

Benefits of Microsoft® Hyper-V Integration with StorTrends® iTX



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Introduction to AMI and StorTrends iTX

American Megatrends Inc. (AMI) creates and manufactures key hardware and software solutions for the global computer marketplace, providing the highest quality and compatibility necessary to build today's advanced computing systems. Established by S. Shankar in 1985, AMI's mission is to design state-of-the-art computer solutions and develop advanced technology for the best computing solutions in the world.

American Megatrends has been in the data storage business since 1994, with the inception of the MegaRAID® Host Bus Array (HBA). AMI quickly ascended to become the world's largest third party RAID vendor. By 1996 AMI was well known for its RAID expertise and was named the number one third-party host-based RAID controller manufacturer in the world by Gartner Group's Dataquest. In 2001, AMI sold its MegaRAID® Division to LSI Logic, in order to focus on expanding its lineup of NAS and IP-SAN solutions. In 2002, AMI launched the StorTrends® Product Division, and has moved steadily forward from this point with its sights set on once again being a leader in the storage market.

Today, StorTrends iTX data storage software and StorTrends IP-SAN and NAS storage appliances are installed in dozens of countries, and trusted by Tier One OEMs, SMBs, local governments and institutions. StorTrends empowers users with a fast, flexible setup and provisioning routine, and dramatically reduces the time and cost required to manage, maintain and expand a SAN environment, whether locally or remotely. While AMI relies on standard and proven technologies and standards like Linux and iSCSI to reduce costs and time-to-market (TTM), AMI's value-add has always been in the careful and meticulous design of its storage software technology. Created by the engineering team that developed the award-winning and ubiquitous MegaRAID® controller, StorTrends storage appliances utilize Commercial Off-the-Shelf (COTS) hardware, thereby guaranteeing the user the latest in hardware technology at the best possible price.

StorTrends iTX and Virtualization

The adoption of virtualization in the enterprise has greatly increased flexibility in deployment and life cycle management of applications. Today, many data centers use virtualization to consolidate workloads and reduce server sprawl. They are also increasingly pairing virtualization with clustering technologies to provide a robust IT infrastructure with high availability and quick disaster recovery.

One area that is a major strength for StorTrends iTX is its integration with the key virtualization solutions on the market today. StorTrends storage appliances powered by StorTrends iTX are certified for use with VMware® ESX Server, Citrix® XenServer®, and Hyper-V™ from Microsoft®. The flexibility and robustness of the virtualized environment is guaranteed thanks to several of the core technologies in StorTrends iTX, including its OS-agnostic High Availability, support for clustering, its advanced Redirect-on-Write Snapshot Technology, and Asynchronous Replication with Wide Area Data Services (WDS).

In particular, its strong synchronous and asynchronous replication modules and snapshot technology allows StorTrends iTX to offer outstanding integration and support for server virtualization with Microsoft® Hyper-V™.

What is Hyper-V™?

Hyper-V is a hypervisor-based technology from Microsoft that is a key feature of Windows Server 2008 R2. It provides a scalable, reliable, and highly available virtualization platform. It is part of Microsoft's ongoing effort to provide our customers and partners with the best operating system platform for virtualization. Microsoft® Hyper-V™ Server 2008 R2 is a stand-alone product that provides a reliable and optimized virtualization solution enabling organizations to improve server utilization and reduce costs.

Since Hyper-V Server is a dedicated stand-alone product, which contains only the Windows Hypervisor, Windows Server driver model and virtualization components, it provides a small footprint and minimal overhead. It easily plugs into customers' existing IT environments, leveraging their existing patching, provisioning, management, support tools, processes, and skills. The latest version of Microsoft Hyper-V, Microsoft Hyper-V Server 2008 R2, includes live migration, cluster shared volume support and expanded processor and memory support for host systems.

Usage Scenarios for Hyper-V

Hyper-V provides a dynamic, reliable, and scalable virtualization platform combined with a single set of integrated management tools to manage both physical and virtual resources, enabling the creation of an agile and dynamic data center. Virtualization with Hyper-V enables flexible and robust solutions for Server Consolidation, Business Continuity and Disaster Recovery, Testing and Development, and much more.

