MPE Native Fibre Channel Installation onto an FC LDEV 1

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The following information can be distilled from the MPE/ix 7.5 Communicator at HP's documentation website at http://www.docs.hp.com/mpeix/all/

MPE/iX 7.5 can be installed to a supported fibre channel disk array, such as the VA7100, XP1024 and XP128. It is (highly) recommended that installation be done as a direct connect from the HP e3000's FC HBA A6795A card to the FC port on the disk array. Then, afterward, you can reconfigure using the FC switch, if you choose.

Configure the Disk Array

Create Luns and their sizes through the appropriate interface to the array and set the port setting to "Private-Loop" and set the port ID to a unique number between 0 and 255 within your SAN. In our example we have set our port ID on our VA7100 to 90 and created 10 luns with addresses from 0..9.

FC Hardware Paths

There are two address modes for the paths. The first one is the HP-UX FC path referred to as the long path. This long path is required by PDC to locate the boot path. The components of which are described below:

BC / BC / BC / Card . Domain . Area . Port . Bus . Target . LUN |------| |-------| FC NPORT ID FC Lun

The second form of the path is referred as the MPE FC Path or short path. This form is required to configure Ldevs from within SYSGEN. The same example of the long path will be used in our short path example:

 BC / BC / BC / Card . NPort . LUN

0 / 6 / 0 / 0 . 90 . 0 |-----|-----|-----| Card Address Nport Lun

The utility FCSCAN, executed under MPE can be used to generate both address paths.

Setting the Bootpath Address

1. Load the SLT and get to the ISL> prompt. Proceed to ODE and at the

prompt

run Mapper2.

Mapper2

0/6/0/0 HP 6795A 2G/1G Fibre Chan. Adapter 103CH 1029H 103CH 128CH 0AH 0/6/0/0.8.0.90.0.0.0 HP A6188A Disk Array - - - HP15 0/6/0/0.8.0.90.0.0.1 HP A6188A Disk Array - - - - HP15 0/6/0/0.8.0.90.0.2 HP A6188A Disk Array - - - HP15 0/6/0/0.8.0.90.0.0.3 HP A6188A Disk Array - - - HP15 0/6/0/0.8.0.90.0.0.4 HP A6188A Disk Array - - - HP15 0/6/0/0.8.0.90.0.0.5 HP A6188A Disk Array - - - - HP15 0/6/0/0.8.0.90.0.0.6 HP A6188A Disk Array - - - - HP15 0/6/0/0.8.0.90.0.0.7 HP A6188A Disk Array - - - HP15 0/6/0/0.8.0.90.0.1.0 HP A6188A Disk Array - - - - HP15 0/6/0/0.8.0.90.0.1.1 HP A6188A Disk Array - - - HP15

We will assume that the first lun in the array will be the system volume set Ldev 1.

2. The address component of the card is 0/6/0/0.8. The 90, you will notice, is the value of the port ID from the array and the last three components are the SCSI lun and target fields that make up the lun address.

3. Set the Primary bootpath to 0/6/0/0.8.0.90.0.0.0 and restart the machine.

Installing MPE

 $4. \ \mbox{Install MPE}$ on the primary bootpath as you would normally do and then reboot.

Configure MPE using SYSGEN and FCSCAN

5. FCSCAN is used to scan the fibre channel adapter for devices. It will also return SYSGEN and Boot Menu Paths for any devices it encounters. :fcscan -h FCSCAN Version 1.1 Scanning for Fibre Channel devices. This could take up to a few minutes. Please wait ... FCSCAN has found the following Fibre Channel I/O Adapter Cards and Devices

on this system.

SYSGEN PATH	DESCRIPTION	BOOT MENU PATH
============	=============	=================
0/6/0/0	Fibre Channel Adapter	
0/6/0/0.90	Fibre Channel N-Port	
0/6/0/0.90.0	HP A6188A disk	0/6/0/0.8.0.90.0.0.0
0/6/0/0.90.1	HP A6188A disk	0/6/0/0.8.0.90.0.0.1
0/6/0/0.90.2	HP A6188A disk	0/6/0/0.8.0.90.0.0.2
0/6/0/0.90.3	HP A6188A disk	0/6/0/0.8.0.90.0.0.3
0/6/0/0.90.4	HP A6188A disk	0/6/0/0.8.0.90.0.0.4
0/6/0/0.90.5	HP A6188A disk	0/6/0/0.8.0.90.0.0.5
0/6/0/0.90.6	HP A6188A disk	0/6/0/0.8.0.90.0.0.6
0/6/0/0.90.7	HP A6188A disk	0/6/0/0.8.0.90.0.0.7
0/6/0/0.90.8	HP A6188A disk	0/6/0/0.8.0.90.0.1.0
0/6/0/0.90.9	HP A6188A disk	0/6/0/0.8.0.90.0.1.1

Note

In our example we will create a system volume set consisting of Ldev1 thru Ldev 5 and a user volume set consisting of Ldev 35 thru Ldev 39.

