Accelerating Virtualization

with Networked Performance Flash™

Astute Networks

Welcome to Astute Networks

I want to take this opportunity to welcome you to Astute Networks and thank you for considering our ViSX family of VMware performance acceleration solutions.

ViSX features two key Astute innovations - Networked Performance Flash,™ a unique network-based flash memory architecture for shared performance across Virtual Machines, and DataPump Engine,™ our patented processor that offloads 100% of network and storage traffic to free up I/O and deliver sustained 100% random I/O and bandwidth – fused together in a cost-effective, easy-to-deploy, small footprint appliance that maximizes the performance of VMware-based virtualized server, virtualized desktop, and cloud environments.

Like many organizations we speak with, you are likely enjoying several benefits of virtualization, yet you are facing new challenges that virtualization has created for you, including an inability to support higher Virtual Machine (VM) counts per physical server, slow VM datastore performance that is reliant on slow traditional storage systems, and underperforming business-critical applications due to virtualization's "funnel effect" restriction of more VMs contending for the same I/O resources. As such, organizations have been hesitant to virtualize production environments and realize the full benefits of virtualization.

ViSX eliminates this "funnel effect", delivers network-based, shareable, high performance VM datastores, and resolves key virtualization pain points and performance issues. A brief configuration and then vMotion your VM datastores to ViSX is all it takes.

It's as simple as that. Best of all, ViSX is VMware Ready Certified to assure compatibility, and additive to your existing infrastructure, to provide 100% investment protection of your server, network and storage assets. No changes, no rip and replace, and no forklift upgrade.

I invite you to contact us directly for more information on how ViSX can maximize the performance of your VMware deployments and I thank you, again, for considering Astute Networks.

Best regards,

Steve Topper, CEO
Astute Networks, Inc.

ViSX G3 Solutions for VMware

Accelerating Virtualization with Networked Performance Flash

Virtualization offers powerful benefits: server consolidation, lower TCO, the agility to respond to changing business needs.

However, virtualized server or desktop environments experience performance bottlenecks from overreliance on disk-based storage.

ViSX G3 Solutions for VMware

Astute Networks ViSX G3 solutions off-load the performance demands of VMs from your current virtualized disk-based storage — eliminating the bottlenecks that cause virtual stall.

The ViSX G3 solution is fully complementary to your existing VMware virtualized infrastructure and provides 100 percent protection of your investment in existing server, network and storage assets.

ViSX G3 solutions deliver high performance over a standard network to indivdual VMs as needed.

ViSX G3 Solutions for VMware

Accelerating virtualization with Networked Performance Flash

Delivering the Performance You Need Where You Want It

Astute Networks designed its unique Networked Performance Flash™ architecture and patented DataPump Engine™ technology to deliver high performance over a standard network to individual VMs as needed, enabling:

The Challenge of Virtual Stall

Slow virtual machine data stores can make companies slow to adopt virtualization.

- Slow response in SAP, Oracle, SQL and other large databases

- SLAs for Microsoft Exchange, SharePoint and other I/O-intensive applications

- Unpredictable and slow backup and recovery times for virtualized data stores

- Limited server consolidation initiatives — few VMs per host server

- Poor virtual desktop implementation performance

- Increased VM-per-host density to improve server consolidation.

- Faster backup and recovery of virtualized data stores to increase availability service levels.

- Maximum acceleration of Exchange, SharePoint and other high-performance applications.

- Performance needed to virtualize Oracle, SAP, SQL and other business-critical databases.

- Efficient scaling of virtualized desktop infrastructures to further centralize management.

The Power of Flash Delivered Through Standard Interfaces

ViSX G3 solutions hold VM data stores using performance-optimized flash rather than capacity-optimized disks commonly used in virtualized storage. ViSX G3 solutions are installed and configured easily in minutes via FlashWRX™ a web-based graphical user interface (GUI) and simple command line interface (CLI).

They connect using standard Ethernet local area networks and iSCSI protocol and are VMware Ready certified to work with current and future virtualized servers, networks and storage infrastructure.

ViSX G3 Solutions Complement Investments in Existing Infrastructure

VMware virtual machines run diverse applications and databases that benefit from complementary data stores. The ViSX G3 enables VMs to use disk-based data stores for optimum capacity and flash-based data stores for optimum performance. This innovative approach complements past investments in virtualized storage infrastructure to the lower total cost of ownership (TCO) while increasing virtual machine performance.

