# Nexsan Unity Release Notes, FW 6.1.2

Firmware Release for Unity Storage Systems

**Release Date**: December 2020

## Contents

**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 customers 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; for more information, see The move to HTML5.

## Unity 6.1.2

### *Enhancements in 6.1.2*

The following enhancements are included in this release:

| Enhancement | 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. |

| Enhancement | 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. <br><br> 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. <br><br> 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. <br><br> 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. |

## Resolved issues in 6.1.2

The following notable issues have been resolved in Unity 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:<br><br>• 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.<br><br>• 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. |

## Unity 6.1.1

### *Enhancements in 6.1.1*

The following enhancements are included in this release:

| Enhancement | 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 alternate option 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 . |
| Usability enhancements to the HTML5 UI | These 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 was16. |

## Resolved issues in 6.1.1

The following notable issues have been resolved in Unity 6.1.1:

| Defect | Description |
|---|---|
| ACoU fixes | The Unity 6.1.1 release includes these fixes to the Assureon Client on Unity (ACoU): <br><br>• If a folder is deleted during ingestion, ACoU will no longer terminate the archive job. <br><br>• 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. |

# Unity 6.1

## *Enhancements in 6.1*

The following enhancements are included in this release:

| Enhancement | Description |
|---|---|
| NEW Unity platforms:<br>Unity7900<br>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.<br><br>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:<br>the U2G460 | This release introduces the second generation of the US460 Expansion, the U2G460. Highlights of the U2G460 platform include:<br><br>• 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<br><br>• Up to 840TB raw capacity in 4U<br><br>• Dual-port SAS for high availabilityy<br><br>• 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):<br><br>• Improved and faster handling of file delete operations to avoid missed requests when a batch delete is initiated.<br><br>• Reduction in CPU usage by Shortcut jobs, which allows for more CPU cycles for accessing shortcuts, archiving, and other operations.<br><br>• Improved handling of cache files in memory and on disk, including keeping the last used cache files in memory to improve overall performance.<br><br>• 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. |

| Enhancement | Description |
|---|---|
| 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. |

## Resolved issues in 6.1

The following notable issues have been resolved in Unity 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. |

## Unity 6.0.1

### *Enhancements in 6.0.1*

The following enhancements are included in this release:

| Enhancement | Description |
|---|---|
| The Home Directories feature now includes a confirmation popup for archiving user Home Directories | When you remove a group of users from a Home Directory, Unity now prompts you to confirm this action and specify whether you want to archive Home Directories for all users in the group or specific users only. |
| ACOU performance and scalability improvements | Assureon Client on Unity performance and scalability have been improved by adding more scanning threads for archiving files in real time and for synchronizations. Also, a conflict between file system and archiving events that had caused extremely slow archiving has been resolved. |
| ACOU load balancing | The load balancing feature was added to archive files and ACLs (Access Control Lists) across all available Assureon servers. |

### *Resolved issues in 6.0.1*

The following notable issues have been resolved in Unity 6.0.1:

| Defect | Description |
|---|---|
| ACOU not displaying real-time archiving jobs and some shortcut jobs | A defect was resolved that caused archiving jobs not to show any stats for real-time archiving and in some cases failed to show the shortcut job. |
| Archiving exceptions during processing of ACLs | Exceptions encountered during processing of ACLs (Access Control Lists) prevented archiving jobs from completing. This has been resolved. |
| Potential memory leak when the Unity system is connected to an unstable AD environment | An issue causing a memory leak in unstable AD environments has been resolved. |

## Unity 6.0

### *Enhancements in 6.0*

Here is a summary of the new features and enhancements included in this release:

| Enhancement | Description |
|---|---|
| Home Directories | The Home Directories feature provides a wizard that enables you to automatically create a home folder for each user in the associated group on a client system. The Home Directories wizard steps you through adding administrators and user groups, and then instantly creates home folders for every user in the assigned user group. The feature requires that Unity and the client system be configured to use Active Directory for authentication. To add a file system for home directories, click **Storage > Home Directories**. |
| Fast Ethernet connectivity, up to 40 GbE | To support faster Ethernet connectivity on Unity, we tested and qualified the Intel® XL710-QDA2 dual-port Ethernet Converged Network adapter, with supported speeds of up to 40 GbE. |
| Firmware updater and Performance monitor in HTML5 | The Unity Firmware updater has been converted to the HTML5 UI format. Click **System > Check for Updates**.<br><br>Also, the Unity Performance Monitor now displays live and historical performance information in graphical format in the HTML5 UI. The Performance Monitor provides a visual display of built-in performance counters, featuring graphical and tabular views of the data. Click **System > Performance Monitor**. |
| Improvements for Assureon Client on Unity (ACOU), version 2 | We made the following enhancements for using the Assureon Client on Unity:<br>• client triggered expiration (CTE).<br>• archiving Access Control Lists (ACLs).<br>• control to limit shortcutting files based on size.<br>We also made improvements to the restore shortcuts mechanism and the real time mechanism, and added various enhancements and fixes that will improve ACOU performance and stability. |
| ATTO 10GbE NIC support | We added support for the ATTO FastFrame dual-port Ethernet adapter, with both RJ45 (copper) and SFP (fibre) connectivity. |
| ATTO 16/32G FC cards firmware upgrades | We tested and qualified a new firmware version for the ATTO 16/32G Fibre Channel cards. This firmware improves performance and stability. |
| FW upgrade on the on-board SAS controllers | A new firmware version for the on-board SAS controllers was qualified on the Unity2200, Unity4400, and Unity6900 Storage Systems. The new firmware provides stability and performance improvements. |

