



# **Veritas NetBackup Flex Scale Command Reference Guide**

*Release 3.2*

**Linux**

**Mar 26, 2024**



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# Veritas NetBackup Flex Scale Command Reference Guide

## 1.1 Legal Notice

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Veritas Technologies LLC  
2625 Augustine Drive  
Santa Clara, CA 95054  
<http://www.veritas.com>

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## 1.3 Documentation

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## 1.5 Veritas Services and Operations Readiness Tools (SORT)

Veritas Services and Operations Readiness Tools (SORT) is a website that provides information and tools to automate and simplify certain time-consuming administrative tasks. Depending on the product, SORT helps you prepare for installations and upgrades, identify risks in your datacenters, and improve operational efficiency. To see what services and tools SORT provides for your product, see the data sheet:

[https://sort.veritas.com/data/support/SORT\\_Data\\_Sheet.pdf](https://sort.veritas.com/data/support/SORT_Data_Sheet.pdf)



## Introducing node-level CLI

### 2.1 About accessing Veritas NetBackup Flex Scale node-level CLI

Veritas NetBackup Flex Scale node-level CLI can be accessed using Management IP address of the node.

You can access the Veritas NetBackup Flex Scale node-level CLI by login into the system using Management IP address of the node and with your credentials.

For example:

```
ssh admin_user@management_ipAddress
```

After you login to the Veritas NetBackup Flex Scale node-level CLI, you can type a question mark (?) at the prompt to get list of all the available commands.

```
[nbfs-3.1] nso-1.vxindia.veritas.com > ?
Available commands

delete    Delete appliance settings
set       Modify appliance settings
show      Examine the running and historical state of the host
support   Perform supportability operations
system    Run a privileged operation or obtain monitoring data
```

## 2.2 Veritas NetBackup Flex Scale node-level CLI command conventions

This document uses the following conventions when describing commands that are used in the Veritas NetBackup Flex Scale node-level CLI.

### 2.2.1 Command conventions

- When tab is entered command show the required parameters:

```
> system install hw-vendor-packages rpm_name=
```

## Appliance commands

- *show appliance*
- *system factory-reset*
- *system restart*
- *system self-test*
- *system shutdown*

## 3.1 show appliance

show appliance status – Show status information about the appliance node.

### 3.1.1 SYNOPSIS

show appliance status

### 3.1.2 DESCRIPTION

Use this command to show status information about the appliance and the current node, such as product name, cluster name, appliance node status, console virtual IP address.

### 3.1.3 OPTIONS

**show appliance status** Show the status information about the node, such as product name and the node status.



## 3.2 system factory-reset

system factory-reset - Initialize factory reset

### 3.2.1 SYNOPSIS

system factory-reset

system factory-reset *<reset-all>*

### 3.2.2 DESCRIPTION

You can use the `system factory-reset` command to begin factory reset process and will need to confirm a number of options before starting. If you are running factory reset with disk erase option selected, the process will begin in background and open a status screen after beginning.

You can also use the `system factory-reset reset-all` command to begin factory reset process and will only need to confirm whether to start. `system factory-reset reset-all` will default to setting the previous options to “Yes”.

Both commands can only be run on a single node.

### 3.2.3 OPTIONS

**reset-all** Begin factory reset process and will only need to confirm whether to start.

### 3.2.4 EXAMPLES

The following example shows how to run factory reset on your appliance:

```
system factory-reset
```

The following example shows how to run factory reset on your appliance and only need to confirm whether to start:

```
system factory-reset reset-all
```

## 3.3 system restart

system restart - Restart the system.

### 3.3.1 SYNOPSIS

system restart [force]

### 3.3.2 DESCRIPTION

Use this command to restart the current system. You cannot use this command to restart another system remotely.

### 3.3.3 OPTIONS

**restart [force]** Use this command to restart the system. The *force* parameter forces the system to restart even if services are not able to be stopped. Use this parameter if a previous attempt failed.

## 3.4 system self-test

system self-test – Test the current status of the various appliance components.

### 3.4.1 SYNOPSIS

system self-test hardware

system self-test software

### 3.4.2 DESCRIPTION

The appliance runs a test at regular intervals to check the status of its components. This ability of the appliance is referred to as self test. Use the `system self-test` command to verify the current status of the various appliance components.

### 3.4.3 OPTIONS

**hardware** Use this command to view the enhanced hardware monitoring page that displays the status of various hardware components.

**software** Use this command to test the current status of the various appliance software components.

### 3.4.4 EXAMPLES

system self-test software

```
Starting self-test on Sun Mar 19 19:40:45 2023

Running validation tests on the host 'nso-01'.

    Checking system configuration... [PASS]

    Checking whether SSH is running... [PASS]

    Checking MSDP and NetBackup... [PASS]

    Checking host name settings... [PASS]

    Checking whether the hostagent service is running... [PASS]

    Checking whether Appliance version and Access version are consistent across the_
    ↪cluster.... [PASS]

    Checking whether NetworkManager service is disabled... [PASS]

    Checking whether required vendor utilities are installed... [PASS]

    Checking the accessServices... [PASS]

    Checking the serviceGroupsCheck... [PASS]
```

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Checking whether the factory checkpoint exists...	[PASS]
Validation tests are complete.	
Appliance self-test result: PASS``	

## 3.5 system shutdown

system shutdown - Turn off the system.

### 3.5.1 SYNOPSIS

system shutdown

### 3.5.2 DESCRIPTION

Use the command to turn off the system and power off.

### 3.5.3 OPTIONS

**shutdown** Use to turn off the current system and power off the appliance node.



## Logs commands

- *support data-collect*
- *support logbrowser*

## 4.1 support data-collect

support data-collect – Gather device logs.

### 4.1.1 SYNOPSIS

support data-collect *advanced*

support data-collect *cancel-performance-job*

support data-collect *delete* <file=>

support data-collect *list*

support data-collect *list-performance-job*

support data-collect *performance-job*

support data-collect *sanitize-data status*

support data-collect *sanitize-data enable*

support data-collect *sanitize-data disable*

support data-collect *status*

support data-collect *upload* <file=>

### 4.1.2 DESCRIPTION

Use this command to - Collect default/additional diagnostic logs. - Delete the log package that were generated using the data-collect command. - List all the generated log packages from the /log/data-collect directory. - Display the status of the ongoing data-collect command. - Disable the use of a proxy server for this appliance. - Upload the log package that were generated using the data-collect command. - Enable, disable, and view the current setting for sanitizing sensitive data.

### 4.1.3 OPTIONS

**support data-collect advanced** Collect additional diagnostic logs.

**support data-collect cancel-performance-job** Cancel the scheduled job for collecting performance metrics.

**support data-collect delete** <file=> Delete the log packages that were generated using the data-collect command.

**support data-collect list** List all the generated log packages from the /log/data-collect directory.

**support data-collect list-performance-job** Display the job that is scheduled for collecting performance metrics.

**support data-collect performance-job** Collect performance metrics for Docker host and configured containers.

**support data-collect sanitize-data status** Display the data sanitization status.

**support data-collect sanitize-data enable** Mask sensitive data such as personally identifiable information (PII) in the generated data-collect log package.

**support data-collect sanitize-data disable** Disable masking of sensitive data such as personally identifiable information (PII) in the generated data-collect log package

**support data-collect status** Display the status of the ongoing data-collect command.

**support data-collect upload** <file=> Upload the log package that was generated using the data-collect command.



#### 4.1.4 EXAMPLES

```
support data-collect      [INFO] The data-collect command is initiated. Use the
support data-collect status command to check the current status.      Operation
completed successfully
```

## 4.2 support logbrowser

support logbrowser - Show/control log transfer console processes.

### 4.2.1 SYNOPSIS

support logbrowser start

support logbrowser status

support logbrowser stop

### 4.2.2 DESCRIPTION

Use this command to manage the log transfer web service, which is used by the Log Transfer Console to download the logs to your local system.

### 4.2.3 OPTIONS

**support logbrowser start** Start the log transfer web service. You can set the amount of time from 1 to 720 minutes. The default time is 720 minutes. When the set time expires, the log transfer web service stops automatically.

**support logbrowser status** Show the status of the log transfer web service.

**support logbrowser stop** Stop the log transfer service manually.

## Monitor commands

- *set beacon*
- *show hardware-errors*
- *show hardware-health*

## 5.1 set beacon

set beacon - Start or Stop the LED(s) of HDD drive(s) / SSD drive(s)

### 5.1.1 SYNOPSIS

```
set beacon hdd <diskid=> <operation=> <minutes=>
```

```
set beacon ssd <diskid=> <operation=> <minutes=>
```

### 5.1.2 DESCRIPTION

You can use the `set beacon hdd` to start or stop flashing the LED(s) of one or more HDD drive(s).

Use the `set beacon ssd` to start or stop flashing the LED(s) of one or more SSD drive(s).

### 5.1.3 OPTIONS

`set beacon hdd`

**hdd** Start or Stop the LED(s) of HDD drive(s) by diskid

*diskid* ID of the disk that you want to locate. Use slot:port:box:bay format. Default value: ALL

*operation* Start or Stop flashing the target LEDs, should be: [start or stop]

*minutes* The duration of time, in minutes, that LEDs can flash

`set beacon ssd`

**ssd** Start or Stop the LED(s) of SSD drive(s) by diskid

*diskid* ID of the disk that you want to locate. Use slot:port:box:bay format. Default value: ALL

*operation* Start or Stop flashing the target LEDs, should be: [start or stop]

*minutes* The duration of time, in minutes, that LEDs can flash

### 5.1.4 EXAMPLES

The following example shows how to set beacon to flash an LED of a HDD with diskid for 3 minutes:

```
set beacon hdd diskid=0:1I:2:1 operation=start minutes=3
```

The following example shows how to set beacon to flash an LED of a SSD with diskid for 3 minutes:

```
set beacon ssd diskid=0:1I:2:1 operation=start minutes=3
```

## 5.2 show hardware-errors

show hardware-errors - View the errors that are related to hardware components.

### 5.2.1 SYNOPSIS

show hardware-errors

### 5.2.2 DESCRIPTION

View the errors that are related to the hardware components of an appliance. You can use this information to notify Veritas Technical Support of the errors.

### 5.2.3 OPTIONS

**show hardware-errors** Display all the errors that are related to hardware status.

## 5.3 show hardware-health

show hardware-health - View the health of the various hardware components.

### 5.3.1 SYNOPSIS

show hardware-health node *[component=]*

### 5.3.2 DESCRIPTION

View the performance and status of various hardware components of the appliance node and the attached storage.

### 5.3.3 OPTIONS

**show hardware-health node** *[component=]*

The following options are available for the *[component]* parameter. The default value is all.

(All/Product/Fan/CPU/Disk/RAID/Power/PCI/Network/DIMM/SSD/Firmware/Driver/Utility/Array/Adapter/Temperature)[all]

For example, to view the serial number of the appliance node, run the following command:

```
show hardware-health node component=Product
```

### 5.3.4 EXAMPLES

The following is an example output of the `show hardware-health node component=Product` command.

Compute Node NetBackupFlexScale Appliance

Time Monitoring Ran: Sun Mar 19 2023 22:20:55 PDT

```
+-----+
|                                     |
|               Hardware monitor information               |
|+-----+-----+-----+-----+ |
|| Name                               | Manufacturer | Serial      | I/O Configuration | |
|+-----+-----+-----+-----+ |
|| NetBackup Flex Scale 5551 | HPE          | SGH030VQPL | A                  | |
|+-----+-----+-----+-----+ |
|                                     |
+-----+
```

## Network commands

- *delete network*
- *set network*
- *show network*
- *system ipmi*

## 6.1 delete network

delete network - Delete the configured network settings.

### 6.1.1 SYNOPSIS

delete network interface

delete netowrk vlan

### 6.1.2 DESCRIPTION

Use the `delete network interface` command to remove the IP address and shut down the interface.

Use the `delete netowrk vlan` command to delete a protocol-based VLAN.

### 6.1.3 OPTIONS

**interface** Unconfigure an IP address for a network interface

**vlan** Delete a protocol-based VLAN



## 6.2 set network

set network - Configure network settings.

### 6.2.1 SYNOPSIS

```
set network interface <ip=> <netmask=> <gateway=>
```

```
set network vlan <vlanid=> <ip=> <netmask=> <gateway=>
```

### 6.2.2 DESCRIPTION

You can use the `set network interface` command to set the IP address of a single interface on the network that you want to connect your appliance to. When you use this command, you need to define the IP address, the netmask address, and the gateway address.

Use the `set network vlan` command to set VLAN for your appliance in your existing network environments.

### 6.2.3 OPTIONS

**interface** Configure an IP address for a network interface

*ip* IPv4 or IPv6 address

*netmask* Netmask for an IPv4 address or the prefix length for an IPv6 address

*gateway* Default gateway IP address

**vlan** Tag a protocol-based VLAN

*vlanid* VLAN identifier [1-4095]

*ip* IPv4 or IPv6 address

*netmask* Netmask for an IPv4 address or the prefix length for an IPv6 address

*gateway* Default gateway IP address

### 6.2.4 EXAMPLES

The following example shows how to configure your appliance network settings:

```
set network interface ip=10.180.2.3 netmask=255.255.255.0 gateway=10.180.2.1
```

## 6.3 show network

show network - Show network settings.

### 6.3.1 SYNOPSIS

show network interface status

show network vlan status

### 6.3.2 DESCRIPTION

Use the `show network interface status` command to list the network properties.

Use the `show network vlan status` command to show VLAN for your appliance in your existing network environments.

### 6.3.3 OPTIONS

**interface** Display status of a network interface

**vlan** Display VLAN status

*status* VLAN status

## 6.4 system ipmi

system ipmi - Disable restricted access to IPMI.

### 6.4.1 SYNOPSIS

system ipmi restricted-access disable

### 6.4.2 DESCRIPTION

Use this command to disable restricted access to IPMI.



## Software commands

- *system add*
- *system install*
- *system list*
- *system software available-patch*
- *system software delete-update*
- *system software download-progress*
- *system software download-update*
- *system software downloaded*
- *system software install-update*
- *system software installed-eebs*
- *system software readme*
- *system software rollback-update*
- *system software share*
- *system software stop-download*
- *system software upgrade-status*
- *system software version*
- *system uninstall*
- *system upgrade*

## 7.1 system add

system add – Use to update mandatory list of hardware vendor specific rpms.

### 7.1.1 SYNOPSIS

system add hw-vendor-packages

### 7.1.2 DESCRIPTION

Use this command to update mandatory list of hardware vendor specific rpms, a vendor specific rpm can be drivers, utilities and etc. To see name and minimum version of the mandatory or required vendor, run `system list hw-vendor-packages` command. You can download the sample `vendor_utilities.json` file from veritas support site if needed. You can run the `system software share open` command on the appliance and copy the downloaded file to the appliance. After you have downloaded the new `vendor_utilities.json`. You can now run the `system add hw-vendor-packages` command.

### 7.1.3 OPTIONS

**system add hw-vendor-packages** Update mandatory list of hardware vendor specific rpms.

### 7.1.4 EXAMPLES

system add hw-vendor-packages

```
Successfully replaced vendor_utilities.json file.``
```

## 7.2 system install

system install – Use to install hardware vendor specific rpms.

### 7.2.1 SYNOPSIS

```
system install hw-vendor-packages rpm_name=*<rpm-name>*
```

### 7.2.2 DESCRIPTION

Use this command to install a new hardware vendor specific rpm, a vendor specific rpm can be drivers, utilities and etc. To use this command you must know the name of the vendor rpm that you want to install. To see a list of the mandatory or required vendor rpms you need to install, run `system list hw-vendor-packages` command. You can download these required hardware vendor rpms from hardware vendor support site, and download these manually. You can run the `system software share open` command on the appliance and copy the downloaded rpms to the appliance. After you have downloaded the hardware vendor specific rpms. You can now run the `system install hw-vendor-packages rpm_name=` command.

### 7.2.3 OPTIONS

**system install hw-vendor-packages rpm\_name= <rpm-name=>** Install hardware specific rpms.

*rpm-name=* The name of hardware vendor specific rpms that you want to install.

### 7.2.4 EXAMPLES

```
system install hw-vendor-packages rpm_name=example1.rpm,example2.rpm
```

```
[Info] V-409-775-30005: Installed the hardware vendor package on the system_
↪successfully.``
```

## 7.3 system list

system list – Use this command to list the required or installed vendor specific rpms.

### 7.3.1 SYNOPSIS

system list hw-vendor-packages

system list vendor-rpm\_installed

### 7.3.2 DESCRIPTION

Use this command to list the required or installed vendor specific rpms. The required or mandatory vendor rpms are those drivers or utilities which are must for nodes to function properly.

### 7.3.3 OPTIONS

**hw-vendor-packages** Use this command to list the required vendor specific rpms.

**vendor-rpm\_installed** Use this command to list the user installed vendor specific rpms.



## 7.4 system software available-patch

system software available-patch – Lists the available patch information.

### 7.4.1 SYNOPSIS

system software available-patch

### 7.4.2 DESCRIPTION

You can use this command to show the patches that are available for installation for a particular appliance node.

### 7.4.3 OPTIONS

**system software available-patch** Use this command to check the Veritas site for any software updates that are available.

## 7.5 system software delete-update

system software delete-update – Delete a software update.

### 7.5.1 SYNOPSIS

system software delete-update <*update-name*=>

### 7.5.2 DESCRIPTION

You can use this command to delete a specific software release update, sometimes referred to as a patch. Use the `system software downloaded` command to obtain the list of software release updates that are downloaded.

### 7.5.3 OPTIONS

**system software delete-update** <*update-name*=> Delete a specific release update.

*update-name*= The specific name of the update that you want to delete.

## 7.6 system software download-progress

system software download-progress – Show the progress of an online patch download.

### 7.6.1 SYNOPSIS

system software download-progress

### 7.6.2 DESCRIPTION

Use this command to display the download progress of a software patch.

### 7.6.3 OPTIONS

**system software download-progress** Display the download progress of a software patch. The progress bar displays the download progress. Press Ctrl+C to exit this command. Exiting the command does not stop the download process.

## 7.7 system software download-update

system software download-update – Download a software update.

### 7.7.1 SYNOPSIS

system software download-update <*update-name*=>

### 7.7.2 DESCRIPTION

You can use this command to download a specific release update.

### 7.7.3 OPTIONS

**system software download-update** <*update-name*=> Download a specific update.

*update-name*= The file name of the update that you want to download.

## 7.8 system software install-update

system software install-update – Use to install an EEB or a software release update.

### 7.8.1 SYNOPSIS

system software install-update <*update-name*=>

### 7.8.2 DESCRIPTION

Use this command to install a new or an existing software update or an engineering binary (EEB) to an appliance node that you designate. To use this command you must know the name of the software update or the EEB, that you want to install. To see a list of the software updates that are available for you to install, run `system software available-patch` command. This command checks the Veritas site for the latest software updates. Once you find the software update that you want to install, you must run the `system software download-update update_name=` command, where *update\_name* is the name of the software update. To see the list of the EEBs that are available for you to install, check the Veritas Download Center and download these manually. You can then run the `system software share open` command on the appliance and copy the downloaded EEB to the appliance. After you have downloaded the software update or EEB you can now run the `system software install-update update-name=` command.

This command can only be run on a single node.

### 7.8.3 OPTIONS

**system software install-update <*update-name*=>** Install a software release update.

*update-name*= The name of the update that you want to install.

## 7.9 system software downloaded

system software downloaded – List downloaded software updates.

### 7.9.1 SYNOPSIS

system software downloaded

system software downloaded <*update-name*=>

system software downloaded <*list*>

### 7.9.2 DESCRIPTION

List downloaded software updates.

### 7.9.3 OPTIONS

**system software downloaded** List all downloaded software updates.

*update-name*= The specific name of the update that you want to list detail.

*list* List only the names of all downloaded software updates.

## 7.10 system software installed-eebs

system software installed-eebs – Show the list of the Emergency Engineering Binaries (EEBs) that are installed on each node of the appliance.

### 7.10.1 SYNOPSIS

system software installed-eebs

### 7.10.2 DESCRIPTION

Show the list of the Emergency Engineering Binaries (EEBs) that are installed on each node of the appliance.

### 7.10.3 OPTIONS

**system software installed-eebs** Show the list of the Emergency Engineering Binaries (EEBs) that are installed on each node of the appliance.

## 7.11 system software readme

system software readme – Defines the Access Appliance patch process.

### 7.11.1 SYNOPSIS

system software readme

### 7.11.2 DESCRIPTION

This command defines the patch process for the appliance node.

### 7.11.3 OPTIONS

**system software readme** Show the patch process for the appliance node.

### 7.11.4 EXAMPLES

This command contains the following patch information.

```
Patch Readme
=====
The following procedures explain how to copy a software release update to
the NetBackup Flex Scale Appliance node and install the update.

To download software update directly from the Veritas Support website:

1. Use the 'system software available-patch' command to look for the latest
   release updates.

2. Use the 'system software download-update' command to download the release update.

3. Use the 'system software downloaded' command to list all of the downloaded
   release updates. Note the name of the update to install.

To upload a software update from a local computer:

1. Log in as the user 'admin' to the Appliance node.

2. Use the 'system software share open' command to open the share so the
   Appliance node can receive the release updates. Access to the share:
   (nso-01:/system/inst/patch/incoming)

3. On the local computer, perform the following steps:

   a. Mount/Map the appropriate share.

   b. Download the release update from the Veritas Support website.

   c. Unzip the release update and review the README file in the zip.

   d. Upload the unzipped release update to the mounted share.
```

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e. Unmap/Unmount the mounted share.

4. Use the 'system software share close' command to close the share.

5. Use the 'system software downloaded' command to list all the downloaded release updates. Note the name of the update to install.

To install a release update on the NetBackup Flex Scale Appliance node:

1. Make sure that you follow the correct upgrade process in the Access Appliance documentation before you install the patch on this node.

2. Use the 'system software install-update' command to install the release update to the node.

Use the name of the release update that you noted in the procedures

above when you entered the 'system software downloaded' command.

For more detailed information about this process, refer to the NetBackup Flex Scale Appliance documentation.

## 7.12 system software rollback-update

system software rollback-update – Rollback a specific EEB.

