Installation Guide for Direct Attach Kit for SAN Attach Storage

HPUX

Fred Schimscheimer, Network Appliance, Inc.
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Executive Summary

The Direct Attach Kit is a Network Appliance product that allows the direct attachment of Network Appliance storage to either a SAN network or point to point to a UNIX®-type server, without using NFS. This capability enhances the Network Appliance broad spectrum of support and completes all three protocols: iSCSI, NFS, and FCP. This paper provides the installation details to get a system administrator up and running quickly.

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1.1 HPUX Host Configuration for FCP

a) Install NetApp SAN (FCP) Host Attach Kit

NetApp provides "SAN (FCP) Host Attach Kit" for FCP on HPUX. This product simplifies the configuration and the management of the SAN environment. In order to install this product you need to complete the following basic steps on your host server.

Enter your user name and password on the NOW™ Web site (http://now.netapp.com/) and select "Download Software" from the Select Start Page list box.

On the Download Software page, go to the ***SAN (FCP) Host Attach Kit*** product row of the table and select HPUX from the Select Platform drop-down list and click the GO button.

Follow the prompts to reach the Software Download page and download the NetApp software file to a local directory such as /tmp/netapp.

Copy the downloaded attach kit file to a directory (/tmp/netapp) on the host server. Uncompress the file using the following command:

```
cd /tmp/netapp
gunzip ntap_hpux_fcp_1_1.depot.gz
```

Extract the file by executing the following command at the host server:

```
/usr/sbin/swinstall –s /tmp/install/ntap_hpux_fcp_1_1.depot
```

Change to the /tmp/netapp directory where you extracted the software (for example, cd /tmp/netapp/netapp_aix_SAN_kit_1.1) and execute the following command:

```
/usr/sbin/swinstall –s /tmp/install/ntap_hpux_fcp_1_1.depot
```

Answer the prompt and complete the installation.

For detailed installation steps, please refer to *"FCP HPUX Attach Kit 1.1 Installation and Setup Guide"* on the NOW Web site.

b) Install the HBA and Driver

Log in to the NOW Web site and check the Compatibility and Configuration Guide for NetApp FCP and iSCSI products for your host server product compatibility. NetApp supports Emulex FC HBA for HPUX. Install the FC card and driver on the host server. For installation steps please refer to *"Host Bus Adapter Installation and Setup Guide 1.1 for Fibre Channel Protocol on Solaris™"* on the NOW Web site.

c) Obtain WWPN for the Initiator

1. Each HBA attached to your host server is uniquely identified by WWPN or WWNN. In order to create an igroup for FCP on the storage system you will need WWPN for the HBA. Complete the following step on the host server to obtain the WWPN.
2. Add the following lines to your /.profile file on the server:

```
export PATH=$PATH:/opt/NetApp/santools/bin
export MANPATH=/usr/share/man:/opt/NetApp/santools/man
```

3. After installation of the FC adapter and driver get WWPN for the HBA by executing the following command at the host server:

```
[root@hp5470-svl1]> sanlun fcp show adapter –c
igroup create –f –t hpux hp5470-svl1 10000000c93d85a0
```

4. The WWPN for adapter in the above example is 10000000c93d85a0. The sanlun product can generate the *"igroup create"* command if "-c" option is specified. The generated command can be used to create igroups on the NetApp storage system.
5. After installation is completed reboot the system using the following command:

```
#reboot
```

6. After adding LUN devices you can execute the following command to refresh the driver.
7. For detailed installation steps please refer to "FCP HPUX Attach Kit 1.1 Installation and Setup Guide" on the NOW Web site.

```
#ioscan –fn –C disk
```

d) Making LUNs Accessible on the Host Server

1. After LUNs are discovered by the host server execute the "insf -e" command to create a partition table on the new disk.

```
#insf -e
```

2. To make the LUNs visible to the host server, run this command:

```
#ioscan –fn –C disk
```

e) Obtain the VERITAS® Foundation Suite CD-ROM and VERITAS Documentation

1. Insert and mount the VERITAS Foundation Suite CD-ROM on the host. Change to the pkgs directory on the CD-ROM.

```
#cd /cdrom/cdrom0/pkgs
```

2. Verify that you have your VERITAS license key.

```
#vxlicrep –p
```

3. Install the VERITAS Volume Manager (VxVM) packages. The packages installed depend on the version of the VxVM software.

```
#swinstall –s VRTSlic VRTSvxvm VRTSvmsa VRTSvmdoc VRTSvcs
VRTSvmman VRTSvmdev
```

4. Install the VERITAS patches required by your operating system. For information about VERITAS patches required for HPUX, see the VERITAS Volume Manager Installation Guide.
5. Add the root disk controller number to the VERITAS exclude list. With a text editor, open:

```
/etc/vx/vxvm.exclude file and add the root disk with the full path to the file save the file
```

6. Enter the following command to install VERITAS software:

```
#vxinstall
```

7. Reboot the host server by entering the following command:

```
#reboot
```

8. Enter the following command to verify that the storage LUNs you selected are under VERITAS Volume Manager control:

```
#vxdisk list
DEVICE      TYPE      DISK      GROUP      STATUS
C2t2d0      sliced    -         -          LVM
C5t0d0      sliced    c5t0d0    rootdg     online
C5t0d1      sliced    c5t0d1    rootdg     online
```

f) ASL, Installing and Managing VERITAS Array Support Library 2.0 for NetApp Storage

1. Insert ASL 2.0 software from the CD-ROM:

```
#cd /cdrom/cdrom0/pkgs
```

2. Extract the ASL 2.0 software by entering the following command:

```
#tar –xvf NTAPasl.tar
```

3. Install the NTAPasl package by entering the following command:

```
#swinstall –s NTAPasl.pkg
```

4. Restart the vxconfigd daemon by entering the following command:

```
#vxdctl enable
```

5. Verify the installation by entering the following command and then locating the NetApp Enclosure Type in the output of the vxdmpadm listenclosure all command.

```
[root@hp5470-svl1]> /sbin/vxdmpadm listenclosure all
ENCLR_NAME    ENCLR_TYPE    ENCLR_SNO      STATUS
==================================================
OTHER_DISKS   OTHER_DISKS   OTHER_DISKS    CONNECTED
Disk          DISK          DISKS          DISCONNECTED
FAS30500_0    FAS30500      1032303        CONNECTED
FAS30500_1    FAS30500      1032303        CONNECTED
```

2. Important links

Qlogic HBA driver download page:
http://www.qlogic.com/products/iscsi_products_hba.asp

Qlogic HBA documentation:
http://www.qlogic.com/support/product_resources.asp?id=341

Emulex support Web site for driver/firmware download:
http://www.emulex.com/ts/index.html

NetApp ASL Web site for software package download:
http://now.netapp.com/NOW/download/tools/vasl

NetApp ASL Web site documentation page:
http://now.netapp.com/NOW/download/tools/vasl/install.pdf

HP HBA Web site:
Download the HBA driver from the HP Web site:
http://software.hp.com

Also download the HBA installation guide from the HP Web site:
http://docs.hp.com/en/netcom.html

NetApp documentation:
Software download page on NOW:
http://now.netapp.com/NOW/cgi-bin/software

Block Access Management Guide for FCP:
http://now.netapp.com/NOW/knowledge/docs/ontap/rel70rc/pdfs/ontap/bsagfcp.pdf