NEXSAN

HYPER–UNIFIED STORAGE

Nexsan Unity
Upgrade Guide

Applying Upgrades to Unity

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Contents

About this document

This document describes the prerequisites, benefits, and process for upgrading to Unity 6.0 from NST 3.2, NST 4.0.x, Unity 2.0. or Unity 5.0.x.

Audience

This guide has been prepared for the following audience:

- IT system administrators
- Engineers
- Technicians
- Any qualified NST/Unity administrator.

Conventions

Here is a list of text conventions used in this document:

Convention	Description
<u>underlined blue</u>	Cross-references, hyperlinks, URLs, and email addresses.
boldface	Text that refers to labels on the physical unit or interactive items in the graphical user interface (GUI).
`monospace`	Text that is displayed in the command-line interface (CLI) or text that refers to file or directory names.
`monospace bold`	Text strings that must be entered by the user in the command-line interface or in text fields in the graphical user interface (GUI).
italics	System messages and non-interactive items in the graphical user interface (GUI) References to Software User Guides

Notes, Tips, Cautions, and Warnings

Note Notes contain important information, present alternative procedures, or call attention to certain items.

Tip Tips contain handy information for end-users, such as other ways to perform an action.

CAUTION: In hardware manuals, cautions alert the user to items or situations which may cause damage to the unit or result in mild injury to the user, or both. In software manuals, cautions alert the user to situations which may cause data corruption or data loss.

WARNING: Warnings alert the user to items or situations which may result in severe injury or death to the user.

Contacting Nexsan

For questions about Nexsan products, please visit the Nexsan support Web page, and the Nexsan Unity Documents & Online Help page. If you are unable to find the answer to your question there, please see our contact information below.

Service and support

Nexsan's Technical Services Group provides worldwide assistance with installation, configuration, software support, warranty, and repair for all Nexsan products. A variety of service and support programs are available to provide you with the level of coverage and availability your operation requires.

Nexsan Unity Documentation & Online Help page:
https://helper.nexsansupport.com/unt_downloads.html

Unity Online Help page:
https://helper.nexsansupport.com/unt_onlinehelp.html

Contact Nexsan Unity support:
https://helper.nexsansupport.com/unt_support

Worldwide Web site:
www.nexsan.com

Related documentation

The following Nexsan product manuals contain related information:

- Nexsan Unity Online Help
- *Nexsan Unity Hardware Reference Guide*
- *Nexsan Unity Hardware Maintenance Guide, Unity Next Generation*
- *Nexsan Unity Software User Guide*
- *Nexsan Unity nxadmin Command-line Interface Reference Guide*
- *Nexsan Unity nxcmd Command-line Interface Reference Guide*
- *Nexsan Unity Snapshots and Replication Guide*
- *Nexsan Unity Storage Expansion Reference Guide*
- *Nexsan Unity VMware Best Practices Guide*
- *Nexsan Unity NFS Interoperability*
- *Nexsan Unity Networking Best Practices Guide*
- *Nexsan Unity Performance Best Practices Guide*
- *Nexsan Unity Microsoft Best Practices Guide*

Overview

This document describes the prerequisites, benefits, and process for upgrading to Unity v. 6.0 from Nexsan NST and Unity Storage Systems from NST 3.2, NST 4.0.x, Unity 2.0.x, or Unity 5.x.

CAUTION:

- REPLICATED ENVIRONMENTS: If the Unity System that you are upgrading is replicated, update the remote Unity system FIRST, by logging on directly to the remote system. After you update the remote system and then connect and log on to the primary system, the Unity System (site node) for the remote Unity System will no longer display in Unity on the primary system; this is normal. The Unity System for the remote system will reappear again when you update the primary system.

- SYSTEM REBOOTS DURING UPDATE: The Unity firmware updater reboots Unity, or the controller node during the update process. For Clustered Unity Systems, the firmware updater also performs a cluster failover operation to the other node in the cluster—if the controller node you are upgrading is currently hosting a Pool Resource Group with storage pools assigned to it or both of these cluster resources.

  As a result, for Clustered configurations, client systems and applications on the network will temporarily lose connection to Unity during both the reboot and failover operations. For single controller systems, client systems and applications on the network will temporarily lose connection while the system reboots.

