harmonic

DMS

Distribution Management System

Installation, Maintenance and Recovery Guide

VERSION 2.3

Rev. A
Manual Part No. INS-DMS-2.3

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Topics:

Installing the Hardware

The DMS Dell server is a 19" rack unit.

To connect the DMS Dell server to the network:

❖ Connect one Ethernet cable to the rear panel socket labeled Gb1 for management and one Ethernet cable to the rear panel socket labeled Gb2 for data.

DMS Network Security

Harmonic recommends that users install network security patches from Microsoft as well as installing virus detection software. Security patches released by Microsoft should be installed to provide optimum security for DMS.

Installing DMS and Mirror Setup for Redundancy

To use server redundancy, install software in the following order:

1. *DMS with SQL Server 2008 DB* on the backup server.
2. *Mirror Setup* on the backup server.
3. *DMS with SQL Server 2008 DB* on the primary server.
4. *Mirror Setup* on the primary server.

Installing DMS with SQL Server 2008 DB

The following procedures lead you step by step to prepare the virtual disks, a Windows Server 2008 installation for DMS and to install DMS.

The minimum requirements are:

- Dell R610 Server
- Windows Server 2008 Standard 32-bit
- Display resolution for Client for optimum performance is 1024x768

Configuring the Virtual Disks

To configure the virtual disks:

1. Create a virtual disk drive with two (2) mirrored physical disk drives as Raid 1.
2. Name the drive (C:) **System**.
3. Create a virtual disk drive with three (3) physical disk drives as Raid 5.
4. Name the second drive (D:) **Data**.

Configuring Windows Server 2008

To configure Windows Server 2008:

1. Install Windows Server 2008 SP2 (32-bit) on disk C:.
2. Verify you are logged in with administrator permissions.
3. To Disable Internet Protocol Version 6 (TCP/IP v6) for each NIC:
   a Select **Control Panel > Network and Sharing Center > Manage network connections**.
   b Right-click **Local Area Connection** and select **Properties**.
   c Clear the Internet Protocol Version 6 (TCP/IP v6) check box.
   d Click **OK**.
   Do this for all NICs.
4. To rename the management NIC:
   a Right-click the management NIC and select **Rename**.
   b Enter **Management Connection**.
5. To rename the data NIC:
   a Right-click the data NIC and select **Rename**.
   b Enter **Data Connection**.
6. To set metric for the Management Connection NIC:
   a Right-click on the Management Connection NIC and select **Properties**.
   b Select **Internet Protocol Version 4 (TCP/IPv4)**.
   c Click **Properties**.
   d Click **Advanced...**.
   e Clear the **Automatic metric** check box.
   f Enter **1** in the Interface metric box.
   g Click **OK**.
   h Click **OK**.
   i Click **Close**.
7. To set metric for the Data Connection NIC:
   a Right-click on the Data Connection NIC and select **Properties**.
   b Select **Internet Protocol Version 4 (TCP/IPv4)**.
   c Click **Properties**.
   d Click **Advanced...**.
   e Clear the **Automatic metric** check box.

f Enter **2** in the Interface metric box.

g Click **OK**.

h Click **OK**.

i Click **Close**.

8. To disable checking for important Windows updates:
   a Select **Control Panel** > **Windows Update** > **Change settings**.
   b Select **Never check for updates** under the Important updates drop down list.
   c Click **OK**.
9. To configure Power saving:
   a Select **Control Panel** > **Power Options**.
   b Select **High performance**. (Don't change any default values.)

   The system can work with a firewall if you configure the firewall to allow it.
10. To turn the firewall on:
    a Right-click **Computer** > **Manage**.
    b Select **Configuration** > **Windows Firewall with Advanced Security** > **Windows Firewall Properties**.
    c Set Firewall state to On on the Domain Profile, Private profile and Public Profile tabs.
    d Click **OK**.
11. To configure the firewall Inbound Rules:
    a Right-click **Computer**.
    b Select **Manage**.
    c Select **Configuration** > **Windows Firewall with Advanced Security** > **Inbound Rules**.
    d Click New Rule in the Actions box.
    e Select Port.
    f Click Next.
    g Select TCP.
    h Select Specific local ports.
    i Enter *61616*.
    j Click Next.
    k Select Allow the connection.
    l Click Next.
    m Mark the following check boxes: Domain, Private, Public.
    n Click Next.
    o Enter *DMS Broker* for Name.
    p Click Finish.
    q Repeat Step d to Step p four times and enter the following:

- First repeat enter *2221* for Specific local ports and *DMS FTP* for Name.
- Second repeat enter *1433* for Specific local ports and *SQL_SERVER_1* for Name.
- Third repeat enter *1434* for Specific local ports and *SQL_SERVER_2* for Name.
- Fourth repeat enter *9090* for Specific local ports and DMS Web App Port for Name.

r The rules in the Inbound Rules Table should all be set to *Any*.

