



Spectra Verde Array

Release Notes and Documentation Updates



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Part Number

90990082 Revision R

Revision History

Revision	Date	Description
G	October 2013	Updated for Verde 1.3 release.
H	November 2013	Updated for Verde 1.3.1 release.
I	January 2014	Updated for Verde 1.4 release.
J	March 2014	Updated for Verde 1.4.1 release.
K	April 2014	Updated for Verde 1.4.2 release.
L	May 2014	Updated for Verde 1.4.4 release. Verde 1.4.3 was never released.
M	June 2014	Updated for Verde 1.4.5 release.
N	September 2014	Updated for Verde 1.5 release.
O	December 2014	Updated for Verde 2.0 release.
P	March 2015	Updated for Verde 2.1 release.
Q	May 2015	Updated for Verde 2.1.1 release.
R	August 2015	Updated for Verde 2.1.2 release.
S	September 2015	Updated for Verde 2.1.3 release.

Note: To make sure you have the release notes for the most current version of the Verde software, log into the Spectra Logic Technical Support portal at support.spectralogic.com. The release notes also include updates to the product documentation.

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To Obtain Documentation

Spectra Logic Website: support.spectralogic.com/documentation

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ABOUT THIS GUIDE

These release notes give you the latest information available about the Spectra® Verde®, its software, and firmware. They also serve as an addendum to the published documentation for the array.

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Site Preparation Guide Updates	page 49

Note: To make sure you have the release notes for the most current version of the Verde software, log on to the Spectra Logic® Technical Support portal at support.spectralogic.com. The release notes also include updates to the product documentation.

INTENDED AUDIENCE

This guide is intended for data center administrators and operators who maintain and operate file storage systems. The information in this guide assumes a familiarity with computing terminology, RAID technology, SAS connectivity, and Gigabit and 10 Gigabit Ethernet (10 GigE) networking. You also need to be familiar with installing, configuring, and using data file storage and archival software.

RELATED INFORMATION

This section contains information about this document and other documents related to the Spectra Verde.

Verde User Interface Screens

The Verde interface changes as new features are added or other modifications are made between software revisions. Therefore, the screens you see in the Verde web interface may differ from those shown in this guide.

Related Publications

The following documents related to the Spectra Verde are available from the Spectra Logic website at support.spectralogic.com/documentation/, and from the Documentation screen on the Verde web interface.

- The *Spectra Verde User Guide* provides information about configuring, using and maintaining your Verde.
- The *Spectra Verde Network Setup Tips* provide helpful instructions for troubleshooting common connectivity problems.
- The *Spectra Verde Quick Start Guide* provides basic instructions for the essential installation and configuration steps.
- The *Spectra Verde Command Line Interface Guide* describes how to configure, monitor, and maintain the Spectra Verde arrays through the command line interface.
- The *Spectra Verde Site Preparation Guide* provides important information that you should know before installing Verde arrays in your storage environment.
- The *Spectra Verde Installation Guide* provides instructions for installing a Verde array.

The following documents are available after logging into your Support portal account at: support.spectralogic.com.

- The *Spectra Verde Drive Replacement Guide* provides instructions about replacing a failed data drive after the array is installed.
- The *Spectra Verde Power Supply Replacement Guide* provides instructions about replacing a failed power supply after the array is installed.
- The *Spectra Verde Boot Drive Replacement Guide* provides instructions about replacing a failed boot drive in the array.
- The *Spectra Verde Fan Replacement Guide* provides instructions about replacing a failed fan in the array.
- The *Spectra Verde HBA Replacement Guide* provides instructions about replacing a failed HBA in the array.

Note: To make sure you have the release notes for the most current version of the Verde software, log into the Spectra Logic Technical Support portal at support.spectralogic.com. The release notes also include updates to the product documentation.

TYPOGRAPHICAL CONVENTIONS

This guide uses the following conventions to highlight important information:

Note: Read text marked by “Note” for additional information or suggestions about the current topic.



Important

Read text marked by the “Important” icon for information that will help you complete a procedure or avoid extra steps.



Caution

Read text marked by the “Caution” icon for information you must know to avoid damaging the array, the disk drives, or losing data.



WARNING

Read text marked by the “Warning” icon for information you must know to avoid personal injury.

WARNUNG Lesen Sie markierten Text durch die “Warnung”-Symbol für die Informationen, die Sie kennen müssen, um Personenschäden zu vermeiden.

These release notes use an arrow (→) to describe a series of menu selections. For example:

Select **Configuration** → **Network**.

— means —

Select **Configuration**, then select **Network**.

Verde Software Updates

This section provides instructions to update your Verde, as well as an overview of the features and changes for each released software version.

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Updating Software	page 10
Check the Current Software Version	page 11
Check the Currently Released Verde Software Version	page 11
Download and Stage the Updated Software	page 12
Install the Update	page 14
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UPDATING SOFTWARE

Some problems with the Verde arrays may be fixed by updating the array's software. Spectra Logic provides complete support for the most current release of software and one revision back. Customers using previously released software packages are asked to update to the current release as soon as possible.

Note: You must have a current software upgrade key entered in the array you want to update. See the *Spectra Verde User Guide* for more information.

If Automated Software Upload is enabled, when a new release of software is available from the Spectra Logic support website, the array sends an email to all users configured to receive Warning or Informational emails and posts a system message to the Messages screen. If configured to do so, the array also downloads the updated software.

The method used to update the array depends on if the Automated Software Upload feature is enabled or not, and if enabled, whether it is configured to download the update software.

- If the update package downloaded automatically, skip to [Install the Update on page 14](#).
- If you were notified that an update is required, but the update did not download automatically, skip to [Download and Stage the Updated Software on page 12](#).
- If you do not know if the array needs an update installed, continue with [Check the Current Software Version on page 11](#).

Check the Current Software Version

Use the following steps to determine the current software version running on your Verde master node.

1. From the menu bar, select **Support** ⋮ **Software**. The Software screen displays.
2. The current software version is listed next to **Current Version** in the Software Update pane.

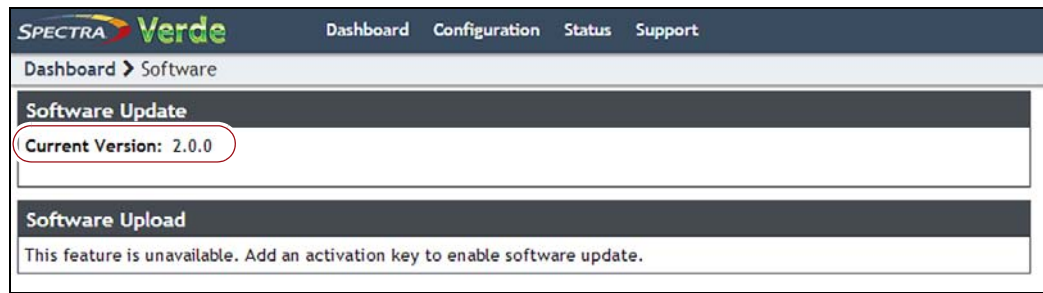


Figure 1 The current Verde software version.

Check the Currently Released Verde Software Version

Follow these steps to check the currently recommended Verde software version:

1. Log into your user account on the Technical Support portal at support.spectralogic.com.
Note: See the *Spectra Verde User Guide* for information about creating an account and accessing the Technical Support portal.
2. Select **Downloads** ⋮ **Product Software**.

3. On the Product Software page, locate the Verde array in the **Spectra Product** column. The currently released Verde software version is listed in the **Current Version** column.

Spectra Logic Support Portal

Service Partner Resources | Incidents & Inventory | Documentation | Downloads | Support by Product

Services & Contracts | Admin

Home / Downloads / Product Software

Product Software

The table below shows the current released version for each Spectra product. To download a software file, click the software version listed in the Current Version column.

You can download software or firmware for any product. However, you will need to generate a valid service key, and install it on your Spectra product before software can be applied. Note that in order to generate a key, your Spectra product must be covered by warranty or a service contract.

Important:

- Even though the current version has the same name for different library types, make sure you download the version specifically for your library type, as file extensions are different per library type (BlueScale software for T200, T380, and T680 have the same extension.)
- Some browsers will change the extension of the BlueScale package file upon download (to .zip, for example). If this happens, **do not unzip** the file. Instead, select **Save As** and change the file extension from .zip to the extension shown in the table below. **Do not change anything else** in the file name.
- If you are upgrading a Tape Series library from BlueScale 12.4.x or earlier versions, or 12.5.x or later versions, review the following before upgrading:
 - [BlueScale Package Update Instructions: Updating from BlueScale 12.4.x and Earlier Versions](#)
 - [BlueScale Package Update Instructions: Updating from BlueScale 12.5.3 and Later Versions](#)
- If a software file is not downloadable or you do not see a software version listed for your Spectra product, then contact Spectra Logic Support.

Spectra Product	Current Version	File Size (KB)	Release Notes
TFinity	BlueScale12.6.29-20150124F	63,244	TFinity Library Release Notes and Documentation Updates
T950	BlueScale12.6.27-20140804F.2lpz	59,756	T950 Library Release Notes and Documentation Updates
T200/380/680	BlueScale12.6.27-20140804F.2boz	39,510	Spectra T200, T380, & T680 Release Notes and Documentation Updates
T120	BlueScale12.6.27-20140804F.2spz	39,423	T120 Library Release Notes and Documentation Updates
T50e	BlueScale12.6.28-20140904F.52z	17,840	T50e Library Release Notes and Documentation Updates
T50	BlueScale10.5.8-20090428F	12,681	contact Spectra Logic Support
Verde	verde-production-2.0.0-1106275.archive	559,421	nTier Verde Array Release Notes and Documentation Updates
BlackPearl	black_pearl-production-1.0.2-1106286.archive	692,098	BlackPearl Release Notes and Documentation Updates

Figure 2 The Product Software screen.

