Hewlett Packard
Enterprise

NimbleOS 5.1.4.100 Release Notes

Version 5.1.4.100

Published March, 2020

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Support

All documentation and knowledge base articles are available on HPE InfoSight at *https://infosight.hpe.com*. To register for HPE InfoSight, click the *Create Account* link on the main page.

Email: *support@nimblestorage.com*

For all other general support contact information, go to *https://www.nimblestorage.com/customer-support/*.

Contents

NimbleOS 5.1.4.100

Version:	5.1.4.100
Revision:	Monday March 2, 2020 16:54:51

The release notes describe the major changes, fixes, and known issues for this release of the NimbleOS. They do not include all individual fixes and internal changes.

For technical support, contact HPE Nimble Storage Support at:

mailto:support@nimblestorage.com
877-3-NIMBLE (877-364-6253), option 2.

Important Update Note

Updating NimbleOS can involve an update to component firmware on the standby controller. This can cause an email alert and automated case indicating "Standby Controller Not Available" when the firmware update process takes longer than five minutes. This is expected behavior and does not affect data services. At the end of the software update, you can check status of both controllers in the Web UI under **Manage** > **Hardware**. One controller will be ACTIVE and the other STANDBY under normal operating conditions following a successful software update.

All third-party software notices can be found on HPE InfoSight (*https://infosight.hpe.com*) on the **Resources** > **Nimble Storage** > **Documentation** page:

https://infosight.hpe.com/resources/nimble/docs

The Documentation page also includes the *General Terms and Conditions* document. You can display this document by performing the following steps:

1. In the navigation pane on the HPE InfoSight Documentation page, scroll through the Document Type list and select Support Policy.
2. In the page that appears, select General Terms and Conditions. This document opens in a browser tab.

Special Notes

Note	Description
CRITICAL	HPE Nimble Storage continues to qualify configurations between releases. The Validated Configuration Matrix provides information about validated configurations and is updated frequently. It is a good practice to check your system configuration against this online tool. The Validated Configuration Matrix tool is available on HPE InfoSight: *https://infosight.hpe.com/resources/nimble/validated-configuration-matrix*
CRITICAL	Arrays must be running NimbleOS 4.5.4.0 or 5.0.4.0 or later to upgrade to NimbleOS 5.1.4.100.
CRITICAL	Internet Explorer 10 and earlier versions are not supported in NimbleOS 4.x and later.

Note	Description
CRITICAL	An extended data services outage may occur with MS iSCSI initiator and Intel NICs using the built-in Windows driver e1q60x64.sys (version 11.0.5.21/11.0.5.22). If you encounter this problem, please update your system to use the latest Windows driver.
CRITICAL	A service outage may occur on Windows 2012 R2 hosts using Emulex or Broadcom Fibre Channel HBAs with firmware/driver prior to 11.2. Update the Emulex or Broadcom firmware/driver to 11.2 or later
CRITICAL	Due to a known Red Hat Enterprise Linux bug 1002727, while running virtualized in VMware ESX, manually rebooting the active controller in presence of heavy IOs using the **reboot --controller** command on a Fibre Channel array may trigger an incorrect retry initiated by RHEL guests running the following kernel versions: • 6.4 and earlier • 6.5 without the patch • 7.0 without the patch This incorrect retry logic may lead to unexpected application behavior. In these environments, we recommend the **failover** command instead.
CRITICAL	Due to a known Red Hat Enterprise Linux bug 3550561, unexpected application behavior may occur on RHEL 7.5 hosts with kernel-3.10.0-862.3.2.el7 or derivatives using Emulex FC FCoE HBAs (lpfc driver) and raw devices. To avoid this issue: • If running RHEL 7.6, update to kernel-3.10.0-957.el7 or later. • If running RHEL 7.5z, update to kernel-3.10.0-862.25.3.el7 or later.
CRITICAL	As outlined in the current Validated Configuration Matrix, HPE Nimble Storage fully supports Windows guest operating systems on Microsoft Hyper-V, including Virtual Fibre Channel (VFC) connectivity and multi-pathing with HPE Nimble Storage DSM and VSS support. However, Linux guest operating systems running in Hyper-V VFC configurations are not qualified. Running Red Hat Linux guest operating systems with the “Linux Integration Services” kit installed, or with hv_storvsc drivers in such configurations can lead to Red Hat bug 1364282, which can cause an unexpected service outage.
Important	Starting with NimbleOS 5.1.1.0, the size of the software package now exceeds 2 GB, which may lead to lengthier software download times. Previously, the sizes of the NimbleOS 5.0.x download packages were approximately 1.6 GB, and NimbleOS 4.x packages were approximately 900 MB.
Important	Starting with NimbleOS version 5.1.3.0, the array group now uses Java Development Kit (JDK) version 1.8.0.212. This addresses several security vulnerabilities identified in the previous version of the JDK listed at *https:/infosight.hpe.com/user/bulletins*.

Note	Description
Important	HPE Nimble Storage CS2xx (except CS235) and CS4xx arrays are blocked from updating to NimbleOS 5.1.1.0 and later releases by default. These arrays will be allowed to update in special circumstances, such as for group merge and evacuation purposes, and temporary data migration workloads. Contact HPE Nimble Storage Support if you wish to update your CS2xx or CS4xx array to NimbleOS 5.1.x.x.
Important	After completing the NimbleOS update for array groups configured for Synchronous Replication, download the corresponding version of the *Synchronous Replication Witness* software, and update the witness host.
Important	Microsoft Offload Data Transfer (ODX) is not supported if the destination volume has synchronous replication enabled.
Important	TRIM on ReFS is not supported by Microsoft on Windows Server versions prior to 2019.
Important	Starting with NimbleOS version 5.0.7.0, the Fibre Channel HBAs will use an updated firmware (11.4.204). The new firmware addresses an issue in which some 16Gb Fibre Channel HBAs might not auto-negotiate to 16Gb on all ports due to a timing issue within the code of the previous version of the firmware.
Important	As of vSphere 6.5, VMware is discontinuing the Thick Client (also known as the desktop or C# Client). As a result, the HPE Nimble Storage vCenter Plugin is deprecating the Thick Client and future releases of NimbleOS will not support it.

<table>
<tr><th>Note</th><th>Description</th></tr>
<tr><td>Important</td><td>Starting with version 5.0.3.0, NimbleOS includes a restriction that prevents you from enabling deduplication when you are using a CS3000, CS5000, CS7000, HF20, HF40, or HF60 array that has fewer than six SSDs. This restriction is necessary to prevent the possibility of significant performance issues.