12. To disable Password complexity:
    a Select **Control Panel > Administrative Tools**.
    b Double-click **Local Security Policy**.
    c Select **Account Policies > Password Policy**.
    d Double-click **Password must meet complexity requirements**.
    e Select **Disabled.**
    f Click **OK**.
13. Reboot the server.

    Some of the above configuration changes only take effect after a reboot.

Installing the DMS System

Prerequisites:

- No antivirus should be installed on the server.
- Windows Installer (MSI) MSI 3.1.0.0 should be installed on the server.
- .NET Framework 3.5 SP1 should be installed on the server.
- The DMS setup file and the SQL folder should be in the same folder.

If the Windows installer (MSI) is not installed, you can install it from the following path on the install CD, `SQL2K8\WindowsInstaller-KB893803-v2-x86.exe`.

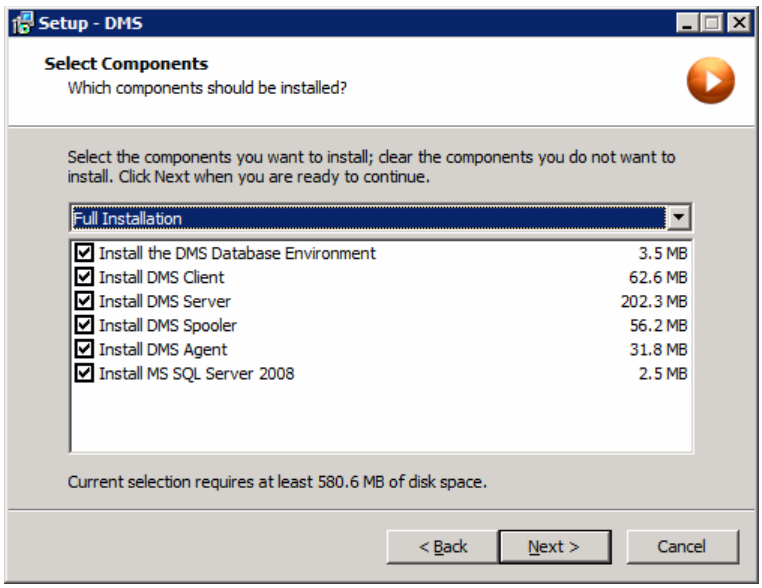
If .NET framework is not installed, you can install it from the following path on the install CD, `SQL2K8\dotnetfx35setup.exe`.

To install DMS:

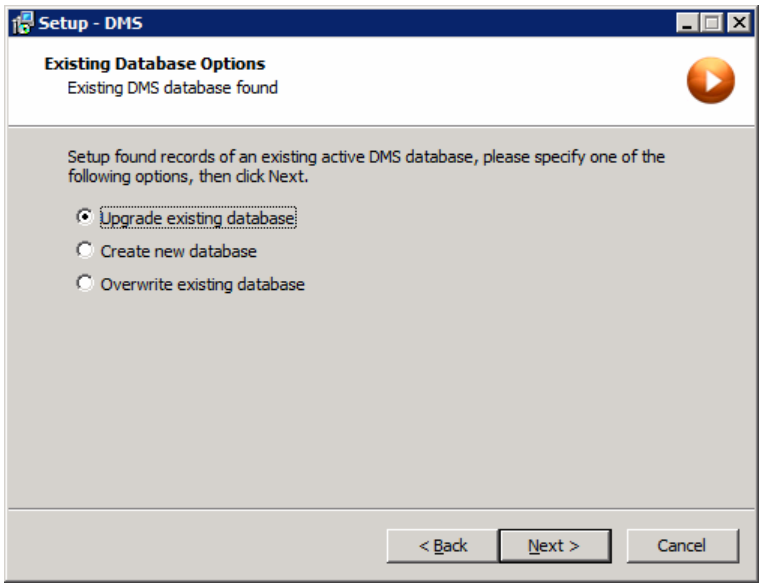
1. Double-click the **Setup DMS** icon on the install CD.

