

# System Access Guide

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Hitachi Virtual Storage Platform Gx00 and Fx00 with NAS  
Modules

VSP N series

Hitachi NAS Platform

Release 13.8

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# Contents

<b>Preface</b> .....	<b>9</b>
Related Documentation.....	9
Accessing product documentation.....	12
Getting help.....	12
Comments.....	13
<b>Chapter 1: NAS Platform overview</b> .....	<b>14</b>
Supported NAS Platform functionality.....	14
Considerations when using a NAS module.....	14
User accounts.....	16
Changing supervisor and root passwords.....	17
Managing a server or cluster.....	17
Using NAS Manager.....	18
Browser support.....	18
Server Status Console.....	18
Using NAS Manager tables.....	20
Accessing and navigating NAS Manager pages.....	22
Disabling an embedded SMU.....	23
Using the command line interface.....	23
Restricting CLI commands.....	23
Accessing the SMU command line interface.....	24
Using the serial (console) port (HNAS server only).....	25
Using an SSH connection.....	25
Accessing the server/cluster command line reference.....	25
Using SSH using the SMU.....	26
Using SSH on the server.....	26
Using Telnet .....	27
Using SSC.....	27
<b>Chapter 2: Introduction to Licensing</b> .....	<b>28</b>
Hitachi NAS Open Source Software Copyrights and Licenses.....	28
AES .....	28
Ant.....	29
Ant-Contrib.....	29
Antlr.....	30

AOP Alliance.....	30
apt.....	31
Arcfour RC4 .....	31
Aspectjrt Aspectjweaver.....	31
attr.....	31
Avalon Framework.....	31
Avalon Logkit.....	31
AWS SDK for Java.....	32
Axis2/java.....	32
Azure Libraries for Java.....	32
backport-util-concurrent-java60.....	32
Base64.....	32
base-password.....	33
bash.....	33
Bastille.....	33
Big Number.....	33
Bison Parser Framework.....	33
bitstring.h .....	33
boost-jam.....	34
Boost library.....	35
Bouncy Castle Crypto APIs.....	35
C3p0.....	35
C Library strtptime .....	35
C++ standard template library.....	36
CentOS.....	36
Cloudfiles.....	37
Commons BeanUtils.....	37
Commons CLI.....	37
Commons Codec.....	37
Commons Collections.....	38
Commons Compress.....	38
Commons Configuration.....	38
Commons DBCP.....	38
Commons Digester.....	39
Commons email.....	39
Commons FileUpload.....	39
Commons IO.....	39
Commons Lang.....	40
Commons Logging.....	40
Commons Net.....	40
Commons Pool.....	40

Concurrent.....	41
Crypto layer from MIT Kerberos.....	41
CURL.....	41
Dce_guid.....	41
Debian.....	42
debsigs.....	42
dejavu-fonts.....	42
DNSJAVA.....	44
dojo.....	44
Dom4j.....	48
Dpkg.....	49
Ehcache.....	50
Element Construction Set (ECS).....	50
Excalibur.....	51
FastInfoSet.....	51
FreeMarker.....	51
Fulcrum YAAFI .....	51
FUSE.....	51
gettimeofday.c.....	51
GlassFish Server.....	52
glob.....	52
GNU Crypto.....	52
GNU Libc Components.....	52
grub.....	53
Gsoap runtime .....	53
Guava.....	53
Guice.....	53
Henry Spencer's regex library (BSD version).....	53
Hibernate.....	53
Hibernate Tools.....	54
HttpComponents.....	54
http.jar.....	54
http-tiny.....	54
ICU.....	57
Inno Setup.....	58
ion-java.....	58
Jackson JSON Parser.....	58
Javassist.....	58
JavaMail API Jar.....	59
JAX-RS.....	59
Jaxen.....	59

JCache (JSR107).....	59
jclouds.....	59
JCommon.....	59
JCS.....	59
Jetty.....	60
Jfreechart.....	64
JMES Path Query Library.....	64
Joda Time.....	65
JPam.....	65
json Path.....	65
jQuery.....	65
jQuery UI.....	66
JRadius.....	66
JSON-RPC.....	66
JSP Standard Tag Library.....	67
JSR 311 API.....	67
Junit.....	67
Jython .....	71
libzip2 .....	72
libc6.....	73
libgcc1.....	73
libssh2.....	73
libpcap .....	74
libstdc++.....	75
libunwind.....	76
locale.gen.....	76
linux-kernel.....	76
Log4cplus.....	77
logkit.....	77
Log4j.....	78
Loki.....	78
Lua.....	78
marsaglia-c.....	79
Mcelog.....	79
mchange-commons-java.....	79
MD4.....	79
memtest86+.....	80
mingwm10.dll.....	80
Munin.....	80
NDMJOB.....	81
NDMP SDK.....	81

net-ldap.....	83
ndmpcopy.....	83
Net-SNMP.....	84
net-tools.....	84
netbase.....	84
netty.....	84
NFSv4 constants.....	84
nis.....	85
NTP.....	85
Nutch.....	86
OpenJDK.....	86
OpenLDAP.....	86
OpenSSL.....	87
org.jessies.terminator.....	87
ORO.....	87
PAM.....	88
PAM RADIUS-auth module.....	89
Perl module Net::SSH2.....	89
Perl module Regexp::IPv6.....	92
POCO.....	92
Postgresql.....	93
Postgresql-jdbc.....	94
prototype.js.....	94
PySocks.....	94
qTip.....	94
Quartz.....	95
Regexp.....	95
Requests.....	96
Rocoto.....	96
Ruby-LDAP.....	96
ruby-net-ldap.....	96
rrdtool.....	96
RSYSLOG.....	97
Schematics.....	97
screen.....	97
Servlet API.....	97
SHA-256.....	97
Simpleyaml.....	98
SLF4J.....	98
solnlib.....	98
SortedContainers.....	98

