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NexentaStor™ 4.0.4-FP5 Release Notes

NexentaStor 4.0.4 FixPacks (abbreviated as FP here) deliver fixes and enhancements to improve stability, scalability, and performance. Each FixPack builds on the fixes and enhancements previously released, addresses customer-reported problems, and issues found internally by Nexenta engineering.

NexentaStor 4.0.4 Release History

- NexentaStor 4.0.4-FP5: 6/28/16
- NexentaStor 4.0.4-FP4: 3/02/16
- NexentaStor 4.0.4-FP3: 2/23/16
- NexentaStor 4.0.4-FP2: 12/07/15
- NexentaStor 4.0.4-FP1: 11/03/15
- NexentaStor 4.0.4: 7/21/15

In This Document

NexentaStor 4.0.4-FP5

NexentaStor 4.0.4-FP5 includes one enhancement, eight resolved issues, and several known issues.

Enhancement in 4.0.4-FP5

Table 1 lists the enhancement added in NexentaStor 4.0.4-FP5:

TABLE 1: NEXENTASTOR 4.0.4-FP5 ENHANCEMENT

Component	Key	Enhancement Description
Chassis Management	NEX-5356	Chassis management for SanDisk InfiniFlash IF150.

Resolved Issues in 4.0.4-FP5

Table 2 describes key issues resolved in NexentaStor 4.0.4-FP5:

TABLE 2: NEXENTASTOR 4.0.4-FP5 RESOLVED ISSUES

Component	Key	Resolved Issue Description
Kernel	SUP-770	Resolved potential deadlock among COMSTAR and STMF worker threads.
Kernel	NEX-4592	Resolved deadlock between Fibre Channel initiator and Fault Management Architecture after removing a faulted device.
Kernel	NEX-4433	Resolved FC ALUA cluster node deadlock that may occur shortly after an HA failover.
Kernel	NEX-4472	Resolved issue where access to NFS datastores could be lost in ESX environments when the DNS server becomes unresponsive.
Kernel	NEX-3856	Corrected a panic due to a null pointer dereference in the fibre channel target (`fct`) module.
NMS	NEX-5238	Resolved issue where NMS unnecessarily called `smbadm join` upon service failover.
Protocol	NEX-5134	Resolved an issue with NFSv4 that might result in a hang of NFS services.
Protocol	NEX-5787	Resolved an issue where an `oplock` break during session teardown might lead to a kernel panic.

Known Issues in 4.0.4-FP5

Table 3 lists the issues known in NexentaStor 4.0.4-FP5 as of June 2016:

TABLE 3: NEXENTASTOR 4.0.4-FP5 KNOWN ISSUES

Components	Key	Known Issue Description	Workaround
Appliance Mgmt	NEX-3226	Modifying syslog configuration using NMV truncates syslog.conf file.	Use the NMC command to modify the syslog server settings. `nmc@my_filer:/$ setup network service syslog-daemon edit-settings syslog.conf`
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 vendor documentation to determine if the IPMI vendor supports accessing power supply and fan data.

Appliance Mgmt	NEX-5582	In some rare instances, upgrading specifically from 4.0.4-FP3 to 4.0.4-FP5 will create an incorrectly named checkpoint.	**1.** Find current checkpoint (marked 'Yes' in the CURRENT column) using the NMC:
			`nmc@my_filer:/$ show appliance checkpoint rootfs-nmu-215 Mar 2 9:27 2016 upgrade Yes Yes 4.0.4-FP3`
			2. Enable expert mode
			`nmc@my_filer:/$ option expert_mode = 1`
			3. Enter into bash
			`nmc@my_filer:/$ !bash`
			`You are about to enter the Unix ("raw") shell and execute low-level Unix command(s). Warning: using low-level Unix commands is not recommended! Execute? (y/n) <press y> Select Yes`
			4. Using nano or vim to edit /etc/default/versions file:
			`nmc@my_filer:/$ nano /etc/default/versions`
			5. Locate the line that contains the current checkpoint name. In that line, change 4.0.4-FP3 to 4.0.4-FP5.
			`syspool/rootfs-nmu-215 4.0.4-FP5`
			6. Enter into the NMC by pressing `crtrl+d`
			7. Issue nmc command:
			`setup appliance nms restart`
			8. Verify that name is correct:
			`nmc@my_filer:/$ show appliance checkpoint`