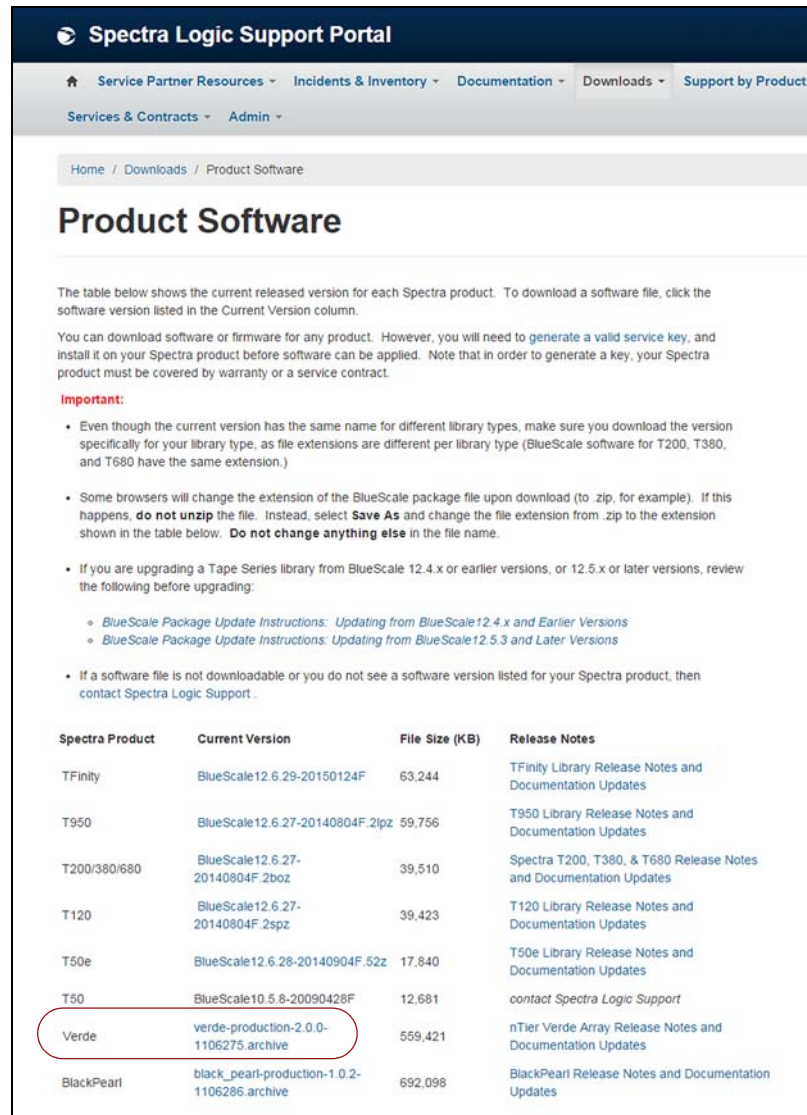
4. Compare the Current Version available for the Verde array to the version installed on the array.

Download and Stage the Updated Software

Use the instructions in this section to download and install the updated software for the Verde array.

1. Log into your account on the Technical Support portal at support.spectralogic.com.

2. Select **Downloads**  **Product Software**. The Product Software Screen displays.



Spectra Logic Support Portal

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Product Software

The table below shows the current released version for each Spectra product. To download a software file, click the software version listed in the Current Version column.

You can download software or firmware for any product. However, you will need to generate a valid service key, and install it on your Spectra product before software can be applied. Note that in order to generate a key, your Spectra product must be covered by warranty or a service contract.


Important:

- Even though the current version has the same name for different library types, make sure you download the version specifically for your library type, as file extensions are different per library type (BlueScale software for T200, T380, and T680 have the same extension.)
- Some browsers will change the extension of the BlueScale package file upon download (to .zip, for example). If this happens, **do not unzip** the file. Instead, select **Save As** and change the file extension from .zip to the extension shown in the table below. **Do not change anything else** in the file name.
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 - [BlueScale Package Update Instructions: Updating from BlueScale 12.4.x and Earlier Versions](#)
 - [BlueScale Package Update Instructions: Updating from BlueScale 12.5.3 and Later Versions](#)
- If a software file is not downloadable or you do not see a software version listed for your Spectra product, then contact Spectra Logic Support.

Spectra Product	Current Version	File Size (KB)	Release Notes
TFinity	BlueScale12.6.29-20150124F	63,244	TFinity Library Release Notes and Documentation Updates
T950	BlueScale12.6.27-20140804F.2lpz	59,756	T950 Library Release Notes and Documentation Updates
T200/380/680	BlueScale12.6.27-20140804F.2boz	39,510	Spectra T200, T380, & T680 Release Notes and Documentation Updates
T120	BlueScale12.6.27-20140804F.2spz	39,423	T120 Library Release Notes and Documentation Updates
T50e	BlueScale12.6.28-20140904F.52z	17,840	T50e Library Release Notes and Documentation Updates
T50	BlueScale10.5.8-20090428F	12,681	contact Spectra Logic Support
Verde	verde-production-2.0.0-1106275.archive	559,421	nTier Verde Array Release Notes and Documentation Updates
BlackPearl	black_pearl-production-1.0.2-1106286.archive	692,098	BlackPearl Release Notes and Documentation Updates

Figure 3 The Product Software screen.

3. Locate the Verde array in the **Spectra Product** column. The currently released Verde software version is listed in the **Current Version** column.
4. Click the name of the Verde package. The package begins downloading through your web browser. Do not unzip the downloaded file.

- From the menu bar, select **Support**  **Software** to display the Software screen. Click **Choose File**. Using your web browser, browse to the location of the update file and select the file to upload. The file is staged to the system.

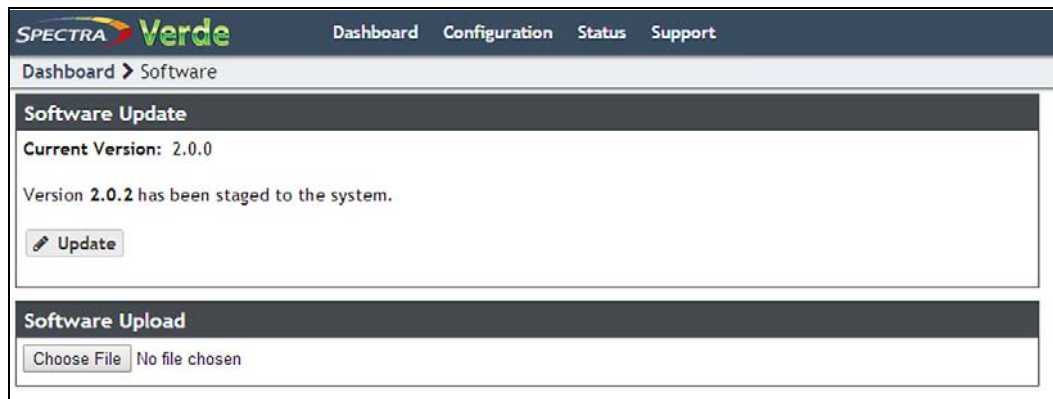



Figure 4 The Software Update screen with an available software package listed.

Install the Update

- Discontinue all file storage operations on the Verde master and expansion nodes. The master node automatically reboots as part of the update process.
- From the menu bar, select **Support**  **Software** to display the Software screen. The Software screen displays with the software upload file staged to the system.

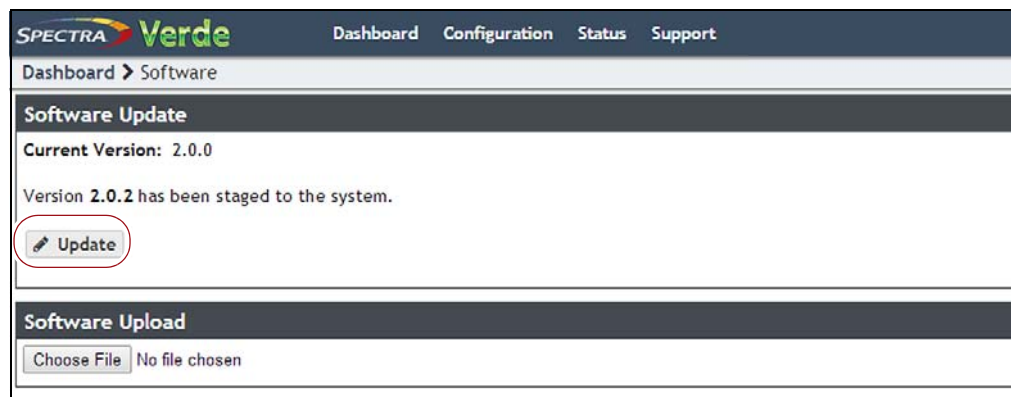


Figure 5 The Software Update screen with a software package staged to the system.

3. Click **Update**. A progress bar shows the progress of the update.

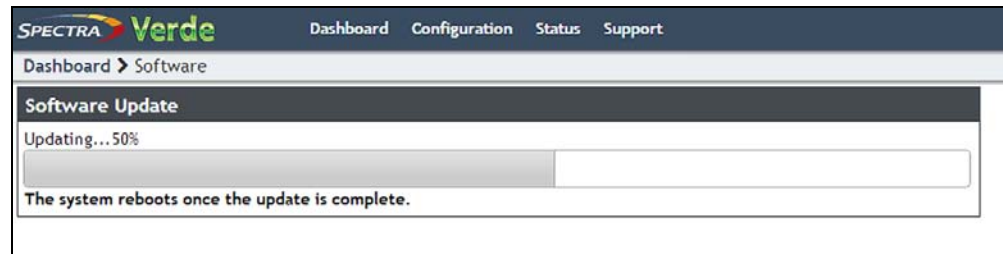


Figure 6 The Software Update screen showing the progress of an update.

4. When the update is complete, the Verde array automatically reboots to begin using the latest software.
5. Restart file storage operations.

