

## Chapter 4

# Before You Install the SDX-300 Software

This chapter provides information and procedures that you should read before you install the Service Deployment System (SDX) software. The chapter contains the following sections:

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## Requirements to Install the SDX Software

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Before you start to install the SDX software, make sure that you:

- Have a license for the SDX software from Juniper Networks Customer Services and Support. For information about obtaining licenses, see *Chapter 8, Installing and Configuring Licenses*.
- Have identified which SDX components to install on various systems in the network.
- Have a solid working knowledge of how to work in a UNIX environment, including how to perform tasks such as starting UNIX sessions, issuing commands on the UNIX command-line interface, mounting CDs, navigating through the file structure, and using a text editor to read and modify text files.

## Required User Privileges to Install the Software

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Before you install the software, make sure that you have administrator root permissions on each host where you plan to install and configure SDX software. A root user is typically a system administrator who has the authority to install software and maintain the system.

If you want authorized users to execute commands as if they had root privileges, you can use the UNIX **sudo** command to enable these authorized users.

If you want authorized users with nonroot privileges to be able to configure and administer the SDX software, you can create nonroot users and groups with the UNIX **admintool** utility. See your Solaris documentation for more information. Alternatively, you can use the command described in *Installing the SDX Software with the Installation Program in Silent Mode* on page 66 to create nonroot users and groups.



**NOTE:** You must install all SDX components as the same administrative user, either all as root or all as the same nonroot user. Installation of some components by the root user and others by a nonroot user causes problems.

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## SDX Software Distribution

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Juniper Networks provides the SDX software on two *SDX-300 Service Deployment System Software CDs*. These CDs contain the component software, supporting applications, and *Release Notes* needed to install and operate the SDX software. Throughout this book, we refer to the software distributed on these CDs as the SDX software distribution.

The *SDX Application Library CD* contains software for optional SDX applications. For information about the SDX Application Library, see the *SDX Application Library Guide*.

The *SDX-300 Service Deployment System Software CDs* are labeled SDX disk 1 and SDX disk 2.

Table 7 describes the contents of SDX disk 1.

**Table 7: Directories on SDX Disk 1**

Directory	Contents (Directory Name or Description)
solaris	Package files to install the SDX software: omniORB, SMCpython, UMCagent, UMCdatint, UMCdirxa, UMCecl, UMCedsa, UMCiDSa, UMCjboss, UMCjps, UMCjre, UMClicsvr, UMCmig, UMCnetsmp, UMCnic, UMColdap, UMColdapa, UMCpom, UMCpyadd, UMCradius, UMCredir, UMCredmon, UMCsae, UMCsmg
solaris8	Directories for IP Filter: ipf, ipfx
solaris9	Directories for IP Filter: ipf, ipfx
tools	Files for the <b>verifyInst</b> command: criteria.cfg, verifyInst
webapp	Web archive (WAR) files for Web applications: entmgr.war, licsvrAdmin.war, nataddr.war, nicAdmin.war, pomAdmin.war, sportal.war, tagsEntdemo.war
Release_Notes.pdf	Release Notes
UMCsdx.bin	SDX GUI installation program

Table 8 describes the contents of SDX disk 2.

**Table 8: Directories on SDX Disk 2**

Directory	Contents (Directory Name or Description)
gnu	Directory for Java Object Request Broker (ORB): JacORB
SDK	Directories for software development files: doc, dtd, idl, lib, lib-1.3, lib-1-4, mibs, plugin
solaris_patches	Directories that contain Solaris patch files: solaris8, solaris9
Steel_Belted_Radius	Files to use with Steel Belted RADIUS: account.ini, dictiona.dcm, juniper.dct, ldapauth.aut, proxy.ini, radius.dct, vendor.ini, virneo.com.aut, virneo.com.dir, virneo.net.aut, virneo.net.dir
Unsupported	Directories that contain unsupported software: ConfEd, Linux, samples, Solaris, WinNT

## System Requirements for Installing the SDX Software

All SDX components can typically be installed on a single Sun Solaris host that communicates across a network. The plan for your SDX implementation may require additional hosts to meet scalability and engineering requirements to distribute processing to other systems.

