

Technology Overview

Typical Hardware Configuration and Software required for deployment of Real-Time editing and feature creation functions.

- **Minimum Hardware Configuration**

Memory Requirement : 256MB of RAM per CPU

Disk Space Requirements: about 1 GB disk space required.

- **Operating Systems Allowed**

Windows 2000, Windows XP & Windows Server 2003.

- **Required Software & Versions**

SQL Server 2000

ArcSDE 9.0

Java 2 SDK Standard Edition Version 1.4.2

Apache 2.0.48

Tomcat 4.1.29

ArcIMS 9.0

Software Install Procedures

- **ArcIMS procedure:**

ArcIMS 3.1, 4.0 or 4.0.1 must be uninstalled to install ArcIMS 9.0.

If ArcIMS components were distributed among several computers, it is recommended the uninstall program be manually run on each computer.

A supported Web server and Servlet Engine must be properly installed and configured before running the setup program for ArcIMS 9.0.

- **Install Java 2 SDK Standard Edition Version 1.4.2**

Double click the j2sdk-1_4_2-windows-i586.exe file on CD, accept all of the installation program defaults.

- **Install Apache 2.0.48**

1. Install location as <drive>:\Apache

2. After install, modify the httpd.conf file. Click Start > Programs > Apache HTTP Server 2.0.48 > Configure Apache Server > Edit the Apache httpd.conf Configuration File.

3. Locate the line 'DirectoryIndex index.html' and add 'default.htm' and 'default.html' at the end so it reads: DirectoryIndex index.html index.html.var default.htm default.html
4. Verify that the installation was successful. Open a Web browser and type the computer or domain name. For example, <http://machinename>. The Apache page: "Seeing this instead of the website you expected?" should display. If the page does not display, check that Apache is running.
5. Open the Services window.
6. A service named Apache2 should be listed as started. If it isn't, start it by clicking the triangle in the toolbar. Verify that the Apache installation is successful

• **Install Tomcat 4.1.29**

1. Type <drive>:\Tomcat4129 for the installation directory.

 **Do not install Tomcat under Program Files, or other paths with spaces, or problems may occur.**

2. After install, SET ENVIRONMENT VARIABLES
3. Navigate to the Windows Environment Variables. Under System Variables, Click New. For the Variable Name, type: JAVA_HOME, For Variable value, type the path where Java 2 SDK is installed; for example: <drive>:\j2sdk1.4.2, and click OK.
4. Create another system environment variable called CATALINA_HOME. For Variable value, type the path where Jakarta Tomcat 4.1.29 is installed; for example: <drive>:\Tomcat4129, and click OK.
5. While in the System Variables panel, scroll to Path, select it and click Edit. In the Variable Value text box, append the following to the end of the text, including the leading semi-colon: ;%JAVA_HOME%\bin. Click ok.

• **Configure Apache and Tomcat**

1. Download the Mod_JK2 configuration files for Apache and Tomcat: [Tomcat4129 Apache2048 IMS9 win.zip](#) and extract the contents of the zip file to a temporary location on your hard drive.
2. Copy the mod_jk2.so file to your Apache Modules directory. For example: <drive>:\apache\apache2\modules.
3. Copy the workers2.properties file to your Apache Conf directory. For example: <drive>:\Apache\Apache2\conf.

4. Modify the httpd.conf file. Click Start > Programs > Apache HTTP Server 2.0.48 > Configure Apache Server > Edit the Apache httpd.conf Configuration File.

5. Locate the line: #LoadModule ssl_module modules/mod_ssl.so and add the following line of code directly below it, so it reads:

```
#LoadModule ssl_module modules/mod_ssl.so
```

```
LoadModule jk2_module modules/mod_jk2.so
```

6. Open the Services window. Start and stop the services in the following order:

- J1. Stop Apache2
- J2. Stop Apache Tomcat 4.1
- J3. Start Apache Tomcat 4.1
- J4. Start Apache2

7. Enter the following into a Web browser.

```
http://<your_machine_name>/examples/servlet/HelloWorldExample
```

A page should display that says "Hello World" if the test is successful

• **Install ArcSDE**

1. All ArcGIS® clients must be upgraded to ArcGIS 9.0, before upgrading to ArcSDE 9.0

2. MDAC 2.6 is required for ArcSDE 9.0 for Sql Server. If MDAC version 2.6 is not detected, the setup will install MDAC 2.6 for you.

