

# Brocade 6510 Switch, DCX 8510 Backbone Switch, and Network Advisor Software

Release Notes for Oracle Storage Area Networks

E27089-01

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Read this document to be aware of issues or requirements that can affect the installation and operation of the Brocade 6510 Fibre Channel switch, Brocade DCX 8510 Backbone, and Brocade Network Advisor management software in an Oracle storage area network (SAN).

## Product Features

This section summarizes the key characteristics of the following products:

- [Brocade 6510 Fibre Channel Switch](#)
- [Brocade DCX 8510-8/8510-4 Backbone Switches](#)
- [Brocade Network Advisor](#)

## Brocade 6510 Fibre Channel Switch

The Brocade 6510 Fibre-Channel switch introduces 16-Gbps Fibre Channel support in a compact, non-director class switch. It is suited for a variety of SAN environments.

The Brocade 6510 offers the following features and capabilities:

- 1U form factor
- 24, 36, or 48 auto-sensing, 16-Gbps ports in a single domain
- Ports on Demand scaling
- 2-, 4-, 8-, and 16-Gbps, auto-sensing, Fibre-Channel switch and router ports
- 10-Gbps manual set capability on FC ports with optional 10-Gigabit FCIP/Fibre Channel license
- In-flight, data compression and encryption on up to two ports for a combination of security and efficient link utilization
- Virtual Fabric support to improve isolation between different VFs
- Fibre Channel Routing (FCR) service for improved scalability and fault isolation (with optional Integrated Routing license)
- Ready for use with FICON, FICON Cascading, and FICON Control Unit Port
- Optimal bandwidth utilization and load balancing: the licensable Inter-Switch Link (ISL) Trunking can combine up to eight 2-, 4-, 8-, or 16-Gbps ports into a single, logical ISL with a speed of up to 128 Gbps (256 Gbps full duplex)
- Support for Access Gateway configuration and virtualization of server ports connected to the fabric core

- 10G Fibre Channel integration on the same port provides for DWDM metro connectivity on the same switch (first eight ports only)
- Brocade EZSwitchSetup wizard makes SAN configuration a three-step, point-and-click task
- Real-time power monitoring down to the switch level
- 800-nanosecond port-to-port latency through the use of cut-through frame routing at 16 Gbps.

## **Brocade DCX 8510-8/8510-4 Backbone Switches**

The Brocade DCX 8510-8 and DCX 8510-4 are industry-leading, enterprise-class backbone switches that combine highly robust platforms with breakthrough performance, scalability, and energy efficiency. They are designed to increase business agility by adapting to dynamic growth and change, by providing high-availability access to information, and by reducing infrastructure and administrative costs.

Key features of the Brocade DCX 8510 Backbone switches include:

- Support for high density SAN configurations in a reduced footprint: up to 384 16-Gbps external ports per chassis in a DCX 8510-8 or up to 192 in a DCX 8510-4.
- 2-, 4-, 8-, and 16-Gbps, auto-sensing, Fibre-Channel ports
- Support for the [FC16-48 Fibre-Channel Port Blade](#) and [FX8-24 FCIP Extension Blade](#)
- Universal ports that self-configure as E\_Ports, F\_Ports, EX\_Ports and M\_Ports (10-Gbps ports are configured as E\_Ports only)
- In-flight data encryption, decryption, and data compression through 16-Gbps port blades
- Trunking technology that groups up to eight ports to create high-performance, 128-Gbps Inter-Switch Links (ISLs)
- Support for 4x16-Gbps, quad SFP (QSFP) inter-chassis links (ICLs) connecting up to six chassis
- Diagnostic port (D\_Port) functionality
- Redundant and hot-swappable control processor blades, core switch blades, power supplies, blower assemblies, and WWN cards for high availability non-disruptive software upgrades.

### **FC16-48 Fibre-Channel Port Blade**

Key features of the Brocade FC16-48 port blade include:

- Forty-eight 16-Gbps Fibre-Channel ports
- Provision for manually configuring the first eight Fibre-Channel ports for 10-Gbps Fibre-Channel SFP transceivers (the 10-Gbps Ethernet SFPs used on the FX8-24 FCIP blade are not compatible)
- Support for in-flight data encryption, decryption, and compression.