### 7.12.1 SYNOPSIS

system software rollback-update <*update-name*=>

### 7.12.2 DESCRIPTION

Use this command to rollback any Emergency Engineering Binaries (EEBs) that are installed on your appliance. You can use the `system software installed-eebs` commands to view the software version and all installed EEBs. You can then specify which EEB you want to roll back. You can only specify only one EEB at a time with this command. However, you can use this command multiple times to roll back as many installed EEBs as you want.

### 7.12.3 OPTIONS

**system software rollback-update** <*update-name*=> Roll back a specific EEB.

*update-name*= The name of the EEB that you want to roll back.

## 7.13 system software share

system software share – Share or unshare a directory for incoming patches

### 7.13.1 SYNOPSIS

system software share open

system software share close

### 7.13.2 DESCRIPTION

You can use this command to share or not share the directory that is used to receive incoming patches for your appliance. This operation is accomplished by opening and closing the Network File System (NFS) protocol shares.

### 7.13.3 OPTIONS

**system software share open** Open the NFS shares for the directory that receives incoming patches.

**system software share close** Close the NFS shares for the directory that receives incoming patches.

## 7.14 system software stop-download

system software stop-download – Stop the download process of a software update or the software patch, which can be in any of these installation stages - Downloading, Stopped, or Postcheck.

### 7.14.1 SYNOPSIS

system software stop-download <update-name=>

### 7.14.2 DESCRIPTION

Use this command to stop a patch download in one of the following stages:

- Downloading - The software update is in the process of being downloaded.
- Stopped - The downloading process has stopped abruptly; therefore the download cannot be completed.
- Postcheck - During downloading, the software update splits into several files.

Once the split files are downloaded, they need to be merged into the software update. The merging is termed as Postcheck.

### 7.14.3 OPTIONS

**system software stop-download** <update-name=> This command stop downloading of patch.

*update-name*= The name of the software patch update.

### 7.14.4 NOTE

You cannot use the stop-download command if the software update has been downloaded completely and the download process is in Completed stage.

## 7.15 system software upgrade-status

system software upgrade-status - View the version and the software upgrade status.

### 7.15.1 SYNOPSIS

system software upgrade-status

### 7.15.2 DESCRIPTION

This command displays the upgrade status, including the target version, percentage completion, upgrade process status, and some of latest operations.

### 7.15.3 OPTIONS

**system software upgrade-status** View the version and the upgrade status of the appliance node.

### 7.15.4 EXAMPLE

The following is an example output of the `system software upgrade-status` command:

```
[nbfs-3.1] nbfs-01 > system software upgrade-status

The target version is: 3.1

Current upgrade status: COMPLETED. The upgrade is 100% completed.

Latest operations:

-[2023-03-19 11:59:19] [WARNING] Post-upgrade self test failed.

-[2023-03-19 11:59:33] [INFO] Running upgrade cleanup...

-[2023-03-19 12:01:28] [INFO] Upgrade completed with the following warning(s):
Post-upgrade self test failed.
```

## 7.16 system software version

system software version - Use this command to view the version of your appliance node.

### 7.16.1 SYNOPSIS

system software version

### 7.16.2 DESCRIPTION

Use this command to view the version of your appliance node.

### 7.16.3 OPTIONS

**system software version** Use this command to view the version of your appliance node.

## 7.17 system uninstall

system uninstall – Use to uninstall hardware vendor specific rpms.

### 7.17.1 SYNOPSIS

```
system uninstall hw-vendor-packages rpm_name=*<rpm-name>*
```

### 7.17.2 DESCRIPTION

Use this command to uninstall a new hardware vendor specific rpm, a vendor specific rpm can be drivers, utilities and etc. To use this command you must know the name of the vendor rpm that you want to uninstall. To see a list of the installed vendor rpms you need to uninstall, run `system list vendor-rpm_installed` command.

### 7.17.3 OPTIONS

**system uninstall hw-vendor-packages rpm\_name= <rpm-name=>** Uninstall hardware specific rpms.

*rpm-name=* The name of hardware vendor specific rpms that you want to uninstall.

### 7.17.4 EXAMPLES

```
system uninstall hw-vendor-packages rpm_name=example1.rpm,example2.rpm
```

```
[Info] V-409-775-30009: Un-installed the hardware vendor package on the system_
↪successfully.``
```

## 7.18 system upgrade

system upgrade – Use to upgrade hardware vendor specific rpms already installed.

### 7.18.1 SYNOPSIS

system upgrade hw-vendor-packages rpm\_name=*\*<rpm-name>\**

### 7.18.2 DESCRIPTION

Use this command to upgrade a existing hardware vendor specific rpm, a vendor specific rpm can be drivers, utilities and etc. To use this command you must know the name of the vendor rpm that you want to upgrade. To see a list of the mandatory or minimum required version you need to have, run `system list hw-vendor-packages` command. You can download the updated hardware vendor rpms from hardware vendor support site, and download these manually. You can run the `system software share open` command on the appliance and copy the downloaded rpms to the appliance. After you have downloaded the hardware vendor specific rpms. You can now run the `system upgrade hw-vendor-packages rpm_name=` command.

### 7.18.3 OPTIONS

**system upgrade hw-vendor-packages rpm\_name=** *<rpm-name>* Upgrade hardware specific rpms.

*rpm-name=* The name of hardware vendor specific rpms that you want to upgrade.

### 7.18.4 EXAMPLES

```
system upgrade hw-vendor-packages rpm_name=example1.rpm,example2.rpm
```

```
[Info] V-409-775-30011: Upgraded the hardware vendor package on the system_
↪successfully.``
```



## Storage commands

- *system storage erase-disk*

## 8.1 system storage erase-disk

system storage erase-disk - Erase disks operations.

### 8.1.1 SYNOPSIS

system storage erase-disk *abort*

system storage erase-disk *configure*

system storage erase-disk *show*

### 8.1.2 DESCRIPTION

Use this command to secure erase all data disks. Disk erasure destroys all data stored on the appliance disks by overwriting the disks with a digital pattern. The operation cannot be reverted and the erased data cannot be recovered. Ensure that the data has been backed up and verified, or that the data is no longer needed before you erase the disks. The data erasure process complies with the National Institute of Standards and Technology Special Publication 800-88 (NIST SP800-88).

### 8.1.3 OPTIONS

**system storage erase-disk abort** Abort disk erasure operation

**system storage erase-disk configure** Set operation to erase all disks

**system storage erase-disk show** View current and historical status of disk erasure operations

## Support commands

- *support acl*
- *support collect*
- *support elevate*
- *support generate-otp*
- *support lock*
- *support shell*
- *support show-otp*
- *support unlock*

## 9.1 support acl

support acl - Manage the appliance compatibility file

### 9.1.1 SYNOPSIS

support acl factoryreset

support acl rollback

support acl display

support acl update

### 9.1.2 DESCRIPTION

You can use the `support acl factoryreset` command to factory reset the appliance compatibility file.

Use the `support acl rollback` command to roll back the appliance compatibility file to the previous version.

Use the `support acl display` command to display the appliance compatibility file.

Use the `support acl update` command to update the appliance compatibility file.

### 9.1.3 OPTIONS

**factoryreset** Factory reset the appliance compatibility file

**rollback** Roll back the appliance compatibility file to the previous version

**display** Display the appliance compatibility file

**update** Update the appliance compatibility file

### 9.1.4 EXAMPLES

#### support acl update

This requires uploading a compatibility file before running this command.

common workflow to update ACL file:

1. Run command: 'system software share open' it will open a NFS share at appliance.
2. Assume user have one Linux setup, user can mount appliance share to their setup\_↵  
↵system via command like below.

- a. Example: `mount -t nfs -o rw 'appliance hostname':/system/inst/patch/incoming /↵mnt/nfs`
- b. It is better to use setup which in same site with appliance,  
otherwise NFS mount could take longer and the experience not good due to network\_↵  
↵issue.
1. Then user could copy ACL file to NFS mount path, in this example, its /mnt/nfs.

- a. Please note: the ACL file name must be: acl\_info.json
- 4. Run command: 'support acl update' to replace the ACL file.
- 5. Run command: 'system software share close' as suggested in step 1 to ensure appliance security.

The following example shows the output that is displayed when you run the support acl update command successfully:

```
[nbfs-3.1] NetBackupFlexScale-appliance > support acl update

Updated the appliance compatibility file successfully.

Operation completed successfully
```

### support acl factoryreset

Please notify that the support acl factoryreset will only run successfully once you have updated the appliance compatibility file by support acl update command.

The following example shows the output that is displayed when you run the support acl factoryreset command successfully:

```
[nbfs-3.1] NetBackupFlexScale-appliance > support acl factoryreset
>> Do you want to factory reset ACL file? (yes/no): yes

Reset the appliance compatibility file to its default factory settings successfully.

Operation completed successfully
```

### support acl rollback

The following example shows the output that is displayed when you run the support acl rollback command successfully:

```
[nbfs-3.1] NetBackupFlexScale-appliance > support acl rollback
>> Do you want to rollback ACL file to previous version? (yes/no): yes

Rolled back the appliance compatibility file successfully.

Operation completed successfully
```

### support acl display

The following example shows the output that is displayed when you run the support acl display command:

```
+-----+-----+-----+-----+
| Type | Component | Compatible versions |
+-----+-----+-----+-----+
| Firmware | BIOS | 2.36, 2.42, 2.56, 2.62, 2.68 |
+-----+-----+-----+-----+
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```

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```

| Firmware | HPE Smart Array P816i-a SR Gen10 in Slot 0 (Embedded) | 2.65-0,3.53-0,5.00,5.32,5.
| 32-0 |
+-----+
| Firmware | Mellanox_ConnectX-4 | 14.27.4000 (HP_2420110034),14.32.1010
| (HP_2420110034) |
+-----+
| Firmware | iLO5 | 2.30,2.42,2.55,2.65,2.
| 72 |
+-----+
| Firmware | System ROM | U30 v2.36 (07/16/2020),U30 v2.42 (01/23/2021),U30 v2.56,U30 v2.
| 62 (03/08/2022),U30 v2.68 (07/14/2022) |
+-----+
| Firmware | NVMe Backplane FW | 1.20,1.24
| |
+-----+
| Firmware | Power Mgmt Ctlr FW Bootloader | 1.1
| |
+-----+
| Firmware | System Programmable Logic Device | 0x31
| |
+-----+
| Firmware | Power Management Controller Firmware | 1.0.7,1.0.8
| |
+-----+
| Firmware | Server Platform Services (SPS) Firmware | 4.1.4.339,4.1.4.423,4.1.4.505,4.1.4.
| 601,4.1.4.804 |
+-----+
| Firmware | Intelligent Provisioning | 3.40.192,3.50.100
| |

```

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+-----+-----+-----+-----+			
+-----+-----+-----+-----+			
Firmware		Embedded Video Controller	
→			2.5
→			
+-----+-----+-----+-----+			
+-----+-----+-----+-----+			
Firmware		HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr -	
→VK001920GWITC			4IYRHPG6
→			
+-----+-----+-----+-----+			
+-----+-----+-----+-----+			
Firmware		HPE 7.68TB NVMe Read Intensive SFF (2.5") - MZXL57T6HALA-	
→000H3		MPK70H5Q,MPK73H5Q,MPK75H5Q,	
→MPK76H5Q			
+-----+-----+-----+-----+			
+-----+-----+-----+-----+			
Firmware		HPE 7.68TB NVMe Read Intensive SFF (2.5") - MZXL7T6HALA-	
→000H3		MPK7625Q	
→			
+-----+-----+-----+-----+			
+-----+-----+-----+-----+			
Firmware		HPE 7.68TB NVMe Read Intensive SFF (2.5") - MZWLR7T6HBLA-	
→00AH3		HPK1	
→			
+-----+-----+-----+-----+			
+-----+-----+-----+-----+			
Firmware		HPE 14TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e -	
→Seagate - MB014000JWZHC		HPD0,HPD2	
→			
+-----+-----+-----+-----+			
+-----+-----+-----+-----+			
Firmware		HPE 14TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e -	
→WDC - MB014000JWUDB		HPD2,HPD3	
→			
+-----+-----+-----+-----+			
+-----+-----+-----+-----+			
Firmware		HPE Ethernet 1Gb 4-port 366FLR Adapter	
→		1.2529.0,1.3089.0,1.3227.	
→0			
+-----+-----+-----+-----+			
+-----+-----+-----+-----+			
Driver		igb	
→		5.6.0-k	
→			
+-----+-----+-----+-----+			
+-----+-----+-----+-----+			

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Driver	mlx5_core	
↪		4.9-2.2.4
↪		
+-----+-----		
↪-----+		
↪-----+		
Driver	smartpqi	
↪		1.2.16-040,2.1.8-040,2.1.12-
↪055		
+-----+-----		
↪-----+		
↪-----+		
Utility	RESTful Interface Tool	
↪		3.2.2
↪		
+-----+-----		
↪-----+		
↪-----+		
Operation completed successfully		



## 9.2 support collect

support collect - Collect appliance details and transmit to Veritas AutoSupport server.

### 9.2.1 SYNOPSIS

support collect inventory

support collect config

### 9.2.2 DESCRIPTION

Use this command to collect appliance details on-demand without waiting for a scheduled collection. Ensure that Call Home is enabled on the appliance before you run this command.

### 9.2.3 OPTIONS

**support collect config** Use this command to collect configuration information about the appliance and transmit it to the Veritas AutoSupport server.

**support collect inventory** Use this command to collect all component-specific metadata including the appliance model and serial number and transmit it to the Veritas AutoSupport server.

### 9.2.4 EXAMPLES

The following example shows the output that is displayed when you run the `support collect config` command:

```
[nbfs-3.1] NetBackupFlexScale-appliance > support collect config

[Info] Collecting configuration data. This process may take several minutes.

[Info] V-475-4-30000 Configuration data collection completed.

Transmitting this data to the Veritas AutoSupport server may take up to 30 seconds.
```

The following example shows the output that is displayed when you run the `support collect inventory` command:

```
[nbfs-3.1] NetBackupFlexScale-appliance > support collect inventory

Collecting inventory data. The data collecting process may take several minutes.

Inventory collection completed. It may take 10 to 30 seconds to transmit the data to ↵
↵Veritas.
```

## 9.3 support elevate

support elevate - Enables the user to open a root shell.

### 9.3.1 SYNOPSIS

support elevate

### 9.3.2 DESCRIPTION

You can use this command to open a root shell in which you can troubleshoot or manage underlying operating system tasks. The password of maintenance is required.

NOTE: If current appliance node is in lockdown mode, you need assistance from Veritas Support to generate One-Time Password (OTP) and unlock root shell access before you can successfully open the root shell. In this case, a passphrase, which your support representative specified while generating the security key, is needed.

## 9.4 support generate-otp

support generate-otp - Generate a One-Time Password (OTP).

### 9.4.1 SYNOPSIS

support generate-otp

### 9.4.2 DESCRIPTION

You can use the this command to generate One-Time Password (OTP). OTP is a 10-digit number used by your support representative to generate a security key which is needed to unlock root shell access when this appliance node is in lockdown mode. Note that OTP expires after 2 hours since it is generated.

## 9.5 support lock

support lock - Lock root shell access.

### 9.5.1 SYNOPSIS

support lock

### 9.5.2 DESCRIPTION

You can use the this command to lock root shell access if the appliance node has been unlocked by command `support unlock` , when this appliance node is in lockdown mode.

NOTE:

- When it is run, all the active root shell sessions in current node will be terminated.
- The system will lock root shell access automatically after 12 hours even you don't manually run this command to lock.

## 9.6 support shell

support shell - Enables the user to open a read-only shell.

### 9.6.1 SYNOPSIS

support shell

### 9.6.2 DESCRIPTION

You can use this command to open a shell in which you can monitor and troubleshoot appliance node as non root user in read-only mode.

## 9.7 support show-otp

support show-otp - Show One-Time Password (OTP).

### 9.7.1 SYNOPSIS

support show-otp

### 9.7.2 DESCRIPTION

You can use the this command to show the One-Time Password (OTP) if it has been generated by command `support generate-otp`.

## 9.8 support unlock

support unlock - Unlock root shell access.

### 9.8.1 SYNOPSIS

support unlock

### 9.8.2 DESCRIPTION

You can use the this command to unlock root shell access when this appliance node is in lockdown mode. When it is run, you are prompted for the security key which your support representative must generate using the One-Time Password (OTP).





## Introducing cluster-level CLI

### 10.1 About accessing Veritas NetBackup Flex Scale cluster-level CLI

Veritas NetBackup Flex Scale cluster-level CLI can be accessed using the console IP address.

You can access the Veritas NetBackup Flex Scale cluster-level CLI by logging into the system using the console IP address with your credentials.

For example:

```
ssh admin_user@console_ip
```

After you login to the Veritas NetBackup Flex Scale cluster-level CLI, you can type a question mark (?) at the prompt to get list of all the available commands.

```
[nbfs-3.1] nso-1.vxindia.veritas.com > ?
Available commands

cluster      Cluster configuration commands
filesystem   File system operations
man          Show man page for the given module
network      Network IP configuration settings
storage      Storage management commands
support      Support and diagnostic settings
system       System utility commands
```

## 10.2 Veritas NetBackup Flex Scale cluster-level CLI command conventions

This document uses the following conventions when describing commands that are used in the Veritas NetBackup Flex Scale cluster-level CLI.

### 10.2.1 Command conventions

- Brackets `[]` indicate that the enclosed component of the command line is optional.
- Curly braces `{ }` indicate an association between the enclosed options. For example, `{opt1 [opt2 ... optn]}` means that if the command contains `opt1`, then the command may optionally contain `opt2 ... optn`.
- A vertical bar (or the pipe symbol) `|` separates optional arguments from which you can choose. For example, if a command has the following format, you can choose `arg1` or `arg2` (but not both):

```
command [arg1 | arg2 ]
```

- Italics indicate that the information is user supplied. For example, the user supplies the `ipaddr`, `nodename`, and if the network `ip` online is isolated or not in the following command:

```
network ip online ipaddr=<ipaddr> nodename=<nodename>
```

- An ellipsis (...) means that you can repeat the previous parameter. For example, consider the following command:

```
filesystem alert set inodes-or-fs-space=<inodes-or-fs-space> num-inodes-or-percentage=<num-inodes-or-percentage> fs-name=[fs-name,...] snapshot-name=[snapshot-name]
```

## 10.3 About accessing the online man pages

You can see all the available man pages by typing `man` command at the command line.

```
[nbfs-3.1] r7515-142v17.vxindia.veritas.com > man

system      System related settings
filesystem  File System settings
network     Configure network settings
storage     Storage management settings
cluster     Cluster configuration commands
support     Support utility commands
```

You access the online man pages by typing `man name_of_category` at the command line.

```
[nbfs-3.1] r7515-142v17.vxindia.veritas.com > man network

vlan      Show man page for vlan related commands in network module
show      Show man page for show commands in network module
all       Show man page for all commands in network module
device    Show man page for device related commands in network module
bond      Show man page for bond related commands in network module
```

You can access the man pages for a specific category by typing `man name_of_category name_of_component` at the command line.

```
[nbfs-3.1] r7515-142v17.vxindia.veritas.com > man network bond
```

### NAME

`bond - Bond show command`

### SYNOPSIS

`network bond show`

### DESCRIPTION

The `network bond show` command is used to view the bonding of Ethernet interfaces.

### OPTION

`network bond show`

Show the current bonding settings.

### EXAMPLES

Display the bond settings.

```
> network bond show
BONDNAME      MODE                DEVICES
-----      -
bond0         active-backup      eth0 eth1

> network bond show
BONDNAME      MODE                DEVICES
-----      -
privbond0     balance-rr         eth2 eth3
```

To exit the system console, enter the following command: `exit`.



## 11.1 cluster

### 11.1.1 SYNOPSIS

```
cluster node reboot nodename=<nodename>
cluster load show
cluster node shutdown nodename=<nodename>
cluster node start nodename=<nodename>
cluster node stop nodename=<nodename> force=[force]
```

### 11.1.2 DESCRIPTION

The cluster commands allow you to view the nodes in the cluster and their states. You can start, stop, reboot or shutdown nodes in the cluster configuration.

### 11.1.3 OPTIONS

***nodename*** The node on which the operation takes place. A value of `all` indicates the operation takes place on all of the nodes in the cluster. The value `all` does not apply to the `del` command.

***ipaddr*** The accessible IP address of the node used start,stop,shutdown,reboot a cluster node.

**cluster node reboot *nodename*=<*nodename*>** Reboot a node or all of the nodes in the cluster. To reboot a node, specify the *nodename* as it is displayed in the `cluster load show` command. To reboot all the nodes in the cluster use `all` for *nodename*.

**cluster load show** Display the nodes in the cluster, their states, CPU load, and network load, during the past 15 minutes. It also displays information about nodes that are being added to the cluster, deleted from the cluster, replaced in the cluster and nodes on which upgrade is in progress.

**cluster node shutdown *nodename*=<*nodename*>** Shut down a node or all of the nodes in the cluster. To shut down a node, specify the *nodename* as it is displayed in the `cluster load show` command. To shut down all the nodes in the cluster, use `all` for *nodename*.

**cluster node start nodename=<nodename>** Start a cluster node

**cluster node start nodename=<nodename>** Start a cluster node

**cluster node stop nodename=<nodename> force=[force]** Stop a cluster node Use the *force* option to force stop the running nodes in stop cluster node nodename=all operation if some nodes are not reachable.

