

Overview

HP DCFM software is a server based network management applications that enable end-to-end management of B-series Storage Area Network (SAN) fabrics. HP DCFM Enterprise and Professional+ manage and secure the flow of data across multiple fabrics. They provide a holistic view of SAN Fabrics whether local to the data center or geographically dispersed. With policy based management HP DCFM Enterprise and Professional+ enable IT organizations to meet their Service Level Agreements (SLAs). HP DCFM Enterprise and Professional+ provides multi-protocol networking support for:

- Fibre Channel
- Fibre Channel over IP
- Fibre Channel Routing
- iSCSI

Both DCFM Enterprise and Professional+ seamlessly manage multiple data center fabrics to help optimize performance and maximize the availability of data and networked resources. They do so by utilizing industry-leading capabilities for monitoring, troubleshooting, diagnostics, and proactive event notification. In addition, both products feature easy-to-use administration tools that streamline or automate repetitive tasks so organizations can achieve unprecedented levels of productivity and efficiency.

Organizations must maximize the utilization of their infrastructure resources. With unique asset tracking and reporting capabilities, DCFM Enterprise and Professional+ provide detailed visibility into performance utilization of hardware and network bandwidth. HP DCFM Enterprise and Professional+ maximizes the ROI of hardware purchases by better utilizing existing infrastructure resources and identifying new network requirements.

Today, only HP StorageWorks DCFM Enterprise provides a non-disruptive path and functional continuity for organizations that are upgrading from Fabric Manager. Both DCFM Enterprise and Professional+, however, provide comprehensive management of both B-series FOS based fabrics as well as fabrics in interop mode with M-series M-EOS and FOS based fabrics.

Organizations that need to manage smaller SAN environments can utilize B-series Data Center Fabric Manager Professional, a server based application included with B-series switches that contains a subset of Data Center Fabric Manager Enterprise features. Data Center Fabric Manager Professional enables the centralized management of up to 1,000 ports in a single fabric, performing key functions (such as firmware downloads and configurations) for groups of switches while accessing device-level information.

What's New

There are now two advanced management versions of HP Data Center Fabric Manager software:

- HP DCFM Enterprise that provides a view of up to 24 SAN Fabrics and 9,000 switch ports.
- HP DCFM Professional+ that provides a view of up to 4 SAN Fabrics and 2,560 switch ports
HP DCFM Professional will continue to be offered which can manage up to 1,000 switch ports in a single fabric.

Models

HP StorageWorks B-Series Data Center Fabric Manager Enterprise Software

T5542A

HP StorageWorks B-Series Data Center Fabric Manager Professional+ Software

TA754A

Overview

Highlights

- Centralizes management of B-series fabrics within and across data centers, including those with different protocols
- Supports server virtualization, including visualizing and setting QoS levels for applications running on virtual machines
- Reduces expenses and maximizes productivity by automating tasks and providing easy-to-use, wizard-driven operations
- Administers SLAs via industry-leading monitoring, troubleshooting, diagnostics, and event notification capabilities
- Secures data flow from applications to storage across data center fabrics by managing user access controls and ensuring consistent security settings
- Delivers real-time and historical performance monitoring to enable proactive problem diagnosis, maximize resource utilization, and facilitate capacity planning
- Integrates seamlessly with leading third-party automation solutions to provide a holistic approach to data center management

Product Features

Feature List

HP DCFM Enterprise and Professional+ Features:

- **B-Series DC SAN Director management** with features such as Quality of Service (QoS) and end to end performance monitoring. HP DCFM Professional+ does not support management of the B-Series DC SAN Backbone Director.
- **Unprecedented scalability** HP DCFM Enterprise supports up to 24 physical SAN fabrics, 9,000 switch ports, and 20,000 end devices while HP DCFM Pro+ supports up to 4 physical SAN fabrics, 2560 switch ports, and 4096 end devices.
- **An overarching view of fabric health** with at-a-glance views of switch and Inter-Switch Link (ISL) health status, including a connectivity map for status per device, performance utilization rate per ISL, and visualization of end devices.
- **Performance monitoring** proactively addresses issues with both real-time and historical performance data collection, monitoring, and graphical displays (across Fibre Channel, FCIP, and Fibre Channel Routing ports and connections).
- **Fault management** helps manage events and failures in the data center by configuring rule-based events. You can define triggers that prompt user actions.
- **Troubleshooting and diagnostics** streamline problem resolution.
- **Advanced Call Home** enables automatic calls into HP Service Centers when specified triggering conditions are met. Advanced Call Home defines how HP DCFM Enterprise and DCFM Pro+ should respond to certain events, including automatically capturing diagnostic information from the switches.
- **Extensive zoning** capabilities support analysis of the impact of zoning changes offline without affecting the production fabric.
- **Configuration management** enables automated backup of critical configurations across data centers and promotes configuration consistency across the fabric.
- **Security management** allows multiple levels of user access and views with flexible definitions of administrator responsibilities; helps maintain consistent security settings across multiple switches by leveraging the Security Replication Wizard; and manages the configuration, and settings.
- **HP DCFM Enterprise Also Adds:** FICON and cascaded FICON environment configuration and management provides powerful analysis and diagnostic capabilities, as well as SAN-level RNID data display, Port Connectivity Dialog, FICON Emulation support, and Multi-PDCM matrix display. HP DCFM Professional+ does not support management of FICON configurations.
- **Full B-Series DC SAN Backbone Director management** with features such as Quality of Service (QoS) and end to end performance monitoring including management of the B-Series DC SAN Backbone.

HP StorageWorks Data Center Fabric Manager Enterprise and Professional+ are highly scalable, Java-based applications that manages multiple B-Series switches and fabrics in real-time. In particular, Data Center Fabric Manager provides the essential functions for efficiently configuring, monitoring, dynamically provisioning, and managing SAN fabrics on a daily basis.

Through its single-point SAN management platform, Data Center Fabric Manager enables the global integration and execution of processes across multiple fabrics. Moreover, Data Center Fabric Manager helps to lower the cost of SAN ownership by intuitively facilitating a variety of SAN management tasks. As a result, Data Center Fabric Manager provides a flexible and powerful tool optimized to provide organizations with rapid access to critical SAN information across multiple fabrics. This latest indention, introduces full support for the B-series router/extension products for easy deployment of this new technology.

HP StorageWorks Data Center Fabric Manager software simplifies infrastructure management with the performance and scalability required for Next Generation Data Centers that connects applications to infrastructure in the majority of the world's data centers. With Data Center Fabric Manager Enterprise and Professional+, B-Series products, whether based on the Fabric Operating System (FOS) or the M-EOS and FOS in interop mode, can be managed with less cost and complexity. Data Center Fabric Manager delivers compelling increases in scalability and performance, which are essential as infrastructure management extends its scope from individual switches and directors to an end-to-end virtual data center with its pools of physical servers and storage connected by policy-based services to the converged, multi-protocol Data Center Fabric. As the HP StorageWorks DC SAN Backbone Director expanded fabric size and performance while adding new "plug-in" fabric services such as adaptive networking, so too does SAN management evolve from the switch and director management architecture of earlier products to the policy-based, fabric service management architecture of Data Center Fabric Manager.

Product Features

Basic Management

HP StorageWorks Data Center Fabric Manager Professional is a management application available at no-charge and comes with B-series SAN Switches and:

- Allows management of a single Fabric OS (FOS) fabric (up to a 1,000 switch ports) at a time
- Performs group switch management beyond the scope of Web Tools
- Does not offer management of the DC SAN Backbone Director or FICON
- Manages B-Series SAN Switches (M-Series switches require DCFM Enterprise or Professional+)

It is targeted for SMB customers that use FOS based SAN fabrics and require a management solution for smaller SANs based on a single fabric.

SMB customers that initially start off with Data Center Fabric Manager Professional and have a small SAN environment may over time feel the need for expansion to a mid-range class product (Data Center Fabric Manager Professional+) or an enterprise-class product (Data Center Fabric Manager Enterprise) as their environments start to grow in size and complexity, and as they start to uptake more enterprise-class functionality (such as Fibre Channel Routing, FCIP, etc.). A non-disruptive upgrade path is available from Data Center Fabric Manager Professional to Data Center Fabric Manager Enterprise or Professional+

Advanced Management

HP StorageWorks DCFM Enterprise and Professional+ are the enterprise-class products that support FOS products as well as FOS and M-EOS products together. HP DCFM Enterprise provides complete DC SAN Backbone Director management including enterprise-class features/environments such as FICON, Fibre Channel Routing, FCIP, adaptive networking, etc while HP DCFM Professional+ provides the same feature set except for support for the DC SAN Backbone Director and FICON.

