

Connectrix DS-16B2

The DS-16B2 (Brocade SilkWorm 3800) Departmental Switch is a 16-port Fibre Channel gigabit switch that supports link speeds up to 2 Gb/s. The DS-16B2 is compatible with the DS-16B/DS-8B product family, and can operate as a single-switch fabric or in a multi-switch fabric.

The DS-16B2 is one rack unit (1U) in height, has an air-cooled chassis, and can be set up as a stand-alone unit or mounted in a 19-inch rack.

[E-Lab Navigator](#) lists specific versions of supported firmware, as well as fabric topology constraints associated with the DS-16B2.

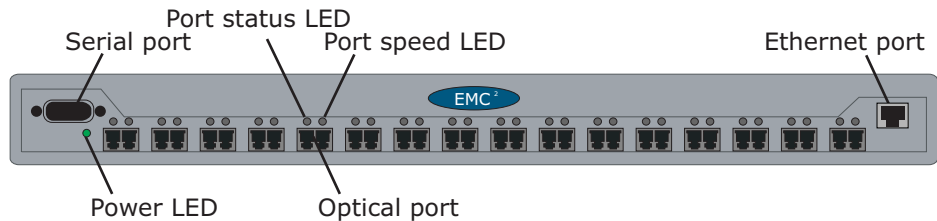


Figure 43 Connectrix DS-16B2

Key features

Connectivity features include:

- ◆ 16 optical ports, compatible with small form factor pluggable media (SFPs).
 - Switch is capable of 2 Gb/s.
 - Ports are self-configuring, and are capable of individually becoming a fabric-enabled port (F_Port) or an expansion port (E_Port).
 - Each port can automatically negotiate to the highest common speed of all devices connected to the port.
- ◆ Optional *trunking* capability between interconnected DS-16B2 ports.
 - Allows up to four ISL connections (E_Ports) between two DS-16B2 switches to be merged into one link.
 - Provides up to 8 Gb/s between DS-16B2 switches.

- ◆ One RS-232 serial port (DB-9 connector) on the front panel.
- ◆ One IEEE-compliant RJ-45 connector on the front panel for use with 10/100 Mb/s Ethernet.

Supported features

For the most up-to-date information on supported features, consult the *EMC Support Matrix* located on the [E-Lab Interoperability Navigator](#).

Unsupported features

For the most up-to-date information on unsupported features, consult the most current version of the appropriate Connectrix B Series release notes and product documentation on [Powerlink](#).

Management

The DS-16B2 can be managed using several remote and local access methods. Fabric management can be performed out of band using either ESNM, Telnet, or the Web by connecting to the 10/100BaseT Ethernet port on the switch. Additionally, Fabric Manager, a Client/Server-based application, can be installed on a PC with Ethernet access to the switch, and can be used to perform fabric management.

Management features include:

- ◆ Centralized configuration and management of fabric using Client/Server architecture
- ◆ Supported Clients: Windows 95, Windows 98, Windows NT 4.0, Windows 2000, Sun Solaris
- ◆ Out-of-band management available using ESN Manager, Telnet or Web-based tool
- ◆ Centralized management of switch
- ◆ 10/100 Mb Ethernet connections for out-of-band management
- ◆ Extensive centralized logging: event, audit, and session logs, as well as SNMP support

Reliability, availability, and serviceability

Reliability, availability, and serviceability features include:

- ◆ Error notification:
 - Automatic error notification using optional Fabric Watch utility
 - Automatic error notification sent through **syslogd**
 - Automatic error notification using Web Tool or Fabric Manager
 - MIB compliance: MIB-II system group, Interface group, and SNMP group, Fabric Element MIB, vendor-specific MIBs, standard generic traps, enterprise-specific traps
- ◆ Dual redundant power supplies
- ◆ Highly integrated, reliable, multifunction (ASIC) devices throughout the switch
- ◆ Fan, temperature, and port status easily viewable from GUI management tool
- ◆ Dynamic statistics display performance data for each online port through GUI or telnet CLI
- ◆ Event logs for streamlined troubleshooting and rapid error source identification

Trunking

Note: For a complete description of trunking, refer to the *Departmental Switch Model DS-16B2 Interswitch Link (ISL) Trunking User Guide*, available on [Powerlink](#).

The ISL trunking feature allows up to four ISL connections between two switches through an E_Port to merge logically into a single link and aggregate their throughput. For example, at 2 Gb/s speeds, a four-ISL trunk delivers an aggregated throughput of up to 8 Gb/s.

ISL trunking dynamically performs load sharing, at the frame level, across a set of available links between two adjacent switches to establish a trunking group. Ports that belong to a trunking group are called trunking ports. One port is used to assign traffic for the group, and is referred to as the trunking master.

The primary task of ISL trunking is to route data and edge switches that aggregate connections to servers and storage.

Benefits of trunking technology

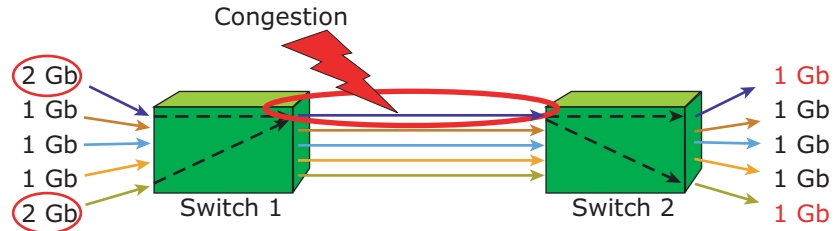


Figure 44 ISLs with no trunking

With no trunking:

- ◆ Single ISL is capable of 2 Gb/s maximum.
- ◆ During fabric build process, multiple nodes may be assigned the same ISL.
- ◆ In this case, two nodes pushing 4 Gb/s combined are competing for a single 2 Gb/s pipe.
- ◆ Congestion results.

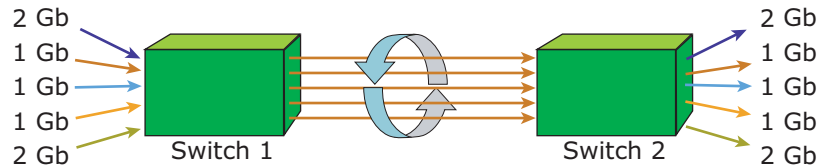


Figure 45 ISLs with trunking

With trunking:

- ◆ Trunking all four ISL creates one logical ISL.
- ◆ Fibre Channel frames from initiators and targets are sent across the first available ISL.
- ◆ Trunking relieves the congestion.
- ◆ Trunking utilizes bandwidth more efficiently.

Trunking restrictions

Note these restrictions:

- ◆ Ports must be capable of being configured as E_Ports.
- ◆ Ports must reside in contiguous four-port groups; for example: 0 through 3, 4 through 7, 8 through 11, 12 through 15.
- ◆ Ports must be set to run at the 2 Gb speed.
- ◆ The cable used in a trunking group should not be longer than 300 meters, and individual cable lengths in a trunking group must be within 30 meters of each other.

Further reading

Several related EMC Connectrix B manuals and release notes are available on [Powerlink](#), under Support > Technical Documentation and Advisories > Hardware/Platforms Documentation > Connectrix Directors and Switches.