



# CHAPTER 1

## Installing the Database for Cisco DCNM-SAN

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This chapter describes about installing the database for Cisco DCNM for SAN (DCNM-SAN) and contains the following sections:

- [Information about the Database, page 1-1](#)
- [Installing the Database, page 1-1](#)

### Information about the Database

Before you install DCNM-SAN, you must install a database. As of Cisco MDS NX-OS Release 4.1(1) and later, DCNM-SAN is packaged with PostgreSQL database. You can install PostgreSQL by using DCNM-SAN installer from Cisco.com. If the PostgreSQL database is present in your computer, the DCNM-SAN installer will upgrade it to the latest version.

### Installing the Database

This section includes the following topics:

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- [Directory Structure, page 1-2](#)
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- [Increasing UDP Buffer Size, page 1-3](#)
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### Restrictions

- If you are installing Cisco SAN-OS Release 3.1(2b) or later, you can also use Oracle Database 10g Express. Your other choice is PostgreSQL.
- If you are installing Cisco NX-OS Release 5.0(1a) or later, you can also use Oracle Database 10g Express, or Oracle Database 10g. Your other choice is PostgreSQL.
- Be sure to back up all of the rrd file in \$INSTALL/pm/db before the upgrade.

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- If you want to use Oracle Database 10g Express, you must install the database and create a user name and password before continuing with the DCNM-SAN installation.
- We recommend the Oracle Database 10g Express option for all users who are running Performance Manager on large fabrics (1000 or more end devices).

## Directory Structure

Starting from Cisco MDS NX-OS Release 4.1(3a), the directory structure has changed to accommodate its future integration with Nexus 5000 products. By default, the DCNM-SAN components are installed on your computer's hard drive, in the C:\Program Files\ folder. The installation path is the root directory on your computer, such as C:\Program Files\Cisco Systems. DCNM-SAN and databases are installed in application directories, such as C:\Program Files\Cisco Systems\DCM\FM. [Table 1-1](#) and [Table 1-2](#) describe the directory structure for Windows, UNIX and Solaris operating systems.

**Table 1-1** Directory Structure (Windows)

Directory	Description
C:\Program Files\Cisco Systems\	Home directory for Cisco products.
C:\Program Files\Cisco Systems\DCM\	Home directory for Cisco Data Center Management products.
C:\Program Files\Cisco Systems\DCM\FM	Home directory for DCNM-SAN and Device Manager.
C:\Program Files\Cisco Systems\DCM\JBoss-4.2.2.GA	Home directory for JBoss (DCNM-SAN Server infrastructure).
C:\Program Files\Cisco Systems\DCM\DB	Home directory for database (Oracle and PostgreSQL).
C:\Program Files\Cisco Systems\DCM\JRE	Home directory for Java Runtime Environment.
C:\Program Files\Cisco Systems\DCM\JBoss-4.2.2.GA\SERVER\FM	Home directory for DCNM-SAN Server.

**Table 1-2** Directory Structure (Unix and Solaris)

Directory	Description
/usr/local/cisco	Home directory for Cisco products.
/usr/local/cisco/dcm/	Home directory for Cisco Data Center Management products.
/usr/local/cisco/dcm/fm	Home directory for DCNM-SAN and Device Manager.
/usr/local/cisco/dcm/jboss-4.2.2.GA	Home directory for JBoss (DCNM-SAN Server infrastructure).
/usr/local/cisco/dcm/db	Home directory for database (Oracle and PostgreSQL).
/usr/local/cisco/dcm/jboss-4.2.2.GA/server/fm	Home directory for DCNM-SAN Server.

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## Installing Oracle

To install the Oracle database, follow these steps:

**Step 1** Click the following link to install Oracle Database 10g Express or Oracle Database 11g.

<http://www.oracle.com/technology/software/products/database/xe/index.html>



**Note** If you have another instance of Oracle already installed on a PC, we recommend that you do not install the Oracle database on the same PC. In such cases, DCNM-SAN can only use the PostgreSQL database.

**Step 2** Run OracleXE.exe to install the Oracle database. Set the password for the system user. The database administrator uses the password to manage and administer Oracle Database 10g Express server, which is installed by the Oracle installer.

**Step 3** Finish the installation and verify that both services (OracleServiceXE and OracleXETNSListener) are running from the Services window.

