NexentaConnect for VMware Virtual SAN

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Preface

This documentation presents information specific to Nexenta products. The information is for reference purposes and is subject to change.

Intended Audience

This documentation is intended for Storage Administrators and assumes that you have experience with data storage concepts, such as NAS, SAN, NFS, and ZFS; VMware vSphere, VMware Virtual SAN; Microsoft Windows Active Directory 2008 R2.

Documentation History

The following table lists the released revisions of this documentation.

Table 1: Documentation Revision History

Revision	Date	Description
3000-nc_vsan-1.0.2 FP2-000061-B	October, 2015	GA

Contacting Support

Choose a method for contacting support:

- Visit the Nexenta customer portal or partner portal. Log in and browse the customers knowledge base.

Comments

Your comments and suggestions to improve this documentation are greatly appreciated. Send any feedback to doc.comments@nexenta.com and include the documentation title, number, and revision. Refer to specific pages, sections, and paragraphs whenever possible.

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1

Introduction to NexentaConnect for VMware Virtual SAN

This chapter includes the following topics:

- About NexentaConnect for VMware Virtual SAN
- About VMware Virtual SAN
- NexentaConnect for VMware Virtual SAN Requirements
- About NexentaConnect for VMware Virtual SAN Licenses
- NexentaConnect for VMware Virtual SAN Components
- Overview of the NexentaConnect for VMware Virtual SAN GUI Elements
- Overview of the NexentaConnect for VMware Virtual SAN GUI Elements
- About NexentaConnect for VMware Virtual SAN High Availability

About NexentaConnect for VMware Virtual SAN

NexentaConnect for VMware Virtual SAN is a Nexenta product that provides a user interface to manage file services on top of VMware Virtual SAN.

NexentaConnect for VMware Virtual SAN delivers the following features:

- Network Attached Storage (NAS) for VMware Virtual SAN (NFS and SMB)
- Storage performance and health monitoring
- Storage acceleration and data reduction
- Snapshot service on per share level

About VMware Virtual SAN

VMware Virtual SAN (VSAN) is a storage solution integrated with VMware vSphere. VSAN provides a capability to combine local ESXi disks into a single data pool and present the pool to all ESXi hosts in the ESXi cluster. VMware VSAN implements the software defined storage concept, which is reflected in Storage Policy Based Management (SPBM). SPBM provides abstraction from the hardware layer storage pool on which you can provision virtual machines. Redundancy is achieved on the virtual machine level.

While VSAN is a scale-out high performance storage solution, it does not provide file storage. You must use other storage solutions to completely meet the needs of production environments. NexentaConnect for VMware Virtual SAN completes VMware VSAN with the required functionality.

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NexentaConnect for VMware Virtual SAN Requirements

NexentaConnect for VMware Virtual SAN works with the following components:

- VMware vCenter Server 6.0 U1
- VMware Virtual SAN 6.0 or 6.1
- VMware ESXi 6.0 U1a

About NexentaConnect for VMware Virtual SAN Licenses

You can obtain the following NexentaConnect for VMware Virtual SAN licenses:

- **Free Trial**

  45-days free trial of Enterprise Edition. No registration required to start the trial. After free trial expires, you cannot create any new shared folders. Existing folders remain available. To convert from Free Trial to Enterprise Edition, contact sales@nexenta.com.

- **Enterprise Edition**

  Perpetual license based on the registered number of CPU sockets. The number of sockets on the NexentaConnect for VMware Virtual SAN license must be equal or greater than the number of CPU sockets in your VMware Virtual SAN license.

Obtaining an Enterprise License Key

To use the NexentaConnect for VMware Virtual SAN Enterprise Edition, obtain the enterprise license key from the Nexenta Sales team.

Provide the following information:

- Product ID (located under **NexentaConnect Settings > Register NexentaConnect**)
- Number of CPU sockets used in the VMware Virtual SAN cluster

❖ *To obtain an Enterprise License Key:*

1. See nexenta.com/VSAN or send an e-mail with the required information to sales@nexenta.com.

Upgrading from Free Trial to Enterprise License

You can convert from a Free Trial to Enterprise license without re-installing the NexentaConnect for VMware Virtual SAN. Before upgrading the license, obtain a license key from Nexenta Sales.

See Obtaining an Enterprise License Key.

