

Good morning,

I'm having problems configuring a SAN MSA2012fc Dual Controller connected to a Proliant DL380 G5 running Suse Linux Enterprise Server with 2 Emulex FC2142SR (A8002A) HBA's.

The problem I'm experiencing is that the disks on the SAN appear to be multiplied by four, i.e. on the SAN I have configured 2 vdisks and on the machine I am seeing 8:

```
/opt/hp/hp_fibreutils # ./hp_rescan -a
```

```
Adding legacy tape devices to /proc/scsi/device_info
```

```
Scanning /sys/class/scsi_host/host0
```

```
Scanning /sys/class/scsi_host/host1
```

```
scsi0 00 00 00 HP          MSA2012fc  J200      Enclosure
scsi0 00 01 00 HP          MSA2012fc  J200      Enclosure
scsi0 00 02 00 HP          MSA2012fc  J200      Enclosure
scsi0 00 03 00 HP          MSA2012fc  J200      Enclosure
scsi1 00 00 00 HP          MSA2012fc  J200      Enclosure
scsi1 00 01 00 HP          MSA2012fc  J200      Enclosure
scsi1 00 02 00 HP          MSA2012fc  J200      Enclosure
scsi1 00 03 00 HP          MSA2012fc  J200      Enclosure
```

I have tried using SLES 10 SP1 as well as SLES SP2 but the problem occurred on both. On SLES SP1 I used the official HP package HPDMmultipath-4.0.0. On SLES SP2, I followed the official HP instructions installing all the recommended packages and their corresponding versions, but the problem wasn't solved.

As for the HBA's drivers I've tried both the original HP drivers (package hp-lpfc-2008-05-30) as the latest Emulex drivers but without any luck. The drivers compile, make and install alright and the module seems to be running OK but the disks are detected incorrectly.

When using SLES SP1 I used the switch -sp when installing the drivers to disable multipath ... When I tested with SLES SP2 I didn't use the -sp switch.

```
/opt/hp/hp_fibreutils # dmesg |grep Emulex
```

```
Emulex LightPulse Fibre Channel SCSI driver 8.2.0.22_p1
```

```
Copyright(c) 2004-2008 Emulex. All rights reserved.
```

```
/opt/hp/hp_fibreutils # grep lpfc /etc/modprobe.conf
```

```
options lpfc lpfc_nodev_tmo=28 lpfc_lun_queue_depth=16  
lpfc_discovery_threads=32
```

```
/opt/hp/hp_fibreutils # modinfo lpfc |more
```

```
filename: /lib/modules/2.6.16.54-0.2.8-  
bigsm/kernel/drivers/scsi/lpfc/lpfc.ko
```

```
version: 0:8.2.0.22_p1
```

```
author: Emulex Corporation - tech.support@emulex.com
```

```
description: Emulex LightPulse Fibre Channel SCSI driver  
8.2.0.22_p1
```

```
license: GPL
```

```
srcversion: 6D165CDA957263297189E3F
```

dmesg shows the following on startup, which as far as I know is normal:

lpfc: module not supported by Novell, setting U taint flag.

lpfc 0000:0b:00.0: 0:1303 Link Up Event x1 received Data: x1 xf7
x10 x9

lpfc 0000:0e:00.0: 1:1303 Link Up Event x1 received Data: x1 xf7
x10 x9

lpfc 0000:0b:00.0: 0:1305 Link Down Event x2 received Data: x2 x20
x80110

lpfc 0000:0b:00.0: 0:1306 Link Up Event in loop back mode x3
received Data: x3 x1 x10 x1

lpfc 0000:0b:00.0: 0:1308 Link Down Event in loop back mode x4
received Data: x4 x20 x80000

lpfc 0000:0b:00.0: 0:1303 Link Up Event x5 received Data: x5 x1
x10 x1

lpfc 0000:0b:00.0: 0:1305 Link Down Event x6 received Data: x6 x20
x80110

lpfc 0000:0b:00.0: 0:1306 Link Up Event in loop back mode x7
received Data: x7 x1 x10 x1

lpfc 0000:0b:00.0: 0:1308 Link Down Event in loop back mode x8
received Data: x8 x20 x80000

lpfc 0000:0b:00.0: 0:1303 Link Up Event x9 received Data: x9 x1
x10 x1

I've upgraded the firmware version of the HBAs, from their
original 2.50 A6 version to 2.72 A2 using the utility HBAnyware,
but without any positive result:

```
/opt/hp/hp_fibreutils # cat /sys/class/scsi_host/host0/info
```

```
HP FC2142SR 4Gb PCI-e, SC, Fibre Channel Adapter on PCI bus 0b  
device 00 irq 169
```

```
/opt/hp/hp_fibreutils # cat /sys/class/scsi_host/host0/fwrev
```

```
2.72A2 (W3F2.72A2), sli-3
```