   The DMS setup wizard dialog displays.
2. Click **Next**.
3. Select drive **D:** for the destination folder, *Harmonic*.
4. Click **Next**.

5. Select the components to install. You don't have to install the client on the server.

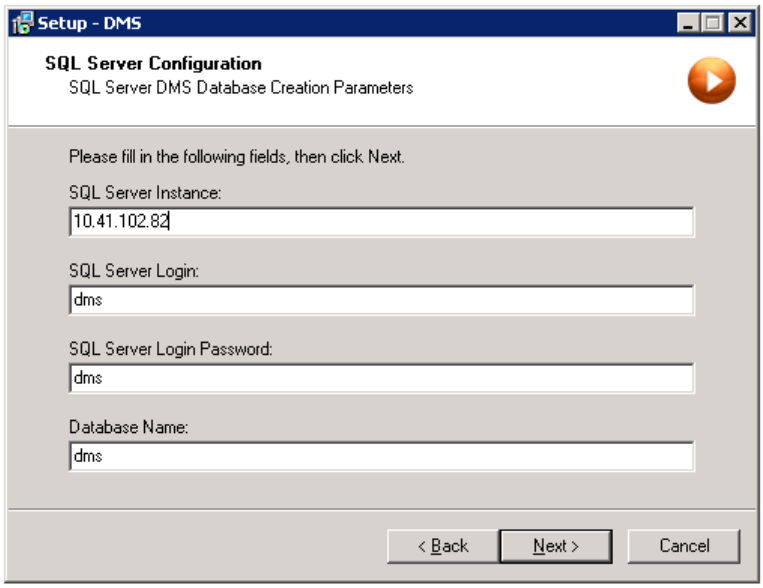


6. Click **Next**.
7. If a DMS database already exists and you selected Install the DMS Database Environment, then the *Existing Database Options* page displays, see *Uninstalling and Re-Installing DMS* for details.



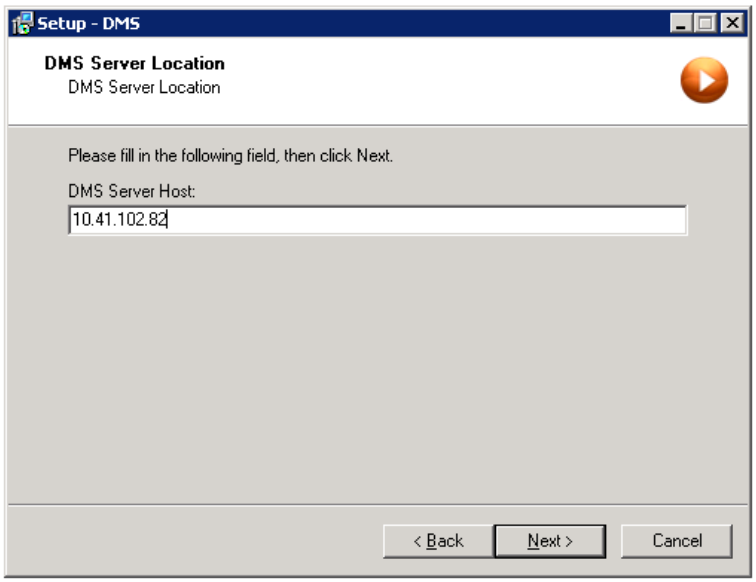
8. Click **Next**.

9. You can enter any name that you choose for each of the following:
   - SQL Server Instance
   - SQL Server Login
   - SQL Server Login Password
   - Database Name



10. Click **Next**.
11. For DMS Server Host, enter the management IP address.

NOTE: This is also the IP address where the database will be.



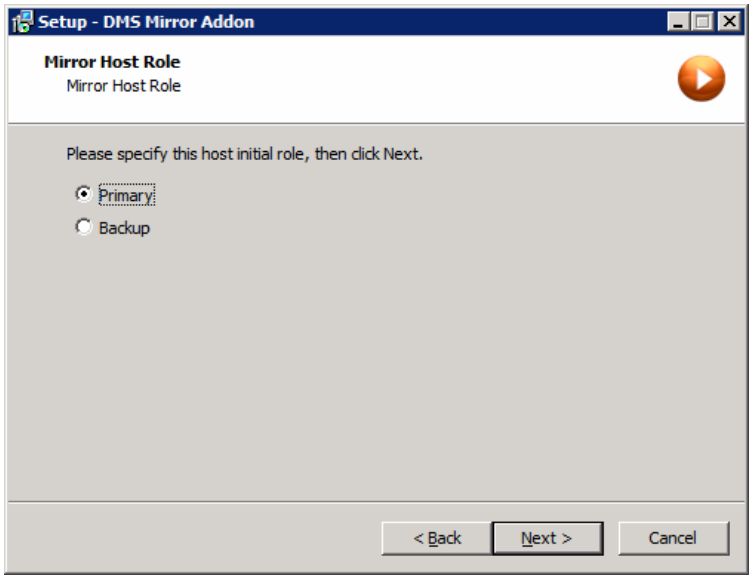
12. For Start Menu Folder, enter **DMS**.
13. Click **Install** to start the installation process.
14. When the process is finished, choose to restart the computer.

