



# NexentaStor 4.0.5-FP2

## Release Notes

### In This Document

This document details the most up-to-date information pertaining to 4.0.5-FP2 release.

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### Release History

Date	Description
Dec, 2016	NexentaStor 4.0.5 GA version
June, 2017	NexentaStor 4.0.5-FP1 version
July, 2017	NexentaStor 4.0.5-FP2 version

## NexentaStor 4.0.5-FP2

Code changes in recent versions of NexentaStor 4.0.5 had the unexpected side effect of occasionally requiring some systems to be re-licensed because hardware checks failed, leading to the incorrect conclusion that the hardware had changed. This issue is fixed in 4.0.5-FP2.

### Upgrades in 4.0.5-FP2

NexentaStor 4.0.5-FP2 includes the following upgrade:

- Upgraded Apache version to 2.4.26 to address the following CVEs.

Key	CVE
NEX-13531	CVE-2017-7679
NEX-13532	CVE-2017-7668
NEX-13533	CVE-2017-7659
NEX-13534	CVE-2017-3169
NEX-13535	CVE-2017-3167

### Resolved Issues in 4.0.5-FP2 as of July 2017

Component	Key	Description
Upgrade	NEX-13646	Resolved issue where some systems were required to obtain a new license due to failed hardware checks.

Obtain a Re-issued License in the Following Case

**Warning:** Any users who received a new license due to encountering the above issue (NEX- 13646) should NOT upgrade to 4.0.5-FP2. If you encountered this issue, you will need to have another license re-issued. This fix only ensures that NEX-13646 will not be encountered upon upgrading a system that has not already encountered it.

### Known Issues in 4.0.5-FP2 as of July 2017

Known issues for 4.0.5-FP2 is identical to known issues in NexentaStor 4.0.5-FP1.

# NexentaStor 4.0.5-FP1

NexentaStor 4.0.5-FP1 delivers fixes to improve stability, scalability, and performance. This Fix Pack builds on the fixes and enhancements previously released in 4.0.5; addresses customer-reported issues, and addresses issues found internally by Nexenta engineering.

Our releases continue to focus on ensuring the highest level of security. We have included fixes for several CVEs and other security issues. See “Resolved Security Issues in 4.0.5-FP1” table for more information on the security fixes.

## Upgrades in 4.0.5-FP1

NexentaStor 4.0.5-FP1 includes the following upgrades:

- Upgraded OpenSSL version to 1.0.2k
- Upgraded Apache version to 2.4.25

## AutoSync Changes in 4.0.5-FP1

NexentaStor 4.0.5-FP1 provides several AutoSync fixes and enhancements. The following two AutoSync enhancements in 4.0.5-FP1 are worth highlighting:

- In 4.0.5-FP1 you have the ability to reschedule AutoSync if source and/or destination pool has ongoing scrub or resilver. This is accomplished by enabling the “reschedule flag” property and setting a different “reschedule interval” for the AutoSync service you create.

### Using NMC:

To enable the reschedule flag:

```
nmc@host:/$ setup auto-sync :<name of service> property general-flags
```

Using TAB or ARROW KEYS, select the service property “reschedule” and enable it using the SPACEBAR.

And to change the reschedule interval:

```
nmc@host:/$ setup auto-sync :<name of service> property
reschedule_interval
```

Now type the reschedule interval for the AutoSync service to resume.

### Using NMV:

If you wish to reschedule the service using NMV, select the checkbox “Reschedule Service” when creating the service. This sets the default interval to 10 mins. AutoSync will restart every 10 mins and check the resilvering status.

**Reschedule Service**   
Reschedule service if source and/or destination volume is resilvering or scrubbing.

- AutoSync keeps clones “space optimized” when replicating parent datasets that contain VM images for OpenStack or VMware.

## Enhancement in 4.0.5-FP1 as of June 2017

Component	Key	Description
Chassis Management	NEX-9769	Added Chassis Management support for HGST Storage Enclosure 4U60.

