

# Emulex virtualisation solutions for Windows Server 2008

The Windows Server 2008 operating system, with its built-in Web and virtualization technologies, is the most robust, security-rich and reliable foundation from Microsoft to date. SAN connectivity is a fundamental part of the Windows Server 2008. SAN connectivity improves efficiency and reliability by centralizing storage. It is a requirement for virtualization technologies providing the framework for VM mobility, provisioning and disaster recovery.

## Hyper-V Virtualization – Enhanced SAN Connectivity with Emulex

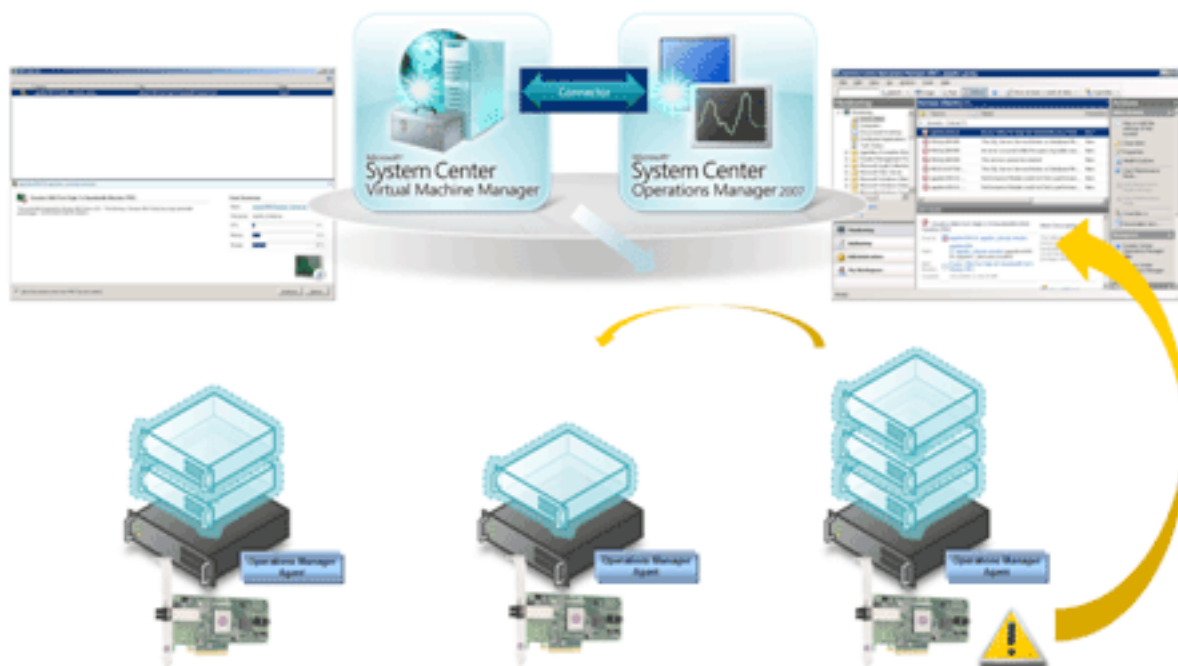
With the unrelenting escalation of costs for power, cooling and data center footprint, IT managers are under pressure to extract even more performance from their hardware and software. Hyper-V, the next-generation server virtualization technology for Windows Server 2008, allows a single physical server to do the work of multiple under-utilized servers. Recent studies have shown that 60% of virtualized servers are connected to a Fibre Channel SAN, enabling rapid migration of virtual machines and fail-over cluster support. Emulex HBAs and FCoE CNAs are the optimum storage connection for Hyper-V and Windows Server 2008.

Emulex is also releasing a new management pack for Hyper-V that supports Performance and Resource Optimization (PRO) for System Center Virtual Machine Manager 2008. The Emulex Management Pack monitors I/O usage relative to maximum available bandwidth and provides the option to migrate virtual machines to balance I/O loads.

Hyper-V requires a SAN to enable VM mobility, enable disaster recovery, and improve storage provisioning. Emulex LightPulse Adapters with Hyper-V Failover Clustering provide a highly available solution. With LightPulse Virtual HBA technology optimized for Hyper-V and Virtual Machine Manager, Emulex delivers enhanced SAN connectivity with the best performance and easy to use powerful management software that enable the creation and management of Virtual HBA Ports (VPorts).

### Enhance security and performance of Hyper-V and VMM in a SAN

Using Emulex LightPulse Virtual HBA Technology and HBAnyware, Emulex Fibre Channel HBAs and FCoE Converged Network Adapters work with Virtual Machine Manager to provide a fully integrated SAN solution for Windows Server 2008 Hyper-V and Microsoft Virtual Server 2005 R2.



## Speed Up Provisioning and Streamline Management with Emulex

Windows Server 2008 features many new features designed to simplify and automate server management in a SAN environment. Key features include:

- **Windows Server 2008 Core installation** – Option to install a minimum OS footprint.
- **Windows PowerShell** – Command-line shell and scripting technology to automate system administration tasks and increase IT productivity.
- **Storage Explorer** – New storage management tool in Windows Server 2008.
- **MPIO Enhancements** – Simplify MPIO installation and set-up with an inbox, industry-standard DSM.
- **Enhanced Storage Features** – Changes to the disk management environment, including enhancements to VDS and VSS.
- **PRO Packs** – System Center Virtual Machine Manager 2008 supports new Performance and Resource Optimization (PRO) packs. Emulex launched a Management Pack that monitors I/O usage relative to maximum available bandwidth and provides the option to migrate virtual machines to adjust I/O loads.

IT organizations using Emulex adapters can be assured that all these new features work effectively in an Emulex connected SAN and also take advantage of additional efficiency features using Emulex AutoPilot Installer® deployment software and the HBAAnyware® centralized management application.

## Windows Server 2008 – Optimal Performance and Power Efficiency with Emulex

Emulex offers a broad family of LightPulse® Fibre Channel and Fibre Channel over Ethernet (FCoE) adapters supporting Windows Server 2008. In supporting Windows Server 2008, Emulex was able to take advantage of a number of new high-performance Windows architectural features. Here are some examples of how Emulex is able to give you an excellent connectivity solution for your Windows Server 2008 storage area network.

### Improve CPU and Memory Utilization - Storport Miniport Driver

Windows Server 2008 reduces server CPU requirements by 30-50% for I/O intensive workloads when compared to Windows Server 2003. Windows Server 2008 also includes significant improvements with memory usage, which is particularly beneficial for applications like Exchange Server that support a large number of users. The Emulex Storport Miniport driver is optimized for use with Windows Server 2008 and delivers benefits in both CPU and memory utilization.

### Boost Performance with Enhanced Interrupt Handling - MSI-X

With the proliferation of server virtualization, it is increasingly important to achieve maximum CPU utilization. Windows Server 2008 supports Message Signaled Interrupts-eXtended (MSI-X), a new technology that allows CPU interrupts from multiple devices to be processed in parallel. MSI-X is supported with Emulex 8Gb HBAs and provides maximum efficiency when redundant HBAs are installed for failover and load balancing.