Installation Guide

Novell®
iManager

2.7

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Contents

About This Guide

This guide describes how to install Novell iManager 2.7. It is intended for network administrators and includes the following sections:

Audience

This guide is intended for network administrators.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation.

Documentation Updates

For the most current version of the *iManager 2.7 Installation Guide*, see the English version of the documentation at the iManager 2.7 documentation site (http://www.novell.com/documentation/imanager27/index.html).

Additional Documentation

- *iManager 2.7.4 Administration Guide* (http://www.novell.com/documentation/imanager27)
- Tomcat servlet container (http://jakarta.apache.org/tomcat)
- Java Web site (http://java.sun.com)
- eDirectory home (http://www.novell.com/products/edirectory)
- eDirectory documentation (http://www.novell.com/documentation/edir88/index.html)
- Novell eDirectory Cool Solutions community (http://www.novell.com/coolsolutions/nds)
- Novell Technical Services (http://support.novell.com)

Installing iManager

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Novell iManager provides a global view of your network from one browser-based tool, allowing you to proactively assess and respond to changing network demands.

Using iManager, you can administer Novell eDirectory and many Novell and third-party products, including Novell Open Enterprise Server, Identity Manager, Novell Audit, and BorderManager. This centralized management system eliminates administrative redundancy and unnecessary overhead, saving your time and money.

This section includes the following information:

1.1 Server-Based and Client-Based Versions of iManager 2.7

The traditional server-based version of iManager 2.7, called simply iManager, is installed on a server that can access an eDirectory tree. The client-based version of iManager, called iManager Workstation, is installed on a client workstation rather than a server. Use the following guidelines to decide which version fits best in your environment, or whether your eDirectory management policies would benefit from installing both versions:

- If you have a single administrator who always manages eDirectory from the same client workstation, you can take advantage of iManager Workstation. iManager Workstation is fully self-contained and requires little setup. It automatically starts and stops the resources it needs when it loads or unloads. iManager Workstation installs and runs on various Linux or Windows client workstations, has no dependencies on server-based iManager, and it can coexist with any other versions of iManager installed on your network.

  iManager plug-ins do not automatically synchronize between iManager instances. If you have multiple administrators and use customized plug-ins, iManager Workstation and these plug-ins must be installed on each administrator's client workstation.

- If you manage eDirectory from multiple client workstations, or have multiple administrators, install iManager Server so that it is available from any connected workstation. Additionally, customized plug-ins only need to be installed once per iManager Server.

1.1.1 Supported Platforms on iManager (server based)

iManager 2.7 supports the following server platforms:

Operating Systems

- Linux
    - Red Hat Enterprise Linux ES 4 (32-bit and 64-bit)
    - Red Hat Enterprise Linux AS 4 (32-bit and 64-bit)
    - Red Hat Enterprise Linux Server 5 (32-bit and 64-bit)
    - Red Hat Enterprise Linux Server 6 (32-bit and 64-bit)
    - Red Hat Enterprise Linux 5 Advanced Platform (32-bit and 64-bit)
    - Red Hat Enterprise Linux 6 Advanced Platform (32-bit and 64-bit)
    - SUSE Linux Enterprise Server 9 SP4 (32-bit and 64-bit) with latest updates
    - SUSE Linux Enterprise Server 10 SP1 or later
    - SUSE Linux Enterprise Server 11 or 11 SP1 (32-bit and 64-bit)

        WARNING: iManager 2.7 does not support SUSE Linux Enterprise Server 11 SP2

    - Open Enterprise Server 2 SP1, SP2, and SP3
- Windows
    - Windows Server 2003 Standard Edition SP2 (32- bit)
    - Windows Server 2003 Enterprise Edition SP2 (32-bit)
    - Windows Server 2008 Enterprise Edition SP2 (32-bit and 64-bit)
    - Windows Server 2008 R2 Enterprise Edition (64-bit)
    - Windows Server 2008 R2 Standard Edition (64-bit)

NOTE: ◆ iManager 2.7.4 does not include NetWare as a supported platform.

- iManager 2.7 does not include Solaris as a supported platform. However, iManager can still manage and work with applications and resources, such as eDirectory, running on the Solaris platform.

Application Servers

- Tomcat 5.5.x

Web Servers

Except for the Open Enterprise Server 2 (OES 2) platform (Linux), iManager uses only Tomcat 5.5 for its Web Server requirements. On the OES 2 Linux platform, iManager 2.7 uses both Tomcat 5.0.30 and Apache 2.2.3.

Browsers

- IE 6 SP2 on Windows XP
- IE 7
- IE 8
- IE 9
- Firefox 1.5.x, 2.0.x, 3.0, 3.5, and 3.6

- Firefox 4.0.1
- Firefox 9.0.1

IMPORTANT: Though you can access iManager through a Web browser that is not listed, we do not guarantee full functionality.

iManager 2.7 does not support access through an iChain server with a path-based multihoming accelerator, and with Remove Sub Path from URL enabled.

Directory Services

- eDirectory 8.7.3
- eDirectory 8.8

1.1.2 Supported Platforms on iManager Workstation

iManager workstation supports the following desktop platforms:

Linux

- Red Hat Enterprise Linux Work Station 4, Red Hat Enterprise Linux Work Station 5, and Red Hat Enterprise Linux Work Station 6
- SUSE Linux Enterprise Desktop 10 SP1 or later
- OpenSUSE 10.3/11/11.1/11.2/11.3/11.4 (32-bit and 64-bit)
- SUSE Linux Enterprise Desktop 11 SP1 (32-bit and 64-bit)

Windows

- Windows XP Professional SP3
- Windows Vista Ultimate SP1 (32-bit and 64-bit)
- Windows Vista Enterprise SP1 (32-bit and 64-bit)
- Windows Vista Business SP1 (32-bit and 64-bit)
- Windows 7 Enterprise Edition (32-bit and 64-bit)
- Windows 7 Ultimate Edition (32-bit and 64-bit)
- Windows 7 Professional Edition (32-bit and 64-bit)

NOTE: With the release of iManager 2.7, the term "Mobile iManager" has been changed to "iManager Workstation".

iManager workstation bundles the following versions of Tomcat and Java:

- Tomcat 5.5.34
- Java 1.6.0_30

1.1.3 Backward Compatibility

If the iManager 2.7 Server installation routine detects a previously installed version of iManager 2.5 or 2.6, it prompts you that it will remove the existing iManager and Tomcat. If you do not want this to happen, stop the installation.

