SearchVirtualDataCentre.co.UK E-Guide

Expert Guide to Server Virtualization in 2010

Many businesses still fail to take advantage of the significant benefits offered by server virtualization. This expert E-Guide, brought to you by SearchVirtualDataCentre.co.uk and EMC, highlights the top six predictions for server virtualization in 2010. Discover how this technology will improve the efficiency of disaster recovery, consolidation efforts, and storage initiatives. Gain insight into the significant changes you can expect from server virtualization in the coming year.

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Virtual disaster recovery will evolve in 2010

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The growing adoption of server virtualization technologies in the enterprise has dramatically changed the traditional data center for the better. As the technologies evolve, hypervisors become more sophisticated and the list of available management tools continues to grow. But that's just the beginning of the changes you can expect. This tip highlights a few predictions for various facets of server virtualization technologies throughout 2010.

Server virtualization technologies prediction No. 1: disaster recovery

As server virtualization technologies continue to evolve, so will virtual disaster recovery considerations and planning. Although virtualization provides a backup of sorts, it is not a foolproof method. If one virtual server goes down, it can take hundreds of virtual machines (VMs) with it -- bringing enterprise operations to a screeching halt. Having a solid DR plan in place and examining each aspect will make all the difference.

Concerns about compliance and business continuance are also driving the need for disaster recovery strategies. Fibre Channel on Ethernet (FCoE), network virtualization, growing computing power and attention to security will all influence the future of virtual DR.

Server virtualization technologies prediction No. 2: server consolidation

The future holds promise for server virtualization and consolidation. Server technologies continue to advance, offering more processor cores and memory for the same amount of capital investment. This means that each technology refresh can potentially host more VMs and further reduce the total number of physical servers.

Organizations must adjust their practices to evaluate new VMs in the same way that they evaluate new physical servers. This is critical to prevent uncontrollable virtual machine sprawl --the possibility of organizations moving to 100 physical servers today spiraling to 1,000 virtual servers tomorrow.

Experts consider server consolidation to be one step closer to a fully virtualized data center that abstracts business data from its infrastructure.

"It's not just for power savings, hardware reduction or DR anymore," said Pierre Dorion, a Denver-based data center practice director at Long View Systems, an IT solutions and services company. "We're looking to completely abstract the physical layer at more levels than just the server." Inevitably, that will combine integration with other virtualization efforts throughout network, storage and the desktops/endpoints.

Server virtualization technologies prediction No. 3: test and development

If you've deployed server virtualization in the test and development lab and have worked with VMs, it may be time to take that next step. Try adding more virtual machines to the lab environment. You may also want to investigate using storage area networks (SANs) to centralize all files comprising your VMs in an effort to improve laboratory performance.

SANs cost more than typical tape and disk storage, so don't move to this level until the new virtual labs have proven records of performance and cost reductions. Keep in mind that you must still put proper backup and recovery practices into place.

Server virtualization technologies prediction No. 4: storage

Storage virtualization has been around for some time in one form or another. While its use in storage pooling and consolidation may have peaked, experts like Greg Schulz, founder and senior analyst at The Server and StorageIO Group, insist that this is just the beginning for other aspects of the technology.

"Storage virtualization in terms of agility, transparency, data movement, migration, emulation such as virtual tape … we're seeing the tip of the iceberg," said Schulz. Administrators should expect to see continued product maturity that will lead to more features that create more stability, interoperability and scalability, he added.

Network performance is also shifting, as FCoE and 10 GbE slowly emerge to provide the bandwidth needed for critical storage-intensive applications across Ethernet LANs. Deduplication also plays an indirect role by reducing the size of the overall data set, which can improve backup times and dramatically boost data migration speeds to DR sites.

Server virtualization technologies prediction No. 5: security

Virtualization has its weak points, and security flaws can easily surface in server configuration and OS patching. It's much easier to overlook a configuration setting or OS patch level when there are dozens of VMs on a physical server.

Traditional security techniques generally monitor network traffic and its behavior, which is suitable with distinct physical servers and networking hardware. But when multiple servers are hosted on the same machine -- along with network virtualization technologies like soft switches -- virtual security must emphasize inter-process monitoring of VM interaction.

Virtualization security flaws also surface in server configuration and OS patching. It's much easier to overlook a configuration setting or OS patch level when there are dozens of VMs on a physical server. Keep an eye on your hypervisors, which can also suffer from security flaws and potentially expose the VMs that run under them. Virtualization users should add hypervisor patching/updating to their OS maintenance process.

Server virtualization technologies prediction No. 6: hypervisors

Today's major hypervisors are well-developed, so innovation may have slowed. While the industry is largely settling into the "big three" products -- Citrix XenServer, VMware ESXi and Microsoft Hyper-V -- there is plenty of speculation on where hypervisor technology is heading in 2010.

Improvements in hypervisors will facilitate inspection and enforcement tasks. "We have a lot of clients under pressure to support more multitenant-type architectures where [implementers] start to mix some security zones on

the same physical infrastructure," said Chris Wolf, senior analyst for Burton Group data center strategies, noting the importance of security in public cloud situations.

Vendors will dramatically develop management tools, including that help provide data path visibility and troubleshoot applications in virtual environments as well as planning tools for virtual desktop environments. Tool evolution will incorporate products that manage virtualization throughout the data center infrastructure, including servers, storage and the network. Eventually, virtualization tools that provide integration with the cloud will become available.