Autodesk® OnSite Enterprise

ADMINISTRATOR'S GUIDE

autodesk®

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1 2 3 4 5 6 7 8 9 10

Contents

Getting Started

1

Autodesk OnSite® Enterprise delivers live, interactive mapping and design information from your organization's central server directly to the point-of-work on Microsoft® Windows® CE-based mobile computing devices. This chapter includes general information about Autodesk OnSite Enterprise, this guide, and its audience.

In this chapter

About This Document

This guide describes how to install, configure, and administer the Autodesk OnSite Enterprise servlet. Written for system administrators, who install Autodesk OnSite Enterprise and manage the servlet operations, this guide covers the following topics:

- The servlet environment
- Installing the servlet
- Testing, starting, and stopping the servlet
- Setting values in the configuration files
- Converting files to different formats
- Geometry mapping
- Error logging and error types
- Configuring application servers

To get the most benefit from this guide, you need expertise in Web-server administration and experience using a Web application server.

Most instructions in this document assume that Autodesk OnSite Enterprise is installed in the default folder *C:\Program Files\Autodesk\OnSiteEnterprise2.5*, sometimes abbreviated to *<InstallFolder>*.

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2. Drag to select the text that you want to copy.
3. Right-click the selected text, and then choose Copy from the shortcut menu.

   The text is copied to the Clipboard.

Useful Terms and Acronyms

This document uses the following terms and acronyms:

Terms and Acronyms

Term or Acronym	Description
DWG (Drawing format file)	The standard file format for saving vector graphics from within AutoCAD.
DXF (Drawing Interchange Format)	An ASCII or binary file format of an AutoCAD drawing file for exporting AutoCAD drawings to other applications or for importing drawings from other applications.
JAR (Java ARchive)	A compressed file format used to bundle Java .class files in a single file for easy distribution. JAR filenames end with a *.jar* extension.
JDK (Java Development Kit)	A free software-development environment for producing Java programs, available at http://java.sun.com.
JMC (JRun Management Console)	A browser-based tool that lets you configure Macromedia JRun.
JRE (Java Runtime Environment)	The minimal part of the JDK required to run Java programs. The JRE consists of the JVM and the Java platform's core classes and supporting files. It doesn't include the compiler, debugger, or other tools present in the JDK.
JVM (Java Virtual Machine)	An operating environment, specific to the host computer, on which you run Java applications.
Java servlet	A Java program that runs as part of a network service, typically as an HTTP (Web) server that responds to requests from clients. Java servlets are Java objects that are loaded dynamically by the JRE when the Web server starts, or when the servlet is first called. A servlet is loaded only once and normally remains in memory for as long as its host server is running; this low-overhead operation promotes high throughput. For more information, see http://java.sun.com/products/servlet/.

Terms and Acronyms (*continued*)

Term or Acronym	Description
Mapset	A set of maps related to a single MWF file. A mapset typically includes a specification of the initial view, extents to which you can pan the view, and all linked maps on the map. In the context of Autodesk OnSite Enterprise, a mapset is the MWF file converted to an OSD file, the linked maps converted to OSD files, and non-map-related linking information.
MWF (Map Window File)	The Autodesk MapGuide native file format.
OSD (OnSite Drawing)	The Autodesk OnSite View native file format.
OSM (OnSite Markup)	The Autodesk OnSite View native markup file format.
RML (Redline Markup Language)	An XML-derived file format for communicating markup information from Autodesk OnSite View and Volo View to AutoCAD.
SP (Service Pack)	A patch for an operating system or software package that is provided by the publisher. To run properly, other programs often require the host operating system or auxiliary software to be updated with recent service packs.

Overview

Autodesk OnSite Enterprise is a Java servlet that uses standard Web and mobile protocols to deliver interactive digital design and mapping information from your organization's central server directly to handheld Microsoft Windows CE devices at the point of work. Field employees can update (synchronize) data remotely with a central database, obviating data integration and duplication problems.

Autodesk OnSite Enterprise performs server-side file conversions, responding to requests to convert native AutoCAD (DWG and DXF) and Autodesk MapGuide (MWF) files to the Autodesk OnSite Drawing (OSD) format. When Autodesk OnSite Enterprise is used with third-party synchronization software, applications can download the converted files from the server to the mobile device, and upload Autodesk OnSite Markup (OSM) files, which Autodesk OnSite Enterprise converts to Redline Markup Language (RML). Autodesk OnSite Enterprise supports all the enhancements to the AutoCAD

2004 DWG and DXF file formats and the Autodesk MapGuide Release 6.5 MWF file format.

The Autodesk OnSite solution comprises two products: Autodesk OnSite Enterprise and Autodesk OnSite View. Autodesk OnSite View is designed to be an Autodesk OnSite Enterprise client and a stand-alone mobile design-and-review tool. As a stand-alone application, Autodesk OnSite View works with Microsoft® ActiveSync® and lets users exchange data between a hand-held device and a personal computer. Autodesk OnSite Enterprise includes Autodesk OnSite View as the mobile viewing client.

Where to Get More Information

You can find additional information and help at http://www.autodesk.com/onsiteenterprise. This site provides general product information and links to product documentation, support alternatives, downloads, and other resources.

Installing Autodesk OnSite Enterprise

2

This chapter lists the Autodesk OnSite Enterprise system requirements, shows a typical network configuration, and describes how to install, test, start, and stop the Autodesk OnSite Enterprise servlet.

In this chapter

System Requirements

To install and run Autodesk OnSite Enterprise, you will need:

Server

- Intel® Pentium®- or AMD-based PC, with 233 MHz or higher processor
- Microsoft Windows NT 4.0 Server (Service Pack 6a), Microsoft Windows 2000 Server (Service Pack 4), or Microsoft Windows 2003 Server
- 128 MB RAM
- 30 MB free disk space
- 20 MB swap space
- 800x600 VGA display
- Mouse or other pointing device
- Autodesk MapGuide Server Release 6.5 or earlier (installed locally or on another machine)
- Apache Tomcat 3.3.1a (or other third-party application server)
- Sun Java Development Kit (JDK) 1.3.1 and 1.4.*x*

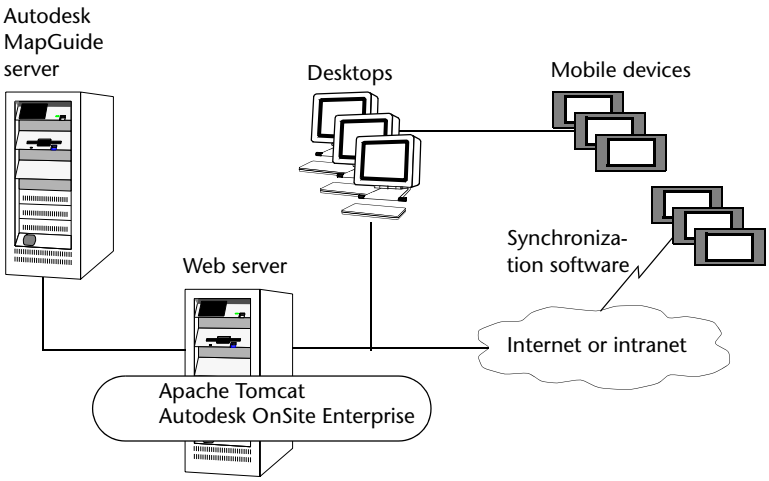
Note Apache Tomcat 3.3.1a and JDK 1.3.1 are included with the Autodesk OnSite Enterprise distribution. If you select these options during installation, the Autodesk OnSite Enterprise Setup program will install them (requiring an additional 55 MB of disk space).

Mobile Client

- Microsoft Windows CE-compatible device
- Windows CE 2.11 or higher, including PocketPC and H/PC Pro devices
- 16 MB RAM

Network Configuration

You can install the Web-server software (IIS, for example) and Autodesk MapGuide Server on the same computer or on different computers on your network. You can install Apache Tomcat (or another application server) on the Web-server computer or on another computer. You must install Autodesk OnSite Enterprise on the same computer as the application server. The following network diagram shows a typical configuration.



The following table shows a typical configuration of the Autodesk OnSite Enterprise required software and files. This document emphasizes the Web-server portion of the environment.

Computer	Software and Files
Autodesk MapGuide server	Autodesk MapGuide Server MWF files and related data files Microsoft Internet Information Services (IIS)
Desktop computer	Autodesk OnSite converters for Microsoft ActiveSync Autodesk OnSite OSVConvert utility
Mobile device	Autodesk OnSite View Microsoft ActiveSync client components Client-synchronization software
Web server	Autodesk OnSite Enterprise Server-synchronization software Apache Tomcat

Note Autodesk OnSite *converters* (or *filters*)are DLLs (stored in C:*Program Files**Common Files**Autodesk Shared*) that are required to convert DWG files to OSD files, and OSM files to RML files.

Installing Autodesk OnSite Enterprise

Autodesk OnSite Enterprise is distributed on CD-ROM.

To install Autodesk OnSite Enterprise

1. Log on to your computer with administrative privileges.
2. Close all open applications.
3. Insert the Autodesk OnSite Enterprise CD. If the Setup program does not start automatically, open Windows Explorer, navigate to the Autodesk OnSite Enterprise CD, and then double-click the file *setup.exe* in the *OSE* folder.

   The Setup wizard appears.
4. On the Setup wizard Welcome page, click Next.
5. If the Software License Agreement page appears, select your country of residence, review the license, click I Accept, and then click Next.
6. On the User Information page, enter your name and your organization's name, select whether to install the Autodesk OnSite Enterprise settings for all users or for only you, and then click Next.
7. On the Configure Application Server page, select one of the following configuration options, and then click Next.
   - *Apache Tomcat 3.3.1a.* Setup installs and automatically configures a clean copy of the Apache Tomcat 3.3.1a application server (along with JDK 1.3.1).
   - *Existing Apache Tomcat 3.3.1a.* Setup checks for an existing Autodesk OnSite Enterprise 2.3 installation or an existing Autodesk MapGuide LiteView 6.5 installation and, if found, determines whether it is using Tomcat and, if so, configures the new copy of Autodesk OnSite Enterprise to work with the existing Tomcat server.
   - *Manual Setup*. Setup neither installs Apache Tomcat (or JDK) nor automatically configures Autodesk OnSite Enterprise to work with an existing server. You must configure your server manually after installation; see Chapter 7, "Configuring Application Servers" on page 63.

     Note For Setup to auto-configure a new Autodesk OnSite Enterprise installation with an existing Tomcat server, the Tomcat server must have been installed by an Autodesk Setup program.
8. On the Destination Folder page, accept the default installation directory (C:*Program Files**Autodesk**OnSiteEnterprise2.5*) or click Browse to specify a different one. Click Next.

Note If you plan to run Apache Tomcat as a Windows service (rather than in a console window), the installation directory's full pathname cannot contain spaces. (You can specify an installation directory under the *Program Files* folder provided that you use *PROGRA~1* in pathnames.)

9 On the Staging Directory Folder page, accept the default staging directory (C:*Program Files**Autodesk**OnSiteEnterprise2.5**StagingDir*\) or click Browse to specify a different one. If you don't accept the default path name, specify an absolute path name (*C:\OnSiteUsers*, for example) or a UNC path name (but not an HTTP link) to a computer on the network domain (*Server1**OnSiteUsers*, for example). Click Next.

Note For information about the staging directory, which is the root of the user directories for file conversions, see "Understanding File Placement and Naming," on page 42.

10 On the Ready To Install The Application page, click Next.

11 When installation completes, click Finish to exit Setup.

12 Within 30 days of first using Autodesk OnSite Enterprise, you must add the product authorization code and serial number to the *config.ini* file, or the program will stop working after the thirtieth day. For instructions, see "Setting the Authorization Code and Serial Number in config.ini" on page 20.

Note The serial number is located on the back of the product's CD packaging. To get an authorization code, visit http://www.autodesk.com/register or call the telephone number listed on the *Read This First* card that came with your product.

Installation Notes

- After Setup completes, Autodesk OnSite Enterprise tools and documentation are available via the desktop menu Start ➤ Programs ➤ Autodesk OnSite Enterprise 2.5.
- To test the installation, see "Testing Autodesk OnSite Enterprise" on page 13.
- To start or stop the Autodesk OnSite Enterprise servlet, see "Starting Autodesk OnSite Enterprise" on page 17 or "Stopping Autodesk OnSite Enterprise" on page 18.
- To change the Autodesk OnSite Enterprise configuration settings manually after installation, see Chapter 3.
- By default, Apache Tomcat 3.3.1a runs in a console window. To run Tomcat as a Windows service, see "Running Apache Tomcat as a Windows Service" on page 72.

- Setup does not migrate settings from a previous major release of Autodesk OnSite Enterprise.
- Setup will not overwrite an existing configuration file (*config.ini* or *MapRequest.ini*) if that file is newer than Setup's own distribution copy.

To uninstall Autodesk OnSite Enterprise

1. Stop the application server and close all Autodesk OnSite Enterprise-related applications.
2. On the Windows desktop, choose Start ➤ Settings ➤ Control Panel.
3. Double-click Add/Remove Programs.
4. In the Currently Installed Programs list, select Autodesk OnSite Enterprise 2.5.
5. Click Remove.
6. Follow the onscreen instructions.

Note To repair an Autodesk OnSite Enterprise installation, follow steps 1 through 4 above, and then click Change in step 5. Click Repair on Setup's Application Maintenance page, click Next, and then follow the onscreen instructions.

