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## SWITCH SAN

### MDS-SERIES (CISCO) COMMANDS

#### MDS-SERIES Switch Commands

```
ip address 191.168.123.234 255.255.255.0
View = show running-config
show environment shows status of all installed hardware components
show flogi database shows database list of all FLOGI events
show fcns database shows database list of all N-ports logged in
show vsan membership shows list of VSAN members
show interface brief lists the interfaces and status
```

#### MDS-SERIES Zoning Commands

```
config terminal Enters configuration terminal
zone name TestZone1 vsan 4 creates a zone
member pwwn 10:01:10:01:10:ab:cd:ef adds node to the zone above
no member pwwn <colon separated wwn> deletes member from zone
zoneset name Zoneset1 vsan 4 creates a zoneset
member <zone name> adds zone to the ZoneSet above
no zone name <zone name> vsan <vsan Id> Deletes a zone
zoneset activate name Zoneset1 vsan 4
zone copy active-zoneset full-Zoneset1 vsan 4
copy running-config start-up config copy from source to startup configuration
vsan database go into vsan configuration mode
vsan 4 interface fc3/21 move port 21 on module 3 to vsan 4
show zoneset shows all zonesets that are active
show zone vsan <#> shows all zones active in vsan
show zoneset active displays the active zoneset
show vsan shows the vsans on the switch
show zoneset active vsan <vsan Id> Shows active zoneset
```

### B-SERIES (BROCADE) COMMANDS

#### B-SERIES Switch Commands

```
switchDisable offline
ipAddrSet set the IP address of a Brocade switch
switchShow display switch info
supportShow full detailed switch info
portShow # display port info
nsShow Name server contents
nsAllShow NS for full fabric
fabricShow fabric information
ad --create create a new Admin Domain.
ad --apply enforce the new Admin Domain configuration.
```

#### B-SERIES Zoning Commands

```
aliCreate "Alias", "20:00:00:e0:69:40:07:08"
zoneCreate "Zone1", "20:00:00:e0:69:40:07:08; 50:06:04:82:b8:90:c1:8d"
cfgCreate "Test_cfg", "Zone1; Zone2"
cfgSave saves zoning information across reboots
cfgEnable "Test_cfg"
zoneShow or cfgShow shows defined and effective zones and configurations
zoneAdd adds a member to a zone
zoneRemove removes a member from a zone
zoneDelete deletes a zone
cfgAdd adds a zone to a zone configuration
cfgRemove removes a zone from a zone configuration
cfgDelete deletes a zone from a zone configuration
cfgClear clears all zoning information/ must disable the effective configuration
```

## M-SERIES (McDATA) COMMANDS

### M-SERIES Switch Commands

```
View=          config ip show
Config> ip      (new IP and Subnet mask)
Show> switch
Show> switch
Show > system
Show> nameserver
Show> loginServer
Show> nameServer
Show.Fabric> nodes
Maint > system > setOnlineState
```

### M-SERIES Zoning Commands

```
Config.Zoning> addWwnMem: <zoneName> <wwn>
Config.Zoning> addZone      add a new zone to the working area
Config.Zoning> activateZoneset  activation of changes
Config.Zoning> showactive     shows actively connected running zoneset
Config.Zoning> clearZone      clear WWNs in a zone
Config.Zoning> deletezone     remove zone from the running config
Config.Zoning> showPending    show pending zones
Config.Zoning> renameZone:<oldzonename><newzonename>
Config.Zoning> deleteWwnMem    <zonename><wwn>
Config.Zoning> renameZoneSet   <zoneSetName>
```

## Veritas VM HOST COMMANDS

- <http://www.symantec.com/business/support/documentation.jsp?language=english&view=manuals&pid=15273>

### Veritas VM Device Commands

```
vxdisk list      List all disks under volume manager control and give there status.
vxdiskadd c1t2d3  add or bring a disk under volume manager control
vxdiskadmin      Interactive front end to the vxdisk program
```

### Veritas VM Filesystem commands

```
vxdisk init      Initialize Physical Volume
vx dg init mydg mydg-01=c1t1ld0  Create Disk Group
vxassist -g mydg make myvol <size> Create Logical Volume
mkfs -F vxfs /dev/vx/rdisk/mydg/myvol  create file system
vxvol -g mydg stopall  stop a volume
vx dg deport mydg      deport disk group
vx dg import mydg       import disk group
vxvol -g mydg startall  starting a imported volume
```