Splunk.....	99
SQLite.....	99
spring-beans, spring-context, spring-core, sprint-test .....	99
strlcat, strlcpy.....	99
sysvinit.....	99
stdint.h (mingw32only variant).....	100
syslog-ng.....	100
Texen.....	100
ThreadPool.....	100
Tigra Calendar.....	101
Tomcat.....	101
Torque.....	101
Turbine.....	102
tzdata and tzdata-java.....	102
ua.js.....	102
udev /dev/ and hotplug management daemon.....	103
udis86.....	103
UnboundID LDAP SDK for Java.....	104
util-linux.....	105
Velocity Engine.....	107
Velocity Tools.....	108
xbDOM.js.....	108
XDR library.....	108
Xerces.....	109
XML RPC .....	109
Zlib library.....	109
Appendix A. Apache License, Version 2.0.....	110
Appendix B. OpenSSL License.....	113
Appendix C. GNU General Public License (GPL) Version 2.0.....	115
Appendix D. GNU General Public License (GPL) Version 3.0.....	121
Appendix E. GNU LESSER GENERAL PUBLIC LICENSE.....	132
Appendix F. OSI - The MIT License.....	139
Appendix G. BSD license (3-clause).....	140
Appendix H. Common Development and Distribution License (CDDL) Version 1.1.....	141
Appendix I. Common Development and Distribution License (CDDL) Version 1.0.....	146



# Preface

This guide explains how to log in to the system, provides information about accessing the NAS server/cluster CLI and the SMU CLI, and provides information about the documentation, help, and search capabilities available in the system. Note that some features apply only to individual platforms and may not be applicable to your configuration.

Virtual Storage Platform G400, G600, G800 and Virtual Storage Platform F400, F600, F800 storage systems can be configured with NAS modules to deliver native NAS functionality in a unified storage platform. The term 'NAS module' in this document also applies to VSP N series. The unified VSP Gx00 models, VSP Fx00 models and VSP N series models automatically form a two-node cluster in a single chassis upon installation, with no external cabling required.

## Related Documentation

**Release Notes** provide the most up-to-date information about the system, including new feature summaries, upgrade instructions, and fixed and known defects.

### Command Line References

The Command Line Reference provides information on the commands used to manage your system, and includes relevant information on the operation of your hardware and software. Depending on the model of your server or cluster node, refer to the Command Line Reference that is appropriate for your system.

- *NAS Module Server Command Line Reference*
- *Command Line Reference for models 4060, 4080, and 4100*
- *Command Line Reference for models 3080, 3090 and 4040*

## Administration Guides

- *System Access Guide* (MK-92HNAS014)—Explains how to log in to the system, provides information about accessing the NAS server/cluster CLI and the SMU CLI, and provides information about the documentation, help, and search capabilities available in the system.
- *Server and Cluster Administration Guide* (MK-92HNAS010)—Provides information about administering servers, clusters, and server farms. Includes information about licensing, name spaces, upgrading software, monitoring servers and clusters, and backing up and restoring configurations.
- *Storage System User Administration Guide* (MK-92HNAS013)—Explains user management, including the different types of system administrator, their roles, and how to create and manage these users.
- *Network Administration Guide* (MK-92HNAS008)—Provides information about the server's network usage, and explains how to configure network interfaces, IP addressing, name and directory services.
- *File Services Administration Guide* (MK-92HNAS006)—Explains about file system formats, and provides information about creating and managing file systems, and enabling and configuring file services (file service protocols).
- *Data Migrator Administration Guide* (MK-92HNAS005) —Provides information about the Data Migrator feature, including how to set up migration policies and schedules.
- *Storage Subsystem Administration Guide* (MK-92HNAS012)—Provides information about managing the supported storage subsystems (RAID arrays) attached to the server/cluster. Includes information about tiered storage, storage pools, system drives (SDs), SD groups, and other storage device related configuration and management features and functions.
- *Snapshot Administration Guide* (MK-92HNAS011)—Provides information about configuring the server to take and manage snapshots.
- *Replication and Disaster Recovery Administration Guide* (MK-92HNAS009)—Provides information about replicating data using file-based replication and object-based replication, provides information on setting up replication policies and schedules, and using replication features for disaster recovery purposes.
- *Antivirus Administration Guide* (MK-92HNAS004)—Describes the supported antivirus engines, provides information about how to enable them, and how to configure the system to use them.
- *Backup Administration Guide* (MK-92HNAS007)—Provides information about configuring the server to work with NDMP, and making and managing NDMP backups.



**Note:** For a complete list of Hitachi NAS open source software copyrights and licenses, see the *System Access Guide*.

## Hardware References

- *Hitachi NAS Platform 3080 and 3090 G2 Hardware Reference* (MK-92HNAS017) — Provides an overview of the second-generation server hardware, describes how to resolve any problems, and replace potentially faulty parts.
- *Hitachi NAS Platform and Hitachi Unified Storage Series 4000 Hardware Reference* (MK-92HNAS030)—Provides an overview of the Hitachi NAS Platform Series 4000 server hardware, describes how to resolve any problems, and how to replace potentially faulty components
- *Hitachi NAS Platform System Manager Unit (SMU) Hardware Reference* (MK-92HNAS065) —This document describes the usage and replacement instructions for the SMU 300/400.