Testing Autodesk OnSite Enterprise

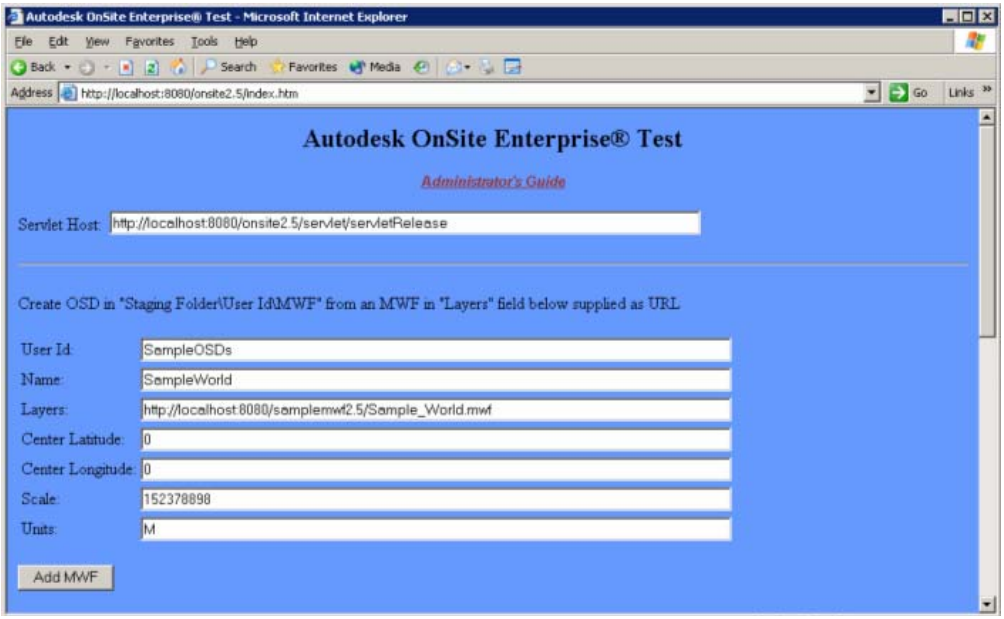
The following procedures describe how to test the Autodesk OnSite Enterprise servlet, named *OnSiteEnterprise*, by using various file-conversion requests. (For more information about requests and file conversions, see Chapter 3, "Converting Files," on page 27.) The instructions in this section assume that:

- Autodesk OnSite Enterprise is installed in the default installation directory: *C:\Program Files\Autodesk\OnSiteEnterprise2.5*
- The staging directory is: *C:\Program Files\Autodesk\OnSiteEnterprise2.5\StagingDir*
- The OnSiteEnterprise servlet is deployed under Apache Tomcat 3.3.1a using port 8080 (Setup's default configuration).
- Autodesk OnSite View is installed on a Windows CE mobile device connected to the server computer.

All the test procedures in this section use the browser-based Autodesk OnSite Enterprise test page.

To open the Autodesk OnSite Enterprise test page

1. If Apache Tomcat isn't running, start it (choose Start ➤ Programs ➤ Autodesk OnSite Enterprise 2.5 ➤ Start Apache Tomcat).
2. In a browser, visit http://localhost:8080/onsite2.5/index.htm to open the Autodesk OnSite Enterprise test page.



To test an ADD_MWF request

1. Open the Autodesk OnSite Enterprise test page (see page 13).
2. Click the Add MWF button.

   The following ADD_MWF request is sent to the OnSiteEnterprise servlet:

   http://localhost:8080/onsite2.5/servlet/servletRelease?
   REQUEST=ADD_MWF&
   USERID=SampleOSDs&
   NAME=SampleWorld&
   LAYERS=http://localhost:8080/samplemwf2.5/Sample_World.mwf
   &LAT=0
   &LON=0
   &SCALE=152378898
   &UNITS=M
3. When the request completes successfully, a Request Completed message appears in the browser, for example:

   2004/07/03 09:37:02 06.9
   OnSite Version: 2.5.0.x
   Request Completed
4. Open Windows Explorer and navigate to:

   C:\Program Files\Autodesk\OnSiteEnterprise2.5\StagingDir\SampleOSDs\MWF

5 Copy the file *SampleWorld.osd* to your Windows CE mobile device.

6 On the mobile device, double-click *SampleWorld.osd*.

Autodesk OnSite View opens *SampleWorld.osd* on the mobile device.

To test a REMOVE_MWF request

1 Open the Autodesk OnSite Enterprise test page (see page 13).

2 Click the Remove MWF button.

The following REMOVE_MWF request is sent to the OnSiteEnterprise servlet:

http://localhost:8080/onsite2.5/servlet/servletRelease?
REQUEST=REMOVE_MWF
&USERID=SampleOSDs
&NAME=SampleWorld

3 When the request completes successfully, a Request Completed message appears in the browser, for example:

2004/07/03 09:37:02 06.9
OnSite Version: 2.5.0.x
Request Completed

4 Open Windows Explorer and navigate to:

C:\Program Files\Autodesk\OnSiteEnterprise2.5\StagingDir\SampleOSDs\MWF

5 The file *SampleWorld.osd*, created by the ADD_MWF request in the preceding procedure, has been deleted.

The REMOVE_MWF request does not delete *SampleWorld.osd* from the mobile device; the user must delete it manually.

To test an ADD_DWG request

1 Open the Autodesk OnSite Enterprise test page (see page 13).

2 Click the Add DWG button.

The following ADD_DWG request is sent to the OnSiteEnterprise servlet:

http://localhost:8080/onsite2.5/servlet/servletRelease?
REQUEST=ADD_DWG
&USERID=SampleOSDs
&DWGFILE=C:\Program Files\Autodesk\OnSiteEnterprise2.5
Samples\SampleDWGs\World.dwg

3 When the request completes successfully, a Request Completed message appears in the browser, for example:

2004/07/03 09:37:02 06.9
OnSite Version: 2.5.0.x
Request Completed

4 Open Windows Explorer and navigate to:

C:\Program Files\Autodesk\OnSiteEnterprise2.5\StagingDir\SampleOSDs\DWG

5 Copy the file *World.osd* to your Windows CE mobile device.

6 On the mobile device, double-click *World.osd*.

Autodesk OnSite View opens *World.osd* on the mobile device.

To test a REMOVE_DWG request

1 Open the Autodesk OnSite Enterprise test page (see page 13).

2 Click the Remove DWG button.

The following REMOVE_DWG request is sent to the OnSiteEnterprise servlet:

http://localhost:8080/onsite2.5/servlet/servletRelease?
REQUEST=REMOVE_DWG
&USERID=SampleOSDs
&DWGFILE=C:\Program Files\Autodesk\OnSiteEnterprise2.5
Samples\SampleDWGs\World.dwg

3 When the request completes successfully, a Request Completed message appears in the browser, for example:

2004/07/03 09:37:02 06.9
OnSite Version: 2.5.0.x
Request Completed

4 Open Windows Explorer and navigate to:

C:\Program Files\Autodesk\OnSiteEnterprise2.5\StagingDir\SampleOSDs\DWG

5 The file *World.osd*, created by the ADD_DWG request in the preceding procedure, has been deleted.

The REMOVE_DWG request does not delete *World.osd* from the mobile device; the user must delete it manually.

Starting Autodesk OnSite Enterprise

To start the Autodesk OnSite Enterprise servlet, start the application server that you chose during Autodesk OnSite Enterprise installation (see page 10). The application server autoloads the OnSiteEnterprise servlet.

To start the Autodesk OnSite Enterprise servlet

- If you chose the *Apache Tomcat 3.3.1a* installation option, choose Start ➤ Programs ➤ Autodesk OnSite Enterprise 2.5 ➤ Start Apache Tomcat. (Or run *<InstallFolder>\run.bat* at a command prompt.)

  Note If you are running Tomcat as a Windows service, see "Running Apache Tomcat as a Windows Service" on page 72.

  or

  If you chose the *Existing Apache Tomcat 3.3.1a* installation option, restart the existing application server.

  or

  If you chose the *Manual Setup* installation option, refer to the relevant instructions in Chapter 7, "Configuring Application Servers," on page 63.

Stopping Autodesk OnSite Enterprise

To stop the OnSiteEnterprise servlet, stop the application server that you chose during Autodesk OnSite Enterprise installation (see page 10).

To stop the Autodesk OnSite Enterprise servlet

- If you chose the *Apache Tomcat 3.3.1a* installation option, choose Start ➤ Programs ➤ Autodesk OnSite Enterprise 2.5 ➤ Stop Apache Tomcat. (Or run *<InstallFolder>\stop.bat* at a command prompt.)

  Note If you are running Tomcat as a Windows service, see "Running Apache Tomcat as a Windows Service" on page 72.

  or

  If you chose the *Existing Apache Tomcat 3.3.1a* installation option, stop the existing application server.

  or

  If you chose the *Manual Setup* installation option, refer to the relevant instructions in Chapter 7, "Configuring Application Servers," on page 63.

Configuring Autodesk OnSite Enterprise

3

During initialization, Autodesk OnSite Enterprise reads the configuration files *config.ini* and *MapRequest.ini* and uses their parameter settings to customize the session. This chapter describes how to set these parameters to control Autodesk OnSite Enterprise's behavior.

In this chapter

Configuration Tasks

To configure Autodesk OnSite Enterprise, you:

- Set parameters in the Autodesk OnSite Enterprise initialization files *config.ini* (required) and *MapRequest.ini* (optional)
- Configure the OSM Converter Service (optional)

The following sections describe these tasks.

Configuring Initialization Files

The default location of the *config.ini* and *MapRequest.ini* files is C:*Program Files**Autodesk**OnSiteEnterprise2.5**OnSite**WEB-INF**IniFile*. Both files are text files that use the same format as a standard Windows initialization file. A pound symbol (#) starts a comment, which continues to the end of the line. A parameter setting takes the form *name=value*, in which *name* is a parameter name and *value* is its assigned value. A parameter name is case-insensitive, meaning that *MyParam* and *myparam* are considered to be the same name.

The *config.ini* file specifies the authorization code, serial number, DownLoadDir, and other parameters. You must set the authorization-code and serial-number parameters within 30 days of starting the Autodesk OnSite Enterprise servlet the first time. Autodesk OnSite Enterprise will not work without *config.ini*.

The *MapRequest.ini* file specifies the default values that Autodesk OnSite Enterprise uses to fulfill requests to convert MWF files to OSD files. You can change values in *MapRequest.ini*, such as the length of time that Autodesk OnSite Enterprise waits to complete an MWF-to-OSD request.

Setting the Authorization Code and Serial Number in *config.ini*

You must add the product authorization code and serial number to the parameters in the *config.ini* file within 30 days from the date you start using the program. If you don't set these parameters, Autodesk OnSite Enterprise stops working after the thirtieth day. If you have an authorization code and serial number, follow this procedure to set them.

To set the authorization code and serial number

1. Open the file *config.ini* in a text editor. Its default location is:

   C:\Program Files\Autodesk\OnSiteEnterprise2.5\OnSite\WEB-INF\IniFile

2. Find the following line:

   ```
   #ACODE=
   ```

3. Delete the initial comment (#) symbol, and add the authorization code after the equals (=) symbol. Type the code exactly as you received it from Autodesk, for example:

   ```
   ACODE=AN-EXAMPLE123
   ```

4. Find the following line:

   ```
   #SerialNumber=
   ```

5. Delete the initial comment symbol (#), and add the serial number after the equals (=) symbol. Type the serial number exactly as it appears on the Autodesk OnSite Enterprise CD, for example:

   ```
   SerialNumber=12345678
   ```

6. Save and close *config.ini*.

Setting DownLoadDir in *config.ini* and the Registry

The Autodesk OnSite Enterprise Setup program sets the value of the DownLoadDir parameter to the full path name of the staging directory that you specify during installation. To change the staging directory manually, you must:

- Change the DownLoadDir setting in *config.ini*
- Change the DownLoadDir registry key

All subsequent results of conversion requests are written to the subdirectories of this new path.

To change the staging directory manually

1. Open the file *config.ini* in a text editor. Its default location is:

   C:\Program Files\Autodesk\OnSiteEnterprise2.5\OnSite\WEB-INF\IniFile

2. Find the following line:

   ```
   DownLoadDir=<pathname>
   ```

3 After the equals symbol, replace the existing pathname with the new pathname, following these rules:

- Specify an absolute path name to a directory that already exists.
- Add an extra backslash as an escape character after each backslash in the path name.
- Use local file names or Uniform Naming Convention (UNC) pathnames to reference any network domain path.
- Do not use an HTTP link in the path.

The following example shows the DownLoadDir value for the default staging directory:

```
DownLoadDir=C:\\Program Files\\Autodesk\\
OnSiteEnterprise2.5\\StagingDir\\
```

The next example shows how to format the DownLoadDir value if the staging directory resides on another server.

```
DownLoadDir=\\\\Server1\\OnSiteUsers
```

4 Save and close *config.ini*.

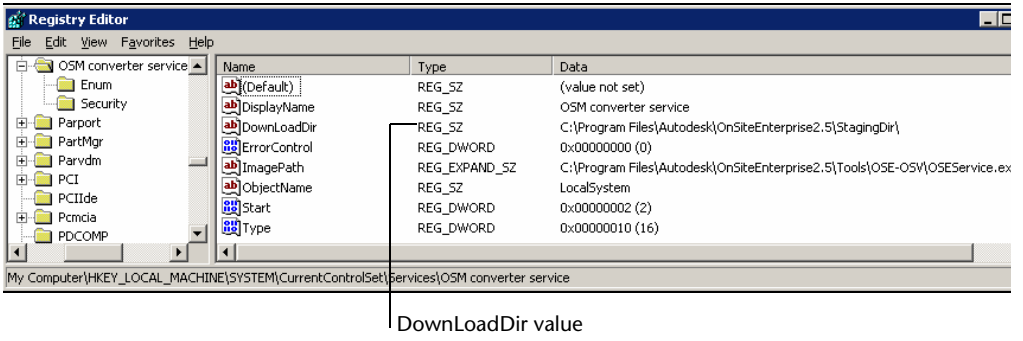
5 Choose Start ➤ Run, type *regedit*, and then press Enter.

Registry Editor starts.

6 Navigate to the registry entry *HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\OSM converter service*.

7 Under Name (in the right pane), double-click the key *DownLoadDir*.

The Edit String dialog box appears



8 Change the path name in the Value Data edit box to the name of the new staging directory, and then click OK.

9 Exit Registry Editor.

10 Restart OSM Converter services by using Control Panel's Services program (choose Start ➤ Settings ➤ Control Panel ➤ Administrative Tools ➤ Services).

Understanding *config.ini* Parameters

The following table describes the *config.ini* parameters.