## Resolved Issues in 4.0.5-FP1 as of June 2017

Component	Key	Description
AutoSync	NEX-5228	Resolved issue where users could encounter an error when destroying and recreating Auto-sync jobs.
AutoSync	NEX-2313	Corrected the functionality of the NMC such that 'keep-src' and 'keep-dst' properties can be changed, similar to the functionality of the NMV.
AutoSync	NEX-8109	Resolved an error, "Arg list too long", which caused AutoSync to fail to delete old snapshots when dealing with very high numbers of snapshots.
AutoSync	NEX-4897	Resolved an issue where AutoSync was failing to destroy AutoSnap-created snapshots at the destination.
AutoSync	NEX-5231	Addressed problems with the way AutoSync handles snapshots at the destination with the 'exclude' option available.
AutoSync	NEX-5230	Resolved an issue where using the force-flag destroy_missing_datasets was not destroying missing datasets.
AutoSync	NEX-5835	Resolved an issue where the unmap_zvols general-flag did not work in flip direction, failing with a "dataset is busy" error.
Kernel	SUP-918	Resolved an issue where entries in the ZFS history buffer may have resulted in zpool and zdb commands hanging.
Kernel	NEX-10004	Resolved Issue where NDMP locking could prevent AutoSync replication in some cases.
Kernel	NEX-5239	Resolved an issue where a recursive AutoSync operation could be broken if new child datasets were added between the scheduled jobs.
Kernel	NEX-9301	Resolved a Double Fault panic that could be encountered when destroying a snapshot.
Kernel	NEX-8883	Corrected the misleading error, "smbios: failed to load SMBIOS: System does not export an SMBIOS table", seen when running certain motherboards using certain BIOS.
Kernel	NEX-6113	Resolved an issue with the behavior of 'ldap_cachemgr' when more than one LDAP Server was specified.
Kernel	NEX-7875	Resolved an issue associated with writing L2ARC records on media with physical sector size of 4k.
Kernel	NEX-5016	Resolved a rare panic that could be encountered while NFS was in the process of stopping its services.
Libraries	NEX-7498	Resolved an issue where users could not set a userquota of 2TB or larger.

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NMS	NEX-9175	Resolved issue where a JBOD rescan returned an error if sedctlid was disabled.
NMS	NEX-8960	Resolved "Proxy Error" message received while executing NMV operation with large amounts of drives, despite the operation completing successfully.
NMS	NEX-10527	Improved the disk space warning mechanism by adding <b>critical</b> daily email alerts when pool utilization is above 83%, and <b>notification</b> daily email alerts when a pool is above 75% utilization. You will continue to get these capacity email alerts even if the volume check runner has gone into maintenance state for capacity check faults.
Appliance Mgmt., Packaging	NEX-9339	Resolved an issue where SNMP monitoring of size and space of filesystems would malfunction on very large datasets.
Protocols	NEX-9098	Resolved an issue where a "TOO_MANY_OPENED_FILES" error was seen when hitting a 16k file handler limit.
Protocols	NEX-9106	Added support for "Resource SID Compression" to SMB.
SMB	NEX-9864	Redesigned the way that SMB handles cancel requests, eliminating the possibility of a race condition between the cancel command and the request it was attempting to cancel.

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## Resolved Security Issues in 4.0.5-FP1 as of June 2017

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Component	Key	Description
Packaging	NEX-8722	Fixed issue around httpd using the value of the Proxy header from HTTP requests to initialize the HTTP_PROXY environment variable for CGI scripts, which in turn allows the remote attackers to redirect the http requests.
Packaging	NEX-10072	Fixed issue with OpenSSL Truncated packet crashing via out of bounds read.
Packaging	NEX-10073	Fixed issue with OpenSSL BN_mod_exp producing incorrect results intermittently on x86_64.
Packaging	NEX-10074	Fixed issues causing servers running httpd digest authentication to crash when malicious input are fed to mod_auth_digest.
Packaging	NEX-10075	Fixed issues with the http parser in httpd incorrectly allowing certain characters not permitted by the http protocol to appear unencoded in http request headers.
Packaging	NEX-10076	Fixed issues with mod_session_crypto module of httpd not using any mechanisms to verify integrity of the encrypted session data stored in the user's browser.
Packaging	NEX-10322	Resolved ntp DoS vulnerability.