The detailed system requirements for each SDX component can vary greatly from installation to installation. You can consult with Juniper Networks Professional Services to determine the specific requirements for your SDX installation. The specifications depend on your particular needs, the number of customers you plan to service, and system usage. Basic requirements are listed in Table 9.



**NOTE:** To determine the hardware requirements for third-party software, consult the documentation for that software.

You install the components listed in Table 9 on a Sun Solaris host.

For each component, ensure that the system meets the minimum memory requirements and minimum recommended disk space (to install and use a component) listed in Table 9.

**Table 9: Minimum Memory and Minimum Disk Space Recommended for SDX Components**

Component Name	Memory	Disk Space	Notes
<b>Server Components</b>			
SAE	256 MB	50 MB	
Juniper Policy Server	256 MB	50 MB	
License server	256 MB	20 MB	
Network information collector (NIC) system	256 MB	50 MB	
Redundancy monitor system	256 MB	20 MB	
SNMP agent	256 MB	50 MB plus logging space	The SNMP agent does not operate on its own. It runs as a complementary component to other SDX components.
<b>Management Tools</b>			
Policy Editor	256 MB	5 MB plus logging space	
SDX Admin	256 MB	10 MB plus logging space	
SDX Configuration Editor	256 MB	10 MB plus logging space	
<b>Infrastructure Components</b>			
AAA RADIUS server	256 MB	20 MB plus logging space	See also <a href="http://www.merit.edu">http://www.merit.edu</a>
Data Integration Suite	256 MB	20 MB	
OpenLDAP directory server	256 MB	50 MB plus space for actual directory data	See also <a href="http://www.openldap.org">http://www.openldap.org</a>

**Table 9: Minimum Memory and Minimum Disk Space Recommended for SDX Components (continued)**

Component Name	Memory	Disk Space	Notes
JBoss application Web server	256 MB	60 MB	For exact space requirements for various versions of JBoss, see <a href="http://www.jboss.org/products/jbos sas">http://www.jboss.org/products/jbos sas</a>
<b>Captive Portal System</b>			
IP filter	256 MB	20 MB	
Web redirect server	256 MB	20 MB	

## Verifying System Resources

You can use an SDX command, **verifyInst**, to verify that the system has adequate system resources before and after you install the SDX software. The **verifyInst** command checks the current installation against the following SDX hardware and software requirements:

- Disk space for software operation—Platform
- Host OS release version—Processor
- Memory—Swap

The **verifyInst** command is located in the */tools* directory in the SDX software distribution. You can issue the command directly from the CD. If you want to install a local copy on a host, you must copy the complete */tools* directory to the host.

To check system resources for all currently installed components:

- Issue the **verifyInst** command with no arguments:

```
verifyInst
```

To check system resources for one or two packages:

- Issue the **verifyInst** command with the package name(s):

```
verifyInst <package-Name> <package_name>
```

For example, to check the UMColdap and UMColdapa packages enter:

```
verifyInst UMColdap UMColdapa
```

When you run the **verifyInst** command to check disk space, the command examines the default installation directory (*/opt/UMC*).

To check disk space when the SDX software is installed into a directory other than the default (*/opt/UMC*):

- Issue the **verifyInst** command with the **-I** option to specify the directory:

```
verifyInst -I <directory>
```

For example, if you installed the SDX software into the */base/SDX* directory, enter:

```
verifyInst -l /base/SDX
```

The */tools/criteria.cfg* file specifies default hardware and software requirements.