| Enhancement | Description |
|---|---|
| BIOS v 3.1 and IPMI v3.7 were qualified | New firmware releases of the BIOS and IPMI software were qualified for the Unity2200, Unity4400, and Unity6900 Storage Systems. These new releases provide performance and stability improvements. |
| SMB/NFS joining Active Directory | This release removes the constraint to have SMB version 1 enabled on the Windows Active Directory for Unity to join the domain. |
| n-Way Sync | We made the following improvements to n-Way Sync:<br><br>• added support to assist with initial data migration by allowing the replicator mechanism to obtain data from an alternate source (such as a storage expansion) rather than the replication partner.<br><br>• resolved a potential deadlock situation.<br><br>• stability and performance improvements. |
| E-Series firmware releases qualified | We qualified and tested the following E-Series firmware releases with Unity:<br><br>• E-Series V/VT (6Gb) 1208.1 FW<br><br>• E-Series P 1304 FW |

## Resolved issues in 6.0

The following notable issues were resolved in Unity 6.0:

| Defect | Description |
|---|---|
| SMB/NFS issues resolved | We resolved the following items affecting SMB and NFS:<br>• unnecessary error reports when IPv6 is enabled on domain controllers and DNS servers.<br>• a potential problem with mounting CIFS shares on Linux using SMBv2.<br>• added support for NFS static mount and state port. |
| OS-level fork mechanism | We resolved an issue whereby the NestOS fork mechanism may cause a system hang. |
| Support for 512n and 512e drives | We added support for disk replacements using 512e on legacy systems with 512n drives. |
| Memory management improvements to resolve system hang | We added memory management improvements (ARC reap) for systems with heavy I/O. |
| LDAP password or group descriptor lengths increased to 8k | We now allow LDAP client configurations to accept searches of up to 8k in length. |
| CallHome log package | The CallHome log package feature now collects additional information to help our Support team better troubleshoot issues. |
| Improvements to SCSI component | Several improvements and enhancements were made to the NestOS iSCSI components<br>`mptsas, sd, ses` |
| NestOS tuning improvements | This release provides several new NestOS-level tuning profiles to improve system performance and stability. |
| Unity System stability | We also made various fixes to improve Unity System stability. |

# The move to HTML5

Unity 5.0 introduced our new HTML5 graphical user interface for managing your Unity deployment.

The new interface significantly reduces the number of steps typically required to complete day-to-day tasks. The transition to the new interface also eliminates dependence on Adobe Flash, which is nearing obsolescence, and takes advantage of the performance and security benefits of HTML5.

The move to HTML5 required significant redesign to simplify ease of use and to recreate the powerful features of the Flash UI. These initial releases in HTML5 include all of Unity's most popular functionality, while seldom-used features, such as Synchronous Replication, are currently NOT available, except in the NestOS CLI or the Unity classic interface. See Accessing features not yet in the new interface.

To access functionality that's not available in the Unity HTML5 interface, you can also use the Unity classic interface concurrently with the new interface (see the command to enable the new interface below). If you already have our new HTML5 UI, you can open the Flash UI in a separate browser tab or window by selecting the OPEN UNITY CLASSIC UI option from the HELP menu. This enables you to run both our classic, Flash-based and our new HTML5 user interfaces at the same time. The powerful NestOS CLI is available with either version of Unity.

► **To enable the new Unity HTML5 interface after upgrading:**

From the nxadmin CLI, enter the following command:

```
ui -c set_new
```

The Unity Classic and HTML5 graphical user interfaces operate concurrently and files are mutually compatible in either interface.

► **To open the Unity classic interface from the HTML5 UI:**

• From the **Unity navigation bar**, select **Help > Open Unity Classic UI**.

► **To revert to the Unity classic interface:**

• From a command shell, enter the following command:

```
ui -c set_legacy
```

In this case, the default Unity URL will once again open to the Unity classic UI.

