Get more from your computing resources with AMD Virtualization™ technology.

Today's IT departments face many challenges. Maintaining a computing infrastructure that's well managed and secure. Staying within power, cooling, and space constraints. Consolidating underutilized resources. Effectively running legacy applications. Removing disruptions that decrease productivity. If only there was a way to get more from your servers. With the right software and help from the new and improved AMD Virtualization™ (AMD-V™) technology with Rapid Virtualization Indexing, available with Six and Quad-Core AMD Opteron™ processors, you can get more from your servers. And more from your virtualization environment.

What is AMD Virtualization™ (AMD-V™) technology?

Simply put, AMD Virtualization™ (AMD-V™) technology is a hardware-based technology that helps enable servers to reach higher levels of efficiency and utilization by assisting virtualization software to run multiple operating systems and applications on a single physical AMD Opteron™ processor-based server. You no longer need to operate on a "one operating system, one application to one server" model. AMD-V™ technology allows you to better utilize your resources, which makes your servers and workstations more efficient, and your datacenters more effective.

For example, servers today can operate at less than 15 percent capacity, yet still consume power and generate heat on a 24x7 basis. AMD-V technology with Rapid Virtualization Indexing means that AMD Opteron™ processors can help streamline the datacenter to achieve higher levels of utilization.

How does AMD Virtualization technology work?

When you get down to it, it's all about the ability to divide and conquer. AMD-V™ technology is a set of hardware extensions to the x86 system architecture designed to reduce the performance overhead of virtualization solutions. AMD-V™ technology leverages the AMD Opteron™ processor with Direct Connect Architecture to provide fast and efficient memory handling, which is a must-have for memory-intensive applications like virtualization. So when it comes to dividing and conquering, AMD Opteron™ processor-based systems offer two key benefits, 1) ability to host more virtual machines with process-intensive workloads – and, 2) the ability to run each virtualized application with outstanding performance, so employees remain productive and customers keep coming back.

Utilize your computing resources more effectively.

What are the benefits of AMD-V™ technology?

AMD-V™ technology can help increase computer utilization because it is designed to help:

» **Consolidate existing workloads**

A single system can host disparate workloads along with their respective operating systems, middleware, and communications environments. Each workload can run in a virtual environment that corresponds exactly to the physical environment of its earlier dedicated system, and while the virtual machines stand ready to respond to external requests they use little machine resources or power.

» **Facilitate the introduction of new applications**

Instead of waiting weeks or even months for hardware to begin a new development project, virtual environments can be provisioned on an existing physical server in minutes, saving both user and system administrator time.

» **Streamline software development**

Virtualization can help development organizations maintain a library of virtual machines corresponding to specific hardware and software environments on which their software runs. Software development and testing can be done on a variety of operating systems and configurations on the same physical machine.

» **Provide better business continuity**

Due to the ease with which virtual machines can be migrated to different physical machines, often called live migration, virtualization can greatly enhance your organization's ability to implement high availability and disaster recovery solutions without having to completely duplicate hardware configurations. Additionally, virtualization can simplify the scheduling of planned hardware outages as well as the recovery from unplanned outages.

» **Manage and control desktops from a central environment**

Host desktops inside virtual machines running on centralized servers in a data center. Users can access their virtual desktops remotely from a traditional PC, thin client or repurposed computer using a remote display protocol. Allows your business to achieve better management and control of desktops along with satisfied end users.

Why AMD Opteron™ processors and AMD-V™ technology?

Virtualization is a memory- and compute-intensive environment, putting demands on servers not found in many other software environments. You need a server platform that can provide a robust and scalable environment for virtualization while maintaining power efficiency. HyperTransport™ technology enables high-speed I/O for better sharing of resources. AMD's Integrated Memory Controller can offer crucial low-latency, high-bandwidth memory access needed to fuel the memory-hungry virtualization environment. AMD-V technology with Rapid Virtualization Indexing helps accelerate the performance of virtualized applications by eliminating software overhead while maintaining efficient security boundaries between virtual worlds. No other processor vendor can match AMD's capabilities for x86 virtualization across 2, 4, and 8-socket server platforms:

» **Direct Connect Architecture –** offers unmatched memory bandwidth and scalability allowing more virtual machines (VMs) to be hosted per server and more users and transactions per virtual machines

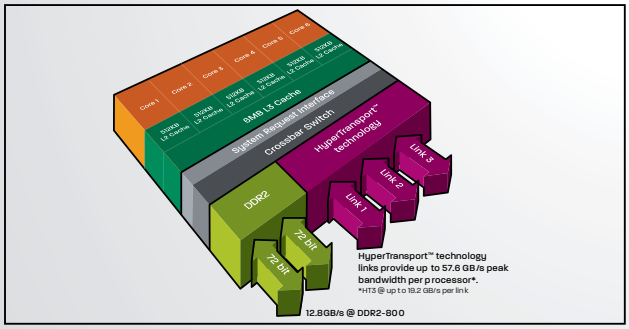
» **Enhanced Power Management –** intelligently manages power consumption so that you don't waste energy during low utilization cycles

» **Rapid Virtualization Indexing with Tagged TLB –** helps accelerate the performance of virtualized applications by enabling hardware-based VM memory management and facilitating efficient switching amongst VMs for better application responsiveness

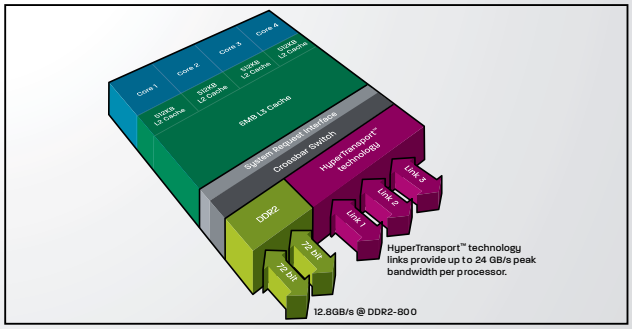
» **HyperTransport™ Technology Assist (HT Assist) –** helps reduce memory latency and increase overall system performance for virtualization workloads in multi-socket systems

» **AMD Extended Migration –** hardware feature that helps virtualization software achieve live migration of virtual machines across the entire range of AMD Opteron™ processors

AMD will continue to push the evolution of x86 virtualization, providing the underlying foundation to achieve near native performance of applications running in virtual machines. Working closely with our virtualization software partners, we are driving virtualization technology into the mainstream.



SIX-CORE AMD OPTERON™ PROCESSOR DESIGN FOR SOCKET F (1207)



QUAD-CORE AMD OPTERON™ PROCESSOR DESIGN FOR SOCKET F (1207)

OUR TECHNOLOGY PARTNERS

Effective virtualization technology depends on a close collaboration between hardware and software vendors. To provide innovation and choice, AMD is developing a robust, "best-of-breed" virtualization ecosystem, along with:

CITRIX® Microsoft® Novell® ORACLE®

Parallels™ redhat® solaris™ vmware®

FOR MORE INFORMATION, VISIT WWW.AMD.COM/VIRTUALIZATION

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AMD
The future is fusion