Autosync	NEX-5228	Users may encounter an error when destroying and recreating Auto-sync jobs.	If this is encountered, contact Nexenta Support for assistance setting up a new Auto-sync job.
Autosync	NEX-5830	Intermittent rare condition where an NFS outage may lead to `rrdaemon` utilization to jump to 100%.	None.
Autosync	NEX-5835	The Auto-Sync `unmap_zvols` general-flag does not work in flip direction, failing with a "dataset is busy" error.	Use a local `before_replication` Action Script to **1.** Save existing COMSTAR mappings on the new destination **2.** Delete COMSTAR mappings on the new destination. Contact Nexenta support if you require assistance implementing this workaround.

Components	Key	Known Issue Description	Workaround
Autosync	NEX-5239	Recursive auto-sync may get broken if new child datasets are added between the job's runs.	**1.** Disable the job **2.** Determine which datasets need to be removed at the destination, and which snapshots need to be destroyed on the source side. **3.** Re-enable the job. Engage Nexenta Customer Support for assistance with this procedure if needed.
Comstar	NEX-3648	Manual failovers hang and cause loss of communication with FC LUNs configured in an ESXi 6.0 cluster.	NexentaStor 4.0.4 does not currently support manual failover using ESXi version 6.0 for FC LUNs. ESXi 5.5 Server is recommended for clusters using FC LUNs.

Comstar	NEX-4246	The default setting of `stmf_sbd:stmf_standby_fail_reads=0` can result in a negative performance impact.	In Microsoft-only server environments, setting `stmf_sbd:stmf_standby_fail_reads = 1`, followed by a reboot, will resolve this issue. However, in any mixed-server environment, this value must be left at zero to support proper LUN discovery.
			
			The following commands will create a system checkpoint, then add the necessary setting to /etc/system. Please issue these commands in NMC and then reboot. Note that both cluster nodes should be updated:
			`nmc@:> setup appliance checkpoint create`
			`nmc@:> options expert_mode=1`
			`nmc@:> !echo "set stmf_sbd:stmf_standby_fail_reads=1" >> /etc/system`
			`nmc@:> setup appliance reboot`

Comstar	NEX-5315	ALUA can be unintentionally disabled after a hard reset of the passive node.	Re-enable ALUA if needed via the NexentaStor GUI (NMV) or command-line interface (NMC).
Comstar	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 `.comstar/config-out-of-sync file` that is created in the root of the clustered volumes.
Fibre Channel	NEX-5805	In certain rare instances, Fibre Channel LUNs may become stuck in an offlining state.	Contact Nexenta Customer Support for assistance implementing the workaround.
Fibre Channel	NEX-6085	Fibre channel port unable to transition from offlining.	Restart the system to recover, by executing the following command from bash: `# reboot –dn`
HA	NEX-3191	Export failure on failover in clusters with large number of NFS mounts and auto-sync jobs.	If an automatic failover times out, manually initiate the failover from NMV or NMC.
HA	NEX-3394	Issues with cluster failover after upgrading a system using PGR3 Reservations to a later release using SCSI-2 reservations.	Configurations using STEC SAS SSD's as data drives with firmware revision E50x or earlier should not be upgraded until the device manufacturer issues a firmware update to resolve this issue. Configurations using STEC SAS SSD's as cache or log devices are not affected by this restriction.