ViSX G3 Solutions Complement Existing Virtualized Infrastructure

ViSX G3 solutions work with existing server, network and storage infrastructure — and the built-in features of vCloud, vSphere, vCenter and other VMware products — to provide advanced functionality including snapshots, thin provisioning, backup and restore, online migrations, data de-duplication, high-availability multi-pathing, dynamic load-balancing and more.

These powerful solutions give you the freedom to use any VMware Ready hardware, software and service products for infrastructure management, data protection and other vital functions. They also relieve the strain on existing virtualized storage and free storage capacity resources for use with other VMs, applications and databases.

ViSX G3 Solutions and VMware Combine for Enterprise Functionality

ViSX G3 Solutions are VMware Ready certified for guaranteed interoperability with VMware and other VMware Ready certified products, such as backup, de-dupe, replication and more. ViSX G3 is also performance optimized for vSphere virtual machines.

- Accelerated virtualized storage with vSphere Storage APIs – Array Integration (VAAI)

- Large volume support with vSphere Virtual Machine File System (VMFS)

- Snapshots with vSphere Virtual Disk Snapshot

- Thin provisioning with vSphere Virtual Disk Thin Provisioning

- Backup with de-duplication and restore with VMware Data Recovery

- Online data store migration with vSphere Storage vMotion

- SLA management with vSphere Profile-Driven Storage

- High-availability multipathing with vSphere iSCSI Multipathing

- Performance management with vSphere Storage I/O Control (SIOC)

- Dynamic load-balancing with vSphere Storage Distributed

- Resource Scheduler (Storage DRS or SDRS)

- Assisted storage management with vSphere Storage APIs – Storage Awareness

Essential for Virtualization and Cloud Computing

In just three units of rack space (3U) and using less than 300 watts of power, ViSX G3 is a complete solution that installs and configures in minutes and supports 64 hosts and their VMs, including extended warranty, professional support and on-site service. Starting at less than $30,000 — about $500 per host and less per virtual machine.

vmware®
READY
CERTIFIED

Performance. Speed. Control.

ViSX G3 Features and Benefits

Innovative Networked Performance Flash™ Architecture

Innovative architecture provisions flash memory over local area networks, complementing disk-based virtualized storage with performance-optimized flash, to accelerate the performance of virtual machines in cloud computing, virtualized server, and virtualized desktop environments.

Unique DataPump Engine™ Technology

Patented technology accelerates network traffic (TCP/IP), virtualized data store traffic (iSCSI), flash performance and protection (RAID) using the Astute Networks DataPump Engine processor, custom hardware and unique software to optimize ViSX G3 performance.

Performance-optimized Virtualized Storage

Support the most demanding databases, applications, and virtual machines with sustained 80,000 random IOPS performance — the equivalent of hundreds of "high-speed" enterprise disks — with each ViSX G3 solution added to a virtualized infrastructure.

Lowest TCO

Slash the TCO of VMware virtualized infrastructures. ViSX G3 solutions lower capital expenditures (CAPEX) by eliminating the overprovisioning of disk capacity and lower operating expenditures (OPEX) by requiring just three units (3U) of rack space and 300 watts of power.

Certified VMware Ready Interoperability

ViSX G3 solutions are optimized for VMware and meet stringent VMware Ready Certified requirements. This ensures seamless interoperability with VMware and other VMware Ready products while delivering unique features with significant value to VMware virtualized infrastructures.

High Availability Enterprise Design

High levels of reliability, availability, and serviceability (RAS) are incorporated into the design of ViSX G3 solutions. Key items are redundant and all components are field-serviceable modules. ViSX G3 solutions utilize enterprise flash memory only to deliver the optimum availability.

Fast Installation and Easy Setup

Everything you need to get started with a ViSX G3 solution is included. It installs into common racks or cabinets in minutes and sets up using a simple command line interface (CLI) and Web-based graphical user interface (GUI). After initial configuration, ViSX G3 solutions are managed by VMware.

Robust Monitoring and Reporting

Achieve lights-out management and support other advanced monitoring and reporting practices using your existing tools with the SNMP, LOM, IPMI, SMART and SOAP/XML open standards supported by ViSX G3 solutions. Plus, there is an open API to support richer custom integration.

Automated Flash Management

ViSX G3 solutions make flash management simple by continuously monitoring flash usage, calculating endurance, and reporting service life remaining as an easy-to-understand percentage. In the unlikely event a flash module needs replacement, ViSX G3 solutions will send proactive alerts and automatically substitute modules with available spares.