PACKAGE HISTORY

The following sections list the Verde update packages that are released and provide information about new features and updates that affect the array and its components. The packages are listed in reverse chronological order, with the most recent release listed first.



Important

Unless otherwise stated, the known issues for a package remain active until moved to the resolved issues section. Always read the known issues section for each firmware release to make sure you are aware of any potential problems.

Verde 2.1.3

Resolved Issues

Issue	Resolution
The connection to NFS shares may be lost and cannot be reestablished	Lost connection to NFS shares is less likely to occur and connection can be reestablished by the clients if it does occur.
Using the Verde array over time may result in degraded array performance.	This issue no longer occurs.
If boot drives are removed and their locations are swapped, the array cannot boot.	The system can now boot correctly if the boot drive locations are swapped.
Verde 2.1.1 has a "TLS Diffie-Hellman Key Exchange Logjam Vulnerability" (CVE-2015-4000).	This issue has been corrected.

Verde 2.1.2

Enhancements

CIFS Improvements This release provides improved CIFS oplock and lease handling in high throughput, multi-client Microsoft Windows® operating system environments for SMB1 and SMB2 clients.

Resolved Issues

Issue	Resolution
When performing a package update using a USB device, the update fails because the array does not recognize the format of the USB device.	The array now recognizes the format of the USB device.
When a storage pool experiences a disk drive failure and uses a spare drive to replace the failed drive, the storage pool cannot be expanded.	You are able to expand a storage pool that is using a spare drive.
If you enable Automatic Software Download on an array and the target URL contains no update packages, an error message displays incorrectly stating that multiple update packages were found at the target URL.	This issue no longer occurs.
When moving a volume from one storage pool to another storage pool, the volume is listed as present on both storage pools. Any attempt to edit the volume(s) fails because the volume name is not unique.	During a volume move, the volume is correctly deleted from the original storage pool.
In a Microsoft Windows operating system environment, if you add multiple ACLs (Access Control Lists) to a file and then change the ACL list at a later date, the file may become inaccessible.	This issue no longer occurs.

Known Issues

Issue	Workaround
Expansion nodes do not show the status of power supplies in the Verde web interface.	Use the lights on the power supplies to determine the status of each power supply.

Verde 2.1.1

Enhancements

The maximum number of objects that can be transferred at a time for a data transfer job from the Verde array to a BlackPearl® gateway was increased from 100,000 to 500,000 objects to help prevent potential data transfer problems. Data transfer jobs involving object counts greater than 500,000 are broken up into transfer lists of 500,000, or less.

Resolved Issues

Issue	Resolution
With the bezel attached to an array, after a certain period of time, a user is unable to log into the Verde user interface. Data transactions are not affected.	This issue no longer occurs.
If a data transfer to a BlackPearl gateway, initiated by a Network File Interface, fails, and the automatically generated volume snapshot fails to delete, the data transfer job becomes stuck in a state of “transferring” and does not complete.	This issue no longer occurs.
The Chelsio 10 GigE card in the Verde array sometimes experiences intermittent data transfer problems due to packet loss.	New firmware for the Chelsio 10 GigE cards is included in the Verde 2.1.1 release.
Using SGL software to transfer data to the Verde array fails because the SMB command “Get File Security” is not supported.	The SMB command “Get File Security” is now supported.
Storage management software packages such as Veeam and Commvault create multiple sessions during file transfer operations which generate multiple requests for file leases. This can create a high traffic load which may cause the connection to drop.	This issue now occurs less frequently.

Verde 2.1

Enhancements

CIFS Share Creation Permissions This release changes how the permissions are set when a CIFS share is created on the Verde array. Now, when a CIFS share is created on the array, the default permission is “Everyone”. This allows a user creating the initial shares to easily set the proper permissions for additional users without requiring the Active Directory Domain administrator password. See [Create a CIFS Share on page 43](#) for more information.

CIFS Reliability Several issues, related to handling multiple file requests from multiple clients simultaneously and properly keeping track of each client session and connection, were addressed in the CIFS service. Most of these issues resulted in a dropped connection to a Verde share when using CommVault and Veeam backup software services rather than standard Windows Explorer actions.

Network File Interface The Spectra Network File Interface (NFI) allows you to automatically move data from your Verde array to one or more BlackPearl™ gateways, without the need to use a DS3 API. Data is transferred on a schedule and data copied from the Verde array to the gateway can be configured to be kept on the array or deleted. When a user needs access to data deleted from the Verde array, the BlackPearl gateway copies it back to the array.

Resolved Issues

Issue	Resolution
After configuring a client in the SNMP service, the client cannot be deleted as the "-" remove button is inaccessible.	The remove button is now accessible after configuring a client in the SNMP service.
When configuring network addresses for a HotPair configuration, the Network screen may display incorrectly.	This issue no longer occurs.

Known Issues

Issue	Workaround
The command line interface reports a storage pool that is finished rebuilding as "Rebuilding 100%".	Use the Verde web interface to see the status of a rebuilding storage pool.
During heavy data traffic to the Verde array, the array may take too long to respond to a write request from a Windows host. Windows interprets this as the volume no longer being accessible and closes the connection.	There is no workaround to this issue.

Verde 2.0

Enhancements

Hot Pair Two Verde master nodes can be connected to multiple expansion nodes in a failover configuration. One master node acts as the primary controller, and the other acts as the secondary. In the event that the secondary controller detects a failure of the primary controller, it automatically takes over to provide uninterrupted operation, without administrative intervention.

Resolved Issues

Issue	Resolution
When an incorrect activation key is entered in the command line interface, the resulting error message displays twice.	The error message now displays once.
If you create an NFS share and enter information in the Comment field, the comment information does not display in the web interface.	The NFS share comment information now displays.
Activation keys disappear from the array after a system software update.	This issue no longer occurs.
If a Data Verification Check is cancelled before it completes, the command line interface incorrectly indicates the check completed successfully.	A cancelled data verification now shows as “Cancelled”.
Changes to the session timeout setting do not take effect until the user logs out.	The session timeout setting now takes effect as soon as it is saved.
You can only change the system hostname once.	You can now change the hostname multiple times.
Moving a volume with snapshots to a different storage pool fails to complete.	Volumes with snapshots now correctly move to the new storage pool.
The command line interface fails to create a snapshot schedule when there is a value in the “Minutes” field.	This issue no longer occurs.
When a storage pool finishes rebuilding after a drive replacement, no message is emailed to configured mail recipients.	A message is emailed to configured mail recipients when a storage pool finishes rebuilding.
On the Hardware screen of the web interface, the graphics of the front and rear slots of the array overlap when viewed using the Google [®] Chrome [™] browser.	This issue no longer occurs.
After configuring an NVR3 [®] storage pool, the NVR3 service incorrectly lists the name of the NVR3 storage pool twice.	This issue no longer occurs.

Known Issues

Issue	Workaround
If you refresh the Hardware screen, the drive size and drive position labels may disappear from the Verde graphic on the Hardware screen.	Navigate to any other screen in the Verde web interface, then navigate back to the Hardware screen.
Topology errors do not display on the Messages screen.	From the menu bar, select Support ... Tools ... Topology to display the Topology screen. Any topology errors display.
Using the command line interface to create a link aggregation with DHCP addressing fails.	Use the Verde web interface to create a link aggregation with DHCP addressing.
When the SATA DOM boot drives reach their write threshold, an error message is generated but the drive health on the Hardware screen continues to show as good.	Contact Spectra Logic Technical Support for assistance (see Contacting Spectra Logic on page 4).
When attempting to join a Windows Active Directory Domain for the first time, a timeout error may display.	Repeat the process. All subsequent attempts to join a domain are successful.
Activation keys with no expiration date may incorrectly expire.	Contact Spectra Logic Technical Support for assistance (see Contacting Spectra Logic on page 4).
When the array has a SAS topology error, the details for that error cannot be viewed using the command line interface.	Use the Verde web interface to see the details of SAS topology errors.
The command line interface does not display the drive serial number or firmware level for drives installed in the array.	Use the Verde web interface to see a drive's serial number or firmware information.
System boot drives may not match their physical numbering. For example, the boot drive that is physically identified as 'Drive 1' may display as 'Drive 2' in the command line and web interfaces.	If you need to replace a failed boot drive, contact Spectra Logic Technical Support to ensure you are replacing the correct drive (see Contacting Spectra Logic on page 4).
The Verde web interface displays the fan layout for a master node in an incorrect order.	There is no resolution to this issue. Contact Spectra Logic Technical Support if you are unable to locate a failed fan in a master node (see Contacting Spectra Logic on page 4).
After joining an Active Directory domain, changes to the Verde system name do not update the FQDN (Fully Qualified Domain Name).	To change the system name after joining an Active Directory domain, first leave the domain. Change the system name, and then rejoin the domain.
If the number of failed drives in a storage pool is greater than the redundancy of the pool, and there is outstanding I/O to the pool, the pool cannot be deleted.	Reboot the array and delete the pool. If the pool still cannot be deleted, contact Spectra Logic Technical Support (see Contacting Spectra Logic on page 4).
Joining an Active Directory domain using the command line interface fails.	Use the Verde web interface to join an Active Directory domain.

Issue	Workaround
If a service fails, the Services screen will incorrectly display the service as running.	There is no workaround to this issue. Reboot the array to restart services. If the problem persists, contact Spectra Logic Technical Support (see Contacting Spectra Logic on page 4).
If the array is powered on without an Ethernet cable connected to the management port, the Verde user interface is not available, even if an Ethernet cable is later plugged in to the management port.	Connect an Ethernet cable to the management port and then reboot the array.

Verde 1.5

Enhancements

Spectra NVR3 The Verde array can now function as a Spectra NVR3 appliance for use as an integrated video recording server, VMS software solution, and a video storage platform in conjunction with a Spectra Logic tape library.