❖ *To upgrade to an Enterprise license, using NexentaConnect for VMware Virtual SAN:*

1. Click **NexentaConnect Settings > Register NexentaConnect**.

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2. In the **Status** column, click the **Trial** or **Expired** link.
3. In the **License Key** field, type the license key that you received from Nexenta Sales.
4. Click **Register**.

NexentaConnect for VMware Virtual SAN Components

NexentaConnect for VMware Virtual SAN includes the following components:

- **NexentaConnect for VMware vSphere Web Client plugin**

  Provides a user interface that enables you to manage file services from VMware vSphere Web Client. The plugin is provided as an MSI Installer (for Windows) and as an Installation Script (for Linux version).

- **NexentaConnect Manager**

  Processes all operations between VMware Virtual SAN and the NexentaConnect for VMware Virtual SAN Web Client plugin.

- **Nexenta IO Engine**

  Provides file services, such as NFS and SMB, as well as snapshot creation and scheduling capabilities.

Overview of the NexentaConnect for VMware Virtual SAN GUI Elements

After installing NexentaConnect for VMware Virtual SAN, the following icons are added to the **Home** page in VMware vSphere Web Client:

- **NexentaConnect Settings**

  Provides a user interface to configure Nexenta Management Server settings, licensing, VMware vCenter settings, SMB authentication, and network settings. Configure these settings during the initial configuration.

- **NexentaConnect for Virtual SAN**

  Provides a user interface for file services management, performance and usage monitoring, user configuration, and data protection.

Overview of the NexentaConnect Settings Page

Initial configuration of NexentaConnect for VMware Virtual SAN involves configuring several components. Configure these components on the NexentaConnect Settings page.

Before starting to use NexentaConnect for VMware Virtual SAN, configure the following:

- NexentaConnect
- VMware vCenter

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- Network
- NexentaConnect registration

  See the *NexentaConnect for VMware Virtual SAN QuickStart Installation Guide*

Overview of the NexentaConnect for VMware Virtual SAN Page

The NexentaConnect for VMware Virtual SAN page includes the following screens:

- **Getting Started**

  Provides an overview of the product and a link to the Online Help.

- **Summary**

  Provides a set of tools to manage NexentaConnect for VMware Virtual SAN, including creation of shared folders, snapshots, user preferences, and so on. You perform most actions on this page.

  See Overview of the Summary Tab.

- **Monitor**

  Provides health monitoring tools, such as the task log, system logs, and system health overview.

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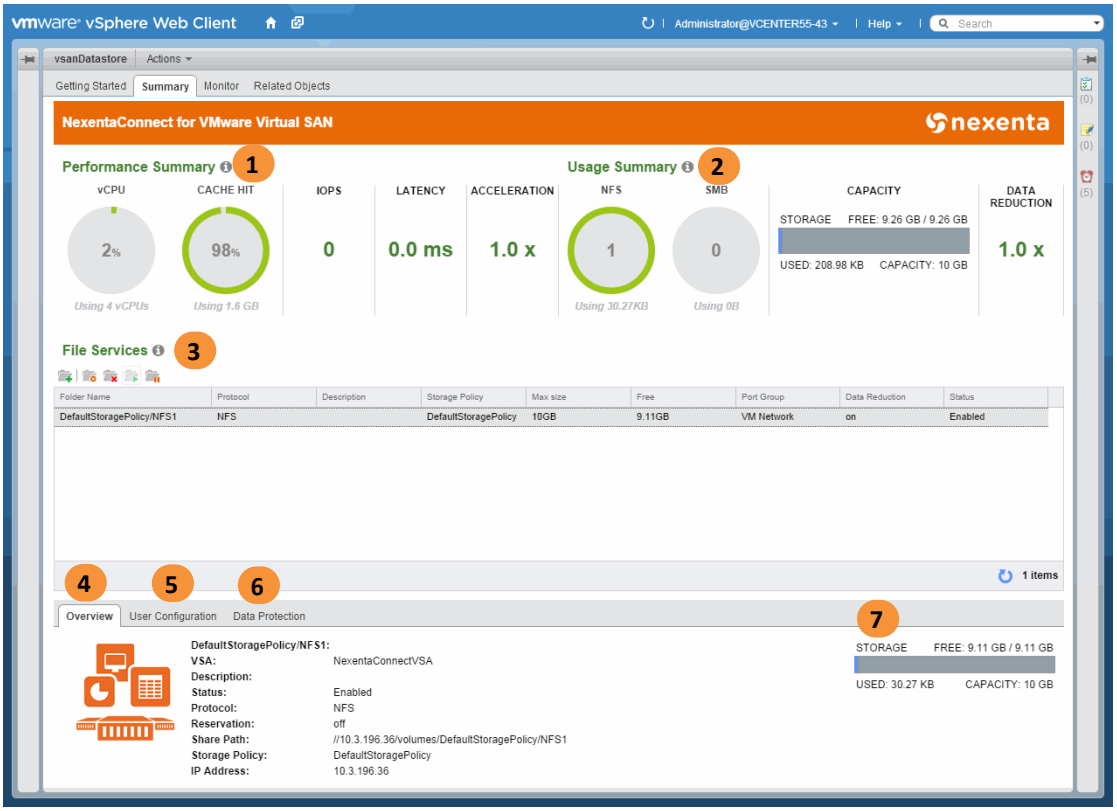
Overview of the Summary Tab