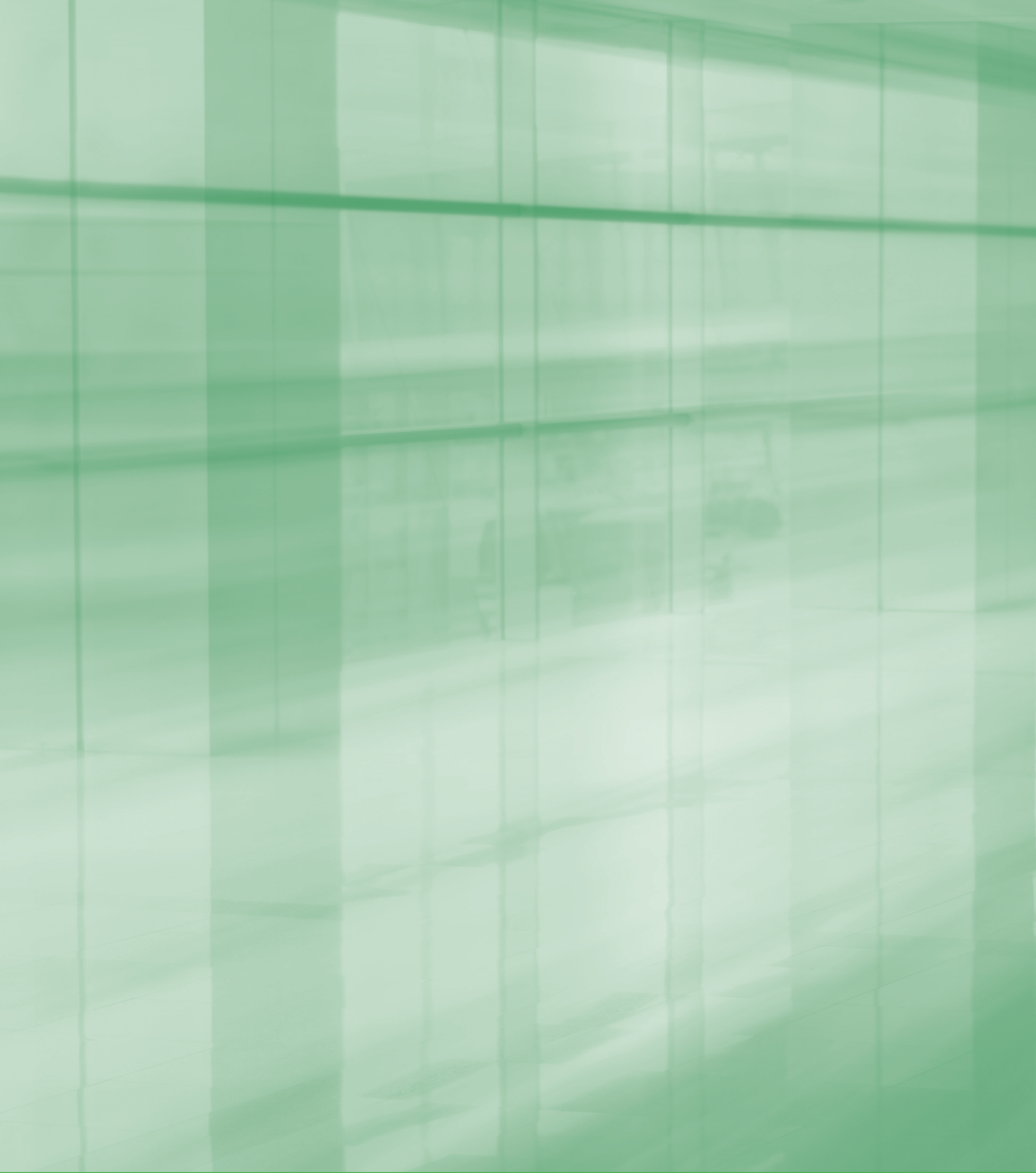## Future Proofing Investment in Existing Architecture

ViSX G3 solutions work with existing server, network, and storage infrastructure. This innovative approach complements past investments in virtualized storage infrastructure to the lower total cost of ownership (TCO) while increasing virtual machine performance.

Flexible Ethernet Network Connections

Leverage existing virtualized network infrastructure and connect ViSX G3 solutions to standard Ethernet local area networks. Choose dual high-speed 10G or dual low-cost 1G Ethernet ports — both are included — to provide virtual machines with access to ViSX G3 solutions.

Complete and Fully Integrated Solution

Everything you need to support virtual machines in cloud computing, virtualized server and desktop environments is included with ViSX G3 solutions. There are no hidden costs and each includes comprehensive extended warranty, expert support and on-site service.