Parameter Name	Description	Default
ACODE	The value used to authenticate Autodesk OnSite Enterprise when it starts. Enter the code exactly as you received it from Autodesk.	None
DownLoadDir	The name of the root directory from which files are downloaded from Autodesk OnSite Enterprise to the mobile device. Files also are uploaded to this directory.	The staging-directory path-name specified during installation.
MaxIdleBeforeClose	The interval in minutes to wait before closing an idle independent connection (0 = never close).	30
MaxPoolSize	The maximum number (greater than or equal to one) of independent connections to Autodesk MapGuide Servers. A maximum value of 32 is recommended. For more information about setting this value, see "Setting Autodesk Onsite Enterprise options," on page 86.	2
SerialNumber	The value used to authenticate the product on installation. Enter the serial number exactly as it appears on the Autodesk OnSite Enterprise CD.	None

Understanding *MapRequest.ini* Parameters

The *MapRequest.ini* file contains default values used by an ADD_MWF request, which is an HTTP request that converts an MWF file to an OSD file, as described in "Using Requests to Convert Files," on page 28.

Usually, you can use the default values in the *MapRequest.ini* file, so you don't change the file. If you need to make changes, use a text editor.

The following table includes default values for the *MapRequest.ini* parameters.

Parameter Name	Description	Default
OutputColorModel	The color model to use to color objects in the OSD file. Specify either ACI (AutoCAD Color Index) or RGB (Red, Green, Blue)	ACI
PdaHeight	The default height, in pixels, within which you can pan on a mobile device.	480
PdaWidth	The default width, in pixels, within which you can pan on a mobile device.	480
Timeout	The length of time in seconds that Autodesk OnSite Enterprise waits for a request to complete before aborting the request.	60

Configuring the OSM Converter Service

Installing Autodesk OnSite Enterprise adds the OSM converter service to your computer. When the Autodesk OnSite Enterprise OSM converter service detects an OSM file in a user subdirectory of the staging directory, it creates an RML file based on the OSM file, and keeps the OSM file. After the conversion, the OSM and RML files reside in the same subdirectory.

You configure the OSM converter service to start automatically or manually through Control Panel's Services extension (choose Start ➤ Settings ➤ Control Panel ➤ Administrative Tools ➤ Services). By default, the OSM converter service starts automatically.

Using Autodesk OnSite Enterprise with Autodesk MapGuide LiteView

A port-number conflict can occur if you're running Autodesk OnSite Enterprise *and* Autodesk MapGuide LiteView under two different instances of Apache Tomcat. To resolve a port conflict, change the Autodesk OnSite Enterprise Http10Connector, Ajp12Connector, and Ajp13Connector port number.

Note If you are running Autodesk OnSite Enterprise and Autodesk MapGuide LiteView under the same instance of Macromedia JRun, deploy them as separate servers with different port numbers.

To change Autodesk Onsite Enterprise's Connector port numbers

1. Open the file *server.xml* in a text editor. Its default location is:

   C:\Program Files\Autodesk\OnSiteEnterprise2.5\jakarta-tomcat3.3.1a\conf\server.xml
2. Find the entry:

   <Http10Connector port="8080" secure="false" maxThreads="100" maxSpareThreads="50" minSpareThreads="10" />
3. Change the default port number from 8080 to any available port number.
4. Find the entry:

   <Ajp12Connector port="8007" />
5. Change the default port number from 8007 to any available port number.
6. Find the entry:

   <Ajp13Connector port="8009" />
7. Change the default port number from 8009 to any available port number.
8. Save and close *server.xml* and restart the Autodesk MapGuide OnSite Enterprise application server.

   Note If you are unsure about port usage, use the command `netstat -a` to display all connections and listening ports in use on a computer.

Converting Files

4

Autodesk OnSite Enterprise converts DWG, DXF, and MWF files to the OSD format when it receives HTTP requests for a file conversion. A conversion request typically comes from an enterprise application, such as a work-order management system. Autodesk OnSite Enterprise converts OSM files to RML format after detecting that they have been placed on the hard drive. You can use the Markup Publisher sample application to convert RML files to the MWF format.

In this chapter

Using Requests to Convert Files

You can create a Web application, such as an HTTP form, and use GET or POST methods to issue requests to perform the following file conversions:

- From DWG or DXF to OSD and HTM files

  The geometry data is converted to OSD. Hyperlink data, other than hyperlinks to other DWG files, is converted to HTM format. Hyperlinks to other DWG files are ignored.

- From MWF to a mapset of OSD and HTM files

  The MWF is converted to OSD format, the linked maps are converted to OSD files, and non-map linking information is converted to HTM format. The non-map linking information is added to a *MapSet.htm* file if one exists; if not, one is created in the user subdirectory of the staging directory.

After conversion, Autodesk OnSite Enterprise places the files in a user-specific subdirectory of the staging directory. Then, by using third-party synchronization software, an application can download the OSD files from the server to a mobile device that runs Autodesk OnSite View.

HTTP requests can also be sent to Autodesk OnSite Enterprise to delete all output files related to a DWG, DXF, or MWF request from a user subdirectory.

You can perform the following additional file conversions on the server that runs Autodesk OnSite Enterprise:

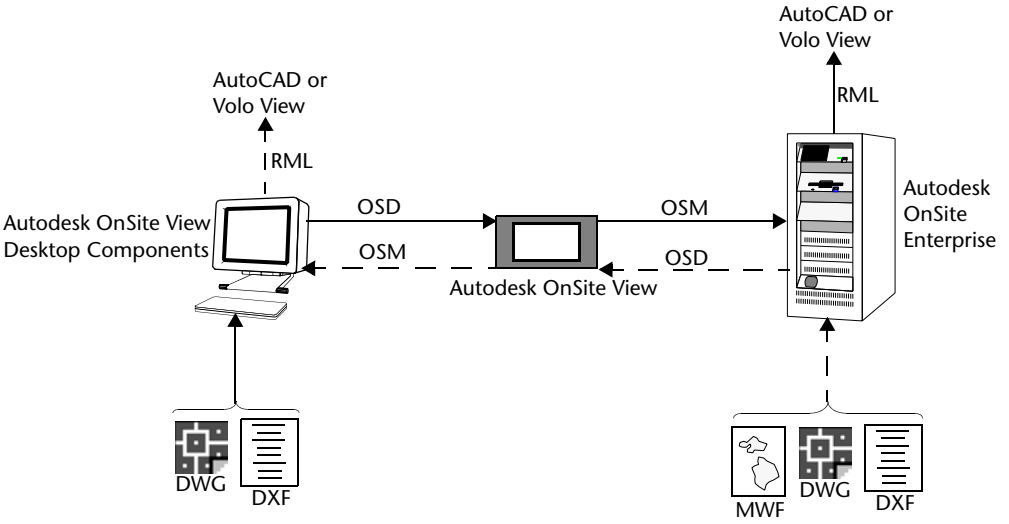
- From OSM to RML files

  An application uploads OSM files from Autodesk OnSite View to the staging directory by using third-party synchronization software. The Autodesk OnSite Enterprise OSM conversion service converts the OSM files to RML format. The OSM files can be located anywhere on the Autodesk OnSite Enterprise server's hard drive.

- From RML to MWF files

  You run the Markup Publisher sample application to convert RML files to MWF format.

The following diagram shows the types of files that Autodesk OnSite View and Autodesk OnSite Enterprise convert, and the resulting output files.



You also can convert RML to MWF (not shown in this diagram), by using the Markup Publisher sample application.

Converting DWG and DXF Files to OSD

When Autodesk OnSite Enterprise receives an ADD_DWG request that specifies the full path to a DWG or DXF file, it converts the DWG or DXF file to OSD format and places the output files in the user directory.

Formatting an ADD_DWG Request

Autodesk OnSite Enterprise converts DWG files to OSD format upon receiving a request in the following format:

```
<prefix>?
   REQUEST=ADD_DWG
   &USERID=user name
   &DWGFILE=file name
```

<*prefix*> represents the URL of the Autodesk OnSite Enterprise servlet:

http://<*webserver_name*>:<*port#*>/<*context_path*>/servlet/servletRelease

<*webserver_name*> is the name of the Web server under which Autodesk OnSite Enterprise is running, followed by a colon (:) and a port number. <*context_path*> may or may not appear, depending on your application-server configuration. The question mark (?) at the end of the prefix separates the servlet address from the request parameters. For the default Autodesk OnSite

Enterprise installation, which requests the OnSiteEnterprise servlet from Apache Tomcat, the URL (for a local host) is:

http://localhost:8080/onsite2.5/servlet/servletRelease

This URL is used in many examples in this document. When making your own requests, change <*webserver_name*> and <*context_path*> to match your configuration.

The following table describes the elements of the URL prefix for default Autodesk OnSite Enterprise installation.

Element	Description
http://localhost	Web-server name
:8080	Port number
/onsite2.5	Context path
/servlet/servletRelease	Servlet mapping, as specified in *web.xml*

Note If you're using the JRun application server, omit <*context_path*>.

Parameters of an ADD_DWG Request

The following table describes the parameters, all of which are required, for the ADD_DWG request.

Parameter	Description	Content
REQUEST	The name of the request	"ADD_DWG"
USERID	A case-insensitive user name	255 or fewer alphanumeric characters, including hyphens (-) and underscores (_)
DWGFILE	The path and file name of the source DWG or DXF file	A full path with valid file name

DWGFILE

You must specify the full path of the DWG file in an ADD_DWG request. You can use a local or Universal Naming Convention (UNC) pathname.

If you convert DWG or DXF files of the same base name, located in different directories, to OSD format, the last file that you convert overwrites the existing OSD file of the same name.

Note An ADD_DWG request will fail to convert a password-protected DWG file and record a message in the error log.

Example of an ADD_DWG Request

The following example shows an ADD_DWG request:

```
http://localhost:8080/onsite2.5/servlet/servletRelease?
   REQUEST=ADD_DWG
   &USERID=robert
   &DWGFILE=d:\bankone\headquarters\electrical.dwg
```

In this example, *http://localhost:8080/onsite2.5/servlet/servletRelease* is the request to Apache Tomcat for the Autodesk OnSite Enterprise servlet, *robert* is the user name, and *d:\bankone\headquarters\electrical.dwg* is the full path and name of the DWG file to be converted.

The resulting OSD, *electrical.osd*, is placed in *<downloaddir>\robert\dwg*.

<downloaddir> represents the directory specified by the DownLoadDir parameter in *config.ini* (see "Setting DownLoadDir in config.ini and the Registry" on page 21).

Output of an ADD_DWG Request

Converting a DWG or DXF file to OSD format produces the following files:

- An OSD file containing the vector data
- An HTM file containing the hyperlinks

If the converted DWG or DXF does not contain hyperlinks, Autodesk OnSite Enterprise creates an empty HTM file.

The following table describes the output files of an ADD_DWG request for the example ADD_DWG request in the preceding section.

Base File Name	File Extension—Contents	Example Output
electrical	OSD—DWG vector data	electrical.osd
electrical	HTM—Hyperlinks in DWG files to objects other than hyperlinks to DWG files	electrical.htm

The HTM file consists of links, if any exist, followed by paragraph tags. For example:

http://XYzServer/ServiceRecords/manhole153.htm<P>

The links cannot reference DWG files. Duplicate links in the DWG file are ignored, resulting in a single link in the HTM. The HTM file is a listing of hyperlink targets, which the user needs to make available on the mobile device to work with the OSD.

The output files of the ADD_DWG request are placed in the user subdirectory. See "Naming the Output of ADD_DWG," on page 43. After converting files to OSD format, you can synchronize the files between the server and mobile device. See "Using OSM Converter Services" on page 49.

Converting MWF Files to OSD

To convert MWF files to OSD format, Autodesk OnSite Enterprise must be connected to Autodesk MapGuide Server, have access to the MWFs to be converted, and be authorized to make requests of the Autodesk MapGuide Server. You issue an ADD_MWF request to Autodesk OnSite Enterprise to convert the MWF files to OSD format.

Note You cannot convert an MWF that has password-protected layers or access keys associated with it.

Autodesk OnSite Enterprise finds the MWF file by using the URL value of the LAYERS parameter, converts the file, and places output files in the user subdirectory.

Formatting an ADD_MWF Request

Autodesk OnSite Enterprise converts MWF files to OSD format upon receiving a request in the following format:

```
<prefix>?
   REQUEST=ADD_MWF
   &USERID=user name
   &NAME=name of OSD file
   &LAYERS=URL, recognized by Autodesk MapGuide, for an MWF
   &LAT=latitude of center of view of map
   &LON=longitude of center of view of map
   &SCALE=scale of the base-level map
```

<*prefix*> is the URL that requests the Autodesk OnSite Enterprise servlet. For more information, see "Formatting an ADD_DWG Request" on page 29.

Parameters of an ADD_MWF Request

The *MapRequest.ini* file parameters specify the default values for the following ADD_MWF parameters: OUTPUTCOLORMODEL, PDAHEIGHT, PDAWIDTH, and TIMEOUT. The table in this section describes these and other parameters for the ADD_MWF request.

Note Literal values are shown in quotation marks. Do not include the quotation marks in the request.

ADD_MWF Parameters

Parameter	Description	Content	Required?
REQUEST	The name of the request	"ADD_MWF"	Required
USERID	A case-insensitive user name	255 or fewer alphanumeric characters, including hyphens (-) and underscores (_)	Required
NAME	An arbitrary name for the OSD output of the request, which may or may not be the same as the name of the MWF file to be converted If a mapset of NAME already exists in the user directory, and another ADD_MWF request is made that uses the same NAME, the second request is ignored and a "Bad request" message is triggered.	The base portion of a Windows file name, with no path, drive letter, slashes, server name, extension (*.mwf*), or any of the following characters: \/:*?"<>| (*MyMap1* and *MyMap* are valid names, for example)	Required
LAYERS	The URL of the desired MWF file	A valid URL	Required
LAT	The latitude of the center of the desired MWF view	A number	Required
LON	The longitude of the center of the desired MWF view	A number	Required

ADD_MWF Parameters (*continued*)

Parameter	Description	Content	Required?
SCALE	The scale of the base-level MWF view	A number greater than 0	Required
OUTPUTCOLORMODEL	The color model for objects in the OSD file	"ACI" or "RGB"	Optional Default = ACI
PDAHEIGHT	The height of the screen on the mobile device	Integer between 1 and 2080, inclusive	Optional Default=480
PDAWIDTH	The width of a screen on the mobile device	Integer between 1 and 2080, inclusive	Optional Default=480
TIMEOUT	The interval, in seconds, allowed to complete a request. If the request specifies an invalid TIMEOUT value, Autodesk OnSite Enterprise substitutes a default value of 30 seconds, so the request might succeed.	Positive integer	Optional Default=60

Example of an ADD_MWF Request

The following example shows an ADD_MWF request:

```
http://localhost:8080/onsite2.5/servlet/servletRelease?
   REQUEST=ADD_MWF
   &USERID=johndoe
   &NAME=plan001
   &LAYERS=http://cityplanning1/proposals.mwf
   &LAT=43
   &LON=18
   &SCALE=12000000
   &TIMEOUT=80
```

In this example, *http://localhost:8080/onsite2.5/servlet/servletRelease* is the request for the Autodesk OnSite Enterprise servlet. The request creates a *johndoe* directory, and *http://cityplanning1/proposals.mwf* is the URL for the MWF file that the request converts to OSD. The name of the resulting OSD, *plan001,* is placed in the *johndoe* user directory.