Because NimbleOS 5.0.2.0 and 5.0.1.0 did not enforce this restriction, arrays upgrading from those releases may already have volumes with deduplication enabled. Any array upgrading to 5.0.3.0 or later with deduplicated volumes will continue to operate as a dedupe capable array, regardless of the number of installed SSDs. Such configurations are not recommended by HPE Nimble Storage.

The following table lists the number of SSDs required for the different arrays:

<table>
<tr><th>Array Model</th><th>Required Number of SSDs</th></tr>
<tr><td>HF20H</td><td>2 SSDs</td></tr>
<tr><td>HF20H upgraded to full population</td><td>4 SSDs</td></tr>
<tr><td>HF20H fully populated and upgraded to HF40H</td><td>4 SSDs</td></tr>
<tr><td>HF20, HF40, HF60</td><td>6 SSDs</td></tr>
<tr><td>CS500</td><td>4 SSDs</td></tr>
<tr><td>CS700</td><td>4 SSDs</td></tr>
<tr><td>CS1000</td><td>3 SSDs</td></tr>
<tr><td>CS3000</td><td>6 SSDs</td></tr>
<tr><td>CS5000</td><td>6 SSDs</td></tr>
<tr><td>CS7000</td><td>6 SSDs</td></tr>
</table>
</td></tr>
<tr><td>Important</td><td>You can enable deduplication for CS1000, CS3000, CS5000, CS7000, CS700, and CS500 arrays on a volume only if the corresponding storage pool has a Flash to Disk Ratio (FDR) greater than 4%. To calculate the FDR, obtain the "Total array capacity (MiB)" and "Total array cache capacity (MiB)" values by using the HPE Nimble Storage CLI command pool --info pool_name. This command returns the Pool capacity (MiB), which is the "Total array capacity (MiB)", and the Pool cache capacity (MiB), which is the "Total array cache capacity (MIB)".

Then perform the following calculation:

FDR = "Total array cache capacity (MiB)"/"Total array capacity (MiB)" * 100

If the array has sufficient capability for deduplication, the pool --info command will also show a value for dedupe capacity (MiB).

Note On the HF20H, HF20, HF40, and HF60 platforms, pool --info displays "N/A" as the value for dedupe capacity (MiB). This because you can enable deduplication for the entire array.</td></tr>
</table>

Note	Description
Important	For connections to the NimbleOS GUI, you must have port 5392 open for the Group Management IP address and both diagnostic IP addresses.
Important	VMware has announced End of General Support for vSphere 5.0, 5.1, and 5.5, which includes vSphere Hypervisor ESXi 5.0, 5.1, and 5.5, and vCenter Server 5.0, 5.1, and 5.5. To maintain your full level of support and subscription from VMware, you should upgrade to a supported version of vSphere. Refer to the VMware Knowledge Base article *KB51491*.
Important	During deployment of a desktop using VMware Horizon View, a VVol (mapping to a disposable disk) is created. A clone of this VVol is also created and placed within a directory under the virtual machine directory named `sdd`. When this desktop is deleted from Horizon View, VMware fails to delete the VVol clone of the disposable disk; only the disposable disk itself is deleted. This will be fixed in the next vSphere release. VMware bug number 1807857 should be used to track this fix. This issue occurs on all versions of VMware Horizon and vSphere that support VVols: • Horizon 6 version 6.1 and later • vSphere 6.0 and later
Important	On Windows Server 2012, 2012 R2, 2016, and 2019, the disk optimization process may record the following error in the Application event log: "The volume was not optimized because an error was encountered: Neither Slab Consolidation nor Slab Analysis will run if slabs are less than 8 MB. (0x8900002D)". Although Windows records this as an Error in the event log, the event can be safely ignored for HPE Nimble Storage volumes. HPE Nimble Storage volumes do not benefit from or require slab consolidation.
Important	Numerous host integration toolkits are supported in NimbleOS 5.1.4.100. It is strongly recommended that they be installed on all Windows, Linux, and VMware hosts. For more information about supported toolkits, refer to the Validated Configuration Matrix, which is available on HPE Nimble Storage InfoSight: *https://infosight.hpe.com/resources/nimble/validated-configuration-matrix*

Note	Description

Important	HPE Nimble Storage recommends that you update to HPE Nimble Storage Windows Toolkit (NWT) 7.0.1 or later if you are using Microsoft VSS Synchronization and NimbleOS 5.1.4.100 or later.
	
	Using application consistent snapshots with earlier versions of NWT and NimbleOS 5.1.4.100 may result in the following error messages:
	
	• In the host's VSS requestor log (C:\ProgramData\Nimble Storage\Logs\VssRequestor.log):
	
	`PID:1996 TID:5752 ERR reqcommon. cpp:683 RequestStatus=QueryStatus(), Function=pAsync->QueryStatus(), Error=VSS_E_PROVIDER_VETO, rc=SystemError, ca=ContactSupport`
	
	• In the Windows event viewer:
	
	`event id 4100: EndPrepareSnapshots method: failed to find LUN s/n <SERIAL_NUMBER> on connected arrays. Make sure that the Nimble array version is compatible with this version of Nimble Windows Toolkit.`
	
	`event id 4170: Nimble VSS provider is not compatible with the current version of the Nimble array software(). Install appropriate version of the Nimble VSS provider.`
	
	NWT 7.0.1 resolves this issue.

Important	HPE Nimble Storage Connection Manager (NCM) for VMware 6.1.0 is signed by VMware for ESXi 6.x. It can be installed through the VMware Update Manager or esxcli command without the `--no-sig-check` flag. See NCM for VMware Release Notes 6.1.0 or later and the latest *VMware Integration Guide* for further details. To locate the latest version of the guide, log in to HPE InfoSight. Choose **Resources** > **Nimble Storage Documentation**. In the left pane, click **Integration Guide**, then click **Connection Manager (NCM) for VMware**. From the list displayed, choose the version of the guide that you want.
Important	Performing a group merge from a source group that contains running Hyper-V virtual machines requires additional care. Group merges require changes to the discovery IP address that can adversely impact running systems. Therefore, if you perform a group merge, you should plan a maintenance outage to gracefully stop all applications and Hyper-V virtual machines on the source group to eliminate unexpected downtime caused by changing IP address during the group merge process. A typical group merge should take only a few minutes to complete and then virtual machines and applications can be restarted. The group merge and pool merge operations will also have impact on SCVMM. The impact will depend on whether the source and destination groups or pools are under SCVMM's management. Please refer to the *SMI-S Integration Guide* which includes details about SCVMM and the impacts in these situations before performing merge operations.