The following screenshot displays the Summary tab in the NexentaConnect for VMware Virtual SAN user interface.

Figure 1-1: Summary Tab Overview



#	Description
1	**Performance Summary** Provides vCPU and cache hit charts for the Nexenta IO Engine, as well as IOPS, latency, and acceleration statistics. **Cache hit** is a parameter that represents the Nexenta IO Engine read cache hits. The Cache hit value reflects the amount of read operations processed by Nexenta IO Engine RAM. Therefore, the higher value is the better. **IOPS** displays the total number of read and write input/output operations performed by NFS and SMB services per second. **Latency** shows the average time required to process an IO request from a client view point. **Acceleration ratio** compares the real user IOPS performed by NFS and SMB services and IOPS performed on the Virtual SAN datastore level.

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#	Description
2	**Usage Summary** Provides charts for SMB and NFS usage, as well as displays capacity and data reduction statistics. The Capacity chart shows how much storage space is available. In the capacity bar two values for free storage space are displayed. The first value shows the amount of physically available storage space. The second value shows estimated usable storage space based on data reduction ratio. The data reduction ratio represents compression ratio.
3	**File Services** Under File Services, you create, delete, edit, enable, and disable a shared folder. The table displays available folders and information about the folders.
4	**Overview** The Overview tab displays information about selected folder location, including the Nexenta IO Engine IP address, sharing protocol, reservation settings, storage policy, and so on.
5	**User Configuration** The User Configuration tab provides information on how to configure access to the selected shared folder.
6	**Data Protection** The Data Protection tab provides functionality to create folder snapshots and snapshot schedules.
7	**Shared Folder Utilization Chart** The chart displays free, used, and total capacity of the selected shared folder.

See Also:

- About VMware Virtual SAN
- Overview of the NexentaConnect for VMware Virtual SAN GUI Elements

About NexentaConnect for VMware Virtual SAN High Availability

If your environment requires, you can configure highly available NFS and SMB storage by using VMware vSphere High Availability (HA). VMware HA provides failover protection against most software and hardware outages. Availability of storage components is completely handled by VMware Virtual SAN and storage policies. Compute availability is handled by VMware HA; therefore, enable VMware High Availability in the Cluster settings using the VMware vSphere Web Client.

For information on how to enable and configure VMware HA, see the VMware documentation.

See Also:

- Enabling VMware High Availability and VMware Distributed Resource Scheduler in a cluster

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2

Managing Shares

This chapter includes the following topics:

- Accessing NexentaConnect for VMware Virtual SAN
- Adding a Shared Folder
- Editing a Shared Folder
- Deleting a Shared Folder
- Disabling a Shared Folder
- Enabling a Shared Folder
- Managing Access to SMB Folders
- Managing Access to NFS Folders

Accessing NexentaConnect for VMware Virtual SAN

NexentaConnect for VMware Virtual SAN is fully integrated with the VMware vSphere Web client user interface. After you install all components of the product, the NexentaConnect for VMware Virtual SAN icon appears in the VMware vSphere Web Client UI.

❖ *To access NexentaConnect for VMware Virtual SAN:*

1. Open a browser window.
2. Type the IP address and port number of the VMware vSphere Web Client.

   Example:

   `https://192.168.1.10:9443/vsphere-client/`
3. Type the credentials.
4. Click **Home**.
5. Click the **NexentaConnect for Virtual SAN** icon.