## Known Issues in 4.0.5-FP1 as of June 2017

Component	Key	Description	Workaround
NMS	SUP-737	NMV may over time grow heap memory while failing to reclaim allocations.	Restart NMS if large amounts of memory are being used.
Appliance Mgmt.	NEX-3226	Modifying syslog configuration using NMV truncates syslog.conf file.	Do not use NMV to modify the syslog server settings. Instead use the NMC command as follows: <pre>nmc@:&gt;setup network service syslog-daemon edit-settings syslog.conf</pre>
Appliance Mgmt.	NEX-5041	Users are currently unable to monitor and report issues with SMCX10 server power supplies and fans.	If iPMI is being used, check documentation to determine if the IPMI vendor supports accessing power supply and fan data.
AutoSync	NEX-5830	Intermittent rare condition where an NFS outage may lead to rrd daemon utilization to jump to 100%.	None
Comstar	NEX-4246	The default setting of <code>stmf_sbd:stmf_standby_fail_reads=0</code> can result in a negative performance impact.	The following commands will create a system checkpoint, then add the necessary setting to <code>/etc/system</code> . Please issue these commands in NMC and then reboot, note that both cluster nodes should be updated:  <pre>nmc@:&gt; setup appliance checkpoint create nmc@:&gt; options expert_mode=1 nmc@:&gt; echo "set stmf_sbd:stmf_standby_fail_reads=1" &gt;&gt; /etc/system nmc@:&gt; setup appliance reboot</pre>
Appliance Mgmt., Comstar, HA	NEX-6040	There is currently no indication when a COMSTAR configuration becomes out of sync between two HA nodes.	Drop into bash and manually check for the existence of the <code>.comstar/config-out-of-sync</code> file that is created in the root of the clustered volumes.
HA	NEX-5593	Mappings added via the <code>idmap</code> command can potentially be lost upon an HA failover.	If a high number of mappings make this workaround prohibitive, please contact Nexenta customer support.
HA	NEX-9167	It is possible for the directory <code>"/opt/HAC/RSF-1/log"</code> to not be created during installation, leading to the inability to create zvol mappings.	<pre>mkdir /opt/HAC/RSF-1/log svcadm enable svc:/network/rpc/rpc-stmfha:default</pre>

Installation	NEX-1881	Under certain circumstances, NexentaStor clusters can have mismatched controller numbers between the nodes.	Contact system installer or support provider to manually reconcile controller numbers.
Installation	NEX-3488	Unable to boot NexentaStor from a drive with 4k native sector size.	Use 512 native or 512 emulated drives for NexentaStor installations.
Installation	NEX-5548	GRUB boot loader fails checksum verification and prevents booting of checkpoints after an upgrade.	<p>Customers experiencing this issue should boot to a recovery CD and reinstall GRUB. Steps to perform this are below:</p> <p>Boot recovery console from the install media, then perform these steps (assuming c1t0d0s0 and c1t1d0s0 are the mirrored boot disks):</p> <pre>#zpool import -f syspool # zfs list -r syspool     rootfs-nmu-003 # mkdir /tmp/syspool # mount -F zfs syspool/rootfs-nmu-003 /tmp/syspool # rm -f /tmp/syspool/etc/zfs/zpool.cache # bootadm update-archive -R /tmp/syspool # cd /tmp/syspool/boot/grub # installgrub -f -m stage[12] /dev/rdisk/c1t0d0s0 # installgrub -f -m stage[12] /dev/rdisk/c1t1d0s0 # umount /tmp/syspool # sync # reboot</pre>
Kernel	NEX-928	When using ZEUS IOPS drives in a JBOD, a mptsas deadlock may occur due to a poor connection with the backplane.	Ensure that required components are installed and properly configured when using ZEUS IOPS drives in a JBOD.
Kernel	NEX-1760	ZFS exhibits long kmem reap times in certain situations.	None
Kernel	NEX-3585	Intermittent issue where VM slack in non-ARC ZFS kmem caches can degrade ARC performance.	None
Kernel	NEX-5308	GRUB menu mistakenly reports 32-bit in a 64-bit environment, possibly leading to issues when upgrading via undocumented methods.	Users may ignore the 32-bit entry in the GRUB menu. The environment is indeed 64-bit. As a reminder, upgrading NexentaStor should always be performed using the NMC 'setup appliance upgrade' command.



