AIX Host Utilities

SAN hosts and cloud clients

NetApp
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AIX Host Utilities 6.1 Release Notes

The release notes describe new features and enhancements, issues fixed in the current release, known problems and limitations, and important cautions related to configuring and managing your specific AIX host with your ONTAP storage system.

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

What's new

The AIX Host Utilities 6.1 release contains the following new features and enhancements:

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

Fixed in this release

BugID	Title	Description
872113	`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

You should be aware of the following known problems and limitations that might impact performance on your specific host.

Bug ID	Title	Description
1069147	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

Install AIX Host Utilities 6.1

The AIX Unified Host Utilities assists you to manage NetApp ONTAP storage attached to an AIX host.

AIX Host Utilities support the following protocols:

- FC
- FCoE
- iSCSI

AIX Host Utilities support the following environments:

- AIX MPIO (Native OS)
- PowerVM

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

What you'll need

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

  You can use the NetApp Interoperability Matrix Tool to verify your configuration.

- Dynamic tracking must be enabled for all FC and FCoE initiators.

> 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.

Steps

1. Log in 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. Go to the NetApp Support Site and download the compressed file containing the Host Utilities 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`
   ```

SAN Toolkit

AIX Host Utilities is a NetApp host software that provides a command line toolkit 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 host bus adapters (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
```

Example output

```
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 Host Utilities configurations and protocols. 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.

AIX Host Utilities 6.1 sample command reference

You can use the AIX Host Utilities 6.1 sample command reference for an end-to-end validation of the NetApp storage configuration using the host utilities tool.

List all host initiators mapped to host

You can retrieve a list of host initiators mapped to a host.

```
# sanlun fcp show adapter -v
```

Example output

```
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

You can retrieve a list of all LUNs mapped to a host.

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

Example output

```
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

You can retrieve a list of all LUNs mapped to a host from a specified SVM.

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

Example output

```
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

You can retrieve a list of all attributes of a specified LUN mapped to a host.

```
# sanlun lun show -p -v
vs_aix_clus:/vol/gpfs_205p2_207p1_vol_0_8/aix_205p2_207p1_lun
```

Example output

```
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 filename

You can retrieve a list of ONTAP LUN attributes by specifying a host device filename.

```
#sanlun lun show -d /dev/hdisk1
```

Example output

```
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

You can retrieve a list of all SVM target LIF WWPNs attached to a host.

```
# sanlun lun show -wwpn
```

Example output

```
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
```

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