Adding a Shared Folder

You can create a shared NFS and SMB folder using the NexentaConnect for VMware Virtual SAN user interface. When you create the first folder, NexentaConnect for VMware Virtual SAN clones a virtual storage appliance (VSA) from the Nexenta IO Engine virtual machine that you have deployed from the provided template. All shared folders are provisioned on the Nexenta IO Engine virtual storage appliance.

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You must have at least one VSAN storage policy defined before you create a folder. You cannot create a shared folder without specifying a storage policy.

For more information, see the *ESXi and vCenter Server Documentation*, section *Define a Virtual Machine Storage Policy for Virtual SAN*.

❖ *To add a shared folder, using the NexentaConnect for VMware Virtual SAN UI:*

1. Select a registered VSAN datastore.
2. Click the **Summary** tab.
3. Under **File Services**, click the **Add Folder** icon.
4. In the **Add Folder** window, complete all required fields:

Folder Name	Descriptive name of the shared folder. You cannot modify the name of a shared folder after creation.
Description	Optional commentary.
Filer Network Settings	Network parameters for the Nexenta IO Engine. The option is only available when you create the first shared folder. Select a port group and specify the IP address that will be assigned to the Nexenta IO Engine. All SMB and NFS shares that you create using NexentaConnect for VMware Virtual SAN will be located on that Nexenta IO Engine. The netmask and MTU settings must match the port group settings.
Share Type	The options are: • **NFS** • **SMB**
Storage Policy	VSAN storage policy that defines virtual machine requirements. You must create a VSAN storage policy before you create a shared folder. You cannot modify the storage policy after you create the shared folder.
Max Folder Size	Maximum size of the folder. The folder initially occupies minimum space and increases its size gradually.
Advanced Settings	Advanced settings change depending on the share type that you selected.
Authentication Type (NFS only)	You can select: • **System Users (AUTH_SYS)** NFS server passes user and group IDs of UNIX users unauthenticated. This method does not require additional administration. • **No Identity (AUTH_NONE)** NFS server maps NFS clients as anonymous user `nobody`. Therefore, all users must log in as user `nobody`.

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Anonymous Access	Enable or disable anonymous access for network clients. If enabled, unknown users are recognized as anonymous user `nobody`.
Data Reduction	Compression algorithm. Select the checkbox to enable the data reduction functionality.
Reserved	Type of virtual disk provisioning. If you select Reserved, vSphere creates a thick-provisioned virtual machine disk (vmdk). If you leave the checkbox empty, vSphere creates a thin-provisioned vmdk. The choice of thin compared to thick provisioning primarily depends on the type of storage you are creating. If you expect data on the disk to grow quicker, such as in databases, consider selecting thick provisioning. If you expect the disk usage on the shared folder to be mostly static, you may want to use the thin provisioning option.
Record Size	Size of filesystem blocks. The default value is 128K.

5. Click **Create**.

Editing a Shared Folder

You can edit some of the shared folder parameters after the folder is created.

Parameters such as name and storage policy can only be defined at folder creation time.

- *To edit a shared folder, using the NexentaConnect for VMware Virtual SAN UI:*
  1. Select a registered VSAN datastore.
  2. Click the **Summary** tab.
  3. Under **File Services**, click the **Edit Folder** icon.
  4. Modify the required property.
  5. Click **Save**.

Deleting a Shared Folder

When you delete a shared folder, all data stored on the folder will be deleted as well. If you want to stop sharing a folder without deleting the data, see Disabling a Shared Folder.

- *To delete a shared folder, using the NexentaConnect for VMware Virtual SAN UI:*
  1. Select a registered VSAN datastore.
  2. Click the **Summary** tab.
  3. Under **File Services**, click the **Delete Folder** icon.

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4. In the confirmation dialog box, click **Yes**.

