

## Chapter 7

# Integrating the DirX Directory Server

DirX Solutions is a product family by Siemens that provides a central repository for storing, managing, and distributing identity profiles, access privileges, and application and network resource information. DirX Solutions contains the software products DirX 6.0 directory server and DirXmetahub 6.0 (the DirX meta engine).

Use the information in this chapter to integrate DirX with Juniper Networks routers and the SRC software. See the *SRC-PE Release Notes* for information about compatibility of this SRC release with DirX releases.

This chapter contains the following sections:

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## Overview of DirX Directory Server Integration

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You can integrate the DirX directory server into your SRC environment by installing the directory software and selecting configuration values to support integration with the SRC software. After you install the DirX software, you run the generate script that is installed from an SRC add-on package.

The DirX directory server is based on LDAPv3, Directory Services Markup Language version 2 (DSMLv2), and X.500 directory server standards. You can use DirX to set up a distributed, replicated directory service and to manage data in directories. DirX provides an identity management system to store information about people, organizations, applications, network devices, and other distributed services. Working with the DirX directory server, DirXmetahub decreases the time and effort to operate multiple directories simultaneously.

## About the DirX Add-On Package

The DirX directory server add-on package for the SRC software is named UMCdirxa. This package provides a **generate.sh** script that integrates DirX with the SRC software and a *variables.tcl* file that contains configuration information that the SRC software requires. Table 9 describes important generate-script information, which is contained in the *variables.tcl* file. The installation for the add-on package places this file in the *customize* in the dirx user home directory */export/home/dirx*.

**Table 9: Information Needed for DirX Generate Script**

Configuration Property	Value
LDAP port to be used for directory instance	389
Suffix for new LDAP directory instance	<i>/o = umc</i>
Identifier for superadministrator	<i>/o = umc, cn = umcAdmin</i>
Password for superadministrator	admin123

The **generate.sh** script also extends the LDAP schema to:

- Index SDX attributes by processing the *schema.adm* file.
- Defines the directory tree structure by processing the *initialize.cp* file.
- Adds access control information by processing the *access.cp* file.
- Creates the directory infrastructure.
- Lets you load sample data.

## Integrating the DirX Directory with the SRC Software

The tasks to integrate DirX Directory Server with the SRC software are:

1. Preparing to Install the DirX Directory Server on page 79
2. Installing the DirX Directory Server on page 80
3. Installing the UMCdirxa Add-On Package on page 80
4. Configuring the DirX Directory Server on page 80

You can obtain the DirX Solutions software package by contacting your local Siemens sales representative. For immediate information, go to:

<http://www.siemens.com/directory>

You can also e-mail Siemens at:

[directory@icn.siemens.de](mailto:directory@icn.siemens.de)

### ***Preparing to Install the DirX Directory Server***

Only root users can install the DirX directory server software. To prepare for installation:

1. Log in as **root**.
2. Load the Siemens DirX Solutions software CD, and access the CD directory. For example:

**cd /cdrom/cdrom0**

3. Create a new directory user. You must create a directory user called *dirx*. Once the software is installed, the *dirx* user can manage the DirX software.

To create a new user and prepare the host for the DirX software:

- a. Start the Solaris Admintool:

**admintool &**

The Admintool: Users window appears.

- b. Select Edit, and then click **Add**.

The Admintool: Add User dialog box appears.

- c. In the User Name field, enter:

**dirx**

- d. In the Set Path field, enter:

**/export/home/dirx**

- e. Click **OK**.

The window closes, and the main Admintool: Users window appears with the information you just entered.

- f. Set the password. For example:

**passwd dirx**

- g. Enter and confirm the password when prompted by the Admintool.

## Installing the DirX Directory Server

The default base directory for installation is */opt/dirx*. We recommend that you install the DirX software in the home directory of the DirX user as described in *Preparing to Install the DirX Directory Server* on page 79, and install the DirX software package in the home directory */export/home/dirx*.

The directory and log files are created in subdirectories of the installation directory. Before you start the installation, verify that you have sufficient disk space available in the installation directory.

To install the DirX directory server software:

1. Log in as **superuser**.
2. Install DirX with the **pkgadd** tool. For example:

```
pkgadd -d /cdrom/cdrom0/server/dirx/sun/dirx60*
```

3. Respond to the prompts as listed in Table 10.

**Table 10: Prompts for Installation of DirX-SV Server Package**

Prompt	Response
Where should the package DirX-SV be installed?	1 = home directory 2 = /opt/dirx <b>NOTE:</b> Select 1.
Please enter the login name of an existing user.	dirx
Do you want to install these as setuid.setgid files?	y
Do you want to continue with the installation of <DirX-SV> ?	y

## Installing the UMCdirxa Add-On Package

You must install the DirX software before you install the SRC add-on package for DirX. To install the add-on package:

1. Log in as **superuser**.
2. Install the DirX add-on package by following the directions in *SRC-PE Getting Started Guide, Chapter 28, Installing the SRC Software on a Solaris Platform*.