## Best Practices

- *Hitachi USP-V/VSP Best Practice Guide for HNAS Solutions* (MK-92HNAS025)—The practices outlined in this document describe how to configure the system to achieve the best results.
- *Hitachi Unified Storage VM Best Practices Guide for HNAS Solutions* (MK-92HNAS026) — The system is capable of heavily driving a storage array and disks. The practices outlined in this document describe how to configure the system to achieve the best results
- *Hitachi NAS Platform Best Practices Guide for NFS with VMware vSphere* (MK-92HNAS028) —This document covers best practices specific to using VMware vSphere with the Hitachi NAS platform.
- *Hitachi NAS Platform Deduplication Best Practice* (MK-92HNAS031)—This document provides best practices and guidelines for using deduplication.
- *Hitachi NAS Platform Best Practices for Tiered File Systems* (MK-92HNAS038)—This document describes the Hitachi NAS Platform feature that automatically and intelligently separates data and metadata onto different Tiers of storage called Tiered File Systems (TFS).
- *Hitachi NAS Platform Data Migrator to Cloud Best Practices Guide* (MK-92HNAS045)—Data Migrator to Cloud allows files hosted on the HNAS server to be transparently migrated to cloud storage, providing the benefits associated with both local and cloud storage.
- *Brocade VDX 6730 Switch Configuration for use in an HNAS Cluster Configuration Guide* (MK-92HNAS046)—This document describes how to configure a Brocade VDX 6730 switch for use as an ISL (inter-switch link) or an ICC (inter-cluster communication) switch.
- *Best Practices for Hitachi NAS Universal Migrator* (MK-92HNAS047)—The Hitachi NAS Universal Migrator (UM) feature provides customers with a convenient and minimally disruptive method to migrate from their existing NAS system to the Hitachi NAS Platform. The practices and recommendations outlined in this document describe how to best use this feature.
- *Hitachi Data Systems SU 12.x Network File System (NFS) Version 4 Feature Description* (MK-92HNAS056)—This document describes the features of Network File System (NFS) Version 4.

- *Hitachi NAS HDP Best Practices* (MK-92HNAS057)—This document lists frequently asked questions regarding the use of Hitachi Dynamic Provisioning.
- *Hitachi Multi-tenancy Implementation and Best Practice Guide* (MK-92HNAS059)—This document details the best practices for configuring and using Multi-Tenancy and related features, and EVS security.
- *Hitachi NAS Platform HDP Best Practices* (MK-92HNAS063)—This document details the best practices for configuring and using storage pools, related features, and Hitachi Dynamic Provisioning (HDP).
- *Hitachi NAS Platform System Manager Unit (SMU) Hardware Reference* (MK-92HNAS065)—This document describes the usage and replacement instructions for the SMU 300/400.
- *Brocade VDX 6740 Switch Configuration for use in an HNAS Cluster Configuration Guide* (MK-92HNAS066)—This document describes how to configure a Brocade VDX 6740 switch for use as an ICC (intra-cluster communication) switch.
- *File System Snapshots Operational Best Practice* (MK-92HNAS068)—This document provides operational guidance on file system snapshots.
- *Virtual Infrastructure Integrator for Hitachi Storage Platforms Operational Best Practice* (MK-92HNAS069)—This document provides operational guidance on Hitachi Virtual Infrastructure Integrator for the HNAS platform.
- *Hitachi NAS Platform Replication Best Practices Guide* (MK-92HNAS070)—This document details the best practices for configuring and using HNAS Replication and related features.
- *Hitachi Virtual SMU Administration Guide* (MK-92HNAS074)—This guide provides information about how to install and configure a virtual System Management Unit (SMU).
- *Hitachi NAS Platform to Hitachi Virtual Storage Platform Unified Gx00 Models Migration Guide* (MK-92HNAS075)—This best practice guide describes how to perform a data-in-place migration of the Hitachi NAS Platform and Virtual Storage Platform (VSP) Gx00 File solution to the VSP Gx00 platform.

## Accessing product documentation

Product user documentation is available on Hitachi Vantara Support Connect: <https://knowledge.hitachivantara.com/Documents>. Check this site for the most current documentation, including important updates that may have been made after the release of the product.

## Getting help

[Hitachi Vantara Support Connect](https://support.hitachivantara.com/en_us/contact-us.html) is the destination for technical support of products and solutions sold by Hitachi Vantara. To contact technical support, log on to Hitachi Vantara Support Connect for contact information: [https://support.hitachivantara.com/en\\_us/contact-us.html](https://support.hitachivantara.com/en_us/contact-us.html).

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**Thank you!**

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## Chapter 1: NAS Platform overview

NAS Platforms are enterprise-class network storage servers that provide high-performance read/write access to data through multiple protocols, such as SMB, NFS, iSCSI, and FTP.

### Supported NAS Platform functionality

These systems support:

- Stand-alone servers, or clusters of up to eight nodes
- Tiered storage
- A single name space with global access
- Virtualized storage pools, servers, file systems, and volumes
- Read caching
- Global symlinks
- Data protection through NVRAM mirroring, snapshots, NDMP-based backup, virus scanner integration, automatic data migration, policy-based data replication, data relocation (with transfer of primary access), and quorum devices
- User, group, and virtual volume (directory) quotas
- Complete tools for managing the system and monitoring system status, including NAS Manager (a browser-based Graphical User Interface), a client for gathering real-time statistics, and a Command Line Interface.