Note	Description
Important	Various timeout values affect HPE Nimble Storage targets from Windows/Linux hosts. Before you update the NimbleOS, install the HPE Nimble Storage Windows Toolkit (NWT) or HPE Nimble Storage Linux Toolkit (NLT) on the host or tune the timeout values. Timeout details for various operating systems can be found on HPE InfoSight under **Resources** > **Documentation**. From the *HPE Nimble Storage Documentation* page, locate the article you want. The following **Knowledge Base** articles and Integration Guides explain how to configure and verify host timeout settings for the major supported operating systems (OS): • For Windows, refer to *KB-000052: Windows Host Disk Timeout Values*. In the context of Microsoft Windows, the following article should also be considered: *KB-000246 MPIO Timeout Parameters for MSDSM and NimbleDSM in Windows 2012 R2* • For VMware, refer to the **Common Tasks and Best Practices > Host Timeout Values** section of the *VMware Integration Guide*. • For Linux, refer to *KB-000304: Linux Host Disk Timeout Values*.
Important	The Backup Repository performance policy introduced in NimbleOS 4.2 cannot be used when replicating against a downstream array running an older release. Replicated volumes need to be associated at the time of creation with a performance policy that either exists downstream or that can be manually created on the downstream array.

New Features in 5.1.4.100

No new features were introduced in NimbleOS 5.1.4.100.

Recent Release Features

The following new features were introduced in NimbleOS 5.1.x:

SSL Certificate Management GUI Application

The SSL Certificate Management GUI application provides a user-friendly interface to install, import, create, verify and delete various kinds of certificates and certificate signing requests (CSR) for the Certificate Authority to process.

Usage Analytics

HPE Nimble Storage uses Google Analytics to gather data related to GUI usage. The data gathered is used to evaluate and improve the product.

Documentation

These Release Notes and other user documentation are available on HPE InfoSight:

https://infosight.hpe.com/resources/nimble/docs

You can manually reach the documentation page by logging onto HPE InfoSight and selecting **Resources** > **Nimble Storage** > **Documentation**.

Document Search Interface

There are several methods you can use to locate the documents you need.

The **Nimble Storage Documentation** page provides a search interface that allows you to search for information across all documentation, including support and knowledge base articles, best practices, solutions and integration guides, product documentation, and configuration matrices.

To go directly to a document, use the navigation pane on the left side of the **Nimble Storage Documentation** page. The navigation pane organizes documents into categories, including:

- Document Type
- Nimble Software and Solutions
- Software Version
- Integration
- Platform

You can use the page scroll bar to move up and down the navigation pane.

Third-Party Software Notices

All third-part software notices can be found in the Documentation Portal on HPE InfoSight.

Here are the steps to manually access the third-party software notices.

1. Log in to HPE InfoSight at https://infosight.hpe.com.
2. From the menu, select Resources Nimble Documentation .
3. In the left navigation pane of the Documentation Portal, scroll through the Document Type section and select Support Policy.
4. From the list displayed, select General Terms and Conditions. The document opens in a web browser.

Core User Documentation

The following is the core user documentation for NimbleOS:

- *GUI Administration Guide*
- *CLI Administration Guide*
- *SNMP Reference*
- *Command Reference*
- *REST API Reference*

Workflow Documents

There are several workflow guides that contain procedures you can perform using either the CLI or the GUI. Each workflow guide covers a specific, frequently performed task related to HPE Nimble Storage products. Each task described by a workflow document is explained in detail in the *GUI Administration Guide* and the *CLI Administration Guide*.

Hardware

Documentation for all hardware components is available on HPE InfoSight. Click the Hardware Guide link in the **Document Type** category. Hardware documentation includes array and expansion shelf installation quick start guides, upgrade, and replacement guides, and comprehensive hardware guides.

Host Integration Guides

Host Integration Guides are available from HPE InfoSight. To locate these documents on the HPE InfoSight **Documentation** page, scroll down the navigation pane to the section called **Integration Guide**. The available guides include the following:

- *Linux Integration Guide*
- *OpenStack Cinder Driver Integration Guide*
- *SMI-S Integration Guide*
- *UCS Director Open Automation Module Integration Guide*
- *VMware Integration Guide*
- *Windows Integration Guide*

Note The version numbers of the host integration guides match the version numbers of their companion Integration Toolkit software packages.

Integration Toolkits

The following Integration Kits include documents that are associated with the toolkit software. You can search for them by entering the HPE Nimble Storage software type and version. The following integration toolkits are supported:

- HPE Nimble Storage Adaptive Flash Cinder Driver for OpenStack
- HPE Nimble Storage AIX ODM
- HPE Nimble Storage Connection Manager (NCM) for Linux
- HPE Nimble Storage Connection Manager (NCM) for VMware
- HPE Nimble Storage PowerShell Toolkit (PSTK)
- HPE Nimble Storage Replication Adapter (SRA)
- HPE Nimble Storage UCS Director Open Automation for Cisco UCS Director
- HPE Nimble Storage Windows Toolkit (NWT)

Note To download Integration Kit software, go to HPE InfoSight (*https://infosight.hpe.com*) and choose **Resources** > **Software Downloads**.