Because iManager Workstation is a self-contained environment, you can install multiple versions on the same workstation (including older versions of Mobile iManager.) However, you should not attempt to run them simultaneously. If you need to use different versions, run one version, close it, and then run the other version.

The same eDirectory tree can be managed with iManager 2.7, iManager 2.6 and iManager 2.5. Your RBS Collection(s) should be updated for iManager 2.7. The updated RBS Collection(s) maintains backward compatibility with iManager 2.6 and 2.5.

1.2 Prerequisites

You must satisfy the following prerequisites in order to install and use either iManager or iManager Workstation. These prerequisites apply to all server platforms. Additional platform-specific prerequisites are listed by platform in Section 1.5, "Installing a New Version of iManager," on page 15.

- ❑ **eDirectory Management:** iManager 2.7 can manage any server running Novell eDirectory 8.7.3 or later.
- ❑ **Admin-Equivalent Rights:** You must have admin-equivalent rights for the creation of a Role-Based Services (RBS) collection in the eDirectory tree, and to run the iManager RBS Configuration Wizard.
- ❑ **File System Rights:** You must have root access for Linux servers or Administrator access for Windows servers.

1.3 Self-Signed Certificates

NOTE: The information in this section does not apply to OES Linux, which installs both Tomcat and Apache. The OES Linux documentation includes information about replacing the self-signed Apache/Tomcat certificate.

Standalone iManager installations include a temporary, self-signed certificate for use by Tomcat. It has an expiration date of one year.

This is not intended to be a long-term implementation. It is a temporary solution to get your system up and running so you can securely use iManager immediately following installation. OpenSSL does not recommend using self-signed certificates except for testing purposes.

One challenge to replacing the self-signed certificate is that Tomcat's default keystore uses is in Tomcat {JKS} format file. The tool used to modify this keystore, `keytool`, cannot import a private key. It will only use a self-generated key.

If you are using eDirectory, you can use Novell Certificate Server to securely generate, track, store and revoke certificates with no further investment. To generate a public/private key pair in eDirectory using Novell Certificate Server, complete the following steps for your applicable platform:

1.3.1 Linux

The following instructions show how to create a keypair in eDirectory and export the Public, Private and Root Certificate Authority (CA) keys via a PKCS#12 file on the Linux platform. This includes modifying Tomcat's `server.xml` configuration file in order to use the PKCS12 directive and point the configuration to an actual P12 file rather than use the default JKS keystore.

The files associated with this process are as follows:

- The temporary keypair is held in the `/var/opt/novell/novlwww/.keystore` file.
- The trusted roots are contained in the `/etc/opt/novell/java/security/cacerts` file.
- The file for configuring Tomcat's use of certificates is `/etc/opt/novell/tomcat5/server.xml`.

1. Create a new server certificate with iManager.

   In iManager, select Novell Certificate Server > Create Server Certificate. Select the appropriate server, specify a nickname and accept the rest of the certificate defaults.

2. Export the server certificate to the tomcat home directory (`/var/opt/novell/novlwww`).

   In iManager, select Directory Administration > Modify Object. Browse to and select the KMO object. In the Certificates tab, select Export. Specify a password and save the server certificate as a pkcs12 file (`.pfx`).

3. Convert the `.pfx` file to a `.pem` file.

   To do this, use a command similar to the following:

   ```
   openssl pkcs12 -in newtomcert.pfx -out newtomcert.pem
   ```

   Specify the certificate password specified in step 2, and specify a password for the new `.pem` file. You can use the same password, if desired.

4. Convert the `.pem` file to a `.p12` file.

   To do this, use a command similar to the following:

   ```
   openssl pkcs12 -export -in newtomcert.pem -out newtomcert.p12 -name "New Tomcat"
   ```

   Specify the certificate password specified in step 3, and specify a password for the new `.p12` file. You can use the same password, if desired.

5. Stop Tomcat.

   ```
   /etc/init.d/novell-tomcat5 stop
   ```

6. Edit the Tomcat configuration file (`/etc/opt/novell/tomcat5/server.xml`) and add `keystoreType`, `keystoreFile`, and `keystorePass` variables to let Tomcat use the newly created `.p12` certificate file. For example:

   ```
   <Connector className="org.apache.coyote.tomcat5.CoyoteConnector"
    port="8443" minProcessors="5" maxProcessors="75" enableLookups="true"
    acceptCount="100" debug="0" scheme="https" secure="true"
    useURIValidationHack="false" disableUploadTimeout="true">
      <Factory
   className="org.apache.coyote.tomcat5.CoyoteServerSocketFactory"
    clientAuth="false" protocol="TLS" keystoreType="PKCS12"
    keystoreFile="/var/opt/novell/novlwww/newtomcert.p12"
   keystorePass="password" />
   </Connector>
   ```

When setting the keystore type to PKCS12 you must specify the entire path to the certificate file, as Tomcat will no longer default to using the Tomcat home path.

7. Change the .p12 file's ownership to the appropriate Tomcat user/group (Normally novlwww), and set the file permissions to user=rw, group=rw, and others=r. For example:

```
chown novlwww:novlwww newtomcert.p12
```

```
chmod 654 newtomcert.p12
```

8. Restart Tomcat. For example:

```
/etc/init.d/novell-tomcat5 start
```

1.3.2 Windows

The following instructions show how to create a keypair in eDirectory and export the Public, Private and Root Certificate Authority (CA) keys via a PKCS#12 file on the Windows platform. This includes modifying Tomcat's `server.xml` configuration file in order to use the PKCS12 directive and point the configuration to an actual P12 file rather than use the default JKS keystore.