Components	Key	Known Issue Description	Workaround
HA	NEX-5147	In certain circumstances, users creating mappings from NMV may intermittently encounter an STMF error.	Contact Nexenta Support for assistance restoring the mappings.
HA	NEX-5593	Mappings added via the `idmap` command can potentially be lost upon an HA failover.	Instead of the `idmap` command, use NMV GUI 'Identity Mapping' to perform removal and recreate the mappings. If a high number of mappings make this workaround prohibitive, please contact Nexenta Customer Support.
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-3606	After seamless upgrade from 3.x to 4.x, `nfsmapid_domain` setting is not maintained, and must be reset manually.	SSH to the system and run the following command to set the `nfsmapid_domain`: `sharectl set -p nfsmapid_domain=<domain> nfs`

Installation	NEX-5548	GRUB boot loader fails checksum verification and prevents booting of checkpoints after an upgrade.	Customers experiencing this issue should boot to a recovery CD and reinstall GRUB. Steps to perform this are below:
			
			Boot recovery console from the install media, then perform these steps (assuming c1t0d0s0 and c1t1d0s0 are the mirrored boot disks):
			
			`# 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/rdsk/c1t0d0s0`
			`# installgrub -f -m stage[12] /dev/rdsk/c1t1d0s0`
			`# umount /tmp/syspool`
			`# sync`
			`# reboot`

Kernel	NEX-1760	ZFS exhibits long kmem reap times in certain situations.	None.
Kernel	NEX-2646	System panic due to 'uncorrectable I/O failure' from zio_suspend() .	If this condition is encountered, remove and then recreate the ACL's on the share.
Kernel	NEX-2899	The `zfs send -I` command performed on a snapshot will close any files opened within	If your use case permits, users needing to access files within a snapshot should clone that snapshot and access files from the clone.

Components	Key	Known Issue Description	Workaround
		that snapshot, leading to potential IO errors.	
Kernel	NEX-2940	Disk pools with a failed sTEC drive as a single ZIL can cause a system panic when users attempt to remove the failed ZIL.	Use redundantly configured (mirrored) ZILs.
Kernel	NEX-3043	Alternating I/Os to datasets of different record sizes can cause long zio_cache reaps.	None.
Kernel	NEX-3585	Intermittent issue where VM slack in non-ARC ZFS kmem caches can degrade ARC performance.	None.
Kernel	NEX-3734	ZFS allows the user to set a duplicate mount point path on two different ZFS filesystems, leading to broken volume services.	Check pool for duplicate mount points before failover, and then perform manual remediation.
Kernel	NEX-4393	In certain situations, the slow I/O diagnosis engine may identify disks experiencing high latency. Also, slow I/O may produce a message indicating that an attempt to retire a disk had been made.	Unless slow I/O disk retirement has been explicitly enabled, disregard the message. By default, slow I/O will not attempt to retire any devices.
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.
Kernel	NEX-6135	If a pool has datasets that are shared using SMB with quotas enabled, and a delete is in progress, then exporting that pool can take a long time while the SMB datasets are being unshared.	If this is encountered, wait for the SMB unsharing to complete.
Kernel	NEX-928	When using ZEUS IOPS drives in a JBOD, an 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.
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-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	Contact Nexenta Support for assistance synchronizing the COMSTAR configurations.

Components	Key	Known Issue Description	Workaround
		restored.	
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 resolving if this issue is encountered.
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.
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.
Openstack	NEX-5652	Systemctl start openstack-cinder-volume makes NFS/NMS unresponsive	Contact Nexenta Customer Support for assistance implementing the workaround.
Protocols	NEX-2522	SMB process may hang waiting for taskq threads to exit.	If this is encountered, the node experiencing the issue must be rebooted.

Notes:

- Nexenta recommends that all customers using VMware follow VMware's recommendations for patching and maintaining VMware vSphere.
- For more details on the issue related to simultaneous file modifications in a mixed SMB/NFS environment, refer to the KB article number 1359 titled "Considerations when using multi-protocol file locking" in the Customer and Partner Portal.
- For issues related to Linux clients failing to see recovered paths after a clustered node reboot, refer to the KB article number 1361 titled "Linux clients do not see stand-by path" in the Customer and Partner Portal.

NexentaStor 4.0.4-FP4

NexentaStor 4.0.4-FP4 includes one resolved issue.

Resolved Issue in 4.0.4-FP4

Table 4 describes key issue resolved in NexentaStor 4.0.4-FP4:

TABLE 4: NEXENTASTOR 4.0.4-FP4 RESOLVED ISSUE

Component	Key	Resolved Issue Description
HA Cluster	NEX-5375	Resolved issue where RSF would fail to start in a clustered environment when 4k sector size disks were in use.