Verified Update Paths

Table 1: From Versions 5.x

From Versions 5.x	
From Version	**To Version**
5.1.4.0	5.1.4.100
5.1.3.100	5.1.4.100
5.1.3.0	5.1.4.100
5.1.2.100	5.1.4.100
5.1.2.0	5.1.4.100
5.1.1.0	5.1.4.100

From Versions 5.x	
From Version	**To Version**
5.0.8.0	5.1.4.100
5.0.7.300	5.1.4.100
5.0.7.200	5.1.4.100
5.0.7.100	5.1.4.100
5.0.7.0	5.1.4.100
5.0.6.0	5.1.4.100
5.0.5.200	5.1.4.100
5.0.5.0	5.1.4.100
5.0.4.0	5.1.4.100
5.0.3.100	5.0.8.0
5.0.3.0	5.0.8.0
5.0.2.0	5.0.8.0
5.0.1.100	5.0.8.0
5.0.1.0	5.0.8.0

Table 2: From Versions 4.x

From Versions 4.x	
From Version	**To Version**
4.5.5.0	5.1.4.100
4.5.4.0	5.1.4.100
4.5.3.0	5.0.8.0
4.5.2.0	5.0.8.0
4.5.1.0	5.0.8.0
4.5.0.0	5.0.8.0
4.4.1.0	5.0.8.0
4.4.0.0	5.0.8.0
4.3.1.0	5.0.8.0
4.3.0.0	5.0.8.0
4.2.1.0	5.0.8.0
4.2.0.0	5.0.8.0
4.1.0.0	5.0.8.0

Table 3: From Versions 3.x

From 3.x Versions	
From Version	**To Version**
3.9.2.0	5.0.8.0
3.9.1.0	5.0.8.0
3.9.0.0	5.0.8.0
3.8.1.0	5.0.8.0
3.8.0.0	5.0.8.0
3.7.0.0	5.0.8.0
3.6.2.0	5.0.8.0
3.6.1.0	5.0.8.0
3.6.0.0	5.0.8.0
3.5.4.0	5.0.8.0
3.5.3.0	5.0.8.0
3.5.2.0	5.0.8.0
3.5.0.0	5.0.8.0
3.4.1.0	5.0.8.0
3.4.0.0	5.0.8.0
3.3.0.0	5.0.8.0
3.2.1.0	5.0.8.0
3.1.0.0	5.0.8.0

Table 4: From Versions 2.x

From 2.2.x, 2.3.x Versions		From 2.1.x Versions		From 2.0.x Versions	
From Version	**To Version**	**From Version**	**To Version**	**From Version**	**To Version**
2.3.18.0	4.5.5.0	2.1.9.1	2.3.18.0	2.0.8.0	2.1.9.1
2.3.16.0	4.5.5.0	2.1.9.0	2.3.18.0	2.0.7.0	2.1.9.1
2.3.15.0	4.5.5.0	2.1.8.0	2.3.18.0	2.0.6.*	2.1.9.1
2.3.14.0	4.5.5.0	2.1.7.0	2.2.9.0	2.0.5.0	2.1.9.1
2.3.12.*	4.5.5.0	2.1.6.0	2.2.9.0	2.0.4.0	2.1.9.1
2.3.9.*	4.5.5.0	2.1.5.0	2.2.9.0		
2.3.8.0	4.5.5.0	2.1.4.0	2.2.9.0		
2.3.7.0	4.5.5.0	2.1.3.0	2.2.9.0		
2.3.6.0	4.5.5.0	2.1.2.0	2.2.9.0		
2.3.4.0	4.5.5.0	2.1.1.0	2.1.9.1		

From 2.2.x, 2.3.x Versions		From 2.1.x Versions		From 2.0.x Versions	
From Version	To Version	From Version	To Version	From Version	To Version
2.3.3.0	4.5.5.0	2.1.0.0	2.1.9.1		
2.3.2.1	4.5.5.0				
2.3.2.0	4.5.5.0				
2.3.1.0	4.5.5.0				
2.2.11.0	3.9.2.0				
2.2.10.0	3.9.2.0				
2.2.9.0	3.9.2.0				
2.2.7.*	3.9.2.0				
2.2.6.0	3.9.2.0				
2.2.5.*	3.9.2.0				
2.2.3.*	2.2.11.0				
2.2.2.0	2.2.11.0				
2.2.1.0	2.2.11.0				
2.2.0.0	2.2.11.0				

Table 5: From Versions 1.x

From 1.4.x Versions		From 1.3, 1.2, 1.1 Versions		From 1.0.x Versions	
From Version	To Version	From Version	To Version	From Version	To Version
1.4.12.0	2.1.9.1	1.3.*.*	1.4.6.0	1.0.7.*	Contact Support
1.4.11.0	2.1.9.1	1.2.*.*	1.4.6.0	1.0.6.*	Contact Support
1.4.10.0	2.1.9.1	1.1.*.*	1.2.2.0		
1.4.9.0	2.1.9.1				
1.4.8.0	2.1.9.1				
1.4.7.0	2.1.9.1				
1.4.*.*	1.4.12.0				

Known Critical Issues

Known Critical Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-77607	Data Service	Removing member array from multi-array group may cause IO disruption to scaled vVol environments	Scaled vVol environments with 500 vVol VDI VMs or more than 5000 Nimble vVol volumes may experience IO disruption when removing a member array from group. Symptom of problem would appear as vVol datastores being (inaccessible). Virtual Machine status would also appear as (inaccessible).	When planning to remove a member array from group, schedule a planned maintenance window and place all ESX hosts into maintenance mode to minimize impact to availability. ESX typically resumes connection to vVol datastores, and reconnects to VMs, after a period of 15-30 minutes automatically without a manual intervention.
AS-95470	Data Service	Pool merge fails due to too many pending deletes	When attempting to perform a pool merge operation, if there are a large number of volumes that must be striped across the pool, and one of the arrays has a large number of pending deletes, then it is possible for the operation to fail due to the Data Service being overloaded. Symptoms of this behavior are if the pool merge operation hangs for several minutes and returns the following message: The request could not be understood by the server.	Not applicable
AS-89324	Platform	False power supply, fan, and temperature readings on Controller B of AFXX and HFXX arrays	Missing IPMI sensors on Controller B of AFXX and HFXX arrays may lead to incorrect power supply, fan and temperature readings. This may result in false power supply, fan, and temperature alerts following a controller reboot or failover.	Please contact HPE Nimble Storage Support.

Known Critical Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-95087	Platform	Unexpected controller takeover due to out-of-memory condition	The array runs post-mortem analysis when one of the essential NimbleOS services terminates abnormally. In rare occasions, such analysis may consume enough memory to trip the out-of-memory threshold, at which point, the controller is rebooted in an attempt to restore normal service. HPE Nimble Storage is currently studying ways to run post-mortem analysis with a lower memory footprint impact.	None. The controller reboot is enough to restore the High Availability state.
AS-99277	System Management	Array Management Service restarts when attempting to stop the Backup Group Leader processes.	In some cases, when the Backup Group Leader is transitioning to a member array role, the Array Management Service may restart unexpectedly. This occurs if the array experiences a timeout when the Array Management Service is attempting to stop the Backup Group Leader processes.	Not applicable. The Array Management Service recovers after the restart.
AS-94737	System Management	No Automatic Failover in the event the host loses all FC connectivity to an array	An Automatic Failover (AFO) of the Group Management Services will not be initiated if all Fibre Channel (FC) interfaces on the Group Leader array fail on both controllers.	A Manual Group Leader Failover will be required to restore Fibre Channel connectivity to the hosts.
AS-93553	System Management	Automatic Failover of Group Services is not supported for Encrypted Volumes	If encrypted volumes are configured and Automatic Failover happens, encrypted volumes wont come online automatically after the other array takes over Group Management services. The user will need to enter the passphrase on new group leader array in order to bring the encrypted volumes back online.	Reenter passphrase after Automatic Failover.

