

Five Reasons Why You Should Use Cisco MDS 64G Fabric Switches

Solution overview

May 2024



Overview

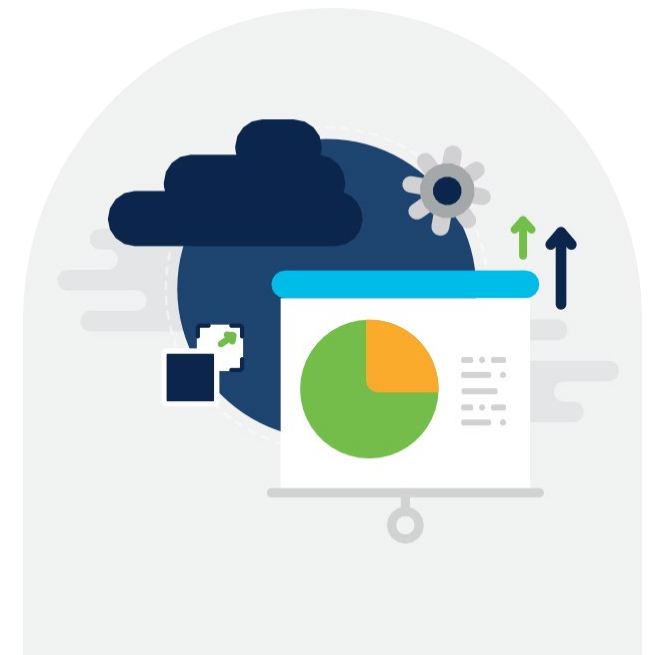
1. Integrated SAN analytics for deep visibility
2. Congestion prevention by using Dynamic Ingress Rate Limiting (DIRL)
3. SAN management and operations by using Cisco NDFC
4. Adoption improvements
5. Architecture for all-flash and NVMe storage networks

Conclusion

Overview

Cisco offers a full range of storage networking solutions that help customers respond quickly to new business needs. These solutions are primarily focused on providing efficient and reliable storage infrastructure for businesses of all sizes. The Cisco® MDS 9000 Family is built from the foundation with next-generation technologies in mind: a critical advantage as customers adds advanced technologies such as 64G Fibre Channel, Non-Volatile Memory Express (NVMe) over Fibre Channel with in-line analytics to get visibility into scalable flash-memory deployments. It is necessary to upgrade the storage networking components to achieve the full potential.

Here are the top five reasons why you should consider the Cisco MDS 64G Fabric switches for your storage infrastructure needs.



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1. Integrated SAN analytics for deep visibility

- Cisco SAN Analytics solution offers end-to-end visibility into the Fibre Channel block storage traffic. The solution is natively available in the storage area network due to its integrated-by-design architecture with the Cisco MDS 9000 switch family.
- Cisco SAN Analytics delivers deep visibility into I/O traffic between the compute and the storage infrastructure. This information is in addition to the already-available visibility that is obtained from individual ports, switches, servers, virtual machines, and storage arrays.
- Cisco SAN Analytics generates multiple performance and error metrics for the complete storage fabric by using a holistic approach. This information can be used to audit the infrastructure.



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2. Congestion prevention by using Dynamic Ingress Rate Limiting (DIRL)

- MDS 9000 series fixed switches have advanced hardware-based capabilities to detect, troubleshoot, and automatically prevent congestion or slow drain situations.
- These benefits can be achieved without any hardware replacement on any MDS software versions.
- Congestion detection occurs at a granularity of 2.5 microseconds and automatic prevention happens as early as 1 millisecond.
- Cisco's patented DIRL feature automatically adapts the traffic rate from a culprit device to prevent the spread of congestion.
- Alternatively, MDS switches can either confine the impact to a switch port or can isolate a slow drain device, thus keeping the rest of the fabric unaffected by the situation.



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3. SAN management and operations by using Cisco NDFC

- Cisco Nexus Dashboard Fabric Controller (NDFC) provides granular, scalable visibility for deep-dive troubleshooting, and maintenance operations that benefit data-center operation teams. It makes fabric management simple and reliable.
- NDFC includes an in-built analytics engine, called SAN Insights that provides visibility into the 1 million initiator-target LUN (ITL) flows or the initiator-target namespace (ITN) flows.
- NDFC's hosting platform, called Nexus Dashboard, provides a 3-node active-active clustering for an industry-unique high-availability management plane.



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4. Adoption improvements

- The 64-Gbps ports allow users to deploy them on existing 32- or 16-Gbps transceivers, thus reducing the initial Capital Expenditures (CapEx) and investment protection with an option to upgrade to 64-Gbps transceivers and adapters whenever needed.
- The MDS 9124V Fibre Channel switch has 24 ports and the MDS 9148V Fibre Channel switch supports 48 ports, where every port supports up to 16000 buffer credit capacity for disaster recovery and backup operations.
- Both the 64-Gbps switches provide superior management of licenses by using the Cisco Software Licensing Using Policy (SLP) feature, making it easy for customers to deploy and utilize the licenses as and when required.
- The introduction of the HBA ER_RDY feature with our host bus adapters (HBA) vendors has paved the way for better congestion management. Now you can manage congestion even on the Host Bus Adapters, with just one CLI and no switch CPU overhead.



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5. Architecture for all-flash and NVMe storage networks

- In multicore environments, NVMe is more efficient because it allows each core to independently talk to the storage system. Users can migrate to NVMe end devices without replacing the core on the same existing MDS 9000 infrastructure, without additional components.
- NVMe over Fibre Channel (NVMe/FC) is compatible with all the storage protocols such as Fibre Channel (FC), Fibre Channel over Ethernet (FCoE) and Small-Scale System Interface (SCSI) providing multiprotocol flexibility. This means different storage components running on different storage protocols such as the ones mentioned above can now seamlessly communicate.
- NVMe/FC is supported on all the Cisco MDS 64G fabric switches and directors on 32Gbps or 64-Gbps speeds by nondisruptive software upgrade making it easy to install.



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To keep up with the storage innovations Cisco MDS 64-Gbps switches are designed to be cost efficient, robust with high ease of automation catering to customer's design needs. The new MDS 9396V fixed switch along with MDS 9124V and MDS 9148V makes it possible for powerful technologies such as NVMe over Fibre Channel. And customers can now deploy the next generation monitoring and analytics solutions without a major equipment upgrade. Thus, paving the way for a seamless transition to NVMe-based solutions on-the-go whenever the customers are ready.



Solution overview

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