**Step 4** Run the following script to

- a. Change the default Oracle admin port to 8082, and
- b. To create a database account. This example creates a new user 'scott' with a password 'tiger'. You need to keep this login credentials as it is required at a later point in the installation process.

```
C:\> cd c:\oracle\app\oracle\product\10.2.0\server\bin
C:\oracle\app\oracle\product\10.2.0\server\bin>sqlplus / as sysdba
SQL> exec dbms_xdb.sethttpport(8082);
SQL> GRANT CONNECT,RESOURCE,UNLIMITED TABLESPACE TO SCOTT IDENTIFIED BY
TIGER;
SQL> EXIT;
```



**Note** The Oracle Database 10g Express option is only supported on Microsoft Windows. It is not supported on UNIX systems.



**Note**

For information about backing up the Oracle database, go to this location:

[http://download.oracle.com/docs/cd/B25329\\_01/doc/admin.102/b25107/backrest.htm#i1004902](http://download.oracle.com/docs/cd/B25329_01/doc/admin.102/b25107/backrest.htm#i1004902).

You can also use the exp/imp utility at this location:

[http://download.oracle.com/docs/cd/B25329\\_01/doc/admin.102/b25107/impexp.htm#BCEEDCIB](http://download.oracle.com/docs/cd/B25329_01/doc/admin.102/b25107/impexp.htm#BCEEDCIB).

If you are using the Oracle database, you need to install the Oracle JDBC (Java Database Connectivity) component for DCNM-SAN to connect to the database.

## Increasing UDP Buffer Size

If the DCNM-SAN SNMP packet log shows an SNMP VarBind decode error, the UDP buffer size is low and the buffer size needs to be increased.

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To increase the UDP buffer size, do the following:

**Step 1** For Solaris, ensure that the UDP buffer size is at least 64 K.

```
ndd -set /dev/udp udp_rcv_hiwat 65535
nnd -set /dev/udp udp_xmit_hiwat 65535
```

**Step 2** Add the following setting in **/etc/system**, so that the buffer size will be in effect even after a reboot.

```
set nnd:udp_rcv_hiwat=65535
set nnd:udp_xmit_hiwat=65535
```



**Note**

Before starting the installation, make sure that you have logged in as a Superuser.

## Backing up Database

The DCNM-SAN uses PostgreSQL Database as the default database. The DCNM-SAN backup utility uses PostgreSQL `pg_dump` utility to dump all of the database content to an ASCII dump file. Restore utility uses PostgreSQL to recreate data using the dump file.

The dump file represents a snapshot of the database at the time of backup.

To perform a backup of the DCNM-SAN database, enter these commands on Linux/Solaris. Assume `INSTALLDIR` is the top directory of DCNM-SAN installation.

```
cd $INSTALLDIR/bin
/pgbackup.sh 02252008.data
```

The backup file `02252008.data` will be created in `$INSTALLDIR/bin` directory. If you want to create it in a standard backup director provide the full path name of the dump file.

To perform a backup of the DCNM-SAN database, enter these commands on Windows. Assume `INSTALLDIR` is the top directory of DCNM-SAN installation.

```
cd $INSTALLDIR/bin
/pgbackup.bat 02252008.data
```

The backup file `02252008.data` will be created in `$INSTALLDIR/bin` directory. If you want to create it in a standard backup director provide the full path name of the dump file.



**Note**

When PostgreSQL is chosen as the database, ensure that the Microsoft Windows user installing the software has administrative privileges and not the domain admin privileges. This is a prerequisite for successful installation.

For information about backing up the PostgreSQL database, run the `pg_dump` utility to have a good backup. For more information, go to this location:

<http://www.postgresql.org/docs/8.1/static/app-pgdump.html>.

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## Restoring Database

To restore DCNM-SAN database, you must have a good backup file, and you must stop the DCNM-SAN server before restoration. Run restore and enter these commands on Linux Solaris. Assume INSTALLDIR is the top directory of the DCNM-SAN installation.

```
cd $INSTALLDIR/bin
./FMServer.sh stop
./pgrestore.sh 02252008.data
./FMServer.sh start
```

To restore DCNM-SAN database, you must have a good backup file, and you must stop the DCNM-SAN server before restoration. Run restore and enter these commands on Windows. Assume INSTALLDIR is the top directory of the DCNM-SAN installation.

```
cd $INSTALLDIR/bin
./FMServer.bat stop
./pgrestore.bat 02252008.data
./FMServer.bat start
```

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