The file server can also acquire Fibre Channel information and publish the detail to the Hitachi Device Manager (HDvM) server. This integration allows the Hitachi Tiered Storage Manager (HTSM) to view information about Fibre Channel devices attached to an HNAS server or cluster by searching for that information on the Hitachi Device Manager.

### Considerations when using a NAS module

Managing a NAS module is different from managing an HNAS server. The following information describes these differences.

#### User management

The following user types are supported:

- Manager
- Supervisor
- Users created in the Maintenance Utility
- Active Directory users

Manager and Supervisor passwords can be changed on the Home -> Server settings -> Server users page. However, passwords for remotely-defined users cannot be changed in the NAS Manager.



**Note:** SMU local users are not supported on an SMU (NAS Manager) running in a NAS module. RADIUS authentication is also not supported.

### **IP addresses**

IP addresses on aggregate or eth-ag interfaces can be actively managed using the NAS Manager. All controller IP addresses are read-only on the NAS Manager but configurable only through the maintenance utility. EVS IP addresses can be managed using the CLI or the NAS Manager.

### **SNMP**

SNMP access must be configured through the maintenance utility. It cannot be managed through the NAS Manager. However, SNMP traps are configurable using the CLI or the NAS Manager.

### **SSC / VSS**

It is not possible to change the port number for these services on a NAS module.

The port numbers are:

- SSC - 206
- VSS - 202

The NAS module uses SHA-2 for authentication.

### **Licensing**

Block licenses can be uploaded on the NAS Manager "License keys" page. However, block licenses cannot be removed.

### **Upgrading**

The NAS module can only be upgraded using the maintenance utility.

### **Restart, reboot and Shutdown**

Shutdown of a NAS module is not available through the NAS Manager. It is only possible to reboot the cluster or one node at a time. File service restart is not supported.

### **Clusters**

A NAS module can only run as a cluster, and the cluster is set up automatically. Therefore, it is not possible to create a new cluster through the NAS Manager.

### **Statistics and status**

The following statistics and status pages are not available for a NAS module in the NAS Manager:

- System Monitor
- System Graphs
- Storage statistics

## User accounts

This section lists the default system user accounts for Hitachi NAS Platform, NAS module, and embedded or external SMU.

Contact Customer Support to obtain the default passwords for the accounts.



**Caution:** It is important to change the passwords from the defaults to new, secure passwords.

System component	User account name
<b>Hitachi NAS Platform</b>	
NAS Manager (Embedded SMU)	admin
Storage server CLI	supervisor manager
Linux CLI*	root supervisor manager
<b>NAS module **</b>	
File-serving CLI	maintenance supervisor manager
Linux CLI	maintenance supervisor manager
Linux CLI*	root
NAS Manager (Embedded SMU)	maintenance supervisor



System component	User account name
	manager
<b>External SMU</b>	
NAS Manager	admin
SMU CLI	manager
SMU CLI *	root
<p>Notes:</p> <p>* The root account provides unlimited access and should only be used with guidance from Customer Support. It is not possible to ssh as this user. The root account must not be deleted but its password can and should be changed.</p> <p>** To configure NAS module users, use the Maintenance Utility. Only the supervisor user can be created or deleted using the CLI. However, it is possible to log into the CLI and embedded SMU on the NAS module using the credentials of a user defined in the Maintenance Utility with the "Administrator user Group" role. Maintenance Utility users with different permissions cannot log into the NAS module or embedded SMU.</p>	

## Changing supervisor and root passwords

You can change supervisor and root passwords for the NAS server using the `password` CLI command. See the `password` man page for further details.

You can also change supervisor and root passwords using the NAS Manager.

### Procedure

1. Navigate to the **Home -> Server settings -> Server users** page.
2. For the required user, click **details**.
3. On the Server User Details page, enter and confirm the new password.
4. Click **OK**.


## Managing a server or cluster

Server/cluster management is performed through NAS Manager (a browser-based graphical user interface) or through commands issued using a command line interface (CLI).

Most management functions can be accomplished through NAS Manager, but some operations require using the CLI.

## Using NAS Manager

The NAS Manager administration tool provides a browser-based interface for managing standalone or clustered servers and their attached storage subsystems. This tool allows you to perform most administrative tasks from any client on the network using a network browser.


 **Note:** When accessing the SMU through NAS Manager, some browsers might fail with an error message of “Secure Connection Failed” due to an invalid security certificate. This situation might occur the first time you access a new SMU, or when the SMU’s IP address or host name have been changed. If you receive this error message, you must add the SMU’s security certificate. Refer to the browser’s help to find information on how to add a certificate, and make sure to permanently store the exception.

As an alternative to NAS Manager, you can use the command line interface (CLI). For more information, see [Using the command line interface \(on page 23\)](#). The CLI is documented in the man pages and the *Command Line Reference*, which is available through a link on the NAS Manager Documentation page.