Installing Mirror Setup

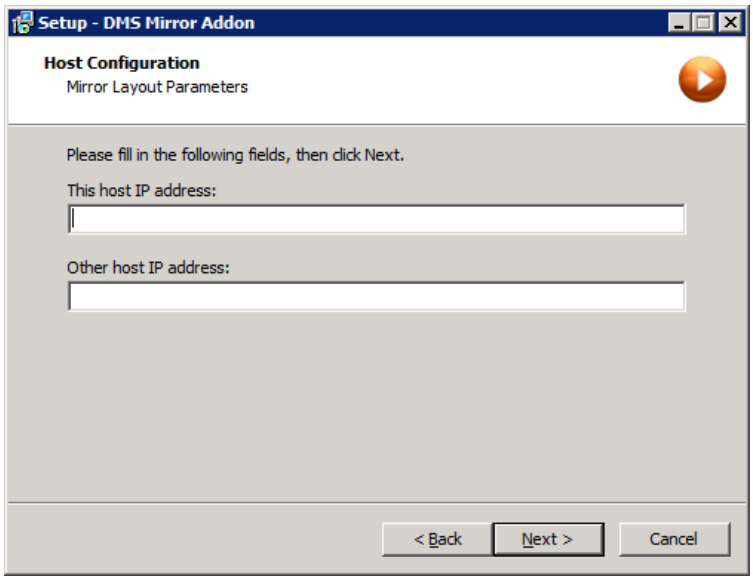
To install Mirror Setup:

1. Double-click the **MirrorSetup DMS** icon on the install CD.

   The DMS setup wizard dialog displays.
2. Click **Next**.
3. Select drive **D:** for the destination folder, *Harmonic*.
4. Click **Next**.
5. Select **Install the DMS Mirror Redundancy Addon**.
6. Click **Next**.
7. If this is the primary server, select **Primary** if it is the backup server select **Backup**.



8. Click **Next**.
9. Enter the IP address for this server as This host IP address and the IP address for the other server as Other host IP address.

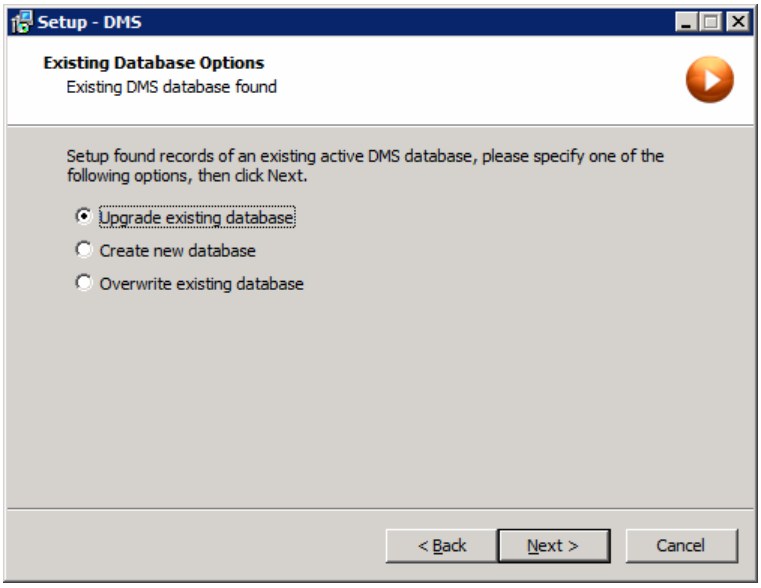


10. Enter or browse the Start Menu Folder.
11. Click **Next**.
12. Click **Install**.

Uninstalling and Re-Installing DMS

If there is an existing DMS database and you run the DMS Setup and select Install the DMS Database Environment, then the *Existing Database Options* page displays comprising the following:

- Upgrade existing database – This option upgrades the schema objects of a valid DMS database from a previous version to the current version.
- Create new database – This option creates a new DMS database leaving the existing database intact. The server connection string will be configured to connect to the new database.
- Overwrite existing database – This option replaces the existing DMS database with a new database.



