IBM® GDPS® Application Qualification support for the Padtec LightPad i1600G, SW Release 3.3.0 Dense Wavelength Division Multiplexer (DWDM) .

International Business Machines Corporation and Padtec S/A, have successfully completed application qualification testing of the Padtec LightPad i1600G DWDM Platform running software release 3.3.0, for the following IBM Parallel Sysplex and Geographically Dispersed Parallel Sysplex™ (GDPS) IBM zEnterprise 196 (z196), zEnterprise BladeCenter Extention (zBX), IBM System z10 (z10 EC, z10 BC), IBM System z9 (z9 EC, z9 BC)and IBM eServer zSeries 990 and 890 (z990, z890) environments:

- GDPS / Peer-to-Peer Remote Copy (PPRC) (Metro Mirror) using the following protocols:
    - ESCON or FICON for Storage Access
    - ESCON or FCP for mirroring
    - ISC-3 for coupling facility (CF) messaging
    - Sysplex Timer links (External Time Reference – ETR and Control Link Oscillator – CLO) for synchronization of servers
    - ISC-3 Peer Mode or 1x IFB for exchanging Server Time Protocol (STP) messages to provide synchronization of servers
    - zBX Extension over IBM's Intra Ensemble Data Network (IEDN)

- GDPS / Extended Remote Copy (XRC) (z/OS Global Mirror) using FICON for asynchronous remote copy.

Distances for the protocols supported for these GDPS applications are defined in the Qualification Results Summary below. For STP applications with distances greater than 100km, 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 below table with *.

Qualification Results Summary:

Padtec PN Descriptor		Description		Protocols Supported		Supported Distance
Network Management System Software 3.3.0						
T25DCxx-4BRESL Firmware 1.0		Transponder, 2,5G, 3R Multiprotocol		ETR, ESCON		100km
				CLO		40km
				1 Gbps / 2 Gbps FCP 1 Gbps / 2 Gbps FICON 1 Gbps / 2 Gbps ISL GbE		100km 200km*
T25DCxx-4BESL Firmware 1.0		Transponder, 2,5G, 2R Multiprotocol		ETR, ESCON		100km
				CLO		40km
				1 Gbps / 2 Gbps FCP 1 Gbps / 2 Gbps FICON ISC-3 Peer (1 Gbps / 2 Gbps) GbE		100km 200km*
TCX12-4D-A0 Firmware 1.0.0.0		Combiner 10G OTN 8:1 Multiprotocol		ESCON		100km
				1/2/4 Gbps FCP 1/2/4 Gbps FICON 1/2/4 Gbps ISL GbE ISC-3 Peer (1 Gbps / 2 Gbps)		100km 200km*
T100DCT-4BDASL Firmware 1.0.0		Transponder 10G, 3R Multiprotocol		1x IFB		100km
				1/2/4/8 Gbps FCP 1/2/4/8 Gbps FICON 1/2/4/8/10 Gbps ISL ISC3 Peer (1G/2G) GbE 10 GbE		100km 200km*

			zBX IEDN Extension	
T100DCT-4HTTU1L Firmware 4.1.3	Transponder 8,5G 850nm		FCP 8 Gbps 8 Gbps FICON 8 Gbps ISL	100km 200km*
T100DCT-4HTTU2L Firmware 4.1.3	Transponder 8,5G 1310nm		FCP 8 Gbps 8 Gbps FICON 8 Gbps ISL	100km 200km*
TM400-9x Firmware 3.0.2	Muxponder 40G OTN 4:1 Multiprotocol		FC 8 Gbps 8 Gbps FICON 8 Gbps ISL 10 GbE zBX IEDN Extension	100km 200km*
DCM17001A-25	80 Channel Dispersion Compensation Module			
DCM17001-60	40 Channel Dispersion Compensation Module			
OPS2–1AB Firmware 1.2.0	Optical Protection Switch Bidirectional Transmission in the Same Fiber, Bidirectional APS			50km**
OPS2–4AC Firmware 1.0.2	Optical Protection Switch Bidirectional APS			100km 200km*

** Implementation of the OPS2 – 1AB Optical Protection Switch requires all line-side connectors to be APC (Angle Polished Connectors).

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 Padtec Lightpad i1600G platforms, utilizing two site-to-site fiber pairs, are recommended for fiber trunk protection of ISC-3 peer mode Server Time Protocol (STP) message passing protocol links.
• 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 the Padtec products. Padtec 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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