Known Critical Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-89701	System Management	Automatic Switchover Service restarts due to thread limitations	The Automatic Switchover Service internally creates and closes threads each time during Automatic Failover (AFO) quorum set-up and tear down. This may cause the service to eventually crash after reaching the maximum thread limit. The system recovers automatically when the Automatic Switchover Service restarts.	Not applicable
AS-65615	System Management	Group Management Service must be restarted to unlock additional volume limits after controller upgrade	When performing a controller upgrade to a high-end model, the object limits will still show the lower limits if the Group Management Service is not restarted.	A failover can be initiated in order to restart the Group Management Service. You may also contact HPE Nimble Storage Support to restart the service manually.
AS-104322	System Management	Group Management Service restarts after snapshot deletion	In rare instances, after the deletion of snapshots, the Group Management Service may restart unexpectedly. This is due to lock acquisition issues with the snapshot deletion handling where there is a race condition between snapshot deletion and updating the snapshot attributes.	Not applicable
AS-100254	System Management	Group Management Service restarts under heavy load	A system management process can restart when the system is under heavy load. The system recovers automatically. The Data service is not affected.	Not applicable

Known Critical Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-81279	System Management	Group Data Service may restart when the array is under heavy load during software update	The underlying scale-out database competes with CASL and other system processes for IOPS. During software update, a migration script runs against the database. Under heavy file system load, the migration steps may not complete within the expected amount of time. As a result, the migration may timeout leading to a restart of the Group Data Service. After the restart, the migration should eventually complete as normal without any user impact or intervention.	There is no workaround. To avoid encountering this issue, reduce IO load when performing software update.
AS-95169	System Management	Graceful shutdown takes longer than expected	In rare occurrences, a customer-initiated reboot may cause a kernel reboot on the active controller. This will cause a longer reboot cycle.	Not applicable
AS-99583	System Management	Shell metacharacters and blank spaces are not supported for PKCS12 custom certificate bundle passwords	Passwords for importing a PKCS12 bundle using cert --import custom --pkcs12... must not contain shell metacharacters or blanks spaces, because they are modified by shell parsing.	Not applicable

Resolved Critical Issues

Resolved Critical Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-104301	Data Service	Data Service restarts when encountering SSD errors	In rare instances and under certain circumstances, the Data service may restart unexpectedly when encountering invalid sectors on an SSD.	The SSD will need to be replaced.

Resolved Critical Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-104742	Host Integration	VASA Sessions created and cached even though Group Management service is unavailable	When the Group Management service restarts for unrelated reasons, the host sends set context (creates a new session) because its VASA sessions have been invalidated with the Group Management service going down. However, when the new session call is made, we create a new session, then realize Group Management is down, and send back an error to the host. Unfortunately, the new session is created (object in memory), but is not truly a valid session. These sessions could accumulate to a large number over time, which may cause an out of memory condition for Jetty. Once the service runs out of memory, it can also restart unexpectedly.	Not applicable
AS-103776	System Management	Group Management service may restart due to an ownership mismatch	In rare cases, a volume collection and volume ownership mismatch can be introduced. As a result, when the Group Management service detects the mismatch, it may restart multiple times.	Contact Nimble Storage Support.

Resolved Issues

Resolved Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-103773	Data Service	Data Service restarts unexpectedly due to replication module	Due to a data structure overflow in the NimbleOS replication module, the Data Service may restart unexpectedly when there is a high throughput replication in progress.	Pause the replication temporarily, contact HPE Nimble Storage Support to apply a workaround, and then resume replication. Please do not pause replication partner if there are any active snapshots in replication progress.

Resolved Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-104738	System Management	Group Management Service restarts when attempting to communicate with Active Directory	The Group Management Service on the array may restart unexpectedly when the winbind component attempts to communicate with an Active Directory Domain Controller that is unreachable.	Not applicable

Known Issues

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-81863	Data Service	Data Service may restart unexpectedly when RAID is in degraded mode	When RAID is degraded, IO needs to be reconstructed by reading from multiple disks, and an internal buffer may exhaust its allocated resources. In rare cases when multiple disks are degraded, the Data Service may restart unexpectedly.	If RAID is degraded for an extended period and Data Service restarts occur, contact HPE Nimble Storage to assess adjusting allocated buffer resources.
AS-102881	Data Service	Data Service Restart due to a race condition during metadata sync	During NimbleOS metadata sync, in rare instances, the data service may restart unexpectedly. The metadata sync operation itself wont be affected and the restart will reset the race condition; the data service will stabilize after the restart.	Data service will be available after restart.
AS-103370	Data Service	Data Service restarts unexpectedly due to replication module	Due to a data structure overflow in the NimbleOS replication module, the Data Service may restart unexpectedly when there is a high throughput replication in progress.	Pause the replication temporarily, contact HPE Nimble Storage Support to apply a workaround, and then resume replication. Please do not pause replication partner if there are any active snapshots in replication progress.

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-99647	Data Service	Space reporting discrepancy between upstream and downstream volume in Synchronous Replication configuration	When zero data is written to an upstream volume involved in Synchronous Replication, an internal flag is not passed properly among various layers from upstream to downstream. Then, zero data on the upstream is treated as SCSI unmaps on the downstream. As a result, a large space reporting discrepancy can occur between the upstream and downstream volumes.	Not applicable
AS-101386	Data Service	Data Service restart due to a race condition	A rare scenario can result into a race condition between clone creation and I/O operations on an encrypted volume; during this time while fetching the encryption keys Data Service may restart and resume normal I/O operations.	None. The Data Service Restart would resume normal I/O operations.
AS-94545	Data Service	Very rare race between Vol claim (with all snapshots marked for deletion) and space recalculation on replica downstream volume	The service may restart when removing the downstream replica using the steps below. 1. Deletion of all snapshots for the replica volume. 2. Claim the replica volume 3. Delete the replica volume	Remove downstream replica using the correct steps ordered below. 1. Claim the replica volume. 2. Delete all of the snapshots for the replica volume. 3. Delete the replica volume.
AS-86720	Data Service	Unassigning and reassigning array to a pool within 5 minutes will fail	Assigning an array to a pool immediately after unassigning it from the same pool will fail with the following error - Failed to assign arrays to the pool: A service is not running or is not reachable	Retry operation after a few minutes to reassign array to pool.
AS-99566	Host Integration	Datastore list is not displaying properly if previous and next buttons are rapidly clicked repeatedly.	The list view result is not displayed properly after switching between the VMFS/vVOL datastore when clicking pagination rapidly, without waiting for the resulting pages to load.	When this problem occurs, click on any item in the menu (Home, vVOLVMs, etc). and then click on the datastore to show the proper results.