Known Issues in 4.0.4-FP4

Known issues for 4.0.4-FP4 is the union of all known issues for FP5 and issues resolved in FP5.

NexentaStor 4.0.4-FP3

NexentaStor 4.0.4-FP3 includes four enhancements, and twenty-one resolved issues.

Enhancements in 4.0.4-FP3

Table 6 includes the enhancement list in NexentaStor 4.0.4-FP3:

TABLE 6: NEXENTASTOR 4.0.4-FP3 ENHANCEMENTS

Component	Key	Enhancement Description
Chassis Management	NEX-4316	Added Chassis Management support for SMC SC946ED-R2KJBOD 90-bay enclosure.
Chassis Management	NEX-4054	Added Chassis Management support for Penguin Computing Icebreaker 4836.
Chassis Management	NEX-4585	Added Chassis Management for SuperMicro 6048R-E1CR36L 36-bay enclosure.
Kernel	NEX-4511	Added support for the PERC H330 Mini RAID controllers using the 3008 chipset.

Resolved Issues in 4.0.4-FP3

Table 7 describes key issues resolved in NexentaStor 4.0.4-FP3:

TABLE 7: NEXENTASTOR 4.0.4-FP3 RESOLVED ISSUES

Component	Key	Resolved Issue Description
Appliance Management	NEX-4212	Resolved issue where volume creation using a profile (automatic provisioning) in certain SMC-90 hardware configurations could exclude valid drives from availability.
Appliance Management	NEX-4019	Resolved issue where NMS incorrectly handled IDMAP rules with spaces.
Appliance Management	NEX-1159	Corrected situation where NexentaStor did not correctly resolve hostnames when treated DNS, AD, and NIS domains were different.
Appliance Management, NMC	NEX-3090	Resolved situation where netmask entries could not be deleted using "setup appliance netmasks" command.
Chassis Management	NEX-3621	Resolved condition where SuperMicro JBODs requiring IPMI to monitor sensors did not report the removal of a power cord.
Commands + Daemons	NEX-3170	Resolved condition where nms-check could go to maintenance mode every week.
Kernel	NEX-4171	Greatly enhanced the functionality of Safe-Mode.
Kernel, User Interface	NEX-4290	Corrected functionality of the "Insensitive" Case Sensitivity setting.
Kernel	NEX-5036	Corrected functionality of "Mixed" Case Sensitivity settings.
Kernel	NEX-5024	Continued improvement of performance while deleting large files.
Kernel	NEX-5085	Implemented asynchronous delete for large files to reduce deletion times.
Kernel	NEX-3691	Resolved an issue that allowed for potential corruption of ACLs.

Component	Key	Resolved Issue Description
Kernel	NEX-5068	Resolved issue where pool import times could be increased if a scrub or resilver was in progress.
NMS	NEX-4107	Resolved condition where appliance-enabled NIS could become dysfunctional if the domain name of a node was changed once it was part of a cluster.
NMS	NEX-4817	Resolved an issue with auto-sync scheduling when Daylight Savings goes into effect.
NMS	NEX-536	Resolved condition where changes made to /etc/inet/ntp.conf were not saved after an NMS restart.
NMV	NEX-3345	Resolved issue where the drop down menu "Data Management -> Shares -> View Log" was not switching between logs when selecting /var/adm/messages.
NMV	NEX-2782	Resolved issue where NMV "Create New Volume" function might not show all profiles and available drives on very large deployments.
Packaging, Seamless Upgrade	NEX-4153	Resolved situation where a user may not be able to boot into Safe Mode.
Protocols	NEX-5082	Addressed an issue encountered when OS X clients accessed a file with a file name of exactly 255-characters.
Protocols	NEX-5133	Resolved intermittent condition where directories could fail to be removed upon deletion from CIFS shares.

Known Issues in 4.0.4-FP3

Known issues for 4.0.4-FP3 is the union of all known issues for FP5 and issues resolved in FP4 onwards.

NexentaStor 4.0.4-FP2 includes security patches for Common Vulnerabilities and Exposures (CVEs), two enhancements, and four resolved issues.

