Solaris host utilities

SAN hosts and cloud clients

NetApp
January 31, 2023

Table of Contents

Solaris host utilities

Solaris Host Utilities 6.2

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

Solaris Host Utilities is a NetApp host software that provides a command line toolkit on your Oracle Solaris 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
/dev/rdsk/c0t600A098038304437522B4E694E49792Dd0s2 qlc3   FCP       10g
cDOT
data_vserver                      /vol/vol0/lun2
/dev/rdsk/c0t600A098038304437522B4E694E497938d0s2 qlc3   FCP       10g
cDOT
data_vserver                      /vol/vol2/lun3
/dev/rdsk/c0t600A098038304437522B4E694E497939d0s2 qlc3   FCP       10g
cDOT
data_vserver                      /vol/vol3/lun4
/dev/rdsk/c0t600A098038304437522B4E694E497941d0s2 qlc3   FCP       10g
cDOT
```

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.

Installing Solaris Host Utilities

The Solaris Host Utilities 6.2 supports several Solaris environments and multiple protocols. The primary Host Utilities environments are:

- Native OS with MPxIO with either the Fibre Channel (FC) or iSCSI protocol on a system using either a SPARC processor or an x86/64 processor.
- Veritas Dynamic Multipathing (DMP) with either the FC or iSCSI protocol on a system using a SPARC processor and with the iSCSI protocol on system using an x86/64 processor.

> The NetApp Solaris Host Utilities software package is available on the NetApp Support Site in a compressed file format for your processor. You can download the Host Utilities software package for your environment from the Support site.

Steps

1. Login to your host as root.
2. Download a copy of the compressed file containing the Host Utilities from NetApp Support Site to a directory on your host.

   At the time this documentation was prepared, the compressed files were called:

   - SPARC CPU: `netapp_solaris_host_utilities_6_2_sparc.tar.gz`
   - x86/x64 CPU: `netapp_solaris_host_utilities_6_2_amd.tar.gz`
3. Go to the directory containing the download.
4. Unzip the file using the gunzip command

   ```
   # gunzip netapp_solaris_host_utilities_6_2_sparc.tar.gz
   ```

5. Unzip the file. You can use the `tar xvf` command to do this.

   ```
   # tar xvf netapp_solaris_host_utilities_6_2_sparc.tar
   ```

6. Add the packages that you extracted from tar file to your host. You can use the `pkgadd` command to do this.

   The packages are added to the `/opt/NTAP/SANToolkit/bin` directory. The following example uses the `pkgadd` command to install the Solaris installation package:

   ```
   # pkgadd -d ./NTAPSANTool.pkg
   ```

7. Confirm that the toolkit was successfully installed by using the `pkginfo` command or the `ls - al` command.

```
# ls -alR /opt/NTAP/SANToolkit
/opt/NTAP/SANToolkit:
total 1038
drwxr-xr-x   3 root     sys            4 Jul 22  2019 .
drwxr-xr-x   3 root     sys            3 Jul 22  2019 ..
drwxr-xr-x   2 root     sys            6 Jul 22  2019 bin
-r-xr-xr-x   1 root     sys       432666 Sep 13  2017 NOTICES.PDF

/opt/NTAP/SANToolkit/bin:
total 7962
drwxr-xr-x   2 root     sys            6 Jul 22  2019 .
drwxr-xr-x   3 root     sys            4 Jul 22  2019 ..
-r-xr-xr-x   1 root     sys      2308252 Sep 13  2017 host_config
-r-xr-xr-x   1 root     sys          995 Sep 13  2017 san_version
-r-xr-xr-x   1 root     sys      1669204 Sep 13  2017 sanlun
-r-xr-xr-x   1 root     sys          677 Sep 13  2017 vidpid.dat

# (cd /usr/share/man/man1; ls -al host_config.1 sanlun.1)
-r-xr-xr-x   1 root     sys        12266 Sep 13  2017 host_config.1
-r-xr-xr-x   1 root     sys         9044 Sep 13  2017 sanlun.1
```

8. After you finish, you must configure the host parameters for your environment using `/opt/NTAP/SANToolkit/bin/host_config` command:
   - MPxIO
   - Veritas DMP
9. Verify the installation:

   ```
   sanlun version
   ```

Sample command reference

List all host initiators mapped to host