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-99177	Host Integration	Instead of vVol VM name, blank space is displayed in vCenter plugin	When you use the HPE Nimble Storage vCenter Plugin for the HTML 5 client, the NimbleOS array table header displays a blank instead of displaying the vVol virtual machine title. This does not affect how the client performs.	No workaround
AS-92898	Host Integration	Error: Could not find pool in vVol datastore creation wizard	When attempting to create a vVol datastore, changing the selection of the group does not fetch the latest group-related pools data. This is caused by a caching issue.	To see the correct pools within the group, close the createDatastore dialog and launch the dialog again, selecting the group for creating datastore.
AS-90455	Platform	IPMI software may not handle command exchange correctly with BMC leading to unexpected reboots of AFx/HFx controllers	In rare cases, out of order commands being sent to the Baseboard Management Controller (BMC) may return out of order responses that are not handled in the correct order by Intelligent Platform Management Interface (IPMI) software. In this instance, the IPMI message queue loses track of message order. The IPMI message queue not being able to return IPMI Watchdog messages to the watchdog thread causes the watchdog thread to timeout leading to an automatic reboot. While this BMC Watchdog timeout issue is specific to the AFx/HFx systems, this is not a hardware issue. Therefore, hardware replacement is unnecessary.	After the controller reboots, BMC firmware is restarted and is functional again automatically.
AS-96053	Platform	NDER process may lead to host reconnects	The Nimble Drive Error Recovery (NDER) is activated for drives failing I/O in an attempt to recover the drive. In rare cases, the process surpass the typical SCSI timeout of 60 seconds, causing host I/O inaccessibility.	Not applicable

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-49747	Platform	Data Service disrupted when standby controller is in a reboot loop	In a rare case, when the standby controller is in a reboot loop, this may disrupt the Data Service. As a result, the array will report several failed SSDs.	Active controller will operate as expected after the faulty standby controller is disabled. (1) Remove the rebooting standby controller from the chassis or contact HPE Nimble Storage Support to remotely power off the rebooting standby controller from the arrays active controller. (2) Then reseat or disk --remove | add the failed SSDs to recover the SSDs.
AS-91522	Platform	SSD has reached its endurance limit (wear leveling) but the disk is not marked failed.	In rare cases, an SSD may reach its endurance limit but continues to pass Nimble Drive Error Recovery algorithm. This causes a never-ending process of off-lining and on-lining the drive. This may occur for Intel and Toshiba SSDs.	Not applicable
AS-55765	Platform	Network storm causes writes to slow down to a point where Data Service restarts due to a health check failure	On lower-end platforms with a lower number of CPU cores, a network storm could keep the kernel busy serving network interrupt requests, and ultimately delay IO requests. This in turn causes IOs to timeout and causes a Data Service restart to recover.	Address the network storm, and then perform a controller failover.
AS-56600	Platform	NVRAM overloaded on high end platforms under heavy stress	In rare cases, heavy load compounded by unaligned workloads on high-end platforms with many CPU cores can cause the NVRAM driver to become overloaded when all cores are busy. The Data Service may restart unexpectedly with a health check error.	Contact HPE Nimble Storage Support.
AS-56942	Platform	Multi-bit Error-Correcting Code (ECC) errors on NVRAM card caused Data Service restart	In rare cases, multi-bit ECC errors on the NVRAM card may cause the Data Service to restart unexpectedly.	Contact HPE Nimble Storage Support.

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-32895	Platform	Removing an array from a group leaves the array in an unusable state.	Upon removing an array from a group and removing any expansion shelves from that array, the array will need to be re-imaged prior to any array reuse.	Schedule time for a Sales Engineer to field-image the array.
AS-33725	Platform	Unexpected controller takeover due to incorrect state of the SAS HBA	When the SAS HBA detects faulty states, to recover, the array needs to reset the SAS HBA's firmware. The SAS HBA firmware reset can block disk I/Os significantly longer than our High Availability monitoring timeouts allow. Instead, a controller reboot is triggered immediately if this state is detected, resulting in an unexpected takeover event.	Contact HPE Nimble Storage Support.
AS-95054	Not applicable	Addition of a server with expired ESXi license fails	When adding a server with an expired ESXi license through the vCenter plugin, you may see an error saying - Failed to submit a task to add server.	A valid ESXi license must be assigned to the server.

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-94539	SAN	Data Service or SCSI High Availability Service Restart when processing Fibre Channel connections	In NimbleOS, the Data Service and the SCSI High Availability Service use the same logic for processing Fibre Channel connections. Due to a software defect in the Fibre Channel connection termination logic, either of these services may stop unexpectedly with a corefile and restart. The software defect occurs when codepaths related to connection termination are simultaneously processed: - processing a Connection_Loss event from the FC driver, for connection A - performing an implicit logout of connection A, due to receipt of a New_Connection event for a conflicting connection B (between the same host/array ports). The restart of the affected service causes a brief interruption in the arrays ability to service incoming requests.	None
AS-98042	SAN	The Data Service restarts unexpectedly during shutdown	When the active controller is being shutdown, the Data Service runs into an internal error condition that causes the service to restart unexpectedly. Since the process is already being shutdown, there is no impact to user data availability.	Not applicable
AS-89933	SAN	Data Service may restart unexpectedly during shutdown	When shutting down or rebooting the array in a planned or unplanned fashion, or working with HPE Nimble Storage Support to restart the service individually, the Data Service may crash unexpectedly during its normal shutdown sequence. The service will recover automatically. There should be no impact since the service is already in the shutdown sequence.	Not applicable