## 11.1.4 EXAMPLES

Display the current state of all the nodes in the cluster and their loads, during the past 15 minutes.

```
> cluster load show
```

Node	State	CPU(15 min) %	pubeth0(15 min)		pubeth1(15 min)	
			rx (MB/s)	tx (MB/s)	rx (MB/s)	tx (MB/s)
----	----	-----	-----	-----	-----	-----
test_1	RUNNING	1.35	0.00	0.00	0.00	0.00
test_2	RUNNING	1.96	0.00	0.00	0.00	0.00
test_3	FAULTED					

  

Nodes in Transition				
Node/IP	Operation	State	Description	
-----	-----	-----	-----	
10.200.58.202	Add node	FAILED	Installing packages	
test_6	Delete node	ONGOING	Removing node	
test_4,test_5	Rolling upgrade	ONGOING	Rolling upgrade phase 2	

Shut down a node in the cluster.

```
> cluster node shutdown nodename=test_4
Stopping Cluster processes on test_4
Sent shutdown command to test_4. SSH sessions to test_4 may terminate.
```

Shut down all nodes in the cluster.

```
> cluster node shutdown nodename=all
Stopping Cluster processes on all
SSH sessions to all nodes may terminate.
Sent shutdown command to test_2
Sent shutdown command to test_3
Sent shutdown command to test_4
Sent shutdown command to test_1
```

Reboot a node in the cluster.

```
> cluster node reboot nodename=test_4
Stopping Cluster processes on test_4
Sent reboot command to test_4. SSH sessions to test_4 may terminate.
```

Reboot all nodes in the cluster.

```
> cluster node reboot nodename=all
Stopping Cluster processes on all
SSH sessions to all nodes may terminate.
Sent reboot command to test_2
Sent reboot command to test_3
Sent reboot command to test_4
Sent reboot command to test_1
```

Replace a faulted node thinkpad-02 in the cluster with a node having 169.254.53.216 as Avahi IP.

```
> cluster load show
```

Node	State	CPU %	eth4(15 min)		eth5(15 min)	
			rx(MB/s)	tx(MB/s)	rx(MB/s)	tx(MB/s)
thinkpad-03	RUNNING	40.098	0.68	0.79	0.73	0.00
thinkpad_02	EXITED	—	—	—	—	—
thinkpad-04	RUNNING	7.258	0.29	0.00	0.72	0.00

To Start a Cluster Node Named visal\_02

```
> cluster node start nodename=visal_02
100% [#] Access Server Start up completed Successfully..
```

To Stop a cluster node Named visal\_02

```
> cluster node stop nodename=visal_02
100% [#] Shutting down Access Server services completed Successfully..
```

### 11.1.5 SEE ALSO

start(1), stop(1), reboot(1), show(1), shutdown(1)

## 11.2 reboot

### 11.2.1 SYNOPSIS

```
cluster node reboot nodename=<nodename>
```

### 11.2.2 DESCRIPTION

The cluster `cluster node reboot` command reboots a node or all of the nodes in the cluster. To reboot a node in the cluster, specify the *nodename* as it is displayed in the `cluster load show` command. To reboot all of the nodes in the cluster, use `all` for *nodename*.

### 11.2.3 OPTIONS

***nodename*** Node on which the operation takes place. A value of `all` indicates the operation takes place on all nodes of the cluster.

**`cluster node reboot nodename=<nodename>`** Reboots a node or all of the nodes in the cluster. To reboot a node in the cluster, specify the *nodename* as it is displayed in the `cluster load show` command. To reboot all of the nodes in the cluster, use `all` for *nodename*.

### 11.2.4 EXAMPLES

Reboots a node in the cluster.

```
> cluster node reboot nodename=test_4
Stopping Cluster processes on test_4
Sent reboot command to test_4. SSH sessions to test_4 may terminate.
```

Reboots all of the nodes in the cluster.

```
> cluster node reboot nodename=all
Stopping Cluster processes on all
SSH sessions to all nodes may terminate.
Sent reboot command to test_2
Sent reboot command to test_3
Sent reboot command to test_4
Sent reboot command to test_1
```

### 11.2.5 SEE ALSO

`show(1)`, `shutdown(1)`



## 11.3 show

### 11.3.1 SYNOPSIS

```
cluster load show
```

### 11.3.2 DESCRIPTION

The cluster show command displays the nodes in the cluster, their states, CPU load, and network load during the past 15 minutes. It also displays information about nodes that are being added to the cluster, deleted from the cluster, replaced in the cluster, and nodes on which upgrade is in progress. The rx and tx columns display statistics of received and transmitted bytes respectively.

### 11.3.3 EXAMPLES

Display the current state of all of the nodes in the cluster and their loads during the past 15 minutes.

```
> cluster load show
```

Node	State	CPU (15 min) %	pubeth0 (15 min)		pubeth1 (15 min)	
			rx (MB/s)	tx (MB/s)	rx (MB/s)	tx (MB/s)
test_1	RUNNING	1.35	0.00	0.00	0.00	0.00
test_2	RUNNING	1.96	0.00	0.00	0.00	0.00
test_3	FAULTED					

  

Nodes in Transition			
Node/IP	Operation	State	Description
10.200.58.202	Add node	FAILED	Installing packages
test_6	Delete node	ONGOING	Removing node
test_4, test_5	Rolling upgrade	ONGOING	Rolling upgrade phase 2

Cluster show output when a node in cluster is being replaced.

```
> cluster load show
```

Node	State	CPU %	eth4 (15 min)		eth5 (15 min)	
			rx (MB/s)	tx (MB/s)	rx (MB/s)	tx (MB/s)
test-03	RUNNING	13.84	4.61	0.00	4.61	0.00
test-02	RUNNING	50.472	4.61	0.00	4.61	0.00
test-01		-	-		-	

  

Node replacement			
Node	Operation	State	Description
test-01	Adding a new node	started	Replace node is running

  

Nodes in Transition			
Node/IP	Operation	State	Description

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=====	=====	=====	=====
10.209.89.11	Add Node	ONGOING	Stage 3 of 7 : Configure new node(s) network

11.3.4 SEE ALSO

reboot(1), shutdown(1)

## 11.4 shutdown

### 11.4.1 SYNOPSIS

```
cluster node shutdown nodename=<nodename> verify=[{true|false|vxdefault}]
```

### 11.4.2 DESCRIPTION

The cluster `cluster node shutdown` command shuts down the nodes in the cluster.

### 11.4.3 OPTIONS

***nodename*** Node on which the operation takes place. A value of `all` indicates the operation takes place on all of the nodes in the cluster.

***verify={true|false|vxdefault}*** Tell command to return only after shutdown of node is completed.

**`cluster node shutdown nodename=<nodename>`** Shut down a node or all of the nodes in the cluster. To shut down a node in the cluster, specify the *nodename*, as it appears in the `cluster load show` command. To shut down all of the nodes in the cluster, use `all` for *nodename*.

### 11.4.4 EXAMPLES

Shut down a node in the cluster.

```
> cluster node shutdown nodename=test_4
Stopping Cluster processes on test_4
Sent shutdown command to test_4. SSH sessions to test_4 may terminate.
```

Shut down all of the nodes in the cluster.

```
> cluster node shutdown nodename=all
Stopping Cluster processes on all
SSH sessions to all nodes may terminate.
Sent shutdown command to test_2
Sent shutdown command to test_3
Sent shutdown command to test_4
Sent shutdown command to test_1
```

### 11.4.5 SEE ALSO

`reboot(1)`, `show(1)`

## 11.5 start

### 11.5.1 SYNOPSIS

```
cluster node start nodename=<nodename>
```

### 11.5.2 DESCRIPTION

The cluster start command starts the given cluster node

### 11.5.3 EXAMPLES

To Start a cluster node, visal\_02

```
> cluster node start nodename=visal_02
100% [#] Access Server Start up completed Successfully..
```

### 11.5.4 SEE ALSO

add(1), del(1), reboot(1), show(1), shutdown(1), replace(1), stop(1)

## 11.6 stop

### 11.6.1 SYNOPSIS

```
cluster node stop nodename=<nodename> force=[force]
```

### 11.6.2 DESCRIPTION

The cluster stop command stops the given cluster node. Use the `force` option to force stop the running nodes in `cluster node stop nodename=all` operation if some nodes are not reachable.

### 11.6.3 EXAMPLES

To stop a cluster node, `visal_02`

```
> cluster node stop nodename=visal_02
100% [#] Shutting down Access Server services completed Successfully..
```

### 11.6.4 SEE ALSO

`add(1)`, `del(1)`, `reboot(1)`, `show(1)`, `shutdown(1)`, `replace(1)`, `start(1)`



## 12.1 network

### 12.1.1 SYNOPSIS

```

network statistics show
network link show nodename=[nodename] device=[device]
network ip modify current-ipaddr=<current-ipaddr> new-ipaddr=<new-ipaddr> netmask=<{ netmask | pre-
fix }> device=[device] fqdn=[fqdn]
network ip delete ipaddr=<ipaddr>
network ip add ipaddr=<ipaddr> netmask*=[{ netmask | prefix}] *type device=[device] node-
name=[nodename] fqdn=[fqdn]
network ip online ipaddr=<ipaddr> nodename=<nodename>
network ip show
network route show nodename=[nodename] type=[type]
network route add nodename=<nodename> ipaddr=<ipaddr> gateway=<gateway> netmask=<{ netmask |
prefix }> device=[device] scope=[scope]
network route delete ipaddr=<ipaddr> nodename=<nodename> gateway=<gateway> net-
mask*=<{netmask | prefix }> *device=[device] scope=[scope]
network bond show
network vlan show
network device show

```

### 12.1.2 DESCRIPTION

These network commands are used to display the details of network and to configure the IP routes and check the status.

### 12.1.3 OPTIONS

`network statistics show`

Display the network configuration and statistics on all the available nodes.

`network link show nodename=[nodename] device=[device]`

Display device attributes.

`network ip modify current-ipaddr=<current-ipaddr> new-ipaddr=<new-ipaddr> netmask=<{ netmask | prefix }> device=[device] fqdn=[fqdn]`

Modify an IP address used by the cluster.

`network ip delete ipaddr=<ipaddr>`

Delete an IP address.

`network route add nodename=<nodename> ipaddr=<ipaddr> gateway=<gateway> netmask=<{ netmask | prefix }> device=[device] scope=[scope]`

Add a new IP address. In a multi-subnet environment, add the IPs of a specific subnet and then configure the routes for that subnet.

`network ip online ipaddr=<ipaddr> nodename=<nodename>`

Bring an IP address used by the cluster online on any running node in the cluster.

`network ip show`

Display IP addresses and their properties.

`network route show nodename=[nodename] type=[type]`

Display route entries in the routing table or global config for the cluster.

`network route add nodename=<nodename> ipaddr=<ipaddr> gateway=<gateway> netmask=<{ netmask | prefix }> device=[device] scope=[scope]`

Add a new route to *ipaddr* destination with *netmask* via *gateway* through *device* on node *nodename*. *scope* parameter can be *local* or *global*. To configure a cluster in a multi-subnet environment, ensure that the IPs of the different subnets are already added to the reachable devices. In a multi-subnet configuration, you are required to select one of the subnets and the gateway as the global gateway. This global gateway is added to the main table and is used as the default route for any connection originating from the cluster to any outside network. There can be only one gateway with *global* scope. When the route is configured with *device* as *any*, the route is added with the reachable device. If *device* is specified with *scope* as *global*, the route is added with the specified device. Node specific gateway route with *global* scope is not supported.

The *local* scope routes are IP/subnet specific and the local gateway route is used for the connections originating and designated from the subnet's IP. The gateway routes with *local* scope do not act as default gateway on a cluster. Local gateway route when configured with *device* as *any* adds the route to all the local routing tables with matching subnet. If *device* is specified with value other than *any*, the route does not get added to other local routing tables even with matching subnets. Node specific routes are allowed with *local* scope. While adding *global* default gateway route, it is recommended to add a subsequent *local* route with the same parameters.

In a multi-subnet environment of 'n' (where n>2) subnets, you should configure one gateway route for *global* scope and 'n' gateway routes for the all the subnets with *scope local*.

The following information gives the result for possible combinations of parameters such as node, device and scope for the route add and route delete command.



- 1) Node = all ; Device = any ; Scope = global; Result = The route gets added/deleted to/from main routing table with the reachable device.
- 2) Node = all ; Device = Specific; Scope = global; Result = The route gets added/deleted to/from main routing table with the specified device.
- 3) Node = Specific; Device = any ; Scope = global; Result = Error: Route operations are not supported for a specific node.
- 4) Node = Specific; Device = Specific; Scope = global; Result = Error: Route operations are not supported for a specific node.
- 5) Node = all ; Device = any ; Scope = local ; Result = The route gets added/deleted to/from local routing table of all matching subnets with all devices on all the nodes.
- 6) Node = all ; Device = Specific; Scope = local ; Result = The route gets added/deleted to/from local routing table of all matching subnets with specific device on all the nodes.
- 7) Node = Specific; Device = any ; Scope = local ; Result = Error: Route operations are not supported for a specific node.
- 8) Node = Specific; Device = Specific; Scope = local ; Result = Error: Route operations are not supported for a specific node.

```
network route delete ipaddr=<ipaddr> nodename=<nodename> gateway=<gateway> net-  
mask*=<{netmask | prefix }> *device=[device] scope=[scope]
```

Delete a route to *ipaddr* destination with *netmask* via *gateway* through *device* on node *nodename*. *scope* parameter can be *local* or *global*. Scope parameter works as stated above in *ip route add* command.

```
network bond show
```

Display the bond settings.

```
network vlan shown
```

Display the current VLAN devices.

```
network device show
```

List all plugged NIC devices on all nodes.

## 12.1.4 SEE ALSO

bond(1), ip(1), show(1), vlan(1), device(1)

## 12.2 bond

### 12.2.1 SYNOPSIS

network bond show

### 12.2.2 DESCRIPTION

The `network bond show` command is used to view the bonding of Ethernet interfaces.

### 12.2.3 OPTIONS

**network bond show** Show the current bonding settings.

### 12.2.4 EXAMPLES

Display the bond settings.

```
> network bond show
BONDNAME      MODE                DEVICES
-----      -
bond0         active-backup       eth0 eth1

> network bond show
BONDNAME      MODE                DEVICES
-----      -
privbond0     balance-rr          eth2 eth3
```

### 12.2.5 SEE ALSO

ip(1), show(1), vlan(1), device(1)

## 12.3 device

### 12.3.1 SYNOPSIS

```
network device show
```

### 12.3.2 DESCRIPTION

The `network network device show` command is used to list NIC devices from Veritas Access Cluster.

`network device show` command prints the bus IDs, MAC addresses, device information, and the device type of all the devices on the given node irrespective of the NICs PCI exclusion state.

### 12.3.3 EXAMPLES

Display the devices.

```
>network device show
cls_01
=====
Device      BusID          MAC Addr          Device Info          Device Type
=====
ens161      0000:04:00.0   00:0c:29:a1:7b:17 VMXNET3 Ethernet Controller Public
ens192      0000:0b:00.0   00:0c:29:a1:7b:f9 VMXNET3 Ethernet Controller Private
ens256      0000:0c:00.0   00:0c:29:a1:7b:21 VMXNET3 Ethernet Controller Not Configured
ens224      0000:13:00.0   00:0c:29:a1:7b:03 VMXNET3 Ethernet Controller Private
ens193      0000:1b:00.0   00:0c:29:a1:7b:0d VMXNET3 Ethernet Controller Public
```

### 12.3.4 SEE ALSO

`bond(1)`, `ip(1)`, `show(1)`, `vlan(1)`

## 12.4 ip

### 12.4.1 SYNOPSIS

```
network link show nodename=[nodename] device=[device]

network ip modify current-ipaddr=<current-ipaddr> new-ipaddr=<new-ipaddr> netmask=<{ netmask | prefix }> device=[device] fqdn=[fqdn]

network ip delete ipaddr=<ipaddr>

network ip add ipaddr=<ipaddr> netmask=<{ netmask | prefix }> type=<type> device=[device] nodename=[nodename] fqdn=[fqdn]

network ip online ipaddr=<ipaddr> nodename=<nodename>

network ip show

network route show nodename=[nodename] type=[type]

network route add nodename=<nodename> ipaddr=<ipaddr> gateway=<gateway> netmask=<{ netmask | prefix }> device=[device] scope=[scope]

network route delete ipaddr=<ipaddr> nodename=<nodename> gateway=<gateway> netmask*=<{ netmask | prefix }> *device=[device] scope=[scope]
```

### 12.4.2 OPTIONS

***nodename*** Node on which the operation takes place. A value of `all` indicates the operation takes place on all nodes of the cluster.

***device*** Device on which the operation takes place.

***ipaddr*** Specifies the IP address. You can specify either an IPv4 address, or an IPv6 address.

***current-ipaddr*** Specifies the old IP address to be modified.

***new-ipaddr*** Specifies what the new IP address will be.

***netmask*** Netmask for the IPv4 address. Specify an IPv4 address in the format AAA.BBB.CCC.DDD, where each number ranges from 0 to 255.

***prefix*** Prefix length for the IPv6 address. The accepted range is 0-128 integers.

***type*** Specifies how the *ipaddr* should be used by the cluster. The *type* can be `physical` or `virtual`. Physical IP addresses are bound to an interface. Virtual IP addresses can be moved from one interface to other. NFS is served using the virtual IP addresses.

***fqdn*** Specifies a comma-separated list of Fully Qualified Domain Name (FQDN) of the IP address. The *fqdn* can include the characters: a-z/A-Z/0-9 or a hyphen (-). Each level of the FQDN should be between 1 and 63 characters long and should not start or end with a hyphen (-). The last Top Level Domain (TLD) must be at least two characters and have a maximum of six characters. *fqdns* can have `NONE` value for `modify` operation. `NONE` is used to remove the existing FQDN entry from the `/etc/hosts` file.

```
network link show nodename=[nodename] device=[device]
```

Display device attributes. The *device* can be `public` or `private` or `all` or any device name. `public` will display attributes for all public devices. `private` will display attributes for all private devices. `all` will display attributes for all devices. *device name* will display attributes for specified device.

```
network ip add ipaddr=<ipaddr> netmask=<{ netmask | prefix }> type=<type> device=[device] node-
name=[nodename] fqdn=[fqdn]
```

Add a new IP address. IP is a protocol that allows addresses to be attached to a network device. Each device must have at least one address to use the corresponding protocol. Both IPv4 and IPv6 addresses can be attached to one device. The *type* can be *physical* or *virtual*. The *device* attribute can be used with IP *type* *virtual*. If the value *type* is *physical*, and the value of *device* and *nodename* are valid, given physical IP will be added for input device. If no *device* and *nodename* configured, input physical IP will be added to free list. The *fqdns* is an optional argument. Each *fqdn* must be a valid *fqdn*. Upon successful validation of the *fqdn*, IP and *fqdns* entry will be added into the */etc/hosts*.

```
network ip delete ipaddr=<ipaddr>
```

Delete an IP address from the cluster. Physical IP addresses can be deleted from any interface of any node in the cluster. Virtual IP addresses, except the console IP address, can be deleted.

```
network ip modify current-ipaddr=<current-ipaddr> new-ipaddr=<new-ipaddr> netmask=<{ netmask | pre-
fix }> device=[device] fqdn=[fqdn]
```

Modify an IP address used by the cluster. Physical IP addresses and virtual IP addresses can both be modified. Virtual IP address modifications cause NFS connections on *oldipaddr* to be terminated.

```
network ip online ipaddr=<ipaddr> nodename=<nodename>
```

Bring an IP address online for a running node of the cluster.

```
network ip show
```

Shows the IP addresses being used.

```
network route add nodename=<nodename> ipaddr=<ipaddr> gateway=<gateway> netmask=<{ netmask |
prefix }> device=[device] scope=[scope]
```

Add a new route for the cluster. The routing table contains information about paths to other networked nodes. Routing table changes can be made per node of the cluster. Use *all* for *nodename* to add the route to all nodes of the cluster. Use a *netmask*(prefix for IPv6) value of 255.255.255.255 (128 for IPv6) for the *netmask* to add a host route to *ipaddr*. Use a value of 0.0.0.0 (:: for IPv6) for the *gateway* to add a route that does not use any gateway. The *dev device* is an optional argument. Use any of the public devices for the *device* (*eth0*, *eth1*, or any). The *scope* argument is an optional argument. It is either *global* or *local*. If not given then *local* by default. *global* indicates that the route will get added to main routing table. *local* indicates that the route will get added to sub-routing (subnet specific) routing tables.

```
network route delete ipaddr=<ipaddr> nodename=<nodename> gateway=<gateway> net-
mask*=<{netmask | prefix }> *device=[device] scope=[scope]
```

Delete a route used by the cluster. Use *all* for *nodename* to delete the route from all nodes of the cluster. The combination of *ipaddr* and *netmask* specifies the network or host for which the route is deleted. Use a value of 255.255.255.255 (128 for IPv6) for the *netmask*|*prefix* to delete a host route to *ipaddr*. *gateway* is an optional argument. If not provided, deletes all the routes from all the tables with similar subnet. *device* is an optional argument. The *scope* argument is an optional argument. It is either *global* or *local*. If not given then *local* by default. *global* indicates that the route will get deleted from main routing table. *local* indicates that the route will get deleted from sub-routing (subnet specific) routing tables.

**network route show** *nodename=[nodename] type=[type]* Display the routing table of the nodes in the cluster from memory or config. Use *all* to see the routing table from all nodes of the cluster. Use *memory* to see routing information from memory. Use *config* to see global config routing information.

