Nexsan Unity Release Notes, Firmware 7.3.2

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Features, Enhancements, and Resolved Issues by version number

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Notes

• We recommend that firmware updates be done during periods of light activity.

• Certain changes of a proprietary or cosmetic nature are not necessarily listed.

• Customers upgrading to Unity version 6.x from a release prior to Unity 5.0, or who do not have the new HTML5 UI enabled in a Unity 5.x release, will NOT have the new HTML5 user interface enabled by default.

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Unity 7.3.2

Features and enhancements in 7.3.2

Features and Enhancements	Description
Replications setting	The number of concurrent async replications permitted on a controller can be set by the user.
Resolved issues	• An absent (or unutilized) SAS card in a PCIe slot no longer produces a SAS layer error in Unity. • Prevention of storage pools from entering a suspended state during SAS HBA IOC resets.

Unity 7.3.1

Features and enhancements in 7.3.1

Features and Enhancements	Description
LUN-level UNMAP	Unity administrator can control the UNMAP setting at the LUN level, independently of VAAI.
Object store erasure coding	Unity supports the option to support erasure coding on an object store. By default erasure coding is enabled. When enabled, the user can choose between one or two datasets for erasure coding parity.
Resolved issues	• A file system owner is not always set to root which causes ambiguity when setting up permissions. • Logging in to the console as nxadmin works consistently. • Running peer command as nxadmin works consistently. • Maximum LUN size value no longer gets overwritten during an upgrade. • In some scenarios, a dataset with software encryption enabled may not display the replication button. It has been resolved. • Snapshots can be taken on datasets that have no schedule enabled.

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Unity 7.3

Features and enhancements in 7.3

Features and Enhancements	Description
Multiple object store support	Enhanced from single, Unity can now create multiple object store instances, allowing administrators to better separate/segregate data and the access to it.
Deduplication	Unity's new deduplication feature can save considerable disk space, especially when many files contain identical or very similar data blocks. Built with flexibility and ease of use, it can be enabled at the storage pool level as well as for individual file systems and LUNs.
Improvements for scrub mechanism	• Configuration enhancements in Unity allow for different scrub types that can run on a pool. The three mechanisms include: • Full , scrubs data and metadata • Metadata , scrubs metadata only • Incremental , scrubs the newly allocated blocks since last full scrub • A scrub operation can be paused / resumed / canceled. • Via CLI ONLY, the user can perform a scrub uniquely on the reported blocks with errors. • The scrub and resilvering settings have been adjusted for better performance
SMB improvements	The SMB module has been improved, allowing the user to control (via CLI) which authentication protocol to use: Kerberos and/or NTLM. Unity enables both options by default, and disables DES/RC4 options by default for security reasons. The user can change the options via CLI by using the SMB service property.
Customer generated certificates	Added support in Unity to install a customer generated certificate for an object store, as well as for Unity GUI access.
Introduction of the U2G424 Expansion	This new Unity expansion hardware includes the following features: • Support for up to 24 drives (HDD or SSD) • Up to 720TB raw capacity in 4U • Dual-port SAS for high availability • Enterprise grade redundant and hot-swappable PSUs, I/O modules and fans

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Features and enhancements in 7.3 (continued)

Features and Enhancements	Description
Performance and stability improvements	• Unity will now prioritize block allocations from the newly added volumes into a pool. This allows pools that are being expanded with new volumes to continue servicing the write operations without a performance impact. Newly added volumes within the pool will host, over time, the same amount of data as the existing volumes, thereby keeping all volumes balanced. • A performance fix has been implemented, as previously in a certain context the import of pools could take longer than expected, caused by a delay in synchronizing the content of a cache file between nodes. • Previously, the quota could not be changed to a smaller number than initially set; this has been resolved by allowing the quota to be changed to a number that is equal to or greater than the reserved space.