Security Patches for Common Vulnerabilities and Exposures in 4.0.4-FP2

Table 9 lists the security patches incorporated in NexentaStor 4.0.4-FP2 to address the following CVEs:

TABLE 9: NEXENTASTOR 4.0.4-FP2 CVES

CVE	Key	Description
(CVE-2015-1789) (CVE-2015-1790) (CVE-2015-1791) (CVE-2015-1792)	NEX-4659	The X509_cmp_time function in crypto/x509/x509_vfy.c in OpenSSL before 0.9.8zg, 1.0.0 before 1.0.0s, 1.0.1 before 1.0.1n, and 1.0.2 before 1.0.2b allows remote attackers to cause a denial of service (out-of-bounds read and application crash) via a crafted length field in ASN1_TIME data, as demonstrated by an attack against a server that supports client authentication with a custom verification callback.

Enhancements in 4.0.4-FP2

Table 10 includes the enhancement list in NexentaStor 4.0.4-FP2:

TABLE 10: NEXENTASTOR 4.0.4-FP2 ENHANCEMENTS

Component	Key	Enhancement Description
Kernel	NEX-3733	Added Apple Extension support in SMB2.
Protocols	NEX-3863	Added functionality to disable/enable SMB quotas.

Resolved Issues in 4.0.4-FP2

Table 11 describes key issues resolved in NexentaStor 4.0.4-FP2:

TABLE 11: NEXENTASTOR 4.0.4-FP2 RESOLVED ISSUES

Component	Key	Resolved Issue Description
Autosync, Kernel	NEX-4724	Resolved condition where resilvering a drive after a replacement could become stuck with heavy IO and auto-services running.
Kernel	NEX-4733	Resolved a panic seen while exporting or destroying a pool with a cache device.
Protocols	NEX-4797	Resolved condition where editing and saving a file from MS-Office was not possible on a Nexenta SMB share.
Protocols	NEX-3409	Fixed a display issue on OSX where nested folders were not displayed in the finder window.

Known Issues in 4.0.4-FP2

Known issues for 4.0.4-FP2 is the union of all known issues for FP5 and issues resolved in FP3 onwards.

NexentaStor 4.0.4-FP1

NexentaStor 4.0.4-FP1 is a maintenance update that delivers more than 90 fixes and enhancements in the areas of general stability, scalability, and performance. NexentaStor 4.0.4-FP1 builds on the fixes previously released, addresses customer-reported issues, and addresses issues found internally by Nexenta engineering since the July 2015 release of NexentaStor 4.0.4.

What's New in 4.0.4-FP1?

The following changes and enhancements in 4.0.4-FP1 are worth highlighting:

Auto-Sync

Reliability and Functionality Extensions

NexentaStor 4.0.4-FP1 improves Auto-Sync usability and reliability. In addition to addressing a number of customer-reported issues, Auto-Sync in 4.0.4-FP1 contains a number of functionality enhancements exposed in NMV. Specifically, NexentaStor 4.0.4-FP1 adds the ability to change snapshot ownership, formally allowing the creation of clones from Auto-Sync snapshots. It also enhances failback capabilities, removing the need to do a full resync before failing back to the primary site. See NMV and the Auto-Sync User Guide for more details.

Reverse-Service Deprecated; Use Flip Direction Instead

The Reverse-Service feature is deprecated in this release. Use the Flip Direction feature instead to restore datasets.

Chassis Management

NexentaStor 4.0.4-FP1 adds chassis management for the following storage enclosures:

- Quanta JB9 FAB-5 controllers
- SanDisk InfiniFlash IF-100

ZFS File Delete Scalability Improvements

NexentaStor 4.0.4 included a set of changes that improved the product's ability to handle large-scale delete operations. NexentaStor 4.0.4-FP1 includes additional enhancements related to large-scale parallel delete operations. Based on internal benchmarking and early customer feedback, these changes should allow the product to seamlessly handle large-scale deletes in real-world production environments.

