IBM® System Storage™ N series
Windows® Host Utilities 6.0.2 Quick Reference Guide (7-Mode)

Service management commands	
fcp {**start**|**stop**} **iscsi** {**start**|**stop**}	Starts or stops the Fibre Channel or iSCSI service.
fcp show initiator **iscsi initiator show**	Displays information about initiators connected to the target.
fcp show cfmode	Displays the cfmode value for FC connections. The single_image setting is required.
Target and session management commands	
iscsi interface	Manages network interfaces used for iSCSI traffic.
fcp config	Manages Fibre Channel interfaces.
iscsi session show [**-v**] [*session_num*]	Shows status of one session, or for all sessions if no session number is specified.
iscsi tpgroup create [**-f**] [**-t** *tpgtag*] *tpgroup_name* **[***interface …***]**	Creates user-defined target portal group. Needed for multiple iSCSI connections per session. All connections for a session must use interfaces in the same target portal group.
portset create -f *name stor_sys*:*port*	Creates a port set. Add the port set to an igroup to limit which FC ports can be used to access LUNs mapped to that igroup.
iSCSI authentication (CHAP) management commands	
iscsi security add -i *initiator* **-s CHAP -p** *inpassword* **-n** *inname* [**-o** *outpassword* **-m** *outname*]	Defines authentication method for specified initiator. For *initiator*, use node name in iqn format. Note that *inname* on storage system is set to outgoing user name on host. Use **-o** and **-m** for mutual CHAP. The *inpassword* and *outpassword* cannot be the same.
iscsi security default -s CHAP -p *inpassword* **-n** *inname* **[-o** *outpassword* **-m** *outname***]**	Sets the default authentication method, user names, and passwords for all initiators not specifically configured.
Target status, performance, and troubleshooting commands	
{**fcp**|**iscsi**} **status**	Displays current status of the Fibre Channel or iSCSI service.
{**fcp**|**iscsi**} **stats**	Displays performance statistics for the protocol.
ifstat [**-z**] **-a** | *interface*	Displays device-level statistics for the specified network interface. Use **-z** to clear statistics. Use **-a** to display statistics for all interfaces.
sysstat {**-i**|**-f**} [*interval*]	Displays iSCSI (**-i**) or Fibre Channel (**-f**) performance statistics. *interval* is integer reporting interval in seconds; default is 15 seconds.
lun stats [**-z**] [**-o**] [**-a**|*lun_path*]	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	
lun setup	Interactive LUN creation. Combines the **lun create**, **igroup create**, **igroup add**, and **lun map** command functions.
lun create -s *size* **-t** *type lun_path*	Manual LUN creation. Enter *size* as an integer with one of the following suffixes: **m** (megabytes), **g** (gigabytes), or **t** (terabytes). Enter *type* as **windows** (MBR disk for Windows Server 2003, XP, or Vista), **windows_gpt** (GPT disk for Windows Server 2003), **hyper_v** (Data ONTAP 7.3.1 and later LUNs containing VHDs), or **windows_2008** (all other Windows Server 2008 or Windows Server 2012 disks). See *Installation and Setup Guide* for details.
igroup create {**-i**|**-f**} **-t windows** [**-a** *portset*] *initiator_group* [*node…*]	Creates a new iSCSI (**-i**) or Fibre Channel (**-f**) initiator group. Specify the initiator WWPNs or iSCSI node name. Use the optional port set to limit which FC ports access LUNs mapped to this igroup.
igroup show [*initiator_group*]	Displays the initiator nodes in the specified initiator group. Omit *initiator_group* to see all igroups.
lun map *lun_path initiator_group* [*lun_id*]	Makes the specified LUN accessible to initiators in the specified igroup. Specify an optional LUN ID, or default to the lowest available value. You can map a LUN to more than one igroup (for example, to enable FC and iSCSI access to the same LUN).
lun show [**-v**|**-m**|**-c**] **[all**|**mapped**|**offline**|**online**|**unmapped**|*lun_path*|**-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**] *lun_path…*	Destroys the specified LUNs and all their data. Use **-f** if LUN is in use.
General notes	
The FilerView® GUI (Data ONTAP 8.0 and earlier) or the System Manager software can also be used to manage your storage system. See the Data ONTAP *System Administration Guide* for your version of Data ONTAP software for more information.	
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). It's best to use the host name for the *anything* portion of the initiator node name.	