  Before upgrading, we recommend that you disconnect any client system with an active connection to datasets (file systems and/or iSCSI LUNs) on Unity. Also, be sure to quiesce any applications with an active connection to Unity.

Prerequisites

Use the following table to understand update prerequisites.

Attribute	Prerequisite
Firmware	NST 3.2, NST 4.0.x, Unity 2.0.x, or Unity 5.x.
Hardware	All platforms, with the exception of the discontinued Metro Cluster (NST 6000MC)
Support Eligibility	Nexsan requires a current support contract be in place. Renewal options are available. During the initial free-of-charge Unity conversion promotion, a minimal two-hour professional services charge will apply.

New in Unity v. 6.0

The following features are added in Unity v. 6.0.

- Converted the Updater user interface to HTML5

- Added the Home Directories feature

- Fast Ethernet support, up to 40GbE

- Redesigned the Performance monitor user interface in HTML5

- Assureon Client on Unity (ACOU), version 2, with client triggered expiration, support for archiving access control lists (ACLs), and several other enhancements

For details about the new features, please see the Unity v. 6.0 Release Notes:

► **To view the release notes:**

- On the Unity **navigation bar**, click **Help > About**, or

- Go to in the Nexsan Unity Documentation & Online Help Web page.

New terminology

Unity Storage System and Unity Storage Expansions

Beginning in Unity 4.x usages such as "the Unity appliance", "the site", "Unity Storage Unit", and "the Unity" were replaced by the Unity Storage System or the Unity System. Expansions are formally referred to as "Unity Storage Expansions" and not "Expanders" or "Expander Units", or "JBOD".

RAID sets

RAID sets are also referred to as "Volumes".

File Systems
The volume-like data structures which were formerly known as "shares" are now known as "file systems".

Shares
Subfolders of these file systems, formerly known as "nested shares", are now referred to as CIFS shares or shares in the strict sense, though the term nested shares may still occur as a casual descriptor when applicable.

Using these terms together
File systems may still be shared at the root level, meaning that clients on the network will likely still perceive and refer to them as shares.In documentation, the term shares will often encompass both file systems and shares *when describing aspects that apply to both types of entities when shared on the network*. The term file system will often denote that we are discussing an *administrative aspect* of the product as opposed to a *client-side experience*.

Before you begin

Make sure that IPMI settings are configured for each Unity system that you are upgrading. The IPMI interface will allow Nexsan Support personnel to remotely access Unity in the event that the system encounters an error during the update process.

► **To verify or configure IPMI settings:**

In the NST and Unity 2.0.x interfaces:

1. In the NST or Unity tree view, click the Site node.

2. Navigate down to the controllers node (under **Site > Clusters** on a Clustered system, or **Site > Controllers** on a single-controller system).

3. Select the IPMI Settings tab on the controllers node's Properties panel.

You must perform the update of Unity using the Unity Software Updater, accessible from Unity. The Unity Software Updater enables you to update Unity over an Internet connection, or from a USB key, loaded with the updated files provided by Nexsan Support. If you are upgrading from a USB key, make sure to obtain a valid USB key containing the update package from Nexsan Support before proceeding.

Typically, you update the passive controller first—with the Active/Active clustering configuration—both controllers are active, but the controller that does NOT currently have the System Management component hosted on it is referred to as the passive controller. This step is normally done automatically by the Updater, but if you would like to manually determine which node is passive, use the following procedure.

► **To determine which node is passive:**

1. In the NST or Unity tree view, click the Site node representing the clustered Unity.

2. Click the Clusters node to display its child node.

3. Click the node representing the two controllers on Unity.

4. Expand the controller node's Properties panel, by clicking the **Properties** tab.

5. Select the **Cluster Resources** tab. The **Cluster Resources** tab provides a visual representation of where each resource in the cluster is currently hosted: Controller 1 or Controller 2. The controller node where the System Management component currently resides is considered the active node in the cluster. The other node is passive.