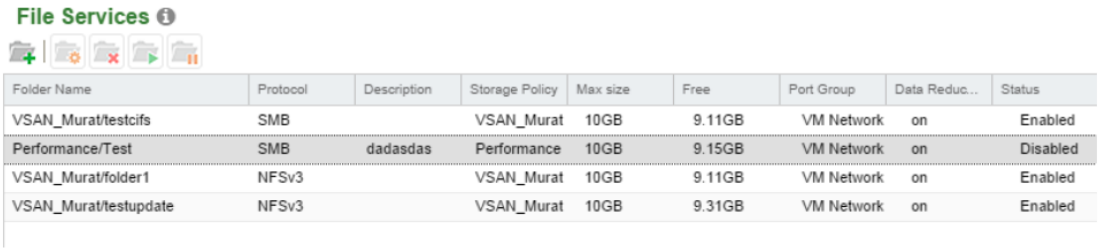
Disabling a Shared Folder

When you disable a shared folder, you stop providing shared access to the folder. All data stored in the folder remains available. If you want to delete data on the shared folder, see Deleting a Shared Folder.

❖ *To disable a shared folder, using the NexentaConnect for VMware Virtual SAN UI:*

1. Select a registered VSAN datastore.
2. Click the **Summary** tab.
3. Under **File Services**, click the **Disable Folder Sharing** icon.

   The folder changes its status to disabled:



Folder Name	Protocol	Description	Storage Policy	Max size	Free	Port Group	Data Reduc...	Status
VSAN_Murat/testcifs	SMB		VSAN_Murat	10GB	9.11GB	VM Network	on	Enabled
Performance/Test	SMB	dadasdas	Performance	10GB	9.15GB	VM Network	on	Disabled
VSAN_Murat/folder1	NFSv3		VSAN_Murat	10GB	9.11GB	VM Network	on	Enabled
VSAN_Murat/testupdate	NFSv3		VSAN_Murat	10GB	9.31GB	VM Network	on	Enabled

Enabling a Shared Folder

If you have previously disabled folder sharing, you can enable folder sharing again.

❖ *To enable a shared folder, using the NexentaConnect for VMware Virtual SAN UI:*

1. Select a registered VSAN datastore.
2. Click the **Summary** tab.
3. Under **File Services**, click the **Enable Folder Sharing** icon.

Managing Access to SMB Folders

After you create an SMB folder, you may want to specify access permissions for the folder. By default, the `smb` user has access to the shared folder. However, you can specify additional access permissions from Windows clients using the Microsoft Management Console (MMC) snap-in.

Default password for the `smb` user is `nexenta`.

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❖ *To manage access to SMB folders:*

1. Log in to Microsoft Windows Server as Domain Administrator.
2. Click **Start**.
3. In the search bar, type **mmc**.
4. Run **mmc.exe**.
5. The empty MMC console appears.
6. Click **File > Add/Remove Snap-in**.
7. In the **Available Snap-ins** list, select **Shared Folders**.
8. In the **Shared Folders** dialog window, select **Another Computer**.
9. Type the IO Engine IP address.
10. Under **View**, select **Shares**.
11. Enter the credentials for SMB user (default password is nexenta).
12. Click **Finish**.
13. Click **OK**.
14. Under **Console Root**, select **Shares >** *<share_name>*.
15. Select **Share Permissions**.
16. Click **Add**.
17. Type the name of the user or group for which you want to grant access.
18. Click **Check Names**.
19. Select the name form the list and click **OK**.
20. Select a use or group and modify the **Allow** and **Deny** rules.
21. Repeat Step 16 to Step 20 for all users and groups.
22. Click **OK**.

Managing Access to NFS Folders

You can restrict access to an NFS folder to `root` user(s) from a specific host, a network, or a sub-network. Active Directory integration is not supported.

❖ *To manage access to NFS folders, using the NexentaConnect for VMware Virtual SAN:*

1. Select a registered VSAN datastore.
2. Click the **Summary** tab.
3. Select an NFS folder.
4. Click **User Configuration**.

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5. In the **Root** field, type a host(s), a network(s), or a sub-network(s).

   Separate IP addresses with commas.

   Example:

   `@10.60.60.0/24`

   The `root` users from the specified host(s), network(s), or sub-network(s) will have access to the NFS folder.

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3

Managing Snapshots

This chapter includes the following topics:

- About Snapshot Management
- Creating a Snapshot
- Deleting a Snapshot
- Creating a Snapshot Schedule
- Disabling a Snapshot Schedule
- Enabling a Snapshot Schedule
- Deleting a Snapshot Schedule
- Restoring Previous Versions of an SMB Folder
- Restoring Previous Versions of an NFS Folder

About Snapshot Management

A snapshot is a read-only copy of a dataset. You can roll back datasets to previous versions. Initially, datasets do not occupy any disk space. As the dataset changes, snapshots start to consume more space by referencing the old data.

