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IBM® GDPS® and Server Time Protocol (STP) Application Qualification support for the ADVA™ FSP 2000™ (Fiber Service Platform) Dense Wavelength Division Multiplexing (DWDM) System

International Business Machines Corporation and ADVA Optical Networking have successfully completed application qualification testing of the ADVA FSP 2000 Fiber Service Platform for the following IBM Parallel Sysplex® and Geographically Dispersed Parallel Sysplex™ (GDPS) IBM System z™and System/390® environments:
• GDPS / "Peer-to-Peer Remote Copy" (PPRC) ("Metro Mirror") using ESCON® or Fibre Channel (FCP) for remote data copy and IBM 9037 Sysplex Timer® and ISC (InterSystem Channel) links for server synchronization.
• GDPS / "Peer-to-Peer Remote Copy" (PPRC) ("Metro Mirror") using ESCON® or Fibre Channel (FCP) for remote data copy and ISC-3 Peer Mode links with STP message passing for server synchronization.
• GDPS / "Extended Remote Copy" (XRC) ("z/OS Global Mirror") using FICON® for asynchronous remote copy.
  IBM protocol link distances supported for these GDPS applications are defined in the "Qualification Results Summary" below.
 Specific ADVA FSP 2000 product hardware features and software release levels, including card module usage in ADVA FSP 3000 applications, are listed in Attachment A, page 2.

Qualification Results Summary:
The ADVA FSP 2000 DWDM platform met IBM Qualification criteria for support of the following IBM System z, zSeries and S/390 servers and GDPS Application Solution protocols:
• IBM System z™, zSeries® z990, z900, z890, z800 and System/390®.
• IBM 9037 Sysplex Timer® CLO links for distances up to 40 km.
• IBM 9037 Sysplex Timer® ETR links for distances up to 100 km.
• FICON® (1 Gbps), FICON Express2 (2 Gbps) and FICON Express4 (4 Gbps) for distances up to 100 km.
• ESCON® Multimode / Single mode fiber for distances up to 100 km.
• ISC-2 (1 Gbps.) Single mode fiber for distances up to 40 km.
• ISC-3 "Compatibility Mode" 1 Gbps (Single Mode fiber) for distances up to 40 km.
• ISC-3 "Peer Mode" 1 Gbps (requires IBM RPQ 8P2197) and 2 Gbps for distances up to 100 km.
• ISC-3 Peer mode protocol links for distances of up to 100km transporting both Coupling Facility and STP message passing.

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 ISC links of up to 100km transporting STP message passing.
• IBM InterSystem Channels (ISC-2 and ISC-3), Sysplex Timer ETR / CLO and STP message passing links require the use of single port per channel Client modules.
• If ADVA EDFA Optical amplifiers are utilized in IBM GDPS 9037 Sysplex Timer applications for ETR protocols, the ADVA "Automatic Laser Shutoff" feature must be disabled or additional non-ETR protocols must be used in the EDFA in conjunction with ETR protocol signal.
• ADVA EDFA Optical amplifiers cannot be used in GDPS network applications for IBM ISC-2 and ISC-3 "Compatibility Mode" protocols.
• Redundant ADVA FSP 2000 or FSP 3000 platforms, utilizing two site-to-site fiber pairs, are recommended for fiber trunk protection of ETR, CLO and ISC-3 STP message passing protocol links.

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Attachment A

GDPS Qualification Testing – ADVA FSP 2000 / FSP 3000 Product Features

Specific ADVA FSP 2000 product hardware features and software release levels used during Qualification testing are as follows:

- ADVA FSP 2000 NEMI-V2 Card with Master Management SW Release 6.2
- ADVA FSP 2000 including the following DWDM channel Card modules:
  Note: The following card modules listed below are supported for use in either an FSP 2000 or FSP 3000 chassis in support of GDPS applications:

  − DWDM-PL/10G-MC10G Multirate Transponder Card for support of 10G ISL (Intra Switch Links) links
  − DWDM-PLR/2G5-MC2G Transponder for support of 1G / 2G FC, 1G / 2G ISL, 1G FICON, 2G FICON Express, 1G ISC-2, 1G ISC-3 Compatibility Mode, 1G ISC-3 Peer Mode, 2G ISC3 Peer Mode and STP message passing protocols.
  − D4TCM-PL/ 4G-MC4G Muxponder for support of 4G ISL links
  − DWCM/LS-T-1310 Transponder Card for support of CLO/ETR links.
- ADVA FSP 2000 including the following XFP and pluggable SFP Transceivers:
  − SFP/2G5U/1310nm/SM/LC, SFP/2G5U/1530nm/SM/LC, SFP/4GU/1310nm/SM/LC and XFP/10G/1310nm/SM/LC
- ADVA FSP 2000 including the following optical amplifiers and Protection modules:
  − EDFA-C-S10-GC Optical Pre Amplifier, EDFA-C-S15-GC Mid-span Optical Amplifier, OPT/EDFA-XE200-C and OPT/EDFA-XT200 RAMAN extended distance amplifiers, RSM-OLM/1630 Dual fiber optical protection Switch.