

# Quick Command Reference: FC HP-UX® Host Utilities 4.3 and Data ONTAP®

NOTE: Host Utilities 4.3 provides support for both LVM and VxVM with HP-UX 11iv2, and LVM only with HP-UX 11iv3

| Commands for discovering or identifying LUNs                                                           |                                                                                                                                                                                                                                                                                                                                                                                  |
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| <b>ioscan -fnC disk</b>                                                                                | Discovers new disks. A reboot is not required.                                                                                                                                                                                                                                                                                                                                   |
| <b>ioinit -i</b>                                                                                       | Creates device entries for new devices that are found after an ioscan.                                                                                                                                                                                                                                                                                                           |
| <b>insf -e</b>                                                                                         | Installs device files in the /dev directory for new devices.                                                                                                                                                                                                                                                                                                                     |
| <b>tdlist</b>                                                                                          | For HBAs that support the Tachyon driver (td), lists target devices, including hardware paths and block device nodes.                                                                                                                                                                                                                                                            |
| <b>fcdlist</b>                                                                                         | For HBAs that support the fcd driver, lists target devices, including hardware paths and block device nodes.                                                                                                                                                                                                                                                                     |
| <b>ls -l /dev/*/group</b>                                                                              | Lists contents of a Volume Group directory. Helps to determine which minor numbers are in use.                                                                                                                                                                                                                                                                                   |
| Commands for using HP-UX Logical Volume Manager                                                        |                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>enable_ontap_pvlinks [set   show   unset ]</b>                                                      | As HP-UX 11iV3 Feb 2007 release does not support Asymmetric Logical Unit Access (ALUA), default multipathing policy is Active/Active. Use the enable_ontap_pvlinks to set the multipathing policy to Active/Passive, to display the current multipathing policy and set the multipathing policy back to Active/Active for all ONTAP LUNs without disturbing other Vendors' LUNs. |
| <b>pvccreate /dev/rdisk/primary_path_disk_device</b>                                                   | Initializes a raw disk device for use as a physical volume in a volume group. <i>primary_path_disk_device</i> is the primary path to the disk device with the LUN.                                                                                                                                                                                                               |
| <b>mknod /dev/vg_name/group c 64 minor_number</b>                                                      | Create a device node on the host for the physical volume group.                                                                                                                                                                                                                                                                                                                  |
| <b>vgcreate vg_name /dev/dsk/&lt;primary_path&gt;</b>                                                  | Creates a new volume group.                                                                                                                                                                                                                                                                                                                                                      |
| <b>vgextend [-f] [-A autobackup] [-g pvg_name] [-x extensibility] [-z sparepv] vg_name pv_path ...</b> | Assigns additional physical volumes to a volume group. The volume group must be active.                                                                                                                                                                                                                                                                                          |
| <b>vgreduce [-A autobackup] vg_name pv_path ...</b>                                                    | Removes each physical volume specified by a <i>pv_path</i> argument from volume group <i>vg_name</i> .                                                                                                                                                                                                                                                                           |
| <b>vgdisplay -v vg_name ...</b>                                                                        | Displays information about volume groups.                                                                                                                                                                                                                                                                                                                                        |
| <b>vgchange -a y/n vg_name   /dev/vg_name</b>                                                          | Activates or deactivates a volume group.                                                                                                                                                                                                                                                                                                                                         |
| <b>vgscan</b>                                                                                          | Scans physical volumes for LVM volume groups.                                                                                                                                                                                                                                                                                                                                    |
| <b>vgimport</b>                                                                                        | Imports an LVM volume group onto the system.                                                                                                                                                                                                                                                                                                                                     |
| <b>vgexport</b>                                                                                        | Exports an LVM volume group and its associated logical volumes.                                                                                                                                                                                                                                                                                                                  |
| <b>lvcreate -L size vg_name</b>                                                                        | Creates logical volume(s) in LVM volume group with <i>size</i> specifying the total size of the logical volume. The <i>size</i> value can't be larger than the NetApp LUN.                                                                                                                                                                                                       |