HP DCFM Enterprise delivers unprecedented scalability, up to 24 fabrics and 9,000 switch ports, while HP DCFM Professional+ scales to 4 SAN Fabrics and 2560 switch ports.

Both offerings provide brand-new features including Adaptive Networking features for quality of service, ingress rate limiting and traffic isolation zones.

While DCFM provides increased functionality, not all features available in FM or HAFM are available in DCFM Enterprise and Professional+, and some functions may operate differently. Please refer to the Migration and Transition guide for additional information.

Enhanced Group Management (EGM)

Enhanced Group Management (EGM) is a FOS license that enables multi-switch operations for those switches that have EGM enabled. It helps automate operations across multiple switches to save time and streamline repetitive operations, which are typically prone to error. EGM drives consistency across fabrics, while minimizing the risk associated with potential downtime due to configuration mismatches. EGM provides streamlined troubleshooting for more effective fabric monitoring and diagnosis.

EGM is included with all FOS-based switches. It is part of the new manageability offering starting with the DC SAN Backbone Director Switch and applicable to all new B-series products including the 8Gb switches (8/8 SAN Switch, 8/24 SAN Switch, 8/40 SAN Switch, 8/80 SAN Switch), and embedded products (Brocade 8Gb SAN Switch for HP BladeSystem c-Class). EGM will also now be included with previous B-Series FOS based hardware products from HP.

All three HP DCFM versions enable EGM functionality. Customers have EGM functionality enabled within the hardware product and need only to make the decision around which application is right for them - DCFM Professional, Professional+ or Enterprise.

Product Features

HP DCFM Enterprise and Professional+ Software Management Features

Performance Monitoring and Management

HP StorageWorks DCFM Enterprise and Professional+ enable IT organizations to monitor fabrics on a real-time and on a historical basis. Both offerings of DCFM use a policy-driven approach to set thresholds for both individual ports and end to end between source (application) and target (disk). This allows users to address performance issues proactively, rapidly diagnose the underlying causes, and quickly resolve them before the SAN becomes the bottleneck for critical applications. Furthermore, IT organizations can use analytical and reporting features to study performance trends over time and make changes to maximize asset utilization and plan for future capacity needs.

Some performance monitoring and management capabilities are listed below:

- Real-time performance data collection, monitoring, and graphical display (across FC, FCIP, and Gigabit Ethernet (GbE) ports and connections)
- Historical performance data collection, monitoring, and graphical displays (across FC, FCIP, and Fibre Channel Routing ports and connections)
- End-to-end monitors (both real time and historical) from source (application) to target (disk)
- Policy-based, user-defined performance thresholds
- Color-coded "marching ants" on the topology to show traffic status

Zoning

Zoning Impact Analysis

HP StorageWorks DCFM supports the concept of an "offline" Zone database, so that users can make zoning changes offline without affecting the production fabric. This feature helps SAN administrators, who receive storage provisioning requests throughout the day and want to make the configuration changes required. Typically there is a very small change window each day during which the changes can actually be pushed to the production fabric. The offline zoning feature provides precisely this ability. Data Center Fabric Manager compares the selected offline database with the online database to see which source devices have gained or lost access to which target devices. Data Center Fabric Manager provides both host-to-storage and storage-to-host connectivity views.

Multi-User Zoning

HP StorageWorks DCFM detects when more than one user is working on the same zone set and provides a notification to these users. Users can then choose to either configure these changes serially or to continue to work in parallel. HP DCFM provides a compare-merge capability when the users are ready to commit the changes. User can compare their own changes to the changes of other users to ensure that zone configurations are not accidentally overwritten. In data center environments in which zoning changes to production fabrics are constantly being made, this is an efficient collaboration tool.

Quality of Service Zoning

Quality of Service (QoS) is a new feature in B-series Adaptive Networking, which enables users to set the desired QoS for applications running on both physical and virtual servers. A High QoS setting gives critical applications the required bandwidth priority, maximum availability, and optimal performance in the event of network congestion. B-series fabrics can automatically and continuously adapt to changing network dynamics to ensure that critical applications always receive high priority.

HP DCFM enables configuration of QoS priorities using special zones and zoning-a paradigm that is very familiar to SAN administrators. Setting a QoS priority for an application, whether it is running on a physical or virtual server, is a simple choice from a right-click menu.