## Browser support

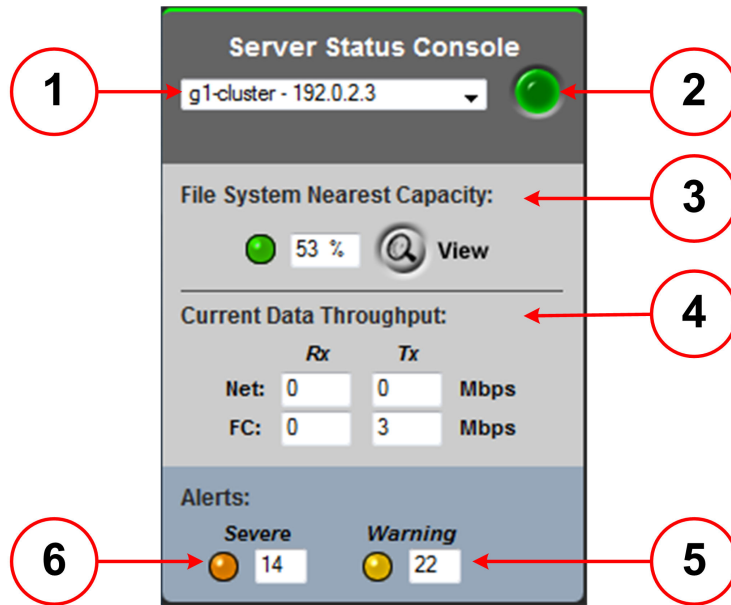
Use one of the following browsers to run NAS Manager, the web-based graphical user interface (GUI) of the system management unit (SMU):

- Microsoft Internet Explorer: version 11.0 or later.
- Mozilla Firefox: any version released in 2015 or later.
- Google Chrome: any version released in 2015 or later.

 **Note:** The SMU uses cookies and sessions to remember user selections on various pages. Therefore, open only one web browser window or tab to the SMU per workstation or computer. If multiple tabs or windows are opened from the same workstation or computer, changes made in one tab or window might affect the other tabs or windows.


## Server Status Console

The NAS Manager **Home** page displays summary status information pertaining to the currently managed server:



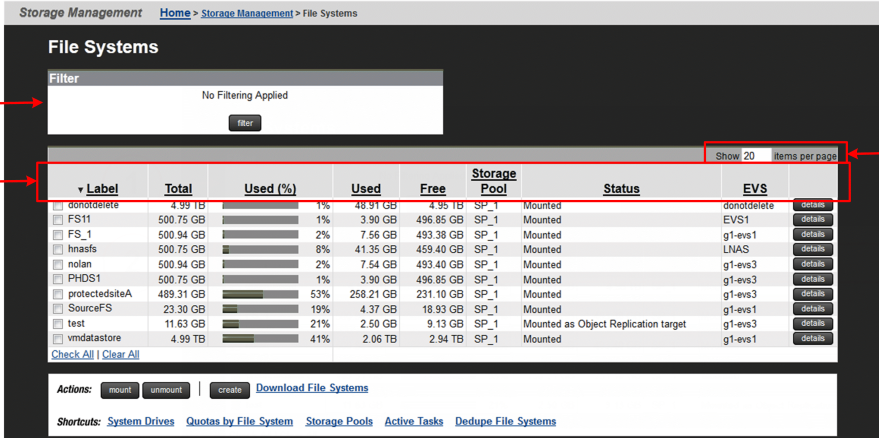
The following table describes the sections of the Server Status Console:

Item	Description
1	Currently managed server or cluster name and IP address. Use the drop-down list (of managed servers/clusters) to select another server or cluster to manage.
2	Summary status indicator for the currently managed server or cluster: <ul style="list-style-type: none"> <li>Green—Operating normally (not showing an alert condition).</li> <li>Amber—Warning condition (operating normally, but action should be taken to maintain normal operation).</li> <li>Red—Critical condition (not functioning or failing in a way that presents a danger to the system).</li> </ul>
3	File System Nearest Capacity The status indicator provides information about how close the file system is to its maximum configured size limit. <ul style="list-style-type: none"> <li>Green—Usage is below the Warning threshold.</li> <li>Yellow—Usage has reached or exceeded the Warning threshold, but is below the Critical threshold.</li> <li>Orange—Usage has reached or exceeded the Critical threshold.</li> </ul> The percentage of allocated space used by the file system nearest to full capacity is displayed next to the status indicator.

Item	Description
	Click View to display the <b>File Systems</b> page, where you can learn more about the file systems on the server or cluster.
4	<p>Current Data Throughput</p> <p>Displays the current data throughput from the data network and Fibre Channel ports, both received (Rx) and transmitted (Tx). Throughput values are updated every 10 seconds.</p> <p> <b>Note:</b> On a NAS module, this section displays the data for the Storage ports instead of the Fibre Channel ports.</p>
5	<p>Warning events recorded in the event log during the past 24 hours.</p> <p>Click the yellow indicator to display the event log, which shows all warning events recorded in the event log.</p>
6	<p>Severe events recorded in the event log during the past 24 hours.</p> <p>Click the orange indicator to display the event log, which shows all severe events recorded in the event log.</p>

## Using NAS Manager tables

Some pages in the NAS Manager interface use tables to present system information:



The screenshot shows the 'File Systems' page in the NAS Manager interface. The table displays various file systems with columns for Label, Total, Used (%), Used, Free, Storage Pool, Status, and EVS. Annotations are as follows:

- 1**: Points to the 'Filter' input field at the top of the table.
- 2**: Points to the column headers of the table.
- 3**: Points to the 'Show 20 Items per page' dropdown menu at the top right of the table.

