.e. com folder) to the servlet directory.
    1. (for iplanet, it will be C:\Netscape\docs\servlet)
    2. (for servletexec , it will be C:\Program Files\NewAtlanta\ServletExec ISAPI\Servlets)
- Copy content of config and test_files directories to the website root directory
    1. (for iplanet, it will be C:\Netscape\docs)
    2. (for iis, it will be C:\inetpub\wwwroot)

- Copy content of jars directory to c:\jars
- Add the 4 jar files in c:\jars folder to the jvb classpath or classpath environment variable. If classpath is empty before, it will become:
- CLASSPATH=c:\jars\saxon.jar;c:\jars\xalan.jar;c:\jars\crimson.jar;c:\jars\jaxp.jar;
- Restart Web server. The WMS connector is installed at:
- http://HOSTNAME/servlet/com.esri.ogc.wms.WMSServlet
- where HOSTNAME is the Web server domain name or IP address
- Test templates:
    1. `GetMap` URL: http://HOSTNAME/`GetMap`.htm
    2. `GetCapabilities` URL: http://HOSTNAME/`GetCapabilities`.htm
- where HOSTNAME is the Web server domain name or IP address

Step 3: Configure the WMS Connector

In a text editor, open the file "WMSEsrimap_prop" in the location of your Servlets directory where the Servlet Connector is installed.

For example: <Tomcat Install Dir>\webapps\ROOT\WEB-INF\classes

Change the following parameters:

- Find enable and change it to enable=true.
- Find appServerMachine and set it to the name of the computer where the ArcIMS Application Server is installed.
- Find appServerClientPort and set it to the name of the port on which the Application Server is running (default is 5300).
- Create a capabilities Directory, where you'll later on save `GetCapabilities`-XML documents - you might create "capabilities" under c:/ArcIMS/ as default
- Find capabilitiesDir and provide the path to the capabilities directory you just created, for example, capabilitiesDir=c:/ArcIMS/capabilities/
- Find debug and set it to debug=true if you want detailed debug information. If you set it to true, the log file will be created inside the working directory.
- Create a working Directory, where the log files will be saved - you might create "workingdir" under c:/ArcIMS/ as default
- Find workingDirectory and provide the path to the working directory, for example, workingDirectory=c:/ArcIMS/workingdir/
- Find reaspect and set it to reaspect=true if you want to re-aspect the generated map images.
- Find defaultService and set it to a default ArcIMS MapServiceName as they are listed in ArcIMS Administrator. If the WMS client doesn't specify the Service, then this default Service will be used.
- Save and close the edited file.
- Create a virtual directory called capabilities pointing to the location where you created the capabilities directory.

Using Apache, you will have to open and edit the file "httpd.conf" to set an alias to this directory. Find the section where you have created the aliases for ArcIMS similar to those for the output folder and add the appropriate lines:

```
Alias /capabilities "c:/ArcIMS/capabilities"
   Alias /capabilities/ "c:/ArcIMS/capabilities"
   <Directory "C:/ArcIMS/capabilities">
         Options Indexes MultiViews
         AllowOverride None
         Order allow,deny
         Allow from all
     </Directory>
```

Restart your Web Server and your Servlet Engine. To test if WMS is installed and working, open your Web browser and type:

```
http://<appServerMachine>/servlet/
        com.esri.wms.Esrimap?Cmd=ping
```

The following should appear:

```
   ArcIMS WMS-OGC Connector Version 4.0
```

Your system now knows that there is a WMS Connector and it will handle WMS requests.

```
Alias /wmsviewer
"<ArcIMS_Install_Dir>\ArcIMS\Samples\WMS\DHTML_wmtclient"
Alias /wmsviewer/
"<ArcIMS_Install_Dir>\ArcIMS\Samples\WMS\DHTML_wmtclient"
<Directory
"<ArcIMS_Install_Dir>\ArcIMS\Samples\WMS\DHTML_wmtclient">
         Options Indexes MultiViews
         AllowOverride None
         Order allow,deny
         Allow from all
         </Directory>
```

Step 4: Setup a MapService and Client for your WMS

You might want to use the WMS samples that are part of the ArcIMS samples provided on the ArcIMS installation CD (They can be installed separately from the setup routine):

- Create a MapService called SanFrancisco pointing to the file SanFrancisco.axl, located under:

  `<ArcIMS_Install_Dir>\ArcIMS\Samples\TutorialData\AXL`

  (You might also have to install the Tutorial Data if you did not install it initially)

- Edit the file "WMSEsrimap_prop" located under:

  `<Tomcat_Install_Dir>\webapps\ROOT\WEB-INF\classes`

  and change the parameter defaultService to:

  `defaultService=SanFrancisco`

- Create a virtual directory called "wmsViewer" pointing to the location where you installed the WMS sample:

Using Apache, you will have to open and edit the file "httpd.conf" to set an alias to this directory. Find the section where you have created the aliases for ArcIMS (the output folder) and add the appropriate lines:

```
Alias /wmsviewer
"<ArcIMS_Install_Dir>\ArcIMS\Samples\WMS\DHTML_wmtclient"
Alias /wmsviewer/
"<ArcIMS_Install_Dir>\ArcIMS\Samples\WMS\DHTML_wmtclient"
<Directory
"<ArcIMS_Install_Dir>\ArcIMS\Samples\WMS\DHTML_wmtclient">
         Options Indexes MultiViews
         AllowOverride None
         Order allow,deny
         Allow from all
         </Directory>
```

Step 5: Test your WMS Service

If you have completed the steps above, you should have a MapService called SanFrancisco running which can be viewed and tested through the WMS interface using the ArcIMS WMS sample client.

Open your web browser, type the URL:

```
http://<localhost>/wmsViewer
```

To view the sample. You should see a Map of SanFrancisco and some available tools. You should be able to navigate this map and to get feature information using the identify tool.

You might also want to try to get the results of the `GetCapabilities` request typing the following URL:

```
http://<localhost>/servlet/com.esri.wms.Esrimap?SERVICENAME=SanFr
ancisco&VERSION=1.1.0&REQUEST=getcapabilities&
```