### **FX8-24 FCIP Extension Blade**

Key features of the Brocade FX8-24 extension blade include:

- Twenty-four 10-Gbps ports

- Fibre-Channel over Internet Protocol (FCIP): overcomes the distance limitations of native Fibre-Channel connections and extends your SAN fabric to any device that can be reached via your IP infrastructure
- 10-Gbps Ethernet SFP transceivers (the 10-Gbps Fibre-Channel SFPs used with manually configured 10-Gbps ports on FC16-48 port blades are not compatible).

## Brocade Network Advisor

Brocade Network Advisor provides the industry's first unified network management solution for data, storage, and converged networks. It supports Fibre Channel Storage Area Networks (SANs), including 16-Gbps platforms, Fibre Channel over Ethernet (FCoE) networks, Layer 2/3 IP networks (including those running Brocade VCS™ technology), wireless networks, application delivery networks, and Multiprotocol Label Switching (MPLS) networks for service providers.

Key features of Brocade Network Advisor include:

- The interface provides an at-a-glance summary of all discovered Brocade devices and third-party IP devices, including inventory and event summary information that can identify problem areas and prevent network downtime.
- Role Based Access Controls (RBAC) allow flexible definition of administrator responsibilities, so that privileges can be selectively assigned to administrators of SANs and IP-based data networks.
- Centrally managed Command Line Interface (CLI) configuration templates allow consistent administration of one or more IP devices.
- A Device Configuration wizard easily configures and manages dynamically updated groups of devices from software images to multi-switch management, including Power over Ethernet (PoE) management and Virtual LAN (VLAN) configuration.
- The MPLS Manager provides comprehensive management of Multiprotocol Label Switching (MPLS) services.
- The interface supports centralized management of Brocade application delivery switches, Virtual IP (VIP), SSL certificates, and Global Server Load Balancing (GSLB).

## Security

Security is a core feature of the Brocade 6510 Fibre Channel switch, Brocade DCX 8510 Backbone, and Brocade Network Advisor software. A comprehensive security framework supports RADIUS and TACACS+, Fibre Channel Security Protocol (FC-SP), Secure File Transfer Protocol (SFTP), Secure Shell (SSH) Protocol, and Simple Network Management Protocol Version 3 (SNMP v3) with Advanced Encryption Standard (AES) data encryption, hardware-enforced zoning, and access-control lists (ACLs).

## Required Firmware Levels

The Brocade 6510 switch and DCX 8510 Backbone switch require Brocade Fabric Operating System (FOS) 7.x or higher. See the Fabric Operating System (FOS) release notes for a matrix showing the firmware levels that can run on connected switches.

Supported firmware and updates are available from [Oracle Product Support](#).

## Management Interfaces

Consult the *Brocade 6510 Hardware Reference Manual*, *Brocade DCX 8510-4 Backbone Hardware Reference Manual*, or *Brocade DCX 8510-8 Backbone Hardware Reference Manual* for a full explanation of the management interfaces available for your equipment. These documents are available directly from the Brocade Resource Center at:

<http://www.brocade.com/products/all/switches/product-details/6510-switch/>

<http://www.brocade.com/products/all/san-backbones/product-details/dcx8510-backbone/>

<http://www.brocade.com/products/all/management-software/product-details/network-advisor/>

## Supported SAN Fabric Configurations

Oracle supports the Brocade 6510 switch and DCX 8510 Backbone switch when used with up to 24 switches in a homogeneous fabric, when used with 2G switches in the same fabric, and with 16-, 10-, 8-, 4-, and 2-Gb Inter-Switch Links between Brocade switches.