The files, and their default locations, associated with this process are as follows:

- The temporary keypair: `C:\Program Files\Novell\Tomcat\conf\ssl\. keystore`.

- The trusted root certificates: `C:\Program Files\Novell\jre\lib\security\cacerts`.

- Configure Tomcat's certificate use: `C:\Program Files\Novell\Tomcat\conf\server.xml`

1. Create a new server certificate with iManager.

   In iManager, select Novell Certificate Server > Create Server Certificate. Select the appropriate server, specify a nickname and accept the rest of the certificate defaults.

2. Export the server certificate.

   In iManager, select Directory Administration > Modify Object. Browse to and select the KMO object. In the Certificates tab, select Export. Specify a password and save the server certificate as a pkcs12 file (`.pfx`).

3. Convert the `.pfx` file to a `.pem` file.

   NOTE: Openssl is not installed on Windows by default, but a version for the Windows platform is available on the Openssl Web site (http://www.openssl.org/related/binaries.html). Alternatively, you can convert the certificate on a Linux platform, on which Openssl is installed by default.

   To do this, use a command similar to the following:

   ```
   openssl pkcs12 -in newtomcert.pfx -out newtomcert.pem
   ```

   Specify the certificate password from step 2, and specify a password for the new `.pem` file. You can use the same password, if desired.

4. Convert the `.pem` file to a `.p12` file.

   To do this, use a command similar to the following:

   ```
   openssl pkcs12 -export -in newtomcert.pem -out newtomcert.p12 -name "New
   Tomcat"
   ```

   Specify the certificate password from step 3, and specify a password for the new `.p12` file. You can use the same password, if desired.

5. Copy the .p12 file to the Tomcat certifcate location.

By default, this is `C:\Program Files\Novell\Tomcat\conf\ssl\`.

6. Stop the Tomcat Service.

   `/etc/init.d/novell-tomcat5 stop`

7. Edit the Tomcat's `server.xml` and add `keystoreType`, `keystoreFile`, and `keystorePass` variables to let Tomcat use the newly created `.p12` certificate file. For example:

```
<Connector className="org.apache.coyote.tomcat5.CoyoteConnector"
 port="8443" minProcessors="5" maxProcessors="75" enableLookups="true"
 acceptCount="100" debug="0" scheme="https" secure="true"
 useURIValidationHack="false" disableUploadTimeout="true">
    <Factory
className="org.apache.coyote.tomcat5.CoyoteServerSocketFactory"
 clientAuth="false" protocol="TLS" keystoreType="PKCS12"
 keystoreFile="/conf/ssl/newtomcert.p12" keystorePass="password" />
```

   When setting the keystore type to PKCS12 you must specify the entire path to the certificate file, as Tomcat will no longer default to using the Tomcat home path.

8. Start the Tomcat Service.

1.4 Downloading and Installing Plug-Ins During Installation

During the iManager 2.7 install, a message appears displaying a URL that refers to an XML descriptor file of available plug-ins. The default location of the Novell descriptor file is http://www.novell.com/products/consoles/imanager/iman_mod_desc.xml (http://www.novell.com/products/consoles/imanager/iman_mod_desc.xml).

You can change this URL to a different location if your iManager install is having trouble reaching the default descriptor file URL. See "Plug-In Module Installation" in the *iManager 2.7.4 Administration Guide* for information on customizing iManager's plug-in download and install process.

For a clean install, the "typical" plug-ins are preselected. For an upgrade, only plug-ins that need to be updated are preselected. You can override the default selections and add new plug-ins to download but it is recommended that you do not unselect any plug-in that was already selected to be updated from a previous version of iManager.

IMPORTANT: iManager 2.7 plug-ins are not compatible with previous versions of iManager. Additionally, any custom plug-ins you want to use with iManager 2.7 must be re-compiled in the iManager 2.7 environment by using the iManager 2.7 SDK.

1.5 Installing a New Version of iManager

Novell iManager 2.7 can be installed on the platforms listed below. In general, you should apply the latest Service Packs for your platform and meet the prerequisites listed in "Prerequisites" on page 12, before installing iManager.

- Section 1.5.1, "iManager Server on Linux," on page 16
- Section 1.5.2, "iManager Server on Windows," on page 19
- Section 1.5.3, "iManager Workstation on Linux Clients," on page 22
- Section 1.5.4, "iManager Workstation on Windows Clients," on page 23

1.5.1 iManager Server on Linux

If the iManager 2.7 installation routine detects a previously installed version of iManager 2.5 or 2.6, it prompts you that it will remove the existing iManager and Tomcat. If you do not want this to happen, stop the installation.

However, when removing the previously installed version of iManager, its directory structure is backed up to the old *TOMCAT_HOME* directory to preserve any previously created custom content.

To prepare for the installation, review the following checklist of prerequisites.

Prerequisites

In addition to the general prerequisites listed in Section 1.2, "Prerequisites," on page 12, the following prerequisites also apply to iManager on Linux:

❑ **Required Linux Packages:** If any of the following packages are not installed, you must obtain them from the vendor of your Linux distribution and install them before installing iManager. They should be on your installation CDs.

