Readme

SANsurfer Fibre Channel and Fibre Channel over Ethernet (FCoE) Adapter Command Line Interface (CLI)

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1. Package Contents

SANsurfer Fibre Channel and Fibre Channel over Ethernet (FCoE) Adapter Command Line Interface (CLI) installation packages are available for the supported OS platforms:

File Name	Description
Windows:	
scli-1.7.3-bb.windows.exe	All supported Windows platforms
Solaris:	
scli-1.7.3-bb.sparc.Solaris.pkg.Z	Solaris SPARC
scli-1.7.3-bb.x86.Solaris.pkg.Z	Solaris x86
Mac:	
scli.1.7.3-bb.macosx.pkg.tgz	Mac OS X (Intel and PowerPC)
Linux:	

scli-1.7.3-bb.i386.rpm.gz	Linux and VMware (Intel x86, Intel 64, and AMD64)
scli-1.7.3-bb.IA64.rpm.gz	Linux (Intel IA64)
scli-1.7.3-bb.ppc64.rpm.gz	Linux (PPC64)

NOTE: The "bb" in the file names above represents the build number of the current software release.

2. Requirements

SANsurfer Fibre Channel and FCoE Adapter CLI requires the minimum hardware and software described in sections 2.1 and 2.2.

2.1 Hardware Requirements

SANsurfer Fibre Channel and FCoE Adapter CLI requires the following minimum hardware:

- One or more of the following QLogic Adapters:

  - QL*x*2*xxx* Fibre Channel Adapters

  - QL*x*8*xxx* Converged Network Adapters

- Single-processor or multi-processor server or workstation:

  - Pentium III with 450MHz or greater for Windows XP Professional, Windows 2000, Windows Server 2003, Windows Server 2008, Red Hat or SLES Linux, Solaris x86, or NetWare

  - Two 64-bit Intel or AMD-based 2.0GHz or greater with hardware assisted virtualization support for VMware ESX server

  - Power Mac G5 1.8MHz, Intel-based Xserve or Mac Pro or greater with 512MB memory

- Fibre Channel devices, such as disks and RAID subsystems. SANsurfer Fibre Channel and FCoE Adapter CLI supports most Fibre Channel devices. For a complete list of devices that support failover, see the QLogic SAN Interoperability Guide, available for download from the QLogic Web site:

  http://www.qlogic.com/Interoperability/Pages/Interoperability.aspx

  NOTE: Tape devices are shown as part of the configuration, but are not fully supported. (It only provides persistent binding and LUN masking for tape devices.)

- 256MB physical RAM required to run SANsurfer Fibre Channel Adapter Adapter CLI; running with less memory can cause disk swapping, which severely affects performance

- Video card capable of 256 colors and a screen resolution of 800x600 pixels required

- About 7MB disk space

2.2 Software Requirements

SANsurfer Fibre Channel and FCoE Adapter CLI requires the following minimum software:

- QLogic QLA2*xxx* drivers for your OS platform

- Administrative privileges to perform management functions

- One of the operating systems identified in the "OS Support" section

3. OS Support

SANsurfer Fibre Channel and FCoE Adapter CLI runs on the following OS platforms:

Operating Systems		
OS Name	**OS Type**	**Hardware Platform**
Windows 2000	32-bit	Intel x86, Intel 64, AMD64
Windows Server 2003	32-bit	Intel x86, Intel 64, AMD64
Windows Server 2003	64-bit	Intel IA64
Windows Server 2003	x64-bit	Intel 64, AMD64
Windows Server 2008	32-bit	Intel x86, Intel 64, AMD64
Windows Server 2008	64-bit	Intel IA64
Windows Server 2008	x64-bit	Intel 64, AMD64
Windows XP Professional	32-bit	Intel x86, Intel 64, AMD64
Windows XP Professional	x64-bit	Intel 64, AMD64
Windows Vista	32-bit	Intel x86, x64-bit Intel 64
Windows Vista	x64-bit	Intel 64, AMD64
OpenSolaris	32-bit, 64-bit	Intel x86, Intel 64, AMD64
OpenSolaris	32-bit, 64-bit	64-bit SPARC
Solaris 10 x86	32-bit, 64-bit	Intel x86, Intel 64, AMD64
Solaris 8/9/10 SPARC	32-bit, 64-bit	64-bit SPARC
Mac OS X (Panther, Tiger, Leopard)	32-bit, 64-bit	PowerPC, Intel
Red Hat RHEL AS/ES 5.*x*	32-bit, 64-bit	Intel x86, Intel IA64, Intel 64, AMD64
Red Hat RHEL AS/ES 4.*x*	32-bit, 64-bit	Intel x86, Intel IA64, Intel 64, AMD64
Red Hat RHEL AS/ES 3.*x*	32-bit, 64-bit	Intel x86, Intel 64, AMD64, Intel IA64
Novell SLES 11 SP*x*	32-bit, 64-bit	Intel x86, Intel 64, AMD64, Intel IA64
Novell SLES 10 SP*x*	32-bit, 64-bit	Intel x86, Intel 64, AMD64, Intel IA64
Novell SLES 9 SP*x*	32-bit, 64-bit	Intel x86, Intel 64, AMD64, Intel IA64
Novell SLES 8 SP*x*	32-bit, 64-bit	Intel x86, Intel 64, AMD64, Intel IA64
VMware ESX 4.*x*	64-bit	Intel 64, AMD64
VMware ESX 3.5.*x*	32-bit	Intel x86, Intel 64, AMD64

NOTE: For specific service packs (SP) and OS updates, refer to the descriptions where this software version is posted on the QLogic Web site:

http://support.qlogic.com/support/drivers_software.aspx

4. Supported Features

SANsurfer Fibre Channel and FCoE Adapter CLI provides a command line interface (CLI) that lets you easily install, configure, and deploy QLogic Fibre Channel Adapters. It also provides robust diagnostic and troubleshooting capabilities and useful statistical information to optimize SAN performance. This tool can only configure adapters on the local machine upon which SANsurfer is installed.

You can operate SANsurfer Fibre Channel and FCoE Adapter CLI in two modes:

- Interactive mode (menu-driven interface). This mode requires user intervention.
- Non-interactive mode (command line interface). Use this mode for scripting or when you just want to perform a single operation.

5. Using SANsurfer Fibre Channel and FCoE Adapter CLI

The following sections describe how to install, start, and remove SANsurfer Fibre Channel and FCoE

Adapter CLI:

5.1 Installing SANsurfer Fibre Channel and FCoE Adapter CLI

For detailed procedures, refer to the SANsurfer Fibre Channel Adapter CLI User's Guide.

TIP: On Linux, add the verify-options "--nodeps" to skip the dependency check when installing the distribution rpm package on a Novell SLES 8/9/10 IA64 system. For example:

```
#rpm -iv scli-x.xx.xx-xx.IA64.rpm --nodeps
```

5.2 Starting SANsurfer Fibre Channel and FCOE Adapter CLI

For detailed procedures, refer to the SANsurfer Fibre Channel Adapter CLI User's Guide.

5.3 Removing SANsurfer Fibre Channel and FCOE Adapter CLI

For detailed procedures, refer to the SANsurfer Fibre Channel Adapter CLI User's Guide.

NOTE: The uninstall process might leave behind specific files and directories. You must manually delete these files.

6. Additional Notes

The following sections provide additional information according to operating system (OS):

6.1 General (applies to all OSs)

Two different measurement formats are used when displaying the hard drive size: decimal (GB) and binary (GB). Both Linux and Windows show the correct number using their numeric format:

- Windows uses binary (numbers that are a power of 2).

- Linux uses decimal (numbers that are a power of 10).

For example:

- 2^{10} is 1,024. The closest decimal number is 10^3 or 1,000.

- 2^{20} is 1,048,576. The closest decimal number is 10^6 or 1,000,000.

- 2^{30} is 1,073,741,824. The closest decimal number is 10^9 or 1,000,000,000.

6.2 Windows

6.2.1 ConfigRequired Parameter

Under Windows, the ConfigRequired parameter in the registry dictates how the OS sees devices.

When ConfigRequired=0, both persistently-bound and new devices appear as enabled. This includes devices that might have been previously unconfigured using SANsurfer Fibre Channel and FCoE

Adapter CLI. You can set this parameter in the SANsurfer Fibre Channel and FCoE Adapter CLI Driver setting, "Present targets that are persistently bound plus any new target(s) found."

