



HYPER-UNIFIED STORAGE

Nexsan Unity NDMP Configuration Guide

Firmware Version Unity v. 7.0

Regulatory Compliance

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Table of Contents

Chapter 1: About this document	5
Audience	5
Conventions	5
Contacting Nexsan	6
Notes, Tips, Cautions, and Warnings	6
Related documentation	6
Safety notices	7
Chapter 2: Before you begin	9
Chapter 3: Enabling NDMP for the Unity Storage System	11
Disabling NDMP for the Unity Storage System	12
Chapter 4: nstndmp	13

Chapter 1

About this document

This *Nexsan NDMP Configuration Guide* provides configuration information for using NDMP with Nexsan Unity.


Audience

This guide has been prepared for the following audience:

- Nexsan-certified installers, such as SEs, and Nexsan support personnel
- 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).
<code>monospace</code>	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).
<i>italics</i>	System messages and non-interactive items in the graphical user interface (GUI) References to Software User Guides
 (arrow icon)	A visual cue to indicate an action carried out by the user to accomplish a given task, or to draw attention to key information. Also used to indicate the beginning of, a step within, or what's next after a procedure.

Contacting Nexsan

For questions about Nexsan products, please visit the [Nexsan support](#) Web page, and the Nexsan Unity [Documents and Downloads](#) 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 Documents & Downloads page:
<https://www.nexsan.com/support/support-unity/>

Contact Nexsan Unity support:
<https://www.nexsan.com/support>

Worldwide Web site:
www.nexsan.com

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.

Related documentation

The following Nexsan product manuals contain related information:

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

Safety notices

Always observe the following precautions to reduce the risk of injury and equipment damage:

- Computer components and disk drives are sensitive to static discharge. Take precautions to discharge any electrostatic charge from your person before and while handling components with your hands or any tools. Use an anti-static wrist-strap.
- The system only be installed in a clean, dry environment. The operating temperature is 10° to 35° C (50° to 95° F), with operating relative humidity at 20 to 95%, non-condensing.
- Do not install hardware in an enclosed cabinet or other small area without ventilation.
- Ensure correct lifting methods are used when handling hardware. Special care should be taken when removing hardware from its packaging and positioning it into its required location. When lifting hardware, two people at either end should lift slowly with their feet spread out to distribute the weight. Always keep your back straight and lift with your legs.
- When installing the system as a rack-mounted component, ensure that all Nexsan-supplied mounting fixtures are secure. All bolts and screws should be fully tightened. Failure to comply with this may result in the unit not being fully supported in the rack and could lead to the product falling from the rack causing personal injury or falling onto other rack components.
- Ensure that the rack is sufficiently stable by having wall anchors and/or stabilizing legs, and that the floor supporting the rack has sufficient strength for the overall weight loading.
- Only a fully-trained Service Engineer is authorized to disassemble any other part of the hardware, and then only when the hardware is powered off.
- The system has multiple power connections; as a result, you must remove all power leads to completely isolate the power and always use the IEC power cords which are supplied with the system.



CAUTION: All NexsanUnity Storage Systems are hot-pluggable. However, new expansions must be powered on AFTER you connect it to the existing system.

1

Before you begin

Before you use a command in the `nxcmd` CLI, you must specify a set of parameters that enable you to connect to the relevant the Unity Storage System (using its corresponding Management Virtual IP address), log on to the Unity Storage System—as a Site or Pool Administrator or as the `nxadmin` account, and then perform the specified action.

You specify the connectivity parameters when you first use a command in the `nxcmd` CLI. During this initial usage, the `nxcmd` CLI gives you the option of saving the connectivity parameters to a configuration file on the Unity Storage System—so that you do not have to specify the parameters each time you run an initial command. If you prefer—for security reasons—you have the option to NOT save the connectivity parameters to the configuration file; but you will need to specify the parameters each time you run an initial command on the system.

► **To set the connectivity parameters for the Unity Storage System:**

1. Access the `nxadmin` CLI—see "Accessing the `nxadmin` CLI" in the *Nexsan `nxadmin` Command Line Interface Guide* on the [Nexsan Documentation & Downloads](#) Web page.
2. Type any command and specify the connectivity parameters to use for the system.
3. Press Enter.