## VMware ESX HOST COMMANDS

- <http://www.b2v.co.uk/b2vguide2vmware.htm>
- <http://b2v.co.uk/b2vguide2vmware3.htm>

### VMware ESX Device Commands

```
esxcfg-rescan <vmkernel adpater> scan for new disks
esxcfg-swiscsi -e      enable iSCSI initiator
more /proc/scsi/lpfc/X  wwn of HBA
esxcfg-vswitch
```

## VMware ESX Filesystem Commands

```
vmkfstools ~
```

## AIX/IBM HOST COMMANDS

- <http://publib.boulder.ibm.com/infocenter/pseries/v5r3/index.jsp?topic>

### AIX Software Installation

```
/usr/lpp          Software Directory
lsllpp -L all      List installed software
lsllpp -f fileset   List all files
instfix -i         List installed patches
cp *.lpp /usr/sys/inst.images copy lpp software to the install directory
smit installp      Install a software package
rmdev             Remove a device
```

### AIX Device Commands

```
lscfg             lists all configured components
smit or smitty     system management utility
lscfg -v l <interface> lists all attributes (WMN's) for a device
emc_cfgmgr         configures symmetrix devices
mkbcv             makes BCV visible to AIX to avoid locking during boot
(1) chdev -l fcsX -a init_link=pt2pt -P "To change INIT Link flags parameter"
(2) chdev -l fscsiX -a fc_err_recov=fast_fail -P "Fabric Event Error RECOVERY Policy"
(3) cfgmgr -v      configures devices and optionally installs device software
```

### AIX iSCSI Commands

```
smit iscsi
```

## HP/UX HOST COMMANDS

- <http://www.docs.hp.com/en/B2355-90681/index.html>

### HP/UX Software Installation

```
sysdef           analyzes current running system
swlist -l bundle  displays version and type of HP-UX
swlist -l patch   List installed patches
swreg -l depot /full/path/to/your/depot_file Register a depot package for install
swinstall         Install the Software depot
```

### HP/UX Device Commands

```
insf -e          install special device files
ioscan -fnC disk scans system hardware
sam             System administration tool
dd if=/dev/rdisk/c34t15d0 of=/dev/zero count=1 makes HP register with a Clariion thru LUNZ device
navicli -h <SP IP> register registers host with Clariion and tests agent install
lsdev -C disk     list device drivers in the system
mknod           makes a directory, special, or ordinary file
/stand/system    system configuration file
```

### HP SAN Commands

```
fcmsutil /dev/fcd0 List HBA wwn
tdutil /dev/td0 List HBA wwn
```

## HP iSCSI Commands

- <http://docs.hp.com/en/T1452-90011/T1452-90011.pdf>

## PROCEDURES

### zone hp server to symm

```
symmask list hba -v          to list your servers paths to the symm
symmask -wwn -dir -p add dev (use wwn, dir, p values from above command) run command for each hba to FA zone
symmask -wwn -dir -p set heterogeneous on HP_UX use wwn from the (symmask list hba -v )
symmask refresh
ioscan -fnC disk
insf -e
symcfg dis
sympd list
```

- To get HP-UX to register with Clariion if using NaviAgent

```
Install NaviAgent
Edit agent.config file
ioscan -fnC disk
insf -e
/sbin/init.d/agent stop
rm /etc/log/HostIdFile.txt
/sbin/init.d/agent start
dd if=/dev/rds/c34t15d0 of=/dev/zero count=1 makes HP register with a Clariion thru LUNZ device
navicli -h <SP IP> register registers host with Clariion and tests agent install

# rmsf path ( The paths are showing NO_HW or not sensing).
# ioscan -fnC disk (check)
# insf -e
# symcfg discover
# powermt display ( check for any dead path)
# powermt check (checks and corrects dead path).
# powermt config
# powermt save
```