## 12.4.3 EXAMPLES

Display the current link attributes and states.

```
>network link show
NodeName          Device  Status  MTU  Detect  Speed  HWaddr
-----
node5_1           eth0    UP      1500  yes    100Mb/s  00:0c:29:a8:9d:f3
node5_1           eth1    UP      1500  yes    100Mb/s  00:0c:29:a8:9d:fd
node5_1           eth2    UP      1500  yes    100Mb/s  00:0c:29:a8:9d:fe
node5_2           eth0    UP      1500  yes    100Mb/s  00:0c:29:da:c9:e2
node5_2           eth1    UP      1500  yes    100Mb/s  00:0c:29:da:c9:ec
node5_2           eth2    UP      1500  yes    100Mb/s  00:0c:29:da:c9:ed
```

View the attributes and state of a specific node and a specific interface.

```
> network link show nodename=node5_2 option=eth0
NodeName          Device  Status  MTU  Detect  Speed  HWaddr
-----
node5_2           eth0    UP      1500  yes    100Mb/s  00:0c:29:a8:9d:f3
```

Display the current link attributes and states for public interfaces.

```
> show netwrk link nodename=all option=public
NodeName          Device  Status  MTU  Detect  Speed  HWaddr
-----
node5_1           eth0    UP      1500  yes    100Mb/s  00:0c:29:a8:9d:f3
node5_1           eth1    UP      1500  yes    100Mb/s  00:0c:29:a8:9d:fd
node5_2           eth0    UP      1500  yes    100Mb/s  00:0c:29:da:c9:e2
node5_2           eth1    UP      1500  yes    100Mb/s  00:0c:29:da:c9:ec
```

Display the current link attributes and states for private interfaces.

```
> network link show nodename=all option=private
NodeName          Device  Status  MTU  Detect  Speed  HWaddr
-----
node5_1           eth2    UP      1500  yes    100Mb/s  00:0c:29:a8:9d:fe
node5_2           eth2    UP      1500  yes    100Mb/s  00:0c:29:da:c9:ed
```

Display the IP addresses used by the cluster and their states.

```
> network ip show
IP                Netmask/Prefix  Device  Node                Type  Status
--
--
--
192.168.10.40     255.255.248.0  eth5    node-01             Physical  (Media IP)
192.168.10.10     255.255.248.0  eth1    node-01             Physical
192.168.10.41     255.255.248.0  eth5    node-02             Physical  (Media IP)
192.168.10.11     255.255.248.0  eth1    node-02             Physical
192.168.10.42     255.255.248.0  eth5    node-03             Physical  (Media IP)
192.168.10.12     255.255.248.0  eth1    node-03             Physical
```

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```

192.168.10.43 255.255.248.0 eth5 node-04 Physical (Media IP)
↪ host-vip14.testdomain.com
192.168.10.13 255.255.248.0 eth1 node-04 Physical
↪ host-v014.testdomain.com
192.168.1.53 255.255.248.0 eth1 node-01 Virtual ONLINE (Con IP)
↪ admin.node.testdomain.com,s3.node.testdomain.com
192.168.1.23 255.255.248.0 eth5 node-02 Virtual ONLINE (Dedupe
↪ IP) host-vip41.testdomain.com
192.168.1.24 255.255.248.0 eth5 node-03 Virtual ONLINE (Dedupe
↪ IP) host-vip42.testdomain.com
192.168.1.25 255.255.248.0 eth5 node-04 Virtual ONLINE (Dedupe
↪ IP) host-vip43.testdomain.com
192.168.1.26 255.255.248.0 eth5 node-01 Virtual ONLINE (Dedupe
↪ IP) host-vip44.testdomain.com
192.168.1.55 255.255.248.0 eth5 node-01 Virtual ONLINE (Master
↪ IP) host-vip73.testdomain.com
192.168.1.54 255.255.248.0 eth1 node-01 Virtual ONLINE (API
↪ GATEWAY IP) host-vip72.testdomain.com
>

```

Add an IP address to the physical IP addresses used by the cluster.

```

> network ip add ipaddr=192.168.10.14 netmask=255.255.248.0 type=physical
ACCESS ip addr SUCCESS V-493-10-1381 ip addr add successful.
>
> show ip addr
IP Netmask/Prefix Device Node Type Status
↪ FQDNs
--
↪ -----
192.168.10.40 255.255.248.0 eth5 node-01 Physical (Media IP)
↪ host-vip11.testdomain.com
192.168.10.10 255.255.248.0 eth1 node-01 Physical
↪ host-v011.testdomain.com
192.168.10.41 255.255.248.0 eth5 node-02 Physical (Media IP)
↪ host-vip12.testdomain.com
192.168.10.11 255.255.248.0 eth1 node-02 Physical
↪ host-v012.testdomain.com
192.168.10.42 255.255.248.0 eth5 node-03 Physical (Media IP)
↪ host-vip13.testdomain.com
192.168.10.12 255.255.248.0 eth1 node-03 Physical
↪ host-v013.testdomain.com
192.168.10.43 255.255.248.0 eth5 node-04 Physical (Media IP)
↪ host-vip14.testdomain.com
192.168.10.13 255.255.248.0 eth1 node-04 Physical
↪ host-v014.testdomain.com
192.168.10.14 255.255.248.0 ( unused ) Physical
↪ host-v015.testdomain.com
192.168.1.53 255.255.248.0 eth1 node-01 Virtual ONLINE (Con IP)
↪ admin.node.testdomain.com,s3.node.testdomain.com
192.168.1.23 255.255.248.0 eth5 node-02 Virtual ONLINE (Dedupe
↪ IP) host-vip41.testdomain.com
192.168.1.24 255.255.248.0 eth5 node-03 Virtual ONLINE (Dedupe
↪ IP) host-vip42.testdomain.com
192.168.1.25 255.255.248.0 eth5 node-04 Virtual ONLINE (Dedupe
↪ IP) host-vip43.testdomain.com
192.168.1.26 255.255.248.0 eth5 node-01 Virtual ONLINE (Dedupe
↪ IP) host-vip44.testdomain.com

```

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```

192.168.1.55      255.255.248.0   eth5      node-01      Virtual  ONLINE  (Master
↪IP)           host-vip73.testdomain.com
192.168.1.54      255.255.248.0   eth1      node-01      Virtual  ONLINE  (API
↪GATEWAY IP)   host-vip72.testdomain.com
>

```

Add an IP address to the virtual IP addresses used by the cluster.

```

> network ip add ipaddr=192.168.10.44 netmask=255.255.248.0 type=virtual
ACCESS ip addr SUCCESS V-493-10-1381 ip addr add successful.
>
> network ip show
IP                Netmask/Prefix  Device      Node        Type        Status
↪                FQDNs
--              -
↪                -----
192.168.10.40     255.255.248.0   eth5        node-01     Physical    (Media IP)
↪                host-vip11.testdomain.com
192.168.10.10     255.255.248.0   eth1        node-01     Physical
↪                host-v011.testdomain.com
192.168.10.41     255.255.248.0   eth5        node-02     Physical    (Media IP)
↪                host-vip12.testdomain.com
192.168.10.11     255.255.248.0   eth1        node-02     Physical
↪                host-v012.testdomain.com
192.168.10.42     255.255.248.0   eth5        node-03     Physical    (Media IP)
↪                host-vip13.testdomain.com
192.168.10.12     255.255.248.0   eth1        node-03     Physical
↪                host-v013.testdomain.com
192.168.10.43     255.255.248.0   eth5        node-04     Physical    (Media IP)
↪                host-vip14.testdomain.com
192.168.10.13     255.255.248.0   eth1        node-04     Physical
↪                host-v014.testdomain.com
192.168.10.14     255.255.248.0   ( unused )  Physical
↪                host-v015.testdomain.com
192.168.1.53      255.255.248.0   eth1        node-01     Virtual  ONLINE  (Con IP)
↪                admin.node.testdomain.com,s3.node.testdomain.com
192.168.1.23      255.255.248.0   eth5        node-02     Virtual  ONLINE  (Dedupe
↪IP)           host-vip41.testdomain.com
192.168.1.24      255.255.248.0   eth5        node-03     Virtual  ONLINE  (Dedupe
↪IP)           host-vip42.testdomain.com
192.168.1.25      255.255.248.0   eth5        node-04     Virtual  ONLINE  (Dedupe
↪IP)           host-vip43.testdomain.com
192.168.1.26      255.255.248.0   eth5        node-01     Virtual  ONLINE  (Dedupe
↪IP)           host-vip44.testdomain.com
192.168.1.55      255.255.248.0   eth5        node-01     Virtual  ONLINE  (Master
↪IP)           host-vip73.testdomain.com
192.168.1.54      255.255.248.0   eth1        node-01     Virtual  ONLINE  (API
↪GATEWAY IP)   host-vip72.testdomain.com
192.168.10.44     255.255.248.0   eth7        node-01     Virtual  ONLINE
↪                host-vip15.testdomain.com
>

```

Add an IP address to the virtual IP addresses used by the cluster for a VLAN device

```

> network ip add ipaddr=192.168.1.27 netmask=255.255.248.0 type=virtual device=eth5.2
ACCESS ip addr SUCCESS V-493-10-1381 ip addr add successful.
>

```

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```
> network ip show
```

IP	Netmask/Prefix	Device	Node	Type	Status	
↪ FQDNs						↪
--	-----	-----	----	----	-----	↪
↪ -----						
192.168.10.40	255.255.248.0	eth5	node-01	Physical	(Media IP)	↪
↪ host-vip11.testdomain.com						
192.168.10.10	255.255.248.0	eth1	node-01	Physical		↪
↪ host-v011.testdomain.com						
192.168.10.41	255.255.248.0	eth5	node-02	Physical	(Media IP)	↪
↪ host-vip12.testdomain.com						
192.168.10.11	255.255.248.0	eth1	node-02	Physical		↪
↪ host-v012.testdomain.com						
192.168.10.42	255.255.248.0	eth5	node-03	Physical	(Media IP)	↪
↪ host-vip13.testdomain.com						
192.168.10.12	255.255.248.0	eth1	node-03	Physical		↪
↪ host-v013.testdomain.com						
192.168.10.43	255.255.248.0	eth5	node-04	Physical	(Media IP)	↪
↪ host-vip14.testdomain.com						
192.168.10.13	255.255.248.0	eth1	node-04	Physical		↪
↪ host-v014.testdomain.com						
192.168.10.14	255.255.248.0		( unused )	Physical		↪
↪ host-v015.testdomain.com						
192.168.1.53	255.255.248.0	eth1	node-01	Virtual	ONLINE (Con IP)	↪
↪ admin.node.testdomain.com,s3.node.testdomain.com						
192.168.1.23	255.255.248.0	eth5	node-02	Virtual	ONLINE (Dedupe	↪
↪ IP) host-vip41.testdomain.com						
192.168.1.24	255.255.248.0	eth5	node-03	Virtual	ONLINE (Dedupe	↪
↪ IP) host-vip42.testdomain.com						
192.168.1.25	255.255.248.0	eth5	node-04	Virtual	ONLINE (Dedupe	↪
↪ IP) host-vip43.testdomain.com						
192.168.1.26	255.255.248.0	eth5	node-01	Virtual	ONLINE (Dedupe	↪
↪ IP) host-vip44.testdomain.com						
192.168.1.55	255.255.248.0	eth5	node-01	Virtual	ONLINE (Master	↪
↪ IP) host-vip73.testdomain.com						
192.168.1.54	255.255.248.0	eth1	node-01	Virtual	ONLINE (API	↪
↪ GATEWAY IP) host-vip72.testdomain.com						
192.168.10.44	255.255.248.0	eth7	node-01	Virtual	ONLINE	↪
↪ host-vip15.testdomain.com						
192.168.1.27	255.255.248.0	eth5.2	node-01	Virtual	ONLINE	↪
↪ host-vip45.testdomain.com						

Delete an IP address from the physical IP addresses being used by the cluster. Physical IP addresses that are assigned to a device can be modified or deleted. The virtual IP address for the console cannot be deleted; it can only be modified.

```
> network ip delete ipaddr=192.168.10.14
ACCESS ip addr SUCCESS V-493-10-1381 ip addr del successful.
>
>show ip addr
```

IP	Netmask/Prefix	Device	Node	Type	Status	
↪ FQDNs						↪
--	-----	-----	----	----	-----	↪
↪ -----						
192.168.10.40	255.255.248.0	eth5	node-01	Physical	(Media IP)	↪
↪ host-vip11.testdomain.com						
192.168.10.10	255.255.248.0	eth1	node-01	Physical		↪
↪ host-v011.testdomain.com						

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```

192.168.10.41 255.255.248.0 eth5 node-02 Physical (Media IP)
↪ host-vip12.testdomain.com
192.168.10.11 255.255.248.0 eth1 node-02 Physical
↪ host-v012.testdomain.com
192.168.10.42 255.255.248.0 eth5 node-03 Physical (Media IP)
↪ host-vip13.testdomain.com
192.168.10.12 255.255.248.0 eth1 node-03 Physical
↪ host-v013.testdomain.com
192.168.10.43 255.255.248.0 eth5 node-04 Physical (Media IP)
↪ host-vip14.testdomain.com
192.168.10.13 255.255.248.0 eth1 node-04 Physical
↪ host-v014.testdomain.com
192.168.1.53 255.255.248.0 eth1 node-01 Virtual ONLINE (Con IP)
↪ admin.node.testdomain.com,s3.node.testdomain.com
192.168.1.23 255.255.248.0 eth5 node-02 Virtual ONLINE (Dedupe
↪ IP) host-vip41.testdomain.com
192.168.1.24 255.255.248.0 eth5 node-03 Virtual ONLINE (Dedupe
↪ IP) host-vip42.testdomain.com
192.168.1.25 255.255.248.0 eth5 node-04 Virtual ONLINE (Dedupe
↪ IP) host-vip43.testdomain.com
192.168.1.26 255.255.248.0 eth5 node-01 Virtual ONLINE (Dedupe
↪ IP) host-vip44.testdomain.com
192.168.1.55 255.255.248.0 eth5 node-01 Virtual ONLINE (Master
↪ IP) host-vip73.testdomain.com
192.168.1.54 255.255.248.0 eth1 node-01 Virtual ONLINE (API
↪ GATEWAY IP) host-vip72.testdomain.com
192.168.10.44 255.255.248.0 eth7 node-01 Virtual ONLINE
↪ host-vip15.testdomain.com
192.168.1.27 255.255.248.0 eth5.2 node-02 Virtual ONLINE
↪ host-vip45.testdomain.com
>

```

Modify an IP address from the IP addresses being used by the cluster. Physical IP addresses that are assigned to a device can be modified or deleted. The virtual IP address for the console cannot be deleted; it can only be modified.

```

> network ip modify current-ipaddr=192.168.10.44 new-ipaddr=192.168.10.14 netmask=255.
↪ 255.248.0 device=eth5
ACCESS ip addr SUCCESS V-493-10-1381 ip addr modify successful.
> network ip show
IP Netmask/Prefix Device Node Type Status
↪ FQDNs
--
↪ -----
192.168.10.40 255.255.248.0 eth5 node-01 Physical (Media IP)
↪ host-vip11.testdomain.com
192.168.10.10 255.255.248.0 eth1 node-01 Physical
↪ host-v011.testdomain.com
192.168.10.41 255.255.248.0 eth5 node-02 Physical (Media IP)
↪ host-vip12.testdomain.com
192.168.10.11 255.255.248.0 eth1 node-02 Physical
↪ host-v012.testdomain.com
192.168.10.42 255.255.248.0 eth5 node-03 Physical (Media IP)
↪ host-vip13.testdomain.com
192.168.10.12 255.255.248.0 eth1 node-03 Physical
↪ host-v013.testdomain.com
192.168.10.43 255.255.248.0 eth5 node-04 Physical (Media IP)
↪ host-vip14.testdomain.com

```

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```

192.168.10.13 255.255.248.0 eth1 node-04 Physical
↪ host-v014.testdomain.com
192.168.1.53 255.255.248.0 eth1 node-01 Virtual ONLINE (Con IP)
↪ admin.node.testdomain.com,s3.node.testdomain.com
192.168.1.23 255.255.248.0 eth5 node-02 Virtual ONLINE (Dedupe
↪ IP) host-vip41.testdomain.com
192.168.1.24 255.255.248.0 eth5 node-03 Virtual ONLINE (Dedupe
↪ IP) host-vip42.testdomain.com
192.168.1.25 255.255.248.0 eth5 node-04 Virtual ONLINE (Dedupe
↪ IP) host-vip43.testdomain.com
192.168.1.26 255.255.248.0 eth5 node-01 Virtual ONLINE (Dedupe
↪ IP) host-vip44.testdomain.com
192.168.1.55 255.255.248.0 eth5 node-01 Virtual ONLINE (Master
↪ IP) host-vip73.testdomain.com
192.168.1.54 255.255.248.0 eth1 node-01 Virtual ONLINE (API
↪ GATEWAY IP) host-vip72.testdomain.com
192.168.10.14 255.255.248.0 eth5 node-01 Virtual ONLINE
↪ host-v015.testdomain.com
192.168.1.27 255.255.248.0 eth5.2 node-02 Virtual ONLINE
↪ host-vip45.testdomain.com
>

```

Online an IP protocol address used by the cluster on any running node of the cluster.

```

> network ip online ipaddr=192.168.1.27 nodename=node-03
ACCESS ip addr SUCCESS V-493-10-1381 ip addr online successful.
>
> network ip show
IP Netmask/Prefix Device Node Type Status
↪ FQDNs
--
↪ -----
192.168.10.40 255.255.248.0 eth5 node-01 Physical (Media IP)
↪ host-vip11.testdomain.com
192.168.10.10 255.255.248.0 eth1 node-01 Physical
↪ host-v011.testdomain.com
192.168.10.41 255.255.248.0 eth5 node-02 Physical (Media IP)
↪ host-vip12.testdomain.com
192.168.10.11 255.255.248.0 eth1 node-02 Physical
↪ host-v012.testdomain.com
192.168.10.42 255.255.248.0 eth5 node-03 Physical (Media IP)
↪ host-vip13.testdomain.com
192.168.10.12 255.255.248.0 eth1 node-03 Physical
↪ host-v013.testdomain.com
192.168.10.43 255.255.248.0 eth5 node-04 Physical (Media IP)
↪ host-vip14.testdomain.com
192.168.10.13 255.255.248.0 eth1 node-04 Physical
↪ host-v014.testdomain.com
192.168.1.53 255.255.248.0 eth1 node-01 Virtual ONLINE (Con IP)
↪ admin.node.testdomain.com,s3.node.testdomain.com
192.168.1.23 255.255.248.0 eth5 node-02 Virtual ONLINE (Dedupe
↪ IP) host-vip41.testdomain.com
192.168.1.24 255.255.248.0 eth5 node-03 Virtual ONLINE (Dedupe
↪ IP) host-vip42.testdomain.com
192.168.1.25 255.255.248.0 eth5 node-04 Virtual ONLINE (Dedupe
↪ IP) host-vip43.testdomain.com
192.168.1.26 255.255.248.0 eth5 node-01 Virtual ONLINE (Dedupe
↪ IP) host-vip44.testdomain.com

```

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```

192.168.1.55      255.255.248.0   eth5      node-01      Virtual  ONLINE  (Master
↳IP)           host-vip73.testdomain.com
192.168.1.54      255.255.248.0   eth1      node-01      Virtual  ONLINE  (API
↳GATEWAY IP)   host-vip72.testdomain.com
192.168.10.14     255.255.248.0   eth5      node-01      Virtual  ONLINE
↳           host-v015.testdomain.com
192.168.1.27      255.255.248.0   eth5.2    node-03      Virtual  ONLINE
↳           host-vip45.testdomain.com
>

```

View the routing table of a specific node in the cluster.

```

> network route show nodename=node_01
node_01
-----
IPv4 routing table: main
=====
Destination  Gateway      Genmask      Flags  MSS  Window  irtt  Iface
=====
0.0.0.0      10.84.144.1  0.0.0.0      UG     0    0       0     ens161
10.84.144.0  0.0.0.0      255.255.248.0 U      0    0       0     ens161
10.84.144.0  0.0.0.0      255.255.248.0 U      0    0       0     ens192
172.16.0.0   0.0.0.0      255.255.255.0 U      0    0       0     ens224

IPv4 routing table: 2
=====
Destination  Gateway      Genmask      Flags  MSS  Window  irtt  Iface
=====
0.0.0.0      10.84.144.1  0.0.0.0      UG     0    0       0     ens192
10.84.144.0  0.0.0.0      255.255.248.0 U      0    0       0     ens192

IPv4 routing table: 1
=====
Destination  Gateway      Genmask      Flags  MSS  Window  irtt  Iface
=====
0.0.0.0      10.84.144.1  0.0.0.0      UG     0    0       0     ens161
10.84.144.0  0.0.0.0      255.255.248.0 U      0    0       0     ens161

```

Add a route through a given device to the routing table of all nodes in the cluster. Use a value of 0.0.0.0 for the gateway, to use a route that is based on only the device and does not use any gateway.

```

> network route add nodename=all ipaddr=0.0.0.0 netmask=0.0.0.0 gateway=192.168.20.1
↳dev device=any scope=local
>network route show
node_01
-----
IPv4 routing table: main
=====
Destination  Gateway      Genmask      Flags  MSS  Window  irtt  Iface
=====
0.0.0.0      10.84.144.1  0.0.0.0      UG     0    0       0     ens161
10.84.144.0  0.0.0.0      255.255.248.0 U      0    0       0     ens161
10.84.144.0  0.0.0.0      255.255.248.0 U      0    0       0     ens192
172.16.0.0   0.0.0.0      255.255.255.0 U      0    0       0     ens224
192.168.20.0 0.0.0.0      255.255.255.0 U      0    0       0     ens192

```

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IPv4 routing table: 3							
=====							
Destination	Gateway	Genmask	Flags	MSS	Window	irtt	Iface
=====							
0.0.0.0	192.168.20.1	0.0.0.0	UG	0	0	0	ens192
192.168.20.0	0.0.0.0	255.255.255.0	U	0	0	0	ens192
IPv4 routing table: 2							
=====							
Destination	Gateway	Genmask	Flags	MSS	Window	irtt	Iface
=====							
10.84.144.0	0.0.0.0	255.255.248.0	U	0	0	0	ens192
IPv4 routing table: 1							
=====							
Destination	Gateway	Genmask	Flags	MSS	Window	irtt	Iface
=====							
10.84.144.0	0.0.0.0	255.255.248.0	U	0	0	0	ens161
node_02							
-----							
IPv4 routing table: main							
=====							
Destination	Gateway	Genmask	Flags	MSS	Window	irtt	Iface
=====							
0.0.0.0	10.84.144.1	0.0.0.0	UG	0	0	0	ens161
10.84.144.0	0.0.0.0	255.255.248.0	U	0	0	0	ens161
10.84.144.0	0.0.0.0	255.255.248.0	U	0	0	0	ens192
172.16.0.0	0.0.0.0	255.255.255.0	U	0	0	0	ens224
192.168.20.0	0.0.0.0	255.255.255.0	U	0	0	0	ens161
IPv4 routing table: 4							
=====							
Destination	Gateway	Genmask	Flags	MSS	Window	irtt	Iface
=====							
0.0.0.0	192.168.20.1	0.0.0.0	UG	0	0	0	ens161
192.168.20.0	0.0.0.0	255.255.255.0	U	0	0	0	ens161
IPv4 routing table: 2							
=====							
Destination	Gateway	Genmask	Flags	MSS	Window	irtt	Iface
=====							
10.84.144.0	0.0.0.0	255.255.248.0	U	0	0	0	ens192
IPv4 routing table: 1							
=====							
Destination	Gateway	Genmask	Flags	MSS	Window	irtt	Iface
=====							
10.84.144.0	0.0.0.0	255.255.248.0	U	0	0	0	ens161

Delete the default gateway being used by a specific node. The deletion only aim at static routes which are added by command (network route add).

```
> network route delete nodename=all ipaddr=0.0.0.0 netmask=0.0.0.0 via gateway=192.
↪168.20.1 dev device=any scope=local
> network route show nodename=node_01
```

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```
node_01
-----
IPv4 routing table: main
=====
Destination    Gateway      Genmask      Flags    MSS  Window  irtt  Iface
=====
0.0.0.0        10.84.144.1  0.0.0.0      UG       0    0        0     ens161
10.84.144.0    0.0.0.0      255.255.248.0 U        0    0        0     ens161
10.84.144.0    0.0.0.0      255.255.248.0 U        0    0        0     ens192
172.16.0.0     0.0.0.0      255.255.255.0 U        0    0        0     ens224
192.168.20.0   0.0.0.0      255.255.255.0 U        0    0        0     ens192

IPv4 routing table: 3
=====
Destination    Gateway      Genmask      Flags    MSS  Window  irtt  Iface
=====
192.168.20.0   0.0.0.0      255.255.255.0 U        0    0        0     ens192

IPv4 routing table: 2
=====
Destination    Gateway      Genmask      Flags    MSS  Window  irtt  Iface
=====
10.84.144.0    0.0.0.0      255.255.248.0 U        0    0        0     ens192

IPv4 routing table: 1
=====
Destination    Gateway      Genmask      Flags    MSS  Window  irtt  Iface
=====
10.84.144.0    0.0.0.0      255.255.248.0 U        0    0        0     ens161
```

View the global route config information for cluster nodes.