NEF, NEF API	NEX-5315	ALUA can be unintentionally disabled after a hard reset of the passive node.	Re-enable ALUA if needed via NexentaStor GUI (NMV) or command-line interface (NMC).
NMC	NEX-3969	Upon upgrade, systems with a time/date set incorrectly can boot to the incorrect checkpoint.	Before starting an install or upgrade, ensure that the system time/date are set correctly. If this issue is encountered, reboot the system to the correct checkpoint.
NMS	NEX-4237	Unexpected behavior after failover may result from restoring old system configuration in situations where nameservice changes have been made.	Contact Nexenta support for assistance if this issue is encountered.
AutoSync, NMS	NEX-4587	Upgrade will fail with a 'Failed to gain exclusive access, operation timed out.' message while auto-sync replication is in progress.	Wait until auto-sync replication completes and retry upgrade.
NMV	NEX-10574	As a result of the sedctl-daemon not running, NMV will show (SED state unknown) during volume creation using Self-Encrypting Drives.	<pre> nmc@host:/\$ setup network service sedctl-daemon enable  nmc@host:/\$ show network service sedctl-daemon PROPERTY VALUE info : sedctl-daemon name : svc:/system/sedctld:default start_pid : 6109 state_timestamp : 13:12:01 start_method_timestamp : 13:12:01 state : online enabled : true  nmc@host:/\$ option expert_mode =1  nmc@host:/\$ setup appliance nms restart </pre>
NMS, Plugin	NEX-2097	A failover that occurs when the COMSTAR configuration between two nodes in a cluster are not synchronized can cause the configuration not to be restored.	Contact Nexenta Support for assistance synchronizing the COMSTAR configurations.
Seamless Upgrade	NEX-3606	After seamless upgrade from 3.x to 4.x, nfsmapid_domain setting is not maintained, and must be reset manually.	<pre> SSH to the system and run the following command to set the nfsmapid_domain:  sharectl set -p nfsmapid_domain=&lt;domain&gt; nfs </pre>

## Upgrading to 4.0.5-FP2

This section covers how to upgrade NexentaStor to version 4.0.5-FP2. Read the information listed in the section “Before You Upgrade” and “After Seamless Upgrade” and then follow the appropriate upgrade instructions.

- Upgrading from 4.0.x
- Upgrading from 3.1.x

**Note:** To upgrade the HA Cluster Plugin, see *HA Cluster User Guide*.

### Before You Upgrade

Ensure that you follow these recommendations before attempting to upgrade:

- Always upgrade NexentaStor using the NMC 'setup appliance upgrade' command.
- Ensure that the system time/date are set correctly. If the system boots to the incorrect checkpoint, reboot the system to the correct checkpoint.
- If auto-sync replication is in progress, wait until it completes before upgrading.
- **Review system requirements**, SMB-supported client operating systems, the NMV port number (8457 for all 4.x releases), and other installation changes that occurred with previous 4.0.x releases. This information is available in the Upgrade sections of the previous NexentaStor 4.0.x Release Notes.
- **Review the *NexentaStor 4.0.5 Installation Guide*** for additional details on upgrading to NexentaStor 4.0.5.
- **Review the Hardware Components List (HCL)** to ensure that your current hardware is compatible with upgrading to NexentaStor 4.0.5.
- **Ensure that you don't have any 3<sup>rd</sup>-party packages running** on NexentaStor. Upgrading NexentaStor will cause those packages to be deleted.
- **Allow Auto-Sync and Auto-Snap jobs to finish processing** before upgrading NexentaStor. Rebooting into NexentaStor is required to complete the upgrade process.