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Unity 7.2

Features and enhancements in 7.2

Features and Enhancements	Description
Unity NV4000 support	The Unity NV4000 is a 4U 24-bay storage system designed to handle diverse and mixed workloads with flexibility, scalability and performance; while meeting the demands of both physical and virtual environments.
Cloud Connector	• Offers support to synchronize files/directories within Unity file systems with various cloud providers (AWS S3 buckets, Azure blob and files, Unity Object Store); • The cloud connector feature offers an easy way to configure which file systems synchronize with their cloud storage counterpart; it also provides the possibility to launch a synchronization operation manually as well as through a schedule. Results of an operation can be observed through comprehensive logs
SMB Access Audit	Audit of files access is now available on Unity. This feature allows the administrator of the system to see what files are being accessed through SMB protocol, and by whom.
Object Store and Object Lock	Unity now prevents deletion of the Object Store pool when there are buckets with object lock enabled.
Improvements for large pools	• Added parallel pool import/export • The resilvering operation will restart if multiple disks are having failures • Added support to scrub only the reported error blocks
Assureon Client on Unity	Added support to allow the user to specify the type of synchronization to run.
Addressed technical debt	Review of software code for optimized designed, performance and maintenance.

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Unity 7.1

Features and enhancements in 7.1

Features and Enhancements	Description
Immutable snapshots – scheduling in CLI	Ability to create immutable snapshot on a configured schedule, in the command line interface (CLI).
MFA Support – in CLI	Multi-Factor Authentication is now supported on Unity. This feature enhances security by verifying user identity, establishing device trust, and securing a connection to company networks and applications.
File and Volume System Encryption	Allows for the creation of encrypted file systems and volumes. File System Encryption will encrypt file and volume data, file attributes, ACLs, permission bits, directory listings, FUID mappings, etc.
SMB encryption	Provides SMB data end-to-end encryption and protects data from eavesdropping occurrences on untrusted networks. Offers an end-to-end privacy and integrity assurance between the file server and the client, regardless of the networks traversed.

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Unity 7.0.4

Features and enhancements in 7.0.4

Features and Enhancements	Description
Support for the new Unity NV6000 platform	UnityNV6000 is a universal system designed to handle diverse mixed workloads, with flexibility, scalability and performance to meet the demands of both physical and virtual environments.
Support for SAS HBA	Broadcom 9500-8e and 9500-16e
Support for ATTO 10G Ethernet	Fastframe 3, N322, 10T - RJ45, and 10S - Fiber
Addressed technical debt	Review of software code for optimized design, performance, and maintenance.

Resolved issues in 7.0.4

Defect	Description
Potential memory leak in the component that loads the disk information	The memory leak issue has been resolved.
Replication may fail due to uncompressed capacity measured against the quota size	The replication issue has been resolved.

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Unity 7.0.3

Features and enhancements in 7.0.3

Features and Enhancements	Description
Improved scrub mechanism	The improved scrub mechanism avoids memory pressure and lock contention on large pools.
Netlogon RPC sealing	The added support for Netlogon RPC sealing relieves outages If using CIFS.

Resolved issues in 7.0.3

Defect	Description
The UI might not load properly if resilvering is in process	The UI loading issue during resilvering has been resolved.
Copying an empty sparse file (unmodified shortcut) within the same file system might not trigger a download of the content	This release fixes the copying of an empty sparse file. (Assureon client on Unity)
Using hard links within SMB might trigger a memory corruption	The memory corruption issue has been resolved.
OS backup operation causes potential system crash	The OS backup operation issue has been resolved.
Modified shortcuts are not archived under proper rules	This release fixes the modified shortcuts. (Assureon client on Unity)
Moving an empty shortcut does not trigger re-archive, Assureon server does not record location transaction	This release fixes re-archive and transaction registry on empty shortcuts. (Assureon client on Unity)
Replication may fail due to uncompressed capacity measured against the quota size	The replication issue has been resolved.
Pool export can take a very long time if the read cache is full	The pool export issue has been resolved.
Directory policies are not applied correctly on updated shortcuts	This release fixes directory policies on updated shortcuts. (Assureon client on Unity)