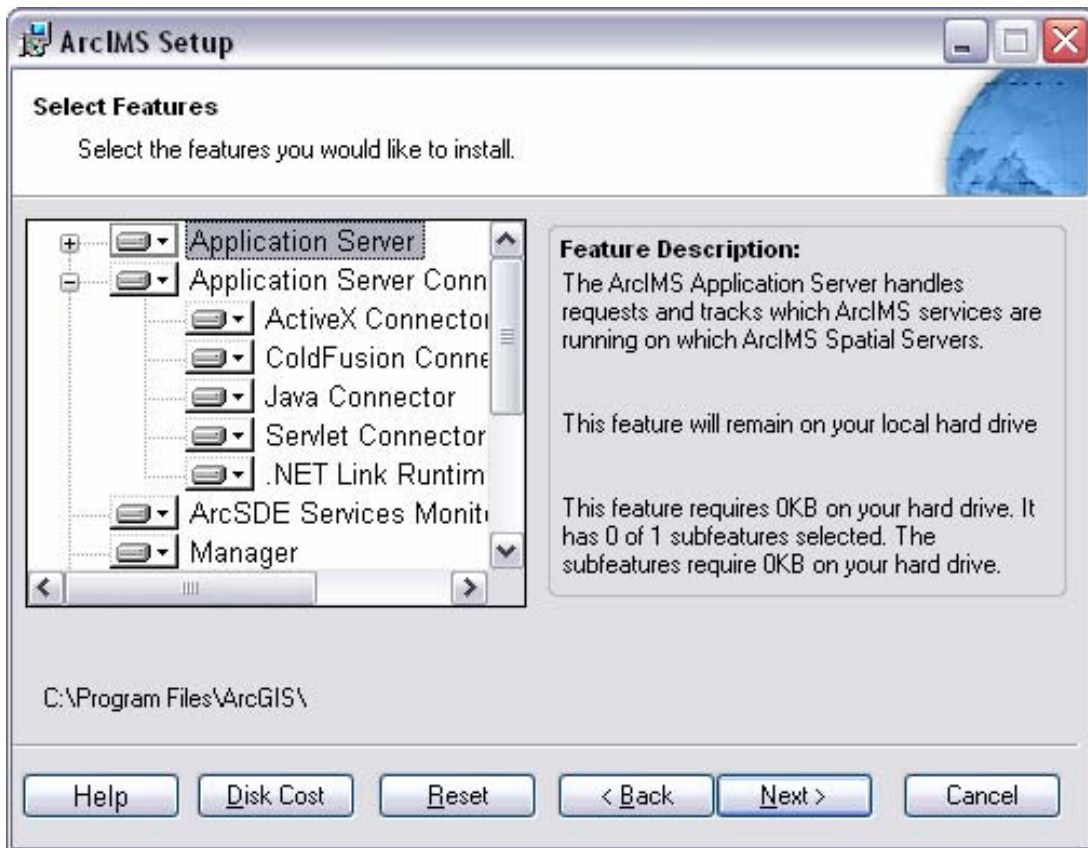
3. Navigate to the Windows folder on the ArcSDE for SQL Server CD and launch setup.exe to begin the installation. During the install you will be asked to read the license agreement and accept it, or exit if you don't agree with the terms. The license agreement dialog contains a link to view the license agreement in another language.

4. To complete the installation follow the directions on your machine.

5. After the ArcSDE installation completes, the setup program will provide the opportunity to begin the post installation setup. The post installation setup will configure the sde environment, set up the sde repository, authorize the software, and create and start the ArcSDE Service.

• Install ArcIMS

1. According to the ArcIMS Install Procedure, in the SELECT FEATURE step, select all the *Application Server Connector* and *ArcSDE Services Monitor*



2. Select Typical as the Post Installation Option.

3. At the Web Server-Servlet Engine Configuration, select Apache 2.0.4x with Tomcat 4.1.xx (mod-jk2). Click Next.

4. For Web Server Directory, enter the path where Apache 2.0.48 is installed; for example, <drive>:\Apache\Apache2

5. For the Servlet Engine Directory, enter the path where Tomcat 4.1.29 is installed; for example, <drive>:\tomcat4129

6. Click next. The Web server / Servlet Engine configuration may take a few minutes to complete.

7. Restart the Web server and Servlet Engine from the services panel once the Post Installation is finished.

Realtime_GIS Demo Data Preparation

• Layers' Name and Order

The demo data service name is Ogemaw_Demo3, its map file is Ogemaw_Demo3.axl. The Layers' Name and Layers order in this file is as follow:

- 1 <LAYER type="featureclass" name="New_Landmarks" visible="false" id="9">
<DATASET name="SDE.SDE.OGEMAW_NEWLANDMARKS" type="point" workspace="sde_ws-9" />
</LAYER>
- 2 <LAYER type="featureclass" name="New_LocalRoads" visible="false" id="8">
<DATASET name="SDE.SDE.OGEMAW_NEWLOCALROADS" type="line" workspace="sde_ws-9" />
</LAYER>
- 3 <LAYER type="featureclass" name="New_MainRoads" visible="false" id="7">
<DATASET name="SDE.SDE.OGEMAW_NEWMAINROADS" type="line" workspace="sde_ws-9" />
</LAYER>
- 4 <LAYER type="featureclass" name="New_Highways" visible="false" id="6">
<DATASET name="SDE.SDE.OGEMAW_NEWHIGHWAYS" type="line" workspace="sde_ws-9" />
</LAYER>
- 5 <LAYER type="featureclass" name="New_ESNZones" visible="false" id="5">
<DATASET name="SDE.SDE.OGEMAW_NEWSERVICEZONES" type="polygon" workspace="sde_ws-9" />
</LAYER>
- 6 <LAYER type="featureclass" name="Edit_Landmarks" visible="false" id="4">
<DATASET name="SDE.SDE.SHIAWASSEE_LANDMARKS" type="point" workspace="sde_ws-9" />
</LAYER>
- 7 <LAYER type="featureclass" name="Edit_LocalRoads" visible="false" id="3">
<DATASET name="SDE.SDE.OGEMAW_LOCALROADS" type="line" workspace="sde_ws-9" />
</LAYER>
- 8 <LAYER type="featureclass" name="Edit_MainRoads" visible="false" id="2">
<DATASET name="SDE.SDE.OGEMAW_MAINROADS" type="line" workspace="sde_ws-9" />
</LAYER>
- 9 <LAYER type="featureclass" name="Edit_Highways" visible="false" id="1">
<DATASET name="SDE.SDE.OGEMAW_HIGHWAYS" type="line" workspace="sde_ws-9" />
</LAYER>
- 10 <LAYER type="featureclass" name="Edit_ESNZones" visible="false" id="0">
<DATASET name="SDE.SDE.OGEMAW_SERVICEZONES" type="polygon" workspace="sde_ws-9" />
</LAYER>
- 11 <LAYER type="featureclass" name="Landmarks" visible="true" id="14">
<DATASET name="landmarks_Ogemaw" type="point" workspace="shp_ws-5" />
</LAYER>
- 12 <LAYER type="featureclass" name="Local Roads" visible="false" id="13">
<DATASET name="Localroads" type="line" workspace="shp_ws-5" />
</LAYER>
- 13 <LAYER type="featureclass" name="Main Roads" visible="true" id="11">
<DATASET name="MainRoads" type="line" workspace="shp_ws-5" />
</LAYER>
- 14 <LAYER type="featureclass" name="Highways" visible="true" id="12">

```

    <DATASET name="Highways" type="line" workspace="shp_ws-5" />
  </LAYER>
15 <LAYER type="featureclass" name="ESN Zones" visible="true" id="10">
    <DATASET name="Ogemaw_ESN" type="polygon" workspace="shp_ws-4" />
  </LAYER>
16 <LAYER type="image" name="Mills_NW DOQQ" visible="false" id="15">
    <DATASET name="skidwaylake_nw.sid" type="image" workspace="jai_ws-0" />
  </LAYER>
17 <LAYER type="image" name="Mills_NE DOQQ" visible="false" id="16">
    <DATASET name="skidwaylake_ne.sid" type="image" workspace="jai_ws-0" />
  </LAYER>
18 <LAYER type="image" name="WestBranch City DOQQ" visible="false" id="17">
    <DATASET name="westbranch_sw.sid" type="image" workspace="jai_ws-0" />
  </LAYER>
19 <LAYER type="image" name="Rose City DOQQ" visible="false" id="18">
    <DATASET name="rosecity_sw.sid" type="image" workspace="jai_ws-0" />
  </LAYER>

```

• How to stop and start ArcIMS services

1. Open the Services window.

2. To stop the ArcIMS services, select the ArcIMS service in the list and click Stop in the toolbar. Always stop the services in the following order, to avoid possible corruption of the configuration files:
 - ArcIMS Tasker
 - ArcIMS Monitor
 - ArcIMS Application Server

3. To start the ArcIMS services, select the ArcIMS service in the list and click the Start in the toolbar. Always start the services in the following order, to avoid possible corruption of the configuration files:
 - ArcIMS Application Server
 - ArcIMS Monitor
 - ArcIMS Tasker