- ◆ compat-libstdc++-33 (Red Hat Advanced Server/Enterprise Server 4, Red Hat Server 5, Red Hat Server 6)
- ◆ libstdc++33-32bit (SLES 11 64-bit)
- ◆ libstdc++43-32bit (SLES 11 64-bit)
- ◆ libstdc++33 (SLES 11 32-bit)
- ◆ libstdc++43 (SLES 11 32-bit)
- ◆ compat-lsb (SLES 9/10)
- ◆ libstdc++33-32bit (SLES 10 SP3 64-bit)
- ◆ compat-libstdc++-33-3.2.3-47.3.i386.rpm (RHEL 6 32-bit)
- ◆ compat-libstdc++-33-3.2.3-47.3.i386.rpm (RHEL 6 64-bit)
- ◆ compat-libstdc++-33-3.2.3-47.3.x86_64.rpm (RHEL 6 64-bit)
- ◆ XFree86-libs-4.2.0-8.i386.rpm (RHEL 6 64-bit, for GUI mode)
- ◆ libstdc++44-32bit-4.4.0_20090212-2.1.x86_64.rpm (RHEL 6 64-bit, for GUI mode)
- ◆ glibc-2.12-1.7.el6.i686.rpm (RHEL 6 64-bit)

NOTE: If you are using PKI plug-in, you must install the following RPMs on the iManager server:

◆**SLES 10 32-bit:** compat (compat-2006.1.25-11.2)

◆**SLES 10 64-bit:** compat-32bit (compat-32bit-2006.1.25-11.2)

◆**SLES 11 32-bit:** compat (compat-2009.1.19-2.1)

◆**SLES 11 64-bit:** compat-32bit (compat-32bit-2009.1.19-2.1)

❑ **Previous Versions of iManager:** If you have installed iManager 2.5 or 2.6, you do not need to uninstall it. See Chapter 2, "Upgrading iManager," on page 27 for more information.

❑ **Processor:** Pentium* III 600MHz or higher processor

❑ **Disk Space:** 200 MB hard-disk space for a local installation

❑ **Memory:** 512 MB RAM (1024 MB recommended)

❑ **Port Setup:** Be aware of possible port conflicts. Tomcat is installed as part of the iManager 2.7 installation, which determines whether the default ports are in use. If they are in use, the install prompts you for different ports for use by Tomcat. By default, Tomcat uses ports 8080, 8443, and 9009.

IMPORTANT: On Linux, iManager is supported only with the version of Tomcat that is installed with iManager.

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iManager installs the following products during installation:

◆ Tomcat 5.5.34

◆ Java 1.6.0_30

◆ Novell International Cryptographic Infrastructure (NICI) 2.7.3

Procedure

1 At the Novell download site (http://download.novell.com), search for iManager products, select iManager 2.7, then download `iMan_27_linux.tgz` to a directory on your server.

2 Use the following command to extract to the iManager folder:

```
tar -zxvf iMan_27_linux.tgz
```

3 Open a shell and change to the `/extracted_directory`/iManager/installs/linux directory.

This path is relative to the directory where you copied or extracted the iManager files.

4 Enter one of the following commands while logged in as `root` or `root`-equivalent.

To do a command-line (text) install, enter the following command:

```
./iManagerInstallLinux.bin
```

To do a GUI install, enter the following command:

```
./iManagerInstallLinux.bin -i gui
```

After a successful install, the installer generates a configuration file (`/var/log/installer.properties`) with values based upon the questions asked during the install. This file can then be modified and used for a silent install. See Section 1.6, "Silent Installation of iManager Server," on page 24.

5 On the opening iManager splash screen, select a language, then click *OK*.

6 Read through the Introduction, then click *Next*.

7 Accept the license agreement, then click *Next*.

8 Specify the components to install as part of the iManager installation, then click *Next*.

You can specify either of the following components:

◆ Novell iManager 2.7, Tomcat, JVM - Installs all the three components.

◆ Novell iManager 2.7 - Installs only the iManager component. You can specify this if you already have Novell Tomcat and JVM installed on your machine.

◆ Tomcat, JVM - Installs Novell Tomcat and JVM components. You can specify to install the two components, and later install iManager separately.

9 Specify if you want to download and install plug-ins as part of the installation, then click Next.

10 (Conditional) To download plug-ins as part of the installation, specify the plug-ins you want to download, then click *Next*.

- ◆ For a console install, enter a comma-separated list of the plug-in numbers to download.
- ◆ For a GUI install, select the check boxes. Default selections are already made.

If desired, you can specify an alternative URL for downloading plug-ins. For more information, see Section 1.4, "Downloading and Installing Plug-Ins During Installation," on page 15. When using an alternative URL for downloading plug-ins, it is solely your responsibility to verify the URL contents, and verify that the plug-in is appropriate for your use.

If the message No new or updated plug-ins found. All plug-ins are downloaded or updated or the iManager download server is unavailable appears in the plug-in download area, one or more of the following conditions exist:

- ◆ There are no updated plug-ins available on the Novell download site
- ◆ There is a problem with your Internet connection; verify your connection
- ◆ Connection to the Novell Descriptor File (http://www.novell.com/products/consoles/imanager/iman_mod_desc.xml) was not successful.
- ◆ The iManager install is behind a proxy that does not allow a connection to the above URL

11 Specify if you want to install plug-ins from a local drive, then click *Next*.

12 (Conditional) To install plug-ins from a local directory, specify the directory path that contains the appropriate plug-in (`.npm`) files.

The default path is `/extracted location/iManager/installs/plug-ins`, but you can specify any valid mount point here.

13 Specify the ports on which you want Tomcat to run.

The defaults are 8080 for HTTP, 8443 for HTTPS, and 9009 as the MOD_JK connector port.

14 (Optional) Specify an authorized user and the appropriate eDirectory tree name that this user will manage, then click *Next*.

This information is not used to authenticate to eDirectory during installation and the information is not validated in any way. Make sure you use the syntax required by the iManager login page.

If you leave these fields blank, iManager allows any user to install plug-ins and make changes to iManager server settings (not recommended long-term.) Specify an authorized user post-install from the *Configure > iManager Server > Configure iManager > Security* page in iManager. For more information, see "Authorized Users and Groups" in the *iManager 2.7.4 Administration Guide*.

15 Read the Pre-installation summary page, then click *Install*.

During installation, iManager files are installed, plug-ins are downloaded, and configuration changes occur. Installation can take several minutes.

