Smartoptics Support Statement

May 2022

Rev 08

This letter of support provides a mechanism for Dell™ to offer the above designated Dell solution support according to the conditions outlined in this document:

Agreement

The following conditions/expectations exist:

- Any distance extension configuration that is beyond the specified scope of the Dell Letter of Support or the Dell Support Matrix requires a Dell Request for Price Quote (RPQ) submission by the Dell Sales team to Dell Engineering.
- The “Supported configurations” section details the Dell supported configurations. These configurations are supported according to the specified recommendations, revisions, and requirements as listed further in this document.

Ordering information

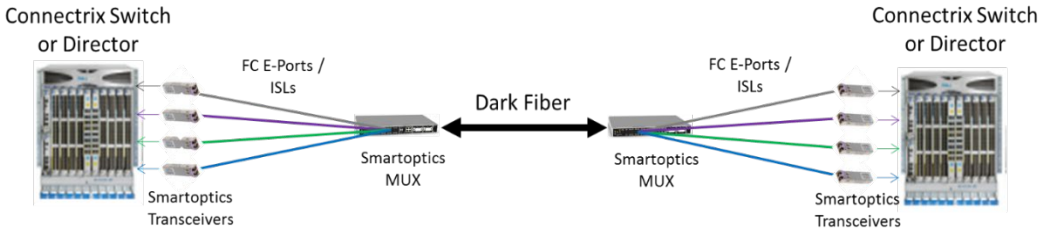
Smartoptics is a Dell Extended Technologies partner. 32G and 16G optics and multiplexers supported with Connectrix switches and directors can be added directly to Dell quotes. Please contact your regional Extended Technologies rep for SKUs and ordering info.

Service and support

Dell does not provide direct field support for Smartoptics hardware. The term support within this document means that Smartoptics hardware has been tested to work in the switches and directors mentioned below and can be installed in these products. Support of the Smartoptics hardware is therefore limited to basic troubleshooting and directing the customer to contact Smartoptics. There are Smartoptics support options available for purchase with the Smartoptics hardware. Please contact your regional Extended Technologies rep for those services SKUs.

Configuration diagram

The following diagram shows an example of a typical Connectrix / Smartoptics deployment:



The configuration above depicts a single path dark fiber configuration. Although not always possible, it is highly recommended that the customer build out a highly available environment with redundancy consisting of:

- Minimum of two Fibre Channel switches or directors per location
- Minimum of two E_ports/ISLs per location
- Minimum of two Smartoptics muxes per location with redundant dark fiber paths

Supported configurations

This section outlines the supported Fibre Channel configurations. 10GE, 40GE, 100GE and 400GE configurations are also supported by Smartoptics but are outside the scope of this document. Please contact your regional Extended Technologies rep for those SKUs.

Supported distance extension devices

The supported configurations consist of the following two categories:

1. Transceivers
    - B-Series/Brocade Supported Transceivers

      The transceivers below are supported with Connectrix B-Series switches and directors. Note that only DWDM transceivers are supported.

Transceiver	Supported Switches and Directors	Supported Fabric OS Versions
32G-IR-DxxS-BR	DS-6610B, DS-6620B, DS-6630B, DS-7720B, ED-DCX6B (PB-DCX6-48P32G + SX6 blade), ED-DCX7B (PB-DCX7-FC64, PB-DCX7-FC32 blade + SX6 blade)	FOS 9.0.0a or higher
32G-IR-Dxxx-BR	DS-6610B, DS-6620B, DS-6630B, ED-DCX6B (PB-DCX6-48P32G + SX6 blade)	FOS 8.2.1c or higher
16G-ER-DxxS-BR2	DS-6610B, DS-6620B, DS-6630B, ED-DCX6B (PB-DCX6-48P32G + SX6 blade), ED-DCX7B (PB-DCX7-FC32 blade + SX6 blade)	FOS 9.0.1a or higher

16G-ER-Dxxx-BR2	DS-6505B, DS-6510B, DS-6610B, DS-6620B, DS-6630B, ED-DCX8510B (PB-DCX-48P16G blade), ED-DCX6B (PB-DCX6-48P32G + SX6 blade)	FOS 8.0.2d or higher (DS-6610B: FOS 8.1.0 or higher)
16G-ER-Dxxx-BR1	DS-6505B, DS-6510B, DS-6520B, ED-DCX8510B (PB-DCX-48P16G blade)	FOS 7.4.2c or higher
8G-ZR-Dxxx-BR1	DS-6505B, DS-6510B, DS-6520B, ED-DCX8510B (PB-DCX-48P16G blade)	FOS 8.0.2d or higher
8G-ER-Dxxx-BR1	DS-300B, DS-6505B, DS-6510B, DS-6520B, ED-DCX8510B (PB-DCX-48P16G blade)	FOS 7.4.2c or higher

