

NetApp® FCP storage system commands for Data ONTAP®

FCP management commands	
fcg status	Displays the status of the fcp service on the storage system.
fcg start stop	Starts or stops the fcp service on the storage system.
fcg config [<i>adapter</i> [up down] [partner { <i>adapter</i> None} -partner] [mediatype { ptp auto loop }] [speed { 1 2 4 auto }]]	Configures the Fibre Channel target adapters on the storage system. Not all versions of Data ONTAP support 4 gigabyte speed. Enter fcg config with no arguments to display adapter information.
fcg show adapter [-v] [<i>adapter</i>]	Displays information about target adapters on the storage system.
fcg show cfmode	Displays the cfmode of a storage system active/active configuration.
fcg show initiator [-v] [<i>adapter</i>]	Displays information about initiators connected to the storage system.
license [add code]	Displays or adds license codes on the storage system. Use to verify that the Fibre Channel protocol is licensed.
FCP target status, performance, and troubleshooting commands	
fcg status	Displays the status of the fcp service on the storage system.
sysstat -f	Displays aggregated storage system performance statistics for FCP.
fcg stats [-z] [<i>adapter</i>]	Displays statistics for the specified FCP target adapter. Use -z to clear statistics.
fcg stats -i interval [-c count] [-a <i>adapter</i>]	Displays FCP performance statistics over a specified interval. <i>interval</i> is integer reporting interval in seconds. Specify <i>adapter</i> , or use -a to display statistics for all FCP target adapters.
lun stats [-z] [-o] [-a <i>lun_path</i>]	Displays block access statistics for the specified LUN. Use -z to clear statistics. Use -o for extended stats, -a to display stats for all LUNs.
lun config_check [-S] [-s -v]	Performs several checks on the lun/igroup/fcp configuration of the storage system. Requires Data ONTAP 7.1 or later.
LUN and igroup management commands	
vol options <i>vol_name</i> nosnap on	Turns off schedule snapshots for a volume containing LUNs. Strongly recommend to enable use of space reservations.
lun setup	Interactive LUN creation. Combines the <code>lun create</code> , <code>igroup create</code> , <code>igroup add</code> , and <code>lun map</code> command functions.
lun create -s size -t linux lun_path	Manual LUN creation. Enter <i>size</i> as integer bytes with one of the following suffixes: m (megabytes), g (gigabytes), or t (terabytes).
igroup create -f -t linux initiator_group [<i>WWPN...</i>]	Creates a new FCP initiator group. Optionally specify the initiator world wide port names (<i>WWPN...</i>), or add them using the <code>igroup add</code> command.
igroup show [<i>initiator_group</i>]	Displays the initiator nodes in the specified initiator group. Omit <i>initiator_group</i> to see all igroups.
igroup add initiator_group WWPN...	Adds initiator world wide port names (<i>WWPN</i>) to the specified igroup.
lun map lun_path initiator_group [<i>lun_id</i>]	Makes the specified LUN accessible to initiators in the specified igroup. Specify optional LUN ID, or take default of lowest available value.
lun show [-v -m -c] [all mapped offline online unmapped <i>lun_path</i> -g initiator_group]	Displays general (-v), mapping (-m), or clone (-c) information about the specified set of LUNs.
lun online offline lun_path...	Enables or disables block-protocol access to the specified LUNs.
lun destroy [-f] <i>lun_path...</i>	Destroys the specified LUNs and all their data. Use -f if LUN is in use.
General FCP notes	
The FilerView™ GUI can also be used for the above commands (http://stor_sys_ip_address/na_admin).	

FCP Red Hat® Enterprise Linux® commands for Host Utilities 3.0

FCP host configuration files	
<code>/etc/modprobe.conf</code>	Contains HBA driver parameter settings.
<code>/etc/fstab</code>	Lists file systems on FCP LUNs to mount.
<code>/etc/multipath.conf</code>	Lists local disks to exclude (blacklist) from multipathing and sets specific device parameters for NetApp storage systems.
QLogic HBA commands	
<code>./scli -i</code>	Lists HBA attributes, including WWPN.
<code>./scli -C <i>wwpn</i></code>	Lists all attributes for the specified <i>wwpn</i> , including firmware and driver versions.
Emulex HBA commands	
<code>/usr/sbin/hbanyware/hbacmd ListHBAs</code>	Lists HBA attributes, including WWPN.
<code>/usr/sbin/hbanyware/hbacmd HBAAattrib <i>wwpn</i></code>	Lists all attributes for the specified <i>wwpn</i> , including firmware and driver versions.
Multipathing (dm-multipath) commands	
<code>/etc/init.d/multipathd start</code>	Manually start the multipathing service on the Linux host.
<code>chkconfig --add multipathd</code> <code>chkconfig multipathd on</code>	Configure the multipath service to start automatically.
<code>multipath -ll -v3 -d</code>	Display the multipathing configuration.
<code>multipath -v2</code>	Creates the initial multipath configuration.
Accessing LUNs as Linux disk devices	
<code>/opt/netapp/santools/qla2xxx_lun_rescan all</code>	Rescan QLogic HBAs to discover new LUNs and targets.
<code>/usr/sbin/lpfc/lun_scan all</code>	Rescan Emulex HBAs to discover new LUNs and targets.
<code>/opt/netapp/santools/sanlun lun show all</code>	Lists available LUNs as seen by the sanlun script.
<code>/opt/netapp/santools/sanlun fcp show adapter -c all</code>	Generate igroup create commands that you can run on the storage system to create an initiator group for this host.
<code>ls -l /dev/mapper/</code>	List multipath devices generated for LUNs when using dm-multipath.
<code>/sbin/fdisk <i>device</i></code>	Partition the LUN. <i>device</i> is the <code>/dev/sdx</code> name for the LUN. At least one partition is required if not using dm-multipath.
<code>mkfs -V -t ext3 <i>device</i></code>	Create an ext3 file system on the partition or multipath <i>device</i> . For dm-multipath, create the file system on the <code>/dev/mapper/</code> device.
<code>/sbin/e2label <i>device</i> <i>label</i></code>	Create a persistent label for the file system. <i>device</i> is the partition, <i>label</i> is a unique string (maximum 16 characters). Not needed when using dm-multipath.
<code>mount -a</code>	Mounts all file systems listed in <code>/etc/fstab</code> .
<code>df</code>	Lists all mounted file systems.
Troubleshooting	
<code>sanlun lun show all</code>	Verify that LUNs are visible to the host.
<code>sanlun fcp show adapter -v all</code>	Verify that host's HBA world wide port names.
<code>license</code> (from storage system console)	Verify that FCP is licensed on the storage system.
<code>lsmod grep qla</code> <code>lsmod grep lpfc</code>	Verify that the QLogic or Emulex driver is loaded on the host.
<code>lsmod grep dm</code>	Verify that the dm-multipath driver is loaded on the host.
Check the log file on the storage system (<code>/etc/messages</code>) for error messages.	
Search the NetApp Service and Support Knowledgebase at https://now.netapp.com/eservice/SupportHome.jsp for information about the problem.	
Before contacting NetApp Global Services with a problem, run the <code>/opt/netapp/santools/linux_info</code> and <code>/opt/netapp/santools/filer_info</code> scripts on the host to collect information to help diagnose the problem. Also run the appropriate script for your Fibre Channel switches.	
Resources	
http://now.netapp.com	All NetApp documentation and software downloads.
http://now.netapp.com/NOW/knowledge/docs/san/fcp_iscsi_config/fcp_support.shtml	FCP support matrix.