| <b>lvextend -L size vg_name</b>                                                                        | Increase space for LVM logical volume.                                                                                                                                                                                                                                                                                                                                           |
| <b>ntap_config_paths</b>                                                                               | Checks available paths to LUNs and reorders those paths (with HP PV-Links only) if necessary.                                                                                                                                                                                                                                                                                    |
| <b>newfs -F {hfs vxfs} /dev/vg_name/lv_name</b>                                                        | Create a new file system on a logical volume.                                                                                                                                                                                                                                                                                                                                    |
| <b>mkdir -m 777 /dir_name</b>                                                                          | Make a directory for a mount point.                                                                                                                                                                                                                                                                                                                                              |
| <b>mount /dev/vg_name/lv_name /dir_name</b>                                                            | Mounts a file system.                                                                                                                                                                                                                                                                                                                                                            |
| Commands for using scsimgr in HP-UX 11iv3                                                              |                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>scsimgr get_stat</b>                                                                                | Gets basic global statistics.                                                                                                                                                                                                                                                                                                                                                    |
| <b>scsimgr get_stat -D /dev/rdisk/disk0</b>                                                            | Gets basic statistics for disk0.                                                                                                                                                                                                                                                                                                                                                 |
| <b>scsimgr get_stat -D /dev/rdisk/disk0 all_lpt</b>                                                    | Gets basic statistics for all LUN paths of disk0.                                                                                                                                                                                                                                                                                                                                |
| <b>scsimgr -v get_stat -H 64000/0x0/0x0.0x0.0x4000000000000000</b>                                     | Gets all the statistics for target path with the hardware path of 64000/0x0/0x0.0x0.0x4000000000000000.                                                                                                                                                                                                                                                                          |
| <b>scsimgr get_info</b>                                                                                | Gets basic global status and information.                                                                                                                                                                                                                                                                                                                                        |
| <b>scsimgr -v get_info all_lun</b>                                                                     | Gets all status information of all the LUNs.                                                                                                                                                                                                                                                                                                                                     |
| <b>scsimgr get_info -D /dev/rdisk/disk0</b>                                                            | Gets basic status information for disk0.                                                                                                                                                                                                                                                                                                                                         |
| <b>scsimgr get_info -D /dev/rdisk/disk0 all_lpt</b>                                                    | Gets basic status information for all LUN paths of disk0.                                                                                                                                                                                                                                                                                                                        |
| <b>scsimgr lun_map</b>                                                                                 | Displays LUN path information for all LUNs.                                                                                                                                                                                                                                                                                                                                      |
| <b>scsimgr lun_map -D /dev/rdisk/disk0</b>                                                             | Displays LUN path information for disk0.                                                                                                                                                                                                                                                                                                                                         |
| <b>scsimgr replace_wwid -D /dev/rdisk/disk0 dsf</b>                                                    | Validates replacement of disk0 and re-assign its DSF to the replacing LUN.                                                                                                                                                                                                                                                                                                       |
| <b>scsimgr replace_wwid -D /dev/rdisk/disk0</b>                                                        | Unbinds all LUN paths that are associated with disk0.                                                                                                                                                                                                                                                                                                                            |
| <b>scsimgr replace_wwid -H 64000/0x0/0x0.0x0.0x4000000000000000</b>                                    | Validates replacement of the LUN at hardware path of 64000/0x0/0x0.0x0.0x4000000000000000 and re-assign its DSF to the replacing LUN.                                                                                                                                                                                                                                            |
| <b>scsimgr replace_leg_dsf -D /dev/rdisk/c0t5d0</b>                                                    | Validates change of LUN to which legacy DSF /dev/rdisk/c0t5d0 is bound to.                                                                                                                                                                                                                                                                                                       |