NexentaConnect for VMware Virtual SAN provides a capability to manage snapshots and snapshot schedules for the NexentaConnect VSA folders.

Using the NexentaConnect for VMware Virtual SAN user interface, you can perform standard operations with snapshots, such as deleting and creating them.

Creating a Snapshot

You can create instant folder snapshots using the NexentaConnect for VMware Virtual SAN user interface. Use these snapshots to protect and restore your data.

❖ *To create a snapshot, using the NexentaConnect for VMware Virtual SAN UI:*

1. Select a registered VSAN datastore.
2. Click the **Summary** tab.
3. Under **File Services**, select a folder.
4. Click **Data Protection**.
5. Under **Snapshots**, click the **Create Snapshot** icon.

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Deleting a Snapshot

You may need to delete snapshots in a folder if you want to free more space on disk.

- *To delete a snapshot, using the NexentaConnect for VMware Virtual SAN:*
  1. Select a registered VSAN datastore.
  2. Click the **Summary** tab.
  3. Under **File Services**, select a folder.
  4. Click **Data Protection**.
  5. Under **Snapshots**, click the **Delete Snapshot** icon.

Creating a Snapshot Schedule

NexentaConnect for VMware Virtual SAN uses the native Nexenta Auto-Snap service to create snapshot schedules. You can create multiple schedules for any folder.

- *To create a snapshot schedule, using the NexentaConnect for VMware Virtual SAN:*
  1. Select a registered VSAN datastore.
  2. Click the **Summary** tab.
  3. Under **File Services**, select a folder.
  4. Click **Data Protection**.
  5. Under **Snapshots**, click the **Create Snapshot Schedule** icon.
  6. In the **Schedule Snapshot** window, specify a schedule and retention policy.
  7. Click **Create**.

Disabling a Snapshot Schedule

When you disable a snapshot schedule, it temporarily stops creating new snapshots according to the scheduled interval. Disabled snapshot schedules can be later enabled; see Enabling a Snapshot Schedule.

- *To disable a snapshot schedule, using the NexentaConnect for VMware Virtual SAN:*
  1. Click **VSAN Datastore > Summary**.
  2. Under **File Services**, select a folder.
  3. Click **Data Protection**.
  4. Under **Snapshots**, click the **Disable Schedule** icon.
  5. In the confirmation dialog box, click **Yes**.

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Enabling a Snapshot Schedule

You can enable any disabled snapshot schedule.

- *To enable a snapshot schedule, using the NexentaConnect for VMware Virtual SAN:*
  1. Select a registered VSAN datastore.
  2. Click the **Summary** tab.
  3. Under **File Services**, select a folder.
  4. Click **Data Protection**.
  5. Under **Snapshots**, click the **Enable Scheduler** icon.
  6. In the confirmation dialog box, click **Yes**.

Deleting a Snapshot Schedule

You can delete a snapshot schedule to stop creating new snapshots at the scheduled interval.

- *To delete a snapshot schedule, using the NexentaConnect for VMware Virtual SAN:*
  1. Select a registered VSAN datastore.
  2. Click the **Summary** tab.
  3. Under **File Services**, select a folder.
  4. Click **Data Protection**.
  5. Under **Snapshots**, click the **Destroy Scheduler** icon.
  6. In the confirmation dialog box, click **Yes**.

Restoring Previous Versions of an SMB Folder

Using the snapshot feature of NexentaConnect for VMware Virtual SAN, you can create snapshots of SMB folders. The snapshots are displayed as previous versions of files or folders in the files and folders properties on Windows clients. To restore previous versions of an SMB folder, log in to a Windows client, access the SMB folder, and in the file or folder properties click **Previous Version**. The restore procedure is supported for files, sub-folders, and folders. Therefore, you can rollback the whole SMB folder, as well as single files.

- *To restore previous versions of an SMB folder:*
  1. Log in to a Windows client.
  2. Navigate to the location of the SMB folder.
  3. Right click on the folder, a sub-folder, or a file.
  4. Select **Properties > Previous Versions**.

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5. Select a snapshot to restore.
6. Click **Restore**.

