

EMC VisualSAN® Version 2.2 Installation and Configuration Guide

This document provides installation and configuration information for EMC VisualSAN. Use this document in conjunction with the [EMC VisualSAN Version 2.2 Release Notes](#).

Contents

Overview.....	1
Preparing for the Installation.....	2
SAN Server Requirements.....	2
Array Requirements.....	2
VisualSAN Management Station Requirements.....	2
Attached Device Requirements.....	3
Cluster Requirements.....	4
Installing VisualSAN.....	4
Launching and Configuring VisualSAN.....	7
Launch and Login.....	7
Obtaining and Activating License Keys.....	7
Configuring the Mail Server.....	8
Configuring Zone Visualization.....	8
Enabling Discovery.....	9
Capturing the SAN Configuration for Troubleshooting Purposes.....	9
Making VisualSAN Remotely Available to a Web Browser.....	10
Deleting the VisualSAN Database.....	10

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 | EMC Storage Area Network (SAN) environments with EMC VisualSAN®.

Note: This document should be used in conjunction with the [EMC VisualSAN Version 2.2 Release Notes](#). In addition, refer to the release notes for information on Dell PowerVault SAN environments.

Preparing for the Installation

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

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

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

SAN Server Requirements

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

1. Install and enable SNMP on all servers in the SAN.
2. Install and enable the Navisphere agent on all servers in the SAN.

Array Requirements

The following requirements apply to arrays included in the SAN.

1. Make sure Access Logix is installed on all Dell | EMC arrays.
2. Install the Fibre Alliance MIB Software Package (.ndu file) on your FC4700, CX600, and CX400 storage arrays in the SAN.

Note: This software is available on the Fibre Alliance MIB Support CD provided with your Fibre Channel storage system.

3. Make sure that the connectivity table for each array in Navisphere Manager reflects the current SAN environments by doing the following:
 - A. Launch the Navisphere console.
 - B. Right-click the storage array and select **Connectivity status**.

Note: VisualSAN will display all hosts and HBAs displayed in the Navisphere GUI or connectivity tables.

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 Disk Space: 280 MB
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 (CLI) on the system with the VisualSAN management station.

Note: The Navisphere CLI 6.2 is required for the CX600 and CX400 storage arrays.

5. 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.
6. 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 configured to send SNMP Traps to the VisualSAN management station.
2. 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
3. Make sure that all PV128T tape libraries have firmware version 1.40D or higher.

Cluster Requirements

VisualSAN has the ability to automatically group your cluster nodes under one cluster icon and provide additional information such as the cluster virtual IP address and the cluster name.

In order for VisualSAN to provide this feature, the Cluster SNMP Agent needs to be installed on all cluster nodes. It is recommended that you install cluster support before installing VisualSAN.

Use the following steps to install the Cluster SNMP agent on the cluster nodes.

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. Click **I Accept**.
3. Click the plus sign **(+)** next to **SAN SNMP Agents** in the tree view on the left to expand the display.
4. Click **Cluster** in the tree view on the left.
5. Click **Next**. VisualSAN will now perform a dependency check.
6. Click **Install** to install the Cluster SNMP Agent.

Note: In order for VisualSAN to correctly represent the status of the cluster, the **SNMP** service needs to be restarted on the cluster node after installing the **Cluster SNMP Agent** or whenever the cluster node is rebooted.

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.

EMC believes the information in this publication is accurate as of its publication date. The information is subject to change without notice.

The information in this publication is provided as is. EMC Corporation makes no representations or warranties of any kind with respect to the information in this publication, and specifically disclaims implied warranties of merchantability or fitness for a particular purchase. Use, copying, and distribution of any EMC software described in this publication requires an applicable software license.

EMC2, EMC, VisualSAN, CLARiiON, Navisphere are registered trademarks of EMC Corporation. All other trademarks used herein are the property of their respective owners.

Copyright © 2002 EMC Corporation. All rights reserved.

©2002 Dell Computer Corporation. All rights reserved. Reproduction in any manner whatsoever without the written permission of Dell is strictly forbidden.

Trademarks used in this text: Dell, the DELL logo, Dell OpenManage, and PowerVault are trademarks of Dell Computer Corporation; Intel and Pentium are registered trademarks of Intel Corporation; Microsoft, Windows, and Windows NT are registered trademarks of Microsoft Corporation; EMC is the registered trademark of EMC Corporation.

Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Dell Computer Corporation disclaims any proprietary interest in trademarks and trade names other than its own.