Resolved Issues

Issue	Resolution
Under certain circumstances, a user is unable to configure a data connection after configuring the management connection.	This issue no longer occurs.
On a large array spanning multiple nodes, the Erase Data command sometimes fails to erase data on a foreign drive.	This issue no longer occurs.
Several commands in the command line interface do not display the available, minimum, or maximum size of a volume.	This issue no longer occurs.
When attempting to reduce the minimum size of a volume, the web interface displays an incorrect message reading “Minimum size cannot exceed available space.”	The web interface now displays the correct message informing the user that “Minimum volume size cannot be reduced.”
If an email is sent to the root address of an array, the connection is correctly refused, but error messages related to this event repeatedly generate in the Messages screen.	Only one message is logged for this event.
When the master node is connected to multiple expansion nodes, deleting a storage pool succeeds, but displays an incorrect error message that the pool was not deleted.	The error message no longer displays.

Issue	Resolution
After upgrading to Verde 1.4.1, the web and command line interfaces can take several minutes to display the storage pools and volumes configured on the array.	This issue no longer occurs.
The web interface sometimes swaps the display order of the two system drives.	This issue no longer occurs.
When the array generates a scheduled log set, two notification emails are sent to configured mail recipients.	The array only sends one notification email when a scheduled log set is generated.
When a drive in a storage pool fails and is automatically replaced by a global spare drive, the original failed drive does not correctly become a global spare when it is physically replaced.	A failed drive replaced by a global spare drive now correctly becomes a global spare when physically replaced in the array.
Chassis fans in the 2U master node do not increase speed when the chassis temperature increases.	Chassis fans now run at full speed for maximum cooling.

Known Issues

Issue	Workaround
When the array is undergoing backup operations, software updates fail.	Stop all backup operations prior to performing a software update.
If the NVR3 Service crashes, the Verde web interface incorrectly reports the service as Running.	Reboot the array.
Renaming a volume shared by the CIFS service can cause CIFS errors.	Stop sharing the volume prior to renaming it.
If an expansion chassis is powered on several minutes after the master node was powered on, the status for all hardware components in the expansion chassis is Unknown.	To avoid this issue, power on all nodes at the same time. If you are experiencing this issue, power down all nodes and power them on at the same time.
In multi-node arrays, hardware failure messages do not indicate which node is experiencing the failure.	Use the Hardware page in the Verde web interface to determine the location of the failed component.
After stopping the NVR3 service, the service occasionally indicates that it cannot be restarted until a data connection is configured, even though a data connection is already configured.	Navigate away from the NVR3 service details screen, and then navigate back to the NVR3 service details screen. The NVR3 service can be restarted.
After configuring an NVR3 storage pool, the NVR3 service incorrectly lists the name of the NVR3 storage pool twice. Note: This issue is resolved in Verde 2.0.	Ignore the second entry, there is only one storage pool.
If you delete the NVR3 storage pool while performing backup operations, the NVR3 service may display incorrect status.	Contact Spectra Logic Technical Support for assistance (see Contacting Spectra Logic on page 4).

Issue	Workaround
On the media information panel of the NVR3 Phoenix RSM software, the number of drives listed is one less than the actual number of drives in the array.	None.
On the media information panel of the NVR3 Phoenix RSM software, you can only view details for drives on the first page of the drive list.	None.
The NVR3 Phoenix RSM software may fail to communicate with a camera using a default URL.	If the software cannot connect to the camera using the default URL, consult the camera manufacturer's <i>User Guide</i> for the updated URL.
Occasionally, when enabling the NVR3 service, a message is generated that the tape vault service cannot be started.	Contact Spectra Logic Technical Support for assistance (see Contacting Spectra Logic on page 4).

Verde 1.4.5

Resolved Issues

Issue	Resolution
The authenticated Likewise session context management table could become corrupted when multiple clients are attached and detaching from a Likewise share, which may result in a Likewise system failure.	This issue no longer occurs.

Verde 1.4.4

This release corrects SMB2.1 issues related to "credits" and "leases" in regards to Windows 2012 R2, Windows 2012, Windows 2008 R2, and Windows 2008. Additionally, CIFS performance has been further optimized to provide a significant increase in sequential read and write performance when using multiple streams.

Resolved Issues

Issue	Resolution
Occasionally, CIFS shares become inaccessible.	This issue no longer occurs.

Verde 1.4.2

Resolved Issues

Issue	Resolution
The read performance of a CIFS share, when multiple clients and multiple streams request to read the same file, can become very slow for extended periods of time.	This issue no longer occurs.
A user can log into the Verde web interface using the username Administrator , and no password.	It is no longer possible to log into the Verde web interface with the username Administrator .

Verde 1.4.1

The Verde 1.4.1 software fixes several memory leaks and improves internal logging to AutoSupport Logs used in troubleshooting.

Resolved Issues

Issue	Resolution
Under certain circumstances the CIFS service fails to respond to requests when sharing volumes on a network connection configured with SMB 2.1 large MTU support.	This issue no longer occurs.
If a client repeatedly connects and disconnects to a CIFS share over a long period of time, the Verde array may stop responding to all requests. This is due to a memory leak when the CIFS service disconnects.	This issue no longer occurs.

Verde 1.4

Resolved Issues

Issue	Resolution
The SNMP agent does not support <code>GetBulk</code> requests.	The SNMP agent now supports <code>GetBulk</code> requests.
If host machines lose access to a CIFS share on the array, the array must be power-cycled to access the share again.	The array no longer requires a power-cycle to access CIFS shares if the connection was temporarily lost.

Issue	Resolution
Immediately after logging into the Verde interface, the performance graph fails to display on the Dashboard screen.	The Dashboard now always displays the performance graph.
The Time zone setting is not saved when switching between performance graphs.	The Time zone setting is now maintained when switching between performance graphs.
Changing the default color of the Visual Status Beacon has no effect on the actual color of the LED.	The default color of the Visual Status Beacon can now be correctly changed.
If you use the command line interface to start a Data Integrity Check on a storage pool that is already undergoing a Data Integrity Check, the process fails with no error message.	An error message is now generated.
When manually configuring the time of day, the Time Settings dialog box continues to display after clicking Save .	The dialog box now correctly closes.
Attempting to create two CIFS shares with identical names generates an unexpected error.	The array now correctly informs you that each CIFS share name must be unique.
Network interface performance graphs display inaccurate transfer rates.	Network performance graphs now display correct transfer rates.
The array can generate logset files that are too large to be emailed.	Logset files are now always small enough to be emailed.
The legend on the Performance screen occasionally does not display.	The legend now consistently displays.
The maximum number of snapshots allowed for a given snapshot schedule does not display.	The maximum number of snapshots now displays for each snapshot schedule.
When an error occurs on the array, the error notification email sent by the array does not include a description of the error.	Error notification emails now include a description of the problem.
NFS shares allow “rootsquash” and “norootsquash” permissions on the same share.	It is no longer possible to create an NFS share with both “rootsquash” and “norootsquash” permissions.
If the first line of an NFS Access Control list is blank, an unexpected error message is generated.	The array now ignores any blank lines in the NFS Access Control list.
When creating a storage pool, the user is not notified that they may be using all available disks in the array and will have no available spares in the system to handle any drive failures.	Help text is displayed when creating a storage pool that informs the user there are no spare drives remaining in the array with the selected storage pool configuration.
The array cannot connect to a Windows Server 2012 R2 Active Directory domain.	The array can now successfully join a Windows Server 2012 R2 Active Directory domain.
Creating a volume with a space character in the volume name fails and causes the Verde interface to hang.	Volume creation with a space character in the volume name is now successful.

Issue	Resolution
On systems with a large number of storage pools, web browsers accessing the Verde interface may lock up.	Web browsers no longer experience issues when a system is configured with a large number of storage pools.
The Verde interface displays a blank page after generating a report on the power supplies in the array.	Reports on power supplies are now correctly displayed.
CommVault running on Windows Server 2012 cannot connect to a CIFS share on the Verde array.	CommVault on Windows Server 2012 can now connect to CIFS shares on the Verde array.

Known Issues

Issue	Workaround
When the front bezel is not installed, the Verde interface incorrectly displays the bezel status as good.	Install the bezel to determine the status of the bezel, otherwise ignore the incorrect status.
The list of required parameters displayed for the CLI command <code>config snapshot schedule</code> is incomplete. Using only the listed required parameters causes the command to fail.	Include the elective parameters when configuring a snapshot schedule using the command line interface.
When manually configuring DNS settings, the DNS and Search Domain settings will disappear when saving the configuration.	Wait up to 30 seconds for the DNS and Search Domain settings to display after saving the configuration.
If a Data Verification Check is cancelled before it completes, the command line interface will incorrectly indicate the check completed successfully. Note: This issue is resolved in Verde 2.0.	Ignore the incorrect status.
Running a Data Integrity Check on a storage pool that is in the Rebuilding state causes an unknown error to display.	This is not a supported feature. Ignore the error and run the Data Integrity Check after the storage pool finishes rebuilding.
If you configure a single GigE data port connection and then create a link aggregation of all GigE ports, only the previously configured port will be included in the resulting link aggregation.	Clear the configuration from any configured GigE data ports before creating a link aggregation.
Information entered into the Comments field when creating an NFS share is not visible in the Verde interface after the NFS share is created.	Use the command line interface to view the comment field for a specified NFS share.
You cannot create a CIFS share on a read only volume.	Edit the volume configuration so that it is no longer read only. Configure the CIFS share, then edit the volume configuration again to enable the read only setting.