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Unity 7.0

Features and enhancements in 7.0

Features and Enhancements	Description
NEW Unity products: NV10000	The Unity NV10000 product introduces all-flash NVMe capabilities to the Unity platform, offering optimal performance, capacity and flexibility. The NV10000 includes multi-protocol support (File, Block and Object) with enhanced security features. Enhanced performance includes throughput of 20+GB/s. Improved connectivity options include 100GbE support.
Object Storage (S3) and object locking	This release introduces the object storage, based on the S3 protocol as well as object locking support, enabling bucket or object level protection for a specified retention period to create immutable copies of data. This allows enterprises to address compliance, regulatory, and other data protection requirements.
Immutable snapshots	This release introduces support for an immutable file system and LUN snapshots for data protection. This provides lock-down point-in-time copies of data for recovery to a previously saved copy of the data.
Support for 25GbE HBAs	To support 25Gb Ethernet connectivity on Unity, the Intel® XXV710 dual-port Ethernet Network adapter was tested and qualified, in addition to 1 | 10 | 40 GbE HBAs.
Support for QLogic® Gen 6 Fibre Channel HBAs	This release includes support for the QLogic QLE2672/QLE2742 Series FC cards, as a replacement to Nexsan's current 16Gb/32Gb FC HBA offerings.
Persistent L2ARC	The persistent L2ARC feature allows the system to persist its metadata structure to be able to recover the L2ARC content after a reboot or cache device remove or add operation. This significantly eases the impact a reboot has on read performance on a system with large caches.
UNMAP and TRIM for SSD storage	This feature allows the system to support TRIM and UNMAP commands to the underlying storage when files are deleted. This can be configured at the storage pool level as either on-demand or auto. Note: This feature will work on storage pools that contain SSDs which support UNMAP and TRIM.

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Features and enhancements in 7.0 (continued)

Features and Enhancements	Description
User Interface Improvements	Further support of the HTML5 interface has been added as improvements: • IP-based restrictions for file systems • Self-Encrypting Drive (SED) support for E-Series behind Unity • Asynchronous replication: Site and Pool Promotion and Demotion • Several performance monitor improvements
Assureon Client on Unity (ACoU) performance and scalability improvements	This release includes enhancements and fixes for ACoU, including (but not limited to): • Increased read performance, by adding minimum read ahead support • Improved the shortcutting mechanism to shortcut files faster • Improved the archiving mechanism in error conditions • Improved handling of heavy loads Also, a potential race condition that could happen in some circumstances while files were being archived, has been resolved.
Asynchronous Replication improvements	The asynchronous replication mechanism has been improved to replicate a large number of datasets at a higher speed (it can go up to 10x faster). This is achieved by improved thread management and more optimized allocation of resources. Also, the dataset will be sent across the wire compressed if it has the compression feature enabled.

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Resolved issues in 7.0

Defect	Description
Potential memory leak when the Unity system compares snapshots on large datasets	This release fixes a potential memory leak that can be generated while comparing snapshot changes for large datasets.
Unity system joined to an Active Directory subdomain	Fixed several issues reported while the Unity system is joined to a subdomain within an Active Directory environment.
Potential deadlock caused by zvol devices	This release fixes a potential deadlock that can be triggered when using zvol devices in a pool.
SMB/IDMAP may not resume whensystem is connected to an unstable AD environment	An issue that may cause the SMB/IDMAP modules to not resume functionality in an unstable AD environment has been resolved.
SMB server unable to serve more requests due to a high number of sessions	A potential issue that can cause the SMB server to stop serving requests due to a high number of sessions has been resolved.
NFS server can stop working when querying for a group membership	Resolved an issue when an NFS server stops working while fetching the group membership, in the event that a group member user for a user does not have a group ID number.
High CPU usage when clients query for DFS information	This release resolves the high CPU usage when clients are continuously query the system for DFS information.
Resilvering operation may not complete	An issue that caused the resilver process to keep restarting has now been resolved.

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Unity 6.1.2

Enhancements in 6.1.2

Features and Enhancements	Description
Support for the Nexsan BEAST Elite	The Unity system can now be expanded with the BEAST Elite and BEAST Elite F storage platforms. The BEAST Elite and Elite F storage platforms support up to 60 drives in 4U. The BEAST Elite supports up to 16TB drives, and the BEAST Elite F supports QLC NAND technology.
Asynchronous Replication: Space validation enhancements	This release includes the following enhancements to the Asynchronous Replication's space validation: • For incremental replication streams only, the Unity system now provides an option to ignore notification errors for insufficient disk space on the secondary (or remote) Unity system when replicating. This option is disabled by default, but it can be enabled for each storage pool or dataset. For more information, please contact Nexsan Technical Support. • For full replication streams, the Unity system now considers the size of the replicated data on the remote site, if it exists, as well as available disk space. If the sum of the size of the data and available disk space in the remote storage pool is greater than the data to be replicated, the Unity system will allow the replication stream to proceed.
Updates to the U2G460 storage expansion	These updates were made to the U2G460 storage expansion: • We qualified a new Seagate 1.6TB SSD for both Read and Write FASTier cache on the U2G460. • We qualified the latest system firmware for the U2G460. The firmware includes several fixes that improve overall stability.
Nested share names can start with a numerical character	The Unity HTML5 UI now allows you to start (nested) share names with a number — for example, "23_emp". This setting is disabled by default; to enable it, please contact Nexsan Technical Support.
Automatic Emulex® driver selection for Emulex Gen 6 Fibre Channel and ATTO 16/32G FC HBAs	The Unity system now automatically applies the appropriate Emulex driver depending on the HBA installed.

