Disclaimer

Harmonic reserves the right to alter the equipment specifications and descriptions in this publication without prior notice. No part of this publication shall be deemed to be part of any contract or warranty unless specifically incorporated by reference into such contract or warranty. The information contained herein is merely descriptive in nature, and does not constitute a binding offer for sale of the product described herein. Harmonic assumes no responsibility or liability arising from the use of the products described herein, except as expressly agreed to in writing by Harmonic. The use and purchase of this product do not convey a license under any patent rights, copyrights, trademark rights, or any intellectual property rights of Harmonic. Nothing hereunder constitutes a representation or warranty that using any products in the manner described herein will not infringe any patents of third parties.

Trademark Acknowledgments

Harmonic and all Harmonic product names are trademarks of Harmonic Inc. All other trademarks are the property of their respective owners.
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.
   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.
   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.
   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.)
   c 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:
Installing DMS with SQL Server 2008 DB

---

- 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.
- 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.

![DMS Server Location](image)

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](image)

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.
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 backup 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](image)

**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](image)

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.
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.
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:

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.