Connectivity parameters	Description
<code>managementIP</code>	Specifies the Unity Storage System's Management Virtual IP address.
<code>authenticationType</code>	Specifies the type of user authentication configured on the system: <code>local</code> (Nexsan Unity authentication) or <code>domain</code> (Microsoft Active Directory or LDAP authentication).

Connectivity parameters	Description
<code>userName</code>	<p>Specifies the domain or local user account to use to connect to the system. The user can be a Site or Pool Administrator and/or the <code>nxadmin</code> account on the system. If the system is connected to a Microsoft Active Directory or LDAP Directory server, you must specify a valid domain account in order to configure security settings for the Unity Storage System and permission settings for file systems.</p> <p>Keep in mind that, if you specify a Pool Administrator without specifying <code>nxadmin</code> credentials, access to functions and operations will be limited.</p> <p>Note The <code>userName</code> parameter must include the domain name if the <code>authenticationType</code> parameter is set to <code>domain</code>; for example, <code>/authenticationType:domain /username:bob@domain1.net</code>.</p>
<code>userPassword</code>	Refers to the password for the user account specified in the <code>userName</code> parameter.
<code>useSSL</code>	Enables or disables SSL encryption for the connection to the Unity Storage System.
<code>nxadminPassword</code>	Refers to the password for the <code>nxadmin</code> account on the system. This parameter is optional. If you specify this parameter, the <code>nxcmd</code> CLI gives the domain or local user account, specified in the <code>userName</code> parameter, <code>nxadmin</code> access to the system.
<code>saveToConfig</code>	When specified and set to <code>true</code> , this parameter saves the connectivity properties in a configuration file on the system; all passwords are encrypted in the file. The default value for this parameter is <code>false</code> .

► **Example:**

In this example, we set the connectivity parameters for the Unity Storage System at the same time as we create a storage pool on the system:

```
nxcmd Pool Create /name:FinancePool1 /resourceGroup:one /numberOfVolumes:2
/managementIP:XXX.XXX.XXX.XXX /authenticationType:domain
/userName:bob@domain.net /userPassword:PASSWORD /useSSL:true
/nxadminPassword:PASSWORD /saveToConfig:true
```

Enabling NDMP for the Unity Storage System

The `nxcmd Site EnableNDMP` command enables the back up of data from the Unity Storage System to a backup and restore solution that supports the Network Data Management Protocol. See also `nstndmp` in the *nxadmin Command Line Interface Reference Guide*, available from the [Nexsan Unity Documentation & Downloads](#) Web page..

► **To run this command:**

1. Access the CLI command shell.
2. Type the command using the syntax provided in this topic.
3. Press Enter.

```
nxcmd Site EnableNDMP /User:<user name> /Password:<password|path>
```

Site EnableNDMP parameters	Description
/User	Specifies the name of the user.
/Password	Specifies the password or the path to the file containing the password. If you are using the path, you must put the path in double quotes.

► **Example:**

We enable NDMP for the Unity Storage System using the password for the BACKUP_ADMIN user.

```
nxcmd Site EnableNDMP /User:BACKUP_ADMIN /Password:password
```

Disabling NDMP for the Unity Storage System

The `nxcmd Site DisableNDMP` command disables back up of data from the Unity Storage System using NDMP.

▶ **To run this command:**

1. Access the CLI command shell.
2. Type the command using the syntax provided in this topic.
3. Press Enter.

```
nxcmd Site DisableNDMP
```

nstndmp

The `nstndmp` command enables you to query the NDMP (Network Data Management Protocol) service on the Unity Storage System to get the status of active sessions, terminate a session, query backup devices, and set or get the current NDMP service variables and properties.

► **To run this command:**

1. Access the CLI command shell.
2. Type the command using the syntax provided in this topic.
3. Press Enter.

See also "Enabling NDMP for the Unity Storage System" in the *Nexsan nxcmd Command Line Interface Reference Guide*.

Recommended settings

Nexsan recommends that you use the default and recommended settings for NDMP listed in this topic.

NAS name

Resolves via DNS. Set to either the name of an interface on the Unity Storage System designated for backups or the IP address of the resource group. Set the `mover-nic` property on the NAS to the IP address of the resource group or applicable Unity name.

User name and password

Set user name and password in the Unity Storage System interface.