The install DMS database environment option creates and executes the necessary SQL batch files to create a new DMS database and its associated MS SQL Server login. If this option is selected without installing MS SQL Server, only the scripts are created but not executed.

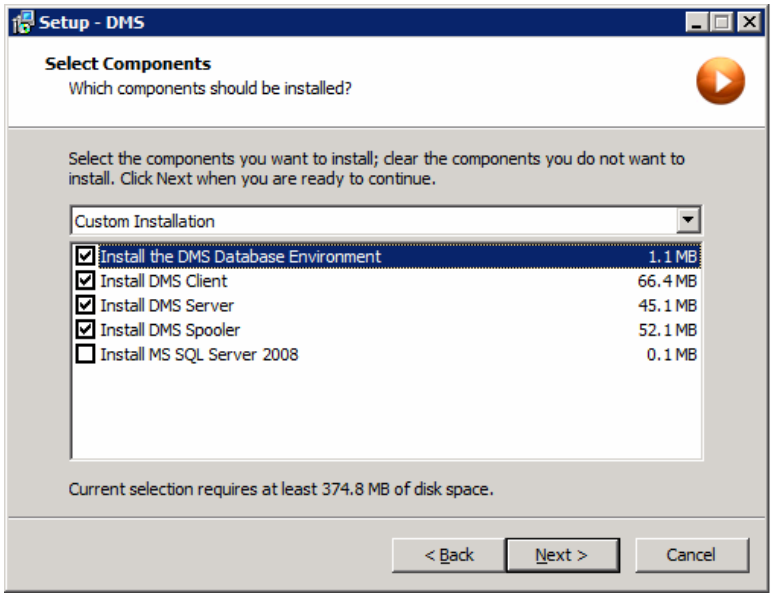
NOTE: You should uninstall DMS before re-installing DMS.

To uninstall and re-install DMS:

1. Close all applications.
2. Uninstall **DMS** with *Programs and Features* in the Control Panel.
3. Copy the **Setup DMS** file to the c:\Install folder.
4. Double-click the **Setup DMS** icon on the install CD.

   The DMS setup wizard dialog displays.

5. Click **Next**.
6. Select drive **D:** for the destination folder, *Harmonic*.
7. Approve the *folder exists* warning.
8. Select the components to install and de-select the *Install MS SQL Server 2008* check box.

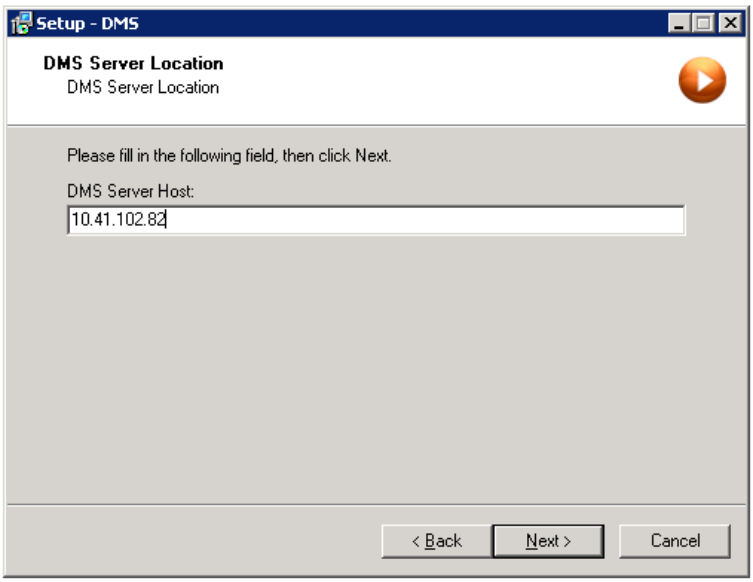


If there is an existing database, the following three options display when you click Next:

- Upgrade existing database
- Create new database
- Overwrite existing database

9. For SQL Server Instance, use the default or enter any name you want.
10. You can enter any name that you choose for each of the following:
    - SQL Server Login
    - SQL Server Login Password
    - Database Name

11. For DMS Server Host, enter the management IP address.



12. For Start Menu Folder, enter **DMS**.
13. Click **Install** to start the installation process.
14. When the process is finished, restart the computer.

