Hyper-V: A more complete virtualization platform

Over the past few years, organizations of nearly every size have embraced virtualization technologies. It's no surprise—virtualization not only can help you become more agile, but it also can drive down costs significantly. As virtualization technologies continue to evolve, there is even greater potential for extending virtualization throughout your organization and into the cloud.

With Windows Server® 2012 Release Candidate (RC) Hyper-V®, you can more efficiently run multiple operating systems in parallel, on a single server. Plus, you can use virtualization for almost any workload. And with more features, better scalability, and more built-in mechanisms for reliability, you'll be able to create a platform that works for you—not just today, but well into the future. No matter what that future brings.

Improve security of multitenancy

Virtualized data centers are becoming more popular and practical every day. IT organizations and hosting providers have begun offering infrastructure as a service (IaaS), which provides more flexible, virtual infrastructures to customers. Essentially, these infrastructures are "server instances on demand."

Because of this trend, IT organizations and hosting providers must offer customers enhanced security and isolation from one another. If you're hosting two companies—or have to separate and secure data from two different divisions—each entity must be provided with its own privacy and security. Windows Server 2012 RC Hyper-V provides you with the ability to:

- **Fully isolated the network layer in your data center,** through programmatically managed and extensible capabilities. This enables connection to the network of virtual machines with policy enforcement for security and isolation.

- **Protect against spoofing.** Protect against malicious virtual machines that steal IP addresses from other virtual machines (known as "spoofing").

- **Shape network traffic to enforce multitenant security.** With the Hyper-V Extensible Switch, traffic from multiple VLANs can now be consolidated and directed to a single network adapter in a virtual machine.

- **Monitor more effectively**. Designate which virtual ports should be monitored, as well as to which virtual port the monitored traffic should be delivered for additional processing.

- **Extend your virtual switch capabilities.** The Hyper-V Extensible Switch in Windows Server 2012 RC provides a fully extendible and customizable solution that can supply additional functionality such as traffic monitoring, firewall filters, and switch forwarding.

Put a flexible infrastructure in place

With Windows Server 2012 RC Hyper-V, you'll get a flexible platform that helps to ensure you're always running at peak efficiency. As part of this process, adding and managing virtual machines is fast and easy. From virtual subnets to built-in automation, you'll be able to place and move your virtual servers whenever—and wherever—you need them. In addition, you'll be able to:

- **Scale beyond VLANs.** Instead of relying on complex and time-consuming VLANs, you can now take advantage of Hyper-V Network Virtualization. With this feature, you can isolate network traffic on a shared infrastructure and move virtual machines within your virtual infrastructure—and even to the cloud—while preserving their virtual network assignments and IP addresses.

- **Migrate virtual machines and storage without downtime.** Improvements to live migration mean that you can now move multiple virtual machines—including those outside a clustered environment, even between servers with no shared storage. In addition, migrating storage no longer means downtime because the new live storage migration capability lets you move virtual hard disks that are attached to a running virtual machine.

- **Automate routine tasks.** With full support for automation through Microsoft® Windows PowerShell™ 3.0, you'll be better equipped to increase productivity and spend less time on maintenance. For instance, you can build

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command-line tools or automated scripts for setup, configuration, monitoring, and more.

- **Get storage flexibility.** Your storage, your choice. Hyper-V now supports direct attached storage (DAS), server message block (SMB) shares, virtual host bus adapters (HBAs), and storage area network (SAN) environments. As a result, it's easier to prioritize storage needs and reduce costs.

Get better scale, performance, and density

Whether you're well on your way to virtualization or just starting to develop the infrastructure, Windows Server 2012 RC Hyper-V can help. In fact, almost any workload can be virtualized. Hyper-V supports large, mission-critical workloads with many different features. With Hyper-V, you'll be able to:

- **Scale up as needed.** Host scale and scale-up workloads are dramatically increased in Windows Server 2012 RC Hyper-V—up to 320 logical processors on hardware, 4 terabytes of physical memory and up to 1 TB on a virtual machine, 64 virtual processors, and a possible 4,000 virtual machines in a cluster.

- **Get better support for Dynamic Memory.** Dynamic Memory additions can help you increase consolidation and improve reliability, which, in turn, can lead to lower costs—particularly for environments that currently have many idle or low-load virtual machines. In fact, you can add more memory while the virtual machine is running.

- **Ensure accurate chargebacks.** With Resource Metering in Windows Server 2012 RC, you can gain more insight into the resource usage of specific servers. Then, you can use this data for everything from capacity planning to workload redistribution.

- **Take advantage of storage enhancements.** Windows Server 2012 RC is designed to better handle current and future workloads and ensure that your evolving needs are met, with features

such as the new large-capacity virtual hard disk format VHDX, support for Offloaded Data Transfers, Data Center Bridging, and virtual Fibre Channel.

- **Guarantee bandwidth.** Quality of Service for bandwidth management lets you guarantee a minimum bandwidth to a virtual machine or service, including network storage.

Implement a highly available solution

As organizations increasingly host important workloads in virtual environments, the need for integrated, highly availability solutions for customers of any size becomes essential. Windows Server 2012 RC Hyper-V continues to deliver best-in-class high availability, and offers additional options for the needs and budgets of a wide range of businesses. You'll get the ability to:

- **Increase the flexibility of clustered enhancements.** Get greater value through greater density, simultaneous migration, and virtual Fibre Channel.

- **Streamline backup operations.** Incremental backup of virtual hard disks can help to make backing up faster and easier and save both network bandwidth and disk space.

- **Ensure business continuity.** The Hyper-V Replica feature asynchronously replicates virtual machines to different locations for business continuity and failure recovery.

- **Improve resilience to unplanned downtime.** Windows Server 2012 RC can help to protect against many unplanned scenarios with a variety of features, including SMB transparent failovers, Reliable Crash Recovery, and NIC Teaming.

Learn More

Ready to learn more about how Windows Server 2012 RC can help you?

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