

Configuring NetBackup FT Media Server and SAN Clients

What is SAN Client?

A NetBackup client, which has Fibre Transport (FT) service enabled and activated. Unlike normal clients, SAN clients send the data to Media Server via fibre optic channel. SAN clients have no Operating System limitations, any NBU client can be configured and SAN client.

What is FT Media Server?

NetBackup media server supporting remote client's backup over the FT pipe. Its main purpose is to serve SAN client backups & restore via FT pipe. NetBackup FT media server supports only **Linux & Solaris x64** servers and **QLogic ISP 2312 & ISP24xx** HBA adapter.

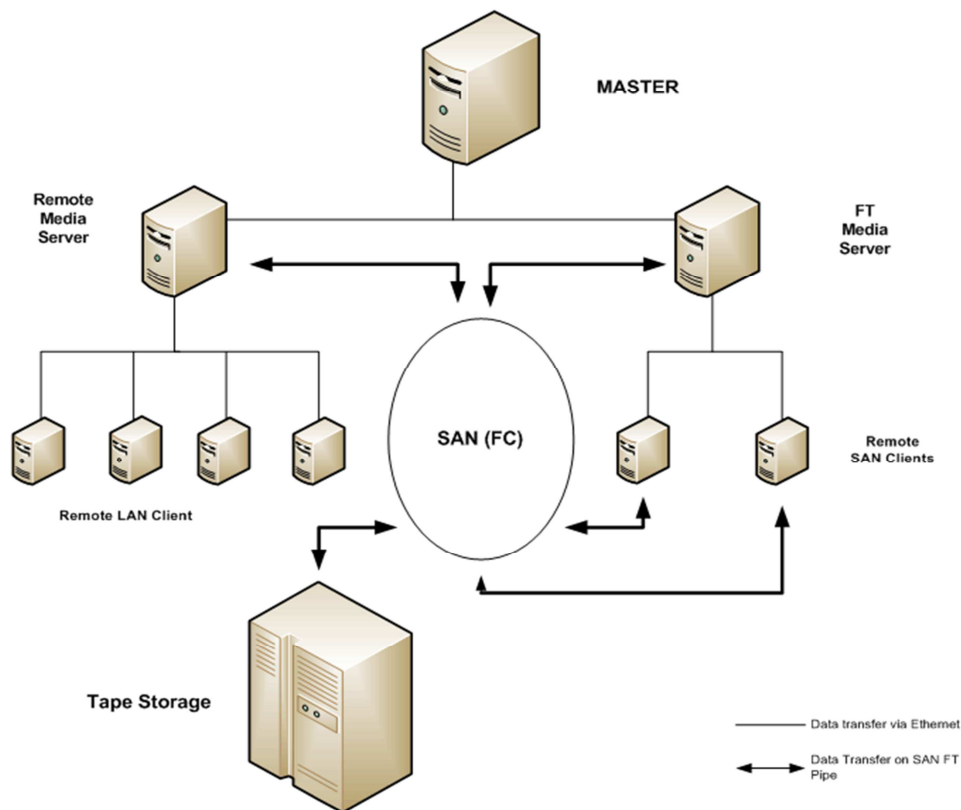


Fig 1 Overview of backup design on LAN and SAN

Configuring FT Media server

In our environment, we have chosen NetBackup media server installed over Red Hat Linux 5.5 x64 which is attached to IBM 3584 storage tape library. It is mandatory that HBA configured as target for FT media server must be QLogic ISP 2312 and ISP 24xx, because NetBackup binds *ql2300_stub* drivers to the adapters that is assigned to act as target. In case if a different HBA (e.g. Brocade) is in place, then the drivers will not function due to driver mismatch with the target adapter.

- First step is to bind the target ports with NetBackup ql2300_stub driver, so that whenever the server starts target HBA never start in Initiator mode and its permanently marked to operate in target mode. Using nbhba NetBackup modifies the NVRAM in HBA device, such that ports operate as targets.
 - Enabling nbhba mode

Command: *nbftsrv_config -nbhba*

```
[root@ftmedia ~]# cd /usr/opensv/opensv/netbackup/bin/admincmd/
[root@ftmedia admincmd]# ./nbftsrv_config -nbhba
```

Installing nbhba driver.