### After Seamless Upgrade

After seamless upgrade from 3.x to 4.x, if the `nfsmaid_domain` is explicitly set via either `sharectl` or by editing `/etc/default/nfs` using `"setup network service nfs-server edit-settings nfs"`:

- SSH to the system and run the following command to set the `nfsmapid_domain`.  

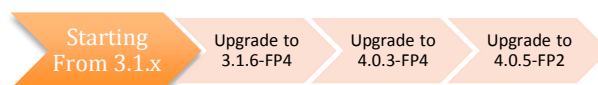
```
sharectl set -p nfsmapid_domain=<domain> nfs
```

### Upgrading From 4.0.x

- 1 `nmc:/$ setup appliance upgrade -s`
- 2 Complete the upgrade.
- 3 Reboot your system.

### Upgrading From 3.1.x

Upgrading NexentaStor from version 3.1.x to the latest 4.0.5 requires these interim upgrade steps:



**Step 1. Upgrade to 3.1.6-FP4**

Upgrade to NexentaStor 3.1.6-FP4:

- 1 nmc:/\$ setup appliance upgrade
- 2 Complete the upgrade.
- 3 Reboot your system.

**Step 2. Upgrade to 4.0.3-FP4**

Now upgrade to 4.0.3-FP4:

- 1 nmc:/\$ setup nexentastor upgrade -r 4.0.3
- 2 Complete the upgrade.
- 3 Reboot your system.

**Step 3. Upgrade to 4.0.5-FP2**

And finally, upgrade to 4.0.5-FP2:

- 1 nmc:/\$ setup appliance upgrade -s
- 2 Complete the upgrade.
- 3 Reboot your system.

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**Completing Additional Configurations****Upgrading Data Volumes if You Will Not Be Booting in to a 3.1.x Checkpoint**

- 1 Upgrade NexentaStor volumes to use ZFS feature flags:  
setup volume <volname> version-upgrade
- 2 Repeat to upgrade all NexentaStor volumes.

**Resetting nfsmapid**

After upgrading from 3.x, you will need to manually reset the `nfsmapid_domain` setting:

- 3 SSH to the system, log in to bash and type:  

```
option expert_mode =1

!bash
```
- 4 Type:  

```
sharectl set -p nfsmapid_domain=<domain> nfs
```

## Where to Find More Information

For more information on NexentaStor 4.0.5, use the following documents in conjunction with this release notes. To access the following documents, please visit: <https://nexenta.com/products/downloads/nexentastor>

***NexentaStor 4.0.4-FP5 MetroHA Admin Guide***

This document demonstrates the basic steps and commands to configure and manage synchronous mirroring of data between two geographically remote sites. This is a solution that builds upon the NexentaStor HA Cluster feature.

***NexentaStor 4.0.5 Installation Guide***

This document includes the instructions to install and upgrade NexentaStor.

***NexentaStor 4.0.5 User Guide***

This guide demonstrates the basic steps and commands to configure and manage NexentaStor 4.0.5 appliances. Use this document in conjunction with the *NexentaStor 4.0.5 HACluster User Guide*.

***NexentaStor 4.0.5 HACluster User Guide***

This guide demonstrates the basic steps and commands to configure and manage the NexentaStor 4.0.5 High Availability (HA) cluster using the NexentaStor 4.0.5 Command Line Interface (NMC).

***NexentaStor 4.0.5 Auto-Sync Guide***

This document demonstrates how to configure AutoSync to replicate datasets using the NexentaStor Command Line Interface (NMC) and NMV.

***Hardware Certification List (HCL) for NexentaStor 4.0.5***

This document provides a list of certified hardware for NexentaStor 4.0.5 and is intended for Nexenta Partners and Nexenta customer-facing organizations.