Enhancements in 4.0.4-FP1

NexentaStor 4.0.4-FP1 includes a number of enhancements, listed in **Table 13**:

TABLE 13: NEXENTASTOR 4.0.4-FP1 ENHANCEMENTS

Component	Key	Enhancement Description
Auto-Sync	NEX-4076	Added enhanced service flags for more options for replicating intermediate snapshots. For more details on this and other following Auto-Sync enhancements, see the Auto-Sync User Guide.
	NEX-4104	Added functionality to ensure that auto-services that replicate the same dataset cannot adversely affect each other.
	NEX-4120	Enhanced synchronization between Auto-Sync and Auto-Snap so that snapshots are appropriately deleted on the destination.
	NEX-4128	Added the ability to auto-sync a dataset from one primary site to two different DR sites.
	NEX-4129	Added multi-destination functionality to allow unique retention policies for each DR site.
Chassis Management	NEX-2799	Added chassis management support for Quanta JB9 FAB-5.
	NEX-3737	Added chassis management support for SanDisk InfiniFlash IF-100.

Resolved Issues in 4.0.4-FP1

Table 14 describes key issues known in NexentaStor 4.0.4 and resolved in FP1:

TABLE 14: NEXENTASTOR 4.0.4-FP1 RESOLVED ISSUES

Component	Key	Resolved Issue Description
Auto-Sync	NEX-2385	Resolved the issue where the Auto-Sync service could time out under certain conditions.
	NEX-4102	Corrected the behavior of method 'get_ownership' to address the error resulting in no introspection data available.
	NEX-4106	Corrected the behavior of Auto-Sync retention so that zvol snapshots are also deleted whenever a ZFS filesystem snapshot is deleted.
	NEX-4210	Resolved the condition where HA Cluster Auto-Sync could result in 'No IO in 300 seconds' error.
	NEX-4275	Resolved the condition where Auto-Sync jobs could hang when RRDaemon exceeds the maximum for an active session.
Comstar	NEX-3856	Corrected a panic due to a null pointer dereference in the Fibre Channel Target (fct) module.
HA	NEX-3767	Resolved the condition where RSF Heartbeat activity on 4K sector drives created alignment error messages.
	NEX-3769	Resolved the condition where systems with two or more pools with similar names could be susceptible to unintended LU deletions upon failover.
	NEX-3951	Created a global variable to enable/disable LUN rather than target to resolve a potential Reservation Conflict panic condition.
Kernel	NEX-1961	Addressed the reported mismatch for L2ARC space use.
	NEX-3878	Corrected the invalid-address kernel panic in nvlist_copy_pairs from snmpd while exporting a zpool.
	NEX-3988	Corrected the issue that had single device faults potentially result in full system outage.
	NEX-3997	Resolved the issue of attempting to retire a failing or faulty drive potentially resulting in a BAD TRAP panic.
	NEX-2966	Corrected the condition on busy NFS servers where the Network Lock Manager (NLM) might not release deleted files quickly.
	NEX-3311	Addressed the potential zpool export command hang caused by a held exported_lock.
	NEX-3717	Resolved the issue where Toshiba THNSNJ96 SATA SSD was not recognized upon hotplug.
	NEX-3890	Resolved the condition where users performing multiple parallel deletions of very large files built with small record sizes could see performance degradation during the delete.

Component	Key	Resolved Issue Description
	NEX-4383	Added a tunable to allow ddi_log_sysevent to drop events when the event queue is full, in order to avoid possible I/O hangs.
	NEX-4506	Resolved the issue where 16K devices could fault when being added as spares.
NMC	NEX-3076	Added an NMC "-s" option to specify serial number, and amended related documentation for consistency with 3.x releases.
NMS	SUP-801	Resolved the issue where NMS could not start due to a possible infinite loop in the NZA scheduler.
NMV	NEX-3511	Resolved the condition where users could encounter an ACLCollector.pm error when editing CIFS settings on folders.
Protocols	SUP-672	Resolved the condition that caused the Microsoft Management Console listing of connected clients to load very slowly.
	NEX-4053	Resolved the issue where "DIR" commands issued on a Windows client could hang when using the SMB2 protocol.
	NEX-1999	Resolved the intermittent panic from SMB2 session management.

Known Issues in 4.0.4-FP1

Known issues for 4.0.4-FP1 is the union of all known issues for FP5 and issues resolved in FP2 onwards.

