

IBM® GDPS® Application Qualification support of the Ciena ONLINE Metro Multiservice Dense Wavelength Division Multiplexing (DWDM) and Ciena CN 2000 Storage Extension Platforms

International Business Machines Corporation and Ciena Corporation have successfully completed application qualification testing of the Ciena ONLINE Metro Release 7.1 Multiservice DWDM and Ciena CN 2000 Release 4.0, Storage Extension platform in the following IBM Parallel Sysplex® and Geographically Dispersed Parallel Sysplex™ (GDPS), IBM System/390® and zSeries® eServer™ environments:

- GDPS / “Peer-to-Peer Remote Copy” (PPRC) / ESCON®, synchronous copy solutions, up to the standard IBM 9037 Sysplex Timer® application distance of 40 km and Special Bid (Requires IBM RPQ 8P2263 or 8P2262) GDPS/PPRC application solutions of up to 100km.
- GDPS / PPRC / Fibre Channel, synchronous copy solutions, up to the standard IBM 9037 Sysplex Timer application distance of 40 km and Special Bid (Requires IBM RPQ 8P2262 or 8P2263) GDPS/PPRC application solutions of up to 100km.
- GDPS / “Extended Remote Copy” (XRC) / FICON®, asynchronous copy solutions, up to the standard application distance of 100km. Special Bid FICON Extended Distance Solutions (FEDS) are supported for applications distances of up to 300km (Ref. GDPS Application Limitations below).

Specific Ciena product hardware features and software release levels used during the testing evaluation follow:

- Ciena ONLINE Metro Multiservice DWDM Platform Product Release 7.1 features:
 - WCI-E2R (NXWCCxxQ), 1 port, 8Mbps – 200Mbps Data rate Card supporting IBM ETR, CLO and ESCON protocols.
 - WCI-AP (133-1WC1-A00), 1 Port, 100Mbps – 2.5Gbps Data rate Card supporting IBM ESCON, ISC1, ISC2, ISC3 Compatibility / Peer modes, 1G / 2G Fiber Channel, FICON (1G) and FICON Express (2G) protocols.
 - WCI-AF (NXWCCxxN), 1 port, 100 Mbps – 2.5Gbps Data rate card supporting IBM 1G / 2G Fiber Channel, FICON and FICON Express protocols.
 - ESMUX (NXMUXE12), 12 port, ONWAVE 12 x 200Mbps Data Rate Card supporting IBM ESCON protocol.
 - GRDM (NXMUXDE2), 2 port, ONWAVE 2 x 1Gbps Data Rate Card supporting Fiber Channel, FICON and FICON Bridge protocols.
- Ciena CN 2000 Storage Extension Product Release 4.0 for support of 4 port, full rate ESCON aggregation or 4 port sub rate aggregation of Fiber Channel, FICON and GbE protocols.

Qualification Results Summary:

The Ciena ONLINE Metro Multiservice DWDM and CN 2000 platform products met IBM Qualification criteria for support of the following IBM eServer zSeries GDPS Application Solution protocols:

- IBM 9037 Sysplex Timer® CLO links up to 40 km.
- IBM 9037 Sysplex Timer® ETR links up to 100 km.
- FICON® (1 Gbps) Single mode / Multimode fiber up to 300 km (Ref. GDPS Application limitations below)
- FICON Express (2 Gbps) Single mode / Multimode fiber up to 300 km (Ref. GDPS Application limitations below)
- ESCON® Multimode / Single mode fiber up to 100 km.
- ISC-1 (1 Gbps.) Single mode fiber up to 40 km.
- ISC-2 / HiPerLink (1 Gbps.) Single mode fiber up to 40 km.
- ISC-3 S/390 and zSeries “Compatibility Mode” 1 Gbps (Single Mode fiber) up to 40 km.
- ISC-3 zSeries “Peer Mode” 2 Gbps (Single Mode fiber) up to 100 km.

GDPS Application Limitations:

- IBM GDPS support is limited to Ciena product applications which utilize DWDM dark fiber networks. IBM GDPS eServer applications do not support SONET based networks.
- Effective channel data rates for FICON and FICON Express protocols are affected by extended distance applications in excess of 100 km. Ciena Optical amplifiers may also be required for distances in excess of 100 km.
- The Ciena CN 2000 is used to augment the Ciena ONLINE Metro for GDPS application protocols not including IBM InterSystem Channels (ISC) and Sysplex Timer ETR and CLO protocol links.

Ciena product compliance to product specifications, safety, regulatory agencies, industry Standards and truth in advertising is the sole responsibility of the Ciena Corporation.

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