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Enhancements in 6.1.2 (continued)

Features and Enhancements	Description
Support for Netlogon with secure channel when connecting to a Microsoft Active Directory domain controller	The Unity 6.1.2 release includes support for Netlogon with secure channel when connecting to a Microsoft Active Directory domain controller. Note that due to a vulnerability in the Netlogon Remote Protocol (see https://msrc.microsoft.com/update-guide/en-US/vulnerability/CVE-2020-1472), Microsoft will enforce Netlogon with secure channel between member computers and Active Directory domain controllers beginning in February 2021.
Support for allowing bypass directory traverse checking for users/groups	You can now enable bypass directory traverse checking for CIFS shares in situations where a (nested) share has file system and share permissions for a certain user, but the parent folder of the nested share does not have the relevant user permissions. When bypass directory traverse checking is enabled for a user/group, the user can access a nested share, regardless of the user permissions configured at the parent-level. With this feature disabled, the only way for a user to access the share is to manually apply file system permissions, which may also give the user access to the parent folder. The `smbserver` nxadmin CLI command includes options and settings to enable and configure bypass directory traverse checking. For more information on how to use the new options, please contact Nexsan Technical Support.

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Resolved issues in 6.1.2

Defect	Description
ACoU archiving may not resume under specific circumstances	Archiving may not resume when ingestion is paused on the Assureon server while the archive queue is full. This has been resolved.
MacOS Big Sur and read hang issues with CIFS shares	Reading a CIFS share on the Unity using the Finder application in MacOS Big Sur may result in a hang issue. This is due to the way MacOS Big Sur sends read requests to SMB servers; this has been resolved.
Failing drive may cause Clustering issues	Under specific circumstances, a failed or failing disk drive may cause the Unity's clustering mechanism to go into Broken (unsafe) mode. This has been resolved.
Asynchronous Replication fixes	The Unity 6.1.2 release includes these fixes to the Asynchronous Replication mechanism: • When a user initiates a Site Failover, the Unity system may not pause (stop) scheduled replications while the site failover mechanism is in process. This may result in the final data replication process, which occurs at the end of site failover, to fail due to data being out of sync between the primary and secondary sites. • When replication is interrupted for any reason while nearing completion, the Unity system may attempt to resume the replication with an empty stream; this may result in the secondary Unity system rejecting the replication stream, and the primary system attempting to resend it at 60 second intervals.
Log package may fail to collect system fault logs	Under specific circumstances, the Unity system's log packaging mechanism may fail to collect system fault logs. This issue has been resolved.

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Unity 6.1.1

Enhancements in 6.1.1

Features and Enhancements	Description
ACoU enhancements	This release includes enhancements and fixes to the restore feature in the Assureon Client on Unity (ACoU), including (but not limited to): • Added the ability to restore to a point in time. • Added the ability to skip, overwrite, or rename files that already exist. • Added new restore flags including: /verbose, /FileSystemNames, and /prefix. (Note that these flags are available in the Assureon Windows Client). • Several ACoU restore flags/commands were renamed to match equivalent options/settings in the Assureon Windows Client.
Support for Emulex Gen 6 Fibre Channel HBAs	This release includes support for the Emulex LPe31000/LPe32000-Series FC cards, as an alternateoption to Nexsan's current FC HBA offerings. In addition, we successfully tested and qualified the Emulex Gen 6 firmware with the ATTO 16/32G FC HBAs currently offered on the Unity platform. The Emulex Gen 6 firmware improves the performance and stability of the ATTO 16/32G FC cards. For more information, please contact Nexsan Technical Support. • The cloud connector feature offers an easy way to configure which file systems synchronize with their cloud storage counterpart; it also provides the possibility to launch a synchronization operation manually as well as through a schedule. Results of an operation can be observed through comprehensive logs
Usability enhancements to the HTML5 UI	The SMB client might not be able to access files when thThese enhancements were added to the HTML5 UI in this release: • The Unity HTML5 UI now allows you to include an underscore (_) in (nested) share names. By default, the ability to specify share names with an underscore is disabled; to enable this functionality, please contact Nexsan Technical Support. • The Unity HTML5 UI now allows you to specify file system and (nested) share names with up to 50 characters; the previous limit was 16.