Label	Total	Used (%)	Used	Free	Storage Pool	Status	EVS
donotdelete	4.99 TB	1%	48.91 GB	4.95 TB	SP_1	Mounted	donotdelete
FS11	500.75 GB	1%	3.90 GB	496.85 GB	SP_1	Mounted	EVS1
FS_1	500.94 GB	2%	7.56 GB	493.38 GB	SP_1	Mounted	g1-ews1
hnasfs	500.75 GB	8%	41.35 GB	459.40 GB	SP_1	Mounted	LNAS
nolan	500.94 GB	2%	7.54 GB	493.40 GB	SP_1	Mounted	g1-ews3
PHDS1	500.75 GB	1%	3.90 GB	496.85 GB	SP_1	Mounted	g1-ews3
protectedoleA	489.31 GB	53%	259.21 GB	231.10 GB	SP_1	Mounted	g1-ews3
SourceFS	23.30 GB	19%	4.37 GB	18.93 GB	SP_1	Mounted	g1-ews1
test	11.63 GB	21%	2.50 GB	9.13 GB	SP_1	Mounted as Object Replication target	g1-ews3
vmdatastore	4.99 TB	41%	2.06 TB	2.94 TB	SP_1	Mounted	g1-ews1

Item	Description
1	Filter displays any filtering in use for the table being displayed. To enable or change filtering, click filter.
2	Column labels

Item	Description
3	Show X Items per page

### About Filtering

When you have a large number of items in a table, filtering allows you to specify criteria to limit the display of the items in the table to only those items matching the specified criteria. By default, filtering is disabled, but you can enable it by clicking filter.

The criteria used to filter items in the table depend on the items listed in the table. For example, when you click filter on the **File Systems** page, the file system filter dialog appears:

You can filter by file system name, storage pool containing the file system, file system status, or file systems on a particular EVS.

When you click filter on the **System Drives** page, the system drive (SD) filter dialog appears:

You can filter by SD access enabled or disabled, SD status, if the SD has mirrors, and several other criteria.

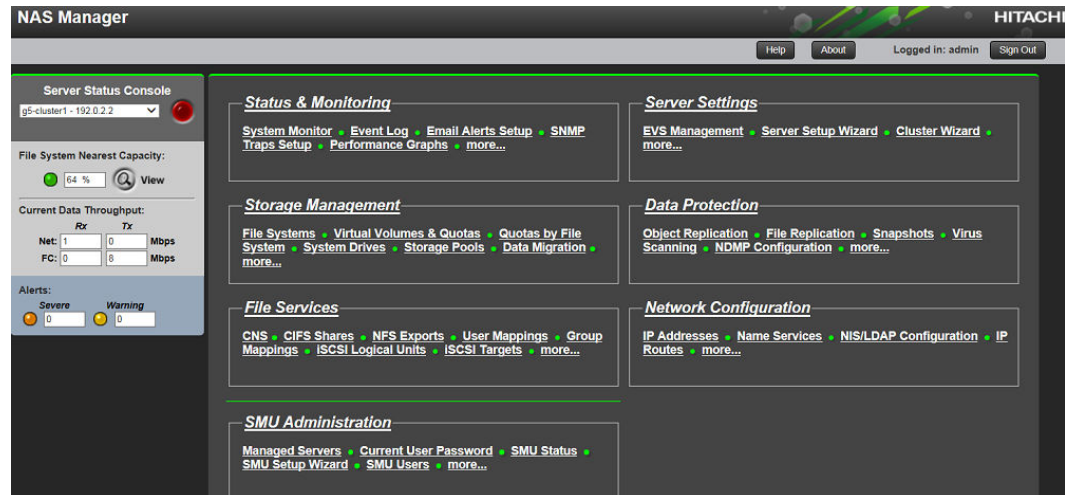
To change the filtering criteria, click reset, specify the new criteria to be used to filter the table items, then click OK.

To remove filtering, click reset, then click OK.

## Accessing and navigating NAS Manager pages

The NAS Manager uses a two-level page structure, including links to specific functions and categories that wrap those functions. Clicking a link starts its target function, while clicking a category loads a page. Note that the functions that appear depend on your platform.

The top-level page is the NAS Manager **Home** page:



This page groups functions associated with the currently managed server under page categories, including:

- **Status & Monitoring:** System Monitor, Event Log, Email Alerts Setup, SNMP, Management Access Statistics, System Graphs and Statistics, Storage and File Service Statistics, Diagnostic Log, and so on.
- **Server Settings:** EVS Management, Server/Cluster Configuration and Settings, Maintenance Tasks, Management Access and Statistics, and so on.
- **Storage Management:** File Systems, System Drives, Storage Pools, RAID Racks, Virtual Volumes, Quotas, Data Migration, and so on.
- **Data Protection:** Virus Scanning, Object and File Replication, Snapshots, File System Versions and Recovery, NDMP backup, and so on.
- **File Services:** CNS, NFS Exports, SMB Shares, iSCSI, FTP, User Mapping, Group Mapping, and so on.
- **Network Configuration:** IP Addresses, Name Services, NIS/LDAP Configuration, IP Routes, Link Aggregation, Network Statistics, and so on.

Additional categories (not associated with the currently managed server):

- **SMU Administration:** Manages the SMU itself (for example, currently managed server selection, date and time, security, private management network).

## Disabling an embedded SMU

It is possible to disable the embedded SMU on a VSP-G series NAS platform (if the GAD Enhanced for NAS feature is not enabled).

Before disabling an embedded SMU, ensure that there is an external SMU available to manage the cluster and to send updates to any Hitachi Device Manager (HDvM) that is also managing the cluster.

To link an external SMU to your HDvM, in the NAS Manager, navigate to the Home > Storage Management > Hitachi Device Managers page and add a server.

To disable an SMU, use the following command:

```
smu-service-disable
```

The command requires confirmation (y/n).