Issue	Workaround
Activation Keys sometime fail to display in the Verde and command line interfaces.	The keys only fail to display, they are not deleted from the system. There is no resolution to this issue.
The command line interface does not show any network traffic during data transfer operations.	Use the Verde interface to view network performance data.
If you disconnect an expansion node from the master node, the Hardware screen in the Verde interface will continue to display the status of the expansion node.	There is no workaround for this issue.
If you change the name of a volume that is being shared by either NFS or CIFS, access to the shared volume is lost.	Do not change the name of a volume that is being shared. Alternatively, configure the volume so that it is not shared, change the name of the volume, and then reconfigure the share.
Rolling back to a previous snapshot does not indicate success or failure.	There is no workaround for this issue.
It is not possible to edit a CIFS share after it has been created.	Delete the existing share and create a new CIFS share with the desired settings.
The blue drive power and activity light on a data drive stops illuminating after a few hours of use.	The data drive is functioning normally. Use the Verde interface to determine the status of the drive. The red failure light is not affected and displays in the event of a drive failure.
Moving a volume that is currently undergoing a Data Verification Check causes an unexpected error.	Cancel or wait for the Data Verification Check to complete before moving a volume.

Verde 1.3.1

Resolved Issues

Issue	Resolution
Clients attached to CIFS shares may not see updates to directory contents.	This issue no longer occurs.
Replicated System Configuration (RSC) does not backup the array boot drives on storage pools that contain a space character in the pool name.	RSC now correctly backs up the boot drive configuration to storage pools with a space character in the name.
After upgrading to Verde 1.3, the Visual Status Beacon on the front bezel may display an abnormal pattern of lights for approximately one hour.	This issue no longer occurs.
The Verde interface does not show an error when a power supply fails.	A failed power supply now correctly displays as failed in the Verde interface.

Known Issues

Issue	Workaround
When creating a storage pool using drives in the 2U master node and two or more expansion nodes, a message displays indicating an unexpected error occurred during pool creation.	Ignore the message, the pool was created successfully.
When creating a storage pool using the command line interface, changes to the number of drives or protection level may take up to two minutes to display.	Wait while the information displays.
It may take up to two minutes for the Verde web interface or the command line interface to display a newly created storage pool, or to cease to display a recently deleted storage pool.	Wait while the interface is updated.
When a drive in a storage pool fails and is physically replaced, the information displayed on the Verde web interface may be incorrect.	Correct information displays when the pool rebuild completes.
When an expansion node experiences an error condition, the overall condition of the array continues to display as good.	Use the hardware screen of the Verde web interface to determine the status of expansion nodes.
The command line interface incorrectly displays two CPUs in the Verde 2U master node.	Ignore the error. Only one CPU is present.
If a host computer loses access to a share on the Verde, the array must be power-cycled before the share is accessible again.	Power cycle the array to access the share.
After changing the system name, the System Name Edit button is unresponsive.	Log out, and re-login to the Verde interface to restore button functionality.

Verde 1.3

Enhancements

The Verde 1.3 software includes the following features:

Replicated System Configuration The Verde master nodes mirror their boot drives on to an existing storage pool on the array's data disks. If one or both boot drives fail, the system automatically restores the system configuration when replacement boot drives are installed.

Data Integrity Verification The Verde arrays feature an on-demand data integrity check for data drives configured in a storage pool. The check scans the drives for data corruption and corrects any errors found.

Verde 2U master node support The Verde software now supports 2U master nodes.

Resolved Issues

Issue	Resolution
During a software upgrade, the Verde web interface appears to hang after uploading a software upgrade file.	The array now indicates it is verifying the software upgrade file after uploading.
A blank web page displays if you attempt to access the Verde web interface without logging in.	You are now directed to the login page if you attempt to access the web interface with out logging in.
When creating a new storage pool while data is being transferred to a different storage pool, an error message displays indicating that the creation of the new storage pool failed, even though the creation was successful.	The error message no longer appears.
When downloading a .csv file, the file extension is missing from the file name.	The downloaded file now has the .csv extension.
If you replace a failed drive when the array is powered off, the new drive is not recognized when the array is powered on.	The replacement drive is recognized when the array powers on.
Long volume names display past the border of their table.	This issue no longer occurs.
Navigating away from the Software Upgrade screen while an upgrade is in progress causes the upgrade to fail.	Software upgrades no longer fail if you navigate away from the Software Upgrade screen.
If the array has a failed component and a user manually refreshes the Verde web interface, an error displays indicating that some features are unavailable.	This issue no longer occurs.
There is no way to cancel a volume move once it is started.	In progress volume moves can now be cancelled from the Volume screen.
In the command line interface, running the command <code>config nfsshare list</code> results in an error.	The command now completes successfully.
When creating a new storage pool, the space character can be used for the pool name.	The space character is no longer accepted for storage pool names.
In the command line interface, if the command <code>config pool expand</code> is executed with an invalid ID, a non-human readable error message displays.	An error message indicating the ID is invalid displays when this occurs.
If a volume with a configured snapshot schedule is moved to a new pool, the old storage pool cannot be deleted.	This issue no longer occurs.

Issue	Resolution
When the password for the Local CIFS Admin account is changed, the session timeout value does not display for the account.	The session timeout value now correctly displays after a password change.
In the command line interface, the command <code>config account list</code> does not display the role for the Local CIFS Admin account.	The command now displays the role for the Local CIFS Admin account.
The Verde web interface does not show the status of a pool rebuild.	The status of pool rebuilds are now shown in the web interface.
The Verde web interface does not inform the user that the SATA DOM boot module needs to be replaced after reaching a usage threshold.	The web interface now notifies the user that a boot module needs to be replaced after excessive use.
The Verde web interface does not show the status of a volume move.	The web interface now shows the status of an in-progress volume move.
When the array is configured to use link aggregation, only one port is being utilized for outgoing data.	Link aggregation now uses all configured ports for outgoing data.
When using the command line interface to create storage pools, only certain stripe configurations were allowed.	You can now create a storage pool with any valid stripe configuration through the command line interface.

Known Issues

Issue	Workaround
The SNMP agent does not support GetBulk requests. Note: This issue is resolved in the Verde 1.4 release.	There is no resolution to this issue.
No message is generated when a expansion node is disconnected from a master node.	There is no resolution to this issue.
Users can change the high watermark setting of an existing pool to a value lower than the pool's current usage level.	Do not set the watermark below a storage pool's current usage level.
No message is generated when a storage pool is filled to capacity.	Use the Verde web interface to monitor storage pool usage.
The Verde web interface displays the fan layout for an expansion node in an incorrect order.	There is no resolution to this issue. Contact Spectra Logic Technical Support if you are unable to locate the failed fan in an expansion node.

Issue	Workaround
<p>When the master node is cabled to multiple expansion nodes, deleting a storage pool succeeds, but displays an incorrect error message that the pool was not deleted.</p> <p>Note: This issue is resolved in the Verde 1.5 release.</p>	<p>Ignore the error message. The pool was deleted successfully.</p>
<p>After a software upgrade, the Verde web interface may not automatically redirect to the login screen as intended.</p>	<p>Wait approximately 10 minutes after the upgrade completes, and close the web session. Launch a new session and log in to the web interface.</p>
<p>The Verde array can occasionally generate logset files too large to be emailed from the array.</p> <p>Note: This issue is resolved in the Verde 1.4 release.</p>	<p>There is no resolution to this issue.</p>
<p>If you attempt to add a Verde array to a Windows Active Directory domain using a multi-homed domain controller, the array may fail to join the domain and does not generate an error.</p>	<p>Domains with a multi-homed domain controller must be properly configured to use DNS before the Verde array can be added. Contact Spectra Logic Technical support for assistance.</p>

Verde 1.2.3

Resolved Issues

Issue	Resolution
<p>When using the Computer Management feature in Windows Server 2008 R2 to connect to a Verde array and select a share, an error message displays indicating the administrator does not have permissions to list the share.</p>	<p>This issue no longer occurs.</p>

Verde 1.2.2

Resolved Issues

Issue	Resolution
<p>When using a Windows client, if the Read Only attribute is set for a file on removable media, you cannot copy it to a Verde share.</p>	<p>This issue no longer occurs.</p>
<p>A high frequency of writes to the SATA DOM boot modules may cause the modules to fail.</p>	<p>The frequency of writes to the SATA DOM boot modules has been reduced to increase module lifetime.</p>

Verde 1.2.1

Resolved Issues

Issue	Resolution
Older Windows clients such as Windows XP or Windows 2003 cause the Verde share access to no longer work in a Windows environment.	This issue no longer occurs.

Known Issues

Issue	Workaround
If a Verde array is in the process of rebuilding a number of drives equal to the storage pool's parity configuration and an additional drive fails, file storage operations to the array may be stopped.	Replace any failed drives and use the Verde web interface to reboot the Verde array to allow file storage operations.

Verde 1.2

Enhancements

The Verde 1.2 software includes the following feature:

Expansion Node Support The Verde expansion node can be connected to the master node to provide up to an additional forty-four data drives. The expansion node connects to the master node using the four port SAS card installed in the master node.

Known Issues

Issue	Workaround
The Move <volume> window does not go away when a volume move is complete.	Close the Verde web interface and log back in.
In the command line interface, the system name of an expansion node has a space character preceding the name.	The space character exists as part of the system name of the expansion node. You need to include the preceding space character when entering the system name of an expansion node for any command that requires it.
In the command line interface, SAS topology errors display a question mark (?) in the description field instead of the problem description.	Use the Verde web interface to see the description of the SAS topology error.

Issue	Workaround
In the command line interface, the fans in positions 4-7 list generic IDs and incorrect RPM speeds.	Use the Verde web interface to determine the RPM speed of each fan.
Cannot edit NTP servers when the array is joined to an Active Directory domain.	None.

Verde 1.1

Enhancements

The Verde 1.1 software includes the following features:

Front Bezel Support The Verde features a bezel mounted on the front of the array. The bezel includes an LED display that changes color and pattern to reflect the state of the system.

Command Line Interface The Verde can be configured, used and maintained over a command line interface. See the *Verde Command Line Interface Guide* for more information.

Enhanced Dashboard Display The dashboard of the Verde web interface now displays the status of more aspects of the system, including NTP, DNS, and SMTP.