## Linux HOST COMMANDS

- <http://www.redhat.com/docs/manuals/enterprise/RHEL-5-manual/en-US/>

### Linux Device Commands

```
modprobe -l *lpfc* List Emulex modules
modprobe -r discover new disk
/sys/class/scsi_host/host1/issue_lip discover new disk
/sys/class/scsi_host/host1/scan discover new disk
/usr/sbin/lpfc lun_scan all
```

### Linux FC SAN Commands

```
more /proc/scsi/lpfc/X wwn on RHEL3
more /sys/class/scsi_host/hostX/port_name wwn on RHEL4
more /sys/class/scsi_host/hostX/port_name wwn on RHEL5
(X is the instance number of the HBA)
```

### Linux iSCSI Commands

```
yum install iscsi-initiator-utils      install iSCSI soft initiator
rpm -q srvmadmin-deng iscsi-initiator-utils  install iSCSI soft initiator
rpm -ql iscsi-initiator-utils          confiure iSCSI soft initiator
iscsiadm -m discovery -t -p 192.168.1.100  discover iSCSI target
iscsiadm --mode node --targetname iqn
```

## SUN/SOLARIS HOST COMMANDS

- [http://developers.sun.com/openstorage/articles/opensolaris\\_storage\\_server.html](http://developers.sun.com/openstorage/articles/opensolaris_storage_server.html)

### SOLARIS Software Installation

```
ptree -a      Shows all running processes in a tree format
showrev -p    Displays currently installed Solaris patches
prtconf       prints system configurations
pkginfo       lists installed software packages
pkgadd        install software packages
pkgrm         removes installed software packages
```

### Solaris Device Commands

```
cfgadm -a      list all
cfgadm -c configure c4  configure StorEdge Leadville driver.(Search for new devices)
devfsadm -vC    searches for devices and also cleans up old
update_drv -f sd -d -I searches for devices
devinfo         print device specific information about disk devices
drvconfig       generates special device files
reboot -- -r     reboots system to discover configuration changes, and rebuild special files
/etc/system     system files
/kernel/drv/sd.conf lists of available target ids and luns
/kernel/drv/lpfc.conf used for persistent binding on Emulex (qla22xx.conf for Qlogic)
/var/adm/messages system messages
```

### Solaris iSCSI Commands

```
iscsiadm add static-config iqn.1999-08.com.array:sn.01234567,192.168.1.3:3260  map target
iscsiadm add discovery-address 192.168.1.13:3260
iscsiadm modify discovery --isns enable
iscsiadm list target -v5 Target: iqn.1986-03.com
devfsadm -Cv -i iscsi
```

### Solaris FC SAN Commands

```
fcinfo hba-port      Lists information and WWNs
fcinfo remote-port -p 10000000c937694f -ls Lists the remote-port information
```

## SOLUTIONS ENABLER COMMANDS

### Commands to see devices

```
syminq          ~ list all devides seen by host OS
syminq -cids     ~ list Clariion devices
syminq hba -fibre ~ list HBA
syminq -pdevfile ~List the location of devices
sympd list       ~ lists the Symmetrix devices that the host OS can see
sympd list -vcm  ~ lists all the physical device name in the device masking database
symdev list pd   ~ lists the Symmetrix devices that the host OS can see
symdisk
```

## Symdev Commands

```
symdev list          ~ list all devices on symm
symdev -sa -p list   ~ list devices mapped to that one FA
symdev list -bcv or -rdf1 ~ list all bcv or rdf1 volumes
symdev list -noport  ~ list devices not mapped to any FE ports
symdev list -clariion
symdev show 0123 -v   ~ verbose listing of one device
symdev list -RANGE 0001:0123 -v ~ verbose listing of a range of devices
symdev list pd       ~ list devices this host can see
```

## Symcfg Commands

```
symcfg discover      ~ discover the storage environment
symcfg list          ~ list local and remote symmetrixes
symcfg list -clariion ~ list clariions
symcfg list -v       ~ lists whether the Symmetrix director has device masking turned on
symcfg list -FA all list ~ lists all fibre directors in a Symmetrix system
symcfg list -dir all -address -sid 6196 ~ identify the address information for devices
symcfg list -dir all -address -available ~ sid 6196 ~ returns the next available LUN address
symcfg list -lockn all ~ list of visible Symm exclusive locks
symcfg -sid 098712341357 -lockn 15 release ~ release a lock on a Symmetrix array.
```

