Cisco MDS 9000 XRC Acceleration Package

Product Overview

When used in conjunction with the Cisco® MDS 9000 SAN Extension over IP and Mainframe Packages in Cisco MDS 9500 Series Multilayer Directors and Cisco MDS 9200 Series Multilayer Fabric Switches, the Cisco MDS 9000 XRC (Extended Remote Copy) Acceleration Package provides an integrated, cost-effective, and reliable business-continuance solution for the IBM System z using IBM z/OS Global Mirror (formerly known as Extended Remote Copy, or XRC).

The Cisco MDS 9000 XRC Acceleration Package accelerates dynamic updates from primary to secondary direct-access storage devices (DASD) by reading ahead of the remote replication IBM System z, known as the System Data Mover (SDM). This data is buffered in the Cisco MDS 9000 18/4-Port Multiservice Module (MSM) line card or Cisco MDS 9222i Multiservice Modular Switch that is local to the SDM, reducing or eliminating the latency effects that can otherwise reduce performance at distances of 200 km or greater. This process is sometimes referred to as XRC emulation or XRC extension.

Features

The Cisco MDS 9000 XRC Acceleration Package provides the following features:

- **Integrated solution:** Historically, other XRC emulation and acceleration solutions have required separate extension switches or directors. These imposed major costs in terms of capital, floor space, power, cooling, maintenance and support charges, and management overhead. The Cisco MDS 9000 XRC Acceleration Package is simply a software license added to the configuration already in place for extension over IP.
- **Fibre Channel over IP (FCIP) compression:** XRC Acceleration uses the FCIP compression capabilities of the Cisco MDS 9000 18/4-Port Multiservice Module and MDS 9222i hardware platforms. While actual compression ratios achieved are highly data dependent, compression ratios of 4:1 or better are common.
- **FCIP encryption:** XRC Acceleration uses the built-in IP Security (IPsec) encryption capabilities of the Cisco MDS 9000 18/4-Port Multiservice Module and MDS 9222i. Encryption is performed at Gigabit Ethernet wire rates, using Internet Key Exchange (IKE) for protocol and algorithm negotiation and key exchange, and Advanced Encryption Standard 256 (AES-256), AES-128, Data Encryption Standard (DES), or 3DES (168 bit) for encryption.
- **Scalability through parallelism:** XRC Acceleration supports the use of multiple SDMs, and multiple readers can be used within each SDM. IBM z/OS Parallel Access Volumes (PAVs) and Hyper-PAVs are supported.
- **Multivendor DASD:** DASD from IBM, EMC and HDS are supported.
- **Simplicity of management:** After the licenses are installed and the FCIP tunnels are configured, simply configure acceleration for each FCIP tunnel (between the SDM and the primary DASD) on which it is desired to enable use of the feature.
- **Single-pane management:** XRC Acceleration is easily managed from the Cisco Fabric Manager GUI for configuration, status, and real-time performance monitoring. Detailed historical performance reporting and trending information is available through the optional Cisco Fabric Manager Server Package.

- **Manageable using IBM z/OS tools:** For those who prefer their single management pane to be an SA/390 Resource Measurement Facility (RMF) report on their IBM System z, port statistics, performance data, and bandwidth utilization alerts can be passed to the IBM System z through the in-band IBM Control Unit Port (CUP) interface, enabling management using IBM z/OS tools.
- **Increased read-ahead capability:** XRC Acceleration can have more than 250 Read Record Set (RRS) operations outstanding, which can deliver improved performance, especially with longer distances or shorter records, such as database logs.
- **In-band XRC performance reporting:** Cisco and IBM have developed an in-band interface that allows the Cisco MDS 9000 Family to provide detailed statistics to the XRC Performance Monitor. These statistics provide better control over performance, as well as enhanced troubleshooting capabilities.

Software Release

To use this package, Cisco MDS 9000 NX-OS Software Release 4.2(1) or later must be installed.

License Information

This package is licensed per switch for all the ports and line cards in the switch. Deployment of this package requires a Cisco MDS 9000 Family switch or director with the Cisco MDS 9000 XRC Acceleration Package license (and its prerequisites) at each end of the FCIP link over which IBM z/OS Global Mirror traffic is being accelerated.

Two other packages are required as prerequisites for enabling XRC Acceleration:

- **Cisco MDS 9000 Mainframe Package:** Enables IBM Fiber Connection (FICON)
- **Cisco MDS 9000 SAN Extension Package:** Enables FCIP. XRC Acceleration requires that FCIP be used with either the Cisco MDS 9222i or the MDS 9000 18/4-Port Multiservice Module line card.

Ordering Information

The ordering numbers associated with this package are:

- M9500XRC= Cisco MDS 9000 XRC Acceleration Package for one Cisco MDS 9500 Series Multilayer Director
- M9200XRC= Cisco MDS 9000 XRC Acceleration Package for one Cisco MDS 9200 Series Multilayer Switch

For More Information

For more information, see the Cisco MDS 9000 NX-OS Software data sheet, the Cisco MDS 9000 Mainframe Package data sheet, and the Cisco MDS 9000 SAN Extension over IP Package data sheet.

Interoperability information for specific FICON-capable devices is available in the Cisco Data Center interoperability support matrix at http://www.cisco.com/en/US/docs/switches/datacenter/mds9000/interoperability/matrix/Matrix.pdf.

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