Resolved Issues

Issue	Resolution
The Verde does not allow clearing a network interface configuration.	A Clear button is now provided to clear the configuration of a data interface.
Pool and volume information is unavailable during pool rebuilds and volume transfers.	This information is now available during pool rebuilds and volume transfers.
Cannot create a volume when the value for Minimum Size is the same as the total space available on a storage pool.	You can now create a storage pool when the value for Minimum Size is the same as the total space available on a storage pool.
Automated emails do not contain any information to help identify which array generated the email.	Emails sent from a Verde array now include the array hostname and IP address of the array.
When setting the system time manually, the user is logged out and returned to the login screen.	You are no longer logged out of the Verde web interface when you manually configure the system time.

Issue	Resolution
During a package update, you cannot upgrade to the same code level the array is already using.	It is now possible to perform a package update to the same code level that is currently installed on the array. Only perform this upgrade at the direction of Spectra Logic Technical Support.
If you are reading or writing data to one storage pool, and try to create a second storage pool, an error message is generated indicating that pool creation failed. In fact, the pool is created successfully.	The incorrect error message is no longer generated.
The Verde web interface may report the status of either the CIFS or NFS services as “starting”, even though they are in the “running” state.	The CIFS and NFS service status now displays correctly.
The MTU setting on a link aggregation using 10 GigE ports resets to 1500 after a power cycle.	The MTU setting is now maintained through power cycles.
The gateway IP address does not display after configuring a 10 GigE link aggregation using DHCP.	The gateway IP address now correctly displays after configuring a link aggregation using the 10 GigE ports.
If you are joined to an Active Directory domain and configure the system time on the array manually, the time resets to the current Active Directory time after a power cycle.	The array now maintains the manually configured time when joined to an Active Directory domain.
In the Verde web interface, tables with multiple rows alternate background colors from grey to white. After an automatic page refresh, all rows appear with a grey background.	This issue no longer occurs.
Emails automatically generated by the array incorrectly listed the product name as “Strata”.	Emails now correctly refer to the product as “Verde”.
The 25-hour resolution setting for performance graphs only displays the last 12 hours of data.	Performance graphs set to the 25-hour resolution setting now correctly display the last 25 hours of data.
When a volume is configured to use compression and is filled to greater than 80% capacity, the storage pool the volume resides on cannot be deleted.	You can now successfully delete the storage pool under these conditions.

Known Issues

Moving a Volume An issue exists in the Verde 1.1 release that can cause your array to become non-functional unless precautions are taken before moving a volume from one storage pool to another.

Before moving a pool, you must delete any snapshot schedule configured for that volume. See the *Spectra Verde User Guide* for instructions on how to delete a snapshot schedule.

In addition, it is important that you do not generate a manual snapshot of the volume while it is being moved.



Caution

Failure to follow these precautions can cause the array to become non-functional.

Issue	Workaround
When link aggregation is configured using the two 10_GigE ports and one port fails, or a cable is unplugged, the connection is lost.	After the cabling or failed port is fixed, delete the link aggregation in the web interface, then reconfigure the link aggregation.
When changing the system name, access to the Verde management port is momentarily lost.	The connection is restored after a few seconds.
You cannot set the MTU value when creating a link aggregation using the command line interface.	Use the Verde web interface to create the link aggregation or create the link aggregation using the command line interface and then use the command <code>network dataagg update</code> to set the MTU value.
Full volumes cannot be moved, even if there is sufficient space on the move target.	Delete data from a full volume before attempting to move it to a different storage pool.
If you configure manual DNS settings on the array and then change the system name, the DNS settings are lost.	Configure the system name before manually configuring DNS settings.
Cannot manually configure the system time in the command line interface when NTP is disabled.	The help text instructions for setting the current time through the command line interface are incorrect. Specify the date and time using the format "DD/MM/YYYY" followed by the time in 24 hour format. For example: '30/01/2013 15:00'
No message is generated when installing a disk drive.	Use the hardware screen of the Verde web interface to confirm that the drive is recognized after installation.
The wrong pool name is temporarily displayed after a volume move is initiated.	Wait a few moments for the display to update, and confirm that you are moving the volume to the intended storage pool.
If you enter an invalid percentage for the high watermark during storage pool creation, the storage pool name is incorrectly flagged as "invalid".	Ignore the warning about the pool name. Enter a valid percentage for the high watermark.

Issue	Workaround
At certain zoom levels and time resolution settings, the labels on the horizontal side of performance graphs may be unreadable.	There is no workaround for this issue.
If the array is experiencing an error condition for any device installed in the array and the Verde web interface is manually refreshed, an error message appears indicating that an error occurred during Verde initialization.	Ignore the message, the Verde web interface is functioning normally.
A CIFS share cannot be created on an array that is at maximum data capacity.	Delete data from the array before creating a CIFS share.
The time zone setting on the performance screen is reset after changing the view settings. Note: This issue is resolved in the Verde 1.4 release.	Re-select the desired time zone setting each time you change the view settings.
If you delete all volumes and pools and immediately configure new pools and volumes, it may be possible to configure more than one NFS share per volume.	Only create one NFS share per volume.
If you navigate to the Software Update screen immediately after logging in to the Verde web interface, the screen indicates that no activation keys are entered, even if activation keys were previously entered. Note: This issue is resolved in the Verde 1.4 release.	Navigate to any other screen of the web interface, and then navigate back to the Software Update screen.
Performance graphs do not update if the system time is set to an earlier time.	Set the system time to any time after the timestamp when the performance graphs stopped updating.
Manually refreshing the Storage Pools screen disables the New button.	Navigate to any other screen of the web interface, and then navigate back to the Storage Pools screen.
Cannot increase a volumes size using units smaller than the current unit. (For example, if the size of the volume is 1 GB, you cannot increase its size by entering 1500 MB).	Use the same unit size, or greater, when increasing volume size. (For example, use 1.5 GB instead of 1500 MB to increase the volume size).
Cannot change user passwords in the command line interface.	Use the Verde web interface to change user passwords.
There is no indication that an update package is uploaded to the array when you navigate away from the Package Update screen and then back to the screen.	Do not navigate away from the Package Update screen when uploading a package. Wait several minutes for the package to upload.
The Pool capacity shows as a negative value after a drive failure.	Ignore the display. The value reverts to the proper value once the failed drive is replaced.

Issue	Workaround
Cannot reduce the minimum size of a volume.	Delete the volume and recreate it with the desired minimum size.
Performance graphs do not automatically update.	Use your browser's refresh button to update the graphs.
Comma-separated value files (.csv) downloaded from the array do not have the file extension in the file name.	Edit the name of the file and add '.csv' to the end of the file name.

Verde 1.0

Description Initial release.

Features

The Verde includes the following features:

Easy Network-Based Administration The Verde is configured over an Ethernet network using a standard web browser.

File Sharing Connectivity for Major Operating Systems The Network File System (NFS) and Common Internet File System (CIFS) protocols provide connectivity to most major operating systems, including Windows, Apple, UNIX, and Linux.

Gigabit Ethernet connectivity Four onboard Gigabit Ethernet (GigE) ports provide Ethernet connectivity for the array with one dedicated port used to access the SpectraView web interface. This port cannot be used for data transfer.

Operating System Drive Two dedicated Data On Module (DOM) mirrored drives provide the dedicated storage for the operating system.

Rack-Mount Hardware The Verde is designed to mount in a standard 4-post, 19-inch rack using just 4U (7 inches or 17.8 cm) of rack space. Rack-mounting hardware is included with the Verde. Alternatively, the Verde can be placed on a level tabletop or other horizontal surface.

RAID-Protected Data Disks The Verde includes up to thirty-six high-performance disk drives mounted on individual drive sleds. The drives provide the array's storage capacity. Disk drives are grouped into protected volumes with selectable parity options and automatic data integrity verification to protect against data corruption.

Redundant Components The array features N+1 redundant power supplies and data drives that are hot-swappable for uninterrupted operation. Any data drives not configured in a storage pool act as global spares. The spare becomes active if a drive in the storage pool fails.

Verde Web Interface The Verde web interface is used to perform configuration and management tasks on the Verde. It also lets you monitor the Verde hardware and view system messages.

10 Gigabit Ethernet A dual port, 10 Gigabit Ethernet (10 GigE) network interface card is installed to provide high-speed data connections between hosts and the Verde.

Known Issues

Issue	Workaround
There is no way to delete messages on the messages screen.	There is no resolution to this issue.
Sets of disks that were configured as a storage pool in one Verde array, do not display on the Storage Pools screen when moved into a different Verde array.	Do not move disks from one Verde array to another.
Performance graphs do not accurately report the write speed of compressible data streams at the Storage Pool and Drive level. This occurs because the data is compressed by the file system before it is written to disk.	There is no resolution to this issue.
The Verde console does not display the correct IP address for the Verde management port if the IP address was changed in the Verde web interface.	Press CTRL-R to refresh the console screen. The updated IP address displays.
Unable to move or alter volumes if the storage pool is full to capacity.	Delete data from the storage pool so that it is not full to capacity before moving a volume to a different pool.
Storage Pools at 80% or greater filled capacity take a long time to rebuild.	Maintain storage pools at 80% or less capacity, or understand that rebuilds take up to several days on very full pools.
Pool creation dialog times out when creating large storage pools.	The pool is created successfully. Force a page refresh by pressing F5 or use the refresh button on your web browser to refresh the Verde web interface.
Configuring a storage pool with 6 drives, using the dual-parity option, does not have a Capacity-Performance slider.	None. Storage pools of 6 drives in a dual-parity configuration are created with the best possible capacity-performance ratio and do not require the slider.