Chapter 2

Updating Unity

The Nexsan firmware updater provides options you can use to:

- update firmware components on Unity. This also updates the firmware updater itself.
- add new features to Unity
- update the cluster license to a permanent license

Topics in this section:

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Updating to the latest firmware

The Unity firmware updater provides three methods for updating firmware:

- by connecting to the Unity license server,

- from a USB key if you do not have Internet access, or

- by uploading a file from a directory located on your network.

The firmware update you are entitled to perform on Unity depends on whether you have a maintenance plan for Unity:

- With a maintenance plan, you can update firmware components on Unity to a major release version; for example: 5.x.x to 6.x.x.

- Without a maintenance plan, you can only update firmware components to a minor release; for example: 5.0.x to .5.1.x.

For more information about maintenance plans, please contact your Nexsan Reseller or Support representative.

CAUTION: The Nexsan Unity firmware updater reboots Unity. For Clustered systems, the updater also performs a cluster failover operation to the other node in the cluster. As a result, client systems and applications on the network will temporarily lose connection to Unity during both the reboot and failover operation.

Before updating, we recommend the following:

- Disconnect any client system with an active connection to datasets (file systems and/or iSCSI LUNs) on Unity.

- Quiesce any applications with an active connection to Unity.

Note If there is an attached E-Series that also needs a firmware update, your Unity will need to be taken offline.

► **To perform a firmware update:**

1. On the **Unity navigation bar**, select **System > Check for Updates**. Unity checks system health and opens the firmware updater.
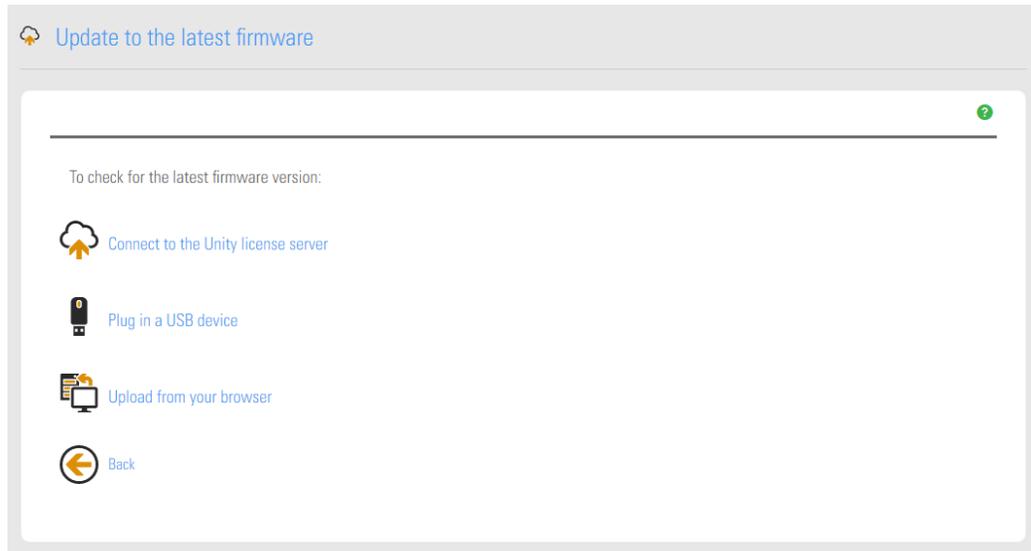
Figure 2-1: Nexsan Unity firmware updater
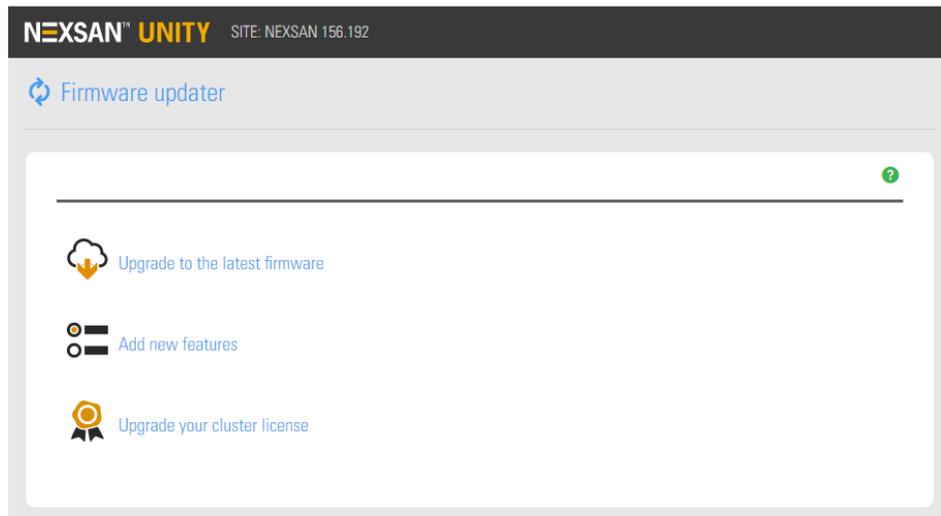
2. Select **Update to the latest firmware**.