Output of an ADD_MWF Request

Converting an MWF file to OSD format produces a mapset consisting of the following files:

- An OSD file containing the MWF vector data
- Additional OSD files containing linked maps

  Autodesk OnSite Enterprise converts hyperlinks contained in only the requested MWF and ignores chained links. If MWF1 links to MWF2, and MWF2 links to MWF3, for example, and you make a request to convert MWF1, Autodesk OnSite Enterprise converts MWF1 *and* MWF2, but ignores MWF3.
- An HTM file containing hyperlinks in the MWF to non-map data

  The non-map linking information is added to the *MapSet.htm* file if it exists; otherwise, the file is created in the user-specific subdirectory of the staging directory.

The following table describes the output files of the conversion for the example ADD_MWF request in the preceding section.

Sample File Name	Contents	Example
Plan001.osd	MWF vector data	Plan001.osd
MapSet.htm	Hyperlinks in MWF files to non-map objects	MapSet.htm
Plan001!dm!<*n*>.osd where n > 0, n = 1 for the first linked file, n = 2 for the second linked file, and so on	Map to which an object in the MWF links	Plan001!dm!1.osd Plan001!dm!2.osd and so on

The output files of the ADD_MWF request are placed in a user-specific subdirectory of the staging directory. See "Naming the Output of ADD_MWF," on page 43. After converting files to OSD format, you can synchronize the files between the server and mobile device. See "Using OSM Converter Services," on page 49.

Understanding *MapSet.htm*

The *MapSet.htm* file consists of links followed by paragraph tags. For example,

http://XYzServer/ServiceRecords/manhole153.htm<P>

These are links in the MWF that do not reference maps. Duplicate links in the HTM file are ignored. The information in *MapSet.htm* is shared across all mapsets for the USERID in Autodesk OnSite Enterprise. If there are no links in the user's MWF files, the HTM file is blank.

Using Requests to Delete Output Files

You should systematically remove the outdated output files of past ADD_DWG and ADD_MWF to prevent a large number of files from accumulating. Generally, third-party synchronization software does not remove a synchronized file from the user directory.

You can programmatically remove OSD files and associated hyperlink files that you convert from DWG and DXF files by using the REMOVE_DWG request. You can programmatically remove OSD files that you convert from MWF format by using a REMOVE_MWF request. You should remove these output files after synchronizing the files on the server and mobile device.

Removing the Output of ADD_DWG

The REMOVE _DWG request deletes the OSD and HTM files that have a base file name that matches the DWGFILE parameter of the request. Autodesk OnSite Enterprise deletes an OSD and HTM file from the user directory in response to the REMOVE_DWG request.

Formatting a REMOVE_DWG Request

You issue the REMOVE_DWG request in the following format:

```
<prefix>?
   REQUEST=REMOVE_DWG
   &USERID=user name
   &DWGFILE=file name
```

<prefix> is the URL that requests the Autodesk OnSite Enterprise servlet. See "Formatting an ADD_DWG Request" on page 29.

Parameters of a REMOVE_DWG Request

The following table describes the parameters, all of which are required, of a REMOVE_DWG request.

Parameter	Description	Content
REQUEST	The type of request	"REMOVE_DWG"
USERID	A case-insensitive user name	255 or fewer alphanumeric characters, including hyphens (-) and underscores (_)
DWGFILE	The file name of the source DWG or DXF file	A valid Windows file name (use local or Universal Naming Convention (UNC) pathnames)

Example of a REMOVE_DWG Request

The following example shows a REMOVE _DWG request:

```
http://localhost:8080/onsite2.5/servlet/servletRelease?
   REQUEST=REMOVE_DWG
   &USERID=robert
   &DWGFILE=electrical.dwg
```

In this example, *http://localhost:8080/onsite2.5/servlet/servletRelease* is the request to Apache Tomcat for the Autodesk OnSite Enterprise servlet, *robert* is the user name, and *electrical.dwg* is the file name of the DWG whose base file name matches that of the OSD file to be deleted. When the request is completed, the *electrical.osd* and *electrical.htm* files are removed from *<downloaddir>\robert\dwg*.

Removing the Output of ADD_MWF

The REMOVE_MWF request deletes all output files of ADD_MWF request except *MapSet.htm*, because this file has hyperlink information for all mapsets.

Formatting a REMOVE_MWF Request

You issue the REMOVE_MWF request in the following format:

```
<prefix>?
  REQUEST=REMOVE_MWF
  &USERID=user name
  &NAME=mapset name
```

<*prefix*> is the URL that requests the Autodesk OnSite Enterprise servlet. See "Formatting an ADD_DWG Request" on page 29.

Parameters of a REMOVE_MWF Request

The following table describes the parameters, all of which are required, of the REMOVE_MWF request.

Parameter	Description	Content
REQUEST	The type of request	"REMOVE_MWF"
USERID	A case-insensitive user name	255 or fewer alphanumeric characters, including hyphens (-), and underscores (_)
NAME	The name of the mapset to be removed	The base portion of a Windows file name, with no path, drive letter, slashes, server name, or extension.

Example of a REMOVE_MWF Request

The following example shows a REMOVE_MWF request:

```
http://localhost:8080/onsite2.5/servlet/servletRelease?
   REQUEST=REMOVE_MWF
   &USERID=johndoe
   &NAME=plan001
```

In this example, *http://localhost:8080/onsite2.5/servlet/servletRelease* is the request to Apache Tomcat for the Autodesk OnSite Enterprise servlet, *johndoe* is the user name, and *plan001* is the mapset name of one or more OSD files to be deleted from the user directory or its subdirectories.

Converting OSM Files to RML

Autodesk OnSite View users make design changes—*markups*—that are saved in OnSite View Markup (OSM) files on the mobile device. To insert the markups into original DWGs for review and sharing with others, you convert the OSM files to the Autodesk XML-based Redline Markup Language (RML).

RML files can be read by AutoCAD 2000i and later, Volo View, and other applications. You can insert markups saved in RML format into the original drawing files.

Understanding the Conversion Process

Autodesk OnSite Enterprise converts OSM files to RML format after the files have been placed on the server. How the conversion process works depends on the application design and the configuration of the synchronization software. Here's one scenario:

- An application places the OSM files into the user directory on the mobile device, and runs third-party synchronization software.
- The third-party synchronization software uploads OSM files to the server and places them in the *markups* subdirectory of the user directory on the server.
- The Autodesk OnSite Enterprise OSM converter service detects OSM files in the *markups* directory, and creates a version of the file in RML format.

The OSM file remains intact and in the same directory as the RML file after it is created. The RML file is placed in the *markups* subdirectory with the OSM file.

Note To change the staging directory for the output of OSM file conversions, see "Setting DownLoadDir in config.ini and the Registry" on page 21.

Understanding File Placement and Naming

Autodesk OnSite Enterprise places the output files of ADD_DWG and ADD_MWF requests in the user subdirectory of the staging directory and its subdirectories. The output files of requests include OSDs that are converted from DWG, DXF, or MWF format by the requests. The placement of the files in these directories stages them for synchronization between the server and the mobile device running Autodesk OnSite View.

An Autodesk OnSite Enterprise server has multiple user directories, which you name after Autodesk OnSite View users. The USERID parameter of a ADD_DWG or ADD_MWF request specifies the name of the user subdirectory of the staging directory.

Creating User Directories

The staging directory is created when you install Autodesk OnSite Enterprise, and you set the DownLoadDir parameter in the *config.ini* file to match it. Autodesk OnSite Enterprise creates user subdirectories of the staging directory the first time you issue an HTTP request to convert a file to OSD. Autodesk OnSite Enterprise names the subdirectories as follows:

- A new subdirectory is specified by the request's user-name parameter.
- Sub-subdirectories are named *DWG* or *MWF,* depending on the type of file you are converting to OSD.

If the user name passed to an ADD_DWG request is "robert", for example, the following directory is created in the *robert* user directory:

<downloaddir>/robert/DWG

If the user name passed to an ADD_MWF request is "johndoe", the following directory is created in the *johndoe* user directory:

<downloaddir>/johndoe/MWF

In the preceding examples:

- *<downloaddir>* is the name of the staging directory specified by the DownLoadDir parameter value in the Autodesk OnSite Enterprise *config.ini* file.
- *robert* is the user name in an ADD_DWG request, which creates the user directory named *robert*.
- *johndoe* is the user name in an ADD_MWF request, which creates the user directory named *johndoe*.

When you issue another request using a different user name, another user directory bearing that user name is created.

Naming the Output of ADD_DWG

After converting from a DWG or DXF file to an OSD and HTM file, Autodesk OnSite Enterprise places files in the DWG subdirectory of the user directory. The file is given the base file name of the DWG or DXF file. If the request specifies conversion of *floorplan.dwg*, for example, Autodesk OnSite Enterprise creates the following files:

<downloaddir>\robert\dwg\floorplan.osd
<downloaddir>\robert\dwg\floorplan.htm

Naming the Output of ADD_MWF

After conversion from MWF to a mapset of OSD and HTM files, the OSD file is placed in the MWF subdirectory of the user directory. The file is given the base file name specified by the NAME parameter of the request. For example, the following request specifies a mapset name, *chicago*:

```
http://localhost:8080/onsite2.5/servlet/servletRelease?
   REQUEST=ADD_MWF
   &USERID=johndoe
   &NAME=chicago
   &LAYERS=http://windycity/lakefront.mwf
   &LAT=41.8
   &LON=-87.5
   &SCALE=12000000
   &TIMEOUT=80
```

Upon receiving this request, the file that Autodesk OnSite Enterprise creates from MWF vector data is named as follows:

<downloaddir>\johndoe\mwf\chicago.osd

Linked Non-Map Data

If a *MapSet.htm* file does not already exist in the *johndoe* subdirectory of the staging directory, issuing an ADD_MWF request specifying "johndoe" creates the following file:

<downloaddir>\johndoe\MapSet.htm

If there are hyperlinks to non-MWFs in the MWF, these links are added to *MapSet.htm*; otherwise, the file remains empty. The REMOVE_MWF request removes listed links belonging to an MWF that is removed, but does not remove *MapSet.htm* itself, so the file may accumulate links as more ADD_MWF requests are made.

Linked MWFs

If there are other MWFs that the converted MWF links to, additional OSD files containing one level of linked MWFs are placed in the MWF subdirectory. Links beyond the first level are not captured. The files are placed in the user subdirectory of the staging directory. The NAME parameter of the request specifies the file name of the linked MWF to which the following suffix is added:

!dm!n

where *n* is an integer greater than 0. *n* is 1 for the first linked file, 2 for the second linked file, and so on.

When converting an MWF file to OSD format, the output files might be named as follows:

<downloaddir>\johndoe\MapSet.htm
<downloaddir>\johndoe\mwf\chicago.osd
<downloaddir>\johndoe\mwf\chicago!dm!1.osd
<downloaddir>\johndoe\mwf\chicago!dm!2.osd

OSM Upload Directory

When OSM files are uploaded from Autodesk OnSite View to Autodesk OnSite Enterprise, they should be placed in a *\DWG\markups* or *\MWF\markups* (depending on the type of file that was marked up) subdirectory of the user directory. The OSM file that is a markup of a DWG or DXF, for example, should be placed in a *\DWG\markups* subdirectory as shown by the following example:

<downloaddir>\robert\DWG\markups\shed.osm

Converting RML Files to MWF By Using VB

When you install Autodesk OnSite Enterprise, a sample application written in Microsoft Visual Basic® (VB) called Autodesk Markup Publisher is installed with Autodesk OnSite Enterprise. Autodesk Markup Publisher converts RML files to MWF format. The RML files must have been created from an MWF.

Autodesk Markup Publisher consists primarily of the following files:

- *OSVMarkupPub.vbp*, a Microsoft Visual Basic 6 project
- *OSVMarkupPub.exe*, the executable
- The VB source code, *frmMain.frm*

  You can use Markup Publisher source code as a model for writing custom Autodesk OnSite Enterprise file conversion programs.
- *UsaMap.rml* and *UsaMapStatic.mwf*, a sample RML and the MWF on which it is based

By default, the installation program places Markup Publisher files in *C:\Program Files\Autodesk\OnSiteEnterprise2.5\Samples\Markup Publisher.*

Requirements for Using Markup Publisher

To use Markup Publisher, you must have the Autodesk MapGuide Viewer ActiveX Control *Release 6.3* or *6.5* and the Microsoft XML library installed on your computer. The XML library, *msxml.dll* in the *C:\WINNT\System32* directory, is freely available from Microsoft if you do not have it.

Before attempting to convert the *UsaMap.rml* to MWF format, open *UsaMap.rml* in a text editor, and verify the path of *UsaMapStatic.mwf* on line 4 matches the path of *UsaMapStatic.mwf* on your computer. By default, this path is:
C:\Program Files\Autodesk\OnSiteEnterprise2.5\Samples\Markup Publisher\UsaMapStatic.mwf. For example:

```
<redline:BaseDocument requiredSystem="AcDb_v_001"
    nameSpace="acdb" topNode="Drawing">
    "C:\Program Files\Autodesk\OnSiteEnterprise2.5\
        Samples\Markup Publisher\UsaMapStatic.mwf"
</redline:BaseDocument>
```

Warning The path to *UsaMapStatic.mwf* must be a double-quoted absolute path, not a URL.

Running Markup Publisher

You can run *OSVMarkupPub.exe* either by using the graphical user interface or from the command line.