## *Accessing features not yet in the new interface*

This table lists infrequently used features not yet available directly in the new Unity HTML5 interface and how to access them using the Unity classic interface or from the Unity command line.

| Feature | Where to find it |
| --- | --- |
| IP-based restrictions for file systems | ► **To access the feature:**<br>- In the Unity classic interface, expand **File Systems** properties and select **IP Restrictions**.<br>- In the NestOS nxadmin menu, enter 6, then 1.<br>For detailed instructions, see<br>- "Setting up IP restrictions" in the Unity classic online help.<br>- "Setting IP-based access restrictions on a file system" in the *nxadmin Command-Line Interface Reference Guide*. |

| Feature | Where to find it |
|---------|------------------|
| n-Way Sync | ► **To access the feature:**<br><br>- Using the Unity classic interface, under the **Site** node, click the **n-Way Sync** node.<br><br>- Using the nxcmd command-line interface, for command information enter<br><br>`nxcmd sync`<br><br>For detailed instructions, see<br><br>- "Synchronous data replication," in the Unity classic online help and user guide.<br><br>- "Sync" in the *nxcmd Command-Line Interface Reference Guide*. |
| Reports | ► **To access the feature:**<br><br>In the Unity classic interface, select **System Monitoring > Generate Reports** from the Unity toolbar.<br><br>See "Reports" in the Unity classic online help and user guide. |
| Role-based user administration | ► **To access the feature:**<br><br>- In the Unity classic interface, expand the **Unity Storage System** node, and select **User Authentication** from the properties panel.<br><br>For detailed instructions, see<br><br>- "User authentication modes" in the Unity classic online help and user guide.<br><br>- the "Site" and "Pool" sections in the *nxcmd Command-Line Interface Reference Guide*. |
| Self-Encrypting Drive (SED) support for E-Series behind Unity | ► **To access the feature:**<br><br>- In the Unity classic interface, from the **Storage Enclosures** node, select an enclosure with SED-capable hardware.<br><br>- Using the nxcmd command-line interface, for command information enter<br><br>`nxcmd storagedevice encryptstorage`<br><br>For detailed instructions, see<br><br>- "Using Self-Encrypting Drives (SEDs)" in the Unity classic online help and user guide.<br><br>- the "StorageDevice" section in the *nxcmd Command-Line Interface Reference Guide*. |
| Asynchronous replication:<br><br>- Site and Pool Promotion and Demotion<br><br>- Replication Bandwidth | *Site and Pool Promotion and Demotion*<br><br>► **To access the feature:**<br><br>Site failover (promotion and demotion):<br><br>- Using the Unity classic interface, click the context menu button on the **Site** node to open the node context menu. Select **Failover Site**.<br><br>Pool failover:<br><br>- Using the Unity classic interface, click the context menu button on the **Storage** |

| Feature | Where to find it |
|---------|------------------|
| - Offline replication | **Pools** node to open the node context menu. Select **Failover Pool**.<br><br>- Using the nxcmd command-line interface, for command information enter<br><br>`nxcmd site promote|demote`<br>`nxcmd pool promote|demote`<br><br>For detailed instructions, see<br><br>- "Performing a failover of the entire site" and "Performing a failover of a storage pool" in the Unity classic online help and user guide.<br><br>- "Site" and "SyncReplication" in the *nxcmd Command-Line Interface Reference Guide*. |
| | *Replication Bandwidth*<br><br>► **To access the feature:**<br><br>- Using the Unity classic interface, click the **Storage Pools** node for which you want to enable bandwidth throttling, and in the **Properties** panel, select the **Replication Bandwidth** tab.<br><br>- Using the nxcmd command-line interface, for command information enter<br><br>`nxcmd Replication EnableBandwidthThrottling`<br><br>For detailed instructions, see<br><br>- "Enabling bandwidth throttling" in the Unity classic help and user guide.<br><br>- "Enabling bandwidth throttling" in the *nxcmd Command-Line Interface Reference Guide*. |
| | *Offline replication*<br><br>► **To access the feature:**<br><br>For offline replication, you can use the Unity classic interface.<br><br>For detailed instructions, see "Performing offline replications" in the Unity classic online help and user guide. |
| Synchronous replication (mirroring) | ► **To access the feature:**<br><br>- Using the Unity classic interface, click the **Site node**, then the **Synchronous** tab.<br><br>- Using the nxcmd command-line interface, for command information enter<br><br>`nxcmd syncreplication`<br><br>For detailed instructions, see<br><br>- "Synchronous Replication" in the Unity classic online help and user guide.<br><br>- "SyncReplication" in the *nxcmd Command-Line Interface Reference Guide*.<br><br>Synchronous replication is available for systems configured with the appropriate hardware. |

# Contact information

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