3. Select one of the following:

- **Connect to the Unity license server** to check for updates on the Nexsan Unity license server using the Internet.

- **Plug in a USB drive** to update firmware components from a USB key loaded with the update files provided to you by Nexsan Support. Before performing the update, you must plug the USB key into one of the available USB ports at the back of the Unity chassis.

- **Upload from your browser** to browse for the update package file (.tgz) and select it from a directory on your network.

Figure 2-2: Downloading the latest firmware

The firmware updater displays the installed Unity firmware version and the latest available version.

Figure 2-3: The updater compares current and latest versions
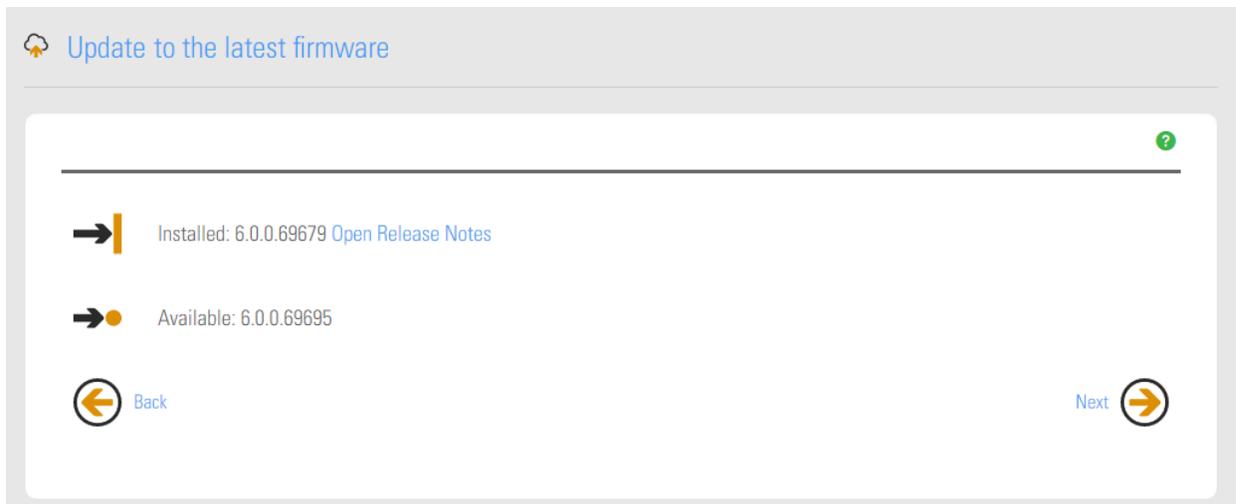
4. Click **Next** to begin the update process. Unity validates and prepares the package for installation.

5. Click **Proceed**, review the update steps, and click **Start** when you are ready.

    The firmware updater displays the steps as it performs the update. It will automatically fail

    over the resource groups on one controller and updates the other controller.

6. After successfully upgrading the first controller, the updater pauses. Before proceeding with the update of the peer controller, verify that your data (VMs, shares, LUNs) are accessible on controller 2. Click **Proceed** when you are ready to continue.

7. The updater proceeds with the update of controller 1. When the update process completes successfully, click **Restart Unity**.

    Unity prompts you to login when the restart completes

► **Related Topics:**

Adding new features on the next page

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# Adding new features

The Unity firmware updater enables you to add new features to Unity.