Issue	Workaround
<p>The Verde does not allow clearing a network interface configuration.</p> <p>Note: This issue is resolved in the Verde 1.1 release.</p>	<p>To clear the configuration of a network interface, configure the interface to use a static IP address, then leave the IP Address field blank. Click Save to clear the configuration.</p>
<p>Pool and volume information is unavailable during pool rebuilds and volume transfers.</p> <p>Note: This issue is resolved in the Verde 1.1 release.</p>	<p>Wait until the storage pool stops rebuilding or the volume finishes transferring to another pool to view pool and volume information.</p>
<p>Cannot monitor performance of the array via SNMP.</p>	<p>There is no resolution for this issue.</p>
<p>When moving a volume that is a CIFS based share, the CIFS service momentarily stops and restarts.</p>	<p>If necessary, remount the CIFS share after the move is complete.</p>
<p>Once created, you cannot rename a storage pool.</p>	<p>If possible, delete the storage pool and create a new pool with the desired name. If you cannot delete a storage pool, you can attempt to create another pool if drives are available with the desired name and transfer the data to the new pool. Otherwise, you must keep the original name.</p>
<p>Drives can be physically hard to remove from slots in the array.</p>	<p>Use caution when removing drives. If a drive does not slide easily by pulling on the sled handle, grasp the sides of the drive sled and pull the drive out of the enclosure.</p>
<p>Cannot create a volume when the value for Minimum Size is the same as the total space available on a storage pool.</p> <p>Note: This issue is resolved in the Verde 1.1 release.</p>	<p>To create a volume using all available space on the storage pool, leave the Minimum Size and Maximum Size fields blank.</p>
<p>If you are not logged in to the Verde web interface and attempt to go directly to a page inside the GUI, you are redirected to a blank page.</p>	<p>Always enter the URL address for the login screen of the array, which is the IP address of the Verde management port.</p>
<p>If a unit has a failed drive, it is correctly identified as failed in the Verde web interface. If you reboot the array under this condition, the web interface shows a good status for the drive.</p>	<p>Do not reboot the array with a failed drive. If you must reboot under this condition, physically mark the drive in some manner so you know which drive to replace when the replacement drive arrives.</p>
<p>In a single, dual, or triple parity storage pool, a second global spare drive does not automatically replace the initial global spare drive if the first global spare becomes degraded.</p>	<p>Replace any drives that fail as soon as possible to prevent this issue from occurring.</p>

Issue	Workaround
<p>If many volumes, shares, and snapshots are created on an array, the array experiences a decrease in performance.</p>	<p>There is no resolution for this issue. Plan your storage usage accordingly. Spectra Logic recommends that you do not create more than 10 volumes on a single array. With 10 or less volumes configured on a array, the number of shares and snapshots possible for each volume is low enough to keep performance at an optimal level. This issue will be addressed in a subsequent release.</p>
<p>Automated emails do not contain any information to help identify which array generated the email. Note: This issue is resolved in the Verde 1.1 release.</p>	<p>By default, all Verde arrays are configured with the same information in the From Address field used when generating automated emails. If you have not changed this setting and receive an automated email, you are not able to tell which array generated the email. Login to each array and check the Messages screen to determine which array generated the message. To change this setting see the <i>Spectra Verde User Guide</i>.</p>
<p>The Volumes screen does not list the total or available size of the storage pool on which the volume resides.</p>	<p>If you want to change the size of a volume after it is created and do not know how much space is available on the storage pool on which the volume resides, click Configuration > Pools. The Pools screen displays. The total size of each pool is listed on this page.</p>
<p>Cannot create an NFS or CIFS share when there is no data connection to the Verde.</p>	<p>Connect a cable to one of the data ports on the array and configure the port before creating any shares.</p>
<p>When setting the system time manually, the user is logged out and returned to the login screen. Note: This issue is resolved in the Verde 1.1 release.</p>	<p>System time is updated. Log back into the Verde web interface.</p>
<p>No message is generated when a login to the array fails.</p>	<p>There is no resolution to this issue.</p>
<p>Chrome and Safari web browsers, running on Mac OS X Lion, do not correctly display the Verde web interface.</p>	<p>Use the Firefox web browser on Mac OS X Lion, or upgrade to the most recent Macintosh operating system.</p>
<p>If the CIFS service hangs on the array, there is no way to restart the CIFS service.</p>	<p>To restart the CIFS service, do one of the following.</p> <ul style="list-style-type: none"> ▪ Restart the Verde ▪ Restart the service on your Active Directory server ▪ Restart your Active Directory server
<p>During a package update, you cannot upgrade to the same code level the array is already using. Note: This issue is resolved in the Verde 1.1 release.</p>	<p>Only attempt software upgrades to newer versions of software. Subsequent releases will provide the ability to revert to the previously installed version.</p>

Issue	Workaround
When you edit an existing service, volume, storage pool, share, network interface, etc, the Edit dialog box shows the state of the array when you click Edit . If changes to the array occur after you click Edit , these changes are not shown.	Refresh the screen by pressing F5 or use the refresh button on your web browser to ensure you have the latest status of the particular object as other administrators may be making changes at the same time.
When moving a volume, clicking Move more than once causes error messages to display.	Only click Move once when moving a volume.
Rebooting the array while moving a volume to a different storage pool causes the move to fail.	Do not reboot the array during the move.
If you are manually creating a log set and an error occurs that would trigger automatic log generation, the second log is not generated.	There is no resolution for this issue.
When rebooting the array through the Verde web interface, the Firefox web browser does not automatically return to the login screen.	Allow the system to complete its initialization sequence. After a few minutes, enter the IP address of the Verde management port to return to the login screen.

Important Information

This section provides information that is essential for ensuring optimal operation of your array and that your data is accessible at all times.

PROTECTING DATA ON THE VERDE

The features described in this section help protect data and keep the array in an optimal state.

Global Spare Drives

Any drives not configured in storage pools act as global spare drives. If a drive failure occurs on the Verde array, it immediately activates a global spare. When the failed drive is replaced, the replacement drive acts as the global spare. Having one or more global spare drives in your array is suggested to ensure continued access to a storage pool if a data drive fails.

Volume Snapshots

Volume snapshots are images of a volume's configuration and data makeup as they were when the snapshot was generated. Restoring to a previously created snapshot allows you to go "back in time" and restore the volume to the state it was in when the snapshot was created. You can use a volume snapshot to restore an entire volume, or a single file that was accidentally deleted. Snapshots can be created manually or on a schedule. Volume snapshots are retained on the array until they are deleted.

For more information on creating snapshots, snapshot schedules, and restoring from snapshots, see the *Spectra Verde User Guide*.

User Guide Updates

This section provides updates to the *Spectra Verde User Guide*. This information will be added to the guide when it is next updated.

Create a CIFS Share

Spectra Logic recommends using Active Directory to control access to CIFS shares on the Verde array. If your Windows environment does not use Active Directory, see the *Spectra Verde User Guide*.

Before you can create a CIFS share, you must set a system name for the array and join an Active Directory domain. When a CIFS share is created on the array, the default permission is “Everyone”. This allows a user creating the initial shares to easily set the proper permissions for additional users without requiring the Active Directory Domain administrator password.

Set the System Name

1. From the menu bar, select **Status ... Hardware**. The Hardware screen displays.

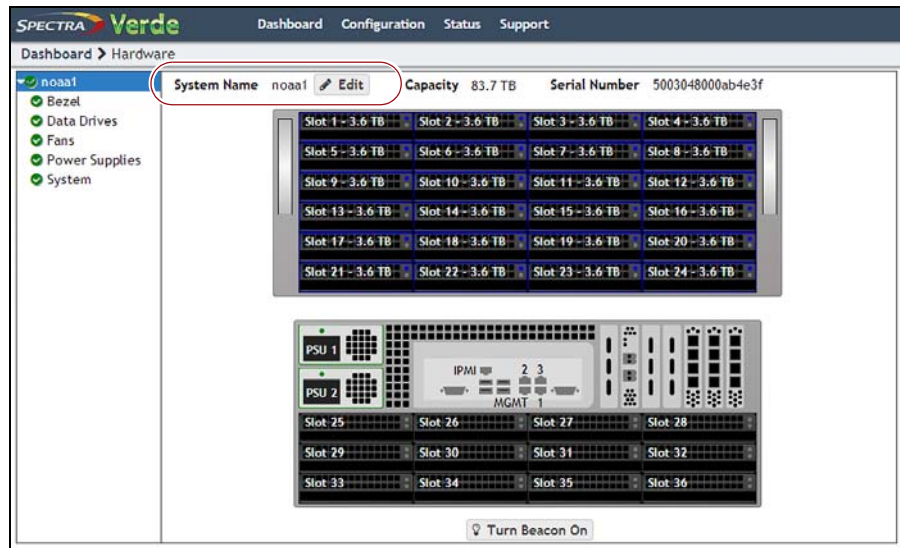


Figure 7 The Hardware screen showing the system name.

2. Click **Edit** next to the system name. The Edit System Name dialog box displays.

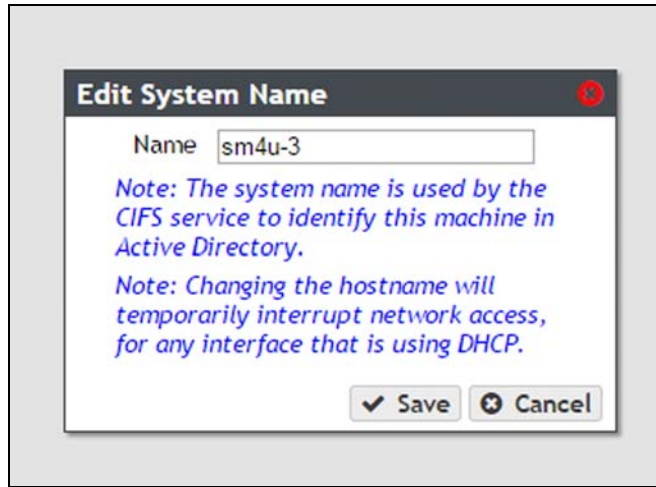


Figure 8 The Edit System Name dialog box.

3. In the **Name** field, enter a system name for the array. The name set here is the name that displays in the Active Directory domain.
4. Click **Save**. The Hardware screen displays showing the name of the array.