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Resolved issues in 6.1.1

Defect	Description
ACoU fixes	The Unity 6.1.1 release includes these fixes to the Assureon Client on Unity (ACoU): • If a folder is deleted during ingestion, ACoU will no longer terminate the archive job. • A Java exception causing some archive jobs to fail has been resolved.
Windows Computer Management and Unity file systems	Managing a Unity file system using Windows Computer Management adds miscellaneous entries to the properties of the file system, which causes the file system to no longer be displayed in the Unity UI. This may also prevent some Unity services from restarting after a system reboot. This has now been resolved.
Upgrading to a 6.x FW release may cause issues with pool scrub schedules	A time synchronization issue with pool scrub schedules was noted after upgrading to a Unity 6.x release on some Unity systems. This has been resolved.
NVDIMM power management unit timeout issue	An issue with the timeout functionality of the NVDIMM power management unit resulted in Unity removing the NVDIMM from the corresponding pool(s). This has been resolved.
Locked files not displaying in Microsoft Management Console	Some locked files on the Unity may not appear in MMC; this has been resolved.
Error modifying file system properties in the Unity UI	Modifying specific file system properties in the Unity HTML5 UI may result in an error; this has been resolved.
Issues with syslog logging mechanism for firewall traffic	An issue with the syslog configuration for logging firewall traffic was noted. This has been resolved.

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Unity 6.1

Enhancements in 6.1

Features and Enhancements	Description
NEW Unity platforms: Unity7900 Unity3300	This release introduces the new Unity7900 and Unity3300, the next generation of the trusted Unity series with more capacity and over 3x improvement in IOPs and 1.5x increase in throughput. Other architectural enhancements include optimizations for all-flash configurations and high speed connectivity access with 32G FC and 40GbE. The Unity7900 also includes a new 16GB NVDIMM (and power management unit) that supports higher-speed DRAM access in the same form fit and function as existing NVDIMM units.
Second generation of the US460 Expansion: the U2G460	This release introduces the second generation of the US460 Expansion, the U2G460. Highlights of the U2G460 platform include: • Support for up to 60 drives - available in packs of 20, 40 or 60 HDDs, with corresponding number of FASTier cache SSDs populated in the front bay of the new Unity7900 or Unity3300 • Up to 840TB raw capacity in 4U • Dual-port SAS for high availability • Enterprise grade redundant and hot-swappable PSUs, I/O modules and fans
Performance optimizations for all-flash configurations	This release includes OS-level tunings that provide performance increases on all-flash systems (using SSD media).
ACoU performance and scalability improvements	Both the performance and scalability of the Assureon Client on Unity (ACoU) have been improved in this release with several enhancements and fixes, including (but not limited to): • Improved and faster handling of file delete operations to avoid missed requests when a batch delete is initiated. • Reduction in CPU usage by Shortcut jobs, which allows for more CPU cycles for accessing shortcuts, archiving, and other operations. • Improved handling of cache files in memory and on disk, including keeping the last used cache files in memory to improve overall performance. • Support for monthly scheduled jobs.
Removal of 16-character limitation on passwords for local users	Password for local user accounts can now contain more than 16 characters.
Support for LDAP Channel Binding and LDAP Signing on AD	This release includes support for LDAP Channel Binding and LDAP Signing on Active Directory. Microsoft will enforce these security changes on AD in March 2020, per the Microsoft Security Advisor - ADV190023; for more information, see https://portal.msrc.microsoft.com/en-us/security-guidance/advisory/ADV190023.

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Resolved issues in 6.1

Defect	Description
Potential kernel crash on high I/O workloads in All Ports All LUNs configurations	This release resolves a potential kernel crash during high I/O workloads in APAL configurations.
NFS service properties overwritten on FW upgrades	Specific properties on the NFS service were overwritten during a FW upgrade. This issue has been resolved.
NIS service in maintenance mode after FW upgrade	Under specific circumstances, the Network Information Service on Unity went into maintenance mode following a FW upgrade. This has been resolved.
SMB server unable to authorize new sessions when multiple incomplete logon requests exist	This release fixes a potential issue where the SMB server on Unity is unable to authorize additional sessions when multiple SMB logon requests remain incomplete.

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