► **To add features:**

1. Launch the Unity firmware updater, as described in <u>Updating to the latest firmware</u> on page 12.

2. Select **Add new features**.

3. Unity displays the features currently installed in your Unity System. Click the right arrow to continue.

Figure 2-4: Viewing installed features
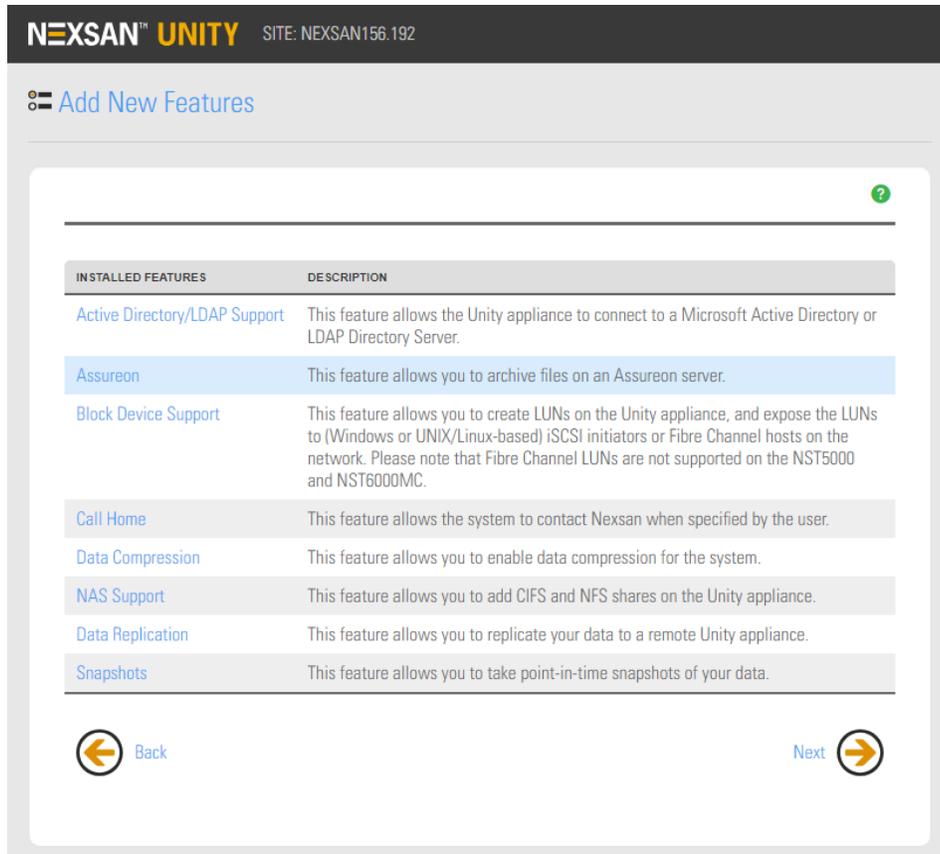
4. To check if new features are available, select the relevant feature update option:
   - **Connect to the Unity License Server** checks for new features on the Nexsan Unity Update Server.
   - **Plug in a USB drive** checks for new features from a USB key with the update files provided to you by Nexsan Support. Before performing the update, you must plug the USB key into one of the available USB ports at the back of Unity chassis.