```
> network route show nodename=all showtype=config
node_01
-----
Destination    Netmask      Gateway      Iface    Scope
=====
0.0.0.0        0.0.0.0      10.84.144.1  ens161   global

node_02
-----
Destination    Netmask      Gateway      Iface    Scope
=====
0.0.0.0        0.0.0.0      10.84.144.1  ens161   global
```

## 12.4.4 SEE ALSO

bond(1), show(1), vlan(1), device(1)

## 12.5 show

### 12.5.1 SYNOPSIS

network statistics show

### 12.5.2 DESCRIPTION

The `network network statistics show` command displays the network configuration and statistics on all of the available nodes.

### 12.5.3 EXAMPLES

Show the network configuration and statistics.

```
>network statistics show

Interface Statistics
-----

va73_01
-----
Interfaces      MTU      RX-OK      RX-DROP      RX-ERR      RX-FRAME      TX-OK
↳ TX-DROP      TX-ERR      TX-CAR      Flag
   lo          65536      48138        0           0           0          48138
↳           0           0           0           LU
   eth2         1500      955874       18           0           0          912458
↳   0           0           0           BMRU
   eth3         1500      759216       18           0           0          647319
↳   0           0           0           BMRU
   eth0         1500      1757268      794          0           0          82759
↳   0           0           0           BMRU

va73_02
-----
Interfaces      MTU      RX-OK      RX-DROP      RX-ERR      RX-FRAME      TX-OK
↳ TX-DROP      TX-ERR      TX-CAR      Flag
   lo          65536      27296        0           0           0          27296
↳           0           0           0           LU
   eth2         1500      1062983      14           0           0          805435
↳   0           0           0           BMRU
   eth3         1500      797769       14           0           0          608673
↳   0           0           0           BMRU
   eth0         1500      1761159      819          0           0          85103
↳   0           0           0           BMRU

Routing Table
-----

va73_01
-----
Destination      Gateway      Genmask      Flags      MSS Window  irtt Iface
(continues on next page)
```

(continued from previous page)

0.0.0.0	10.209.192.1	0.0.0.0	UG	0 0	0	eth0
10.209.192.0	0.0.0.0	255.255.252.0	U	0 0	0	eth0
172.16.0.0	0.0.0.0	255.255.255.0	U	0 0	0	eth2
va73_02						
-----						
Destination	Gateway	Genmask	Flags	MSS Window	irrtt	Iface
0.0.0.0	10.209.192.1	0.0.0.0	UG	0 0	0	eth0
10.209.192.0	0.0.0.0	255.255.252.0	U	0 0	0	eth0
172.16.0.0	0.0.0.0	255.255.255.0	U	0 0	0	eth2

## 12.5.4 OUTPUT

### Interface Statistics

**Interfaces** The name of the interface.

**MTU** The Maximum Transmission Unit of the interface.

**RX-OK** Number of received packets.

**RX-DROP** Number of dropped packets.

**RX-ERR** Number of error packets.

**RX-FRAME** Number of packets fails to end on byte boundary.

**TX-OK** Number of transmitted packets.

**TX-DROP** Number of dropped packets.

**TX-ERR** Number of error packets.

**TX-CAR** Number of carrier lost.

### Flag

B: BROADCAST L: LOOPBACK M: MULTICAST R: RUNNING U: UP

### Routing Table

**Destination** The destination network or destination host.

**Gateway** The gateway address or '\*' if none set.

**Genmask** The netmask for the destination net; '255.255.255.255' for a host destination and '0.0.0.0' for the default route.

**Flags** U (route is up) H (target is a host) G (use gateway) R (reinstate route for dynamic routing) D (dynamically installed by daemon or redirect) M (modified from routing daemon or redirect) A (installed by addrconf) C (cache entry) ! (reject route)

**Next Hop** The the nexthop router of a multipath route.

**Ref** Number of references to this route.

**Use** Count of lookups for the route.



**MSS** Default maximum segment size for TCP connections over this route.

**Window** Default window size for TCP connections over this route.

**irtt** Initial RTT (Round Trip Time).

**Iface** Interface to which packets for this route will be sent.

### 12.5.5 SEE ALSO

bond(1), ip(1), vlan(1), device(1)

## 12.6 vlan

### 12.6.1 SYNOPSIS

`network vlan show`

### 12.6.2 DESCRIPTION

The `network network vlan shown` command is used to view VLAN interfaces.

By default `network ip add` will not use VLAN devices unless explicitly specified in the *device* attribute.

When a VLAN device is deleted, physical IPs that are used by that VLAN device will automatically be freed, and can be seen in the output of `network ip show` as unused. When a VLAN device is deleted, virtual IPs configured on that VLAN device will automatically be deleted and will no longer be visible in `network ip show`.

### 12.6.3 OPTIONS

**`network vlan show`** Show the current VLAN devices.

### 12.6.4 EXAMPLES

Display the VLAN devices.

```
> network vlan show
VLAN          DEVICE      VLAN id
----          -
eth0.2        eth0          2
```

### 12.6.5 SEE ALSO

`bond(1)`, `ip(1)`, `show(1)`, `device(1)`

## 13.1 storage

### 13.1.1 SYNOPSIS

```
storage disk show option=[ stats | detail | paths ]
```

The disks may be direct-attached storage or shared storage devices.

### 13.1.2 DESCRIPTION

The `storage` commands create logical pools and file systems.

File systems consist of metadata and file data. Metadata consists of information like last modification time, creation time, permissions, and so on. The total amount of space taken by the metadata depends upon the number of files. A file system that contains many smaller files requires more space to store the metadata, and a file system with fewer large files requires less space to store the metadata.

When a file system is created, some space is set aside initially for the metadata. This space is generally proportional to the size of the file system. This is the reason for the non-zero usage percentage in the output of `filesystem operation list` just after the creation of the file system. The space that was set aside for the metadata would grow or shrink as and when required. A file system on a 1 GB volume would take around 40 MB (about 4%) initially for storing the metadata, whereas a file system of size 10 MB would take around 7.3 MB (73%) initially for storing the metadata.

### 13.1.3 OPTIONS

The `storage disk show` command displays aggregated information of all the disk devices connected to any or all of the nodes in the cluster.

The `storage disk show option=stats` command displays a list of disks and nodes in a tabular form. Each row corresponds to a disk, and each column corresponds to a node. An “OK” in the table indicates that the disk that corresponds to that row is accessible by the node that corresponds to that column. An “ERR” indicates that the disk that corresponds to that row is inaccessible by the node that corresponds to that column. A “NOT\_CONN” indicates that the disk that corresponds to that row is not connected to the node that corresponds to that column.

The storage disk show option=detail command displays a list of disks and their properties. The column ID in storage disk show option=detail consists of: VendorID, ProductID, TargetID, and LunID. A “:” separates these fields.

If a disk is shared across multiple nodes and has name inconsistencies across the nodes, then that disk is shown as “—”.

The storage disk show option=paths command shows the list of multiple paths of disks connected to all or any of the nodes in the cluster. It also shows the status of those paths on each node in the cluster.

### 13.1.4 EXAMPLES

Display the list of disks in tabular form.

```
> storage disk show option=stats
Disk          nasgw9_2  nasgw9_1  nasgw9_3  nasgw9_4  nasgw9_5  nasgw9_6
=====
AMS_WMS0_0    OK        OK        OK        OK        OK        OK
AMS_WMS0_1    OK        OK        OK        OK        OK        OK
DS4800-0_0    OK        OK        OK        OK        OK        OK
DS4800-0_1    OK        OK        OK        OK        OK        OK
nasgw9_1_Disk_0 NOT_CONN OK        NOT_CONN NOT_CONN NOT_CONN NOT_CONN
nasgw9_1_Disk_1 OK        OK        OK        OK        OK        OK
EMC_CLARiion0_0 OK        OK        OK        OK        OK        OK
EMC_CLARiion0_1 OK        OK        OK        OK        OK        OK
```

Display the list of disks and their properties.

```
> storage disk show option=detail
Disk          Pool          Enclosure  Array Type  Size (Use%)  Transport  ID
↪          Serial Number
=====
↪=====
ams_wms0_10    *coordinator*  ams_wms0    A/A          1.00G 0.0%    FC          ↪
↪HITACHI:DF600F:4:1  71011588000A
ams_wms0_11    *coordinator*  ams_wms0    A/A          1.00G 0.0%    FC          ↪
↪HITACHI:DF600F:4:2  71011588000B
ams_wms0_12    p03            ams_wms0    A/A          1.00G 27.5%    FC          ↪
↪HITACHI:DF600F:4:3  71011588000C
ams_wms0_13    p03            ams_wms0    A/A          1.00G 18.8%    FC          ↪
↪HITACHI:DF600F:4:4  71011588000D
ams_wms0_14    p04            ams_wms0    A/A          1.00G 17.8%    FC          ↪
↪HITACHI:DF600F:4:5  71011588000E
```

Show the list of multiple paths of disks connected to all or any of the nodes in the cluster. Also show the status of those paths on each node in the cluster.

```
> storage disk show option=paths
Disk          Paths  nasgw78_2  nasgw78_1
=====
AMS_WMS0_0    Path 1  primary,enabled,active primary,enabled,active
AMS_WMS0_1    Path 1  primary,enabled,active primary,enabled,active
Disk_0        Path 1  enabled,active          enabled,active
nasgw78_2_Disk_0 Path 1  enabled,active          -
nasgw78_1_Disk_0 Path 1  -                      enabled,active
```

### 13.1.5 SEE ALSO

fs(1), pool(1), scanbus(1), snapshot(1)



## 14.1 filesystem

### 14.1.1 SYNOPSIS

```
filesystem operation list fs-name=[fs-name]
filesystem operation online fs-name=<fs-name>
filesystem operation offline fs-name=<fs-name>
filesystem tasks resync-status
filesystem alert set inodes-or-fs-space=<inodes-or-fs-space> num-inodes-or-percentage=<num-inodes-or-percentage> fs-name=[fs-name,... ] snapshot-name=[snapshot-name]
filesystem alert clear inodes-or-fs-space=<inodes-or-fs-space> fs-name=<fs-name> snapshot-name=[snapshot-name]
filesystem alert show
filesystem tasks show fs-name=<fs-name>
filesystem tasks pause fs-name=<fs-name>
filesystem tasks resume fs-name=<fs-name>
filesystem snapshot list fs-name=[fs-name]
filesystem snapshot show-schedule fs-name=[fs-name] schedule-name=[schedule-name]
```

### 14.1.2 DESCRIPTION

The filesystem commands manage file system operations.

File systems consist of metadata and file data. Metadata consists of information like last modification time, creation time, permissions, and so on. The total amount of space taken by the metadata depends upon the number of files. A file system that contains many small files requires more space to store the metadata, and a file system with fewer large files requires less space for storing the metadata.

When a file system is created, some space is set aside initially for the metadata. This space is generally proportional to the size of the file system. This is the reason for the non-zero usage percentage in the output of `filesystem`

operation list just after the creation of the file system. The space set aside for the metadata grows or shrinks as and when required. A file system on a 1 GB volume takes around 40 MB (about 4%) initially for storing the metadata, whereas a file system of size 10 MB takes around 7.3 MB (73%) initially for storing the metadata.

### 14.1.3 OPTIONS

```
filesystem operation list fs-name=[fs-name]
```

List all the file systems.

```
filesystem operation online fs-name=<fs-name>
```

Make the file system online.

```
filesystem operation offline fs-name=<fs-name>
```

Make the file system offline.

```
filesystem tasks resync-status
```

Show resynchronization progress running in the background.

```
filesystem alert set inodes-or-fs-space=<inodes-or-fs-space> num-inodes-or-percentage=<num-inodes-or-percentage> fs-name=[fs-name,...] snapshot-name=[snapshot-name]
```

Allow users to set alerts on file systems and snapshot usage. The user can set alerts based on the number of inodes used or the file system space used. The value should be in a percentage when the alert is being set for the disk space. The default alert set for the disk space usage is at 80%. When the alert set is numinodes, the input should be the number of inodes. The default alert value for numinodes is set at 0. This will not send any alert till you set it to a different value. When this command is not supplied with the file system name, it changes the default system wide value for the alerts. For the file systems on which alerts are set explicitly, the alert is sent based on the value specified and not the default value. The alerts can be observed by the user in the “Report> showevents” CLI command. You can specify a comma-separated list of file systems.

fullspace is the tunable for file system full protection. For the file system to run efficiently, users should always reserve some space for the file system, instead of using 100% of the space. When file system usage is above the limit set by fullspace, all the NFS/CIFS shares on top of the file system are automatically changed to readonly to prevent the file system from becoming full. When users grow the file system or delete some files to get enough free space, the shares are automatically changed back to readwrite (there might be a delay for up to 5 minutes). By default, fullspace is 0, which means this function is disabled.

```
filesystem alert clear inodes-or-fs-space=<inodes-or-fs-space> fs-name=<fs-name> snapshot-name=[snapshot-name]
```

Allow users to unset the alerts set on the file system and the snapshot name. If an alert on any file system is unset, the user gets an alert for the file system based on the default values. You can specify a comma-separated list of file systems. When fullspace is unset (or set to 0), the shares that were changed to readonly due to file system high usage are changed back to readwrite mode immediately.

```
filesystem alert show
```

Show the current disk space usage and the alert value set. “(D)” beside the value shows that the value is the default value through the system.

```
filesystem tasks show fs-name=<fs-name>
```

```
filesystem tasks pause fs-name=<fs-name>
```

```
filesystem tasks resume fs-name=<fs-name>
```



Lists the long-term file system operations which are in progress on the system. Each task provides the file system name, task type, state and the status of the progress in percentage. Most of the tasks represent I/O being performed on file system volumes. Operations such as read-writeback recovery for mirrored volumes, parity recalculation for RAID-5 volumes, and volume re-layouts involve moderate to large amounts of I/O. During rolling upgrade, if any of the ECRE-BUILD/ATCOPY/ATCPY/PLXATT/VXRECOVER/RESYNC/RECOV tasks are running, you may need to wait for the tasks to complete. Especially in FSS (or erasure coding enabled) clusters, it is important to wait for these tasks to complete before you upgrade, reboot, or shut down the node(s).

```
filesystem snapshot list fs-name=[fs-name]
```

Displays all the snapshots of the specified file system. If no file system is specified, snapshots of all the file systems are displayed.

```
filesystem snapshot show-schedule fs-name=[fs-name] schedule-name=[schedule-name]
```

Show all schedules that have been set for automated snapshot creation.

```
filesystem policy list fs-name=[fs-name]
```

List all the data movement and data deletion policies that are set for all the file systems. If *fs-name* is included in the command, then the command lists all the policies for the specified file system.

#### 14.1.4 EXAMPLES

Show resynchronization progress running in background.

```
> filesystem tasks resync-status
FS              MIRROR              TYPE      PROGRESS  START_TIME
↳USED_TIME    REMAINING_TIME
=====
mir2            tier 1,mirror 02    RESYNC    6.46%    Jun/05/2011/09:39:53
↳0:5:9        1:14:34
mir3_rol12      tier 1              ROLLBACK  1.28%    Jun/05/2011/14:51:40
↳0:0:12        15:23
mir3            tier 1,mirror 03    RESYNC    7.67%    Jun/05/2011/15:10:26
↳0:1:14        14:50
```

Make a file system offline.

```
> filesystem operation offline fs-name=fs1
100% [#] Offline filesystem
```

Make a file system online.

```
> filesystem operation online fs-name=fs1
100% [#] Online filesystem
```

Set alert on the file system.

```
> filesystem alert set inode-or-fs-space=numinodes num-inodes-or-percentage=2M fs-
↳name=fs2
ACCESS fs SUCCESS V-288-663 Alert of type [ numinodes ] set to 2M on the file system
↳fs2
```

Unset the alert on the file system.

```
> filesystem alert clear inode-or-fs-space=numinodes fs-name=fs2
ACCESS fs SUCCESS V-288-663 Alert of type [ numinodes ] set to DEFAULT value on the
↳file system fs2
```

Set alert on a snapshot of the file system.

```
> filesystem alert set inode-or-fs-space=numinodes num-inodes-or-percentage=2M fs-
↳name=fs2 snapshot-name=snap1
ACCESS fs SUCCESS V-288-663 Alert of type [ numinodes ] set to 2M on the file system
↳fs2 snapshot snap1
```

Unset the alert on a snapshot of the file system.

```
> filesystem alert clear inode-or-fs-space=numinodes fs-name=fs2 snapshot-name=snap1
ACCESS fs SUCCESS V-288-663 Alert of type [ numinodes ] set to DEFAULT value on the
↳file system fs2 snapshot snap1
```

Show the alert status.

```
> filesystem alert show
```

File System	Numspace(cur_usage/value)	Numinodes(cur_usage/value)	Fullspace(cur_usage/value)
fs1	8% / 80% (D)	5 / 0 (D)	8% / 0% (D)
fs2	6% / 85%	5 / 1000	6% / 20%

View the list of file systems.

```
> filesystem operation list
```

FS	NFS SHARED	CIFS SHARED	STATUS	SIZE	LAYOUT	MIRRORS	COLUMNS	USE%
fs1	no	no	online	100.00M	simple	-	-	3%
fs2	no	no	online	100.00M	simple	-	-	3%
fs3	no	no	online	700.00M	simple	-	-	4%
fs4	no	no	online	69.00M	simple	-	-	4%
fs5	no	no	online	1.94G	simple	-	-	1%

Display detailed information for a specific file system.

```
> filesystem operation list fs-name=mir4
General Info:
=====
Block Size:      1024 Bytes
Version:         Version 8
Cluster5_01:     online

primary
=====
```

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```

Size:                30.00G
Use%:                0%
Layout:              mirrored
Mirrors:             4
Columns:             -
Stripe Unit:        0.00 K
FastResync:          Enabled

1. Mirror 01:
List of pools:       pool1
List of disks:       disk1 disk2

2. Mirror 02:
List of pools:       pool1
List of disks:       disk3 disk4

3. Mirror 03:
List of pools:       pool1
List of disks:       disk5 disk6

4. Mirror 04:
List of pools:       pool1
List of disks:       disk7 disk8

Secondary
=====
Size:                20.00G
Use%:                0%
Layout:              mirrored
Mirrors:             2
Columns:             -
Stripe Unit:        0.00 K
FastResync:          Disabled

1. Mirror 01:
List of pools:       pool1
List of disks:       disk9 disk10

2. Mirror 02:
List of pools:       pool1
List of disks:       disk11 disk12

FS Type:              Normal

Defrag Status: Not Running
Fullfsck Status: Not Running
Resync Status:
  Tier 1, Mirror 03: 7.67%      Start_time: Jun/05/2011/15:10:26   Work_time: 0:1:14_
  ↳ Remaining_time: 14:50
  Tier 1, Mirror 04: 1.08%      Start_time: Jun/05/2011/13:08:07   Work_time: 0:1:21_
  ↳ Remaining_time: 2:03:33
  Tier 2, Mirror 02: 11.27%     Start_time: Jun/05/2011/14:03:14   Work_time: 0:0:18_
  ↳ Remaining_time: 02:21
Rollsync Status:
  Rollsync mir4_roll, Tier 1: 1.28% Start_time: Jun/05/2011/14:51:40   Work_time: _
  ↳ 0:0:12 Remaining_time: 15:23
Relayout Status: Not Running

```

View the list of snapshots.

```
> filesystem snapshot list
```

Snapshot		FS	Status	ctime	
↪mtime	Removable	Preserved			
=====		===	=====	=====	
↪=====	=====	=====			
snap2		fs1	offline	2009.Jul.27.02:40:43	
↪2009.Jul.27.02:40:57	no	no			
sc1_24_Jul_2009_21_34_01_IST		fs1	offline	2009.Jul.24.21:34:03	
↪2009.Jul.24.21:34:03	yes	no			
sc1_24_Jul_2009_19_34_02_IST		fs1	offline	2009.Jul.24.19:34:04	
↪2009.Jul.24.19:34:04	yes	no			
presnap_sc1_24_Jul_2009_18_34_02_IST		fs1	offline	2009.Jul.24.18:34:04	
↪2009.Jul.24.18:34:04	yes	yes			
sc1_24_Jul_2009_17_34_02_IST		fs1	offline	2009.Jul.24.17:34:04	
↪2009.Jul.24.17:34:04	yes	no			

Display the list of snapshots for a given file system.

```
> filesystem snapshot list fs-name=fs2
```