LSAN Zoning

HP StorageWorks DCFM has several features for performing Logical SAN (LSAN) zoning that allows multiple fabrics, whether local or remote, to connect with each other without merging. Only devices that

Product Features

have been specifically zoned within these fabrics can communicate with each other, rather than complete unrestricted access. HP DCFM consolidates LSAN zoning into the regular Zoning dialog box, but provides a different zoning scope based on the backbone fabrics that have been discovered. It displays potential zoning members based on the backbone fabric and its connected edge fabrics.

HP DCFM allow LSAN zones to be created, edited, and activated in the fabric zoning scope for both backbone and edge fabrics. The HP DCFM topology supports comprehensive Meta SAN features, which include visualization of the backbone and edge fabrics and display of Inter-Fabric Links (IFLs) in the topology.

Configuration Management

Configuration management features provide several benefits, for example, if a switch that had been performing successfully until just a few minutes ago is suspected to be "misbehaving" due to an accidental configuration, it can quickly be restored to the "last known good configuration." Similarly, a user can remove a switch whose lease has expired and replace it with a new switch of the same model without having to manually reconfigure the new switch; it can be provisioned through HP DCFM.. An enterprise may have global corporate standards for switch configuration and requirements. With HP DCFM, ensuring configuration consistency is easy: replications can be configured from a "golden master" switch to all other switches.

Pre-Requisite Information

Software Pre-Requisites Firmware versions defined in SAN Design Guide: <http://www.hp.com/go/SANDesignGuide>

Hardware Prerequisites B-Series 2 Gb/s (v5.x firmware), 4 Gb/s, and 8 Gb/s Switches listed in the SAN Design Guide. Also, refer to: <http://www.hp.com/go/SANDesignGuide>.

Server Pre-Requisites HP StorageWorks Data Center Fabric Manager Enterprise is support on the following Operating Systems:

- Microsoft Windows 2003 Server, XP Professional, Vista Business Edition, and 2008 Server
- Linux Red Hat AS 4.0, Enterprise Linux 5 Advanced, SuSE Linux ES10
- Sun Solaris 10

HP DCFM Enterprise and Professional+ must be installed on a dedicated server that meets the minimum requirements specified in the DCFM User Manual.

Software Licensing HP StorageWorks DCFM Enterprise edition supports up to 24 SAN Fabrics and 9,000 ports from a single server. HP StorageWorks DCFM Professional+ supports up to 4 SAN Fabrics and 2560 switch ports from a single server.

Service and Support, HP Care Pack, and Warranty Information

Product Warranty

HP warrants only that the Software media will be free of physical defects for a period of ninety (90) days from delivery.

EXCLUSIVE REMEDY. The entire liability of HP and its suppliers and your exclusive remedy for Software that does not conform to this Limited Warranty shall be the repair or replacement of the defective media. This warranty and remedy are subject to your returning the defective media during the warranty period to HP in the country in which you obtained the Software.

Services Included with Product Purchase

HP DCFM comes with one year of 9x5 software support which includes comprehensive support and software updates to enhance the performance and availability of your software. Experienced Response Center engineers provide trustworthy advice on issues such as software features and use, problem diagnosis and resolution, and software defect identification.

Software support benefits include:

- Improved productivity of system managers and operators
- Improved system performance and reduced downtime due to software defects
- Expedited problem resolution through expert-level technical resources
- Software and documentation updates
- Electronic access to essential product and support information

For increased uptime, productivity and ROI -HP Care Pack packaged services for Storage

These days, you need to get the most out of your storage investment-you can't afford not to. When you buy HP storage products and solutions, it's also a good time to think about what levels of service and support you may need. To help take the worry out of deploying, designing, maintaining, and managing your environment, we've designed a portfolio of service options that are as: flexible, reliable and scalable as your storage. Unlike storage-only vendors, we take a holistic approach to your entire environment, bridging storage, servers, blades, software and network infrastructures with our HP Care Pack packaged services for Storage.

Protect your business beyond the warranty

When it comes to robustness and reliability, standard warranties on today's computing equipment have matured just as the technologies have matured. Good news on some fronts-but also a source of potential problems and subsequent consequences that come from depending on standard warranties alone. Standard warranty protects against product defects and some causes of downtime- but not the business. By using a standard approach to warranty uplifts, such as HP Care Pack Services, you can reduce downtime risks and be more certain of operational consistency for both mission-critical and standard business computing. Simply put, HP Care Pack Services normalize the warranty of combined products - helping you proactively guard against unplanned downtime.