## Supported Platforms and Operating System Software

Oracle supports the Brocade 6510 switch, DCX 8510 Backbone switch, and Network Advisor software with the following combinations of operating system and platform:

- Oracle Solaris 11 on SPARC and x64 platforms
- Oracle Solaris 10 on SPARC and x64 platforms
- Oracle Linux 5 and 6 (UEK and Standard Kernel) on IA32 and AMD 64 platforms
- Microsoft Windows 2003 Server on IA32 and AMD64 platforms
- Microsoft Windows 2008 Server on IA32 and AMD64 platforms
- Red Hat Enterprise Linux RHEL 4.x and 5.x on IA32 and AMD64 platforms
- SuSE Linux Enterprise Server 10 and 11
- Hewlett-Packard HP/UX versions 11.23 and 11.31
- IBM AIX versions 5.3 and 6.1
- IBM z/OS

## Supported Host Bus Adapters (HBAs)

Oracle supports the Brocade 6510 switch and DCX 8510 Backbone switch with the following host bus adapters:

- SG-XPCIE1FC-QF4, SG-XPCIE2FC-QF4
- QLogic 2460/2462, SGX-PCI1FC-QF4, SG-XPCI2FC-QF4
- SG-XPCI1FC-EM4-Z, SG-XPCI2FC-EM4-Z
- Emulex LP11000/11002-S
- SG-XPCIE1FC-EM4, SG-XPCIE2FC-EM4
- Emulex Lpe11000/Lpe11002
- SG-XPCIE2FC-QB4-Z, QLogic QEM2462

- SG-XPCIE1FC-QF8-Z/SG-XPCIE2FC-QF8-Z
- SG-XPCIE1FC-EM8-Z/SG-XPCIE2FC-EM8-Z
- SG-XPCIE2FC-EB4-Z
- SG-XPCIE2FC-QB4-Z
- SG-XPCIE2FCGBE-E-Z
- SG-XPCIE2FCGBE-Q-Z
- SG-XPCIEFCGBE-E8-Z
- SG-XPCIEFCGBE-Q8-Z
- SG-XEMFCOE2-Q-SR, SG-XPCIEFCOE2-Q-SR
- SG-XEMFCOE2-Q-TA, SG-XPCIEFCOE2-Q-TA
- A6826
- AB378A/AB379
- IBM Feature Code 6228
- IBM Feature Code 6239
- IBM Feature Code 5758/9 4G

Once testing is complete, 16-Gb initiators will be supported as well.

## Supported Application Software

Oracle supports the Brocade 6510 switch, DCX 8510 Backbone switch, and Network Advisor software with the following data protection applications:

- Oracle Solaris Cluster 3.3
- Oracle Secure Backup 10.x
- Symantec Net Backup 6.5.x, 7.x
- Enterprise Backup Manager 7.3, 7.6.x
- IBM Tivoli Storage Manager 5.5.6, 6.x

## Supported Storage Systems

Oracle supports the Brocade 6510 switch, DCX 8510 Backbone switch, and Network Advisor software with the following [Disk Arrays](#), [Tape Libraries](#), and [Tape Drives](#):

### Disk Arrays

- Oracle Sun 2540 and 2540M2
- Oracle Sun 6180
- Oracle Sun 6580
- Oracle Sun 6780
- StorageTek FLX380
- Sun StorEdge 6540

## Tape Libraries

- Oracle StorageTek SL8500
- Oracle StorageTek SL3000
- Oracle StorageTek SL500
- Oracle StorageTek L180/L700j/L1400M

## Tape Drives

Oracle supports the Brocade 6510 switch, DCX 8510 Backbone switch, and Network Advisor software with the tape drives and interfaces listed below.

### FICON

- Oracle StorageTek 9840C and 9840D FICON
- Oracle StorageTek 9940B FICON

### Fibre-Channel (Full-Fabric)

- Oracle StorageTek 9840D
- Oracle StorageTek T10000A, T10000B, and T10000C
- IBM and Hewlett-Packard LTO Gen-3, Gen-4, and Gen-5

## Oracle Product Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

## Additional Documentation

Full product documentation is available directly from the Brocade Resource Center. See:

<http://www.brocade.com/products/all/switches/product-details/6510-switch/>

<http://www.brocade.com/products/all/san-backbones/product-details/dcx8510-backbone/>

<http://www.brocade.com/products/all/management-software/product-details/network-advisor/>

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