| <b>scsimgr inquiry -D /dev/rdisk/disk272</b>                                                           | Displays standard inquiry data for LUN with DSF /dev/rdisk/disk272.                                                                                                                                                                                                                                                                                                              |

| VERITAS Volume Manager (VxVM) Commands                                                                        |                                                                                                                                                                                                                  |
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| <b>vxctl enable</b>                                                                                           | Detects new LUNs on NetApp storage.                                                                                                                                                                              |
| <b>vxdisk list</b>                                                                                            | Displays information about disks, including name, disk group, and status.                                                                                                                                        |
| <b>vxctl stop</b><br><b>vxconfigd</b>                                                                         | Stops the VxVM configuration daemon.<br>Restarts the VxVM configuration daemon.                                                                                                                                  |
| <b>vxdisksetup -i device_name</b>                                                                             | Initializes the disk for VxVM<br><i>device_name</i> is the name listed for the LUN in the DEVICE column of the vxdisk list command output.                                                                       |
| <b>vx dg init dg_name dg_name=device_name</b>                                                                 | Creates a disk group for the LUN.<br><i>dg_name</i> is the name you assign to the disk group.<br><i>device_name</i> is the name listed for the LUN in the DEVICE column of the vxdisk list command output.       |
| <b>/opt/VRTS/bin/vxpfto -g dg_name -t &lt;seconds&gt;</b>                                                     | Increases the Powerfail Timeout interval on a disk group containing NetApp LUNs to the specified seconds.                                                                                                        |
| <b>vx dg -g dg_name adddisk dg_name=device_name</b>                                                           | Adds a disk to a diskgroup.                                                                                                                                                                                      |
| <b>vx dg import dg_name</b>                                                                                   | Imports a disk group to make the specified disk group available on the local machine.                                                                                                                            |
| <b>vx dg deport dg_name</b>                                                                                   | Disables access to the specified disk group.                                                                                                                                                                     |
| <b>vx dg destroy dg_name</b>                                                                                  | Removes a disk group from the system.                                                                                                                                                                            |
| <b>vxprint</b>                                                                                                | Displays records from the Veritas Volume Manager configuration.                                                                                                                                                  |
| <b>vx dmpadm listenclosure all</b>                                                                            | Displays storage enclosure information.                                                                                                                                                                          |
| <b>vxddladm listversion</b>                                                                                   | Lists the version number of numbers of ASLs and minimum VxVM release that is required for each library.                                                                                                          |
| <b>vx dmpadm stat restored</b>                                                                                | Displays the current values of the Veritas DMP restore daemon.                                                                                                                                                   |
| <b>vx dmpadm stop restore</b>                                                                                 | Stops the Veritas DMP restore daemon.                                                                                                                                                                            |
| <b>vx dmpadm start restore interval=&lt;seconds&gt; policy=&lt;policy&gt;</b>                                 | Starts the Veritas DMP restore daemon with the specified values.                                                                                                                                                 |
| <b>vxassist -g dg_name make vol_name size</b>                                                                 | Creates a logical volume.                                                                                                                                                                                        |
| <b>mkfs -F vxfs /dev/vx/rdisk/dg_name/vol_name</b>                                                            | Creates a file system on the logical volume.                                                                                                                                                                     |
| <b>mkdir -m 777 /dir_name</b>                                                                                 | Make a directory for a mount point.                                                                                                                                                                              |
| <b>mount /dev/vx/dsk/dg_name/vol_name /mnt/dir_name</b>                                                       | Mounts a file system.                                                                                                                                                                                            |
| LUN and igroup information Commands                                                                           |                                                                                                                                                                                                                  |
| <b>sanlun fcp show adapter -c</b>                                                                             | Displays the ONTAP igroup create command with the host's WWPNs. You can copy and paste this command to the storage appliance command line to create an igroup with the host's WWPNs.                             |
| <b>sanlun lun show -p</b>                                                                                     | Shows which block device nodes correspond to LUNs on NetApp storage. Also shows which paths to the LUN are primary and secondary, and provides information about the multipathing policy.                        |
| Fibre Channel protocol service and adapter management commands                                                |                                                                                                                                                                                                                  |
| <b>fcp start stop</b>                                                                                         | Starts or stops the FC service.                                                                                                                                                                                  |
| <b>fcp config [adapter [up down]]<br/>[partner {adapter None}   -partner]<br/>[mediatype {ptp auto loop}]</b> | Configures the FC target adapter up or down. Leave off <b>up</b> or <b>down</b> to display configurable information. Omit <i>adapter</i> to display all.                                                         |
| <b>fcp show adapter [adapter...]</b>                                                                          | Displays target adapter information for specified logical adapters.                                                                                                                                              |
