



## **AIX host utilities**

### **SAN hosts and cloud clients**

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# AIX host utilities

## AIX Host Utilities 6.1

### What you'll need

- For reliable operation, you must verify that your entire iSCSI, FC, or FCoE configuration is supported.

You can use the [NetApp Interoperability Matrix Tool](#) to verify your configuration.

### SAN Toolkit

AIX Host Utilities is a NetApp host software that provides a command line tool kit on your IBM AIX host. The toolkit is installed when you install the NetApp Host Utilities package. This kit provides the `sanlun` utility, which helps you manage LUNs and HBAs. The `sanlun` command returns information about the LUNs mapped to your host, multipathing, and information necessary to create initiator groups.

### Example

In the following example, the `sanlun lun show` command returns the LUN information.

```
#sanlun lun show all

controller(7mode)/ device host lun

vserver(Cmode) lun-pathname filename adapter protocol size mode
-----
data_vserver    /vol/vol1/lun1 hdisk0 fcs0    FCP      60g C
data_vserver    /vol/vol2/lun2 hdisk0 fcs0    FCP      20g C
data_vserver    /vol/vol3/lun3 hdisk11 fcs0    FCP      20g C
data_vserver    /vol/vol4/lun4 hdisk14 fcs0    FCP      20g C
```



This toolkit is common across all configurations and protocols of the Host Utilities. As a result, some of its contents apply to one configuration, but not another. Having unused components does not affect your system performance.



The SAN toolkit is supported on AIX and PowerVM/VIOS OS versions.

### Install AIX Host Utilities

The NetApp AIX Host Utilities software package is available on the [NetApp Support Site](#) in a compressed tar.gz file.

You must install the AIX Host Utilities Kit while using AIX MPIO with NetApp ONTAP Storage.

You can download the compressed file containing the Host Utilities software packages from the NetApp Support Site. After you have downloaded the file, you must decompress it to get the two software packages you need to install the Host Utilities.

## Steps

1. Login to your host.
  - On an AIX host, log in as **root**.
  - On a PowerVM host, log in as **padmin**, and then enter the `oem_setup_env` command to become root.
2. Download a copy of the compressed file containing the Host Utilities from NetApp Support Site to a directory on your host.
3. Go to the directory containing the download.
4. Decompress the file and extract the SAN Toolkit software package.

```
tar -xvf ntap_aix_host_utilities_6.1.tar.gz
```

The following directory is created when you decompress the file: `ntap_aix_host_utilities_6.1`. This directory will have one of the following subdirectories: `MPIO`, `NON_MPIO`, or `SAN_Tool_Kit`.

5. Install the AIX MPIO:

```
installp -aXYd /var/tmp/ntap_aix_host_utilities_6.1/MPIO  
NetApp.MPIO_Host_Utilities_Kit
```

6. Install the SAN Toolkit:

```
installp -aXYd /var/tmp/ntap_aix_host_utilities_6.1/SAN_Tool_Kit  
NetApp.SAN_toolkit
```

7. Reboot the host.
8. Verify the installation:

```
sanlun version
```

## Sample command reference

### List all host initiators mapped to host

```
# sanlun fcp show adapter -v
bash-3.2# sanlun fcp show adapter -v
adapter name: fcs0
WWPN: 100000109b22e143
WWNN: 200000109b22e143
driver name: /usr/lib/drivers/pci/emfcdd
model: df1000e31410150
model description: FC Adapter
serial number: YA50HY79S117
hardware version: Not Available
driver version: 7.2.5.0
firmware version: 00012000040025700027
Number of ports: 1
port type: Fabric
port state: Operational
supported speed: 16 GBit/sec
negotiated speed: Unknown
OS device name: fcs0
adapter name: fcs1
WWPN: 100000109b22e144
WWNN: 200000109b22e144
driver name: /usr/lib/drivers/pci/emfcdd
model: df1000e31410150
model description: FC Adapter
serial number: YA50HY79S117
hardware version: Not Available
driver version: 7.2.5.0
firmware version: 00012000040025700027
Number of ports: 1
port type: Fabric
port state: Operational
supported speed: 16 GBit/sec
negotiated speed: Unknown
OS device name: fcs1
bash-3.2#
```

