

EMC VisualSAN® Version 2.2 Installation and Configuration Guide for PowerVault SAN 5.x Environments

This document provides installation and configuration information on EMC VisualSAN for Dell PowerVault SAN 5.x environments.

For information about upgrades to Dell PowerVault SAN 5.x, consult the following URL:

<http://dellupgrade.com/SAN/5.01/>

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Overview

This document provides step-by-step preparation, installation, and configuration guidelines for EMC VisualSAN® Version 2.2. This document only lists the steps required to manage Dell PowerVault Storage Area Network (SAN) version 5.0 or higher environments with EMC VisualSAN®.

Note: This document should be used in conjunction with the EMC VisualSAN Version 2.2 Release Notes.

Preparing for the Installation

This section identifies requirements that must be met before installing VisualSAN. These requirements include:

- SAN Server Requirements
- VisualSAN Management Station Requirements
- Attached Device Requirements

Note: EMC VisualSAN 2.2 only supports Windows SAN hosts. Netware support will be provided in a later release.

SAN Server Requirements

The following requirements apply to all servers included in the SAN.

1. Make sure the software configuration adheres to the PowerVault SAN 5.x specifications. This includes firmware levels.
2. Install the SNMP Service and make sure it is running.
3. Make sure that the READ Community of the SNMP Service matches the Community with which EMC VisualSAN will be configured.
4. Install the QLogic QMS SNMP Agent and make sure it is running.
5. Install the Dell PowerVault PV650F SNMP Agent on all servers that have the Dell OpenManage Data Agent installed. Make sure the Dell PowerVault PV650F SNMP Agent is running on all of these servers.
6. Install the Dell PowerVault Tape Discovery Agent on all servers that are connected through a fabric to a Dell PV120T or Dell PV130T. Ensure that the SNMP service has been started following the installation.
7. Install the Dell OpenManage Software Agent and make sure it is running.
8. Install the Dell OpenManage Cluster SNMP Agent on all servers belonging to a cluster. Ensure that the SNMP service has been started following the installation.

Note: In order for EMC VisualSAN to correctly represent the status of the cluster, the SNMP service must be restarted on the cluster nodes after installing the Cluster SNMP Agent or whenever the cluster nodes are rebooted.

VisualSAN Management Station Requirements

The following requirements apply to the server or desktop system that you choose to be the VisualSAN management station.

Note: It is recommended that the VisualSAN management station be installed on a system that is NOT included in the SAN.

1. Make sure that the VisualSAN management station can communicate with all devices that you wish VisualSAN to discover through TCP/IP protocol (including hosts, switches, storage arrays, tape libraries, and so on).
2. The following minimum system requirements apply to the VisualSAN management station:
 - o Operating System: Windows 2000 Professional, Server or Advanced Server with service pack 1, 2, or 3.
 - o Processor Speed: 500 MHz minimum, 1 GHz recommended
 - o RAM: 512 MB minimum, 1 GB recommended
 - o Free disk space: a minimum of 280 MB. 1 GB free disk space is recommended.
3. Verify that the management station has a C drive.

Note: VisualSAN can be installed on any drive but a C drive is required for storing temporary files during installation.

4. Install the Navisphere command line interface (OMCLI or NAVICLI) on the system with the VisualSAN management station.
5. Install the Software SNMP Agent on the VisualSAN Management Station. This allows VisualSAN to provide a launch point for applications such as Data Administrator, Data Supervisor, Storage Consolidation, Backup Exec, Arc Serve, and other management applications for the Dell PowerVault SAN. (See the release notes for more information.)
6. Verify that the TCP/IP protocol of all the Network Interface Cards (NIC) on the VisualSAN management station is configured with a valid DNS server.
7. If the system with the VisualSAN management station already has Microsoft SQL Server installed, make sure that it is configured to be in Mixed Mode.

Attached Device Requirements

The following requirements apply to devices included in the SAN. These devices can include hosts, switches, tape libraries, Navisphere Event Configurator for Dell | EMC arrays, and so on.

1. Make sure that all devices included in the SAN are at the PowerVault SAN 5.x level.

2. Make sure that all devices included in the SAN are configured to send SNMP Traps to the VisualSAN management station.
3. Make sure that all devices included in the SAN are at the PowerVault SAN 5.x level.
4. Make sure that all components of PV136T tape libraries have the following firmware levels:
 - Library: 2.73 or higher
 - RMU: 160D.00004 or higher
 - Bridge: 4.22.412 or higher
5. Make sure that all PV128T tape libraries have firmware version 1.40D or higher.
6. Make that all PV530F SAN Appliances are updated to firmware version 2.23 or higher. Save the configuration in QLConfig from the PowerVault 530F console in order for EMC VisualSAN to discover backend HBAs.
7. Make sure that the PV35F bridges have the firmware version 2.2 d9913n or higher.