Uninstalled WinDriver for FT Server mode.

It may be necessary to temporarily unload your QLogic drivers to free up the ports for the nbhba drivers.

This is an optional step. If you choose not to do this, the nbhba drivers may not have access to the HBA ports until a subsequent reboot.

Would you like to unload and reload your native QLogic drivers now? [y,n] (y) y

Are you sure you want to unload QLogic driver: qla2xxx? [y,n] (y) y

Removing qla2xxx.

Installed driver for nbhba mode.

```
[root@ftmedia admincmd]#
```

- Modifying the HBA port as target.

Initially all HBA will attached to server will operate in Initiator mode and below is the command to display the HBA port info.

Command: *nbhba -L*

```
[root@ftmedia admincmd]# ./nbhba -L
4 ports recognized; 0 target mode ports; mode : driver in nbhba mode
HBA Index #1
Device ID = 2432
World Wide Name = XX:XX:XX:XX:XX:XX:XX:XX
Model Name = "QLE2462 "
Port = 0
Mode = initiator (designated for other use)(138)
HBA Index #2
Device ID = 2432
World Wide Name = XX:XX:XX:XX:XX:XX:XX:XX
Model Name = "QLE2462 "
Port = 1
Mode = initiator (designated for other use)(138)
HBA Index #3
Device ID = 2432
World Wide Name = XX:XX:XX:XX:XX:XX:XX:XX
Model Name = "QLE2462 "
Port = 0
Mode = initiator (designated for other use)(138)
```

```
HBA Index #4
Device ID = 2432
World Wide Name = XX:XX:XX:XX:XX:XX:XX:XX
Model Name = "QLE2462 "
Port = 1
Mode = initiator (designated for other use)(138)
[root@ftmedia admincmd]#
```

Setting the HBA port as target; always note that if you are using dual port HBA adapter it's not possible to set just one port as target and other as initiator, because nbhba changes the NVRAM of the device which causes both the ports of adapter to function as target.

Command: *nbhba -modify -wwn <HBA WWPN> -mode target*

```
[root@ftmedia admincmd]# ./nbhba -modify -wwn 21:00:00:E0:8B:9B:96:F0 -mode target
Modified port with WWN 21:00:00:E0:8B:9B:96:F0
Modified port with WWN 21:01:00:E0:8B:BB:96:F0
[root@ftmedia admincmd]#
```

Verify the changes using nbhba command again, you will notice two port of a HBA in target mode.

```
[root@ftmedia admincmd]# ./nbhba -L
4 ports recognized; 2 target mode ports; mode : driver in nbhba mode
HBA Index #1
Device ID = 2432
World Wide Name = XX:XX:XX:XX:XX:XX:XX:XX
Model Name = "QLE2462 "
Port = 0
Mode = initiator (designated for other use)(138)
HBA Index #2
Device ID = 2432
World Wide Name = XX:XX:XX:XX:XX:XX:XX:XX
Model Name = "QLE2462 "
Port = 1
Mode = initiator (designated for other use)(138)
HBA Index #3
Device ID = 2432
World Wide Name = XX:XX:XX:XX:XX:XX:XX:XX
Model Name = "QLE2462 "
Port = 0
Mode = target (designated for FT Server)(8138)
HBA Index #4
Device ID = 2432
World Wide Name = XX:XX:XX:XX:XX:XX:XX:XX
Model Name = "QLE2462 "
Port = 1
Mode = target (designated for FT Server)(8138)
[root@ftmedia admincmd]#
```

- Next, we will configure the FT services for the media server. This will create two new services **nbftsrvr** and **nbfdrv64** which are makes the NBU server to function as FT media server. After configuring these services, nbhba mode will end in the server.