After confirming the disabling of the SMU service:

- the **smu-service-status** command shows the SMU status as "disabled" on both nodes.
- the embedded SMU is not accessible.
- viewing the **Cluster Status** page on an external SMU shows a grey status button with text "Disabled" for the embedded SMU.
- the embedded SMU is no longer listening on ports 80 or 443. See the Network Administration Guide for further details.

## Using the command line interface

The storage server and the system management unit (SMU) each come with a command line interface (CLI) for configuration and management. Both support secure connections, configurable passwords, and other security mechanisms.



**Note:** For more information on the CLI, see the man pages.

## Restricting CLI commands

Dynamically managing the access level of some CLI commands can help prevent system users from viewing and/or changing sensitive company data.



**Note:** This ability is only available on the CLI. It is not possible to restrict command access through the NAS Manager which already has a read-only user.

Restricting CLI commands on the NAS server can prevent exposure of sensitive data, such as:

- File names and contents
- Directory names and contents
- User names
- Client IP addresses

A restriction is cluster wide and affects all EVSs and tenants.

To use the commands which set and unset restricted access, contact your Hitachi Vantara customer support representative.

Administrators can list the commands that have been restricted using the Supervisor level `user-level-override-list` CLI command. It also lists the restricted command's current access level.

For example:

```
$ user-level-override-list
Command Name          Access Level
status                SUPERVISOR
```

See the command man page for further information.

## Accessing the SMU command line interface

Use one of the following methods to access the SMU command line interface:

- Serial (console) port
- SSH connection
- Hypervisor console (either ESXi or Hyper-V). See the Virtual SMU Administration Guide for further details.



**Warning:** The SMU and NAS Platform are appliances, not plain Linux servers, and their configurations are programmatically controlled. If their configuration files are manually changed outside of the provided/supported commands, the impact of such changes cannot be predicted and might destabilize the system. Do not, for any reason, manually edit configuration files or install applications/scripts on the SMU or NAS Platform without consent from your support provider.



## Using the serial (console) port (HNAS server only)

The SMU ships without a preconfigured network setup. To perform the initial setup, access the SMU through a direct serial connection or KVM. After its network configuration has been completed, access the SMU's CLI directly through SSH or through a Java-enabled SSH session running under NAS Manager.

To connect using a serial console:

### Procedure

1. Attach an RS232 null-modem cable (DB-9 female to DB-9 female) to the serial port on the SMU back panel. Attach the other end of the serial cable to a terminal (for instance, a laptop).
2. Start a console session using your terminal emulation with the following settings:
  - 115,200 b/s
  - 8 data bits
  - 1 stop bit
  - No parity
  - VT100 emulation
  - No flow control

You may want to enable the logging feature in your terminal program to capture the session.

3. Log in as the user `manager`. When prompted, enter the password for the user `manager`.
4. After connecting, launch the storage server CLI or select the SMU shell. From the SMU command line, access the server CLI using a method in the displayed menu, or enter `q` to access the SMU shell.

## Using an SSH connection


The SMU can be accessed using any SSH client. Note that the client should be configured to support the UTF-8 (Unicode) character encoding.


## Accessing the server/cluster command line reference


The storage server ships with a comprehensive CLI, documented in the online man pages and the CLI Command Line Reference. You can access the server/cluster CLI through the Server Control (SSC) utility, available for Windows and Linux.

Access the CLI in the following ways:

- Secure Shell (SSH) connection into the server through the SMU
- SSH or Telnet connection directly into the server
- Server Control (SSC) utility, available for Windows and Linux

 **Note:** To access the file server CLI directly, using SSH, telnet, or SSC, through the public network, a server administration IP address may be assigned to at least one of the gigabit Ethernet interfaces. The server supports access to its CLI through any administrative IP address. By default, an administrative IP address is available on the private management network.

 **Note:** When using the server CLI, the console device should be configured to use UTF-8 (Unicode) encoding. When using the CLI through SSH, telnet, or SSC, the server sends and expects to receive data using UTF-8 encoding, so the device sending data to or receiving data from the server should be configured to use UTF-8 encoding.

 **Note:** System administrators can query the LDAP server for information about hosts configured into netgroups. You may discover whether a host is in a specific netgroup hierarchy or all of the netgroups to which a host belongs. The `nis-is-host-in-netgroup` and `nis-netgroups-for-host` commands are used to check whether a host is a member of a specified netgroup or to determine the set of netgroups to which a host belongs.

## Using SSH using the SMU

The SMU supports SSH. After logging into the SMU, the SMU can redirect connections directly to the server CLI. This can be useful for two reasons:

- It eliminates the need to assign a server administration IP address to the gigabit interface of the server.
- It enhances the security of the server by isolating administrative access to the private management network.


To SSH into the server using the SMU as a proxy:

### Procedure

1. Connect to the SMU through SSH.
2. Log in to the SMU as `manager`.
3. Select the targeted server from the list that is displayed.  
The SMU automatically initiates a connection to the server CLI.
4. When prompted, enter the user name `supervisor` and the password for the “supervisor” user account.

## Using SSH on the server

When connecting to a NAS server/cluster through SSH through the administrative services EVS IP address, log in using the user name `supervisor`.

 **Note:** NAS Platform 3080 or NAS Platform 3090 servers/clusters do not support SSH connections.

The Administrator must configure the server to accept SSH connections, and the SSH client should be configured to support UTF-8 (Unicode) character encoding.

Use these steps to connect by SSH to the server.