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Setting required Windows registry values

Run the Host Utilities installation program. After the Host Utilities are installed, you can use the **Repair** option of the installation program if you install a new HBA, remove a DSM, or make other configuration changes. Alternatively, if Data ONTAP DSM for Windows MPIO is installed, you can run the **Repair** option of the DSM installation program.

Microsoft iSCSI Initiator GUI

`Start > Control Panel > iSCSI Initiator` (Windows Server 2003 and Windows Server 2008) **`Server Manager > Tools > iSCSI Initiator`** (Windows Server 2012)	Launches the Initiator GUI used to manage the iSCSI Initiator.

iSCSI GUI tabs

`General` (Windows Server 2003 and Windows Server 2008)	View or change node name and set CHAP password.
`Configuration` (Windows Server 2012)	View or change node name and set CHAP password.
`Discovery`	Add storage systems and iSNS servers.
`Targets`	Log in to and configure targets (storage systems).
`Persistent Targets` (Windows Server 2003) **`Favorite Targets`** (Windows Server 2008 and Windows Server 2012)	Lists targets configured for automatic login after host reboot. The actual configuration is done on the Targets tab.
`Bound Volumes/Devices` (Windows Server 2003) **`Volumes and Devices`** (Windows Server 2008 and Windows Server 2012)	View and create persistent bindings for applications that use iSCSI LUNs.
`RADIUS`	Configure authentication using a RADIUS server. Requires Data ONTAP 8.0 or later.

Displaying Fibre Channel world wide port names (WWPNs)

For all Windows Server hosts, you can use the HBA manufacturer's management software. For Windows Server 2003, you can use **`fcinfo/ports/details`** from the host console. The **fcinfo** program is available for download from Microsoft. For Windows Server 2008, you can use **`Start > Administrative Tools > Storage Explorer`**.	Displays the WWPN and other information about each FC HBA in the Windows Server host.

Accessing LUNs using the native Windows stack

`Start > Administrative Tools > Computer Management`, then select **`Storage > Disk Management`** (Windows Server 2003 and Windows Server 2008) **`Server Manager > Tools > Computer Management`**, then select **`Storage > Disk Management`** (Windows Server 2012)	Opens the Disk Management tool. Note that LUNs appear in this tool only when the iSCSI session is active.
`Action > Rescan Disks`	In Disk Management, discovers new LUNs.

Accessing LUNs using Veritas Storage Foundation™

`Start > All Programs > Symantec > Veritas Storage Foundation > Veritas Enterprise Administrator`	Opens the Veritas Enterprise Administrator. LUNs appear only when the FC/iSCSI session is active.
`Actions > Rescan`	In Veritas Enterprise Administrator, discovers new LUNs.

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 FCP and iSCSI are licensed on the storage system.
`ifconfig -a` (from storage system console) **`ipconfig /all`** (from host console)	Verify that network parameters, especially duplex and jumbo frame (mtu) settings, are compatible on the host and storage system.

If using Ethernet jumbo frames for iSCSI, verify that jumbo frames are configured on all switches between the host and storage system.

Verify Fibre Channel switch zoning between HBAs and storage system. Each HBA port should be zoned to a port on both controllers.

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. See the Microsoft iSCSI initiator release notes or online help for the password rules; do not use hexadecimal passwords.

Check the log file on the storage system (/etc/messages) for error messages.

View IBM support information at: www.ibm.com/storage/support/nseries

Resources

IBM product information	www.ibm.com/storage/support/nseries
IBM N series interoperability matrix	www.ibm.com/systems/storage/network/interophome.html
Contact IBM Support	**1-800-IBM-SERV**

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