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-56019	Security	Group Management restarts while shutting down	While the group management process is shutting down, it may experience a fault that causes a restart attempt.	None required. The process is shutting down.
AS-82317	System Management	The Event service may crash during application context switch	Due to the use of SIGALARM signals to indicate a DNS timeout in libcurls standard system resolver, when the signal happens it can sometimes switch the application context to the signal handler, causing the Event service to crash unexpectedly.	Validate the DNS servers defined on the array and eliminate any inaccessible or unresponsive DNS servers. If all defined DNS servers have been confirmed and the Event service continues to crash, contact HPE Nimble Storage Support.
AS-68651	System Management	Flood of timeouts causing Event Management service restart	We create multiple threads to deliver emails, but we use a non-threadsafe libcurl call to dispatch them. Therefore, the lock needs to be around libcurl call. If there is a misconfigured DNS or SMTP server, the curl call will timeout. If there are greater than 7 emails waiting to be delivered and all are suffering a timeout, we will starve the health checking for more than the 300-second health check timeout causing the Event Management service to restart.	Correct the DNS or SMTP configuration to a valid address by ensuring that a ping to the defined address succeeds.
AS-28992	System Management	Array removal might not complete in time	In some cases when there is high load, array removal can take longer than usual and timeout, which leads to an intermediate state where the group leader believes the array still belongs to the group, but the array has been removed.	Re-run array removal to clear the group leader metadata.
AS-71090	System Management	No Audit Log entry is created if user does not have the privilege to create user	If a user tries to create a new user account, but the user doesnt have the privilege to do so, the user creation will fail. However, an audit log entry is not created.	Not applicable

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-55005	System Management	Unexpected Group Management restart due to memory inconsistency	In rare cases, a memory inconsistency causes an unexpected Group Management Daemon (GMD) restart.	Not applicable
AS-98953	System Management	Array Management Service restarts during Backup Group Leader discovery	The arrays database system may become unavailable for a limited time when there is a failure in setting up the Backup Group Leader. When attempting to discover a new Backup Group Leader, the Array Management Service may restart due to a race condition.	This restart is non-disruptive to the data on the array, and the Array Management recovers after the restart occurs.
AS-94683	System Management	Network isolation of the Group Leader and Backup Group Leader array may lead to Automatic Switchover service restarts	In Automatic Switchover environments, in rare instances, network isolation of the Group Leader and Backup Group Leader may cause the service that handles the automatic switchovers to restart unexpectedly.	No workaround is needed. The service recovers on its own.
AS-99702	System Management	Backup Group Leader is not assigned due to power outage	Following a power outage, it is possible that the Backup Group Leader is not assigned to the group. This may occur if the SODB database does not start due to an SSH key issue.	Please contact HPE Nimble Support.
AS-74242	System Management	Force deletion of user defined performance policy should not be supported	There is a --force switch available when deleting a performance policy via the HPE Nimble Storage Array CLI. This --force switch does not work and will fail with the following: ERROR: Failed to delete performance policy. Resource busy. The --force command is not supported since the specified performance policy should not be removed without first checking its volume or folder associations.	Not applicable

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-98561	System Management	While editing the schedule to assign the Synchronous Replication partner for a volume collection, the following error occurs: Failed to synchronize configuration to partner.	Some internal operations may timeout when configuring the replication partner, and the following error message occurs: Failed to synchronize configuration to partner. Internally, it will retry as needed in order to complete the necessary process to set the Synchronous Replication partner. No user action is necessary.	Not applicable
AS-89124	System Management	Synchronous Replication Volume Count Limit	The group --list_limits CLI command does not list the Synchronous Replication volume count Limit. Synchronous Replication on 5.1.0.0 and later can protect up to 128 volumes.	Not applicable
AS-90633	System Management	Error No message received after issuing CLI command	Under system busy conditions, when an excessive amount of operations are being issued in parallel or too many internal retries are occurring to perform tasks, you may receive a No message received error after issuing a CLI command.	Please reissue the command. If the operation was already performed by the earlier command, an appropriate message will be returned.
AS-100171	System Management	Group Management Service restarts unexpectedly when snapshot is deleted	In a rare timing issue, the Group Management Service for an array group may restart unexpectedly if a snapshot is deleted while its checksums are being sent to the downstream array.	Not applicable
AS-28589	System Management	Network issues may cause restart of Group Management service	On rare occasions, a very slow network (or network issues like dropped packets) can cause a restart of the Group Management services. However, replication and other services will resume where they left off prior to the restart.	Not applicable

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-44941	System Management	Adding/removing volumes while replication is in progress may cause Group Management restart	Adding or removing volumes to a volume collection while replication is in progress for that volume collection could potentially lead to a restart of the Group Management services. This does not have a significant impact however, since replication (and other services) resume where they left off before the restart	Not applicable
AS-101941	System Management	Array Management Service restarts due to invalid REST API Requests	In rare instances the Array Management Service may restart unexpectedly after it receiving a large amount of invalid REST API requests. In this case, the REST API request is sent without an object set, so the segment in the REST request has an empty object set. When array attempts to access the same segment for the object set information, that causes a segmentation fault and leads to an Array Management Service restart. This service restart is non-disruptive.	Not applicable
AS-91638	System Management	Group Management Service restarts due to packet loss in network	If the network response to a REST request takes more than 5 minutes, a thread performing the REST request times out and as a result Group Management Service restarts. The service stabilizes itself and as long as the network is serving the requests faster. A single instance of the Group Management service restart should not cause any disruptions.	Please review the network and see if there is a consistent packet loss and fix any network glitches. If you need any assistance, please reach out to HPE Nimble Storage Support.
AS-93113	System Management	Unmanaged snapshots remain after cleanup is enabled	If clones are created using an unmanaged snapshot, then this unmanaged snapshot will not be deleted even if cleanup is enabled.	Not applicable

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-98694	System Management	Snapshot limit warning alarms persist after update to 5.1.x.x or later	After the update to 5.1.x.x or later, the Snapshot limit warning alarm is no longer used. This presents a situation where stale alarms are present on the array and they will not be cleared even if the space situation is rectified. The alarm follows the following format: WARNING Mon DD YYYY HH:MM:SS Acknowledged - Volume <volume name> snapshot space usage is over the configured warning limit.	The alarms can be deleted manually either in the GUI or on the CLI.
AS-49590	System Management	Unexpected Group Management restart due to high memory utilization	In rare cases, the standard memory allocator does not reuse freed memory efficiently during heavy workloads. When Group Management Daemon (GMD) utilization becomes too high, GMD may restart to recover.	Not applicable
AS-99625	System Management	vCenter plugin not getting deployed properly because of version mismatch	When array software is updated using the GUI, the new vCenter plugin is not getting installed properly this is because there is a mismatch of plugin version specified in the plugin-package.xml verses the actual plugin version.	Contact HPE Nimble Storage Support for assistance with plugin registration.
AS-72559	System Management	Group management service may restart during software update	Group management service may restart during software update due to race condition involving unlocking the download lock file.	Not applicable

