Today, businesses of all sizes need cost-effective, dynamic IT capability. If you’re running a small or midsized company, you need to reduce capital and operating costs while simplifying operations and protecting against application downtime. In a larger enterprise, you need a scalable, high performance infrastructure that is responsive to changing business needs. And in either, you need faster and more adaptable IT service delivery to the business.

Together, IBM® and VMware deliver a range of business infrastructure virtualization solutions to meet these needs.

VMware vSphere™ leverages the power of virtualization to transform data centers of all sizes into dramatically simplified environments to provide the next generation of flexible, reliable IT services. vSphere abstracts applications and information from the complexity of the underlying infrastructure, creating an internal cloud infrastructure that allows IT to focus on the support and enablement of business value. These solutions combine industry leading virtualization technology from VMware and IBM’s resilient high-performance System x® and BladeCenter® servers and storage platforms to support even the most business-critical applications.

The result? The cost-savings, improved service delivery, and risk management that your company needs now.

Cost-effective, Dynamic Business Infrastructure
Virtualization from VMware and IBM System x
and BladeCenter
THE POWER OF COLLABORATION

When IBM and VMware first began collaborating on solutions, they discovered that the combination of IBM mainframe-inspired x86 servers and VMware x86 server virtualization experience would deliver more innovative solutions than either company could working alone. For running mission-critical workloads, the companies delivered rock-solid reliability, dramatic cost-savings and increased efficiency that surpassed every other solution in the industry. More than ten thousand joint customers later, IBM and VMware continue to focus on designing and developing virtualization solutions that redefine industry standards and enable your company’s journey to cloud computing.

“IBM was the first VMware system vendor. And our collaboration and innovation continues today. With vSphere on IBM systems, clients can virtualize more scalable systems giving them more flexibility and lower costs.”

Alex Yost
IBM System x Vice President and Business Line Executive

Achieving business results with a complex IT infrastructure means more than simply deploying an add-on virtualization solution; it means redefining IT as a versatile instrument of business strategy. Achieving this kind of transformation requires a solution offering scalability, performance, and availability, as well as unique features that drive business value. IBM and VMware have built an array of rich, integrated solutions delivering these benefits and more.

UNIQUE VIRTUALIZATION SOLUTIONS

At the core of the IBM and VMware solutions are innovations resulting from the collaboration of two of the most advanced technology companies in the world.

Mainframe-inspired reliability. IBM System x and IBM BladeCenter servers shield your IT from disaster with multiple levels of protection, including IBM Active Memory™, redundant I/O, hot-swap components, I/O Virtualization, IBM Predictive Failure Analysis™, light path diagnostics, and automatic failover.

VMware vSphere complements this with availability services that allow IT to provide applications with varying levels of high availability depending on their priority and need: VMotion™ live migration of virtual machines across servers, Storage VMotion live migration of VM disks, High Availability automatic restarting of applications in the event of failures, and VMware Fault Tolerance for continuous availability.

The eX4 chipset and scalability. IBM System x enterprise servers with the eX4 chipset and technology provide revolutionary scalability to 96 processor cores and 1TB of memory, advanced reliability features, and a high-performance memory subsystem with multiple layers of memory protection. The increased processing power of more cores and additional memory capacity allows the virtualization of larger business-critical workloads without impacting application performance. More applications in a virtualized environment means greater cost savings and reduced downtime. VMware Dynamic Resource Scheduler dynamically load balances these server resources to deliver the right resource to the right application based on business priority, allowing applications to shrink and grow as needed.

Memory protection technology. Standard on System x enterprise servers is IBM Memory ProteXion™ technology, which uses redundant bits in a data packet similar to the hot-spare drive of a RAID array. With Memory ProteXion the memory controller can automatically re-route data around a failed DIMM through spare bits to provide additional security and reliability.

WHY IBM AND VMWARE?

- Scalable, resilient virtualization
- Lower total cost of ownership and quick return on investment
- Best-practices deployment
- Higher reliability
- Vast virtualization experience
- One-stop integrated support

IBM BladeCenter with VMware Virtual User Environment
**Energy Savings.** IBM System x and BladeCenter servers are designed to be energy efficient from the ground up using solid-state drives and high-efficiency power supplies and reducing the number of power hungry components on the server. You can be assured that you are starting with hardware that will deliver leadership performance per watt for all of your applications. IBM Systems Director Active Energy Manager allows companies to predict and manage periods of peak energy usage by monitoring and throttling energy consumption. VMware Distributed Power Management allows energy savings at low usage times by consolidating workloads onto fewer servers, and powering down those that aren’t needed.

**Predictive failure technology.** Using advanced heuristic techniques and self-diagnostics, IBM Predictive Failure Analysis (PFA) can help detect when components are operating outside of normal thresholds. Because PFA can predict the failure of supported components, you can replace them before they fail. While almost all vendors offer PFA on hard drives and memory, IBM includes PFA on selected models for hard drives, memory, processors, power supplies, fans, and voltage regulator modules.