Upgrading to the Latest 4.0.4 FixPack

Upgrading to 4.0.4 will upgrade NexentaStor to the latest FixPack. To begin the upgrade process, first read the following information, and then use the upgrade instructions that apply to your needs:

- 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

- **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 the 4.0.4 release before upgrading the latest 4.0.4 FixPack. This information is available in the Upgrade sections in the NexentaStor 4.0.4 Release Notes.
- **Review the Hardware Components List** (HCL) to ensure that your current hardware is compatible with upgrading to the latest FixPack.
- **Ensure that you don't have any 3rd-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.

Frequently Asked Questions About Upgrading

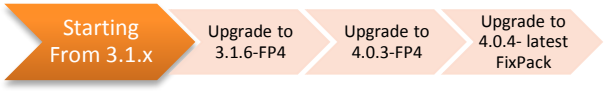
Version?	**Question**	*How do I know which NexentaStor version I currently have installed?*
	Answer	To determine the NexentaStor version you currently have installed, use the following command at the `nmc` prompt: • `nmc:/$ show appliance version`
Availability?	**Question**	*Do services and volumes remain available to clients during the upgrade and required restart?*
	Answer	During the upgrade, NexentaStor services and volumes remain available to network clients. During the required system restart after upgrading, however, NexentaStor services are not available; therefore, we recommend that you schedule the upgrade and restart during a scheduled system maintenance window.
New ID?	**Question**	*What if I'm upgrading NexentaStor onto a new machine or a system with significantly different hardware?*
	Answer	If your machine ID has changed, visit the Customer Portal or Partner Portal and get a new License Key. To do so, you'll need to provide: • The old license key • The sales order that applies to the old license key • The new machine ID
3rd Party Apps?	**Question**	*Can I upgrade with third-party applications on my NexentaStor appliance?*
	Answer	You might have third-party packages installed if you changed repository sources on your NexentaStor appliance. *Upgrading with third-party packages installed on NexentaStor will result in the loss of components that are not included with the NexentaStor build.*
Upgrade After Rollback?	**Question**	*Can I roll back NexentaStor to a previous version after upgrading to the latest FixPack?*
	Answer	You can roll back to a previous 4.0.x release; however, we do not recommend rolling back to 3.1.6-FP4 after upgrading to the latest FixPack on a production system. In particular, if you upgrade the volume version, rollback to 3.1.6-FP4 will not be possible.
No Internet?	**Question**	What if I don't have an Internet connection?
	Answer	If you do not have an Internet connection and want to upgrade NexentaStor, contact support@nexenta.com.

Upgrading From 4.0.x

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

Upgrading From 3.1.x

Upgrading NexentaStor from version 3.1.*x* to the latest 4.0.4 FixPack 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 the Latest 4.0.4 FixPack

And finally, upgrade to the latest FixPack:

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

Note: NMV for 4.x is now accessed at port 8457.

What to Expect During Upgrade

The instructions in this section show the basic upgrade processes from the most common starting points; however, depending on your previous installation and configuration, you may encounter additional configuration questions. We've addressed the most common ones here:

Cleanup the upgrade caches? Selecting Yes creates a rollback checkpoint, which is useful if you need to roll back to the installation prior to upgrading. You can view a list of available check points by using the `show appliance checkpoint` command.

Disabling and restarting multi-NMS? Upgrading NexentaStor requires that multi-NMS is disabled and restarted.

Is your hardware certified? Use the Hardware Certification List (HCL) to ensure that your hardware is compatible with NexentaStor. Using incompatible hardware may cause unexpected results and may also void your license. If your existing hardware is not included in the HCL, contact Nexenta Support.

Reboot the system? Yes, to complete the upgrade process, you'll need to reboot the system into NexentaStor. You can continue to work in a previous version—for example, if you have a process running that hasn't completed; however, rebooting into NexentaStor is required to complete the upgrade process.

For additional information about upgrading NexentaStor, see the NexentaStor 4.0.4 Release Notes.

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:

1. SSH to the system.
2. Log in to bash and type:
   `option expert_mode =1`
   `!bash`
3. Type:
   `sharectl set -p nfsmapid_domain=<domain> nfs`