The DirX add-on package is installed in a subdirectory named *customize* in the dirx user home directory */export/home/dirx*.

## Configuring the DirX Directory Server

To configure the DirX directory server:

1. Log in as **dirx**, and enter the following commands:

```
su - dirx  
cd customize  
sh ./generate.sh
```

2. At the system prompt “Do you want to load sample data? [n]”, enter y for yes.

The script takes a few minutes to create, initialize, and configure the database and start the server processes. The **generate.sh** scripts generate the *log.txt* log file.

If the generation fails, the system returns a FAILED message.

3. Verify whether the integration was successful by opening *log.txt* file with an editor, such as vi, and search for FAILED.

If the search does not find the word FAILED, the integration was successful.

4. To verify that the DirX directory server processes are running, enter:

**ps -ef | grep dirx**

The system displays three processes, as shown in the following sample screen output:

```
root 20263 20260 0 Feb 11 ? 5:40 /export/home/dirx/bin/dirxldapv3
dirx 20261 20260 0 Feb 11 ?26:26 /export/home/dirx/bin/dirxdsa -d
/export/home/dirx/server/DB
dirx 20260 143 0 Feb 11 ?0:00 /export/home/dirx/bin/dirxdsas -d
/export/home/dirx
```

Wait for the output of all three processes to appear. The DirX LDAPv3 process takes longer than the other two.

## Provisioning the Directory by Using DirXmetahub

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Metahub provides the ability to integrate connected data sources, such as a relational database that holds subscriber information, other LDAP directories, or flat files (for example, XML) into the SDX directory infrastructure. Metahub is a set of components that includes:

- Metadirectory store—SDX directory that holds all the required SDX-related information.
- Metaagent—Interface to the connected data source. Its function is to import and export data from the data source.
- Metacontroller—Scriptable directory that joins the engine that transforms the data representation from the connected data source to the SDX LDAP schema. It performs the load, join, and aggregate function on directory entries and attributes.

DirXmetahub provides the SRC software with a unified view of the data by synchronizing the OSS data that is stored in one or more database into the SDX directory. This synchronization process can be performed in a scheduled manner on all data or only data that has changed since the last synchronization.

## Uninstalling the DirX Directory Server

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To uninstall DirX:

1. Log in as **root**.
2. Stop the DirX directory server. For example:

```
/etc/init.d/dirx stop
```

3. Start the Solaris software management tool.

```
swmtool
```

The Admintool: Software window appears.

4. Select the installed DirX directory server packages.
5. Select **Edit**, and click **Delete**.

A status dialog box prompts you to confirm that you want to delete the packages.

6. Click **Delete**.

## Starting the DirX Directory Server

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You can start the DirX directory server in two ways: in a **dirx** user environment or in a superuser environment.



**NOTE:** See the Siemens DirX directory server documentation for operating details.

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### Starting the DirX Directory Server in a **dirx** user Environment

To start DirX within a **dirx** user environment:

1. Log in as a **dirx** user:

```
login dirx
```

2. Change the directory to the *customize* directory:

```
cd customize
```

3. Start DirX by entering the command:

```
dirxadm -c start
```

### Starting the DirX Directory Server in a Superuser Environment

To start DirX within a superuser environment:

1. Log in as root.
2. Start the DirX directory server:

```
/etc/init.d/dirx start
```

The start process takes approximately 30 seconds.

### Stopping the DirX Directory Server

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You can stop the DirX directory server in two ways: in a dirx user environment or in a superuser environment.



**NOTE:** See the Siemens DirX directory server documentation for operating details.

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### Stopping the DirX Directory Server in a dirx user Environment

To stop DirX within a dirx user environment:

1. Log in as a dirx user:
2. Change the directory to the *customize* directory:

```
login dirx
```

```
cd customize
```

3. Stop DirX by entering the command:

```
dirxadm shutdown.tcl
```

### Stopping the DirX Directory Server in a Superuser Environment

To stop DirX within a superuser environment:

1. Log in as root.
2. Stop the DirX directory server:

```
/etc/init.d/dirx stop
```

## Backing Up the DirX Database

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You can manually back up the database for any directory you have installed. For information about migrating a directory database to another host, see *SRC-PE Getting Started Guide, Chapter 35, Upgrading the SRC Software on a Solaris Platform*.

To back up the DirX database:

1. Log in as user `dirx`, and access the *customize* subdirectory.

```
cd customize
```

2. Archive the database.

```
dirxadm  
dirxadm> source bind.tcl  
dirxadm> save -file /tmp/dirxdb
```

## Restoring the DirX Directory Database

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You can manually restore the database for any directory you have installed. For information about migrating a directory database to another host, see *SRC-PE Getting Started Guide, Chapter 35, Upgrading the SRC Software on a Solaris Platform*.

To restore the DirX database:

1. Verify that the DirX server is running. See your DirX documentation for details.
2. Restore the archive.

```
dirxadm  
dirxadm> source bind.tcl  
dirxadm> restore -file /tmp/dirxdb
```

We recommend that you restart SRC components after restoring directory data from a backup, to ensure that the restored database is used.