Key Features of Hyper-V

The latest version of Hyper-V from Microsoft (Windows® Server 2008 R2 Hyper-V) adds new features that greatly increase its flexibility and performance. For example, by using live migration, VMs can now be migrated from one physical computer to another while running, and storage can be added or removed from a VM while it is running. In addition, Hyper-V now better leverages the power of physical computer hardware with greater processor support and deeper support for physical computer hardware. Some of the key features and recent improvements to Hyper-V include:

- Live Migration
- Increased Hardware Support for Hyper-V Virtual Machines
- Cluster Shared Volumes
- Improved Cluster Node Connectivity Fault Tolerance
- Enhanced Cluster Validation Tool
- Improved Management of Virtual Data Centers
- Improved Virtual Networking Performance
- Increased Performance and Reduce Power Consumption
- Enhanced Networking Support
- Dynamic VM storage
- Broad OS Support: Broad support for simultaneously running different types of operating systems, including 32-bit and 64-bit systems across different server platforms, such as Windows, Linux, and others.
- Network Load Balancing
- New Hardware Sharing Architecture
- Virtual Machine Snapshot: Hyper-V provides the ability to take snapshots of a running virtual machine so you can easily revert to a previous state, and improve the overall backup and recoverability solution.
- Extensibility

Key Benefits of Hyper-V Integration with StorTrends iTX

When used together with StorTrends storage appliances running StorTrends iTX, a Windows Server offering virtualization with Hyper-V can take advantage of many of the features of StorTrends iTX to greatly enhance the power and performance of the virtualized environment.

StorTrends iTX and its OS-agnostic High Availability feature is fully compatible with Microsoft Hyper-V clustering, for creating a highly available, highly reliable virtualized server environment. The OS-agnostic High Availability in StorTrends iTX gives a fully redundant storage setup to maintain full connectivity that can quickly and easily re-establish server connectivity in the case of a disaster with only changes sent via StorTrends' advanced snapshots and WDS capability.

Because Hyper-V is rooted in Microsoft Windows® Server technology, it is a VSS-aware application, which allows it to provide an extra layer of data protection. Volume Shadow Copy Service (VSS), introduced by Microsoft in Windows® Server 2003 and featured in Windows® Storage Server, is the infrastructure that enables built-in high-fidelity snapshot (shadow-copy) capability. VSS mitigates any potential problems with snapshots being out of synchronization due to delayed writes or I/O caching. By coordinating writes and pausing the virtual machine (VM), it allows for iTX to intelligently take a snapshot, to ensure data consistency among any guest OS running a database or similar write-intensive applications.

In conjunction with the snapshot capability featured in Hyper-V, StorTrends iTX offers extreme reliability and redundancy with second storage layer instantaneous snapshots taken of VMs for additional protection against crash-consistent snapshots. Moreover, multiple Hyper-V virtual machines (VMs) have full access to both iSCSI and NAS from the same unit.

With Hyper-V, organizations can take advantage of the cost savings of virtualization and make the best use of server hardware investments by consolidating multiple server roles as separate virtual machines (VMs) running on a single physical machine. Moreover, multiple different operating systems—Windows®, Linux, and others— can be run in parallel on a single server to more fully leverage the power of x64 computing. Through StorTrends iTX, Hyper-V virtual servers have full access to both iSCSI and NAS from the storage array, saving power, operating and hardware cost. By virtue of its Thin and Auto Provisioning capabilities, StorTrends iTX also contributes to disk space savings by allowing multiple VMs to be saved on a single array.

Finally, with Hyper-V live migration, running virtual machines (VMs) can be migrated from one Hyper-V physical host to another, without any disruption or perceived loss of service. IT professionals are increasingly looking to live migration to create a dynamic and flexible IT environment that responds to emerging business needs. Live migration provides the core technology required for dynamic load balancing, VM placement, high availability for virtualized workloads during physical computer maintenance, and reduced data center power consumption. Thanks to its tight integration with Hyper-V and its live migration capabilities, administrators using StorTrends iTX can easily add storage capacity on the fly - without disrupting users and virtual machines.

Conclusion

The broad support of StorTrends iTX for leading virtualization solutions such as Microsoft Hyper-V Server is just one of the advantages of choosing StorTrends. To learn more about how to integrate Hyper-V with StorTrends iTX, and experience the benefits of virtualization, including reduced operating costs and increased reliability and flexibility, contact a StorTrends Sales Representative at 1-800-U-BUY-AMI, or visit the home of StorTrends storage products online at www.stortrends.com.

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