Installing VisualSAN

Use the following procedure to install VisualSAN.

If you have launched this document by clicking **View Installation and Configuration Guide** while installing from the OpenManage Storage Installation Manager CD, then start with step 6 of this procedure.

1. Insert the installation CD into the CD drive of the VisualSAN management station. If the setup program does not start automatically, double-click **setup.exe** on the CD.
2. Read the software license agreement and click **I Accept**.
3. Click the plus sign **(+)** next to **Management Console** in the tree view on the left to expand the display.
4. Click **VisualSAN(R)** in the tree view on the left.
5. Read the information on the right and click **View Installation and Configuration Guide** to read the release notes. When finished, click **Next**.

After installation, the release notes are located in the VisualSAN installation directory.

6. **Optional.** The default installation directory is displayed in the **Installation path** text box. If you wish to change the default installation directory, click the **Browse** button and specify a different directory.
7. **Optional.** If you have already set up a mail server that can process VisualSAN alerts, you can configure the mail server during VisualSAN installation.

If you do not wish to configure the mail server at this time, click **Next** and continue with the installation. You can configure the mail server after installation. See the “Configuring the Mail Server” section of this document for more information.

Do the following to configure the mail server during installation:

- A. Enter the mail server host name in the **Mail server hostname (SMTP)** text box. For example, if the mail server is named “mail” and resides in the “dell.com” domain, you would enter “mail.dell.com”.

Note: The mail server must be an SMTP host and accessible to the VisualSAN management station.

- B. Enter the e-mail address to which the mail server should send the VisualSAN alerts in the **Administrator e-mail** text box.
 - C. Click **Next**.
8. **Optional.** If you know the IP address range or individual IP addresses of the SAN devices that you wish VisualSAN to discover, you can enable VisualSAN discovery during installation.

If you do not wish to enable VisualSAN discovery, click **Next** and continue with the installation. You can enable VisualSAN discovery after installation. See the “Enabling Discovery” section of this document for more information.

Do the following to enable VisualSAN discovery during installation:

- A. Enter the IP address range of the SAN devices that you wish VisualSAN to discover in the **Discovery scanning ranges** text boxes and click **Add**. You can enter more than one IP address range. You can also enter individual IP addresses.

The IP address ranges that you specify are displayed under the **Discovery scanning ranges** text boxes. If you wish to delete an IP address range from the VisualSAN configuration, select the item to be deleted and click **Remove**.

Note: Make sure that you only enter the IP addresses for devices that you wish to be discovered. VisualSAN does not allow you to delete a discovered device. Deleting a discovered device requires deleting all data in the VisualSAN database. See the “Deleting the VisualSAN Database” section in this document for more information.

- B. If your SAN devices are using an SNMP community other than “public”, enter the community name in the **SNMP Communities** text box and click **Add**.

The SNMP communities are displayed under **SNMP Communities** text box. If you wish to delete an SNMP community from the VisualSAN configuration, select the item to be deleted and click **Remove**.

Note: The FC4700, CX600, CX400, and PV128T require the SNMP “public” community.

9. Click **Next**. VisualSAN will now perform a dependency check. If all previous steps have been completed successfully, the dependency check will execute successfully.
10. Click **Install** to start the VisualSAN installation. The installation can take as long as 30 minutes.

Launching and Configuring VisualSAN

This section describes how to launch and configure VisualSAN. The information in this section includes:

- Launch and Login
- Obtaining and Activating License Keys
- Configuring the Mail Server
- Configuring Zone Visualization
- Enabling Discovery

Launch and Login

Use the following steps to launch VisualSAN and login:

1. Launch VisualSAN from the Windows Start menu by selecting **Start > Programs > EMC > VisualSAN > VisualSAN**.

2. Enter the following information at the login screen:

User name: User name for authenticating to the domain or local machine.

Password: Password for authenticating to the domain or local machine

Domain: Domain name or local host name.

Obtaining and Activating License Keys

If you have purchased licenses for VisualSAN, you can obtain the license keys from the following web site:

<http://www.dell.com/EMC/VisualSAN>

If you need to purchase a license, you can do so from the same web site. After purchasing a license, an e-mail will be sent to you describing how to download the license. If you have not purchased a license, you will still be able to use VisualSAN for 60 days.