To run Markup Publisher by using the graphical user interface

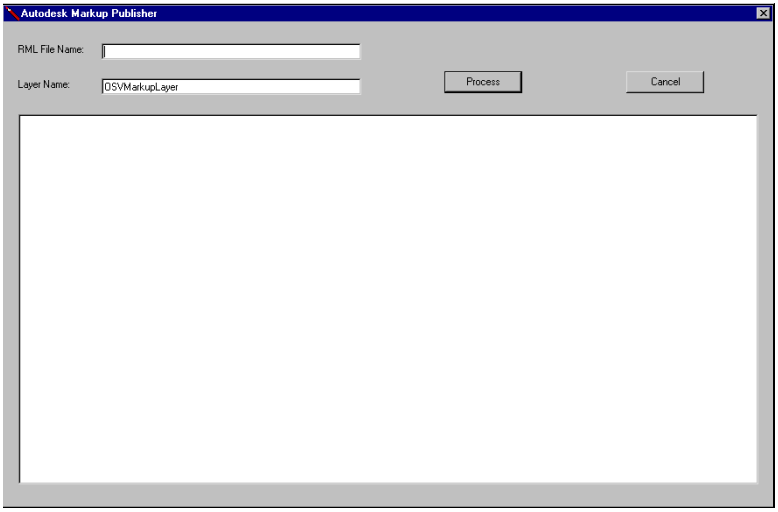
1 Invoke *OSVMarkupPub.exe* without using any arguments.

The following message appears.

- **MarkupFile**—The name of the RML file to use to create the markup layer in the MWF file. Required.
- **LayerName**—The name of the markup layer in the MWF file. The default is OSVMarkupLayer. Optional.

2 Ignore the message, "No command line arguments", and click OK.

The Autodesk Markup Publisher dialog box appears.



3 Enter the RML file name.

Enter the name of the sample file, *USAMap.rml*, for example.

4 Click Process.

USAMap.rml is converted to *RedlineUSAMapStatic.mwf* and placed in the same directory as *USAMap.rml*. Markup Publisher names the output by using the name of the original MWF file with "Redline" prepended to it.

Conversion Tools

Previous sections of this chapter described how Autodesk OnSite Enterprise converts files from various file formats to the OSD format by using HTTP requests and to the RML format by using the OSM converter service. This section describes how to use the command line on the desktop PC to convert files.

A desktop synchronization component that works as a converter with Microsoft ActiveSync is installed on the desktop PC when you install Autodesk OnSite View. This component converts DWG and DXF files to OSD format when you use Microsoft ActiveSync to synchronize files from the PC desktop to the mobile device running Autodesk OnSite View. Conversely, this component converts OSM files to RML format when they are synchronized from the mobile device to the PC.

An Autodesk OnSite Enterprise installation includes a command-line utility named OSVConvert that performs the following tasks on the PC desktop:

- Converts DWG and DXF files to OSD format
- Converts OSM files to RML format

OSVConvert does not use ActiveSync. You can convert a batch of files by using a single OSVConvert command.

Using OSVConvert

By default, OSVConvert (*OSVConvert.exe*) is located in *C:\Program Files\Autodesk\OnSiteEnterprise2.5\Tools\OSE-OSV*, which you can add to your path. Use the following syntax to enter conversion commands at a command prompt (choose Start ➤ Programs ➤ Accessories ➤ Command Prompt):

```
> OSVConvert [/O] [/Q] <inputfile1> [<inputfile2>...]
```

`/O`

Causes the utility to overwrite existing files without asking for confirmation.

`/Q`

Suppresses informational messages during file conversion.

`<inputfileN>`

Names the file(s) to convert. Separate multiple filenames with spaces. Surround a filename that contains spaces with quotation marks.

If you omit the /O parameter, OSVConvert asks you confirm that you want to overwrite files with the same name as the input file.

If you omit the /Q parameter, OSVConvert displays informational messages as it converts each file. For example:

Overwriting 'C:\My Documents\DRAWINGS\colorwh.osd'... done.

Overwriting 'C:\My Documents\DRAWINGS\COWLING4.osd'... done.

Converting 'C:\My Documents\DRAWINGS\COWLING4MDT.osd'... done.

Required Files

If OSVConvert cannot access the line types, AutoLISP code, and shapes included in the DWG, it cannot correctly convert the DWG to OSD format. You must place all files associated with the DWG, such as LIN, LSP, and SHX files, in the directory along with the DWG to be converted.

OSVConvert Examples

The following example shows the command to convert DWGs to OSD format:

```
> OSVConvert co*.dwg
```

The example assumes the files are in your working directory and have a base file name beginning with "co". As shown here, you can use the asterisk (*) wildcard character with OSVConvert to convert all files with names beginning with "co". If you use the asterisk wildcard and /Q is omitted, OSVConvert displays the actual name of each file as it is converted.

The following example shows the command to convert *Warehouse.dwg* to OSD format:

```
> OSVConvert C:\Warehouse.dwg
```

The following example shows the command to convert multiple DWGs with a single command:

```
> OSVConvert C:\Floor*.dwg "D:\Kansas City\PlazaMap.dwg"
```

Use quotation marks to specify a file name or path that contains spaces, such as:

"D:\Kansas City\PlazaMap.dwg"

OSVConvert supports the UNC naming convention.

Using OSM Converter Services

In the context of Autodesk OnSite View, synchronizing files is a software process, not supplied by Autodesk, that compares files on a desktop PC or on a Autodesk OnSite Enterprise server to those on a mobile device, and makes them identical in content and version. Synchronization occurs either at the time you first upload or download the applications or files, or when third-party synchronization software, such as Synchrologic, Microsoft Mobile Information Server, or AvantGo, is invoked to compare the file content and copy the latest version of each item to both locations. The third-party synchronization software provides HTTPS support.

Users of Autodesk OnSite View synchronize files between the mobile device and the PC desktop by using Microsoft ActiveSync.

Using Synchronization Software

The synchronization software synchronizes files between the server and the mobile device. The Autodesk OnSite Enterprise staging directory can be linked with the appropriate Autodesk OnSite View directory during configuration of the synchronization software, so synchronized files are placed in the proper locations for finding them on the mobile device, or for converting them to other file formats on the server.

Uploading and Downloading Files

A scenario for uploading files was described previously; see "Understanding the Conversion Process," on page 41. To download files from the server to the mobile device, the synchronization software is invoked.

The server-side user directory generally is linked with the appropriate client-side directory in the configuration of the synchronization software.

The OSD files from the server generally are placed on the mobile device in directories specified during configuration of the synchronization software.

The following example shows how OSD and OSM files might be structured after downloading to the mobile device:

C:\MyDocuments\OnSite\myserver\mwf\chicago.osd

C:\MyDocuments\OnSite\myserver\mwf\chicago.osm

C:\MyDocuments\OnSite\myserver\dwg\electrical.osm

This example assumes that *MyDocuments* is the staging directory, and *myserver* is the name of the server that is synchronized with the contents of this directory.

Geometry Mapping

5

This chapter describes how Autodesk OnSite View and Autodesk OnSite Enterprise map geometry that is converted from DWG, DXF, and MWF formats to OSD format.

In this chapter

DWG to OSD Geometry Mapping

DWG or DXF files that you convert to OSD format closely resemble the original DWG drawings, but they are not identical because of display limitations of mobile devices and feature and geometry mapping from DWG to OSD. The following table lists the mapping of DWG features to OSD objects that cause a difference in the display of a feature or object before and after conversion.

DWG	OSD
Block reference clipping	Not converted
Hyperlink	Hyperlink (but only the first hyperlink per object is converted)
Line styles and hatches	A set of vectors
Line weight = 1 pixel	Line weight
Line weight > 1 pixel	Not converted
Object Enabler (a utility for using enhanced objects from AutoCAD Architectural Desktop, AutoCAD Land Development Desktop, and Autodesk Mechanical Desktop)	Supported
Perspective view	Not converted
Plot style	Not converted
Raster image	Not converted
Text using a shape font	A set of vectors
TrueType text	Text in Arial font

DWG	OSD
Viewpoint front and back clipping	Not converted
XLine and ray	Line, clipped to the extent of the drawing
Xref	Not converted (resolved if available)

Autodesk OnSite Enterprise converts DWG geometry in model space to OSD format, and does not convert paper space layouts to OSD.

MWF to OSD Geometry Mapping

Autodesk OnSite Enterprise converts all geometry of an MWF to OSD format, and keeps major features, such as lines and polylines, intact. The MWF files that you convert to OSD closely resemble the original drawings, but they are not identical because of display limitations of mobile devices and the way that features and geometry are mapped from MWF to OSD.

The following table describes the conversion of MWF layers to OSD layers.

MWF Layer	OSD Layer
Autodesk GIS Design Server (formerly Vision Theme)	One or more primitives
Text	Text primitives, with all fonts converted to Arial
Polygon	Polygon or polypolygon primitives
Polyline	Polyline or polypolyline primitives
Raster layer	24-bit RGB Windows DIB (device independent bitmap)
AutoCAD DWG	One or more primitives
Point layer	One or more primitives

Other differences include:

- An ellipse in an MWF file is converted to either an ellipse or a polygon in the OSD drawing.
- An ellipse contained in a symbol with non-zero rotation is converted to a polygon. The line type and style of the perimeter edge pen is retained in the OSD file.
- A filled object in an MWF is converted to filled objects in the OSD drawing if one of the following fill patterns is used: Horizontal, Vertical, Cross, Diagonal45, Diagonal135, and Diagonal Cross.

  The following fill patterns do not convert unless the MWF contains a DWG layer:

  - AutoCAD/Autodesk Map ANSI fill patterns
  - AutoCAD/Autodesk Map predefined fill patterns

  Objects filled with bitonal (raster) fill patterns in the MWF are not converted to filled objects in the OSD.

Handling MWF Properties in OSD Files

The following table describes a general map property, projection information, and several map layer properties in an MWF file that are reflected in the converted OSD File. Other MWF properties not reflected in the OSD file are not listed.

MWF Property	Reflected in OSD?	Description
Projection information	Yes	Becomes OGIS WKT
Visibility	Yes	Used for default visible state
Selectability	Yes	Used for base drawing objects
Visible by scale	Yes	Used for scale dependency
Priority	No	Ignored
Show in legend	No	Ignored

MWF Property	Reflected in OSD?	Description
Layer name	Yes	Used in layer list
Color	Yes	Based on ACI or RGB
Legend label	No	Ignored

Handling Projection Information

Autodesk OnSite View uses the Open GIS Consortium (OGC) Well-Known Text (WKT) standard to describe projection information. A WKT string with projection information in the OSD file format describes the projection that existed in the source file. You can see the name of the projection, if one exists for an OSD file, by looking in the Autodesk OnSite View About dialog box. For more information, see the *Autodesk OnSite View Developer's Guide*.

Error Messages

6

This chapter describes how Autodesk OnSite Enterprise errors are logged and provides a list of error messages.

In this chapter

- Error handling
- Listing of error messages

Error Handling

When Autodesk OnSite Enterprise is unable to respond to a request, it writes an error message to a log file. This message provides you with information about the source and nature of the error. Autodesk OnSite Enterprise may encounter errors while:

- Initializing the servlet (which generates an Internal Servlet Error Exception and prevents the servlet from running)
- Finding or opening a MWF file
- Searching for an SDF file that's required to draw a layer (which causes request processing to fail)
- Invoking the servlet with no parameters (which is handled as an invalid request)

The Apache Tomcat logs can include entries from the servlet engine itself, and an application can add additional entries. There are separate servlet logs for normal events and for error conditions.

When an error occurs, Autodesk OnSite Enterprise identifies the source of the error, formats a descriptive error message according to NCSA standards, and returns it to the originating HTTP client (usually a browser), along with a standard error code (400, for example). In the default installation, the error is logged to a file in the following directory:

C:\Program Files\Autodesk\OnSiteEnterprise2.5\jakarta-tomcat-3.3.1a\logs

Understanding Error Message Categories

The error message has three parts, the HttpStatus code, the elapsed time for servicing the request, and the descriptive message. The HttpStatus codes are listed in the following table.

Code	Message	Description
200	Success	The action was successfully received, understood, and accepted.
400	Client Error	The request is invalid or contains invalid syntax; for example, misspelling of a required URL parameter or a missing parameter.
500	Server Error	The servlet could not fulfill an apparently valid request; for example, Autodesk OnSite Enterprise did not find the *config.ini* or *MapRequest.ini* files, or the directory specified by DownLoadDir is invalid.

Error codes 400 and 500 are standard HTTP error codes. A 500 error generally is Web-server or Autodesk OnSite Enterprise configuration error, such as a missing *config.ini* or *MapRequest.ini* parameter. 500 errors generally require administrative action. Some 500 errors are caused by data-related problems, such as missing MWF files.

Generally, a 400 error is caused by an improperly formed request that, for example, is missing a required parameter or has an out-of-range value. All other errors are 500 errors. For any other value that appears in this field consult the list of errors in Hypertext Transfer protocol document RFC 2068 at
http://www.faqs.org/rfcs/rfc2068.html.

Listing of Error Messages

The following table lists the possible error messages and their corresponding codes.