Command : *nbftsrv_config*

```
[root@ftmedia admincmd]# ./nbftsrv_config
Installing the Jungo WinDriver and Fibre Transport Server.
```

Uninstalled WinDriver for FT Server mode.
Removing ql2300_stub.

The following automatic startup and shutdown scripts (respectively) have been installed. They will cause the NetBackup Fibre Transport Server daemon to be automatically shut down and restarted each time the system boots.

```
/etc/rc.d/rc2.d/S21nbftserver  
/etc/rc.d/rc3.d/S21nbftserver  
/etc/rc.d/rc5.d/S21nbftserver  
/etc/rc.d/rc0.d/K03nbftserver  
/etc/rc.d/rc1.d/K03nbftserver  
/etc/rc.d/rc6.d/K03nbftserver
```

Installed driver for FT Server mode.
/etc/udev/rules.d/50-windrvr.rules does not exist, creating...
/etc/udev/rules.d/50-windrvr.rules updated with Jungo WinDriver permissions.
Installed WinDriver for FT Server mode.
NetBackup Fibre Transport Server started.

Would you like to make these changes persist after a reboot? [y,n] (y) y
Running mkinitrd. Previous initrd image is saved at /boot/initrd-2.6.18-194.el5.img.03-23-12.13:20:23.

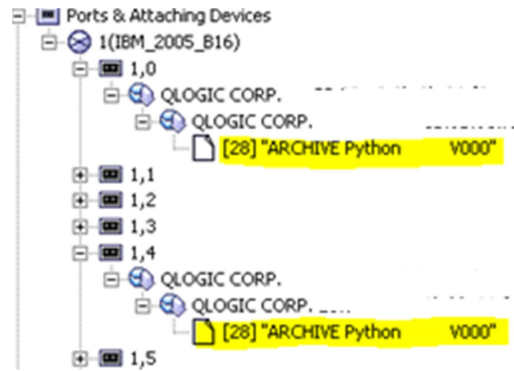
SSID Change: MUST REBOOT TO COMPLETE INSTALLATION.
[root@ftmedia admincmd]#

Reboot the server and verify the FT services (*nbftsvr* and *nbfdrv64*) running.

```
[root@ftmedia ~]# cd /usr/opensv/netbackup/bin/  
[root@ftmedia bin]# ./bpps  
root 2873 1 9 13:27 ? 00:00:05 /usr/opensv/netbackup/bin/nbftsvr  
root 3138 1 0 13:27 ? 00:00:00 /usr/opensv/netbackup/bin/vnetd -standalone  
root 3143 1 0 13:27 ? 00:00:00 /usr/opensv/netbackup/bin/bpcd -standalone  
root 3147 3143 0 13:27 ? 00:00:00 [bpcd] <defunct>  
root 3323 1 0 13:27 ? 00:00:00 /usr/opensv/netbackup/bin/bpcompatd  
root 3331 1 0 13:27 ? 00:00:00 /usr/opensv/netbackup/bin/nbrmms  
root 3353 1 0 13:27 ? 00:00:00 /usr/opensv/netbackup/bin/nbsl  
root 3408 1 0 13:27 ? 00:00:00 /usr/opensv/netbackup/bin/nbsvcmon  
root 3770 2873 12 13:27 ? 00:00:02 /usr/opensv/netbackup/bin/nbfdrv64 -m=0x4a0009 -  
v=1 -s=256K  
[root@ftmedia bin]#
```

Setting up SAN Client:

- Zone the target HBA port to the client. When these target port are connected to fabric switch, you may see switch port naming it as “**ARCHIVE Python**”, this ensures these ports are configured as FT targets for NBU client ports.



- We have chosen windows server as our SAN client, after zoning you may notice in device manager under other devices showing four “**ARCHIVE Python SCSI Sequential Device**” (2 per port).



- Start the “**NetBackup SAN Client Fibre Transport Service**” in the client and run the below command to setup san client service starts every time after system restarts.

bpclntcmd –sanclient 1

- Reboot the San client and once the server is up, master server will auto discover the SAN client and you can notice this is *NBconsole > Media and Device management > Devices > SAN Clients.*