Additional DMS Clients

You can install additional DMS clients on the same LAN as the server for operating or monitoring.

The minimum requirements are:

- 2 GB memory
- Windows XP (Windows Vista and 7 are also supported)
- Resolution for Client for optimum performance: 1024x768

The FTP port is 2221 for the client.

Installing a DMS Client

This procedure is supplied to lead you step by step in installing a DMS client.

Prerequisites:

The DMS setup file and the SQL folder should be in the same folder.

To install an additional DMS client:

1. Close all applications.
2. To open the DMS ports:
   a Select **Control Panel**.
   b Double-click **Windows Firewall**.
   c Select **Change settings** > **Exceptions** > **Add port**.
   d Set the name of the port to **DMS Broker** and the port to **61616** (TCP).

e Click **OK**.

f Select **Add port**.

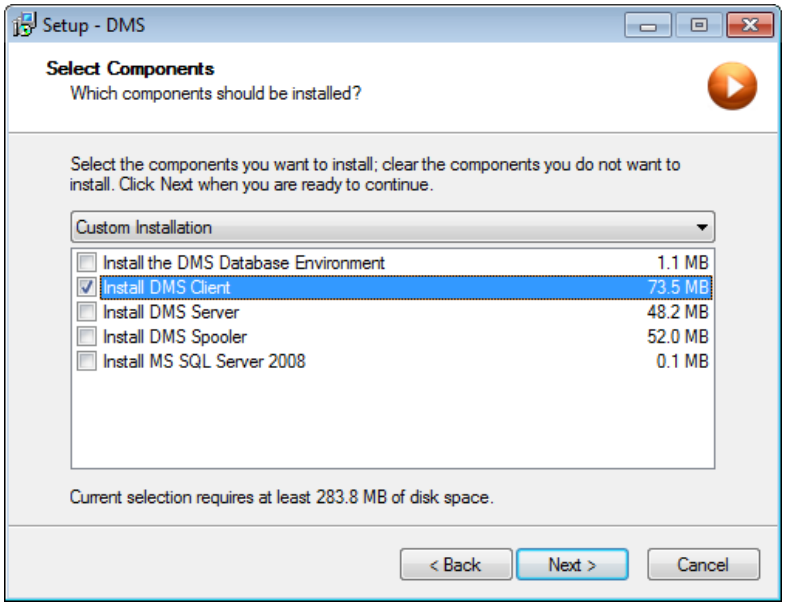
g Set the name of the port to **DMS FTP** and the port to **2221** (TCP).

h Click **OK**.

3. Double-click the **Setup DMS** icon on the install CD.

   The DMS setup wizard dialog displays.

4. Advance the wizard until it asks you to select the components to install.
5. Clear all the check mark boxes except Install DMS Client.



6. Click **Next**.
7. Enter the IP address of the server for DMS Server Host.
8. Advance the wizard to install.

DMS Database Operations

The DMS Server stores its repository data on an MS SQL Server 2008 database.

The DMS Server connects to an MS SQL Server instance and its database using a connection setting defined in the server.production.properties file. This file, among its various configuration settings, contains the following:

- The name of the MS SQL Server instance
- The name of the DMS database used by this DMS Server
- An MS SQL Server login account and password

DMS Database Creation

The DMS MS SQL Server, its principals (login accounts), database and other basic definitions are created and configured during the DMS setup.

To create a DMS database:

1. Select the following components during the DMS Setup to install the MS SQL Server and its DMS environment and to create a database:
   - Install the DMS Database Environment
   - Install MS SQL Server 2008

   See Figure 1.

