

NetApp® iSCSI storage system commands for Data ONTAP® 7.1.x and 7.2.x

iSCSI service management commands	
iscsi start stop	Starts or stops the iSCSI service.
iscsi nodename [<i>new_nodename</i>]	Displays or sets the iSCSI target node name.
iscsi alias [-c <i>new_alias</i>]	Displays, sets, or clears an alias for the iSCSI target node name.
iscsi initiator show	Displays information about initiators connected to target.
ifconfig [-a <i>interface</i>]	Displays or configures network parameters for the specified interface. Use -a to display all network interfaces.
iSCSI software target and session management commands	
iscsi interface show [-a <i>interface ...</i>]	Show which network interfaces are enabled for iSCSI traffic.
iscsi interface enable {-a <i>interface...</i> }	Enable use of specified network interfaces for iSCSI traffic. Use -a to enable all. Only gigabit Ethernet interfaces are recommended for iSCSI.
iscsi interface disable [-f] {-a <i>interface...</i> }	Disable use of specified network interfaces for iSCSI traffic. Use -a to disable all. Use -f to force termination of current sessions.
iscsi session show [-v] [<i>session_num</i>] iscsi connection show [-v] [<i>sess conn</i>]	Show status of one session or connection, or for all if no session number (and connection number for connection show) is specified.
iscsi tpigroup create [-f] [-t <i>tpgtag</i>] <i>tpigroup_name</i> [<i>interface ...</i>]	Create user-defined target portal group. Needed for multi-connection sessions. All connections for a session must use interfaces in the same target portal group.
iSCSI authentication (CHAP) management commands	
iscsi security add -i <i>initiator</i> -s CHAP -p <i>inpassword</i> -n <i>inname</i> [-o <i>outpassword</i> -m <i>outname</i>]	Defines authentication method for specified initiator. For <i>initiator</i> , use node name in iqn format. Note that <i>inname</i> on storage system is set to outgoing user name on host. Use -o and -m for bidirectional CHAP.
iscsi security default -s CHAP -p <i>inpassword</i> -n <i>inname</i> [-o <i>outpassword</i> -m <i>outname</i>]	Sets the default authentication method, user names, and passwords for all initiators not specifically configured.
iSCSI target status, performance, and troubleshooting commands	
iscsi status	Displays current status of the iSCSI service.
iscsi stats [-z]	Displays numbers of iSCSI PDUs and CDBs, and error statistics
ifstat [-z] -a <i>interface</i>	Displays device-level statistics for the specified network interface. Use -z to clear statistics. Use -a to display statistics for all interfaces.
sysstat -i [<i>interval</i>]	Displays iSCSI performance statistics. <i>interval</i> is integer reporting interval in seconds; default is 15 seconds.
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 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 lun create , igroup create , igroup add , and lun map command functions.
lun create -s <i>size</i> [-t <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: m (megabytes), g (gigabytes), or t (terabytes).
igroup create -i [-t <i>aix hpux default linux netware solaris vmware windows</i>] <i>initiator_group</i> [<i>node...</i>]	Creates a new iSCSI initiator group. Optionally specify the initiator node names (<i>node...</i>), or add them using the igroup add 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 <i>initiator_group node...</i>	Adds initiator nodes to the specified igroup.
lun map <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.
lun show [-v -m -c] [<i>all mapped offline online unmapped</i>] [<i>lun_path</i>] -g <i>initiator_group</i>]	Displays general (-v), mapping (-m), or clone (-c) information about the specified set of LUNs.
lun online offline <i>lun_path...</i>	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 iSCSI notes	
The FilerView™ GUI can also be used for the above commands (http://stor_sys_ip_address/na_admin).	The iSCSI service on the storage system uses IP port 3260.
The format of an iSCSI node name is iqn.yyyy-mm.reverse_domain_name:anything and is automatically set on the storage system (target) and each host (initiator). NetApp recommends that you use the host name for the <i>anything</i> portion of the initiator node name.	

iSCSI SUSE® Linux® Enterprise Server commands for Host Utilities 3.0

iSCSI host configuration files	
/etc/initiatorname.iscsi	Contains the iSCSI node name of the initiator.
/etc/iscsi.conf	Lists most settings for iSCSI initiator.
/etc/fstab.iscsi	Lists file systems on iSCSI LUNs to mount.
/etc/multipath.conf	Lists local disks to exclude (blacklist) from multipathing.
iSCSI service management commands	
/etc/init.d/iscsi start	Manually start the iSCSI service on the Linux host.
chkconfig iscsi	Verify/modify whether the iSCSI service starts automatically.
Multipathing (dm-multipath) commands	
/etc/init.d/boot.multipath start /etc/init.d/multipathd start	Manually start the multipathing service on the Linux host.
insserv boot.multipath multipathd	Configure the multipath service to start automatically.
multipath -ll -v3 -d	Display the multipathing configuration.
multipath -v2	Add new LUNs to the multipath configuration.
Accessing LUNs as Linux disk devices	
/etc/init.d/iscsi reload	Make new LUNs visible on the host; does not affect other LUNs.
/etc/init.d/iscsi restart	Discover and automount LUNs; interrupts all iSCSI sessions.
/sbin/iscsi-ls -l	Lists available LUNs as seen by Linux host.
/opt/netapp/santools/sanlun lun show all	Lists available LUNs as seen by the sanlun script.
ls -l	List symbolic links generated for LUNs in the directory: /dev/iscsi (SLES 8 SP3) /dev/disk/by-id (SLES 9) /dev/disk/by-name (dm-multipath) NOTE: No symbolic links for SLES 8 SP4—see Setup guide.
/sbin/fdisk symbolic_link	Partition the LUN. <i>symbolic_link</i> is the name generated for the LUN. At least one partition is required. For dm-multipath, partition any one of the /dev/sdx devices, not the /dev/disk/by-name/ device.
mkfs -V -t ext3 symbolic_link	Create an ext3 file system on the partition <i>symbolic_link</i> . For dm-multipath, create the file system on the /dev/disk/by-name/ device.
iscsi-mountall	Mounts unmounted file systems listed in <i>/etc/fstab.iscsi</i> .
df	Lists all mounted file systems.
Troubleshooting	
ping storage_system_IP_address (from host console) ping host_IP_address (from storage system console)	Verify basic network connectivity between storage system and host.
license (from storage system console)	Verify that iSCSI is licensed on the storage system.
ifconfig (from storage system console and host console)	Verify that network parameters are compatible on host and storage system, especially duplex and jumbo frame (mtu) settings.
If using jumbo frames, verify that jumbo frames are configured on all switches between the host and storage system.	
If using CHAP, verify correct user names and passwords. The incoming values on the host are the outgoing values on the storage system. The outgoing values on the storage system are the incoming values on the host.	
Check the log file on the storage system (/etc/messages) 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 /opt/netapp/santools/linux_info and /opt/netapp/santools/filer_info scripts on the host to collect information to help diagnose the problem.	
Note: SLES 9 is not supported with Data ONTAP 6.4.x	
Resources	
http://now.netapp.com	All NetApp documentation and software downloads.
http://now.netapp.com/NOW/knowledge/docs/san/fcp_iscsi_config/iscsi_support_matrix.shtml	iSCSI support matrix.