Figure 2-5: Checking for new features
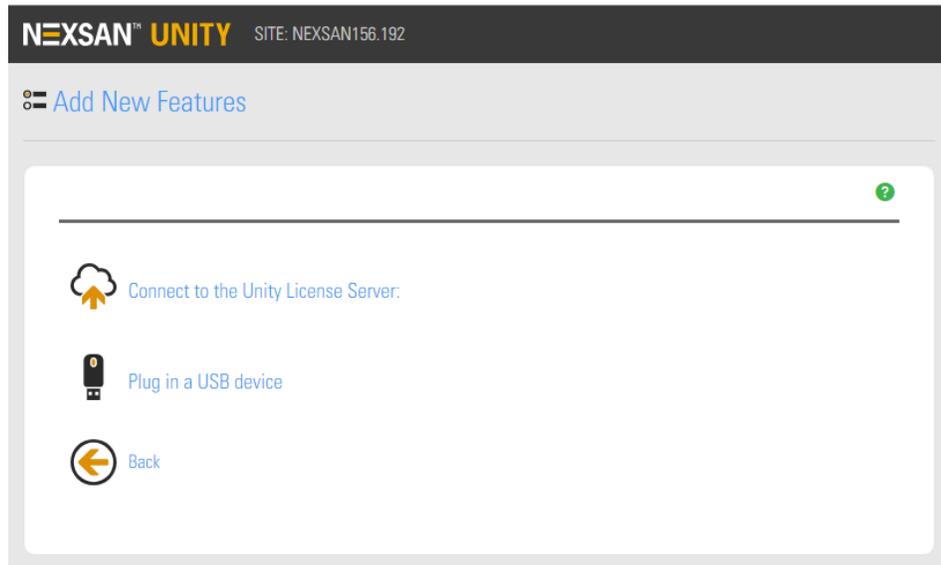
5. The Unity firmware updater verifies if new features are available on the Update Server and displays the results. Perform one of these actions:
   - If new features are found, click the right arrow to start the update process.

   - If no new features are found, click the left arrow to go back to the main screen and close the Updater.

6. When the update is complete, perform one of these actions:
   - If the new features were installed successfully, click the right arrow to start Unity.
   - If an error occurred while trying to add features, hover your mouse on the error text to view the error tool tip and try to resolve the issue accordingly.

Upgrading the cluster license

The Unity firmware updater enables you to update the type of license you purchased for Unity.

An expiration date displays if the cluster license is set to *Evaluation*, otherwise *Permanent License* displays if the system has been converted to a permanent deployment.

► **To convert a temporary cluster license to permanent:**

1. Launch the Unity firmware updater as described in <u>Updating Unity</u> on page 11.

2. Click **Update your license**.

3. Unity displays the current license status.

   If your license has expired or is about to expire, choose one of these options:

   ● <u>Connect to the license server over the Internet</u> to download the a permanent license from the Nexsan Unity License Server.

   ● <u>Plug in a USB drive</u> to read the license package file from a USB key with the update files provided to you by Nexsan Support. Before performing the update, you must plug the USB key into one of the available USB ports at the back of Unity chassis.

   ● <u>From your browser</u>: you can browse for and select the package file from a directory located on your network. By default, the firmware updater will look for a `.nxi` file.

   If you have a permanent license, no action is required. Click the left arrow to go back to the main screen and close the Updater.

4. The Unity firmware updater reads the license file from the License Server or the USB key and displays a confirmation message once the license is converted to permanent.

   Perform one of these actions:

   ● If the cluster license was updated successfully, click the right arrow to finish.

   ● If an error occurred, read the error information and try to resolve the issue accordingly.

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Appendix A

Technical supplement

The following topics provide background on how to update Unity firmware and features with which you are likely already familiar. Some sections are shared with the Unity *Software User Guide.*

Please note that, for simplicity's sake, the following sections will refer to hardware as *Unity* regardless of whether it has yet been converted from NST to Unity.

Adding the Unity update to features.xml

Notes: This section applies only to Unity Systems with no internet available, and for users conducting a conversion from NST to Unity.

These steps show how to add the Unity update option to the features.xml file on systems which cannot connect to the license server (dark sites). At each Nexsan controller which is being updated to Unity, log in as nxsuper at the command line and perform the following steps.

