Increase Business Agility with Virtualization

Businesses today are always looking for ways to reduce IT costs and optimize the utilization of their IT infrastructure while minimizing complexity. Innovations from Microsoft and Advanced Micro Devices (AMD) in virtualization technologies combine to deliver a powerful and highly efficient virtualization platform that provides the ability to quickly deploy and scale IT systems to support agile business initiatives.

AMD and Microsoft – A Powerful Pairing for Virtualization

Broad integration between optimized processors from AMD and virtualization technologies from Microsoft enables businesses to handle the rigors of demanding server workloads while helping to deliver an optimal user experience and improved efficiency with a lower total cost of ownership (TCO). By combining the innovations of AMD and Microsoft, organizations can achieve the advantages of virtualization and support more users, conduct more transactions and run more resource-intensive applications in a virtual environment while helping keep costs under control.

- **AMD’s latest industry-leading processors** – The breakthrough AMD Opteron™ 6200 Series processor, the world’s first x86 processor with up to 16 cores, as well as the AMD Opteron™ 4200 Series processor, which offers up to 8 cores, are optimized for virtualization, delivering the performance efficiency to handle the workloads demanded by today’s business environment while helping to reduce hardware, energy, and operational costs.

- **AMD Virtualization™ (AMD-V™) technology** – AMD-V enables Microsoft Hyper-V® Server to efficiently create virtual machines so that multiple operating systems and their applications can run simultaneously on the same computer, helping reduce overhead and providing near native performance.

- **Microsoft® System Center Virtual Machine Manager** enables centralized management and scalability of physical and virtual IT infrastructures, increased server utilization, and dynamic resource optimization across multiple virtualization platforms. The centralized management application enables taking care of several tasks, among them, provisioning, system configuration, and system monitoring and alerting.

- **Windows Server® 2008 R2 Hyper-V™** utilizes AMD-V technology to consolidate multiple server roles as separate virtual machines running on a single physical machine so that users can efficiently run multiple operating systems—Windows, Linux, and others—in parallel, on a single server, and take advantage of the 64-bit operating environment.
Virtualization Improves Performance

Multi-core AMD Opteron™ processors with AMD-V™ technology, together with Windows Server® 2008 R2 Hyper-V™, combine to deliver performance that can effectively handle real-world workloads with superior performance and the energy efficiency you seek. The massive, industry-leading high-core density of the AMD Opteron 6200 Series processor with up to 16 cores allows you to run more virtual machines per CPU¹ and helps organizations to scale out cloud deployments with fewer nodes, thereby helping to save data center floor space and power consumption. These high-powered and high-value AMD processor technologies, when running software products from Microsoft, can:

- Reduce physical server space in data centers by using virtualization to run multiple virtual machines on a single physical server
- Drive agile execution by carrying out a quick and efficient deployment and scaling of IT systems in response to changes in business conditions
- Allow virtual machines to automatically redirect traffic in real time to reduce system downtime and interruptions
- Enable VDI (Virtual Desktop Infrastructure) to seamlessly integrate virtualization from the data center to the user’s desktop

Key AMD Advantages

- The exceptional CPU compute density of AMD multi-core processors means that more VMs can run on fewer physical machines without a loss in performance.
- AMD Opteron™ processors are optimized for virtualization to provide superior performance with improved energy efficiency.
- AMD Turbo CORE technology allows processors to independently boost their clock speeds, scaling frequency up 500MHz-1GHz automatically to respond to the need for more application performance.²
- AMD Opteron 6200 Series processors are designed to deliver heightened real-world performance with up to 31% better performance at half the CPU cost in 4P configurations.³
- Flex FP helps improve performance by bringing high-level technical computing to the cloud.

Why Virtualization Matters

Virtualization supports business agility, even if you only have a few servers that meet your needs

Virtualization technologies can lead to multiple benefits: meeting changes that affect your business with increased capacity at a lower cost; increasing energy efficiency; and reducing the physical footprint, all while maintaining an IT platform that can easily scale as your needs evolve. Powerful virtualization and management solutions allow you to consolidate your existing servers and desktops and manage everything from a single console, which can help reduce costs and energy consumption while streamlining IT management. Microsoft virtualization and management solutions can also give you the ability to reduce time lost to routine IT administrative functions or unanticipated outages thanks to powerful disaster recovery features, such as live backup and live migration.

The processor really does matter

AMD is a leading global provider of innovative processing solutions and has a solid track record of success in developing cost-effective and high-performing processors. Multi-core processors like the AMD Opteron™ 6200 Series processor, with unprecedented CPU core density, are optimized for virtualization to give you the performance efficiency to handle real-world workloads while helping to reduce hardware, energy, and operational costs.

Virtualization with AMD and Microsoft makes good sense

AMD and Microsoft work closely together, making broad investments in the areas of the platform, IT management, applications, interoperability, and licensing to help you achieve the advantages of virtualization, while reducing the costs associated with its implementation. AMD and Microsoft give you optimized processors together with server and desktop virtualization technologies that create a powerful virtualized infrastructure with the right combination of performance, efficiency, and price.

Resources:

- Visit the Virtualization Partner Portal to learn how to expand your solutions portfolio and access sales and marketing resources for Microsoft virtualization technologies.
- Visit the Microsoft/AMD Resources Page to learn more about how the combined technologies create a powerful virtualized infrastructure.
- Demonstrate how much return on investment businesses can receive with virtualization using the Integrated Virtualization ROI Calculator

¹ Up to 16 virtual machines (VMs) per processor when utilizing the “1 VM per core” rule of thumb
² Based on internal AMD engineering projections of AMD Opteron. 6200 Series processors with up to 500MHz in P1 boost state and up to 1.4GHz in P0 boost state over base P2 clock frequency when thermal headroom is available
³ SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. The results stated above reflect results published on http://www.spec.org/cpu2006/results/res2011q3/cpu2006-20110718-17495.html. The comparison presented above is based on the best performing four-socket servers using AMD Opteron™ processor Model 6222 SE (1ku $5100) and Intel Xeon processor Model E7-4830 (1ku $2059), operating at each processor's default frequency.

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