UDEV detects the devices as generic SCSI devices sg[0-7] , but doesn't seem to recognize them as valid block devices:

```
Vendor: HP          Model: MSA2012fc          Rev: J200
Type:  Enclosure          ANSI SCSI revision:
05
```

```
Vendor: HP          Model: MSA2012fc          Rev: J200
Type:  Enclosure          ANSI SCSI revision:
05
```

```
0:0:0:0: Attached scsi generic sg0 type 13
```

```
0:0:1:0: Attached scsi generic sg1 type 13
```

```
Vendor: HP          Model: MSA2012fc          Rev: J200
Type:  Enclosure          ANSI SCSI revision:
05
```

```
0:0:2:0: Attached scsi generic sg2 type 13
```

```
Vendor: HP          Model: MSA2012fc          Rev: J200
Type:  Enclosure          ANSI SCSI revision:
05
```

```
0:0:3:0: Attached scsi generic sg3 type 13
```

```
.....
```

```
.....
```

```
.....
```

As a result fdisk doesn't recognize them either:

```
/opt/hp/hp_fibreutils # fdisk -l
```

Disk /dev/cciss/c0d0: 73.3 GB, 73372631040 bytes

255 heads, 63 sectors/track, 8920 cylinders

Units = cylinders of 16065 * 512 = 8225280 bytes

System	Device	Boot	Start	End	Blocks	Id
	/dev/cciss/c0d0p1	*	1	64	514048+	83
Linux						
	/dev/cciss/c0d0p2		65	6827	54323797+	83
Linux						
	/dev/cciss/c0d0p3		6828	8920	16812022+	82
Linux swap / Solaris						

The commands `multipath -ll` , `multipath -l` , `multipath -v`,
`multipath -d` produce no output whatsoever.

Finally I'm attaching my current configuration
`/etc/multipath.conf`

```
/opt/hp/hp_fibreutils # cat /etc/multipath.conf
```

```
defaults {
    udev_dir                /dev
    polling_interval        10
    selector                "round-robin 0"
    path_grouping_policy    failover
    getuid_callout          "/sbin/scsi_id -g -u -s /block/%n"
    prio_callout            "/bin/true"
    path_checker            tur
```

```

        rr_min_io                100
        rr_weight                 uniform
        failback                  immediate
        no_path_retry             12
        user_friendly_names      yes
    }

#blacklist {
#       wwid                    26353900f02796769
#       devnode                  "^(ram|raw|loop|fd|md|dm-|sr|scd|st)
#                               [0-9]*"
#       devnode                  "^hd[a-z][[0-9]*]"
#       devnode                  "^cciss!c[0-9]d[0-9]*"
#       device {
#               vendor "HP"
#               product "OPEN-*"
#       }

multipaths {

multipath {
        wwid                    20394857699000000000
        alias                   red
        path_grouping_policy    group_by_prio
        path_selector            "round-robin 0"
        failback                 immediate
        rr_weight                 uniform

```

```

        no_path_retry          10
        rr_min_io              100
    }
}

devices {

device
{
vendor                "HP"
product               "MSA2[02]*"
path_grouping_policy  multibus
getuid_callout        "/sbin/scsi_id -g -u -s /block/%n"
path_selector         "round-robin 0"
rr_weight             uniform
prio_callout          "/bin/true"
path_checker          tur
hardware_handler      "0"
failback              immediate
no_path_retry        12
rr_min_io            100
}
}

```

Any help to resolve my problem would be much appreciated. If additional information is required to aid me with my query feel free to ask me and I will provide it as soon as possible.

Thanks in advance for your replies.