```
# sanlun fcp show adapter -v
adapter name:      qlc3
WWPN:              21000024ff17a301
WWNN:              20000024ff17a301
driver name:       qlc
model:             7335902
model description: 7115462, Oracle Storage Dual-Port 32 Gb Fibre Channel
PCIe HBA
serial number:     463916R+1720333838
hardware version:  Not Available
driver version:    210226-5.10
firmware version:  8.08.04
Number of ports:   1 of 2
port type:         Fabric
port state:        Operational
supported speed:   8 GBit/sec, 16 GBit/sec, 32 GBit/sec
negotiated speed:  32 GBit/sec
OS device name:    /dev/cfg/c7

adapter name:      qlc2
WWPN:              21000024ff17a300
WWNN:              20000024ff17a300
driver name:       qlc
model:             7335902
model description: 7115462, Oracle Storage Dual-Port 32 Gb Fibre Channel
PCIe HBA
serial number:     463916R+1720333838
hardware version:  Not Available
driver version:    210226-5.10
firmware version:  8.08.04
Number of ports:   2 of 2
port type:         Fabric
port state:        Operational
supported speed:   8 GBit/sec, 16 GBit/sec, 32 GBit/sec
negotiated speed:  16 GBit/sec
OS device name:    /dev/cfg/c6
```

List all LUNs mapped to host

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

                    ONTAP Path: data_vserver:/vol1/lun1
                           LUN: 1
                      LUN Size: 10g
                   Host Device:
/dev/rdsk/c0t600A0980383044485A3F4E694E4F775Ad0s2
                          Mode: C
             Multipath Provider: Sun Microsystems
               Multipath Policy: Native
```

List all LUNs mapped to host from a given SVM/ List all attributes of a given LUN mapped to host

```
# sanlun lun show -p -v sanboot_unix`
ONTAP Path: sanboot_unix:/vol/sol_boot/sanboot_lun
                           LUN: 0
                      LUN Size: 180.0g
```

List ONTAP LUN attributes by Host Device File name

```
# sanlun lun show all

controller(7mode/E-Series)/                                          device
vserver(cDOT/FlashRay)       lun-pathname
filename
------------------------------------------------------------------------------
------------------------------------
sanboot_unix                 /vol/sol_193_boot/chatsol_193_sanboot
/dev/rdsk/c0t600A098038304437522B4E694E4A3043d0s2

host adapter    protocol lun size   product
-------------------------------------------
qlc3            FCP      180.0g     cDOT
```

Solaris Host Utilities 6.2 Release Notes

This release notes document contains the latest information for the Solaris Host Utilities 6.2, including updates about known problems, limitations, configuring and managing your ONTAP storage systems.

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

About the Solaris Host Utilities 6.2 release

The Solaris Host Utilities 6.2 supports several Solaris environments and multiple protocols.

The primary Host Utilities environments are:

- Native OS with MPxIO with either the Fibre Channel (FC) or iSCSI protocol on a system using either a SPARC processor or an x86/64 processor.
- Veritas Dynamic Multipathing (DMP) with either the FC or iSCSI protocol on a system using a SPARC processor and with the iSCSI protocol on system using an x86/64 processor.

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.

Solaris Host Utilities 6.2 enhancements

The Release Notes are updated between product releases as new information is available.

The Solaris Unified Host Utilities 6.2 continues to support the following versions of Solaris:

- Solaris 11.x series
- Solaris 10.x series

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
1385189	Solaris 11.4 FC driver binding changes required in HUK 6.2	Solaris 11.4 and HUK recommendations. FC driver binding is changed from `ssd(4D)` to `sd(4D)`. Move configuration that you have in `ssd.conf` to `sd.conf` as mentioned in Oracle (Doc ID 2595926.1). The behavior varies across newly installed Solaris 11.4 system and upgraded from 11.3 or lower versions.

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 - Solaris

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

Copyright information

Trademark information