After the installation completes, the Install Complete page, which displays the successful/unsuccessful installation message, is displayed.

16 Click *Done* to quit the installer.

A browser window appears which displays the Getting Started page.

Wait for iManager to initialize before attempting access.

To access iManager, click the first link on the Getting Started page, then log in. For more information, see "Accessing iManager" in the *iManager 2.7.4 Administration Guide*.

IMPORTANT: When you install iManager on Linux, the following files from InstallAnywhere is left with writeable permission.

- `/var/opt/novell/tomcat5/webapps/nps/UninstallerData/`
  `.com.zerog.registry.xml`

- `/var/opt/novell/tomcat5/webapps/nps/UninstallerData/`
  `Uninstall_<PluginName>/.com.zerog.registry.xml`

  `<PluginName>` - The name of the plug-in installed on iManager.

You must change the permissions from 600 to 644 using the `chmod` command. However, you should not modify the content in the files. If you modify, it might impact the other installations that use InstallAnywhere.

1.5.2 iManager Server on Windows

If the iManager 2.7 installation routine detects a previously installed version of iManager 2.5 or 2.6, it prompts you that it will remove the existing iManager and Tomcat. If you do not want this to happen, stop the installation.

However, when removing the previously installed version of iManager, its directory structure is backed up to the old *TOMCAT_HOME* directory to preserve any previously created custom content.

To prepare for the installation, review the following checklist of prerequisites.

Prerequisites

In addition to the general prerequisites listed in Section 1.2, "Prerequisites," on page 12, the following prerequisites also apply to iManager on Windows:

- ❑ **Previous versions of iManager:** If you have installed iManager 2.5 or 2.6, you do not need to uninstall it. See Chapter 2, "Upgrading iManager," on page 27 for more information.
- ❑ **Web Services:** iManager uses Tomcat on Windows servers. It does not provide any integration with IIS or Apache environments. However, following the iManager 2.7 installation, you can manually integrate iManager with your existing Web server infrastructure, if desired.
- ❑ **Processor:** Pentium III 600 MHz or higher processor
- ❑ **Disk Space:** 500 MB minimum for a local installation
- ❑ **Memory:** 512 MB of RAM (1024 MB recommended)

iManager can install the following products during installation:

- ◆ Tomcat 5.5.34
- ◆ Java 1.6.0_30
- ◆ Novell International Cryptographic Infrastructure (NICI) 2.7.3

Procedure

For information about running iManager Server on the same machine as Novell eDirectory, see "Running eDirectory and iManager on the Same Machine (Windows only)" in the *iManager 2.7.4 Administration Guide*.

1 Log in as a user with administrator privileges to install iManager.

2 At the Novell download site (http://download.novell.com), search for iManager products, select iManager 2.7, then download it to a directory on your server.

3 Extract the file into the iManager folder.

4 Find and run `iManagerInstall.exe` (`extracted_directory`\iManager\installs\win.)

You can view the debug output of the installation program by holding down the Ctrl key immediately after launching the installer. Continue to hold down the key until a console window appears. For more information on debugging, see "Troubleshooting" in the *iManager 2.74 Administration Guide*.

5 On the opening iManager splash screen, select a language and click *OK*.

6 On the introduction page, click *Next*.

7 Accept the license agreement, then click *Next*.

8 Read the Detection Summary page, then click *Next*.

The Detection Summary displays currently installed Servlet container and JVM software that iManager will use once it is installed, and supporting components that are installed as part of the iManager install. Use the *Browse* button to modify the list of installed components if the correct version is not listed.

The Get PORT Input window is displayed.

9 Mention the HTTP and SSL port numbers on which Tomcat server must run on, and click *Next*.

By default, the HTTP port and SSL port values are 8080 and 8443, respectively. However, if you have any other service or tomcat server configured on the default ports, you can configure ports of your choice.

The Choose Install Folder window is displayed.

10 Specify the install folder, then click *Next*.

The default installation location is `C:\Program Files\Novell`.

11 Select the plug-ins to download and install, then click *Next*.

If desired, you can specify an alternative URL. For more information, see Section 1.4, "Downloading and Installing Plug-Ins During Installation," on page 15. When using an alternative URL for downloading plug-ins, it is solely your responsibility to verify the URL contents, and verify that the plug-in is appropriate for your use.

If the message `No new or updated plug-ins found.All the plug-ins are downloaded or updated or the iManager download server is unavailable` appears in the plug-in download area, one or more of the following conditions exist:

- There are no updated plug-ins available on the Novell download site

- There is a problem with your Internet connection; verify your connection

- Connection to the Novell Descriptor File (http://www.novell.com/products/consoles/imanager/iman_mod_desc.xml) was not successful.

- The iManager install is behind a proxy that does not allow a connection to the above URL

12 (Optional) Select plug-ins to install from the local disk drive, then click *Next*.

This lets you to install previously downloaded or custom plug-ins during the installation.

13 (Optional) Specify an authorized user and the appropriate eDirectory tree name that this user will manage, then click *Next*.

This information is not used to authenticate to eDirectory during installation and the information is not validated in any way. Make sure you use the syntax required by the iManager login page.

If you leave these fields blank, iManager allows any user to install plug-ins and make changes to iManager server settings (not recommended long-term.) Specify an authorized user post-install from the *Configure > iManager Server > Configure iManager > Security* page in iManager. For more information, see "Authorized Users and Groups" in the *iManager 2.7.4 Administration Guide*.

14 Read the Pre-installation summary page, then click *Install*.

During installation, iManager files are installed, plug-ins are downloaded, and configuration changes occur. Installation can take several minutes.

After the installation completes, the Install Complete page, which displays the successful/unsuccessful installation message, is displayed.