**THE “ALWAYS ON” IT ENVIRONMENT**

When integrated with Site Recovery Manager from VMware, selected IBM System Storage platforms expand the benefits of virtualization and consolidation. You’ll be able to develop a complete disaster recovery response for a data center, single building, entire campus, or remote site, with automated failover for individual components. And when your virtual machines power back up in the event of a failure, they’ll do so automatically according to the specific policies in your recovery plan.

From large, scalable platforms to smaller systems, IBM and VMware deliver solutions that are optimized for virtualization workloads. Each solution leverages the power of virtualization to drive higher levels of server utilization, greater efficiencies, and best-in-class reliability, no matter what.

**Cost Effective Availability and Business Continuity**

Resilient IBM systems combine with VMware vSphere avoidance of planned downtime and reduction of unplanned downtime to keep IT running. Planned downtime is avoided via migration of workloads between hosts when refreshing servers or performing maintenance. VMware High Availability reduces unplanned downtime by automatically restarting applications when an O/S or host server fails. For the most critical applications, VMware Fault Tolerance creates virtual machine “pairs” that run in lock step; in the event of an unexpected hardware failure that causes the active VM to fail, the secondary VM immediately becomes active and continues to run. IBM storage management products, including Tivoli Storage Manager FastBack™ add another layer of protection with affordable data recovery using VMware Data Protection APIs.

**Rapid Recovery from Disaster**

IBM server and storage systems with VMware Site Recovery Manager simplify recovery from full datacenter outages, without the need for expensive redundant hardware, making disaster recovery rapid, reliable and affordable. DR plans can be fully tested in advance—with no downtime for applications.

**Mission-critical Applications**

Virtualizing Microsoft Exchange using VMware on IBM System x and BladeCenter improves application performance and availability, and saves costs by avoiding costly over-provisioning of Exchange server resources. IBM and VMware set the record for most Exchange mailboxes on a single server with 16,000 “heavy” Exchange users on one IBM System x3850 M2 server running VMware. This is an unprecedented achievement highlighting the value of scale-up server technology. Consolidating the SAP infrastructure through virtualization reduces costs, speeds deployment, and mitigates project risk—benefits that accrue throughout the software lifecycle while adhering to compliance requirements. These and other mission-critical workloads benefit from IBM-VMware capabilities for cost-effective high availability and disaster recovery.
Secure, Cost-effective Desktops

Breakthrough virtualization results extend to the desktop as well. Company data is secure in the data center, desktop provisioning takes minutes, and desktop management is simplified. IBM’s Virtual Client Solution based on VMware virtualization and IBM server and storage systems helps lower desktop TCO by reducing the cost of operations and end-user support.

A SOLUTION FOR EVERY WORKLOAD

Innovative, affordable, resilient IBM x86 servers. IBM has designed optimal platforms that are better balanced for a virtual workload. IBM System x and BladeCenter servers tackle the most demanding workloads while helping you manage complexity and risk in your virtualization environment, from the highly-scalable x3850 M2 and x3950 M2 enterprise servers to the unprecedented performance of the x3550 M2 and x3650 M2 powered by Intel® Xeon® 5500 processors. For IBM 2-socket rack servers, innovation comes standard. IBM starts with standard parts and adds innovation to provide outstanding 2-, 4-, and 6-core performance, high availability, scalability, power efficiency, and proactive manageability.

In blade environments, IBM BladeCenter delivers an open platform that’s easy to manage, energy-efficient and easy to scale, with a wide range of blade servers including the HS22 powered by the Xeon 5500, along with AMD Opteron processor-based LS22 and LS42 blade servers, for a unique pay-as-you-grow-design. Designed for virtualization, BladeCenter includes redundant power and I/O connections from every blade in every chassis, delivering the level of resiliency required in virtualized environments. For small and medium sized companies or sites, the BladeCenter S with HS22 servers supports 200+ VMware virtual machines and 3.6 TB of embedded SAN.

Storage systems for a scalable VMware environment.

The IBM System Storage portfolio provides a range of cost-effective storage solutions for the virtualized environment including DS3000 for smaller sites and N series, DS4000™, DS5000 and Storage Virtualization Controller for enterprise datacenters. The DS5000 demonstrates sustained balanced performance in a mixed VMware workload environment, provides superior database response times, and is one of several IBM platforms that supports VMware Site Recovery Manager.

Systems management that improves efficiency. IBM Systems Director and Virtualization Manager provide simplified systems management of the physical and virtual infrastructure, working with VMware vCenter to optimize IT resources and provide rapid deployment of IT services. Systems Director also integrates with IBM service management offerings from IBM Tivoli group.

Expert services from IBM Global Services (IGS). IBM and VMware offer optional integrated support through IBM Global Services in addition to the strong service and support offered through IBM’s channel partners. Comprehensive virtualization service offerings from IGS include assessment, planning, strategy development, implementation, and support for IBM, VMware, and third-party technologies.

GET STARTED TODAY

IBM and VMware have a history of innovative offerings based on unique technology. Virtualization solutions based on IBM systems and VMware are the ideal basis for your company’s near-term cost-saving needs and journey to cloud computing. To learn more about the VMware and IBM virtualization solutions, please visit www.vmware.com/go/ibm and www.ibm.com/virtualization/vmware.