### List all LUNs mapped to host

```
# sanlun lun show -p -v all
ONTAP Path: vs_aix_clus:/vol/gpfs_205p2_207p1_vol_0_8/aix_205p2_207p1_lun
LUN: 88
LUN Size: 15g
Host Device: hdisk9
Mode: C
Multipath Provider: AIX Native
Multipathing Algorithm: round_robin
```

host	vserver	AIX	AIX	MPIO	
path	path	MPIO	host	vserver	path
state	type	path	adapter	LIF	priority
up	primary	path0	fcs0	fc_aix_1	1
up	primary	path1	fcs1	fc_aix_2	1
up	secondary	path2	fcs0	fc_aix_3	1
up	secondary	path3	fcs1	fc_aix_4	1

### List all LUNs mapped to host from a given SVM

```
# sanlun lun show -p -v sanboot_unix

ONTAP Path: sanboot_unix:/vol/aix_205p2_boot_0/boot_205p2_lun
LUN: 0
LUN Size: 80.0g
Host Device: hdisk85
Mode: C
Multipath Provider: AIX Native
Multipathing Algorithm: round_robin
```

host	vserver	AIX	AIX	MPIO	
path	path	MPIO	host	vserver	path
state	type	path	adapter	LIF	priority
up	primary	path0	fcs0	sanboot_1	1
up	primary	path1	fcs1	sanboot_2	1
up	secondary	path2	fcs0	sanboot_3	1
up	secondary	path3	fcs1	sanboot_4	1

### List all attributes of a given LUN mapped to host

```
# sanlun lun show -p -v
vs_aix_clus:/vol/gpfs_205p2_207p1_vol_0_8/aix_205p2_207p1_lun
ONTAP Path: vs_aix_clus:/vol/gpfs_205p2_207p1_vol_0_8/aix_205p2_207p1_lun
LUN: 88
LUN Size: 15g
Host Device: hdisk9
Mode: C
Multipath Provider: AIX Native
Multipathing Algorithm: round_robin
```

host	vserver	AIX	AIX MPIO		
path	path	MPIO	host	vserver	path
state	type	path	adapter	LIF	priority
up	primary	path0	fcs0	fc_aix_1	1
up	primary	path1	fcs1	fc_aix_2	1
up	secondary	path2	fcs0	fc_aix_3	1
up	secondary	path3	fcs1	fc_aix_4	1

### List ONTAP LUN attributes by Host Device File name

```
#sanlun lun show -d /dev/hdisk1
controller(7mode)/
device host lun
vserver(Cmode) lun-pathname
-----
---
vs_aix_clus /vol/gpfs_205p2_207p1_vol_0_0/aix_205p2_207p1_lun

filename adapter protocol size mode
-----
hdisk1 fcs0 FCP 15g C
```

### List all SVM target LIF WWPNs attached to host

```
# sanlun lun show -wwpn
controller(7mode)/
target device host lun
vserver(Cmode)          wwpn          lun-pathname
-----
-----

vs_aix_clus          203300a098ba7afe
/vol/gpfs_205p2_207p1_vol_0_0/aix_205p2_207p1_lun
vs_aix_clus          203300a098ba7afe
/vol/gpfs_205p2_207p1_vol_0_9/aix_205p2_207p1_lun
vs_aix_clus          203300a098ba7afe
/vol/gpfs_205p2_207p1_vol_en_0_0/aix_205p2_207p1_lun_en
vs_aix_clus          202f00a098ba7afe
/vol/gpfs_205p2_207p1_vol_en_0_1/aix_205p2_207p1_lun_en

filename      adapter      size  mode
-----
hdisk1        fcs0         15g   C
hdisk10       fcs0         15g   C
hdisk11       fcs0         15g   C
hdisk12       fcs0         15g   C
```

## AIX Host Utilities 6.1 Release Notes

This Release Notes document contains the latest information on the AIX Host Utilities 6.1 release, including updates about known problems, limitations, configuring and managing your ONTAP storage system.