When ConfigRequired=1, only persistently-bound devices appear as configured. New devices or devices that were previously unconfigured using SANsurfer Fibre Channel and FCoE Adapter CLI appear as unconfigured. You can set this parameter in the SANsurfer Fibre Channel and FCoE Adapter CLI Driver setting, "Present target(s) that are persistently bound only."

NOTE: For the new Windows driver (version 8.2.0.10 and later), you must set the ConfigRequired parameter to 1 to prevent the OS from seeing unconfigured entries.

6.3 Solaris

On Solaris, the `qla_mp_config_required` parameter in the configuration file dictates how the OS sees devices. The `qla_mp_config_required` flag in the QLogic configuration file (`qla2x00.conf`) controls persistent binding of targets. The default configuration file that comes with the QLogic driver does not have an entry for this flag. An entry for this flag appears in the configuration file only after saving the target configuration data with SANsurfer Fibre Channel Adapter CLI.

By default, SANsurfer Fibre Channel and FCoE Adapter CLI sets the `qla_mp_config_required` flag to one. When this flag is set to one, the driver reports only target devices that are persistently bound in the configuration file to the OS. The driver does not report any new or unconfigured targets to the OS. In other words, the default behavior for this flag is "Persistent Targets Only."

When the `qla_mp_config_required` flag is set to zero, the driver reports both persistently bound and new targets to the OS. This is equivalent to "Persistent Plus New."

NOTES:

- SANsurfer Fibre Channel and FCoE Adapter CLI does not read the value of the persistent-binding-configuration parameter from the configuration file.

- The QLC driver does not support persistent binding or failover configuration.

- The QLC driver does not support selective LUN configuration.

7. Known Issues and Workarounds

The following sections describe the known issues and workarounds (if any) for SANsurfer Fibre Channel and FCoE Adapter CLI according to operating system:

Known Issue	Workaround
Windows	
Unsigned Windows Driver Update: When performing a driver update on unsigned Windows drivers, the OS displays a confirmation dialog box. The dialog box appears in front of SANsurfer (focus).	None
Driver Parameters Revert to their Default Values: When updating the Windows driver using SANsurfer Fibre Channel Adapter CLI, the driver parameters revert to their default values: Present targets that are persistently bound plus any new target(s) found	Bind by worldwide port name (WWPN).
Windows Server 2008 and Vista Installation Limits: SANsurfer Fibre Channel and FCoE Adapter CLI installation fails on Windows Server 2008 and Vista if you are not logged in as an administrator.	Right-click the installation setup file, and from the shortcut menu, click "**Run as Administrator**."
Adapter Parameters/Templates and Flash Updates on	You must update the host to the latest QLogic driver.

8Gb Adapters with Windows Server 2008 Inbox Driver Version 9.1.4.5 or 9.1.4.6: SANsurfer Fibre Channel and FCoE Adapter CLI does not support adapter parameters and Flash updates on 8Gb adapters if running the Windows Server 2008 inbox driver version 9.1.4.5 or 9.1.4.6	
Linux	
Information Left After Deleting Persistent Configuration: Deleting the persistent configuration does not remove the `options qla2x00 ConfigRequired=1 ql2xuseextopts=1` string from the /etc/modules file.	To fully delete all persistent data, you must manually edit this file.
Non-Failover Driver: Under Linux, when running with a non-failover driver, the `ConfigRequired=1` parameter is ignored. Consequently, if it does not find a persistent binding entry, the driver automatically configures the device. When running with a failover driver, the `ConfigRequired=1` parameter indicates that a device must have the matching config entry for it to be configured by the driver.	Do one of the following: - Make sure there is a persistent binding entry - Make sure the device has a matching config entry
Features Not Available When Running IOCTL Module Driver: When running the IOCTL module driver on a Linux OS, the following features are not available: - Persistent binding - Selective LUN - Adapter port statistics - Driver settings - Host topology	None
Features Not Available when Running Sysfs Inbox Driver: When running the Sysfs Inbox Driver on a Linux OS, the following features are not available: - Persistent binding - Selective LUN - Adapter port statistics - Driver settings - Host topology - Link Status - Loopback test	None
VMware Driver: When running the VMware driver on a VMware OS, the following features are not available with virtual ports: - Adapter parameters settings - Adapter parameters restore default - Flash update from file - Flash save to file - Adapter parameters update from file - Adapter parameters save to file - Adapter parameters update from templates - iiDMA (intelligent interleaved direct memory access) settings - Boot device settings - Driver settings - Adapter beacon	None
Features Not Available When Running Windows Driver with NPIV Enabled: When running the driver with NPIV enabled on Windows, the following features are not available with virtual port: - Adapter parameters settings - Adapter parameters restore default - Flash update from file - Flash save to file - Adapter parameters update from file - Adapter parameters save to file - Adapter parameters update from templates	None