NOTE: On Windows, the Install Complete page displays the following error message inspite of a successful installation.

```
The installation of iManager Install 2.7 is complete, but some errors
occurred during the install.
Please see the installation log <Log file path> for details. Press "Done"
to quit the installer.
```

If the specified error message is displayed, do the following:

1. Make note of the log file path that is specified within the error message in the Install Complete page.

2. In the Install Complete page, click *Done*.

3. Open the log file.

4. If you find the following error in the log file, then ignore the error message that is displayed in the Install Complete page because the installation is actually successful, and iManager properly functions.

```
Custom Action: com.novell.application.iManager.install.InstallDLLs
Status: ERROR
Additional Notes: ERROR - class
com.novell.application.iManager.install.InstallDLLs
NonfatalInstallException C:\WINDOWS\system32\msvcr71.dll (The process
cannot access the file because it is being used by another process)
```

---

15 Click *Done* to quit the installer.

A browser window appears which displays the Getting Started page.

Wait for iManager to initialize before attempting access.

To access iManager, click the first link on the Getting Started page, then log in. For more information, see "Accessing iManager" in the *iManager 2.7.4 Administration Guide*.

1.5.3 iManager Workstation on Linux Clients

iManager Workstation is a self-contained environment. Therefore, you can install multiple versions on the same workstation (including older versions of Mobile iManager). However, you should not attempt to run them simultaneously. If you need to use different versions, run one version, close it, and then run the other version.

To prepare for the installation, review the following checklist of prerequisites.

Prerequisites

In addition to the general prerequisites listed in Section 1.2, "Prerequisites," on page 12, the following prerequisites also apply to iManager Workstation on Linux Clients:

❑ **Required Linux Packages:** If any of the following packages are not installed, you must obtain them from the vendor of your Linux distribution and install them before installing iManager. They should be on your installation CDs.

- ◆ GTK2
- ◆ GLIBC 2.3
- ◆ libstd++33
    - ◆ SLED 11 32-bit
    - ◆ SLED 11 SP1 32-bit
    - ◆ openSUSE 11.0 32-bit
    - ◆ openSUSE 11.1 32-bit
    - ◆ openSUSE 11.2 32-bit
    - ◆ openSUSE 11.3 32-bit
- ◆ libstd++33-32 bit
    - ◆ SLED 11 64-bit
    - ◆ SLED 11 SP1 64-bit
    - ◆ openSUSE 11.0 64-bit
    - ◆ openSUSE 11.1 64-bit
    - ◆ openSUSE 11.2 64-bit
    - ◆ openSUSE 11.3 64-bit

❑ **Processor:** Pentium III 600 MHz or higher processor
❑ **Disk Space:** 200 MB minimum
❑ **Memory Requirements:** 256 MB RAM (512 MB recommended)

IMPORTANT: Do not run iManager Workstation from a path that contains spaces.

iManager installs the following products during installation:

- ◆ Tomcat 5.5.34
- ◆ Java 1.6.0_30
- ◆ Novell International Cryptographic Infrastructure (NICI) 2.7.3

Procedure

1 At the Novell download site (http://download.novell.com), search for iManager products, select iManager 2.7, then download `iMan_27_workstation_linux.tar.bz2` to a directory on your server.

2 Extract the file using the following command:

```
tar -xjvf iMan_27_workstation_linux.tar.bz2
```

The extraction creates an `imanager` folder in the same folder where iManager Workstation's `tar.bz2` file is located.

3 Log in as `root`, or a `root`-equivalent, and install the Novell International Cryptography Infrastructure (NICI) software.

To do this, execute the following command from the `imanager/NICI/linux` directory:

```
rpm -Uvh nici.i386.rpm
```

On desktops where NICI is not installed, this command installs NICI. On desktops where NICI is already installed, this command upgrades NICI.

4 If you plan to run iManager Workstation as a non-root user in the future, do not run iManager as root the first time. Navigate to the `imanager/bin` directory and execute the iManager Workstation startup script.

```
./iManager.sh
```

5 When the iManager login screen appears, specify a username, password, and eDirectory tree.

To access iManager, see "Accessing iManager" in the *iManager 2.7.4 Administration Guide*.

If you upgraded from a previous version of iManager, see Chapter 2, "Upgrading iManager," on page 27.

1.5.4 iManager Workstation on Windows Clients

Because iManager Workstation is a self-contained environment, you can install multiple versions on the same workstation (including older versions of Mobile iManager.) However, you should not attempt to run them simultaneously. If you need to use different versions, run one version, close it, and then run the other version.

To prepare for the installation, review the following checklist of prerequisites.

Prerequisites

❑ **Additional Configuration:** If you configure Internet Explorer to use a proxy server for your LAN, then you must also select the *Tools > Internet Options > Connections > LAN Settings > Bypass Proxy Server for Local Addresses* option.

❑ **Processor:** Pentium III 600 MHz or higher processor

❑ **Disk Space:** 200 MB minimum

❑ **Memory:** 256 MB of RAM (512 MB recommended)

❑ Do not run iManager Workstation from a path with spaces in it.

❑ If you are running a Novell Client earlier than version 4.91, make sure that the NMAS client is already installed on the workstation before launching iManager Workstation.

❑ Running iManager Workstation from a path where any directory contains temp or tmp in the name is not supported. If you do this, iManager plug-ins won't install. Run iManager Workstation from `C:\imanager` or some other permanent directory, rather than `c:\temp\imanager` or `d:\tmp\imanager` or `c:\programs\temp\imanager`

❑ The first time you run iManager Workstation on a Windows workstation, you must do so as a user that is a member of the workstation's Administrators group.

iManager installs the following products during installation:

- ◆ Tomcat 5.5.34
- ◆ Java 1.6.0_30
- ◆ Novell International Cryptographic Infrastructure (NICI) 2.7.3

Procedure

1 At the Novell download site (http://download.novell.com), search for iManager products, select iManager 2.7, then download `iMan_27_workstation_win.zip`.

2 Using any ZIP program, extract the `iMan_27_workstation_win.zip` file to a folder.

3 With a file browser, navigate to the `imanager\bin` folder.

4 To execute the script, double-click the `iManager.bat` file.

5 When the iManager login page appears, enter your username, password, and tree.

To access iManager, see "Accessing iManager" in the *iManager 2.7.4 Administration Guide*.