Snapshot		Schedule Name	Status	ctime	
↪mtime	Removable	Preserved			
=====		=====	=====	=====	
↪=====	=====	=====			
snap2		-	offline	2009.Jul.27.02:40:43	
↪2009.Jul.27.02:40:57	yes	no			
sc1_24_Jul_2009_22_34_02_IST		sc1	offline	2009.Jul.24.22:34:09	
↪2009.Jul.24.22:34:09	yes	no			
sc1_24_Jul_2009_21_34_01_IST		sc1	offline	2009.Jul.24.21:34:03	
↪2009.Jul.24.21:34:03	yes	no			
sc1_24_Jul_2009_19_34_02_IST		sc1	offline	2009.Jul.24.19:34:04	
↪2009.Jul.24.19:34:04	yes	no			
presnap_sc1_24_Jul_2009_18_34_02_IST		-	offline	2009.Jul.24.18:34:04	
↪2009.Jul.24.18:34:04	yes	yes			
sc1_24_Jul_2009_17_34_02_IST		sc1	offline	2009.Jul.24.17:34:04	
↪2009.Jul.24.17:34:04	yes	no			

Display the list of snapshots corresponding to a file system and schedule name.

```
> filesystem snapshot list fs-name=fs1 schedule-name=sc1
```

Snapshot		Status	ctime	mtime	
↪	Removable				
=====	=====	=====	=====	=====	
↪	=====				
sc1_24_Jul_2009_22_34_02_IST		offline	2009.Jul.24.22:34:09	2009.	
↪Jul.24.22:34:09	yes				
sc1_24_Jul_2009_21_34_01_IST		offline	2009.Jul.24.21:34:03	2009.	
↪Jul.24.21:34:03	yes				
sc1_24_Jul_2009_20_34_02_IST		offline	2009.Jul.24.20:34:04	2009.	
↪Jul.24.20:34:04	yes				
sc1_24_Jul_2009_19_34_02_IST		offline	2009.Jul.24.19:34:04	2009.	
↪Jul.24.19:34:04	yes				
sc1_24_Jul_2009_18_34_02_IST		offline	2009.Jul.24.18:34:04	2009.	
↪Jul.24.18:34:04	yes				

List all schedules created for automated snapshot creation corresponding to an existing file system.

```

> filesystem snapshot show-schedule fs-name=fs2
FS
↪Minute      Hour      Day      Schedule Name      Max Snapshot Removals
=====
↪=====
fs2           sched2           20
↪ * /25      *          *          *          *          2
fs2           sched3           20
↪ * /45      *          *          *          *          2

```

List automated snapshot schedules for all the file systems.

```

> filesystem snapshot show-schedule
FS
↪Minute      Hour      Day      Schedule Name      Max Snapshot Removals
=====
↪=====
fs1           sched1           10
↪ * /50      *          *          *          *          2
fs2           sched1           10
↪ * /45      *          *          *          *          2

```

Display detailed information for a specific file system

```

> filesystem operation list fs-name=fs4
General Info:
=====
Block Size:      2048 Bytes
Version:         Version 11
Volume Encrypted: Yes
ISA_01:          online
ISA_02:          online

primary
=====
Size:            1.00G
Use%:            5%
Layout:          simple
Mirrors:         -
Columns:         -
Stripe Unit:    0.00 K
Meta Data:       metaOk
FastResync:      Disabled

1. Mirror 01:
List of pools:   pool1
List of disks:   isa_01_intel_nvme2_0

FS Type:         Normal

Defrag Status:   Not Running
Fullfsck Status: Not Running
Resync  Status:  Not Running
Rollsync Status: Not Running
Relayout Status: Not Running

WORM Enabled:    No

```

Display detailed information for a specific file system

```
> filesystem operation list fs-name=fs1
General Info:
=====
Block Size:          2048 Bytes
Version:             Version 13
Volume Encrypted:    No
Max IOPS:            0
ISA_01:              online
ISA_02:              online

primary
=====
Size:                1.00G
Use%:                5%
Layout:              simple
Mirrors:             -
Columns:             -
Stripe Unit:        0.00 K
Meta Data:           metaOk
FastResync:          Disabled

1. Mirror 01:
List of pools:       pool1
List of disks:       isa_01_intel_nvme2_0

FS Type:             Normal

Defrag Status: Not Running
Fullfsck Status: Not Running
Resync  Status: Not Running
Rollsync Status: Not Running
Relayout Status: Not Running

WORM Enabled: Yes
```

List all policies.

```
> filesystem policy list
Name      FS name  Action  Source Tier  Destination Tier  Retrieval Option
↳Pattern  Atime   Mtime   State
=====
↳=====
policy2   fs1      delete  tier1        -                 Standard          \*.
↳txt      >2d     >2d     not running
policy1   fs1      move    primary     tier1              Standard          \*.
↳doc      >3d     >3d     not running
```

List all policies set for file system fs1.

```
> filesystem policy list fs-name=fs1
Name      FS name  Action  Source Tier  Destination Tier  Retrieval Option
↳Pattern  Atime   Mtime   State
=====
↳=====
policy2   fs1      delete  tier1        -                 Standard          \*.
↳txt      >2d     >2d     not running
```

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policy1	fs1	move	primary	tier1	Standard	\*.
→doc	>3d	>3d	not running			

List the I/O tasks which are running in the background.

```
> filesystem tasks show
FILESYSTEM  TASK      STATE    PROGRESS
=====
fs1         ATCOPY    RUNNING  03.01%
ec_fs1      ECREBUILD RUNNING  12.56%
```

Pause all the ongoing tasks for a given file system.

```
> filesystem tasks pause fs-name=fs1
ACCESS fs SUCCESS V-493-10-0 Successfully paused the task for fs1.

> filesystem tasks show
FILESYSTEM  TASK      STATE    PROGRESS
=====
fs1         RELAYOUT  PAUSED   2.50%
```

Resume all the tasks which are in paused state for a given file system.

```
> filesystem tasks resume fs-name=fs1
ACCESS fs SUCCESS V-493-10-0 Successfully resumed the task for fs1.

> show file-system tasks opearation=list
FILESYSTEM  TASK      STATE    PROGRESS
=====
fs1         RELAYOUT  RUNNING  5.60%
```

## 14.1.5 SEE ALSO

disk(1), fs(1), pool(1), scanbus(1), snapshot(1)

## 14.2 snapshot

### 14.2.1 SYNOPSIS

```
filesystem snapshot list fs-name=[fs-name] schedule-name=[schedule-name]
```

```
filesystem snapshot show-schedule fs-name=[fs-name] schedule-name=[schedule-name]
```

### 14.2.2 DESCRIPTION

The storage snapshot commands manage file system level snapshots. All snapshot commands take a file system as an argument and perform operations on that file system.

**The snapshot command can be used to perform the following:**

- listing snapshots for a given file system.
- Displaying schedules created for automated snapshot creation and removal.

### 14.2.3 OPTIONS

```
filesystem snapshot list fs-name=[fs-name] schedule-name=[schedule-name]
```

Display all the snapshots of the specified file system and schedule name. If no file system is specified, snapshots of all the file systems are displayed, whereas if no schedule-name is specified, then snapshots created under fs-name are displayed.

```
filesystem snapshot show-schedule fs-name=[fs-name] schedule-name=[schedule-name]
```

Show all schedules that have been set for automated snapshot creation.

### 14.2.4 EXAMPLES

View the list of snapshots.

```
> filesystem snapshot list
```

Snapshot	Removable	FS	Status	ctime
→mtime		Preserved	Size	
=====		===	=====	=====
→=====	=====	=====	=====	
snap2		fs1	offline	2009.Jul.27.02:40:43
→2009.Jul.27.02:40:57	no	no	190.0M	
sc1_24_Jul_2009_21_34_01_IST		fs1	offline	2009.Jul.24.21:34:03
→2009.Jul.24.21:34:03	yes	no	900.0M	
sc1_24_Jul_2009_19_34_02_IST		fs1	offline	2009.Jul.24.19:34:04
→2009.Jul.24.19:34:04	yes	no	7.0G	
presnap_sc1_24_Jul_2009_18_34_02_IST		fs1	offline	2009.Jul.24.18:34:04
→2009.Jul.24.18:34:04	yes	yes	125M	
sc1_24_Jul_2009_17_34_02_IST		fs1	offline	2009.Jul.24.17:34:04
→2009.Jul.24.17:34:04	yes	no	0K	

Display the list of snapshots for a given file system.



```
> filesystem snapshot list fs-name=fs2
Snapshot
  ↳ mtime          Removable    Schedule Name    Status    ctime
=====
  ↳ =====
snap2
  ↳ 2009.Jul.27.02:40:57 yes      no      -      offline  2009.Jul.27.02:40:43
sc1_24_Jul_2009_22_34_02_IST
  ↳ 2009.Jul.24.22:34:09 yes      no      sc1      offline  2009.Jul.24.22:34:09
sc1_24_Jul_2009_21_34_01_IST
  ↳ 2009.Jul.24.21:34:03 yes      no      sc1      offline  2009.Jul.24.21:34:03
sc1_24_Jul_2009_19_34_02_IST
  ↳ 2009.Jul.24.19:34:04 yes      no      sc1      offline  2009.Jul.24.19:34:04
presnap_sc1_24_Jul_2009_18_34_02_IST
  ↳ 2009.Jul.24.18:34:04 yes      yes     -      offline  2009.Jul.24.18:34:04
sc1_24_Jul_2009_17_34_02_IST
  ↳ 2009.Jul.24.17:34:04 yes      no      sc1      offline  2009.Jul.24.17:34:04
```

Display the list of snapshots corresponding to a file system and schedule name.

```
> filesystem snapshot list fs-name=fs1 schedule-name=sc1
Snapshot
  ↳ Removable    Size    Status    ctime    mtime
=====
  ↳ =====
sc1_24_Jul_2009_22_34_02_IST
  ↳ Jul.24.22:34:09 yes      190.0M    offline  2009.Jul.24.22:34:09    2009.
sc1_24_Jul_2009_21_34_01_IST
  ↳ Jul.24.21:34:03 yes      900.0M    offline  2009.Jul.24.21:34:03    2009.
sc1_24_Jul_2009_20_34_02_IST
  ↳ Jul.24.20:34:04 yes      7.0G     offline  2009.Jul.24.20:34:04    2009.
sc1_24_Jul_2009_19_34_02_IST
  ↳ Jul.24.19:34:04 yes      125M     offline  2009.Jul.24.19:34:04    2009.
sc1_24_Jul_2009_18_34_02_IST
  ↳ Jul.24.18:34:04 yes      0K       offline  2009.Jul.24.18:34:04    2009.
```

List all schedules created for automated snapshot creation corresponding to an existing file system.

```
> filesystem snapshot show-schedule fs-name=fs2
FS
  ↳ Minute    Hour    Day    Schedule Name    Max Snapshot
=====
  ↳ =====
fs2
  ↳ */25      *      *      sched2           20
fs2
  ↳ */45      *      *      sched3           20
```

List automated snapshot schedules for all file systems.

```
> filesystem snapshot show-schedule
FS
  ↳ Minute    Hour    Day    Schedule Name    Max Snapshot
=====
  ↳ =====
```

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fs1				sched1		10	
↪	* / 50	*	*	*	*	2	└
fs2				sched1		10	
↪	* / 45	*	*	*	*	2	└

14.2.5 SEE ALSO

disk(1), fs(1), pool(1), scanbus(1)

## 15.1 support

### 15.1.1 SYNOPSIS

```
support debuginfo upload nodename=[nodename] debug-URL=[debug-URL] module=[module] archived-Logs=[on|off] startDate=[startDate] endDate=[endDate] tar-name=[tar-name]

support metasave image fs-name=[fs-name] location=[location]

support services autofix

support services online service-name=<service-name>

support services show

support health check area=<area> nodename=<nodename>

support syslog add server=<server>

support syslog delete

support syslog show

support syslog set interval=<interval>

support syslog get
```

### 15.1.2 DESCRIPTION

These support utility commands are used to debug any problems that occur within the cluster.

### 15.1.3 OPTIONS

```
support debuginfo upload nodename=[nodename] debug-URL=[debug-URL] module=[module] archived-Logs=[on|off] startDate=[startDate] endDate=[endDate] tar-name=[tar-name]
```

This command uploads debug information of given module from specified node to the external server. The *debug-URL* can be a remote file or a directory. If *debug-URL* specifies a remote file, the debuginfo file is saved by that name; if *debug-URL* specifies a remote directory, the debuginfo file is saved with a

name such as `nas_debuginfo_nodename_modulename_timestamp.tar.gz`. The *archivedLogs* is an optional parameter which can be set to on, off or vxdefault. The *startDate* is an optional parameter which can be set to log start date in mm/dd/yyyy format or vxdefault. The *endDate* is an optional parameter which can be set to log end date in mm/dd/yyyy format or vxdefault. The *tar-name* is an optional parameter which is the final custom tarball name for all the collected logs and the debuginfo file is saved with name such as `tar_name_timestamp.tar.gz`. The supported comma separated module names as below, or you can specify default or all to collect information.

Detailed module Information:

service-status - This module collects the current status for services from the cluster nodes.

initial-deployment - This module collects the install logs from the CPI install log directory `/opt/VRTS/install/logs/`.

**infrastructure - This module collects information for below sub-modules.** nas - This module collects product information from the cluster nodes. nas-procstacks - This module collects stack trace for all running access daemons. sds - This module collects SDS logs. api\_gateway - This module collects API gateway logs.

os - This module collects logs for all kernel dumps and user dumps.

sos-report - This module uses RHEL utility to collect troubleshooting data for Operating System.

explorer - The VxExplorer utility collects logs and environment data from all the servers where the Veritas product is installed.

netbackup-primary - This module collects netbackup master server logs from nodes.

netbackup-media - This module collects netbackup media server logs from nodes.

netbackup-engine - This module collects netbackup engine logs from nodes.

nbsu - This module collects netbackup support utility(nbsu) logs from netbackup master and media containers.

appliance - This module collects logs about appliance.

upgrade - This module collects the upgrade logs for all the cluster nodes.

default - This module is default option which collects logs from all modules except the sos-report module from the cluster nodes.

all - This module collects information for all the above modules from the cluster nodes.

`support metasave image fs-name=[fs-name] location=[location]`

Collects Metasave image of a File System specified by *fsname*. The Metasave image is stored at the directory location specified by *location*. For File System a single Metasave image will be created under *location*.

`support services autofix`

Attempts to fix any faults with any services on all of the running nodes in the cluster.

`support services online service-name=<service-name>`

Brings a service online. If *service-name* is a parallel service that can be brought online on all nodes, an attempt is made to bring the service online on all of the nodes. If *service-name* is a failover service, an attempt is made to bring the service online on any of the running nodes in the cluster. If the *service-name* is already online, no action is taken.

`support services show`

Displays the state of all of the services on all the running nodes in the cluster. It might also attempt to fix any faults with any of the services.

**support health check** *area=<area> nodename=<nodename>* Health check is run on the cluster to verify the network/os/security/protocol configurations. The output of the health check is sent to a file in JSON format at /log/VRTSnas/.

**support syslog add server=<server>** Add an external syslog server.

**support syslog delete** Delete the configured syslog server.

**support syslog show** Display the current list of external syslog servers.

**support syslog set interval=<interval>** Set the interval for forwarding the syslog.

**support syslog get** Get the interval details of the configured syslog server.

## 15.1.4 EXAMPLES

Upload the debugging information of all the nodes to a local machine in the log directory. The path of the log directory is as follows: Access Appliance: /log/.LOGROOT/ Access software: /log/

```
> support debuginfo upload nodename=all debug-URL=file:///log/.LOGROOT/ module=all
```

Upload the debugging information of node1\_1 to a local machine in the log directory. The path of the log directory is as follows: Access Appliance: /log/.LOGROOT/ Access software: /log/

```
> support debuginfo upload nodename=node1_1 debug-URL=file:///log/ module=all
```

Upload all debug information to an FTP server.

```
> support debuginfo upload nodename=node1_1
debug-URL=ftp://admin@ftp.docserver.veritas.com/patches/ module=all
```

Upload all debug logs from all node for all modules from start and end date.

```
> support debuginfo upload nodename=all
debug-URL=ftp://admin@ftp.docserver.veritas.com/patches/ module=all archivedLogs=off_
↪startDate=06/12/2023 endDate=06/15/2023
```

Upload infrastructure and vdd log-related information to an SCP server.

```
> support debuginfo upload nodename=node1_1
debug-URL=scp://root@server.veritas.com:/tmp/ module=infrastructure,vdd
```

Upload the debugging information of all nodes and all modules to a local machine at the debug\_dir directory in the customly named tarball.

```
> support debuginfo upload nodename=all
debug-URL=file:///debug_dir/ module=all tar_name=my_tar
```

Display the state of all of the services.

```
> support services show
```

```

                test
Service         1         2
-----

```

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nfs	ONLINE	STARTING
cifs	ONLINE	ONLINE
ftp	ONLINE	ONLINE
http	ONLINE	ONLINE
backup	ONLINE	OFFLINE
console	ONLINE	OFFLINE
nic_pubeth0	ONLINE	ONLINE
nic_pubeth1	ONLINE	ONLINE
fs_manager	ONLINE	ONLINE
dedup_scheduler	OFFLINE	OFFLINE
10.216.115.199	OFFLINE	ONLINE
10.216.115.200	ONLINE	OFFLINE
10.216.115.201	OFFLINE	ONLINE
10.216.115.202	ONLINE	OFFLINE
10.216.50.132	FAULTED	FAULTED
/vx/fs1	ONLINE	ONLINE
dedupe	OFFLINE	ONLINE
nbu_master	ONLINE	OFFLINE

Bring a service online.

```
> support services online service-name=10.216.50.132
> support services show
```

Service	test	
	1	2
-----	-----	-----
nfs	ONLINE	STARTING
cifs	ONLINE	ONLINE
ftp	ONLINE	ONLINE
http	ONLINE	ONLINE
backup	ONLINE	OFFLINE
console	ONLINE	OFFLINE
nic_pubeth0	ONLINE	ONLINE
nic_pubeth1	ONLINE	ONLINE
fs_manager	ONLINE	ONLINE
dedup_scheduler	OFFLINE	OFFLINE
10.216.50.132	OFFLINE	STARTING
dedupe	OFFLINE	ONLINE
nbu_master	ONLINE	OFFLINE

Autofix all the services.

```
> support services show
```

Service	test	
	1	2
-----	-----	-----
nfs	ONLINE	STARTING
cifs	ONLINE	ONLINE
ftp	ONLINE	ONLINE
http	ONLINE	ONLINE
backup	ONLINE	OFFLINE
console	ONLINE	OFFLINE
nic_pubeth0	ONLINE	ONLINE
nic_pubeth1	ONLINE	ONLINE
fs_manager	ONLINE	ONLINE

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```
dedup_scheduler  OFFLINE  OFFLINE
10.216.50.132    FAULTED  FAULTED
dedupe          OFFLINE  ONLINE
nbu_master       ONLINE  OFFLINE
```

```
> support services autofix
Attempting to fix service faults.....done
> support services show
```

Service	test	
	1	2
-----	-----	-----
nfs	ONLINE	STARTING
cifs	ONLINE	ONLINE
ftp	ONLINE	ONLINE
http	ONLINE	ONLINE
backup	ONLINE	OFFLINE
console	ONLINE	OFFLINE
nic_pubeth0	ONLINE	ONLINE
nic_pubeth1	ONLINE	ONLINE
fs_manager	ONLINE	ONLINE
dedup_scheduler	OFFLINE	OFFLINE
10.216.50.132	OFFLINE	STARTING
dedupe	OFFLINE	ONLINE
nbu_master	ONLINE	OFFLINE

#### Run the health check for several areas on cluster

```
> support health check

NetBackup Flex Scale config_validation INFO V-493-10-0 NETWORK validation in progress.
↪...
NetBackup Flex Scale config_validation INFO V-493-10-0 NETWORK validation is_
↪completed.
NetBackup Flex Scale config_validation INFO V-493-10-0 OS validation in progress...
NetBackup Flex Scale config_validation INFO V-493-10-0 OS validation is completed.
NetBackup Flex Scale config_validation INFO V-493-10-0 SECURITY validation in_
↪progress...
NetBackup Flex Scale config_validation INFO V-493-10-0 SECURITY validation is_
↪completed.
NetBackup Flex Scale config_validation INFO V-493-10-0 PROTOCOLS validation in_
↪progress...
NetBackup Flex Scale config_validation INFO V-493-10-0 PROTOCOLS validation is_
↪completed.
NetBackup Flex Scale config_validation INFO V-493-10-0 VA_CONFIG validation in_
↪progress...
NetBackup Flex Scale config_validation INFO V-493-10-0 VA_CONFIG validation is_
↪completed.
NetBackup Flex Scale config_validation INFO V-493-10-0 Healthcheck output is dumped_
↪at location /log/VRTSnas/health-check-all-nbfs-01-nbfs-02-nbfs-03-nbfs-04-
↪20230402235433.1680504873.json. Please refer the file for details.

> support health check area=os nodename=nbfs-02

NetBackup Flex Scale config_validation INFO V-493-10-0 OS validation in progress...
NetBackup Flex Scale config_validation INFO V-493-10-0 OS validation is completed.
```

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```
NetBackup Flex Scale config_validation INFO V-493-10-0 Healthcheck output is dumped_
↳at location /log/VRTSnas/health-check-os-nbfs-02-20230403044944.1680522584.json._
↳Please refer the file for details.

> support health check area=protocols nodename=nbfs-01,nbfs-02

NetBackup Flex Scale config_validation INFO V-493-10-0 PROTOCOLS validation in_
↳progress...
NetBackup Flex Scale config_validation INFO V-493-10-0 PROTOCOLS validation is_
↳completed.
NetBackup Flex Scale config_validation INFO V-493-10-0 Healthcheck output is dumped_
↳at location /log/VRTSnas/health-check-protocols-nbfs-01-nbfs-02-20230403045840.
↳1680523120.json. Please refer the file for details.
```

### Add a new syslog server

```
> support syslog add server=syslog1.veritas.com

NetBackup Flex Scale service SUCCESS V-493-10-4773 Syslog forwarding enabled_
↳successfully.
```

### Delete the configured syslog server

```
> support syslog delete

NetBackup Flex Scale service SUCCESS V-493-10-4775 Syslog forwarding disabled_
↳successfully.
```

### Show the configured syslog servers

```
> support syslog show

Configured syslog servers: syslog1.veritas.com
```

### Set the syslog interval details

```
> support syslog set interval=45

NetBackup Flex Scale service SUCCESS V-493-10-4779 Interval set successfully.
```

### Get the interval details of the configured syslog server

```
> support syslog get

Interval : 45
```



## 15.2 debuginfo

### 15.2.1 SYNOPSIS

```
support debuginfo upload nodename=[nodename] debug-URL=[debug-URL] module=[module] archived-
Logs=[on|off] startDate=[startDate] endDate=[endDate] tar-name=[tar-name]
```

### 15.2.2 DESCRIPTION

The `support debuginfo upload` command can upload debug information to an external FTP or SCP server.