The following types of licenses are available for VisualSAN:

- VisualSAN Network Manager license key (comes with 32 active fibre channel switch port support)
- VisualSAN Configuration Manager license key
- VisualSAN Performance Manager license key
- 16 port upgrade (multiple license keys available)
- 32 port upgrade (multiple license keys available)

After you have obtained the necessary licenses, use the following steps to activate the licenses. This procedure assumes that you have launched and logged into VisualSAN.

1. Click the VisualSAN **Settings** menu and select **License Administrator**.
2. Click **License > Enter License Key**.
3. Copy the text from your license key and paste it into the text box.
4. Click **Apply** and then **Ok**.
5. Repeat steps 2, 3, and 4 for each license key.
6. Click **File > Save** from the **License Administrator Window**.

Configuring the Mail Server

You can configure a mail server for forwarding VisualSAN alerts as e-mail or e-mail pager messages. The mail server can also be used for sending configuration information for troubleshooting purposes to Dell Technical Support.

Use the following steps to configure the mail server. This procedure assumes that you have launched and logged into VisualSAN.

1. Click the VisualSAN **Settings** menu and select **Mail Settings**.
2. Enter your SMTP server information.
3. Enter the administrator's e-mail address in the '**From**' **Field** text box.
4. Click **Apply** and then **Ok**.

Configuring Zone Visualization

VisualSAN can provide zone visualization for Brocade switches with firmware 2.5.0d or higher.

Use the following steps to implement zone visualization. This procedure assumes that you have launched and logged into VisualSAN.

Note: The zone setting login information must be entered for each fabric before any Zone Control operations can be attempted from the Zone Explorer window. It may take 30 minutes before the information entered in the Zone Setting dialog takes effect.

1. Click the VisualSAN **Settings** menu and select **Zone Settings**.
2. Enter your login information for each fabric.
3. Ensure that the login information is the same on all switches for each fabric.
4. Click **Ok**.

Enabling Discovery

In order for VisualSAN to discover devices included in the SAN, you must provide IP address and SNMP community information.

Use the following procedure to enable discovery. This procedure assumes that you have launched and logged into VisualSAN.

1. Click the VisualSAN **Settings** menu and select **SNMP Discovery Settings**.
2. Click **Add** to display the **Device Discovery – Add – Include Device** dialog.
3. Enter an IP address range in the **From** and **To** text boxes. You can enter a single IP address (rather than a range) in the **From** text box.

Note: Make sure that you only enter the IP addresses for devices that you wish to be discovered. VisualSAN does not allow you to delete a discovered device. Deleting a discovered device requires deleting all data in the VisualSAN database. See the "Deleting the VisualSAN Database" section in this document for more information.

4. Click **Ok**.
5. Repeat steps 2, 3, and 4 for all IP address ranges and individual IP addresses that you wish to be included in discovery.
6. If your devices use an SNMP community name other than “public”, then enter the name in the **SNMP Read Communities** text box and click **Apply**. Click **Ok** when you receive the popup message. Repeat this step for all applicable SNMP community names.
7. Click **Start Discovery**.

Capturing the SAN Configuration for Troubleshooting Purposes

Once you have configured the SAN to meet your requirements, it is a good idea to capture this configuration. Taking a baseline capture that depicts a desired SAN configuration can provide useful comparative information as changes to the SAN occur. A baseline capture also provides useful troubleshooting information for technical support.

Use the following steps to take a baseline capture. This procedure assumes that you have launched and logged into VisualSAN.

1. Click the VisualSAN **Help** menu.
2. Select **Technical Support > Baseline Capture**.
3. Click **Ok**.

Making VisualSAN Remotely Available to a Web Browser

You can remotely access VisualSAN with a web browser. Enabling remote access requires the VisualSAN.html file which is located in the EMC VisualSAN installation directory. The VisualSAN.html file can be shared by remote users using a web server application of the administrator's preference. It is recommended that the system administrator configure the web server application in order to ensure proper security and prevent damage to any existing web server configuration.

For information on configuring a web server, please consult the help documentation or technical support for your web server.

Deleting the VisualSAN Database

In order to delete all data in the VisualSAN database and perform a new discovery, run the following batch files in the order listed under the VisualSAN/Server_batch_files directory.

Caution! These batch files must be run in the order indicated. Failure to run these files in the order indicated can result in serious system problems.

1. StopServices.bat
2. CleanupMSDE.bat
3. StartMSDE.bat
4. CreateTables.bat
5. StartServices.bat

Note: All information in the VisualSAN database is deleted. The result is equivalent to starting with a new VisualSAN installation.

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