## Symconfigure Commands

```
symconfigure -sid <sid> -f <filename> preview ~ checks file to make sure it is ok to exe
symconfigure -sid <sid> -f <filename> commit ~ makes the changes from file
symconfigure -sid <sid> -f <filename> prepare
```

## Symmashdb Commands

```
symmaskdb list devs ~ lists all devices accessible to an HBA on a specified Symmetrix system
symmaskdb remove    ~ removes the meta member devices
symmaskdb restore    ~ restores a database from a specified file
symmaskdb backup     ~ backs up a database to a specified file
symmaskdb init       ~ deletes and creates a new VCMDDB
symmaskdb list assignment ~lists deives already assigned
symmaskdb list no_assignment ~lists deives not yet assigned
```

## Symmask Commands

```
symmask add devs ~ adds a device to the list of devices that a WWN can access in the database
symmask remove devs ~ removes a device from the list of devices that a WWN can access in the database
symmask delete ~ deletes all access rights for a WWN in the database
symmask replace ~ allows one HBA to replace another
symmask refresh ~ refresh vcmdb to all FA ports
symmask login ~ lists for each Fibre director which hosts and HBA's are logged in to a Symmetrix system
symmask list HBA's ~ lists the WWN of the Fibre HBAs on this host
symmask -sid 381 -wwn 50060B0000024F9F6 -dir 16C -p 1 set heterogeneous on HP_UX
symmask -sid SymmID set lunoffset on offset base \ -awwn awwn -dir # -p # ~ offset high lun numbers
```

## Other SYMCLI Commands

```
symsan ~list ports and LUN WWNs seen from a specific Symmetrix director and port
symdg ~ creates/deletes/renames device groups
symld ~ adds & removes devices to a device group
symbcv ~ associates/disassociate BCV with device groups
symmir ~ performs (split/establish/restore) BCV mirror commands against device groups
symclone ~ performs (split/establish/restore/activate/terminate/recreate)
symsnap ~ performs (restore/activate/terminate/recreate)
symrdf ~ performs (split/establish/restore/failover/update/failback/suspend/resume) against RDF device groups
symcg ~ Performs operations on a Symmetrix RDF composite group
symrslv ~ Displays logical-to-physical mapping information about a logical object that is stored on a disk.
symstat ~ Displays statistics information about a Symmetrix, any or all directors, a device group, a disk, or a device.
```



```
symioctl ~ sends I/O control commands to application
```

## NAVICLI COMMANDS

```
navicli -h <host> getall --> Lots of useful and not so useful information
navicli -h <SP IP> getsp ~ verify connectivity
navicli -h <SP IP> register ~ registers host with Clariion and tests agent install
navicli -h <SP IP> storagegroup ~ list all info about existing groups
navicli -h <SP IP> getrg -lunlist ~ list all existing raid groups and LUNS
navicli -h <SP IP> getdisk ~ shows numbers of disks in storage array
navicli -h <SP IP> getrg <rg id> ~ shows the number of raid groups
navicli -h <SP IP> getlun <lun id> ~ lists all the disks
navicli -h <SP IP> storagegroup -list ~ displays storage groups
navicli -h <SP IP> getcache ~ shows the cache
navicli -h <SP IP> storagegroup -create -gname <name> ~ creates a new storage group
navicli -h <SP IP> storagegroup -addhlu -gname <name> -hlu <#> -alu <#> ~ assigns LUNs to storage group
navicli -h <SP IP> storagegroup -connecthost -host <hname> -gname <gname> ~ assigns host to storage group
```

## POWERPATH COMMANDS

```
powermt ~ manage powerpath environment
powercf ~ configure powerpath devices
emcpregr ~ manage powerpath license registration
emcpupgrade ~ convert powerpath configuration files
```

## INQ COMMANDS

```
inq -h ~ list options and syntax
inq -hba ~ list hba wwn
inq -btl ~ display Bus Target and Lun
inq -show_vol ~ display Symmetrix Volume Number.
inq -winvol ~ show Windows filesystems
inq -dev ## -page0 ~ Raw unformatted data on a single device
inq -clariion ~ display CLARiiON device information
```

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