### 15.2.3 OPTIONS

```
support debuginfo upload nodename=[nodename] debug-URL=[debug-URL] module=[module] archived-
Logs=[on|off] startDate=[startDate] endDate=[endDate] tar-name=[tar-name]
```

Upload debugging information of given module from specified node to the external server. The *debug-URL* can be a remote file or a directory. If *debug-URL* specifies a remote file, the debuginfo file is saved by that name; if *debug-URL* specifies a remote directory, the debuginfo file is saved with a name such as *nas\_debuginfo\_nodename\_modulename\_timestamp.tar.gz*. The *archivedLogs* is an optional parameter which can be set to on, off or vxdefault. The *startDate* is an optional parameter which can be set to log start date in mm/dd/yyyy format or vxdefault. The *endDate* is an optional parameter which can be set to log end date in mm/dd/yyyy format or vxdefault. The *tar-name* is an optional parameter which is the final custom tarball name for all the collected logs and the debuginfo file is saved with name such as *tar\_name\_timestamp.tar.gz*. The supported comma separated module names as below, or you can specify default or all to collect information.

Detailed module Information:

*service-status* - This module collects the current status for services from the cluster nodes.

*initial-deployment* - This module collects the install logs from the CPI install log directory */opt/VRTS/install/logs/*.

**infrastructure - This module collects information for below sub-modules.** *nas* - This module collects product information from the cluster nodes. *nas-procstacks* - This module collects stack trace for all running access daemons. *sds* - This module collects SDS logs. *api\_gateway* - This module collects API gateway logs.

*os* - This module collects logs for all kernel dumps and user dumps.

*sos-report* - This module uses RHEL utility to collect troubleshooting data for Operating System.

*explorer* - The VxExplorer utility collects logs and environment data from all the servers where the Veritas product is installed.

*netbackup-master* - This module collects netbackup master server logs from nodes.

*netbackup-media* - This module collects netbackup media server logs from nodes.

*netbackup-engine* - This module collects netbackup engine logs from nodes.

*nbsu* - This module collects netbackup support utility(nbsu) logs from netbackup master and media containers.

*appliance* - This module collects logs about appliance.

*upgrade* - This module collect the upgrade logs for all the cluster nodes.

default - This module is default option which collects logs from all modules except the sos-report module from the cluster nodes.

all - This module collects information for all the above modules from the cluster nodes.

## 15.2.4 EXAMPLES

Upload the debugging information of all the nodes to a local machine in the log directory. The path of the log directory is as follows: Access Appliance: /log/.LOGROOT/ Access software: /log/

```
> support debuginfo upload nodename=all debug-URL=file:///log/.LOGROOT/ module=all
```

Upload the debugging information of node1\_1 to a local machine in the log directory. The path of the log directory is as follows: Access Appliance: /log/.LOGROOT/ Access software: /log/

```
> support debuginfo upload nodename=node1_1 debug-URL=file:///log/ module=all
```

Upload all debug information to an FTP server.

```
> support debuginfo upload nodename=node1_1  
debug-URL=ftp://admin@ftp.docserver.veritas.com/patches/ module=all
```

Upload all debug logs from all node for all modules from start and end date.

```
> support debuginfo upload nodename=all  
debug-URL=ftp://admin@ftp.docserver.veritas.com/patches/ module=all archivedLogs=off_  
↪startDate=06/12/2023 endDate=06/15/2023
```

Upload infrastructure and vdd log related debug information to an SCP server.

```
> support debuginfo upload nodename=node1_1  
debug-URL=scp://root@server.veritas.com:/tmp/ module=infrastructure,vdd
```

Upload os related debug information to file in debug\_dir directory on a node.

```
> support debuginfo upload nodename=node1_1  
debug-URL=file:///debug_dir/ module=os
```

Upload the debugging information of all nodes and all modules to a local machine at the debug\_dir directory in the customly named tarball.

```
> support debuginfo upload nodename=all  
debug-URL=file:///debug_dir/ module=all tar_name=my_tar
```

## 15.3 health

### 15.3.1 SYNOPSIS

support health check *area*=<area> *nodename*=<nodename>

### 15.3.2 OPTIONS

**area** Specify the area where the health check should be run.

**nodename** Name of the nodes on which the health check should be run.

**support health check** Health check is run on the cluster to verify the network/os/security/protocol configurations. The output of the health check is sent to a file in JSON format at /log/VRTSnas/.

### 15.3.3 EXAMPLES

Run the health check for several areas on cluster

```
> support health check

NetBackup Flex Scale config_validation INFO V-493-10-0 NETWORK validation in progress.
↪...
NetBackup Flex Scale config_validation INFO V-493-10-0 NETWORK validation is_
↪completed.
NetBackup Flex Scale config_validation INFO V-493-10-0 OS validation in progress...
NetBackup Flex Scale config_validation INFO V-493-10-0 OS validation is completed.
NetBackup Flex Scale config_validation INFO V-493-10-0 SECURITY validation in_
↪progress...
NetBackup Flex Scale config_validation INFO V-493-10-0 SECURITY validation is_
↪completed.
NetBackup Flex Scale config_validation INFO V-493-10-0 PROTOCOLS validation in_
↪progress...
NetBackup Flex Scale config_validation INFO V-493-10-0 PROTOCOLS validation is_
↪completed.
NetBackup Flex Scale config_validation INFO V-493-10-0 VA_CONFIG validation in_
↪progress...
NetBackup Flex Scale config_validation INFO V-493-10-0 VA_CONFIG validation is_
↪completed.
NetBackup Flex Scale config_validation INFO V-493-10-0 Healthcheck output is dumped_
↪at location /log/VRTSnas/health-check-all-nbfs-01-nbfs-02-nbfs-03-nbfs-04-
↪20230402235433.1680504873.json. Please refer the file for details.

> support health check area=os nodename=nbfs-02

NetBackup Flex Scale config_validation INFO V-493-10-0 OS validation in progress...
NetBackup Flex Scale config_validation INFO V-493-10-0 OS validation is completed.
NetBackup Flex Scale config_validation INFO V-493-10-0 Healthcheck output is dumped_
↪at location /log/VRTSnas/health-check-os-nbfs-02-20230403044944.1680522584.json._
↪Please refer the file for details.

> support health check area=protocols nodename=nbfs-01,nbfs-02
```

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```
NetBackup Flex Scale config_validation INFO V-493-10-0 PROTOCOLS validation in_
↳progress...
NetBackup Flex Scale config_validation INFO V-493-10-0 PROTOCOLS validation is_
↳completed.
NetBackup Flex Scale config_validation INFO V-493-10-0 Healthcheck output is dumped_
↳at location /log/VRTSnas/health-check-protocols-nbfs-01-nbfs-02-20230403045840.
↳1680523120.json. Please refer the file for details.
```

## 15.4 metasave

### 15.4.1 SYNOPSIS

```
support metasave image fs-name=[fs-name] location=[location]
```

### 15.4.2 DESCRIPTION

`support metasave image` command collects metasave image of a file system for debugging purposes.

### 15.4.3 OPTIONS

**support metasave image *fs-name*=[*fs-name*] *location*=[*location*]** Collects metasave image of the file system specified by *fsname*. The metasave image is stored at the directory location specified by *location*. For a file system, a single metasave image is created under *location*.

### 15.4.4 EXAMPLES

Collect metasave of file system *testfs* and store it under **/tmp/meta\_out\_dir**.

```
> support metasave image fs-name=testfs location=/tmp/meta_out_dir
Collecting Metasave image of File System testfs. This may take some time...
SUCCESS: Metasave image of testfs collected succesfully. TAR Image is stored at /tmp/
↪meta_out_dir/metasave_tempfs.tar.
```

### 15.4.5 NOTE

File system must be offline on all the cluster nodes to create a consistent metasave image. Bring the file system offline before collecting metasave using the `Storage>fs offline` command. Metasave image collection is a time-consuming operation. Total time taken depends on the amount of metadata information present in the file system. Other Veritas Access operations can be run from a separate terminal while the metasave collection is in progress.

### 15.4.6 SEE ALSO

`debuginfo(1)`, `fs(1)`

## 15.5 primary

### 15.5.1 SYNOPSIS

support primary reinstall

### 15.5.2 OPTIONS

**support primary reinstall** Primary reinstall is run on the cluster to start empty NetBackup primary server if the catalog file system corrupted.

### 15.5.3 EXAMPLES

Run the primary reinstall

```
> support primary reinstall

NetBackup Flex Scale service INFO V-493-10-0 Started reinstallation of NetBackup_
↳primary server...
NetBackup Flex Scale service INFO V-493-10-0 Disabling VCS monitoring of NetBackup_
↳primary server
NetBackup Flex Scale service INFO V-493-10-0 Disabled VCS monitoring of NetBackup_
↳primary server
NetBackup Flex Scale service INFO V-493-10-0 Unmounting MASTER_FS file system
NetBackup Flex Scale service INFO V-493-10-0 Unmounted MASTER_FS file system
NetBackup Flex Scale service INFO V-493-10-0 Cleaning MASTER_FS file system using_
↳mkfs command
NetBackup Flex Scale service INFO V-493-10-0 Cleaned MASTER_FS file system using_
↳mkfs command
NetBackup Flex Scale service INFO V-493-10-0 Mounting MASTER_FS file system
NetBackup Flex Scale service INFO V-493-10-0 Mounted MASTER_FS file system
NetBackup Flex Scale service INFO V-493-10-0 Selecting target node for NetBackup_
↳primary server
NetBackup Flex Scale service INFO V-493-10-0 NetBackup primary server is already_
↳enabled on noone-01
NetBackup Flex Scale service INFO V-493-10-0 Selected noone-01 for hosting NetBackup_
↳primary server
NetBackup Flex Scale service INFO V-493-10-0 Making the NetBackup primary server's_
↳IPs online on node noone-01
NetBackup Flex Scale service INFO V-493-10-0 NetBackup primary server's IPs are_
↳online on noone-01
NetBackup Flex Scale service INFO V-493-10-0 Creating required directories in MASTER_
↳FS
NetBackup Flex Scale service INFO V-493-10-0 Created required directories in MASTER_
↳FS
NetBackup Flex Scale service INFO V-493-10-0 Disabling health check for NetBackup_
↳primary server
NetBackup Flex Scale service INFO V-493-10-0 Disabled health check for NetBackup_
↳primary server
NetBackup Flex Scale service INFO V-493-10-0 Starting NetBackup primary server_
↳services
NetBackup Flex Scale service INFO V-493-10-0 Started NetBackup primary server_
↳services
NetBackup Flex Scale service INFO V-493-10-0 Successfully reinstalled the NetBackup_
↳primary server
```

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```
NetBackup Flex Scale service WARNING V-493-10-0 Perform rest of recovery steps.
↳manually from the recovery document for NetBackup services configuration and
↳catalog recovery, and then re-enable the health check and VCS monitoring of
↳NetBackup primary server
```

```
Operation completed successfully
```

## 15.6 services

### 15.6.1 SYNOPSIS

```
support services autofix
support services online service-name=<service-name>
support services show
```

### 15.6.2 OPTIONS

***service-name*** Name of the service that needs to be online.

**support services autofix** Attempts to fix any faults with any services on all of the running nodes of the cluster.

**support services online *service-name*=<*service-name*>** Brings a service online. If *service-name* is a parallel service that can be onlined on all nodes, an attempt is made to bring the service online on all of the nodes. If *service-name* is a failover service, an attempt is made to bring the service online on any of the running nodes in the cluster. If *service-name* is already online, no action is taken.

**support services show** Shows the state of all the services on all of the running nodes of the cluster. It might also attempt to fix any faults with any of the services.

### 15.6.3 EXAMPLES

Display the state of all of the services.

```
> support services show

                test
Service         1         2
-----
nfs              ONLINE  STARTING
cifs              ONLINE   ONLINE
ftp              ONLINE   ONLINE
http             ONLINE   ONLINE
backup           ONLINE   OFFLINE
console          ONLINE   OFFLINE
nic_pubeth0      ONLINE   ONLINE
nic_pubeth1      ONLINE   ONLINE
fs_manager       ONLINE   ONLINE
dedup_scheduler  OFFLINE  OFFLINE
10.216.115.199   OFFLINE  ONLINE
10.216.115.200   ONLINE  OFFLINE
10.216.115.201   OFFLINE  ONLINE
10.216.115.202   ONLINE  OFFLINE
10.216.50.132    FAULTED  FAULTED
/vx/fs1          ONLINE   ONLINE
dedupe           OFFLINE  ONLINE
nbu_master       ONLINE   OFFLINE
```

Bring a service online.



```
> support services online service-name=10.216.50.132
> support services show
```

Service	test	
	1	2
-----	-----	-----
nfs	ONLINE	STARTING
cifs	ONLINE	ONLINE
ftp	ONLINE	ONLINE
http	ONLINE	ONLINE
backup	ONLINE	OFFLINE
console	ONLINE	OFFLINE
nic_pubeth0	ONLINE	ONLINE
nic_pubeth1	ONLINE	ONLINE
fs_manager	ONLINE	ONLINE
dedup_scheduler	OFFLINE	OFFLINE
10.216.50.132	OFFLINE	STARTING
dedupe	OFFLINE	ONLINE
nbu_master	ONLINE	OFFLINE

Autofix all of the services.

```
> support services show
```

Service	test	
	1	2
-----	-----	-----
nfs	ONLINE	STARTING
cifs	ONLINE	ONLINE
ftp	ONLINE	ONLINE
http	ONLINE	ONLINE
backup	ONLINE	OFFLINE
console	ONLINE	OFFLINE
nic_pubeth0	ONLINE	ONLINE
nic_pubeth1	ONLINE	ONLINE
fs_manager	ONLINE	ONLINE
dedup_scheduler	OFFLINE	OFFLINE
10.216.50.132	FAULTED	FAULTED
dedupe	OFFLINE	ONLINE
nbu_master	ONLINE	OFFLINE

```
> support services autofix
Attempting to fix service faults.....done
> support services show
```

Service	test	
	1	2
-----	-----	-----
nfs	ONLINE	STARTING
cifs	ONLINE	ONLINE
ftp	ONLINE	ONLINE
http	ONLINE	ONLINE
backup	ONLINE	OFFLINE
console	ONLINE	OFFLINE
nic_pubeth0	ONLINE	ONLINE
nic_pubeth1	ONLINE	ONLINE
fs_manager	ONLINE	ONLINE

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dedup_scheduler	OFFLINE	OFFLINE
10.216.50.132	OFFLINE	STARTING
dedupe	OFFLINE	ONLINE
nbu_master	ONLINE	OFFLINE

## 15.7 syslog

### 15.7.1 SYNOPSIS

```
syslog add server=<server>
syslog delete
syslog set interval=<interval>
syslog get
syslog show
```

### 15.7.2 DESCRIPTION

The report `syslog` command configures the external syslog servers and sets the interval for forwarding the syslog.

### 15.7.3 OPTIONS

***server*** Hostname or IP address of the external syslog server.

***interval*** Time interval for syslog forwarding in min.

**syslog add *server*=<*server*>** Add an external syslog server.

**syslog delete** Delete the configured syslog server.

**syslog set *interval*=<*interval*>** Set the interval for forwarding the syslog.

**syslog get** Get the interval details of the configured syslog server.

**syslog show** Show the current list of external syslog servers.

### 15.7.4 EXAMPLES

Add a new syslog server.

```
> syslog add server=syslog1.veritas.com

NetBackup Flex Scale service SUCCESS V-493-10-4773 Syslog forwarding enabled_
↪successfully.
```

Delete the configured syslog server.

```
> syslog delete

NetBackup Flex Scale service SUCCESS V-493-10-4775 Syslog forwarding disabled_
↪successfully.
```

Show configured syslog servers.

```
> syslog show

Configured syslog servers: syslog1.veritas.com
```

Set syslog forwarding interval:

```
> syslog set interval=45
```

```
NetBackup Flex Scale service SUCCESS V-493-10-4779 Interval set successfully.
```

Get interval details of configured syslog server:

```
> syslog get
```

```
Interval : 45
```

## 15.7.5 SEE ALSO

email(1), exportevents(1), showevents(1), event(1)

## 16.1 system

### 16.1.1 SYNOPSIS

```
system config export location=<location> type=<type>
system config delete file-name=<file-name>
system config show
system gui enable
system gui disable
system gui show
system option show key=cfsmount-onlinetimeout
system option show key=lltpeerinactive-timeout
system option show key=dmpio
system option show key=ninodes
system option show key=write-throttle fs-name=<fs-name>
system option show key=read-nstream fs-name=<fs-name>
system option show key=write-nstream fs-name=<fs-name>
system option show key=write-perf-io fs-name=<fs-name>
system option show key=initial-extent-size fs-name=<fs-name>
system option show key=dmp-path-age
system option show key=dmp-health-time
system option show key=volpagemod-max-memsize
system option show key=vol-appio-threshold
system option show key=vx-timelag*
system option modify key=nfsd value=<value> nodename=[nodename]
```

```
system option modify key=cfsmount-onlinetimeout value=<value>
system option modify key=lltpeerinactive-timeout value=<value>
system option modify key=enclosure\arrayname\arraytype value=<value> iopolicy=<iopolicy>
system option modify key=ninodes value=<value>
system option modify key=write-throttle/read-nstream/write-nstream/read-pref-io/write-pref-io/initial-
extent-size value=<value>
system option modify key=dmp-path-age/dmp-health-time value=<value>
system option modify key=volpagemod-max-memsz value=<value> number=1
system option modify key=vol-appio-threshold option=<option>
system option modify key=vx-timelag value=<value>
system statistics show nodename=[nodename]
system statistics cluster
system statistics fs-io fs-name=[fs-name]
system statistics all nodename=[nodename]
system statistics rdma nodename=[nodename]
```

## 16.1.2 DESCRIPTION

The `system` commands show timezones and regions, and start, stop, sync or check the status of the NTP server. It also contains commands related to showing cluster-wide performance statistics and commands. It also contains the `option` command display for configuring the tunable parameters. It also contains the `license` commands which provide options to perform necessary operations related to licensing.

## 16.1.3 OPTIONS

**system config export location=<location> type=<type>** Save the configuration in a local file.

**system config export location=<location> type=<type>** Save the configuration on a remote machine. Exported File is named `export.tar.gz` if no file name is specified in the URL. Note: When exporting files with ftp URL, the given path is considered relative to the current working directory of the session. For example, to get the file named `README` from your home directory on your ftp site, use:

```
ftp://user:passwd@my.site.com/README
```

But if you want to get the `README` file from the root directory of the site, you need to specify the absolute file name:

```
ftp://user:passwd@my.site.com//README
```

(that is, with an extra slash in front of the file name.)

**system config delete file-name=<file-name>** Delete the locally saved configuration file.

**system config show** View the list of locally saved configuration files.

**system gui enable** The `system guienable` command enables use of the GUI Management Server.

**system gui disable** The system guidisable command disables use of the GUI Management Server.

**system gui show** The system guistatus displays status of the GUI Management Server.

**show client cert-auth-status** The system gui\_clientcertificate authentication status will display if certificate based client authentication is disabled or enabled.

**system option show key=cfsmount-onlinetimeout** Display cfsmount online timeout.

**system option show key=lltpeerinactive-timeout** Display peer inactive timeout.

**system option show key=dmpio** Display the type of iopolicy corresponding to enclosure, array-name, arraytype for each node.

**system option show key=ninodes** Display the global inode cache size.

**system option show key=write-throttle/read-nstream/write-nstream/read-pref-io/write-pref-io/initial-extent-size fs-name=<fs-name>**

Display the file-system specific tunefstab parameters and their value for the specified file system.

**system option show key=dmp-path-age/dmp-health-time** Display the value of the dmp tune attribute.

**system option modify key=nfsd value=<value> nodename=[nodename]** Modify the number of daemons. The range for the number of daemons is from 1 to 512.

**system option modify key=cfsmount-onlinetimeout Value=<value>** Modify cfsmount online timeout. The range is from 300 to 9000. The default timeout value is 1200 seconds.

**system option modify key=lltpeerinactive-timeout Value=<value>** Modify peer inactive timeout. The range is from 100 to 36000. The default timeout value is 16 seconds.

**system option modify key=enclosure|arrayname|arraytype value=<value> iopolicy=<iopolicy>** Modify the dmpio policy corresponding to enclosure, arrayname, arraytype.

**system option modify key=ninodes\*“ \*value=<value>** Modify the global inode cache size.

**system option modify key=write-throttle value=<value> fs-name=<fs-name>** Modify the write\_throttle parameter value for the specified file system. The parameter write\_throttle lets you lower the number of dirty pages per file that the file system generates before writing them to disk. After the number of dirty pages for a file reaches the write\_throttle threshold, the file system starts flushing pages to disk even if free memory is still available. The valid range for write\_throttle is 0 to 2048 pages. The default value is 0 which implies there is no write\_throttle.

**system option modify key=initial-extent-size value=<value> fs-name=<fs-name>** Modify the initial\_extent\_size parameter value for the specified file system. The default value for initial\_extent\_size is 1 file system block. The valid range for initial\_extent\_size is 1 to 32K blocks and must be the power of 2.

**system option modify key=read-nstream value=<value> fs-name=<fs-name>** Modify the read\_nstream parameter value for the specified file system. The valid range for read\_nstream parameter is 1 to number of stripe columns in the associated volume. For the media server workload file system, the recommended read\_nstream parameter value is 1.

**system option modify key=read-pref-io value=<value> fs-name=<fs-name>** Modify the read\_pref\_io parameter value for the specified file system. The valid values for read\_pref\_io are 64k, 128k, 256k, or 512k.

**system option modify key=write-nstream value=<value> fs-name=<fs-name>** Modify the write\_nstream parameter value for the specified file system. The valid range for read\_nstream parameter is 1 to number of stripe columns in the associated volume.

**system option modify** *key=write-pref-io value=<value> fs-name=<fs-name>* Modify the write\_pref\_io parameter value for the specified file system. The valid values for write\_pref\_io are 64k, 128k, 256k, or 512k.