The Release Notes document is updated when new information on using the AIX Host Utilities becomes available.

### About the AIX Host Utilities 6.1 release

The AIX Host Utilities enable you to connect an AIX host to NetApp storage. The AIX Host Utilities support multiple environments and the FC, FCoE, and iSCSI protocols. The supported environments are AIX MPIO (Native OS) and PowerVM.



For specific information about the operating system versions and updates that the Host Utilities support, see the [NetApp Interoperability Matrix Tool](#).

For more information about PowerVM feature, see the IBM PowerVM Live Partition Mobility Red Book.

The Host Utilities software is packaged as a single, compressed file. You can download the compressed file and the documentation from the [NetApp Support Site](#). The ONTAP SAN Host Configuration provides instructions for installing and setting up the Host Utilities to work with your environment and protocol.





You must enable Dynamic Tracking for all FC and FCoE initiators for clustered Data ONTAP deployments.

## AIX Host Utilities 6.1 enhancements

- AIX Host Utilities 6.1 added support for the memory fault issue that occurred in earlier versions of AIX host OS. With AIX Host Utilities 6.1, only the sanlun binary has changed. The MPIIO and related ODM remain unchanged.

## Fixed Issue

BugID	Title	Description
<a href="#">872113</a>	sanlun lun show -p command might cause a memory fault on some versions of AIX host OS	Intermittent instances of AIX coredump are reported while running the sanlun lun show -p command. Sanlun's lun show -p option provides the multipathing information for all the LUNs discovered on a host. It arranges this information to present which SCSI device is sourced from which LUN, the path state (primary or secondary), and other details. However, on some AIX hosts running the sanlun lun show -p command might cause a memory fault. This issue is observed only when you run the sanlun command with the -p option.

## Known Problems and Limitations

To use the Host Utilities efficiently, you should be aware that performance can be affected by known issues about a particular feature, such as a network, or by features that the Host Utilities do not support, such as a specific version of an operating system.

Bug ID	Title	Description
<a href="#">1069147</a>	AIX HU Sanlun reports incorrect HBA speed	Instances of sanlun displaying incorrect HBA speeds are reported while running the sanlun fcp show adapter -v command. The sanlun fcp show adapter -v command displays the HBA cards information, such as supported and negotiated speeds for the adapters. This seems to be a reporting issue only. To identify the actual speed, use the fcstat fcsx command.

[NetApp Bugs Online](#) provides complete information for most known issues, including suggested workarounds where possible. Some keyword combinations and bug types that you might want to use include the following:

- FCP General: Displays FC and HBA bugs that are not associated with a specific host.
- FCP - AIX

## About SAN Host Configuration documentation

Documentation for SAN Host Utilities is included in the [ONTAP SAN Host Configuration](#) documentation. ONTAP SAN HOST configuration documentation is cumulative, covering all current SAN HOST releases. Any functional differences across releases are noted in context.

## Where to find product documentation and other information

You can access documentation for all NetApp products and find other product information resources, such as technical reports and white papers on the Product Documentation page of the NetApp corporate site.

### Related information

#### Configuring and managing your ONTAP storage system

- The [ONTAP Software Setup Guide](#) for your version of ONTAP
- The [ONTAP San Administration Guide](#) for your version of ONTAP
- The [ONTAP Release Notes](#) for your version of ONTAP
- [NetApp Interoperability Matrix](#)
- [Hardware Universe](#) (formerly the System Configuration Guide)
- [Supported Fibre Channel SAN topologies](#)
- [Configuring your host for Host Utilities](#)

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