Error Messages

Message Format	Description	Code
config.ini not found	The *config.ini* file is missing. Its default location is *C:\Program Files\Autodesk\ OnSiteEnterprise2.5\OnSite\WEB-INF\IniFile*. If *config.ini* exists in the proper directory but you still get this error message, open *web.xml* and set the <param-name>IniFile</param-name> tag as described in "Configuring Macromedia JRun 3.0.1" on page 68.	500
MapRequest.ini file not found	The file, which should be in the same directory as *config.ini*, is not found.	500
Authentication Failure	Servlet can only access resources on Autodesk MapGuide Servers that are not password protected.	500
Duplicate Mapset	The mapset is already in the servlet database for this user.	500
Invalid download directory	This directory may not exist.	500
Invalid parameter <Parameter Name>: <Parameter Value>	Parameter Value is not valid.	400
Map projection not supported for <mwfURL>	Only map projections served by Autodesk MapGuide Server 6.3 or 6.5 are supported.	500
Missing parameter <Parameter Name>	Parameter is missing.	400
The map you are trying to view is being processed by Release 4.0 or earlier of Autodesk MapGuide Server.	Autodesk OnSite Enterprise requires Autodesk MapGuide Server Release 6.0 or higher.	500

Error Messages (*continued*)

Message Format	Description	Code
Unable to complete request within the allotted time.	The request could not be completed within the time specified by the TIMEOUT parameter.	500
Unable to open the <mwfURL>	MWF not available. Host server may be down, or its URL may not be spelled correctly.	500
User Files Busy	Another request is being processed for this user. For a given user, simultaneous requests are not supported.	500
The drawing name exceeds the maximum length.	The DWG filename given for an ADD_DWG or REMOVE_DWG request is longer than the maximum 260 characters allowed by Windows for a file name.	400
The drawing name is empty.	The DWG filename supplied in an ADD_DWG or REMOVE_DWG request contains no characters.	400
The drawing was not found.	Autodesk OnSite Enterprise did not find a DWG file matching the file name supplied for an ADD_DWG request.	400
The file does not exist.	Autodesk OnSite Enterprise did not find in the user staging directory an output (converted) file matching the DWG file name supplied in a REMOVE_DWG request.	400
Failed converting drawing	An error occurred during the processing of an ADD_DWG request while a DWG file was being converted to an OSD file.	500
Failed creating drawing output directory	An error occurred during the processing of an ADD_DWG request, while Autodesk OnSite Enterprise was creating the DWG subdirectory of the user directory.	500
Failed deleting output file	An error occurred when Autodesk OnSite Enterprise attempted to delete a file.	500

Error Messages (*continued*)

Message Format	Description	Code
A request is already in progress for user <User name>	A file, indicating a request is in progress, exists in the user directory for the user referenced by a request. This typically happens if the server crashed earlier while processing a request.	500
Conversion failed because <dwg_file> is password protected	An ADD_DWG request is unable to convert a password-protected DWG file.	500
Failed creating user directory	An error occurred while the creating a user directory as part of processing an ADD_DWG or ADD_MWF request.	500

Configuring Application Servers

7

This chapter describes how to configure different application servers manually to work with the Autodesk Onsite Enterprise servlet; how to run Apache Tomcat as a Windows service; how to connect Apache Tomcat to IIS; and how to change various settings and options to improve Autodesk Onsite Enterprise performance.

In this chapter

Overview

The Autodesk Onsite Enterprise servlet, named *OnSiteEnterprise*, must be deployed in a servlet container, such as Apache Tomcat or Macromedia JRun.

The Autodesk Onsite Enterprise distribution comes with the Apache Tomcat 3.3.1a server and Java Development Kit (JDK) 1.3.1. As described in "Installing Autodesk OnSite Enterprise" on page 10, Autodesk Onsite Enterprise Setup will, at your option, install and configure a clean copy of Tomcat, or detect and configure an existing copy that an earlier Autodesk Onsite Enterprise (or Autodesk MapGuide LiteView) installation already is using. To migrate to or use a different application server, however, you must configure that server manually after you install Autodesk Onsite Enterprise. To do so, choose the Manual Setup option during Autodesk Onsite Enterprise installation (thus suppressing Tomcat and JDK installation) and configure your server to work with the OnSiteEnterprise servlet by following the instructions in this chapter.

Assumptions

The Tomcat- and JRun-configuration instructions in this chapter assume that you have chosen the "Manual Setup" option during Autodesk Onsite Enterprise installation and that you're using the following folder locations and HTTP ports:

- Autodesk Onsite Enterprise
  C:\Program Files\Autodesk\OnSiteEnterprise2.5 (referred to as *<InstallFolder>* in some instructions)
- Apache Tomcat 3.3.1a
  C:\Jakarta-tomcat3.3.1a (port 8080)
- Apache Tomcat 4.1.24
  C:\jakarta-tomcat-4.1.24 (port 8080)
- Macromedia JRun 4
  C:\JRun4 (port 8000, 8202)
- JDK 1.3
  C:\JDK1.3
- JDK 1.4
  C:\j2sdk1.4.1_02

Configuring Apache Tomcat 3.3.1a

This section describes how to configure Apache Tomcat 3.3.1a and JDK 1.3 with the OnSiteEnterprise servlet, under Tomcat's *webapps* folder or under an existing folder.

Note URLs for Apache Tomcat are case-sensitive.

To configure Apache Tomcat 3.3.1a with the OnSiteEnterprise servlet under the *webapps* folder

1. Copy the *OnSite* folder and its contents from:

   C:\Program Files\Autodesk\OnSiteEnterprise2.5\OnSite

   to:

   C:\Jakarta-tomcat3.3.1a\webapps and rename the folder by appending **onsite2.5** to webapps.

2. Change the name of the copied *OnSite* folder to all lower-case letters.

   The resulting folder structure is:

   C:\Jakarta-tomcat-3.3.1a\webapps\onsite2.5

   index.htm
   WEB-INF
   WEB-INF\IniFile
   WEB-INF\lib
   WEB-INF\web.xml
   WEB-INF\IniFile\config.ini
   WEB-INF\IniFile\MapRequest.ini
   WEB-INF\IniFile\nullWorld.mwf
   WEB-INF\lib\OnSiteServlet.jar

3. In the copied *IniFile* folder, change the *config.ini* file's parameters to:

   ```
   SerialNumber=<Supplied with your CD>
   ACODE=<Supplied by Autodesk>
   DownLoadDir=C:\\Program Files\\Autodesk\\
     OnSiteEnterprise2.5\\StagingDir\\
   MaxPoolSize=2
   MaxIdleBeforeClose=30
   ```

   Note For information about modifying the *config.ini* file, see Chapter 3, "Configuring Autodesk OnSite Enterprise," on page 19.

4. To start Tomcat, open a command (MS-DOS) prompt and type:

- `C:\>cd C:\Jakarta-tomcat3.3.1a`
- `C:\Jakarta-tomcat3.3.1a>SET JAVA_HOME=C:\JDK1.3`
- `C:\Jakarta-tomcat3.3.1a>cd bin`
- `C:\Jakarta-tomcat3.3.1a\bin>tomcat start`

5 To test the configuration, in a browser, visit http://localhost:8080/onsite2.5/index.htm to open the Autodesk Onsite Enterprise test page, and then click the Add MWF button to create a sample OSD file.

To configure Apache Tomcat 3.3.1a with the OnSiteEnterprise servlet under an existing folder

1 Create an XML file named *apps-onsite25.xml* with the following contents:

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<webapps>
  <Context path="/onsite2.5"
    docBase="C:\Program Files\Autodesk\
    OnSiteEnterprise2.5\OnSite"
    debug="0"  reloadable="true">
  </Context>
</webapps>
```

Note Change the value of *docBase* to your Autodesk Onsite Enterprise installation folder, if necessary.

2 Save this file in *C:\Jakarta-tomcat3.3.1a\conf*.

3 Perform steps 3 through 5 of the preceding procedure.

Configuring Apache Tomcat 4.1.24

This section describes how to configure Apache Tomcat 4.1.24 and JDK 1.4 with the OnSiteEnterprise servlet, under Tomcat's *webapps* folder or under an existing folder.

Note URLs for Apache Tomcat are case-sensitive.

In addition to the assumptions given on page 64, the following instructions also assume that:

- The name of the *WEB-INF* folder under the *OnSite* folder is in uppercase letters
- The following servlet-mapping XML elements in the file *C:\jakarta-tomcat-4.1.24\Conf\web.xml* have been uncommented to enable the invoker servlet to invoke the OnSiteEnterprise class:

```
<!--        Delete this line
  <servlet-mapping>
    <servlet-name>invoker</servlet-name>
    <url-pattern>/servlet/*</url-pattern>
  </servlet-mapping>
-->         Delete this line
```

To configure Apache Tomcat 4.1.24 with the OnSiteEnterprise servlet under the *webapps* folder

1. Copy the *OnSite* folder and its contents from:

   C:\Program Files\Autodesk\OnSiteEnterprise2.5\OnSite

   to:

   C:\jakarta-tomcat-4.1.24\webapps and rename the folder by appending **onsite2.5** to webapps.

2. Change the name of the copied *OnSite* folder to all lower-case letters.

   The resulting folder structure is:

   C:\jakarta-tomcat-4.1.24\webapps\onsite2.5

   index.htm
   WEB-INF
   WEB-INF\IniFile
   WEB-INF\lib
   WEB-INF\web.xml
   WEB-INF\IniFile\config.ini
   WEB-INF\IniFile\MapRequest.ini
   WEB-INF\IniFile\nullWorld.mwf
   WEB-INF\lib\OnSiteServlet.jar

3. In the copied *IniFile* folder, change the *config.ini* file's parameters to:

   `SerialNumber=`*<Supplied with your CD>*

   `ACODE=`*<Supplied by Autodesk>*

```
DownLoadDir=C:\\Program Files\\Autodesk\\
  OnSiteEnterprise2.5\\StagingDir\\
MaxPoolSize=2
MaxIdleBeforeClose=30
```

Note For information about modifying the *config.ini* file, see Chapter 3, "Configuring Autodesk OnSite Enterprise," on page 19.

4 To start Tomcat, open a command (MS-DOS) prompt and type:

- `C:\>cd C:\jakarta-tomcat-4.1.24`
- `C:\jakarta-tomcat-4.1.24>SET JAVA_HOME= C:\j2sdk1.4.1_02`
- `C:\jakarta-tomcat-4.1.24>cd bin`
- `C:\jakarta-tomcat-4.1.24\bin>catalina start`

5 To test the configuration, in a browser, visit http://localhost:8080/onsite2.5/index.htm to open the Autodesk Onsite Enterprise test page, and then click the Add MWF button to create a sample OSD file.

To configure Apache Tomcat 4.1.24 with OnSiteEnterprise under an existing folder

1 Create an XML file named *apps-onsite25.xml* with the following contents:

```
<Context path="/onsite2.5"
  docBase="C:\Program Files\Autodesk\
  OnSiteEnterprise2.5\OnSite"
  debug="0" privileged="true">
</Context>
```

Note Change the value of *docBase* to your Autodesk Onsite Enterprise installation folder, if necessary.

2 Save this file in *C:\jakarta-tomcat-4.1.24\webapps*.

3 Perform steps 3 through 5 of the preceding procedure.

Configuring Macromedia JRun 3.0.1

This section describes how to configure Macromedia JRun 3.0.1 with the OnSiteEnterprise servlet.

To configure Macromedia JRun 3.0.1 with the OnSiteEnterprise servlet

1 In Windows Explorer, make two copies of the existing folder *default* located in *JRun\servers*.

Both copies must be located in the folder *servers*, along with the original *default* folder.

2. Rename the first copy to *default_backup*.

   This copy serves only as an emergency backup; it's not part of the Autodesk Onsite Enterprise configuration.

3. Rename the second copy to *OnSiteEnterpriseServer*.

4. Open the file *JRun\lib\jvms.properties* in a text editor, add the following line, and then save and close the file.

   OnSiteEnterpriseServer=C:/Program Files/Allaire/JRun/servers/OnSiteEnterpriseServer

5. Open the file *JRun\servers\OnSiteEnterpriseServer\local.properties* in a text editor, make the following changes, and then save and close the file.

   - Change:

     jrun.server.displayname=JRun Default Server

     to:

     jrun.server.displayname=Autodesk OnSite Enterprise Server

   - Change:

     default-app.rootdir=C:\\Program Files\\Allaire\\JRun\\ servers\\default\\default-app

     to:

     default-app.rootdir=C:\\Program Files\\Allaire\\JRun\\ servers\\OnSiteEnterpriseServer\\default-app

   - Search for the following port names and change their default values to the indicated new values:

Port Name	Default Value	New Value*
control.endpoint.main.port	53000	53050
jcp.endpoint.main.port	51000	51050
web.endpoint.main.port	8100	8150
ejipt.classServer.port	2323	2373
ejipt.homePort	2333	2383
		* or available port

6 Copy all files and subfolders from:

C:\Program Files\Autodesk\OnSiteEnterprise2.5\OnSite.**

to the folder:

C:\Program Files\Allaire\JRun\servers\OnSiteEnterpriseServer\default-app

Note In Windows Explorer, click "Yes to All" in the message box that asks you if you want to replace existing files.

7 Restart *OnSiteEnterpriseServer.*

To test the Macromedia JRun 3.0.1 configuration with the OnSiteEnterprise servlet

1 In a browser, visit http://localhost:8150/index.htm to open the Autodesk Onsite Enterprise test page.

2 Change the value in the Servlet Host field to http://localhost:8150/servlet/servletRelease.

3 Click the Add MWF button to create a sample OSD file.

Note Autodesk Onsite Enterprise usually finds the configuration file *OnSite\WEB-INF\IniFile\config.ini* successfully. In some circumstance, however, it may not be able to find *config.ini* automatically. In this situation, modify the <init-param> entries (shown in italics) in the file *web.xml* as follows:

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<!DOCTYPE web-app PUBLIC "-//Sun Microsystems, Inc.//
  DTD Web Application 2.2//EN"     "http://java.sun.com/j2ee/dtds/
web-app_2_2.dtd">
<web-app>
  <servlet>
    <servlet-name>OnSiteEnterpriseBroker</servlet-name>
    <servlet-class>OnSiteEnterprise</servlet-class>
    <init-param>
      <param-name>IniFile</param-name>
      <param-value>
        C:\Program Files\Allaire\JRun\servers\
          OnSiteEnterpriseServer\default-app\
          WEB-INF\IniFile\config.ini
      </param-value>
    </init-param>
  </servlet>
  <servlet-mapping>
    <servlet-name>OnSiteEnterpriseBroker</servlet-name>
    <url-pattern>/servlet/servletRelease</url-pattern>
  </servlet-mapping>
</web-app>
```

Configuring Macromedia JRun 4.0

This section describes how to configure Macromedia JRun 4.0 with the OnSiteEnterprise servlet.

To configure Macromedia JRun 4.0 with the OnSiteEnterprise servlet

1. Start JRun Management Console (JMC) by visiting http://localhost:8000 in a browser.
2. Log on to JMC by using the username and password that you specified during JRun installation.
3. In JMC, click Create New Server.
4. In the JRun Server Name text box, type *onsite*.
5. Leave the JRun Server Directory text box blank to accept the default server location *C:\JRun4\servers\onsite*.
6. Click Create Server.

   Note These instructions use the port number 8202.