If you upgraded from a previous version of iManager, see Chapter 2, "Upgrading iManager," on page 27.

1.6 Silent Installation of iManager Server

A silent (non-interactive) installation doesn't display a user interface or ask the user any questions. Instead, InstallAnywhere uses information from a properties file for this purpose.

There are two silent installation options:

- ◆ Section 1.6.1, "Standard Silent Install," on page 24
- ◆ Section 1.6.2, "Customized Silent Install," on page 25

1.6.1 Standard Silent Install

To perform a standard silent install on Linux or Windows server using the default install values:

1 Open a console window and go to the directory containing the iManager file you downloaded.

2 On the command line, enter the following for Linux:

```
./iManagerInstall<platform>.bin -i silent
```

or enter the following for Windows:

```
iManagerInstall.exe -i silent
```

1.6.2 Customized Silent Install

To perform a customized silent install for more control over which modules are installed:

1 Create an `installer.properties` file in the same directory that contains the installer executable file.

2 To perform a silent install using the installer.properties file, enter:

`./iManagerInstall`*platform*`.bin -i silent -f `*pathto_properties_file*

3 In `installer.properties`, set and save the following values for:

- ◆ $PLUGIN_INSTALL MODE$: The property that controls whether plug-ins are installed from disk, network, both disk and network, or neither.

    - ◆ If plug-ins are to be installed from disk, set this property to DISK. This is the default value.

    - ◆ If plug-ins are to be installed from the network, set this property to NET.

    - ◆ If plug-ins are to be installed from both disk and network, set this property to BOTH.

    - ◆ If plugins are not to be installed, set this property to SKIP.

- ◆ $PLUGIN_DIR$: The property that defines an alternate path where plug-ins are located on disk.

    The default path is *installer_root_directory*/iManager/installs/*platform path*/plugin
    All modules found in the plug-in directory are installed, except for subdirectories.

- ◆ $PLUGIN_INSTALL_URL$: The property that specifies the URL where plug-ins are located.

    You can modify this URL. For more information, see "Downloading and Installing Plug-in Modules" in the *iManager 2.7.4 Administration Guide*.

- ◆ $LAUNCH_BROWSER$: The property that enables/disables launching of `gettingstarted.html` when the iManager installation completes.

- ◆ $USER_INSTALL_DIR$: The property that specifies the default path where iManager is to be installed.

4 To specify particular modules to download, use the following examples, providing the module ID and version from the `MANIFEST.MF` file, located in the NPM's META-INF/ folder.

`$PLUGIN_MODULE_ID_1$=eDirectoryBackupAndRestore`

`$PLUGIN_VERSION_1$=2.7.20050517`

`$PLUGIN_MODULE_ID_2$=ldap`

`$PLUGIN_VERSION_2$=2.7.20050517`

`etc. . . . (repeated as many times as there are modules)`

If no modules are defined, then the most commonly installed modules, tagged as "seleceted" in the `iman_mod_desc.xml` files on the download Web site, are installed.

If no version is defined for a module, then any module that matches the NPM name is installed.

Upgrading iManager

2

Novell iManager version upgrade or migrate to 2.7.x depends on the currently installed iManager version on the server. This section explains the following procedures:

2.1 Upgrade Scenarios

The following sections describe various upgrade scenarios of iManager:

2.1.1 Upgrade Scenario for Standalone Server Based Installations of iManager 2.5/2.6

You cannot upgrade previous versions (2.6.x or earlier) of iManager standalone server to iManager 2.7. You should freshly install iManager 2.7 on a standalone server.

2.1.2 Upgrade Scenario for Windows Running iManager 2.7 with Tomcat 5.0

The upgrade scenario for Windows is about installing new iManager 2.7 that runs Tomcat 5.5.32, on top of the existing iManager 2.7 that runs Tomcat 5.0.

Make sure that you do the following while installing the new iManager 2.7:

1. Back up the `..\Tomcat\webapps\nps\packages` folder to a temporary folder on your machine.
2. Uninstall the existing iManager 2.7.
3. Delete the `..\jre` folder.
4. During the new iManager 2.7 installation:
   - When you are prompted to select jre version, make sure that you select `jre 1.6.x`.
   - When you are prompted to install the plug-ins, specify the path to the temporary folder where you have backed up the packages folder.

2.1.3 Upgrade Scenario for Linux Running iManager 2.7 with Tomcat 5.0

The upgrade scenario for Linux is about installing new iManager 2.7 that runs Tomcat 5.5.32, on top of the existing iManager 2.7 that runs Tomcat 5.0.

Make sure that you do the following while installing the new iManager 2.7:

1. The `nps` folder, which has the entire directory structure, of the existing iManager 2.7, is backed up as `nps_2.7` under the `/var/opt/novell/tomcat5` folder.

2. While installing the new iManager 2.7, if you do not specify any path for installing the plug-ins, the path defaults to `/var/opt/novell/tomcat5/nps_2.7/packages` which has the backed up plug-ins.

2.1.4 Upgrade Scenario for OES Installations Running iManager 2.5/2.6

To upgrade the iManager version from 2.5/2.6 to 2.7, you should upgrade the corresponding version of Operating System.

For OES-Linux, upgrade:

- OES 1 SP2 Linux (32-bit) to OES 2 SP1 Linux (32-bit)
- OES 2 Linux (32-bit) to OES 2 SP1 Linux (32-bit)

For more information on upgrading the Linux version, refer to OES 2 Linux Installation Guide (http://www.novell.com/documentation/oes2/inst_oes_lx/index.html?page=/documentation/oes2/inst_oes_lx/data/front.html#front).

When you upgrade OES to OES 2 SP1, iManager will be upgraded to iManager 2.7.2 (iManager 2.7 Support Pack 2).