Please note that the Connectrix B-Series 64 Gb/s capable DS-77xx switches are only supported with the 32G-IR-DxxS-BR optics. ED-DCX7B directors support the 32G-IR-DxxS-BR as well as the 16G-ER-DxxS-BR2 optics (PB-DCX7-FC32-SW blade only). For each of these optics ordered, a corresponding SO-LIC-SB-001 license also needs to be ordered. For example, if a customer requires two long distance ISLs between a DS-7720B switch and an ED-DCX7B director, the order might consist of two 32G-IR-D21S-BR and two 32G-IR-D22S-BR optics (4 total optics). As a result, four SO-LIC-SB-001 licenses must also be added to the order.

- Cisco Supported Transceivers

  Use these transceivers with Connectrix MDS Series switches and directors:

Transceiver	Supported Switches and Directors	Supported Fabric OS Versions
DS-8G-ZR xxxx	Cisco MDS 9148S Cisco MDS 9250i Cisco MDS 9396S Cisco MDS 24/10 Port SAN Extension Module Cisco MDS 9700 48-Port 16-Gbps Fibre Channel Switching Module Cisco MDS 48 Port 32 Gbps Fibre Channel Switching Module[1] Cisco MDS 9132T[2] Cisco MDS 9148T and MDS 9396T[3]	6.2(19) and later 8.2(1) and later
DS-8G-ZR-Cxx		
DS-8G-ZR-Dxxxx		
DS-16G-ER		
DS-16G-ER-Cxx		
DS-16G-ER-Dxxxx		
DS-32G-IR-Dxxxx		8.4(1a) and later

1. This module is supported starting from Cisco MDS NX-OS Release 8.2(1).

2. The Cisco MDS 9132T switch is supported starting from Cisco MDS NX-OS Release 8.2(1).

3. The Cisco MDS 9148T and MDS 9396T switches are supported starting from Cisco MDS NX-OS Release 8.3(1).

2. Multiplexers/Line system

   These devices fall into the following two categories:

   - DCP-M40
     This is an active DWDM line system. The product has 40 ports where the corresponding DWDM wavelengths will be connected. The DCP-M40 supports all protocols between 1-400G, The DCP-M comes in different flavors with the main difference being the reach (distance) of the product. The product provides monitoring capabilities of the optical signals it transports. Please see: https://www.smartoptics.com/products/open-line-systems/ for further details.
   - H-Series
     This is a high density passive WDM platform including CWDM and DWDM multiplexers/demultiplexers.
     Passive multiplexers will not extend the optical reach supported by the optics nor will it be possible to monitor the optical signal that passes through the product. Please see: https://www.smartoptics.com/products/multiplexers-oadms/ for further details.

Recommendations and restrictions

For every single Fibre Channel E_port / ISL, two SFPs are used at the local and remote Fibre Channel switch. It is mandatory that the SFPs on both local and remote switch – associated to the same E_port / ISL are identical in wavelength (i.e., same SFP part number and nano-meter spectrum/nm on both ends).

Smartoptics SFPs and multiplexers do not participate in extending bb-credits for Fibre Channel flow control. The bb-credits used for Fibre Channel flow control will be sourced from the Fibre Channel switch E_ports attached to Smartoptics SFPs/MUX devices. Verify that the physical distance and latency at the customer sites do not exceed the credit amounts/capabilities of the Fibre Channel switches. Fibre Channel switch bb-credit provisioning of the E_port may be required depending on the distance between sites.

If auto-negotiation fails, Fibre Channel link speeds may need to be hard-set across Fibre Channel switched E_ports attached to Smartoptics SFPs/MUX devices.

Consult Dell, Smartoptics, or Fibre Channel switch vendor documentation for assistance and further configuration guidance.

WAN protection

Although not recommended, an unprotected environment can pass Fibre Channel traffic. Dell will support an unprotected distance solution; however the

customer should understand the implications and risks of a non-HA configuration. (There would be no fault to Dell if related issues were to occur.).