- Target link speed - Boot device settings - Driver settings - Adapter beacon - Target / LUN list	
Warning Messages on Startup: When launching SANsurfer Fibre Channel and FCoE Adapter CLI, the following warning messages may appear on the console: - qla2*xxx* 0000:01:02.0: Unable to read SFP data (102/a0/0). - qla2*xxx* 0000:01:02.0: Unable to read SFP data (102/a0/0). - qla2*xxx* 0000:01:02.1: Unable to read SFP data (102/a0/0). - qla2*xxx* 0000:01:02.1: Unable to read SFP data (102/a0/0). - qla2*xxx* 0000:01:02.0: Unable to read SFP data (102/a0/0). - qla2*xxx* 0000:01:02.1: Unable to read SFP data (102/a0/0). - qla2*xxx* 0000:01:02.0: Unable to read SFP data (102/a0/0). The driver displays these messages when it is unable to read SFP data. You can safely ignore them.	None
Manually Starting IOCTL Module on Red Hat 4.x Systems: On Red Hat 4.x systems, an input/output control (IOCTL) module is used to communicate between SANsurfer and the driver.	If you are using an earlier version of SANsurfer (prior to 1.7.1.b26), you must manually start the IOCTL module. After installing but before starting SANsurfer, execute the following command: `# modprobe -a qioctlmod`
Solaris	
Slow Startup in Interactive Mode with Serial Console Server: On Solaris, when launching SANsurfer Fibre Channel Adapter CLI in interactive mode from a Telnet session using a serial console port login, SANsurfer Fibre Channel and FCoE Adapter CLI takes a long time to start.	To resolve the issue, add the "`int`" flag to the command used to start the interactive mode. For example: `#scli int`
Stale Semaphore Left Behind: During normal operation of SANsurfer Fibre Channel Adapter CLI on Solaris, a stale semaphore may be left behind, causing all tools (SANsurfer Fibre Channel Adapter Manager and SANsurfer Fibre Channel and FCoE Adapter CLI) to fail on load.	Manually remove the following two files: */var/tmp/.SEMD* */var/tmp/.SEML*
FCode/BIOS Update Not Available with Sun-branded 2Gb Adapters: SANsurfer Fibre Channel and FCoE Adapter CLI does not support FCode/BIOS update with Sun-branded 2Gb Adapters.	None
Mac OS X	
Adapter Instance Number Changes at Reboot: With Mac OS X, the adapter instance number may not be the same as the current number after the next reboot. SANsurfer Fibre Channel and FCoE Adapter CLI does not accept the adapter number as a valid input and will abort the command.	None **Tip**: When writing scripts, use the adapter WWPN instead of the adapter number.
Unable to Save Configuration: Under Mac OS X, non-root users with admin privilege cannot save Target Persistent Binding or Selective LUN configuration.	Use the "`sudo`" command. This allows you to run SANsurfer as the superuser or another user. For example: `#sudo scli [options]` By default, sudo requires that users authenticate themselves with a password. **NOTE:** By default, this is the user's password, not the root password.
VMware ESX	

Flash Update/Save and NVRAM Issues on 8Gb Adapters: Flash update/save and NVRAM restore default operations are disabled on 8Gb adapters with the VMware inbox driver.	None
Others	
Port Incorrectly Displayed in Adapter in Topology: In specific switch-zoning configurations, an attached port may appear in the topology as an adapter when it is not actually an adapter.	None

8. Contacting Support

Please feel free to contact your QLogic approved reseller or QLogic Technical Support at any phase of integration for assistance. QLogic Technical Support can be reached by the following methods:

Web: http://support.qlogic.com

E-mail: support@qlogic.com

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