?? Linux ? SAN ??????

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- [Configure Multipath on CentOS/RedHat (NetApp FAS2240)](#)
- [iSCSI and multipath on CentOS 7](#)

Q & A
Q: ???? /dev/sda ? Local Disk ?? SAN Disk

```
#> lsscsi
[2:0:0:0]   cd/dvd  hp      DVD-ROM DTA0N   WBD0  /dev/sr0
 state=running queue_depth=1 scsi_level=6 type=5 device_blocked=0 timeout=0
[3:0:0:0]   tape   IBM     ULT3580-HH5    D2AD  /dev/st0
 state=running queue_depth=32 scsi_level=7 type=1 device_blocked=0 timeout=900
[3:0:1:0]   tape   IBM     ULT3580-HH5    D2AD  /dev/st1
 state=running queue_depth=32 scsi_level=7 type=1 device_blocked=0 timeout=900
[3:0:1:1]   mediumx IBM    3573-TL        C.20  -
 state=running queue_depth=32 scsi_level=6 type=8 device_blocked=0 timeout=0
[3:0:2:0]   disk   IBM     1726-4xx FAStT 0617  /dev/sda        <======
 state=running queue_depth=32 scsi_level=6 type=0 device_blocked=0 timeout=60
[3:0:2:31]  disk   IBM     Universal Xport 0617  -
 state=running queue_depth=32 scsi_level=6 type=0 device_blocked=0 timeout=60
```

TIPs?

IBM FAStT ? IBM Storage ????

???? lsscsi ????? yum install lsscsi

Q: ???? HBA Card ? port WWN
???: ? systool

???yum install sysfsutils

```
#> systool -c fc_host -v
?
#> systool -c fc_transport -v
```

????
/sys/class/fc_host/{host#}/port_name

```
#> cat /sys/class/fc_host/host5/port_name
0x2100001b32837bcd
```

????
/proc/scsi/{adapter-type}/{host#}

#> cat /proc/scsi/qla2xxx/2

SCSI Device Information:
scsi-qla0-adapter-node=5001438004253c81;
scsi-qla0-adapter-port=5001438004253c80; <---- WWN
scsi-qla0-target-0=50001fe1500e28fd;
scsi-qla0-target-1=50001fe1500e28f9;
scsi-qla0-target-2=500a09829140a66c;

Q: ???? mpathX ???? Device Mapper(dm-X)
????? multipath??? LUN ?????? /dev/mapper/mpathX?????? pvcreate ? LUN ??? PV ???? pvdisplay -C ?????
?????? /dev/dm-X???????????????? mpathX ???? dm-X?

????

[root@bdb3 ~]# dmsetup ls
mpath1 (253, 4)
rootVG-varLV   (253, 1)
rootVG-swapLV   (253, 3)
rootVG-rootLV   (253, 0)
rootVG-worktmpLV   (253, 2)

TIPs:

    mpath1 (253,4)?4 ????? /dev/dm-4

????

[root@cdb3-b ~]# multipath -ll
mpath1 (360a98000383035537824474d3936556a) dm-4 NETAPP,LUN   <====== ??
[size=700G][features=3 queue_if_no_path pg_init_retries 50][hwhandler=0][rw]
_ round-robin 0 [prio=4][active]
 _ 1:0:1:0 sdb   8:16 [active][ready]
 _ 2:0:1:0 sdd   8:48 [active][ready]
_ round-robin 0 [prio=1][enabled]
 _ 1:0:0:0 sda   8:0 [active][ready]
 _ 2:0:0:0 sdc   8:32 [active][ready]

Q: ? mpathb ?? partition ????????????????????
???????

    WARNING: Re-reading the partition table failed with error 22: Invalid argument.

The kernel still uses the old table. The new table will be used at
the next reboot or after you run partprobe(8) or kpartx(8)

??????????????????? partition ????

partprobe /dev/mapper/mpathb