**system option modify** *key=dmp-path-age value=<value>* Modify the value of dmp\_path\_age.

**system option modify** *key=dmp-health-time value=<value>* Modify the value of dmp\_health\_time.

**system fips show** Show the status of VxOS and MSDP FIPS on cluster

**system statistics show** *nodename=[nodename]* Display system-related statistics.

**system statistics cluster** Display cluster-wide statistics.

**system statistics fs-io** *fs-name=[fs-name]* Display filesystem IO statistics.

**system statistics all** *nodename=[nodename]* Display system and DMP-related statistics at a time.

**system statistics rdma** *nodename=[nodename]* Display rdma statistics.

#### 16.1.4 SEE ALSO

option(1), stat(1), license(1)



## 16.2 config

### 16.2.1 SYNOPSIS

```
system config export type=<type> location=<location>
system config delete file-name=<file-name>
system config show
```

### 16.2.2 DESCRIPTION

The `system config` command exports the Veritas Access configuration settings. The default value: `all` will be set if you leave `config_type` as blank.

Config Name Config information

=====

**admin:** List of users, passwords. This includes cifs local users/groups also.

**network:** DNS, LDAP, NIS, netgroup, nsswitch settings (does not include IP).

**report:** Report settings.

**system:** NTP settings, timezone and system options like `cfsmount_ontimeout`, `dmpio`, `dmptune`, `nfscd`, `ninodes`, `tunefstab`, `vxtune`.

**all:** All the configuration information.

**all\_except\_cluster\_specific:** All except the cluster-specific configuration.

**nfs:** NFS settings.

**ftp:** FTP settings.

**backup:** NBU client and NDMP configuration

**cifs:** CIFS settings.

**replication:** Replication settings.

**storage\_schedules:** Imports dynamic storage tiering (DST) and automated snapshot schedules.

**cluster\_specific:** Public IP addresses, virtual IP addresses, and console IP address. The network connection to the console server may be lost after importing these settings. If this happens, reconnect after importing this configuration.

**storage\_fs\_alert:** File system alert settings.

**compress\_schedules:** Compression schedules.

**defrag\_schedules:** Defragmentation schedule.

**smartio:** SmartIO settings.

**dedupe:** Deduplication configuration.

### 16.2.3 OPTIONS

```
system config export type*=local *location
```

Save the configuration in a local file.

```
system config export file_type*=remote location*=URL
```

Save the configuration on a remote machine. Exported File is named export.tar.gz if no file name is specified in the URL. Note: When exporting files with ftp URL, the given path is considered relative to the current working directory of the session. For example, to get the file named README from your home directory on your ftp site, use:

```
ftp://user:passwd@my.site.com/README
```

But if you want to get the README file from the root directory of the site, you need to specify the absolute file name:

```
ftp://user:passwd@my.site.com//README
```

(i.e. with an extra slash in front of the file name.)

```
system config delete file-name=<file-name>
```

Delete the locally-saved configuration file.

```
system config show
```

View the list of locally-saved configuration files.

## 16.2.4 EXAMPLES

Export the configuration into a file with the name 2014\_July\_20.

```
> system config export type=local location=2014_July_20
```

Export (or save) the configuration onto a remote machine.

```
> system config export type=remote location=scp://root@10.209.105.138:/root/2014_July_
→20.tar.gz or ftp://root@10.209.105.138:/home/user1/2014_July_20.tar.gz
Password: *****
```

## 16.3 fips

### 16.3.1 SYNOPSIS

```
system fips show
```

### 16.3.2 DESCRIPTION

The `system fips show` command provides the facility to only view MSDP FIPS and VxOS FIPS status on the system. One cannot enable/disable FIPS on the system. The Federal Information Processing Standards (FIPS) define U.S. and Canadian Government security and interoperability requirements for computer systems. The FIPS 140-2 standard specifies the security requirements for cryptographic modules. It describes the approved security functions for symmetric and asymmetric *key* encryption, message authentication, and hashing.

### 16.3.3 OPTIONS

### 16.3.4 EXAMPLES

- 1) Show VxOS and MSDP FIPS mode.

When all the precheck conditions are met

```
> system fips show
Cluster status
=====
MSDP: Enabled
VxOS: Enabled

Node                VxOS      MSDP
=====
accesscluster-node-01 Enabled   Enabled
accesscluster-node-02 Enabled   Enabled
```

### 16.3.5 SEE ALSO

`system(1)`

## 16.4 disable

### 16.4.1 SYNOPSIS

`system gui disable`

### 16.4.2 DESCRIPTION

The `system gui disable` command disables the GUI.

### 16.4.3 OPTIONS

**`system gui disable`** Disable the GUI.

### 16.4.4 EXAMPLES

Disable the GUI.

```
> system gui disable
Force stopping vamgmt service.
vamgmt service is not running.
```

### 16.4.5 SEE ALSO

`guidisable(1)`

## 16.5 enable

### 16.5.1 SYNOPSIS

`system gui enable`

### 16.5.2 DESCRIPTION

The `system gui enable` command enables or starts the GUI.

### 16.5.3 OPTIONS

**system gui enable** Start or enable the GUI.

### 16.5.4 EXAMPLES

Enable the GUI console.

```
> system gui enable
Start vamgmt service vamgmt...
vamgmt service is running.
```

### 16.5.5 SEE ALSO

`guienable(1)`

## 16.6 status

### 16.6.1 SYNOPSIS

`system gui show`

### 16.6.2 DESCRIPTION

The `system gui show` command is used to check the status of the GUI.

### 16.6.3 OPTIONS

**system gui show** Check the status of the GUI console.

### 16.6.4 EXAMPLES

Check the status of the GUI console.

```
> system gui show
Checking service vamgmt...
vamgmt service is not running.
```

### 16.6.5 SEE ALSO

`guistatus(1)`

## 16.7 option

### 16.7.1 SYNOPSIS

```

system option show key=cfsmount-onlinetimeout
system option show key=lltpeerinactive-timeout
system option show key=dmpio
system option show key=ninodes
system option show key=write-throttle
system option show key=read-nstream
system option show key=write-nstream
system option show key=write-perf-io
system option show key=initial-extent-size
system option show key=dmp-path-age
system option show key=dmp-health-time
system option show key=volpagemod-max-memsz
system option show key=vol-appio-threshold
system option show key=vx-timelag
system option modify key=nfsd value=<value> nodename=[nodename]
system option modify key=cfsmount-onlinetimeout value=<value>
system option modify key=lltpeerinactive-timeout value=<value>
system option modify key=enclosure\arrayname\arraytype value=<value> iopolicy=<iopolicy>
system option modify key=ninodes value=<value>
system option modify key=write-throttle/read-nstream/write-nstream/read-pref-io/write-pref-io/initial-
extent-size value=<value>
system option modify key=dmp-path-age/dmp-health-time value=<value>
system option modify key=volpagemod-max-memsz value=<value> number=1*
system option modify key=vol-appio-threshold option=<option>
system option modify key=vx-timelag value=<value>

```

### 16.7.2 DESCRIPTION

The `system option` command is used to display and configure the tunable parameters. The description of the DMP I/O policy is as follows:

*adaptive:* In SAN environments, determines the paths that have the least delay, and schedules I/O on paths that are expected to carry a higher load. Priorities are assigned to the paths in proportion to the delay.

*adaptiveminq:* Similar to the adaptive policy, except that I/O is scheduled according to the length of the I/O queue on each path. The path with the shortest queue is assigned the highest priority.

*balanced:* Takes the track cache into consideration when balancing I/O across paths.

*minimumq*: Uses a minimum I/O queue policy. I/O is sent on paths that have the minimum number of I/O requests in the queue. This policy is suitable for low-end disks or JBODs where a significant track cache does not exist. This is the default policy for Active/Active (A/A-A) arrays.

*priority*: Assigns the path with the highest load-carrying capacity as the priority path. This policy is useful when the paths in a SAN have unequal performance, and you want to enforce load-balancing manually.

*round-robin*: Sets a simple round-robin policy for I/O. This is the default policy for Active/Passive (A/P) and Asynchronous Active/Active (A/A-A) arrays.

*singleactive*: I/O is channeled through the single active path. The optional attribute `use_all_paths` controls whether the secondary paths in an Asymmetric Active/Active (A/A-A) array are used for scheduling I/O requests in addition to the primary paths. The default setting is no, which disallows the use of the secondary paths.

### 16.7.3 OPTIONS

**:system option show key=cfsmount-onlinetimeout** Display cfsmount online timeout.

**system option show key=lltpeerinactive-timeout** Display peer inactive timeout.

**system option show key=dmpio** Display the type of iopolicy corresponding to enclosure, array-name, arraytype for each node.

**system option show key=ninodes** Display the global inode cache size.

**system option show key=tunefstab** Display the global value of the write\_throttle parameter.

**system option show key=dmptune** Display the value of the dmptune attribute.

**system option show key=vxtune** Display the tunable values of the volume.

**show system vxfs** Display the tunable parameters for VxFS.

**system option modify key=nfsd\* \*value=<value> nodename=[nodename]** Modify the number of NFS daemons. The range for the number of daemons is from 1 to 512.

**Warning:** The `system option modify *key=nfsd*` command overwrites the existing configuration settings.

**system option modify key=cfsmount\_ontimeout Value=<value>** Modify cfsmount online timeout. The range from 300 to 9000.

**system option modify key=lltpeerinactive-timeout Value=<value>** Modify peer inactive timeout. The range is from 100 to 36000. The default timeout value is 16 seconds.

**system option modify key={enclosure \*encl\_name | arrayname**

**array\_name | arraytype {A/A|A/Pl...} }** iopolicy{adaptive | adaptiveminq | balanced minimumq | priority | round-robin | singleactive}

arraytype (active-active(A/A) active-active-A(A/A-A) active-active-A-HDS(A/A-A-HDS) active-active-A-HP(A/A-A-HP) APdisk(APdisk) active-passive(A/P) active-passive-C(A/P-C) active-passiveF-VERITAS(A/PF-VERITAS) active-passiveF-T3PLUS(A/PF-T3PLUS) active-passiveF-LSI(A/PF-LSI) active-passiveG(A/PG) active-passiveG-C(A/PG-C) Disk(Disk) CLR-A-P(CLR-A/P) CLR-A-PF(CLR-A/PF))"

Modify the dmpio policy corresponding to enclosure, arrayname, arraytype. **Warning:** Check the sequence before modifying the I/O policy. The policies need to be applied in the following sequence: arraytype, arrayname, and enclosure. The enclosure-based modification of the I/O policy overwrites the I/O policy set using the arrayname and the arraytype for that particular enclosure. In turn, the arrayname-based modification of the I/O policy overwrites the I/O policy set using the arraytype for that particular arrayname.

**system option modify key=tunefstab type=write-throttle value=<value>** Modify the value of the write\_throttle parameter.



**system option modify key=dmptune type=dmp-health-time value=<value>** Modify the value of dmp\_health\_time. This attribute sets the time in seconds for which a path must stay healthy. If a path's state changes back from enabled to disabled within this time period, DMP marks the path as intermittently failing, and does not re-enable the path for I/O until dmp\_path\_age seconds elapse. The default value of dmp\_health\_time is 60 seconds. A value of 0 prevents DMP from detecting intermittently failing paths.

**system option modify key=dmptune type=dmp-path-age value=<value>** Modify the value of dmp\_path\_age. The time for which an intermittently failing path needs to be monitored before DMP marks the path as healthy and once again attempts to schedule I/O requests on it. The default value is 300 seconds. A value of 0 prevents DMP from detecting intermittently failing paths.

**system option modify key=ninodes value=<value>** Modify the global inode cache size. The range for inode cache size is from 10000 to 8000000. Set to Auto to enable autoreset by VxFS.

**Warning:** The `system option modify *key=ninodes*` command requires a cluster-wide reboot.

**system option modify key=volpagemod-max-memsize value=<value> number=1** Modify the value of volpagemod\_max\_memsize. This is the maximum memory measured in kilobytes that is allocated for cache object metadata. The default value for volpagemod\_max\_memsize is set to 131072KB. The value that should be used is determined by the total size of volumes for which instant rollbacks are to be taken. The following formula can be used to calculate the required value of volpagemod\_max\_memsize:

$$\text{size\_in\_KB} = 6 * (\text{total\_filesystem\_size\_in\_GB}) * (64/\text{region\_size\_in\_KB})$$

region\_size can be set to 256KB by default for large filesystems.

**system option modify key=vol-appio-threshold option=<option>** Modify the value of vol\_appio\_threshold. This specifies the acceptable impact on application I/Os. Default value of the tunable is 20% i.e. latency degradation upto 120% of reference value is allowed. Maximum value for this is 100%. The options that can be provided are low and high. If user provides low option, this will set tunable value as 20% and if user provides high option, this will set tunable value as 100.

**system option modify key=vx-timelag value=<value>** Modify the values of vx\_ifree\_timelag and vx\_iclean\_timelag.

#### **vx\_ifree\_timelag**

VxFS maintains an inode free list. If you configure the vx\_ifree\_timelag value as 30 seconds, the freelist is scanned every 30 seconds.

#### **vx\_iclean\_timelag**

This is the minimum time that an inode must be in the inode free list before the system reclaims it.

VALUE Specify an integer value (Unit: Seconds)

## 16.7.4 EXAMPLES

Show cfsmount online timeout.

```
> system option show key=cfsmount-onlinetimeout
Resource          OnlineTimeout
-----
cfsmount          300
```

Show peer inactive timeout.

```
System>system option show key=lltpeerinactive-timeout
NODE          LLTPEERINACT
-----
sfs_01        1600
sfs_02        1600
```

Show the value of dmpio policy corresponding to enclosure, arrayname, arraytype.

```
>system option show key=dmpio
NODENAME      TYPE          ENCLR/ARRAY      IOPOLICY
-----
sfs_01        enclosure    disk             Balanced
sfs_01        enclosure    aluadisk0        Priority
sfs_01        arraytype    A/A              balanced
sfs_02        enclosure    disk             Balanced
sfs_02        enclosure    aluadisk0        Priority
sfs_02        arraytype    A/A              balanced
```

Show the value of the global inode cache size.

```
System>system option show key=ninodes
INODE_CACHE_SIZE
-----
565580
```

Show the value of the tunefstab parameters.

```
System>system option show key=write-throttle
NODENAME      ATTRIBUTE      VALUE
-----
sfs_01        write_throttle 0
```

Show the value of the dmptune parameters.

```
System>system option show key=dmp-path-age
NODENAME      ATTRIBUTE      VALUE
-----
sfs_01        dmp_path_age   57
```

Show the value of the vxtune parameters.

```
System>system option show key=volpagemod-max-memsz
NODENAME      TUNABLE          VALUE
-----
sfs_01        volpagemod_max_memsz 12288
sfs_02        volpagemod_max_memsz 12288
sfs_01        vol_appio_threshold  20
sfs_02        vol_appio_threshold  20

System>system option show key=vol-appio-threshold
NODENAME      TUNABLE          VALUE
-----
sfs_01        vol_appio_threshold  20
sfs_02        vol_appio_threshold  20
```

Modify the number of NFS daemons on all the nodes in a cluster.

```
> system option modify key=nfsd value=97
```

Modify cfsmount online timeout.

```
>system option modify key=cfsmount-onlinetimeout value=400
```

Modify peer inactive timeout.

```
> system option modify key=lltpeerinactive-timeout value=1600
```

Modify the dmpio policy, enclosure, and diskname.

```
>system option modify key=enclosure value=Disk iopolicy=Balanced
```

Modify the global inode cache size.

```
> system option modify key=ninodes value=2000343
```

Enable inode cache size autoreset.

```
> system option modify key=ninodes value=Auto
```

Modify the write\_throttle parameter of tunefstab.

```
> system option modify key=write-throttle value=20003
```

Modify the dmp\_path\_age parameter of dmptune.

```
> system option modify key=dmp-path-age value=40
```

Modify the dmp\_health\_time parameter of dmptune.

```
> system option modify key=dmp-health-time value=50
```

Modify the volpagemod\_max\_memsz parameter of vxtune

```
> system option modify key=volpagemod-max-memsz value=12288 number=1
VXTUNE    - set volpagemod_max_memsz as 12288 (KB)

> system option modify key=volpagemod-max-memsz value=54533443234 number=1
VXTUNE    - VxVM vxtune ERROR V-5-1-18394 Tunable value 54533443234 for tunable_
↳volpagemod_max_memsz is out of range [0 - 4294967295]

> system option modify key=vol-appio-threshold options=high
VXTUNE    - set vol_appio_threshold as 100 (by percentage)

> system option modify key=vol-appio-threshold options=low
VXTUNE    - set vol_appio_threshold as 20 (by percentage)
```

## 16.7.5 SEE ALSO

stat(1)

## 16.8 stat

### 16.8.1 SYNOPSIS

```
system statistics show nodename=[nodename]  
system statistics fs-io fs-name=[fs-name]  
system statistics cluster  
system statistics all nodename=[nodename]  
system statistics rdma nodename=[nodename]
```

### 16.8.2 DESCRIPTION

The `system statistics` command displays the system, DMP, and process-related node-wide statistics. The load in the displayed output is the load from the last 1, 5, and 15 minutes. `Intr` is the total number of interrupt counts, and `ctxt` is the total number of context switches that occurred after a reboot.

The `stat` command `cluster` option displays I/O and network throughput at the entire cluster level.

### 16.8.3 OPTIONS

**system statistics show *nodename*=[*nodename*]**

**Display system-related statistics.** *nodename* : name of a node in the cluster.

**system statistics fs-io *fs-name*=[*fs-name*]**

**Display filesystem IO statistics.** *fsname* : name of the filesystem.

**system statistics cluster** Display cluster IO and network throughput.

**system statistics all *nodename*=[*nodename*]**

**Display system and DMP-related statistics of all the nodes or a node in the cluster at a time.**

*nodename* : name of a node in the cluster.

**system statistics rdma *nodename*=[*nodename*]**

**Display RDMA statistics of all the nodes or specific node(s) in the cluster at a time.** *nodename*

: name of node(s) in the cluster.

### 16.8.4 EXAMPLES

Display system-related statistics of node1.

```
> system statistics show nodename=node1  
Gathering statistics...  
GEN STAT :::  
=====  
CPU Idle      : 99.450      Load 1   : 1.020  
CPU System    : 0.050      Load 5   : 1.020  
CPU User      : 0.050      Load 15  : 1.010  
ctxt         : 184128974    intr      : 392690761  processes(R) : 1009379
```

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```
MEM STAT :::
=====
Mem Total : 4040096      Swap total : 1052248      %Mem used : 49.610%
Mem Used  : 2004100      Swap Used  : 0              %Swap Used : 0.000%
Mem Free  : 2035996      Swap Free  : 1052248      %Total use : 49.610%
NET STAT :::
=====
IFACE      rxmb/s      txmb/sec  rxerr/s   txerr/s   coll/s    rxdrop/s  txdrop/s  dev_
↪ speed Mode
-----
↪ -----
pubeth0    0.000      0.000     0.000     0.000     0.000     0.000     0.000     1000_
↪ Full
priveth0   0.000      0.000     0.000     0.000     0.000     0.000     0.000     1000_
↪ Full

DISK STAT :::
=====
                                OPERATIONS          BLOCKS          AVG TIME(ms)
TYP NAME          READ      WRITE      READ      WRITE      READ      WRITE
dm  Disk_0         0         0         0         0         0.0      0.0
dm  Disk_1         0         0         0         0         0.0      0.0
dm  Disk_2         0         0         0         0         0.0      0.0
dm  Disk_3         0         0         0         0         0.0      0.0
```

Display consolidated system-related statistics of all running nodes in the cluster.

```
> system statistics show
Gathering statistics...
Node      %cpu_util %mem_util av_read_time(ms) av_write_time(ms) rx_av_pubeth(mb/s)
↪ tx_av_pubeth(mb/s)
-----
↪ -----
node1     0.800    49.680    0.000      0.000      0.000      0.
↪ 000
node2     0.150    50.110    0.000      0.000      0.000      0.
↪ 000
```

Display filesystem IO statistics of all running nodes in the cluster.

```
> system statistics fs-io fsname=testfs1
                                OPERATIONS          BLOCKS          AVG TIME(ms)
NAME          READ      WRITE      READ      WRITE      READ      WRITE
-----
Node: sfs1_0
=====
testfs1_tier1    532      206      2336      7486      1.17      9.98
testfs1_tier2     1         1         2         16        4.00      8.00
Node: sfs1_1
=====
testfs1_tier1    369      168      1970      3218      2.12      7.67
testfs1_tier2     1         0         2         0         0.00      0.00
```

Display system and DMP-related statistics of node1.

```
> system statistics all nodename=node1
```

Display system and DMP-related statistics of all nodes in the cluster.

```
> system statistics all
```

Display cluster wide Network and IO throughput.

```
> system statistics cluster
Gathering statistics...
Cluster wide statistics:::
=====
IO throughput :: 0
Network throughput :: 1.205
```

Display RDMA network statistics.

```
> system statistics rdma
Gathering statistics...
TAG-NAME  MODE  PRIORITY  MTU  BROADCAST  TxPKTS (M)  TxBYTES (MB)  RxPKT
=====  =====  =====  =====  =====  =====  =====  =====
priveth0  rdma  hipri    8192  172.16.0.255  1.45        106.35        1.34
priveth1  rdma  hipri    8192  172.16.1.255  1.45        106.35        1.34
```

Display RDMA network statistics for specific node(s).

```
> system statistics rdma nodename=rdma_01,rdma_02
Gathering statistics...
NODE      TAG-NAME  PROTOCOL  NODE-RANGE  LINK-TYPE  UDP-PORT  MTU  IP ADDRESS  ↵
↵BCAST-ADDRESS
=====  =====  =====  =====  =====  =====  =====  =====  ↵
↵=====
rdma_02  priveth0  udp       -           rdma       51001     -       172.16.0.4  ↵
↵172.16.0.255
rdma_02  priveth1  udp       -           rdma       51002     -       172.16.1.4  ↵
↵172.16.1.255
rdma_01  priveth0  udp       -           rdma       51001     -       172.16.0.3  ↵
↵172.16.0.255
rdma_01  priveth1  udp       -           rdma       51002     -       172.16.1.3  ↵
↵172.16.1.255
```

NOTE: MTU: '-' is the default, which has a value of 8192. NODE-RANGE: '-' indicates all cluster are to be configured for this link.