### Procedure

1. Connect to the server's administrative services DNS name or IP address.  
`ssh supervisor@server_name_or_IP`
2. When prompted, enter the "supervisor" user's password.

## Using Telnet

Telnet is not supported on the NAS server.

## Using SSC

The server can connect to the SMU from Windows PCs and from Linux/Unix workstations using SSC, which provides a secure connection using a modified version of the Arcfour cipher for encryption and SHA-1 for authentication.



**Note:** The NAS module uses SHA-2 for authentication.

Use the SSC scripting utility to access the server CLI. The server supports SSC access to its CLI through any administrative IP address. By default, the private management network has an administrative IP address available.

The syntax for SSC: `ssc -u user_name -p password host[:port] [command]`

The following table defines the variables:

Syntax	Description
user_name	User account (typically "supervisor").
password	Password. If none specified, SSC prompts for one.
timeout	A timeout (in seconds) for a single-use command.
EVS	Specifies a particular EVS (by its numerical EVS ID) as the target for a single-use command.
host	The server's administration IP address or host name.
port	If the SSC port number has been changed from its default of 206, the port number configured for SSC must be specified in the command syntax.
command	Command to execute. If no command is specified, SSC allows interactive command entry.

---

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<http://web.mit.edu/Kerberos/dist/historic.html#krb5-1.3-src>

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<http://web.mit.edu/kerberos/dist/krb5/1.3/krb5-1.3.5.tar>

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## Aspectjrt Aspectjweaver

Aspectjrt 1.8.2

<https://eclipse.org/aspectj/>

Aspectjweaver 1.6.12

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From <http://aws.amazon.com/sdkforjava/>

aws-java-sdk-1.5.2.jar

aws-java-sdk-1.11.114.jar

aws-swf-build-tool (<https://mvnrepository.com/artifact/com.amazonaws/aws-swf-build-tools/1.1>)

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<http://backport-jsr166.sourceforge.net/>

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```
-----
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Java port of Stefan Goessner JsonPath.

<https://mvnrepository.com/artifact/com.jayway.jsonpath/json-path>

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JSON-RPC JavaScript client

\$Id: jsonrpc.js,v 1.36.2.3 2006/03/08 15:09:37 mclark Exp \$

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## netbase

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It is currently maintained by Marco d'Itri <[md@linux.it](mailto:md@linux.it)>.

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<http://www.openbsd.org/cgi-bin/cvsweb/src/lib/libc/string/strlcpy.c?rev=1.11>

## sysvinit

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<https://packages.debian.org/wheezy/sysvinit>

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## **stdint.h (mingw32only variant)**

<http://www.mingw.org/>

<https://sourceforge.net/p/mingw/mingw-org-wsl/ci/21762bb4a1bd0c88c38eead03f59e8d994349e83/tree/LICENSE>

This package was debianized by Ron Lee <ron@debian.org>

It's components are available from [www.mingw.org](http://www.mingw.org).

The mingw32-runtime source is in the public domain, the win32api source is licenced as follows:

Written by Anders Norlander <anorland@hem2.passagen.se>

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[http://archive.debian.org/debian/pool/main/s/syslog-ng/syslog-ng\\_2.0.9-4.1\\_amd64.deb](http://archive.debian.org/debian/pool/main/s/syslog-ng/syslog-ng_2.0.9-4.1_amd64.deb)

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## tzdata and tzdata-java

<http://www.iana.org/time-zones>

This is the Debian prepackaged version of the Time Zone and Daylight Saving Time Data.

It was downloaded from <http://www.iana.org/time-zones>

Upstream Author: The Internet Assigned Numbers Authority (IANA)

Commentary should be addressed to [tz@iana.org](mailto:tz@iana.org)

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## **udev /dev/ and hotplug management daemon**

[http://archive.debian.org/debian/pool/main/u/udev/udev\\_0.125-7+lenny3\\_amd64.deb](http://archive.debian.org/debian/pool/main/u/udev/udev_0.125-7+lenny3_amd64.deb)

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This is the Debian GNU/Linux prepackaged version of udev.

It has been packaged by Marco d'Itri <md@linux.it>.

Original sources were obtained from:

<http://www.kernel.org/pub/linux/utils/kernel/hotplug/>

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<https://github.com/vmt/udis86>

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This is the Debian GNU/Linux prepackaged version of util-linux.

This package was put together by Guy Maor <maor@debian.org> and later maintained by Sean 'Shaleh' Perry <shaleh@debian.org>, and Adrian Bunk <bunk@stusta.de>.

The current maintainer is LaMont Jones <lamont@debian.org>.

See also: [git://git.debian.org/~lamont/util-linux.git](https://git.debian.org/~lamont/util-linux.git)

It was downloaded from:

<ftp://ftp.us.kernel.org/pub/linux/utils/util-linux-ng/>

Upstream maintainers include:

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Past Maintainer: Adrian Bunk <bunk@fs.tum.de>

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<http://tools.ietf.org/rfc/rfc1014.txt>

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## Zlib library

zlib.h -- interface of the 'zlib' general purpose compression library version 1.2.7, May 2nd, 2012

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<http://zlib.net/>

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```

<one line to give the program's name and a brief idea of what it
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  the Free Software Foundation, either version 3 of the License,
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```

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```

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  This program comes with ABSOLUTELY NO WARRANTY; for details
  type `show w'.
  This is free software, and you are welcome to redistribute it
  under certain conditions; type `show c' for details.

```

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## Appendix E. GNU LESSER GENERAL PUBLIC LICENSE

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Version 2.1, February 1999

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

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- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
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