2.1.5 Upgrade Scenario for Upgrading iManager 2.7 to the Latest Support Pack

The following is a generic scenario to upgrade the iManager version from 2.7 to the latest support pack:

1 Log in to iManager.

2 Click *Configure > Plug-in Installation > Available Novell Plug-in Modules*. The Available Novell Plug-in Modules page is displayed.

3 Under *Novell Plug-in Modules*, Select the latest iManager support pack to which you want to upgrade iManager 2.7 and click *Install*. The Novell iManager Plug-in Modules License Agreement page is displayed.

4 Read the License Agreement, select *I Agree*, then click *OK*. The progress indicator is displayed. If you want to stop the installation, click *Stop*.

5 After the installation is completed, click *Close*. The following successful message is displayed.

```
Success: The plug-in module has been successfully installed.
You must now restart Tomcat in order for the changes to take effect.
After Tomcat restarts, if Role Based Services is installed you will need to
configure the newly installed modules.
```

6 Restart Tomcat.

2.2 Authorized Users

When upgrading iManager you will not see the Authorized User screen during the install if an existing configiman.properties file is detected. The install will use the existing Authorized User settings from that file.

2.3 Updating Role Based Services

The first time you use iManager 2.7 to log in to an eDirectory tree that already contains an RBS collection, it is possible that not all of the roles and tasks are displayed. This is working as expected because some of the plug-ins require updates so that iManager 2.7 can fully utilize them. The RBS Configuration task lists which RBS modules are out-of-date. We recommend that you update your RBS modules to the latest version so that you can see and use all of the available functionality in iManager 2.7.

Be aware that you might have multiple roles with the same name. When plug-ins were updated for iManager 2.5, some plug-in developers changed task IDs or module names but retained the same display names, thus causing the roles to appear to be duplicated when, in fact, one instance is from one version and the other is from a newer version.

NOTE: Because different installations of iManager might have a different number of plug-ins locally installed, you might see discrepancies in the module report for any given collection from the *Role Based Services > RBS Configuration* page. In order for the numbers to match between iManager installations, make sure that the same subset of plug-ins is installed on each iManager instance in the tree.

To check whether you have outdated RBS objects:

1 From the Configure view, select *Role Based Services > RBS Configuration*.

The table on the 2.*x* Collections tabbed page displays any out-of-date modules.

2 To update them, select the number in the *Out-Of-Date* column for the Collection you want to update.

The list of outdated modules is displayed.

3 Select the module you want to update, then click *Update* at the top of the table.

NOTE: When updating to iManager 2.7, or re-installing iManager 2.7, existing plug-ins are not updated automatically. To update plug-ins manually, launch iManager and browse to *Configure > Plug-in Installation > Available Novell Plug-in Modules*. For more information, see "Plug-In Module Installation" in the *iManager 2.7.4 Administration Guide*.

2.4 Re-Installing or Migrating Plug-in Studio Plug-ins

To migrate or replicate Plug-in Studio plug-ins to another iManager instance, or a new or updated version of iManager, do the following:

1. From the iManager Configure view, select *Role Based Services > Plug-in Studio.* The Content frame displays the Installed Custom Plug-ins list, including the location of the RBS collection to which the plug-ins belong.

2. Select the plug-in you want to re-install or migrate, then click *Edit*. You can only edit one plug-in at a time.

3. Click *Install*. You should receive a message saying it was successful. Do this for every plug-in you need to re-install or migrate.

Uninstalling iManager 2.7

<div style="text-align: right; font-size: 3em;">3</div>

This section explains how to uninstall iManager on the following platforms:

IMPORTANT: As a precaution, before uninstalling iManager, back up any custom content or other special iManager files that you want to preserve

There is no specific sequence in which iManager or the associated third-party components must be uninstalled.

There are, of course, ramifications to uninstalling any of these components. For example, if you uninstall either the Web server or the servlet container, you cannot run iManager. Also, on all platforms, the uninstall removes only files that it installed in the first place. If there are files that were created by the application (for example, the log files and auto-generated configuration files that are created while Tomcat runs), these are not deleted by the uninstall because it did not install them.

Likewise, if you have created new files or modified existing files within the directory structure that was originally laid down during the install, these files are not removed by the uninstall. This is a safeguard so that data is not unintentionally deleted when a product is uninstalled.

Uninstalling iManager does not affect any of the RBS configurations that you have set in your tree. The uninstall procedure does not remove log files or custom content.

After running the iManager uninstaller, ensure that the following directories are removed to completely uninstall the iManager.

- `var/opt/novell/iManager/`
- `/etc/opt/novell/iManager/`
- `/var/opt/novell/tomcat5/`
- `/etc/opt/novell/tomcat5/`

If you try reinstalling iManager when these directories are not cleaned, the installation does not successfully complete and the installer throws some errors.

3.1 Linux

`Root` access is required for uninstalling.

1 Open a shell and execute the following command:

   `/var/opt/novell/iManager/nps/UninstallerData/UninstalliManager`

As noted during the uninstall routine, the iManager uninstall process does not uninstall NICI. You can uninstall NICI separately, if desired.

IMPORTANT: If eDirectory is installed on the same server as iManager, NICI is required to continue to run eDirectory.

3.2 Windows

Uninstall iManager using Windows' Add or Remove Programs applet in the Control Panel.

Tomcat and NICI are listed separately. If you are no longer using them, you can uninstall each program separately.

IMPORTANT: If eDirectory is installed on the same server as iManager, NICI is required to continue to run eDirectory.

When you remove iManager 2.7, only some files in the file system are removed. You are asked if you want to remove all iManager files. If you select Yes, all iManager files are removed, including all custom content. However, the 2.7 RBS objects are not removed from the eDirectory tree, and the schema remains in the same state.

3.3 iManager Workstation

To uninstall iManager Workstation, delete the directory where you extracted the files. NICI can be removed through Add or Remove Programs in the Control Panel on Windows or with the `rpm` command on Linux.