Backup level

Nexsan Unity supports incremental backups.

Description	<p>This command enables you to query the NDMP service on the Unity Storage System to get the status of active sessions, terminate a session, query backup devices, and set or get the current NDMP service variables and properties.</p> <p>CAUTION: This command is intended for advanced users and/or for Nexsan Technical Support personnel; some options available with this command should only be executed with the assistance of a Support Engineer, or with explicit instructions provided by a Support Engineer.</p>
Controller	You must run this command on both controllers.

Syntax	<pre>nstndmp [get -p <property> [-p <property>]...] [set -p <property value> [-p <property value>]...] [show-devices] [show-sessions [-i tape,scsi,data,mover] [session id]...] [kill-sessions <session id...>] [enable -a <authentication type> -u <user name>] [disable -a <authentication type>]</pre>
Options	<pre>get -p <property> [-p <property>]...</pre> <p>This command displays information for the specified properties:</p> <ul style="list-style-type: none"> ● <code>backup-quarantine</code> Backs up the files marked as quarantined by AV. Acceptable values are <code>yes</code> or <code>no</code>. The default is <code>no</code>. ● <code>dar-support</code> Sets the Direct Access Recovery. DAR enables you to restore specific files from a backup set, instead of having to restore all backed up files, or having to read the entire backup tape/disc to locate the file(s). When using DAR, NDMP can find the exact location of a file using the NDMP file history interface, which reduces the amount of information processed and reduces recovery time. Acceptable values are <code>yes</code> or <code>no</code>. The default is <code>yes</code>. Nexsan recommends using DAR. DAR requires NDMP version 3 or later. DDAR is not supported. ● <code><altmount></code> Set <code>altmount=true</code> if you are using path names longer than 900 characters. ● <code><UTF-8></code> Set <code>UTF-8=true</code> to support Unicode variable width character encoding. ● <code>extract_acl</code> Use <code>EXTRACT_ACL</code> to extract Windows ACLs (Access Control Lists). ● <code>debug-path</code> Specifies the path where the debug log is saved. The default is <code>/var/ndmp</code>. ● <code>drive-type</code> Specifies either SystemV or BSD tape drives for the data management application. Valid values are <code>sysv</code> and <code>bsd</code>. The default is <code>sysv</code>. ● <code>dump-pathnode</code> Enables or disables backing up the directories containing modified files or directories in <code>dump(1)</code> backup format. Acceptable values are <code>yes</code> or <code>no</code>. The default is <code>no</code>. Nexsan recommends using <code>tar</code> for backups, based on recent updates. ● <code>fs-export</code> Specifies an optional list of mount points that are only exported paths for backup. This has no effect if you leave it empty.

- `ignore-ctime`
Determines whether the change timestamp (`ctime`) of files and directories is used to determine whether a file should be backed up in level backup. If this parameter is set to `yes`, only the modification time (`mtime`) of the file or directory determines whether it should be backed up. Acceptable values are `yes` or `no`. The default is `no`.
- `restore-quarantine`
Restores the files that had been marked as quarantined by AV and are backed up. Acceptable values are `yes` or `no`. The default is `no`.
- `tar-pathnode`
Enables or disables backing up the directories containing modified files or directories in tar backup format. Acceptable values are `yes` or `no`. The default is `no`. Nexsan recommends using tar for backups.
- `token-maxseq`
Sets the maximum sequence number for subsequent token-based incremental backup in NDMP-V4. The default value is 9. There are two limits for this value: `soft-limit`, which is 59, and `hard-limit`, equal to 64. If the token sequence number, passed by the DMA, is between the soft and hard limits, a warning message is issued to the DMA. The token sequence number can never exceed the hard-limit value.
- `type-override`
Override the value of `TYPE`. Valid values are `zfs` and `off`. By default, `type-override` has a value of `off` and does not override `TYPE`. Invalid values are treated as `off`. If it is set to `zfs`, make sure that the path format used in the data management application is consistent with the `zfs` backup type.
- `version`
Sets the maximum active NDMP protocol version. Valid values are currently 2, 3, and 4. The default is 4.
- `zfs-token-support`
Enables or disables token based method for ZFS backup type. Acceptable values are `yes` or `no`. The default is `no`.
- `zfs-force-override`
Overrides the value of `ZFS_FORCE`. `yes` forces a value of `y`. `no` forces a value of `n`. By default, `zfs-force-override` has a value of `off` and does not override `ZFS_FORCE`.
- `debug-path`
Specifies the path where the debug log is saved. The default is `/var/ndmp`.
- `drive-type`
Specifies either SystemV or BSD tape drives for the data management application. Valid values are `sysv` and `bsd`. The default is `sysv`.
- `dump-pathnode`
Enables or disables backing up the directories containing modified files or directories in `dump(1)` backup format. Acceptable values are `yes` or `no`. The default is `no`. Nexsan recommends using tar for backups.