Join an Active Directory Domain

1. From the menu bar, select **Configuration** ... **Services**. The Services screen displays.



Name	State	Enabled
CIFS	Operational	Yes
NFS	Operational	Yes
NVR3	Stopped	No
SNMP	Operational	Yes

Figure 9 The Services screen.

2. Double-click the **CIFS** row, or select the **CIFS** row and then select **Action**  **Show Details**. The details screen for the CIFS service displays.

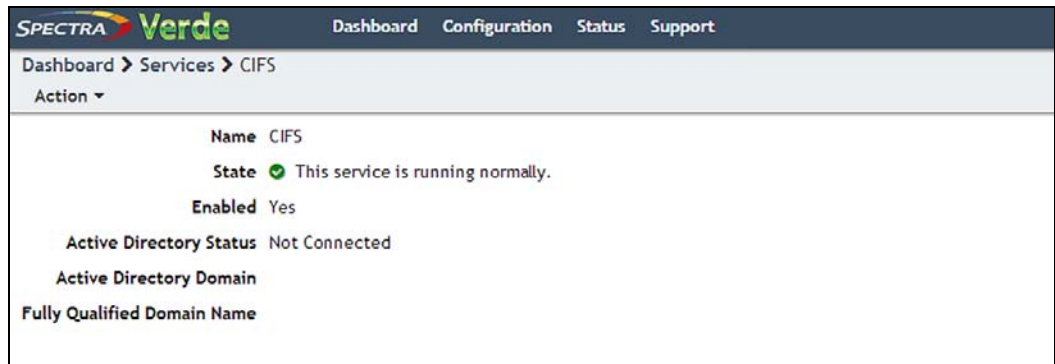


Figure 10 The CIFS service details screen.

3. Select **Action**  **Join Domain**. The Join Domain dialog box displays.

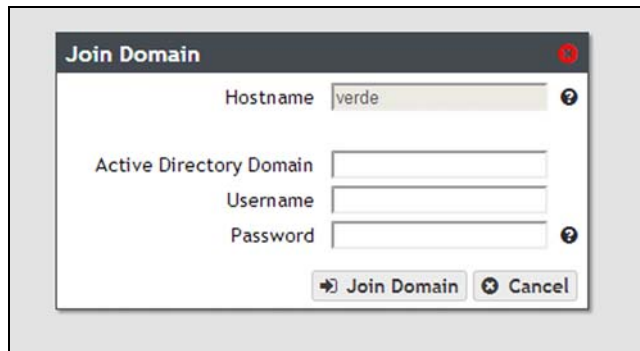


Figure 11 The Join Domain dialog box.

4. The **Hostname** is automatically populated with the name you configured in [Set the System Name on page 43](#).
5. Enter the name of the **Active Directory Domain** you want to join.
6. Enter the **Username** and **Password** of a user authorized to connect to the Active Directory. The password is not saved on the Verde array and needs to be re-entered each time the array joins the domain.
7. Click **Join Domain**. The Verde array joins the Active Directory domain.
8. The CIFS service details screen displays. The **Active Directory Status** should show as “connected”. If you did not successfully join the domain, re-check your Active Directory settings and repeat the steps in this section.

Create a CIFS Share

1. From the menu bar, select **Configuration** > **Shares** > **CIFS**. The CIFS Shares screen displays.

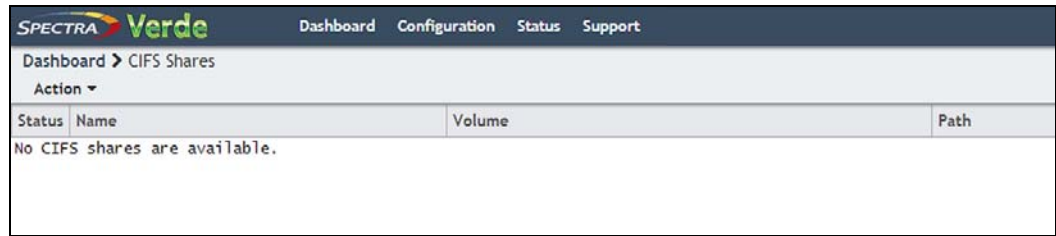


Figure 12 The CIFS Shares screen.

2. Select **Action** > **New**. The New CIFS Share dialog box displays to show the options for creating a new share.

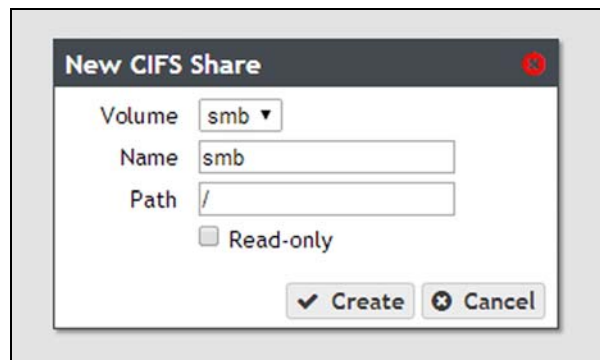


Figure 13 The New CIFS Share dialog box.

3. Use the drop-down menu to select the **Volume** you want to share.
4. Set the **Name** for the volume. This is the name that is displayed in Active Directory configurations.
5. The network address displayed for **Path** is the address of the share you are currently configuring. The default path allows access to the root of the volume.

Note: After sharing the volume root, you can connect to the CIFS share using your Windows host and create subdirectories in the share. You can then edit the share and use the **Path** field to allow access to specific directories by specifying the exact subdirectory (see “Edit a Share” in the *Spectra Verde User Guide*).

For example, if you enter /home/user in the path field, any user that connects to this CIFS share will only have access to the “user” directory, even if the “home” volume contains other directories.

6. If desired, select **Read-only** to configure the volume so that data can only be read from and not written to the volume.

7. Click **Create**. The newly created share is listed on the CIFS Shares screen.

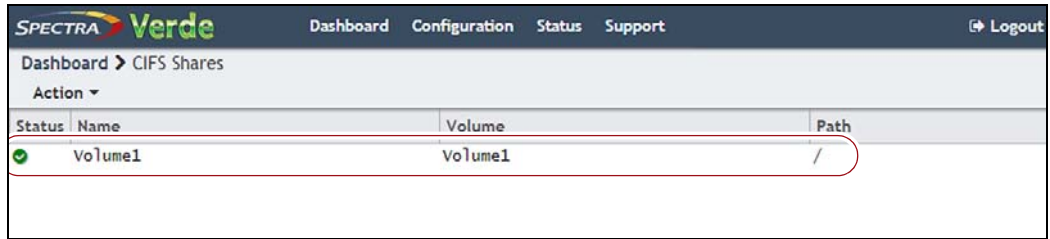


Figure 14 The updated CIFS Shares screen displaying the new share.

Set Permissions for a CIFS Share

1. Mount the new CIFS share to your Windows host.
2. Using Windows Explorer, right-click on the CIFS share, and select **Properties**. The General tab of the Properties window displays.

Note: You cannot use the Computer Management panel to set permissions on CIFS shares.

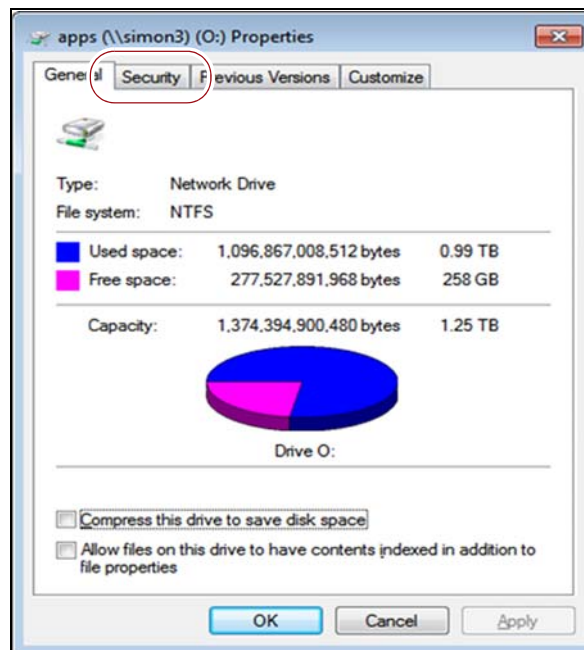


Figure 15 The Properties window.

3. Click **Security**. The Security tab displays.

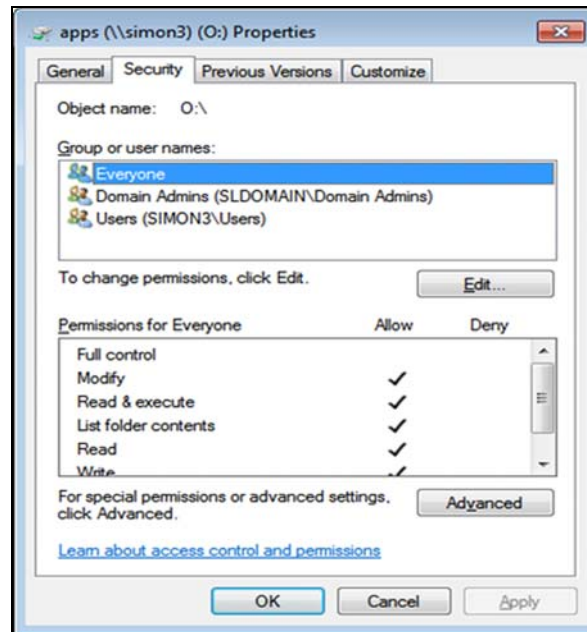


Figure 16 The Security tab.

4. Add, or remove users, or modify permissions for users, as needed for your storage environment.
5. Click **OK**.

Site Preparation Guide Updates

The *Spectra Verde Site Preparation Guide* is current as of the release of Verde 2.0. There are no updates for Verde 2.1.3.