► **To add Unity to features.xml:**

1. Use vi or another text editor to open this file:
   `/var/opt/nest/config/node/common/features.xml`

2. Just above the closing `</features>` tag, add the line which is emphasized in the example below.

3. Save the file.

► **Example of modified file:**

```
<features>

          <feature id="AD" name="Active Directory/LDAP Support">

                              <description>This feature allows
                              Unity to connect to a Microsoft
                              Active Directory or LDAP
                              Directory Server.</description>

          </feature>

          <feature id="blockdevice" name="Block Device Support">

                              <description>This feature enables
                              you to create LUNs on Unity, and
                              expose the LUNs to (Windows or
                              UNIX/Linux-based) iSCSI
                              initiators or Fibre Channel hosts
                              on the network. Please note that
                              Fibre Channel LUNs are not
                              supported on the NST5000.

          </feature>

          <feature id="callhome" name="Call Home">

                              <description>This feature allows
                              the system to contact Nexsan when
                              specified by the
                              user.</description>

          </feature>

          <feature id="datacompression" name="Data Compression">

                              <description>This feature enables
                              you to enable data compression
```

```
                                             for the system.</description>

        </feature>

        <feature id="nas" name="NAS Support">

                                    <description>This feature enables
                                    you to add CIFS and NFS shares on
                                    Unity.</description>

        </feature>

        <feature id="replication" name="Data Replication">

                                    <description>This feature enables
                                    you to replicate your data to a
                                    remote NST
                                    appliance.</description>

        </feature>

        <feature id="snapshots" name="Snapshots">

                                    <description>This feature enables
                                    you to take point-in-time
                                    snapshots of your
                                    data.</description>

        </feature>

        <feature id="ron" name="n-Way Sync">

                                    <description>Nexsan's n-Way Sync
                                    mechanism provides file sharing
                                    services between Unity
                                    appliances.</description>

        </feature>

</features>
```

Manually activating updated branding

These steps show how to manually activate branding on a Unity system on which you have manually updated the features.xml file. This is only necessary for some cases in which the system cannot connect to the license server (dark sites).

► **Manually activating Unity branding:**

Perform the following steps and commands on the first NST-branded controller. This will cause the update to run on additional controllers, so you only need to do this once.

1. Log in to the controller at the command line as nxsuper.

   ```
   nxsuper@HostName:~# pfexec su
   nxsuper@HostName:~# /var/opt/nest/scripts/cfg_branding -c switch –b Unity
   ```

2. If you are logged in to the Nexsan Unity user interface, log out.

   `nxsuper@HostName:~#` **`/var/opt/nest/scripts/rc_resetcache`**

   `nxsuper@HostName:~#` **`/var/opt/nest/scripts/cfg_branding -c show`**

3. Verify that the output says "Unity".

4. Log back in to the Nexsan Unity user interface and verify that Unity branding appears.

Creating the features installer file

These steps show how to create a Nexsan Installer file (.nxi) containing *only the features file* and place it into a deployable archive (.tgz). This is only necessary for cases in which the system cannot connect to the license server (dark sites).

▶ **Important Notes - Read First**

- These steps assume that the modified features.xml file is at its normal location (/var/opt/nest/config/node/common/features.xml) on the system on which you are going to build the .nxi file.

- The archive (.tgz) that results from these steps will have exactly the same name as the larger NestOS update file and thus must not be confused with it. Transfer and installation of the operating system will happen prior to use of the feature file installer that you create here.

- Support Professionals (when applicable): This procedure may be carried out in house on a test system or (preferably) on the customer's system via remote session--it is up to the support professional to adapt this procedure to the context. If performed on a test system, be sure that you have matched your modified features.xml file to the customer's file.

- Once built, the .tgz file may be deployed on a USB stick or on LAN via the "Upload from your browser" feature.

- When executing the steps below, replace ESInstaller-ReleaseName_X.X.X.X.tgz with the exact name of the corresponding NestOS update file.

▶ **Building the installer file (.nxi):**

1. Log in to the NST controller at the command line as nxsuper.

2. `NestOS.HostName:~#` **`cp /var/opt/nest/config/node/common/features.xml ~`**

3. `NestOS.HostName:~#` **`tar czf Features-1.0.0.0.tgz features.xml`**

4. `NestOS.HostName:~#` **`/var/opt/nest/scripts/op Features-1.0.0.0 e`**

5. `NestOS.HostName:~#` **`gtar cvf ESInstaller-ReleaseName_X.X.X.X.tgz Features-1.0.0.0.nxi`**

The file ESInstaller-ReleaseName_X.X.X.X.tgz can now be deployed via USB stick or the LAN method.

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Nexsan Unity support:
https://helper.nexsansupport.com/unt_support

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United Kingdom patents GB2466535B, GB2467622B, GB2467404B, GB2296798B, GB2297636B