IBM® GDPS® and Server Time Protocol (STP) Application Qualification support for the SmartOptics DCP Dense Wavelength Division Multiplexer (DWDM) Platform running software release 7.1.2

International Business Machines Corporation and SmartOptics Corporation have successfully completed application qualification testing of the SmartOptics DCP Dense Wavelength Division Multiplexer (DWDM) Platform running software release 7.1.2 for the following IBM Z®, Parallel Sysplex® and Geographically Dispersed Parallel Sysplex™(GDPS), IBM z16™ Model A01 (z16 A01), IBM z16™ Model A02 (z16 A02), IBM z16™ Rack Mount (z16 Rack Mount), IBM z15® Model T01 (z15 T01), IBM z15® Model T02 (z15 T02), IBM z14® (z14), IBM z14 Model ZR1 (z14 ZR1):

- GDPS using the following protocols:
    - 10G RoCE based Coupling Express® Long Reach (10G CE LR) for exchanging Server Time Protocol (STP) messages to provide synchronization of servers
    - For zHPF®, FICON, and Fiber Channel attachment, please see Broadcom Inc. qualification letters on Resource Link for support

Distances for the protocols supported for these GDPS applications are defined in the Qualification Results Summary below. Longer distances may be approved but require IBM RPQ –8P2981 (z16 A01, z15 T01, z14), 8P2781 (z16 A02, z16 Rack Mount, z15 T02, z14 ZR1). Additional testing may be required to approve the RPQ.

Qualification Results Summary:
The SmartOptics DCP Dense Wavelength Division Multiplexer (DWDM) Platform running software release 7.1.2 met IBM Qualification criteria for protocols listed in the table below.

SmartOptics DCP Dense Wavelength Division Multiplexer (DWDM) Platform running software release 7.1.2				
Module	**Description**	**Model**	**Protocols Supported**	**Supported Distance**
DCP-1610 + DCP-M40-PAM4-ER+[1]	DCP-1610: High density transponder module with ten independent transponders, running in either non-encrypted mode, or in encrypted mode with six encrypted ports DCP-M40-PAM4-ER+: DWDM open-line-system Card pair supports: 10 x 10G CE LR	DCP-1610 + DCP-M40-PAM4-ER+	10G CE LR	100km
DCP-1610 + DCP-M40-PAM4-ZR[1]	DCP-1610: High density transponder module with ten independent transponders, running in either non-encrypted mode, or in encrypted mode with six encrypted ports DCP-M40-PAM4-ZR: DWDM open-line-system Card pair supports: 10 x 10G CE LR	DCP-1610 + DCP-M40-PAM4-ZR	10G CE LR	100km

[1] The DCP-1610 needs to have the lasers forced on at all times on the client side.

GDPS Application Limitations:

• IBM GDPS support is limited to DWDM product applications which utilize point-to-point fixed dark fiber network interconnect between Parallel Sysplexes.

• 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 GDPS links for Server Time Protocol (STP) message passing (which includes 10G CE LR links).

• Fiber-based dispersion compensation units that have not been qualified by IBM are not supported for STP applications.

• Redundant DWDM platforms, utilizing two site-to-site fiber pairs over diverse routes, are recommended for fiber trunk protection of links used for STP message passing (10G CE LR). 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 SmartOptics products. SmartOptics 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.

The terms IBM Z, z16, z15, z14, Coupling Express, FICON, GDPS, Geographically Dispersed Parallel Sysplex, IBM and Parallel Sysplex are trademarks or registered trademarks of International Business Machines Corporation.

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Qualification Letter Version History:
• 03/27/2023: Initial Version
• 04/18/2023: Added support for z16 A02 and z16 Rack Mount