To use a different file to specify hardware and software requirements:

1. Create a text file that uses the same syntax as the *criteria.cfg* file.
2. Issue the **verifyInst** command with the **-f** option to specify the new file:

```
verifyInst -f <filename>
```

For example, to specify the *my.cfg* file:

```
verifyInst -f my.cfg
```

## Network Requirements for the SDX Software

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In a network that supports an SDX installation, ensure that:

- The systems on which SDX components run have network connectivity to each other.
- A domain name system (DNS) is configured on the network.
- Clocks on systems on which SDX components run are synchronized.

Subscriber sessions may not be recognized if the clocks are not synchronized. We strongly recommend that you configure Network Time Protocol (NTP) on every server used for an SDX deployment.

- You define a mechanism to collect log information. Although, you can review the content of log files, we recommend that you use a syslog server for this purpose.
- You identify which router IP interfaces are to be managed as service deployment points.

## SNMP Master Agent Requirements

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The SDX SNMP agent cannot act as a master agent, and it can communicate with master agents only by using the Agent Extensibility (AgentX) protocol. The SDX SNMP agent runs as a subagent to an installed AgentX master agent. For more information about the SNMP agent, see *Chapter 10, Configuring and Starting the SDX SNMP Agent*.

## Directory Server Choices

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The SDX software distribution includes the OpenLDAP directory server and prepackaged integration for OpenLDAP, DirX directory server, eTrust Directory, Oracle Internet Directory, and Sun ONE Directory Server through add-on packages specific to a directory. You can also integrate other directories with the SDX software.

For information about the directory servers that you can integrate with the SDX software, see the *SDX Release Notes*.

## RADIUS Choices

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Although the SDX software operates with other RADIUS systems, we currently support system integration only with Juniper Networks Steel-Belted Radius/SPE server, Merit RADIUS, and Interlink Networks RAD-Series AAA RADIUS.

SDX support for Challenge Handshake Authentication Protocol (CHAP) depends on the integrated RADIUS software. Merit RADIUS does not support CHAP; consequently the SDX software does not support CHAP when you use Merit RADIUS. Steel-Belted Radius/SPE server does support CHAP, so when you use the Steel-Belted Radius/SPE server the SDX software supports CHAP.

For information about the RADIUS servers that you can integrate with the SDX software, see the *SDX Release Notes*.

## X-Window Server Software Recommendations

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Many of the SDX graphical user interfaces (GUIs), such as Policy Editor and SDX Admin, are X-Windows applications and require configuration of the X-Windows server to provide proper font and keyboard behavior. Failure to properly configure the X-Windows server can cause problems in certain circumstances; for example, if you try to use the Japanese locale without having the required Japanese fonts. If you have any questions about X-Windows server configuration, consult technical support or the user documentation for the X-Windows server that you are using.

## Installing Solaris Patches for the UNIX Host

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Before you install the SDX software or related components, such as a directory server, make sure that you install the appropriate Sun Solaris patches on the host. Sun Microsystems frequently issues patch clusters. We recommend that you keep your operating system up to date with Sun's recommended patches for the Solaris operating system.



**NOTE:** Review the *SDX Release Notes* for information about the latest patches required to install your Solaris software.

We provide SDX-required Java 2 Platform, Standard Edition (J2SE) patches in a patch cluster in the SDX software distribution. You can find patch clusters and additional information about Solaris and J2SE patches at the following URL:

<http://sunsolve.sun.com/pub-cgi/show.pl?target=patches/patch-access>

See the Sun Solaris documentation for instructions on how to install the operating system and OS patches.

To install the J2SE patches from the SDX software distribution:

1. On the UNIX host, log in as `root`.
2. Place the SDX software disk 2 in the CD drive.
3. Follow the instructions in the *README* file appropriate to your operating system:
  - Solaris 8—`.../solaris_patches/solaris8/README`
  - Solaris 9—`.../solaris_patches/solaris9/README`.

## Next Steps

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To install the SDX software, see *Chapter 5, Installing the SDX-300 Software*.

To upgrade the SDX software, see *Chapter 12, Upgrading the SDX-300 Software*.