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-95212	System Management	HPE Nimble Storage array compatibility issues with MIT Kerberos trust types	When the HPE Nimble Storage array is configured to use Active Directory integration, the array is joined to one specific domain, as a domain member. Under normal circumstances, users in trusted domains will also be able to authenticate to the array. If one or more trusted domains are joined to the forest using an MIT Kerberos type trust relationship, users and groups in any trusted domain (e.g. not the domain the array is joined to) will be unable to authenticate to the array.	Not applicable
AS-101822	System Management	Group Management Service restarts when Group Leader loses connectivity to Backup Group Leader	In rare instances, the Group Management Service may restart unexpectedly when the Group Leader loses connectivity with its Backup Group Leader. This occurs due to an erroneous issue when one of the arrays database tables is synchronizing while the Group Management Service is performing group operations.	Not applicable
AS-86545	System Management	Unable to create dedupe enabled volumes on a new install	After a CSx000 array is installed, it takes one minute for the array to determine its deduplication capability. If a volume is created prior to this, it will not have dedupe enabled even if the array is dedupe capable.	Once the array is able to determine its deduplication capability, all newly created volumes will have dedupe enabled, if specified. In order to enable dedupe on the previously created volumes, you may run the following command via the HPE Nimble Storage Array CLI: vol --edit <vol_name> --dedupe_enabled yes
AS-92157	System Management	No CLI support for changing the Witness Port	Currently, there is no CLI support for changing the witness port. The nimble-witnessd.service file needs to be edited manually.	Not applicable

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-100463	System Management	Clicking save without updating the user analytics checkbox value incorrectly shows a successful message	Within the Nimble Array GUI when browsing to the Diagnostics page under Alerts and Monitoring, clicking save without updating the user analytics checkbox value incorrectly shows a successful message.	Not applicable
AS-99353	System Management	Ambiguity of PASSWORD when importing a PKCS12 bundle	The PASSWORD refers to the one the user needs to enter for the PKCS12 bundle file to be imported. The correct phrasing should be BUNDLE PASSWORD.	Not Applicable
AS-100989	System Management	User is able to submit empty FQDN or IP Addresses when requesting custom certificate	When generating a custom certificate, the user is allowed to add empty FQDN or IP Address input fields on the form and then click the GENERATE button. This will produce an error message popup (modal) returned from the network (backend).	Click the X-icon button to delete any unused/empty input fields under the section of FQDN or IP Addresses.
AS-99343	System Management	Custom SSL certificate import not supported on older versions of Google Chrome	Within the HPE Nimble Storage array GUI, customer SSL certificate import is only supported on Google Chrome version 71 or later.	Not applicable
AS-99584	System Management	Only one certificate may be selected at a time.	On the certificate list page, although every listed certificate entry has a checkbox next to it, the user cannot choose multiple selections for deletion. The user is allowed to only select one entry to delete at a time.	Not applicable

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-98177	System Management	Setting alarm reminder frequency to the same value from GUI does not change next reminder time	When updating an alarm from the Events > Alarms page in GUI, selecting an alarm and clicking CHANGE REMINDER button, without changing the reminder frequency time, and clicking SAVE button, does not change next reminder time. This behavior is different from CLI. Setting alarm reminder frequency to the same value from CLI resets the next reminder time based on the current time.	To keep the same reminder frequency and reset the next reminder time based on the current time, change the reminder frequency to a different value, save it, and change it back and save it, or use CLI to make the change.
AS-87701	System Management	Incorrect information on hardware page displayed when controller is down	When a controller is down, the user may see incorrect representation of physical ports within the Hardware Page of the array GUI. This is due to the lack of information from the missing controller.	When the controller is back up, all the information is displayed correctly on hardware page.
AS-21697	System Management	GUI shows a general error message during group merge when, for the two groups, the total number of snapshot schedules with a snapshot interval of less than five minutes exceeds five	The GUI shows a general error message during group merge when the total count of snapshot schedules with a snapshot interval of less than five minutes exceeds five: System limits for the number of protection schedules would be violated after adding the array. Current limit is 5.	Delete the appropriate protection schedule with a snapshot interval of less than five minutes to meet the system limits of these protections schedules, and retry the group merge operation.
AS-77372	System Management	Group Merge via GUI unable to process large amount of conflicts	Currently within the HPE Nimble Storage Array GUI, when performing a group merge, if there is a large amount of group merge conflicts (1000 or more), the GUI is unable to process and resolve all of them.	To work around this issue: 1. Log into the destination array to resolve the conflicts. 2. Attempt the group merge again.

Known Issues in NimbleOS version 5.1.4.100				
ID	**Component**	**Title**	**Description**	**Workaround**
AS-95591	System Management	Incorrect ordering of pool merge error messages when Synchronous Replication and Witness are configured	Pool merge is not allowed if Synchronous Replication is enabled and pool merge is not allowed when a witness configured. If an array group has a witness configured for Automatic Switchover and has Synchronous Replication configured, when a user tries to perform a pool merge, the following error is generated: “pool merge is not allowed when witness is configured”. In this case, if the user removes the witness and then re-attempts the pool merge, the following error is then generated: “Pool merge is not allowed when involved in sync replication”. This error should supersede the previous error.	
AS-93157	System Management	Array GUI does not specify which snapshots are unmanaged	The Array GUI does not specify which snapshots are unmanaged and no longer belong to a volume collection.	Run the following command via CLI: snap --list --all --unmanaged
AS-99024	System Management	Browser becomes unstable upon certificate change	After changing a certificate, the GUI may present an error such as follows: The web service is very slow or unreachable...	After a new custom certificate has been imported or existing certificate is deleted, please close the browser where the action was performed and reopen a new one to guarantee a new connection request to the NimbleOS web interface.
AS-94307	System Management	New user status icon changed and account actions been moved to new location	To be filled.	N/A