Restoring Previous Versions of an NFS Folder

You can view the list of snapshots created for an NFS folder from an NFS client. The snapshots are stored in the `.zfs` directory. You can copy data from a read-only snapshot to a new location and use it as a regular folder or replace the existing folder with the old version.

NFS client packages must be installed on the NFS client machine.

❖ *To restore previous versions of an NFS folder:*

1. Log in to the NFS client.
2. Mount the NFS folder:

   Example for Ubuntu:

   ```
   # mount -t nfs <ip>:/<path-to-share> /mnt/<mountpoint>
   ```
3. Change the directory to the mounted NFS folder.

   ```
   # cd /mnt/<mountpoint>
   ```
4. View the list of snapshots:

   ```
   # ls.zfs/snapshots/
   ```
5. Copy the required folder or file:

   ```
   # cp -r .zfs/snapshots/<snapshotname>/<file or folder name> </
   mountpoint/>
   ```


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4

Monitoring NexentaConnect for VMware Virtual SAN

This chapter includes the following topics:

- Viewing Tasks
- Viewing System Logs
- Monitoring Service Health

Viewing Tasks

You can monitor tasks performed by components of NexentaConnect for VMware Virtual SAN.

❖ *To view tasks, using the NexentaConnect for VMware Virtual SAN UI:*

1. Select a registered VSAN datastore.
2. Click the **Monitor** tab.
3. Select the **Task** tab.
4. View the tasks.

Viewing System Logs

Use system logs for troubleshooting NexentaConnect for VMware Virtual SAN.

When you submit a support request to Nexenta Support, export the system logs and attach the logs to the support email.

See Exporting System Logs.

❖ *To view system logs, using the NexentaConnect for VMware Virtual SAN UI:*

1. Select a registered VSAN datastore.
2. Click the **Monitor** tab.
3. Select the **System Logs** tab.
4. View system logs.

Exporting System Logs

If you need to submit a support request to Nexenta, export system logs as a `.zip` archive and attach it to the support email.

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- *To export system logs, using the NexentaConnect for VMware Virtual SAN UI:*
  1. Select a registered VSAN datastore.
  2. Click the **Monitor** tab.
  3. Select the **System Logs** tab.
  4. Click **Export System Logs**.
  5. Optionally, select a date.

     By default, system logs for current date are downloaded.
  6. Click **Download**.

Monitoring Service Health

The Service Health tab displays information about the status of the NexentaConnect Manager and Nexenta IO Engine.

You can view statuses for the following:

NexentaConnect Manager

Management web server

Management database

Maximum memory usage on management server

Memory usage on management server

Disk usage on management server

Nexenta IO Engine

Nexenta management service

NFS, SMB, ZFS services

Server CPU/Memory statistics collection

Disk IO statistics collection

NFS, SMB statistics collection

Zpool VSAN Cluster status

Zpool syspool status

- *To monitor service health, using the NexentaConnect for VMware Virtual SAN UI:*
  1. Select a registered VSAN datastore.
  2. Click the **Monitor** tab.
  3. Select the **Service Health** tab.
  4. View health information.

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Managing NexentaConnect for VMware Virtual SAN

This chapter includes the following topics:

- Maintenance Tasks
- Removing the Nexenta IO Engine Image and NexentaConnect Manager
- Uninstalling the NexentaConnect for VMware vSphere Web Client plugin

Maintenance Tasks

You may need to perform one of the following maintenance tasks:

- Rescanning the VMware Virtual SAN Cluster
- Cleaning Up the VMware Virtual SAN Cluster

Rescanning the VMware Virtual SAN Cluster

You need to rescan the VMware Virtual SAN Cluster if one of the following occurs:

- The connection between VMware Virtual SAN and NexentaConnect Manager is broken
- NexentaConnect Manager needs to be reinstalled for any reason

❖ *To rescan the VMware Virtual SAN Cluster:*

1. Log in to the VMware vCenter where the NexentaConnect for VMware Virtual SAN is installed using the vSphere Web Client.
2. Click the **NexentaConnect for VMware Virtual SAN** icon.
3. Select a VSAN Datastore.
4. Click the **Action** button.
5. Select **Rescan Cluster**.

Cleaning Up the VMware Virtual SAN Cluster

If you need to remove all components of the NexentaConnect for VMware Virtual SAN, start with cleaning up the VMware Virtual SAN Cluster.

Before cleaning up the VMware Virtual SAN Cluster, verify that you have backups for all shared folders.

