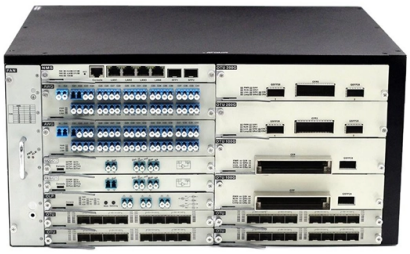
Fiber optic switch VMware



Overview

How Virtual Machines Access Data on a Fibre Channel SANDepending on a port the HBA uses to connect to the fabric, one of the SAN switches receives the requ.

Key Takeaways

Fibre Channel switches are critical for connecting VMware ESXi hosts to SAN storage, enabling high-performance, redundant, and manageable storage networks.Role of Fibre Channel Switches

Fibre Channel (FC) switches act as intermediaries between ESXi hosts and SAN storage arrays, routing I/O requests from virtual machines to the appropriate storage devices. When a VM reads or writes to a virtual disk on a SAN, the VMkernel maps the virtual disk blocks to physical storage and sends the I/O through the host HBA to the FC switch, which then forwards the request to the storage array .

Configuration Best Practices
• Zoning: Configure FC switches to control which host initiators can access which storage targets. Each host initiator port should be in a separate zone with its corresponding target ports. Activate the zoning configuration after saving it to ensure proper connectivity .

• Dual-Fabric Design: Use a dual-fabric SAN setup to provide full path redundancy. Each host HBA port should connect to both fabrics, ensuring that each LUN has an active and standby path for failover .

• Host Bus Adapter (HBA) Settings: Ensure HBAs are compatible with VMware ESXi and configured correctly. Features like N_Port ID Virtualization (NPIV) allow multiple virtual adapters per physical HBA, supporting VM-level SAN access .

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• Block Size and Compatibility: Some storage arrays, such as NetApp EF series, require volumes to be set to 512-byte block size for VMware compatibility .
Troubleshooting Connectivity
• Verify that ESXi hosts can see the storage targets and LUNs.

• Rescan storage adapters if targets are not visible.

• Check FC switch zoning and ensure RSCN messages propagate to hosts.

• Confirm that the storage array is listed in the VMware Hardware Compatibility Guide .
Multipathing and Failover

VMware uses multipathing to manage multiple paths to a LUN. In a dual-fabric setup, one path is active while the other is standby. If the active path fails, I/O is redirected to the standby path automatically, ensuring continuous access .

Summary

Properly configured Fibre Channel switches in VMware environments provide high availability, redundancy, and optimized I/O performance. Key steps include zoning, dual-fabric design, HBA configuration, and multipathing. Regular monitoring and adherence to vendor best practices ensure reliable SAN connectivity for virtualized workloads .

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