7. In the New Server(s) Created dialog box, click Finish.

   The *onsite* server is created.

   Note For instructions on how to create a new server, see the JRun 4 servlet tutorial in *C:\JRun4\docs\html\Getting_Started_with_JRun\servlettutorial3.html*.

8. Copy the contents of the *OnSite* folder (but not the *OnSite* folder itself) from:

   C:\Program Files\Autodesk\OnSiteEnterprise2.5\OnSite.**

   to:

   C:\JRun4\servers\onsite\default-ear\default-war

   The resulting folder structure will appear as follows:

   C :\JRun4\servers\onsite\default-ear\default-war

   index.htm
   WEB-INF
   WEB-INF\IniFile
   WEB-INF\lib
   WEB-INF\web.xml
   WEB-INF\IniFile\config.ini
   WEB-INF\IniFile\MapRequest.ini
   WEB-INF\IniFile\nullWorld.mwf

WEB-INF\lib\OnSiteServlet.jar

9 Under Available Servers in JMC, click the green arrow to the left of the server name *onsite* to start (or restart) the new server.

To test the Macromedia JRun 4.0 configuration with the OnSiteEnterprise servlet

1 In a browser, visit http://localhost:8102/index.htm to open the Autodesk Onsite Enterprise test page.

2 Change the value in the Servlet Host field to:

http://localhost:8102/servlet/servletRelease.

3 Click the Add MWF button to create a sample OSD file.

Running Apache Tomcat as a Windows Service

If you choose to have Autodesk Onsite Enterprise Setup install or update Apache Tomcat 3.3.1a during Autodesk Onsite Enterprise installation, Setup configures Tomcat to run in a console window. If you prefer to run Tomcat as a Windows service, follow the instructions in this section. Separate procedures are provided for Tomcat 3.3.1a or earlier and for Tomcat 4.0 or 4.1.2.4.

Note Tomcat is a Java-based application and therefore depends on the JVM (Java Virtual Machine). A user can log off the server machine without stopping the Tomcat server if JDK 1.3.1 is running. Earlier releases of the JDK will terminate on log-off, stopping the Tomcat server.

Running Apache Tomcat 3.3.1a or earlier as a Windows service

The following instructions assume that:

- Autodesk Onsite Enterprise is installed in the default folder *C:\Program Files\Autodesk\OnSiteEnterprise2.5* (referred to as <*InstallFolder*> in some instructions)
- JAVA_HOME=<*InstallFolder*>\JDK1.3
- TOMCAT_HOME=<*InstallFolder*>\jakarta-tomcat-3.3.1a
- The Apache Tomcat port for HTTP requests is 8080

Note Documentation for the Tomcat 3.*x* NT service executable, *jk_nt_service.exe*, is available in the HOWTO document "Working with the Jakarta

NT Service" at http://jakarta.apache.org/tomcat/tomcat-3.3-doc/NT-Service-howto.html. If you chose the *Apache Tomcat 3.3.1a* option when you installed Autodesk Onsite Enterprise, then Setup installed this HOWTO locally in *<InstallFolder>\jakarta-tomcat-3.3.1a\webapps\ROOT\doc*.

To configure Apache Tomcat 3.3.1a or earlier to run as a Windows service

1. Open the file *<InstallFolder>\Tools\tomcatAsService\wrapper.properties* in a text editor. The three parameters of interest are:

   The location of TOMCAT_HOME:

   ```
   wrapper.tomcat_home=C:\\Progra~1\\Autodesk\\
     OnSiteEnterprise2.5\\jakarta-tomcat-3.3.1a
   ```

   The location of JAVA_HOME:

   ```
   wrapper.java_home=C:\\Progra~1\\Autodesk\\
     OnSiteEnterprise2.5\\jdk1.3
   ```

   The JVM options:

   ```
   wrapper.jvm.options=-Xrs
   ```

   Note For information about specifying JVM options, see "Setting JVM options" on page 83.

2. If you chose the *Apache Tomcat 3.3.1a* option when you installed Autodesk Onsite Enterprise, then Autodesk Onsite Enterprise Setup created the file *<InstallFolder>\run.bat*. Copy the value of the TOMCAT_OPTS environment variable from *run.bat* to the value of the wrapper.jvm.options parameter in *wrapper.properties*. After copying this value, the JVM-options parameter in *wrapper.properties* will look similar to this line:

   ```
   wrapper.jvm.options=-server -Xrs -Xms511m -Xmx511m
   -XX:+DisableExplicitGC -XX:NewRatio=3 -XX:NewSize=127m
   -XX:MaxNewSize=127m
   ```

3. In *wrapper.properties*, change the *wrapper.tomcat_home* and *wrapper.java_home* pathnames, if necessary. Keep the following rules in mind when setting parameter values:

   - The *wrapper.tomcat_home* pathname can contain no spaces
   - The *wrapper.java_home* pathname can contain no spaces
   - The *wrapper.jvm.options* value must contain the -Xrs option (which, for JDK 1.3.1, tells the JVM not to terminate on log off)

   Note A bug in *jk_nt_service.exe* prohibits spaces in pathnames. Note that the folder *Program Files* has been changed to its DOS-equivalent *Progra~1* in pathnames.

4. Open a command (MS-DOS) prompt and type the following commands:

   - `C:\>cd <InstallFolder>\Tools\tomcatAsService`

- C:\<*InstallFolder*>\Tools\tomcatAsService>runService

Note The *runService* command invokes a batch file that contains the commands *jk_nt_service -I OnSiteEnterprise2.5 -a wrapper.properties* (which installs the OnSiteEnterprise2.5 service) and *jk_nt_service -s OnSiteEnterprise2.5* (which starts this service).

5 To test the configuration, in a browser, visit http://localhost:8080/onsite2.5/index.htm to open the Autodesk Onsite Enterprise test page, and then click the Add MWF button to create a sample OSD file.

6 *Optional*. When Tomcat is running as a service, output messages that normally are sent to a console window are written to log files instead. The following *wrapper.properties* parameters define the output's destinations:

```
wrapper.stdout=$(wrapper.tomcat_home)\logs\jvm.stdout
wrapper.stderr=$(wrapper.tomcat_home)\logs\jvm.stderr
```

The default settings direct standard output to the file *jvm.stdout* and errors to the file *jvm.stderr*, both located in the <*TOMCAT_HOME*>*logs*\ folder. You can change these pathnames if you want to.

To control the OnSiteEnterprise service

1 Choose Start ➤ Settings ➤ Control Panel ➤ Administrative Tools ➤ Services

2 Right-click the OnSiteEnterprise2.5 service and use the shortcut menu to start, stop, pause, resume, or restart the service, or choose Properties to set the service's Startup type.

To remove the OnSiteEnterprise service

- Open a command (MS-DOS) prompt and type the following commands:
  - C:\>cd <*InstallFolder*>\Tools\tomcatAsService
  - C:\<*InstallFolder*>\Tools\tomcatAsService>delService

  Note The *delService* command invokes a batch file that contains the command *jk_nt_service -R OnSiteEnterprise2.5* (which stops and removes the OnSiteEnterprise2.5 service).

Running Apache Tomcat 4.0 or 4.1.2.4 as a Windows Service

The following instructions assume that:

- Apache Tomcat is installed in *C:\jakarta-tomcat-4.1.24*
- JDK 1.4 is installed in *C:\j2sdk1.4.1_02*

- The OnSiteEnterprise servlet is configured to run with this Apache Tomcat installation (by using any of the methods described earlier in this chapter)
- The Apache Tomcat port for HTTP requests is 8080

To configure Apache Tomcat 4.0 or 4.1.2.4 to run as a Windows service

1 In a text editor, create a new file named *tomcat4AsService.bat* in *C:\jakarta-tomcat-4.1.24* that contains the following lines.

Note The Autodesk Onsite Enterprise Setup program installs *<InstallFolder>/Tools/tomcatAsService/runTomcat4AsService.bat*, which contains the following lines.

```
REM Location of JDK 1.4 (root folder)
SET JAVA_HOME=C:\j2sdk1.4.1_02

REM Location of Tomcat 4 (root folder)
SET CATALINA_HOME=C:\jakarta-tomcat-4.1.24

REM JVM options
REM See the "Performance Tuning" section of the Autodesk
REM OnSite Enterprise Administrator's Guide.
REM You can redefine these options based on your
REM machine configuration and needs.
SET CATALINA_OPTS=-server -Xms256m -Xmx256m

%CATALINA_HOME%\bin\tomcat.exe
-install OnSiteEnterprise2.5
%JAVA_HOME%\jre\bin\server\jvm.dll
-Djava.class.path=%CATALINA_HOME%\bin\bootstrap.jar;%JAV
A_HOME%\lib\tools.jar
-Dcatalina.home=%CATALINA_HOME%
%CATALINA_OPTS%
-Xrs
-start org.apache.catalina.startup.BootstrapService
-params start
-stop org.apache.catalina.startup.BootstrapService
-params stop
-out %CATALINA_HOME%\logs\stdout.log
-err %CATALINA_HOME%\logs\stderr.log
```

Note Be sure that the final command—*%CATALINA_HOME%\bin\tomcat.exe* (the Tomcat 4.*x* NT service executable)—and all its options are on

a single line with no breaks. For a description of the options used, see the table following this procedure.

2. Open a command (MS-DOS) prompt and type the following commands:
   - `C:\>cd C:\jakarta-tomcat-4.1.24`
   - `C:\jakarta-tomcat-4.1.24>tomcat4AsService.bat`
3. Choose Start ➤ Settings ➤ Control Panel ➤ Administrative Tools ➤ Services.

   Note that the service OnSiteEnterprise2.5 has been installed but not started.
4. Right-click OnSiteEnterprise2.5 and choose Start from the shortcut menu. Close the Services window after the service's status changes to Started.
5. To test the configuration, in a browser, visit http://localhost:8080/onsite2.5/index.htm to open the Autodesk Onsite Enterprise test page, and then click the Add MWF button to create a sample OSD file.

The following table describes the tomcat.exe options used in step 1. Help for *tomcat.exe* also is available at a command (MS-DOS) prompt: Change to the directory *C:\jakarta-tomcat-4.1.24\bin*, type *tomcat -help*, and then press Enter. (*tomcat.exe* replaces Tomcat 3.*x*'s *jk_nt_service.exe* command.).

***tomcat.exe* options**

Option	Description
%CATALINA_HOME%\bin\tomcat.exe	Invokes the executable.
-install OnSiteEnterprise2.5	The service to install.
%JAVA_HOME%\jre\bin\server\jvm.dll	JVM.dll to use to run tomcat.exe.
-Djava.class.path	Semicolon-separated list of jar files or classes required to run Tomcat. In this case, bootstrap.jar and tools.jar are used.
-Dcatalina.home	Location of Tomcat.
%CATALINA_OPTS%	JVM options such as -Xms256 and -Xmx256.

***tomcat.exe* options**

Option	Description
-Xrs	This JVM option can be specified in %CATALINA_OPTS%, but is specified separately here for emphasis and safety. If this option is missing, Tomcat will halt at logoff.
-start org.apache.catalina.startup.BootstrapService	Tomcat class to invoke when the service is started.
-params start	The parameter value to pass to the -start class when the service is started.
-stop org.apache.catalina.startup.BootstrapService	Tomcat class to invoke when the service is stopped.
-params stop	The parameter value to pass to the -stop class when the service is stopped.
-out %CATALINA_HOME%\logs\stdout.log	Name and location of file for standard-output redirection.
-err %CATALINA_HOME%\logs\stderr.log	Name and location of file for standard-error redirection.

To control the OnSiteEnterprise2.5 service

1. Choose Start ➤ Settings ➤ Control Panel ➤ Administrative Tools ➤ Services
2. Right-click the OnSiteEnterprise2.5 service and use the shortcut menu to start, stop, pause, resume, or restart the service, or choose Properties to set the service's Startup type.

To remove the OnSiteEnterprise2.5 service

1. In a text editor, create a new file named *delService.bat* in *C:\jakarta-tomcat-4.1.24* that contains the following lines.

   Note The Autodesk Onsite Enterprise Setup program installs *<InstallFolder>/Tools/tomcatAsService/delTomcat4Service.bat*, which contains the following lines.

```
SET JAVA_HOME=C:\j2sdk1.4.1_02
SET CATALINA_HOME=C:\jakarta-tomcat-4.1.24
%CATALINA_HOME%\bin\tomcat.exe -uninstall
OnSiteEnterprise2.5
```

Note Be certain that the final command—*%CATALINA_HOME%\bin\tomcat.exe*—and its option are on a single line with no breaks.

2. Choose Start ➤ Settings ➤ Control Panel ➤ Administrative Tools ➤ Services
3. Right-click OnSiteEnterprise2.5 and choose Stop from the shortcut menu.
4. Open a command (MS-DOS) prompt and type the following commands:
   - `C:\>cd C:\jakarta-tomcat-4.1.24`
   - `C:\jakarta-tomcat-4.1.24>delTomcat4Service.bat`

   Note After the service is uninstalled, you can refresh Services window (choose Action ➤ Refresh) and note that the OnSiteEnterprise2.5 entry disappears. *tomcat.exe* will not stop a running service when the service is uninstalled, so if you don't stop it manually before uninstalling it, the service will continue to run (and become unavailable after it is next stopped).

Troubleshooting

This section offers suggestions and guidelines for solving common service-configuration problems.

- The TOMCAT_HOME and JAVA_HOME pathnames cannot contain spaces.
- The JVM options must contain the -Xrs option (which, for JDK 1.3.1, tells the JVM not to terminate on log off).
- If more than one instance of Tomcat is running on your machine, check each instance's *server.xml* file for port conflicts. Change ports if necessary and restart the affected Tomcat instance.
- Make sure that *<JAVA_HOME>\jre\bin\server\jvm.dll* exists (or don't use -server option in the JVM options).
- Check the log files in *<TOMCAT_HOME>\logs* or *<CATALINA_HOME>\logs* for errors.
- If you are specifying heap values, Tomcat will not start unless you have enough available RAM.