Extending warranties with HP Care Pack Services

For cost-effective upgrading or extending your standard warranty, HP Care Pack Services offer a suite of standard reactive hardware and software support services that are sold separately, or combined as with our Support Plus and Support Plus 24 services. The portfolio also provides a combination of proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition, with HP Proactive Select we offer an innovative approach to service delivery that gives you the flexibility to acquire the specific proactive services you need today, then add services as your needs evolve. HP Proactive Select offers a broad set of technical or per-event type service options - including server, storage, and network, SAN device, and software, environment, installation and education services. Services that you can mix and match depending on your specific requirements, from preliminary planning and equipment delivery to installation, configuration, integration, and testing, through every level of ongoing support. Our HP Care Pack packaged services for Storage assures help when you need it most. And for many products,

Service and Support, HP Care Pack, and Warranty Information

post-warranty HP Care Pack Services are available when your original warranty has expired.

HP Storage Services: Offering reliability, flexibility and value-just like your storage

HP Storage Services offers a full spectrum of customer care, from technology support to complex migrations to complete completely managed services. HP Factory Express provides customization, integration and deployment services for turnkey solutions. HP Education offers flexible, comprehensive training on storage networking, disk storage systems, and storage software to help your IT staff get the most out of your investments. And HP Financial solutions extend innovative financing and asset management programs to cost-effective buy, manage and eventually retire your older equipment.

HP Storage Services, the trusted business technology experts who manage your technology in action, because when technology works, business works. <http://www.hp.com/hps/storage>

NOTE: Care Pack Services availability may vary by product and country.

HP Care Pack Services are sold by HP and HP Authorized Service Partners:

- Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools.
- Customers purchasing from a commercial reseller can find HP Care Pack Services at http://h30125.www3.hp.com/csn/salesmktg/elfpack/elf_nonlkup_etrylang.asp?code=ELNL

Recommended HP Care Pack Services for optimal satisfaction with your HP product.

Recommended Services

3-Year HP Support Plus 24

For a higher return on your storage investment, HP Support Plus 24 provides integrated hardware and software support services designed specifically for your technology. Available 24x7, this 3-year combined reactive support option delivers onsite hardware support and over-the-phone software support around-the-clock. Leverage the full strength of HP Technology Services - customers can trust the services professionals at HP to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure.

- Improve uptime with responsive hardware and software services
- Cost-effectively obtain expert multivendor support
- Enjoy consistent service coverage across geographically dispersed sites
- Update HP and selected third-party software at a predictable cost
- Take advantage of subscription savings on software updates
- Increase revenue-with access to world-class expertise without headcount implications
- Increase customer satisfaction-with no interoperability gaps

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EN.pdf>

Recommended Deployment

Product is customer installable

Service and Support, HP Care Pack, and Warranty Information

Related HP Care Pack Services that will enhance your HP product experience.

Related Services

3-Year HP Proactive 24 for SANs

As an alternative to our recommended support level, for customers who want improved SAN availability and access to a wide range of proactive and reactive services:

HP Proactive 24 Service for SANs is an integrated hardware and software support service that combines proactive problem prevention with responsive 24x7 assistance for rapid problem resolution.

A collaborative relationship with HP Services strengthens your IT team and gives you direct access to our technical expertise as issues arise.

Improve IT staff skills, increase SAN productivity.

Proactive 24 Service for SANs can help you:

- Enhance the skills and efficiency of your IT staff through knowledge transfer, shared best practices in storage management, and hands-on assistance
- Improve SAN availability through access to a wide range of proactive and reactive services
- Boost productivity through effective change management, configuration assistance, and performance optimization
- Increase the return on your SAN investment
- Enhance your overall operational effectiveness

Expert single-point-of-contact assistance 24x7

An assigned HP Services account manager is your primary contact for proactive services and access to HP's diverse technical resources. Your account manager works closely with your IT staff to understand your goals, document the components of your infrastructure, recommend changes to improve performance and stability, and monitor ongoing operations through HP's industry-leading remote monitoring and support tools.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6887EN.pdf>

HP Assessment Service for SANs

For customers interested in improving availability of their SAN and decreasing potential for unplanned downtime:

The HP Assessment Service for SANs offers customized technical and operational guidance to customers employing HP storage subsystems and the interconnecting storage area network (SAN) infrastructure. In a typical engagement, HP or one of our authorized business partners will perform a detailed discovery using HP's proprietary toolset to gain an understanding of the configuration of your storage devices and SAN topology.