- `fs-export`
Specifies an optional list of mount points that are only exported paths for backup. This has no effect if you leave it empty.
- `ignore-ctime`
Determines whether the change timestamp (`ctime`) of files and directories is used to determine whether a file should be backed up in level backup. If this parameter is set to `yes`, only the modification time (`mtime`) of the file or directory determines whether it should be backed up. Acceptable values are `yes` or `no`. The default is `no`.
- `restore-quarantine`
Restores the files that had been marked as quarantined by AV and are backed up. Acceptable values are `yes` or `no`. The default is `no`.
- `tar-pathnode`
Enables or disables backing up the directories containing modified files or directories in tar backup format. Acceptable values are `yes` or `no`. The default is `no`. Nexsan recommends using tar for backups, based on recent updates.
- `token-maxseq`
Sets the maximum sequence number for subsequent token-based incremental backup in NDMP-V4. The default value is 9. There are two limits for this value: `soft-limit`, which is 59, and `hard-limit`, equal to 64. If the token sequence number, passed by the DMA, is between the soft and hard limits, a warning message is issued to the DMA. The token sequence number can never exceed the hard-limit value.
- `type-override`
Override the value of `TYPE`. Valid values are `zfs` and `off`. By default, `type-override` has a value of `off` and does not override `TYPE`. Invalid values are treated as `off`. If it is set to `zfs`, make sure that the path format used in the data management application is consistent with the `zfs` backup type.
- `version`
Sets the maximum active NDMP protocol version. Valid values are currently 2, 3, and 4. The default is 4.
- `zfs-token-support`
Enables or disables token based method for ZFS backup type. Acceptable values are `yes` or `no`. The default is `no`.
- `zfs-force-override`
Overrides the value of `ZFS_FORCE`. `yes` forces a value of `y`. `no` forces a value of `n`. By default, `zfs-force-override` has a value of `off` and does not override `ZFS_FORCE`.
- `set -p <property value> [-p <property value>]...`
This command sets a value for the specified property. The values are the same as those provided for `get`.
- `show-devices`
This option lists the name, vendor, serial number, and other information about the storage connected to the Unity Storage System.


```
show-sessions [-i tape,scsi,data,mover] [session id]...
```

This option displays details of an NDMP session. You can use these arguments with `show-sessions`:

- `-i tape,scsi,data,mover` identifies a type of interface about which to obtain data. If you don't specify an interface, information for all types of interfaces is displayed.
- `ID` specifies a particular session about which to display data. If you don't specify an ID, data for all sessions is displayed.

```
kill-sessions <session id...>
```

This option enables you to terminate the specified session, which is identified by a number.

```
enable -a <authentication type> -u <user name>
```

This option prompts for the user's password twice for confirmation and activates the specified authentication type with the given user name and password for NDMP client access. Authentication type values can be `cram-md5` or `cleartext`.

```
disable -a <authentication type>
```

This option disables the specified authentication type for an NDMP client's remote access. Authentication type values can be `cram-md5` or `cleartext`.

Example

We display the current properties set for NDMP support on the Unity Storage System:

```
nstndmp get
debug-path=/var/ndmp
dump-pathnode=no
tar-pathnode=no
ignore-ctime=no
token-maxseq=9
version=4
dar-support=no
tcp-port=10000
backup-quarantine=no
restore-quarantine=no
overwrite-quarantine=no
nstfs-force-override=off
drive-type=sysv
vendor-name=Nexsan Technologies
product-name=NestOS v2
mover-nic=
debug-enable=false
```



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<https://www.nexsan.com/support>

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United States patents US8,191,841, US8,120,922;

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