

# Connectrix MDS Data Center Network Manager

## ESSENTIALS

### Data Center Network Manager

- Enables simplified operational management of virtualized data centers
- Provides pro-active monitoring and problem diagnosis, resulting in less time spent on troubleshooting problems
- Provides performance and capacity monitoring for SAN infrastructures

### Optimize your SAN environment with Dell EMC Connectrix MDS Data Center Network Manager (DCNM)

Connectrix MDS DCNM enables storage and SAN administrators to troubleshoot the health and performance of the Connectrix MDS 9000 family of products. DCNM simplifies SAN deployment by providing wizard and template-based provisioning and configuration with an easy-to-use graphical user interface (GUI).

#### Key features and benefits

DCNM includes a number of features and benefits that help organizations proactively manage their SAN environment.

**Virtual machine-aware path management:** Virtual machine-aware dashboards display performance charts, path attributes, topology, path alerts and information about the utilization of virtual machines and virtual hosts – helping administrators quickly identify performance anomalies.

**Planning performance trending and forecasting:** DCNM helps IT design teams plan new deployments and redesign existing deployments based on peak utilization information collected as far back as a year or more.



MDS DCNM Topology View

**Troubleshooting and event management:** DCMN consolidates all of the events on the network such as threshold breaches and switch path alerts and it tracks configurations by individual SAN administrators that may have caused outage or performance degradation. DCMN event-forwarding mechanism notifies, in real-time, the appropriate e-mail address, pager or third-party application when predefined thresholds are breached.

**Domain views:** The domain dashboard displays contextual views of the host, switch and storage infrastructure. These views help administrators determine the source of a problem.

**Configuration web templates:** DCMN provides administrators with wizards and predefined scripts for deploying configuration changes to the SAN. Predefined templates for common tasks are also in the template repository.

**Managing port capacity by tier:** Administrators can track port utilization by tier. The capacity information provides the SAN administrator time to order more ports, which helps reduce the risk of the SAN becoming a bottleneck.

**Scale-out-architecture:** DCMN maintains a consolidated view of the entire network by leveraging scale-out node architecture. Network operation centers now have a single dashboard for monitoring network events.

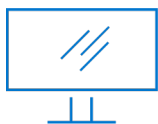
**SAN Analytics:** With MDS SAN Analytics, customers can analyze in real time all Fibre Channel exchanges and report on various metrics, thereby providing comprehensive, timely and continuous monitoring of any potential performance issues or deviations in the network.



## MDS optional features provide the flexibility your environment needs

In addition to DCNM management, there are optional license key features that provide the flexibility for you to choose just the features you need for your environment. From SAN distance extension to mainframe FICON, optional software licenses allow you to pay just for the features your business requires. If you implement any of these features, DCNM will be able to help you fully manage your MDS SAN environment.

License	Description	Features
Enterprise Package	Includes advanced traffic engineering and advanced security features for enterprise SANs	Advanced traffic management includes Inter-VSAN Routing, Quality of Service (QoS) features, Extended credits. Security features include switch-to-switch and host-to-switch authentication, LUN zoning, read-only zones, port security, VSAN based access control, IP Sec for iSCSI and FCiP, IKE Digital Certificates and fabric binding for Fibre Channel.
SAN Extension over IP	Provides integrated, cost-effective and reliable business continuance solutions that use the existing IP infrastructure	Supports SAN Extension Tuner, Inter-VSAN Routing for FCiP and FCiP protocol support, FCiP compression, FCiP Write Acceleration, FCiP Read/Write Tape Acceleration
I/O Acceleration (IOA)	IOA capability is available on MDS 9700 series directors from NX-OS 8.2(1) release and can be enabled using the I/O acceleration package license which is available to configure separately on a module. A module can be configured either for IOA or SAN extension over IP functionality at any time. IOA functionality can be deployed in conjunction with disk data replication solutions to extend the distance between data centers or reduce the effects of latency on application performance due to slower disk or tape devices or low speed links	Transport and speed-independent acceleration that accelerates disk and tape traffic over any 2/4/8/16/32G Fibre Channel port. Works over Metropolitan Area Networks (MANs) and WANs. Data compression in conjunction with FCiP ISLs. High availability using Port-Channels with acceleration over Fibre Channel and FCiP ISLs. Transport Independent Write Acceleration (WA) of Disk Replication traffic and Tape Acceleration (TA) of Tape Replication Traffic.
Mainframe Package	Includes features required for mainframe environments. FICON supports high-speed connectivity between mainframe servers and I/O devices.	VSAN for FICON and FCP Intermixing, FICON Control Unit Port (CUP), Fabric Binding, Switch Cascading, FICON Native Mode Channel-to channel operation, persistent FICON FCID assignment, Port Swapping for host channel cable connections, FICON tape acceleration.
SAN Analytics	There are two options for SAN Analytics: SAN Insights and SAN Telemetry Streaming.	SAN Insights was designed for customers that would like to leverage the data gathering, computation and end-to-end visualization of data provided by the analytics engine that resides on the MDS 32Gb/s switching module through DCNM. SAN Telemetry Streaming is for customers who use Virtual Instruments (VI) or another 3 <sup>rd</sup> party or custom solution to display the data provided by the MDS analytics engine.



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