We will assume that path 0/6/0/0 adapter is already configured.

6. Within SYSGEN add the path 0/6/0/0.90 for the FC_NPORT and then add the Ldevs 1 thru 5 path=0/6/0/0.90.0 ID=HPDARRAY.

 Then add the Ldevs 35 thru 39 which will be used as the user volume set and save this configuration if a SYSGEN group called (for this example) CONFIG.

8. Shutdown the system for reboot.

 Reboot and add the members of the system volume set and create the user volume set and complete the rest of installation and configuration of the

system.

Below is an example of the DSTAT command after volume initialization through VOLUTIL.

:dstat all			
LDEV-TYPE	STATUS	VOLUME	VOLUME SET - GEN
1-A6188A	MASTER	MEMBER1	MPEXL_SYSTEM_VOLUME_SET-0
2-A6188A	MEMBER	MEMBER2	MPEXL_SYSTEM_VOLUME_SET-0
3-A6188A	MEMBER	MEMBER3	MPEXL_SYSTEM_VOLUME_SET-0
4-A6188A	MEMBER	MEMBER4	MPEXL_SYSTEM_VOLUME_SET-0
5-A6188A	MEMBER	MEMBER5	MPEXL_SYSTEM_VOLUME_SET-0
35-A6188A	MEMBER	RATALL5	RATVOL.VOLMGT.QASYSXL-0
36-A6188A	MEMBER	RATALL4	RATVOL.VOLMGT.QASYSXL-0
37-A6188A	MEMBER	RATALL3	RATVOL.VOLMGT.QASYSXL-0
38-A6188A	MEMBER	RATALL2	RATVOL.VOLMGT.QASYSXL-0
39-A6188A	MASTER	RATALL1	RATVOL.VOLMGT.QASYSXL-0

Add Switch Support

The addition of the FC switch into the configuration adds a little complexity to the setup but with a little effort it should be straight forward.

10. Once the direct FC connect has been completed it is recommended that you retain the configuration group in the event that an issue arises that requires debugging of the FC storage array, switch or topology. 11. Connect the HP e3000 FC HBA to a port on the Brocade 2800/2800/3200 or 3800 FC switch and create the zoning for those ports. 12. If you have access to MPE's FCSCAN utility program by using an internal disk as your Ldev 1, run that utility after connecting and verify the new paths. :fcscan -h FCSCAN Version 1.1 Scanning for Fibre Channel devices. This could take up to a few minutes. Please wait ... FCSCAN has found the following Fibre Channel I/O Adapter Cards and Devices on this system. DESCRIPTION SYSGEN PATH BOOT MENU PATH _____ _____ 0/6/0/0Fibre Channel Adapter0/6/0/0.73545Fibre Channel N-Port0/6/0/0.73545.0HP A6188A disk0/6/0/0.73545.1HP A6188A disk0/6/0/0.73545.2HP A6188A disk0/6/0/0.73545.3HP A6188A disk0/6/0/0.73545.4HP A6188A disk0/6/0/0.73545.5HP A6188A disk0/6/0/0.73545.6HP A6188A disk0/6/0/0.73545.7HP A6188A disk0/6/0/0.73545.8HP A6188A disk0/6/0/0.73545.9HP A6188A disk 0/6/0/0.1.31.73.0.0.0 0/6/0/0.1.31.73.0.0.0 0/6/0/0.1.31.73.0.0.1 0/6/0/0.1.31.73.0.0.2 0/6/0/0.1.31.73.0.0.3 0/6/0/0.1.31.73.0.0.4 0/6/0/0.1.31.73.0.0.5 0/6/0/0.1.31.73.0.0.7 0/6/0/0.1.31.73.0.1.0 0/6/0/0.1.31.73.0.1.1

13. Use the boot path on the right hand side to change the boot path within

the Boot Path Menu.

14. If no internal drive is available for getting the FCSCAN information, access the Brocade switch through your favorite browser and access the button for Name Server.

This window should have the port#, port ID, and symbolic name of the device connected to the switch, such as A6188A for the VA7100.

The port ID value of 11f49 is in HEX and converted to decimal will give the value 73545 which one of the components needed for generating a SYSGEN compliant path for the Ldev. This number is actually the concatenation of the Domain . Area . Port fields.

15. The boot path components consist of the NPort ID value (11f49) broken into two digit hex fields and the converted into decimal. The example of 01 1f 49 returns the following: 01 = 1 1f = 31 49 = 73

16. Concatenate this to the 0/6/0/0 path to get 0/6/0/0.1.31.73 and then concatenate the FC Lun path and use this as the primary boot path.