The findings from this process will be compared to HP best practices and industry standards as defined by IT Service Management (ITSM) disciplines. The results of the evaluation will be quickly and efficiently processed into information you can leverage. This information, in the form of a comprehensive HP SAN Assessment report, will be summarized by HP or one of our authorized business partners with recommendations that are intended to improve availability levels and ongoing management of your storage and SAN environment.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA1-2941ENW.pdf>

Service and Support, HP Care Pack, and Warranty Information

eSupport

HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

Support Portal

The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit <http://www.hp.com/support>

Customer Technical Training

Consider education as an integral part of your strategy to get the best return on investment for your HP storage solution. HP offers a variety of training courses on storage software, networking, archiving and disk storage systems. Our classes are available in many delivery modalities from traditional instructor-led courses at one of our 80 training centers worldwide to on-site training customized to your needs or online. <http://www.hp.com/learn/storage>

HP Services Awards

HP Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction. For a list of all our awards, please visit <http://h20219.www2.hp.com/services/cache/433028-0-0-225-121.html>

Additional Services Information

For more information about HP Care Pack Services for Storage, please visit: <http://www.hp.com/hps/storage>

If you have specific questions, contact your local HP representative. Contact information for a representative in your area can be found at "Contact HP" <http://www.hp.com>

Configuration Information

Step 1 - Configuration

Select one:

Model Number	Model Description	Part Number
	HP StorageWorks B-Series Data Center Fabric Manager Enterprise Software	T5542A
	HP StorageWorks B-Series Data Center Fabric Manager Professional+ Software	TA754A

Step 2 - Additional B-Series Supported Software Options

SAN Switch Power Pack+ Bundle Includes bundled license for ISL Trunking, Adaptive Networking, Advanced Performance Monitor, Extended Fabric and Fabric Watch.

SAN Switch Power Pack Bundle Includes bundled license for ISL Trunking, Advanced Performance Monitor, Extended Fabric and Fabric Watch.

Fabric Watch Fabric Watch enables each switch to monitor the SAN for potential faults-and automatically alert network managers to problems before they become failures. Fabric Watch tracks a variety of SAN fabric elements, events, and counters. Monitoring fabric-wide events, ports, SFPs, and environmental parameters permits early fault detection and isolation as well as performance measurement. Each switch in the SAN needs its' own Fabric Watch license.

ISL Trunking High performance enhanced trunking: Optional license logically groups up to eight E-ports to provide a high bandwidth trunk between two switches. Each switch needs its own license. The switch operating system views the trunk as a single, high bandwidth resource (up to 64 Gb) when routing connections between switches. Connections are load-balanced across the individual links, which comprise the logical trunk group.

Performance Monitoring This enabling technology provides the ability to monitor and watch specific fabric metrics from a SID (Source ID) to a DID (Destination ID), creating a method to be able to fine-tune and scale your fabric more efficiently. Performance Monitoring also allows the ability to have an early warning detection of hot-spots within the fabric providing a powerful tool for maintaining overall balanced performance.

Extended Fabric Extends all of the scalability, reliability, and performance benefits of Fibre Channel Storage Area Networks (SANs) beyond the native 10 km distance specified by the Fibre Channel standard.

Configuration Information

Adaptive Networking

Adaptive Networking (AN) is a family of technologies which allow flexible control of traffic movement within the fabric which deliver application aware management of fabric resources. Applications may be used with multiple protocols and multiple classes of service. It includes the following features:

Ingress Rate Limiting:

Allows the ingress bandwidth of a port to be throttled to a rate lower than negotiated with the SAN node. This could be very useful for enterprises offering stepped levels of service and enforcing SLAs.

Quality of Service (QoS):

Enables zones with high, medium, and low priorities within a fabric on a zone by zone basis. This can be very useful for prioritizing array replication over MANs and WANs over less critical traffic.

Traffic Isolation Zones:

Defines paths through a fabric for some or all nodes. Failover allows a non-preferred path to be used if the preferred fails. TIZs use failover by default but it can be disabled if traffic should stop if a preferred path fails. TIZ can be used to manually map out traffic flows within a fabric based on application, priority, and topology.

Server Application Optimization

The SAO license optimizes overall application performance for physical servers and virtual machines. SAO, when deployed with B-Series Fibre Channel HBAs, extends B-Series Adaptive Networking from the B-series SAN fabric to the server infrastructure. This delivers application-level, fine-grain Quality of Service (QoS) management to the HBAs and related server applications.

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