Configuring Apache Tomcat with IIS Web Server

This section describes how to configure Apache Tomcat to communicate with Microsoft's Internet Information Server (IIS) Web server. The following instructions assume that:

- Autodesk Onsite Enterprise is installed in the default folder *C:\Program Files\Autodesk\OnSiteEnterprise2.5* (referred to as *<InstallFolder>*)
- IIS resides on the same machine as Autodesk Onsite Enterprise
- The AJP13 protocol is being used for IIS–Tomcat communications via port 8009

If Autodesk Onsite Enterprise is installed in a folder other than the default installation folder, you first must change the Autodesk Onsite Enterprise installation pathname in the registration file. If Autodesk Onsite Enterprise is installed in the default folder, go to "To configure Apache Tomcat with IIS Web server".

To change the Autodesk Onsite Enterprise installation pathname in the registration file

1. Open the file *<InstallFolder>\Tools\tomcat-iis\iis_redirect.reg* in a text editor.
2. Search for the pathname *C:\\Program Files\\Autodesk\\OnSiteEnterprise2.5* and replace it with the pathname of your Autodesk Onsite Enterprise installation directory.

   Note Use double-backslashes (\\), not single backslashes (\), to separate pathname components.
3. Save and close *iis_redirect.reg*.

To configure Apache Tomcat with IIS Web server

1. Double-click the file *<InstallFolder>\Tools\tomcat-iis\iis_redirect.reg*.
2. Click Yes when prompted to update the registry.
3. Click OK to close the next dialog box that appears.
4. Choose Start ➤ Run, type *regedit*, and then click OK.

   Registry Editor opens.

5. Verify that the keys in *HKEY_LOCAL_MACHINE\SOFTWARE\Apache Software Foundation\Jakarta Isapi Redirector\1.0* contain the correct Autodesk Onsite Enterprise installation directory.
6. Close Registry Editor.
7. Choose Start ➤ Settings ➤ Control Panel ➤ Administrative Tools ➤ Internet Information Services.

   The Internet Information Services window appears.
8. Expand the tree view on left side, right-click Default Web Site, and then select Properties on the shortcut menu.

   The Default Web Site Properties dialog box appears.
9. Click the ISAPI Filters tab.
10. Click Add.

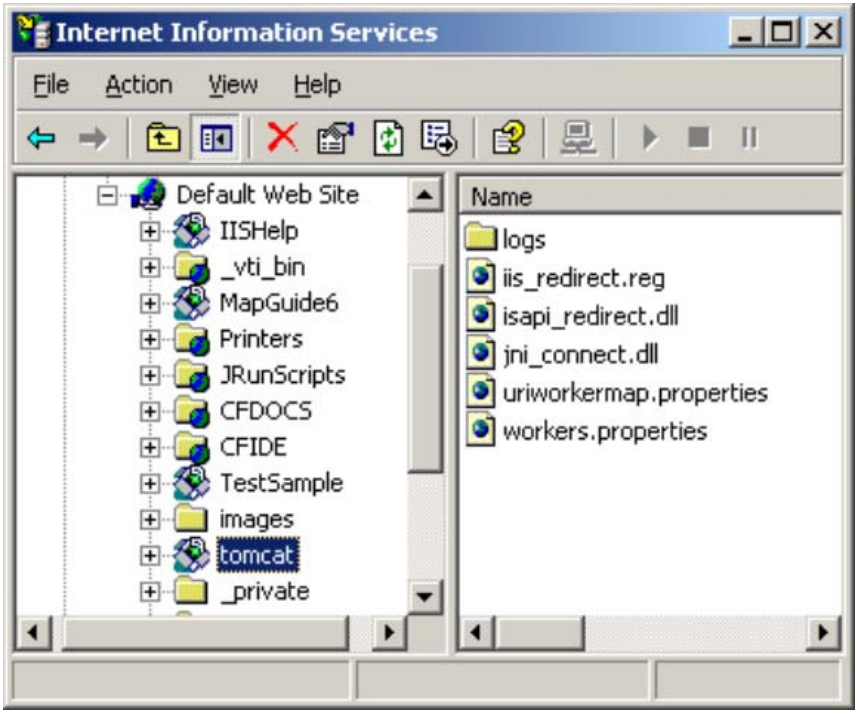
    The Filter Properties dialog box appears.
11. Type the following items in the Filter Name and Executable text boxes:
    - Filter Name: *tomcat*
    - Executable: *<InstallFolder>\Tools\tomcat-iis\isapi_redirect.dll*
12. Click OK in the open dialog boxes.
13. In the Internet Information Services window, right-click Default Web Site in the tree view, and then choose New ➤ Virtual Directory on the shortcut menu.

    The Virtual Directory Creation wizard appears.
14. Click Next in the wizard's first screen.
15. Type *tomcat* in the Alias text box. Click Next.

    Note If you type an alias name other than *tomcat*, you must change the value of the *HKEY_LOCAL_MACHINE\SOFTWARE\Apache Software Foundation\Jakarta Isapi Redirector\1.0* registry key *extension_uri* to */<alias_name>/isapi_redirect.dll*.
16. In Directory text box, type the location of *isapi_redirect.dll*. The default location is *<InstallFolder>\Tools\tomcat-iis*. Click Next.

17 In the Access Permission page, check the Read, Run Script, and Execute check boxes. Click Finish.

The Internet Information Services window should appear as follows:



To test the Autodesk Onsite Enterprise–IIS connection

1 Start Tomcat where Autodesk Onsite Enterprise is deployed.

In the default Autodesk Onsite Enterprise installation, you can choose Start ➤ Programs ➤ Autodesk OnSite Enterprise 2.5 ➤ Start Apache Tomcat. (Or run *<InstallFolder>\run.bat* at a command prompt.)

2 To test the configuration, in a browser, visit http://localhost/onsite2.5/index.htm to open the Autodesk Onsite Enterprise test page, and then click the Add MWF button to create a sample OSD file.

Setting Up IIS in a DMZ

It's also possible to set up IIS in a DMZ (demilitarized zone) and set up Autodesk Onsite Enterprise and MapGuide servers in a secure environment. The following instructions assume that:

- Machine A is available in the intranet environment where Autodesk Onsite Enterprise is deployed.
- Machine B is available in the DMZ zone where IIS is deployed.
- Machine A's 8080, 8007, and 8009 ports are open to Machine B.
- Machine A's Tomcat server is using port 8080 for the HttpConnector, port 8007 for the AJP12 connector, and port 8009 for the AJP13 connector.

Note You can verify (or change) which ports are open by inspecting Tomcat's *server.xml* file.

To set up IIS in a DMZ

1. On Machine B, create the folder *C:\Program Files\Autodesk\OnSiteEnterprise2.5\Tools*.
2. Copy the *tomcat-iis* folder and its contents from Machine A to Machine B folder that you created in the preceding step.

   The new Machine-B folder will be:

   C:\Program Files\Autodesk\OnSiteEnterprise2.5\Tools\tomcat-iis.
3. On Machine B, open the file *workers.properties* and modify the following settings as shown:

   ```
   worker.list=ajp13
   worker.ajp13.port=8009
   worker.ajp13.host=x.x.x.x (where x.x.x.x is Machine A's IP address)
   worker.ajp13.type=ajp13
   ```
4. If the context path for your Autodesk Onsite Enterprise installation is not same as the default context path (that is, */onsite2.5*, all lowercase), modify the appropriate settings in the file *uriworkermap.properties*. The default settings are:

   ```
   default.worker=ajp13
   /admin=$(default.worker)
   /admin/*=$(default.worker)
   /examples=$(default.worker)
   /examples/*=$(default.worker)
   /onsite2.5=$(default.worker)
   ```

```
/onsite2.5/*=$(default.worker)
```

Note The easiest way to test a context path is to try using it to access Autodesk Onsite Enterprise from Machine B. In a Machine B browser, for example, visit http://<*Machine_A_name*>:8080/onsite2.5/index.htm to open the Autodesk Onsite Enterprise test page.

5 Perform the steps given in "To configure Apache Tomcat with IIS Web server" on page 79.

Additional Apache Tomcat References

An Apache Tomcat installation's *doc* folder contains HOWTO documents that describe how to troubleshoot and configure Tomcat. Some useful HOWTOs that come with Apache Tomcat 3.3.1a, for example, (in *jakarta-tomcat-3.3.1a\doc*) are:

- *tomcat-iis-howto.html*
- *Tomcat-Workers-HowTo.html*
- *in-process-howto.html*
- *tomcat-apache-howto.html*
- *mod_jk-howto.html*
- *tomcat-netscape-howto.html*
- *Tomcat-on-NetWare-HowTo.html*

A good third-party explanation of configuring Tomcat with IIS is available at http://www.onjava.com/pub/a/onjava/2002/12/18/tomcat.html.

Performance Tuning

The section describes ways improve Autodesk Onsite Enterprise performance by setting various parameters and options.

Setting JVM options

The Autodesk Onsite Enterprise servlet is a Java application, so its performance depends mainly on the type of JVM (Java Virtual Machine) being used and the JVM's option settings.

JVM types

Since JDK 1.3.1, three types of JVMs have been available: classic, hotspot, and server. The *classic* JVM is designed for desktop applications; the *server* JVM is designed for server applications; and the *hotspot* JVM is an intermediate type that was introduced in earlier releases where a server JVM was not available.

To identify which JVM type(s) are installed on your machine, inspect the *jre/bin* folder of your JDK installation (*C:\jdk1.3.1_07\jre\bin,* for example). *bin* will contain a subfolder for each installed JDK type. The following screen shows a JDK in which all three JVM types are installed.

To specify which JVM to use for an application, use that folder's name as a command-line option when you invoke Java to execute a class. The following command uses the classic VM, for example:

```
C:\>java -classic my_desktop_application.class
```

If omitted, the VM type defaults to -hotspot.

Note The -classic VM option was discontinued with JDK 1.4.0, in favor of the -client option or the -server option.

Because Autodesk Onsite Enterprise does not include a desktop application, the -server option is recommended. Most application servers recognize environment variables that let you specify Java parameters. To run the server VM with Apache Tomcat 3.3.1a and earlier, use the TOMCAT_OPTS environment variable (which you can verify as an option to the *java.exe* call in the file *tomcat.bat*). Setting the following environment variables, for example, will make Tomcat use the server VM in *C:\JDK1.3.1_07:*

```
SET JAVA_HOME=C:\JDK1.3.1_07
SET TOMCAT_OPTS=-server
```

For Apache Tomcat 4.1.24, the Java-options environment variable is named CATALINA_OPTS (or JAVA_OPTS).

For JRun 4.0, modify the settings in the file *C:\JRUN4\bin\jvm.config* as follows:

```
java.home=C:/jdk1.3.1_07
java.args=-server
```

Note Restart the application server after making any of the preceding changes.

Using the -server VM probably will improve performance, but setting other JVM options can improve efficiency.

Garbage collection

A major JVM task (besides running applications) is to reclaim temporary memory allocated to running applications. This memory is collected periodically and automatically by the JVM's *garbage collector,* or *GC*.

The GC in JDK 1.3.1 and earlier releases is single threaded, meaning that when the GC is running, applications pause until the GC finishes, degrading performance. JVM options allow you to control the GC's timing and memory requirements. These options are explained at http://java.sun.com/docs/hotspot/gc/index.html.

The new multi-threaded garbage collector in JDK 1.4.1 and later runs in parallel with applications on multiprocessor machines, so applications don't pause during garbage collection. For GC-tuning details, visit http://java.sun.com/docs/hotspot/gc1.4.2/index.html.

If you let Autodesk Onsite Enterprise Setup install Apache Tomcat 3.3.1a, Setup created the file *C:\Program Files\Autodesk\OnSiteEnterprise2.5\run.bat* (which starts Apache Tomcat) with following Java options:

```
set TOMCAT_OPTS=
  -server
  -Xms511m
  -Xmx511m
  -XX:+DisableExplicitGC
  -XX:NewRatio=3
  -XX:NewSize=127m
  -XX:MaxNewSize=127m
```

The parameter values are determined according to the available RAM on your machine, as follows:

Xms = two-thirds of available RAM
Xmx = two-thirds of available RAM
NewSize = one-sixth of available RAM
MaxNewSize = one-sixth of available RAM

-XX:+DisableExplicitGC. If a Autodesk Onsite Enterprise application contains explicit GC calls, you can leave this option enabled to suppress the calls or disable this option (that is, delete it from the *set* line) to allow the calls. On high-end systems with ample RAM, you can leave this option enabled. On lower-end systems with limited RAM, you can disable this option to make the GC reclaim memory more frequently, at the cost of pausing applications more frequently.

Setting Autodesk Onsite Enterprise options

The *config.ini* parameters that most affects Autodesk Onsite Enterprise performance is MaxPoolSize (page 23), which sets the maximum number of independent connections to MapGuide servers.

Consider an application (Autodesk MapGuide Author, for example) in which you can open an MWF file and then zoom, pan, select, and perform other navigation operations. Each pool specifies a window or space into which an MWF file is loaded. After the map is loaded, you can navigate without forcing the map to reload.

In a multiple-user server environment, it's common for one user to request the map MWF1 while another user requests MWF2 while yet another user requests MWF3 (and so on). Consider the case where:

- MaxPoolSize=1 (that is, only one window is available for loading maps)
- Request#1 asks for MWF1
- Request#2 asks for MWF2
- Request#1 is received a millisecond before Request#2

Request#1 is processed first, and Request#2 must wait until Request#1 completes. If MWF1 already is loaded into the available window, Request#1 is processed quickly because MWF1 need not be reloaded. Request#2 will take longer than Request#1 because the server must load MWF2 into the window, replacing MWF1. The duration or Request#2 is the wait time (until Request#1 finishes) plus the load time (for loading MWF2).

Now consider the same case except that two windows are available (that is, MaxPoolSize=2). Request#2, which now is served in parallel to Request#1, would have a zero wait time plus the same load time.

You may be able to improve performance by increasing the value of MaxPool-Size because:

- The server does not need to reload requested maps that already are loaded.
- Multiple requests can be processed concurrently. (If the number of active requests exceeds the value of MaxPoolSize, excess requests are processed sequentially.)

Higher values of MaxPoolSize require more RAM, however, to keep MWFs loaded in memory, so you will need to experiment with different MaxPool-Size values to determine which setting is best for your environment. The appropriate value depends mainly on the number of clients using the Autodesk Onsite Enterprise server, the frequency of requests, the number of processors on the server, and available RAM.

Index

D

E

F

G

H

I

J

L

M

N

O

P

R

S

T

U

W