Warning:	Cleaning up the cluster removes all file services. You cannot restore the file services after cleaning up the cluster.

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❖ *To clean up the VMware Virtual SAN Cluster:*

1. Log in to the VMware vCenter where the NexentaConnect for VMware Virtual SAN is installed using the vSphere Web Client.
2. Click the **NexentaConnect for VMware Virtual SAN** icon.
3. Select a VSAN Datastore.
4. Click the **Action** button.
5. Select **Cleanup Cluster**.

   VMware vSphere deletes the Nexenta IO Engine virtual machine that was deployed from the Nexenta IO Engine Image during the creation of the first shared folder. All NFS and CIFS folders will be removed.

Removing the Nexenta IO Engine Image and NexentaConnect Manager

You must complete the tasks described in Cleaning Up the VMware Virtual SAN Cluster before you can remove Nexenta IO Engine and NexentaConnect Manager.

❖ *To remove the Nexenta IO Engine and NexentaConnect Manager:*

1. Log in to the VMware vCenter where the NexentaConnect for VMware Virtual SAN is installed using the vSphere Web Client.
2. Navigate to the VMware ESXi host where Nexenta IO Engine and/or NexentaConnect Manager are deployed.
3. Verify that virtual machine is powered off.
4. Right-click on the virtual machine.
5. Select **All vCenter Actions > Delete from Disk**.
6. In the confirmation dialog box, click **OK**.
7. Repeat Step 2 to Step 6 for the other machine.

Uninstalling the NexentaConnect for VMware vSphere Web Client plugin

Before uninstalling the NexentaConnect for VMware vSphere Web Client plugin, complete the steps described in Cleaning Up the VMware Virtual SAN Cluster and Removing the Nexenta IO Engine Image and NexentaConnect Manager.

Select from the following options:

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- If you use the NexentaConnect for VMware vSphere Web Client plugin with VMware vCenter, proceed to:

  Uninstalling the Web Client Plugin from VMware vCenter

- If you use the NexentaConnect for VMware vSphere Web Client plugin with VMware vCenter Server Linux Virtual Appliance, see:

  Uninstalling the Web Client Plugin from VCSA

Uninstalling the Web Client Plugin from VMware vCenter

You can uninstall the NexentaConnect for VMware vSphere Web Client plugin from VMware vCenter if you want to stop using the web plugin. When you uninstall the web plugin, you do not destroy the IO Engine and NexentaConnect Manager virtual machines. You can delete these machines manually using the VMware vSphere user interface.

When you delete the web client plugin, NFS and CIFS folders are not affected. You can access data and snapshots in these folders using the IO Engine IP address. However, you cannot create new NFS and CIFS folders, or new snapshots for these folders.

❖ *To uninstall the NexentaConnect for VMware vSphere Web Client plugin from VMware vCenter:*

1. Log in as Administrator to the Microsoft Windows server where the VMware vCenter Server is installed.
2. Click Start > Control Panel > Programs and Features.
3. Select NexentaConnect for VMware Virtual SAN.
4. Click **Uninstall**.
5. In the confirmation dialog box, click **Confirm**.
6. Click **Yes**.
7. Follow the prompts to uninstall the web plugin.

Uninstalling the Web Client Plugin from VCSA

You can uninstall the NexentaConnect for VMware vSphere Web Client plugin from VMware vCenter Server Linux Virtual Appliance if you want to stop using the web plugin. When you uninstall the web plugin, you do not destroy the IO Engine and NexentaConnect Manager virtual machines. You can delete these machines manually using the VMware vSphere user interface.

When you delete the web client plugin, NFS and CIFS folders are not affected. You can access data and snapshots in these folders using the IO Engine IP address. However, you cannot create new NFS and CIFS folders, or new snapshots for these folders.

❖ *To uninstall the NexentaConnect for VMware vSphere Web Client plugin from VCSA:*

1. Log in to the VCSA using SSH as root.
2. Change directory to `/installer`:

   ```
   # cd installer
   ```

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3. Type:

   ```
   # ./installer -action uninstall -vcuser root -nexenta <nc_manager_ip>
   ```

   System response:

   ```
   Picked up JAVA_TOOL_OPTIONS: -Xms16M -Xmx128M
   Enter your VMware vCenter password:
   ```

4. Type the password for the user you specified in Step 3.

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