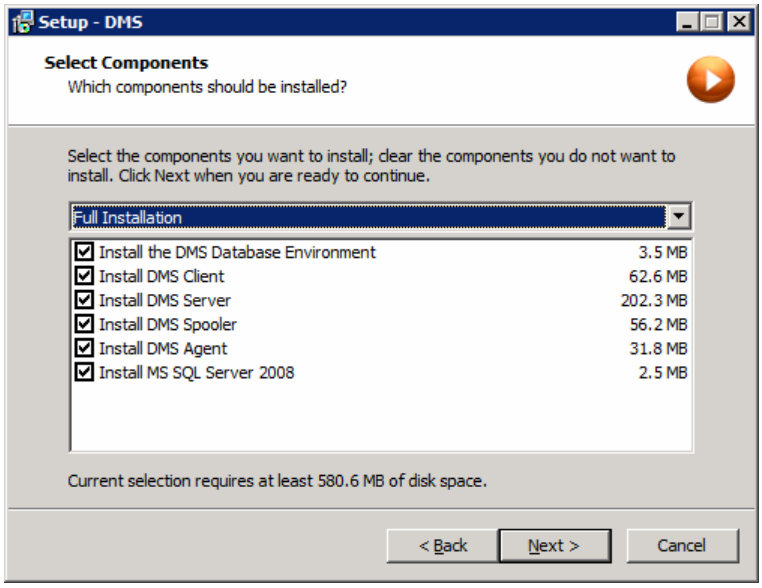


Figure 1: MS SQL Server 2008 component

2. Fill in the following fields during the SQL Server Configuration setup:
   - **SQL Server Instance** – The name or IP of the MS SQL Server instance for the DMS server to use. When you select the Install MS SQL Server 2008 installation component of the DMS setup application then you must also specify the name or IP of the local computer.
   - **SQL Server Login** – The name of the SQL Server login account that the DMS Server uses. When you select the Install MS SQL Server 2008 installation component, the DMS setup application creates this login.
   - **SQL Server Login Password** – The password of the SQL Server login account that the DMS Server uses.
   - **Database Name** – The name of the database that the DMS server uses.

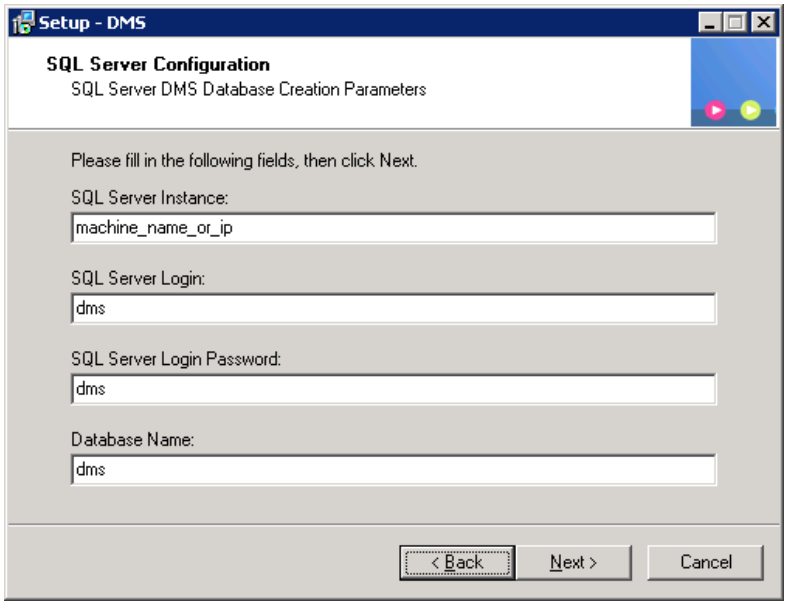


Figure 2: SQL Server Configuration

Point in Time Recovery

This database is configured to enable a point in time recovery. A point in time recovery enables one to recover the database to any point of its existence, as long as there are valid backups. You are not limited to snapshot restores of the backup. For example, if you make a full backup every night at 21:00, you can restore the database to its state as it was at 20:35. This functionality is accomplished by the use of full database and transaction log backups. Full database backups record snapshots of the database, while transaction log backups record the changes that take place in the database after the full back up.

The setup application creates a procedure named *master.dbo.sp_backup_database* that enables full database and transaction log backups. Both types of backups are saved in the MS SQL Server default backup folder (%homedrive% Program Files\Microsoft SQL Server\ MSSQL10.MSSQLSERVER\MSSQL\Backup). The procedure creates a folder for the DMS database in the above named path.

The setup application creates a procedure named *master.dbo.sp_delete_old_backups* that deletes backup files older than a week (this setting is configurable).

Backing Up a DMS Database

You should back up the database on a different server so that we can restore the database if the DMS server crashes and the hardware fails.

The location of the automatic backup database folder is C:\Program Files\Microsoft SQL Server\MSSQL10.MSSQLSERVER\MSSQL\Backup\dms.

The location of the manual backup database folder is C:\Program Files\Microsoft SQL Server\MSSQL10.MSSQLSERVER\MSSQL\Backup.

A sample of an automatic database filename is; dms_backup_performed_on_date_07_02_2011_time050100.Bak.

A sample of an automatic TRN filename is;
dms_backup_performed_on_date_06_02_2011_time110000.Trn.

