

Insufficient Fibre Channel storage disk space



Overview

Troubleshooting fibre channel storage connectivity Verify that the initiator is registered on the array, and that the storage array is configured correctly.

Key Takeaways

Insufficient Fibre Channel storage disk space can be addressed by resizing LUNs, redistributing VMs, adjusting queue depth, and ensuring proper multipathing and SAN configuration. Identify the Issue

First, determine whether the storage shortage is due to full LUNs, misconfigured VMFS volumes, or performance bottlenecks. Check if all ESXi hosts are affected or only specific hosts, and review SCSI errors in VM event logs or /var/log/vmkernel.log for signs of reservation conflicts or I/O issues (Dell documentation) .

Expand or Reallocate Storage

- Resizing LUNs: If the external storage supports it, increase the LUN size on the SAN. After resizing, rescan the Fibre Channel devices on the ESXi host to update the kernel's view of the new size using commands like `echo 1 > /sys/class/scsi_device//device/rescan` (Red Hat documentation) .
- Redistribute VMs: Reduce the number of VMs per LUN or move VMs to other LUNs to improve performance and free space .

- Use Raw Device Mapping (RDM): For direct access to raw disks, RDMs can help manage storage more efficiently and bypass VMFS limitations .

Optimize Performance

- Queue Depth Adjustment: Set the storage device queue depth appropriately for FC disks. For example, Hitachi Vantara recommends a queue depth of 64 for FC disks to prevent HA/FT triggers in VMware . Use `esxcli storage core device set -d -O` to configure.
- Multipathing and Failover: Ensure all HBAs see the same LUNs and configure active-passive storage arrays correctly. Multipathing software inside VMs should not be used for a single physical LUN; instead, rely on ESXi host multipathing .

Best Practices

- Maintain one VMFS volume per LUN to avoid fragmentation and performance issues .
- Test changes in a development environment before applying to production .
- Monitor latency and I/O patterns to identify bottlenecks and ensure balanced distribution of VMs across LUNs.
- For diskless servers booting from SAN, a shared diagnostic partition is acceptable; otherwise, avoid placing diagnostic partitions on SAN LUNs . By combining LUN resizing, VM redistribution, queue depth tuning, and proper multipathing, you can effectively resolve insufficient Fibre Channel storage disk space while maintaining performance and reliability.

Article Content

Troubleshooting fibre channel storage connectivity

Verify that the initiator is registered on the array, and that the storage array is configured correctly. You may need to

Troubleshooting the common Fibre Channel problems

Unlike Ethernet-based storage protocols, FC was designed from the ground up for low latency, high reliability, and

Setting Up ESX Fibre Channel Environment

The FCoE protocol encapsulates Fibre Channel frames into Ethernet frames. As a result, your host does not need special Fibre

Best Practices for Fibre Channel Storage

When using ESXi with Fibre Channel SAN, follow recommendations to avoid performance problems.

VMware ESXi: Troubleshooting Storage issues within VMware ...

This article explains how to troubleshoot VMware vSphere ESXi storage (iSCSI/Fibre Channel) issues.

Huawei SAN Storage Host Connectivity Guide for Red Hat

A Fibre Channel (FC) SAN is a specialized high-speed network that connects host servers to storage systems. The FC SAN

VMware ESXi: Troubleshooting Storage issues within VMware ...

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How to determine if there is

Best Practices for Fibre Channel Storage with ESXi

Check with your storage representative if your storage system supports Storage API - Array Integration hardware acceleration

ESXi Fibre Channel SAN Requirements

Fibre Channel SAN Requirements In preparation for configuring your SAN and setting up your ESXi system to use SAN storage,

Best Practices for Fibre Channel Storage

Best Practices for Fibre Channel Storage When using ESXi with Fibre Channel SAN, follow recommendations to avoid performance

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Preventing Fibre Channel SAN Problems

Preventing Fibre Channel SAN Problems When you use ESXi with a Fibre Channel SAN, follow specific guidelines to avoid SAN

Queue Depth, Setting the Queue Depth, Fast I/O Failure for Fibre ...

AIX supports Fast I/O Failure for Fibre Channel devices after link events in a switched environment. When the FC adapter driver

Chapter 8. Using Fibre Channel devices | Managing storage devices

Configure Fibre Channel devices for high-speed SAN connectivity using native RHEL drivers including lpfc, qla2xxx, and zfcp.

Fiber Channel LUNs wont show up in Disk Manager or Server Manager

Hi Everyone and Happy New Year. I am having an issue where my Windows Server 2019 box is not seeing any of the

Fibre Channel storage

Fibre Channel storage While FC storage has strong performance and reliability, those factors add up to both high cost and

Configuring Fibre Channel Storage

When you use ESXi systems with SAN storage, specific hardware and system requirements exist.

Configuring Fibre Channel disks

To list all the disk and the owning volume groups that are known to the subsystem, run the lspv command. The names of the disks in

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

