



2455 South Road
Poughkeepsie, New York 12601
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IBM® GDPS® and Server Time Protocol (STP) Application Qualification support for the ADVA FSP3000 Release 8.2 Dense Wavelength Division Multiplexing (DWDM) (This Qualification letter is an addendum to and supersedes ADVA DWDM Qualification Letter dated 11/24/2008)

International Business Machines Corporation and ADVA AG Optical Networking have successfully completed application qualification testing of the ADVA FSP3000 Release 8.2 DWDM Platform for the following IBM Parallel Sysplex and Geographically Dispersed Parallel Sysplex (GDPS) IBM System z10, z9 and IBM eServer zSeries 990 and 890 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 CF messaging
 - Sysplex timer links for synchronization of servers
 - ISC-3 Peer Mode with STP messaging for synchronization of servers
 - Parallel Sysplex Infiniband (PSIFB) with STP messaging.

Distances for the protocols supported for these GDPS applications are defined in the Qualification Results Summary below. Although STP applications may exceed 100km, IBM requires an RPQ (8P2263) to assure applications adhere to the bounds of our qualification. This is due to the critical requirement of assuring that no more than 900m of differential delay was introduced into the network.

Qualification Results Summary:

ADVA PN Descriptor	Description	Protocols Supported	Supported Distance
Management Modules			
NCU	Node management module with SW load 8.2.2	-	-
Active and optical Modules			
4TCA – PCN	4-port 4G TDM card	FCP 200/400 ISL 2G/4G ISC3 Peer with or without STP	100 km
WCA-PC-10G	10G transparent channel card	ISL 4G/10G PSIFB (2.5 or 5G IB)	100km
EDFA-C-D20-VGC	Optical Amplifier, Double Stage 20 dBm	All	100km
DCG-M/060/SSMF	Managed DCM using Chirped Fiber Bragg Gratings (CFG) 60km	All	100km
WCE-LS-T-V	Low speed transparent card	ETR / CLO	40km
DWCM-LS-T with UK/DWCM/LS-T-1310L	Low speed transparent card: ADVA FSP2000 module with Upgrade Kit for use in FSP3000	ETR / CLO	40km
RSM-OLM#1630	Fiber protection switch	This RSM can not be used alone. It must be used in conjunction with Client Layer Protection	40km

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 of up to 100 km transporting STP messages.
- Redundant ADVA FSP 3000 platforms, utilizing two site-to-site fiber pairs, are recommended for fiber trunk protection of ETR, Control Link Oscillator (CLO) and ISC-3 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, ETR, and CLO links should connect using different trunk switching modules to ensure that a fiber trunk protection event does not interrupt all timing links simultaneously.

For the support of other GDPS features please refer to previous product releases and test results

Results achieved were in a test environment under laboratory conditions. IBM does not make any representations or warranties regarding the ADVA products. ADVA 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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Charles B. Grizzaffi
System z Connectivity Program Manager
Systems & Technology Group
International Business Machines Corporation

