IBM® GDPS® and Server Time Protocol (STP) Application Qualification support for Ciena 6500 Release 8.0 Packet-Optical Transport Platform.

International Business Machines Corporation and Ciena Communications Inc. have successfully completed application qualification testing of the Ciena 6500 Packet-Optical Transport Platform running software release level 8.0, for the following IBM Parallel Sysplex and Geographically Dispersed Parallel Sysplex™ (GDPS) IBM zEnterprise 196 (z196), IBM zEnterprise 114 (z114), IBM zEnterprise BladeCenter Extention (zBX), IBM System z10 (z10 EC, z10 BC) , IBM System z9 (z9 EC, z9 BC) environments:

- GDPS / Peer-to-Peer Remote Copy (PPRC) (Metro Mirror) using the following protocols:
  - FICON for Storage Access
  - FCP for mirroring
  - ISC-3 for coupling facility (CF) messaging
  - ISC-3 Peer Mode or 1x IFB for exchanging Server Time Protocol (STP) messages to provide synchronization of servers
- GDPS / Extended Remote Copy (XRC) (z/OS Global Mirror) using FICON for asynchronous remote copy
- zBX intraensemble data network (IEDN) extension using 10 Gigabit Ethernet interface (10 GbE)

Distances for the protocols supported for these GDPS applications are defined in the Qualification Results Summary below. For applications with distances greater than 100 km IBM RPQ 8P2263 or 8P2340 is required. Additional testing may be required to approve the RPQ if the application exceeds the actual distance tested noted in the table below with *.

Qualification Results Summary:
The Ciena 6500 Release 8.0 Packet-Optical Transport Platform met IBM Qualification criteria for protocols identified above.

Transport Interface	Description	Part Number	Protocols Supported	Supported Distances
SuperMux 10 Port SFP 10G DWDM	Multiplexer Optical TRansponder aggregating up to 10 1G, 5 2G or 2 4G signals	NTK535EAE5	1/2/4 Gbps FCP, 1/2/4 Gbps FICON, 1/2/4 Gbps ISL GbE	100km
SuperMux 24 Port I/O 1x XFP/10x SFP **	Multiplexer Optical TRansponder aggregating up to 10 1G, 5 2G or 2 4G signals	NTK535FAE5	1/2/4 Gbps FCP, 1/2/4 Gbps FICON, 1/2/4 Gbps ISL GbE	100km 135km*
Flex MOTR 8xSFP, 2xXFP **	Multiplexer Optical TRansponder aggregating 1G, 2G or 4G signals with flexible mappings	NTK531YAE5	1/2/4 Gbps FCP, 1/2/4 Gbps FICON, 1/2/4 Gbps ISL GbE ISC-3 Peer (1/2 Gbps)	100km 135km*
2x10G OTR with strong FEC and FC800/FC1200**	Dual client, dual line Optical TRansponder for transparent transport of 5G, 8G and 10G client services	NTK530PME5	1x IFB (5 Gbps) 8 Gbps FCP 8 Gbps FICON 8 Gbps ISL 10 Gbps ISL 10 GbE zBX IEDN extension	100km 135km*
eDC40G OCLD MetroHSRx 4xOC-192/STM-64/10GbE/OTU2/FC Mux OCI XFP	Multirate 4x10G Combiner with 40G Coherent Line	NTK539PFE5 NTK525CFE5	8 Gbps FCP 8 Gbps FICON 8 Gbps ISL 10 Gbps ISL 10 GbE zBx IEDN extension	100km 135km*

Photonic Trunk Switch (PTS)	Bi-directional optical splitter and switch module	NTUG75BAE5		
Enhanced Trunk Switch (ETS)	Optical splitter and switch module	NTUG90ANE5		

**Note: Fixed Dispersion Compensation Modules (P/N: 166-0103-90x) from the 4200 Advanced Services Platform can be used with the Ciena 6500 Packet-Optical Transport Platform running only these cards.

GDPS Application Limitations:

- IBM GDPS support is limited to DWDM product applications which utilize point-to-point fixed dark fiber network interconnect between sites.
- DWDM end-to-end networks, including DWDM components, transport elements and dark fiber links, must not exceed the equivalent of 900 meters differential delay between transmit and receive paths used for ISC-3 links or 1x IFB links transporting STP messages.
- Redundant Ciena 6500 platforms, utilizing two site-to-site fiber pairs are recommended for fiber trunk protection of ISC-3 and 1x IFB links used to transport STP messages.
- Fiber trunk protection schemes should be designed with two trunk switching modules and four site-to-site fiber pairs carried over at least two diverse routes. STP links should connect using different trunk switching modules to ensure that a fiber trunk protection event does not interrupt all timing links simultaneously

Results achieved were in a test environment under laboratory conditions. IBM does not make any representations or warranties regarding Ciena products. Ciena retains sole responsibility for its products, the performance of such products and all claims relating to such products, including without limitation its products' compliance with product specifications, industry standards and safety and other regulatory requirements.

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