A sample of a manual database filename is; `<dms_database_name>_dms.bak`.

To back up the DMS database:

❖ Execute the back up batch file in the following path D:\Harmonic\Skipper\scripts\backup.cmd.

A backup file with the format <dms_database_name>_dms.bak is created in the following folder;
C:\Program Files\Microsoft SQL Server\MSSQL10.MSSQLSERVER\MSSQL\Backup.

Restoring a DMS Database

Use the Restore DMS Database script to restore a DMS database. When the Install MS SQL Server 2008 installation component is selected, the installer places a shortcut to this script on Windows Desktop see Figure 3.

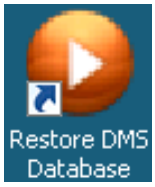


Figure 3: Restore DMS Database script shortcut

CAUTION: Use caution when executing this script since all changes you make in the database after you back up are lost.

To restore a DMS database:

1. Double-click the Restore DMS Database  shortcut.

   The script requests the full path and name of a valid backup of the DMS database, see Figure 4.

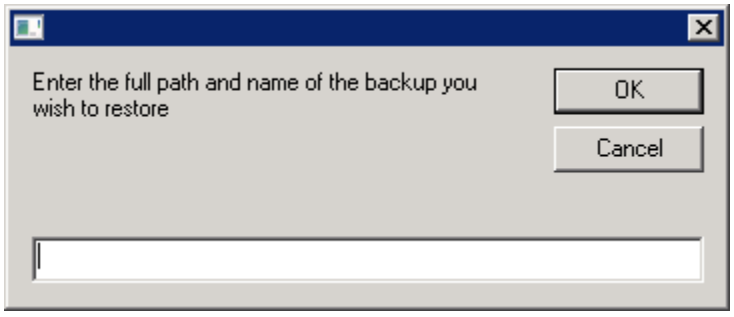


Figure 4: Restore dialog

2. Enter the path and *.BAK filename.
3. Click OK.

DMS Recovery

Database Restoration

If you want to restore the database to the last possible point in time, perform one of the following and then contact Harmonic:

- *Backing Up the DMS Database and Restoring the Server Software and Database*
- *Restoring the Server Software and Database*

Backing Up the DMS Database and Restoring the Server Software and Database

If the SQL Server still functions then you can use this procedure. The basic steps are:

1. Back up the DMS database.
2. Restore DMS server.
3. Configure Windows Server 2008.
4. Install DMS System.
5. Restore DMS database.

To back up the DMS database and restore the server software and database:

1. To back up the DMS database execute the batch file; D:\Harmonic\Skipper\scripts\backup.cmd.

   A backup file with the format <dms_database_name>_dms.bak is created in the folder C:\Program Files\Microsoft SQL Server\MSSQL10.MSSQLSERVER\MSSQL\Backup.
2. Proceed to *Windows Server Installation Restoration* on page 18.
3. After recovery disk installed and Windows is running, configure Windows Server 2008 as described from Step 2 in the section *Configuring Windows Server 2008* on page 4.
4. Install the DMS system as described in *Installing the DMS System* on page 6.
5. Proceed to *Restoring a DMS Database* on page 16 and select the DMS database filename; dms.bak.

Restoring the Server Software and Database

The basic steps are:

1. Restore DMS server.
2. Install DMS System.
3. Copy the DMS database files to the DMS server.
4. Restore DMS database.

To restore the server software and database:

1. Proceed to *Windows Server Installation Restoration* on page 18.
2. Install the DMS system as described in *Installing the DMS System* on page 6.
3. Copy the DB Backup folder, which contains all the backup DMS DB files, to the DMS server.
4. Proceed to *Restoring a DMS Database* on page 16 and select the DMS database filename; dms.bak.

Windows Server Installation Restoration

DMS 2.3 is shipped with a recovery DVD which you can use to recover the DMS server in the following cases:

- The Windows Server installation is corrupted and the server fails to boot
- The server or a system harddrive is replaced

The Harmonic recovery DVD uses Symantec Ghost without attendance to restore the system.

Prerequisites:

DMS server recovery DVD for Dell PowerEdge R610 supplied by Harmonic.

To restore the DMS Windows Server 2008 installation:

1. Reboot or switch the DMS server on.
2. Insert the DVD recovery disk.
3. If the server does not give you the option to boot from an optical disk then press F11 during the BIOS boot process to configure the boot priorities.

   Symantec Ghost runs from the DVD automatically.
4. Reboot the server when Symantec Ghost has completed.