| <b>fcp show initiator [adapter...]</b>                                                                        | Displays information about initiators connected to specified adapters.                                                                                                                                           |
| FC target status, performance, and troubleshooting commands                                                   |                                                                                                                                                                                                                  |
| <b>fcp status</b>                                                                                             | Displays current status of the FC service.                                                                                                                                                                       |
| <b>fcp stats [-z] -i interval [-a   adapter]</b>                                                              | Displays device-level statistics for the specified FC adapter over the specified reporting interval in integer seconds. Use <b>-z</b> to clear statistics. Use <b>-a</b> to display statistics for all adapters. |
| <b>sysstat -f [interval]</b>                                                                                  | Displays performance statistics. <i>interval</i> is integer reporting interval in seconds; default is 15 seconds.                                                                                                |
| <b>lun stats [-z] -i interval [-o]<br/>[-a   lun_path]</b>                                                    | Displays block access statistics for the specified LUN. Use <b>-z</b> to clear statistics. Use <b>-o</b> for extended stats, <b>-a</b> to display stats for all LUNs.                                            |
| <b>cf status</b>                                                                                              | Displays the status of the cluster.                                                                                                                                                                              |
| <b>fcp show cfmode</b>                                                                                        | Displays the current cfmode.                                                                                                                                                                                     |
| <b>sysconfig -v</b>                                                                                           | Displays system configuration information.                                                                                                                                                                       |
| <b>vol status</b>                                                                                             | Displays the status of the volume.                                                                                                                                                                               |

| LUN and igroup management commands                                                                                                                  |                                                                                                                                                                                                   |
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| <b>vol options</b> <i>vol_name</i> <b>nosnap on</b>                                                                                                 | Turns off schedule snapshots for a volume containing LUNs. Strongly recommend to enable use of space reservations.                                                                                |
| <b>vol create</b> <i>vol_name</i>                                                                                                                   | Creates a volume.                                                                                                                                                                                 |
| <b>lun setup</b>                                                                                                                                    | Interactive LUN creation. Combines the functions of the <b>lun create</b> , <b>igroup create</b> , <b>igroup add</b> , and <b>lun map</b> commands.                                               |
| <b>lun create</b> <b>-s</b> <i>size</i> [ <b>-t</b> <i>aix hpux image netware linux solaris vld vmware windows</i> ] <i>lun_path</i>                | Manual LUN creation. Enter <i>size</i> as integer bytes with one of the following suffixes: <b>m</b> (megabytes), <b>g</b> (gigabytes), or <b>t</b> (terabytes).                                  |
| <b>igroup create</b> <b>-f</b> [ <b>-t</b> <i>aix hpux default linux netware solaris vmware windows</i> ] <i>initiator_group</i> [ <i>node...</i> ] | Creates a new FC initiator group. Optionally specify the initiator node names ( <i>node...</i> ), or add them using the <b>igroup add</b> command.                                                |
| <b>igroup show</b> [ <i>initiator_group</i> ]                                                                                                       | Displays the initiator nodes in the specified initiator group. Omit <i>initiator_group</i> to see all igroups.                                                                                    |
| <b>igroup add</b> <i>initiator_group node...</i>                                                                                                    | Adds initiator nodes to the specified igroup.                                                                                                                                                     |
| <b>lun map</b> <i>lun_path initiator_group</i> [ <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.                                                     |
| <b>lun show</b> [ <b>-v -m -c</b> ] [ <b>all mapped offline online unmapped</b> ] <i>lun_path</i> [ <b>-g</b> <i>initiator_group</i> ]              | Displays general ( <b>-v</b> ), mapping ( <b>-m</b> ), or clone ( <b>-c</b> ) information about the specified set of LUNs.                                                                        |
| <b>lun online</b>   <b>offline</b> <i>lun_path...</i>                                                                                               | Enables or disables block-protocol access to the specified LUNs.                                                                                                                                  |
| <b>lun move</b> <i>lun_path to_lun_path</i>                                                                                                         | Moves a LUN to a new path in the same volume.                                                                                                                                                     |
| <b>lun destroy</b> [ <b>-f</b> ] <i>lun_path...</i>                                                                                                 | Destroys the specified LUNs and all their data. Use <b>-f</b> if LUN is in use.                                                                                                                   |
| General FC Notes                                                                                                                                    |                                                                                                                                                                                                   |
| The FilerView® GUI can also be used for the above commands ( <b>http://filer_ip_address/na_admin</b> )                                              | More information at the NetApp NOW® site: <a href="http://now.netapp.com">http://now.netapp.com</a>                                                                                               |
| Resources                                                                                                                                           |                                                                                                                                                                                                   |
| <b>http://now.netapp.com</b>                                                                                                                        | All NetApp documentation and software downloads.                                                                                                                                                  |
| <b>http://now.netapp.com/NOW/knowledge/docs/san/fcp_iscsi_config/</b>                                                                               | FC and iSCSI support matrix. Includes information about supported HBAs, switch firmware, host operating systems, volume manager software, and the version of Data ONTAP supported with your host. |