

## Enhanced utilization of IT resources.

### Simplified management.



AMD Opteron™ processor-based servers provide a robust foundation for maximizing the

benefits of virtualization software, such as VMware® ESX Server™ and GSX Server™. This software helps enterprises partition, consolidate, and manage their mission-critical systems. With simultaneous 32- and 64-bit computing capabilities, the AMD Opteron is well suited for the demands of server virtualization. The processor's Direct Connect Architecture features an integrated memory controller and HyperTransport™ technology, enabling more efficient memory and I/O access – which are key for many memory- and I/O-intensive virtualization environments.

By using server virtualization, companies can “right-size” their systems to respond to changing business requirements. This improves server utilization rates, increases infrastructure flexibility, and helps maximize technology investments.

AMD Opteron processor-based platforms are ideal for enterprise server virtualization because they deliver:

#### Peak performance

The AMD Opteron is built on AMD64 technology with Direct Connect Architecture. Helping to eliminate the bottlenecks inherent in front-side bus technology, the Direct Connect Architecture seamlessly connects the processors, memory controller, and I/O to the central processing unit. This helps improve overall system performance and efficiency. Most importantly, it means that companies can leverage all available resources within a physical system to obtain the key advantages of a virtualized environment.

#### Enterprise-level scalability

By providing efficient CPU utilization and I/O capabilities, AMD Opteron processor-based systems can support an exceptional number of virtual machines within a single physical system. Likewise, for targeted applications,

one AMD server can support large numbers of users on multiple virtual machines.

For example, in a recent development and test environment, a customer successfully ran up to 74 virtual machines on a single AMD Opteron-based HP ProLiant DL585 4-way server with VMware ESX Server software. Using the same configuration, another customer increased the number of users on a single server by more than 100%. As a result, both companies were able to dynamically allocate resources to meet their changing business needs.

#### Effective workload management

Servers based on the AMD Opteron processor are a natural complement to the consolidation initiatives that are driving today's IT organizations. The integrated memory controller offers high-speed, low-latency access to memory. Thus, host systems and virtual machines can operate effectively under peak loads, and in turn, enable IT staff to efficiently balance their application workloads across their virtualized environment. Plus, by consolidating workloads on their systems, companies can reduce server footprints and related data center costs (cooling, power, space, installation, integration, and administration).



## Streamlined environments

By using VMware virtual infrastructure software on AMD Opteron-based servers, enterprises can significantly increase the number of virtual machines on a single physical system. Several factors, including the application type, system load, and memory requirements, affect the specific number of virtual machines that can be supported on one server.

Server virtualization creates a more responsive data center, enabling faster reconfiguration and reallocation of applications and services. The technology allows instant provisioning of servers. User downtime is decreased. Resources are fully utilized. Virtualization is a powerful way to meet service-level agreements and the changing needs of the business.

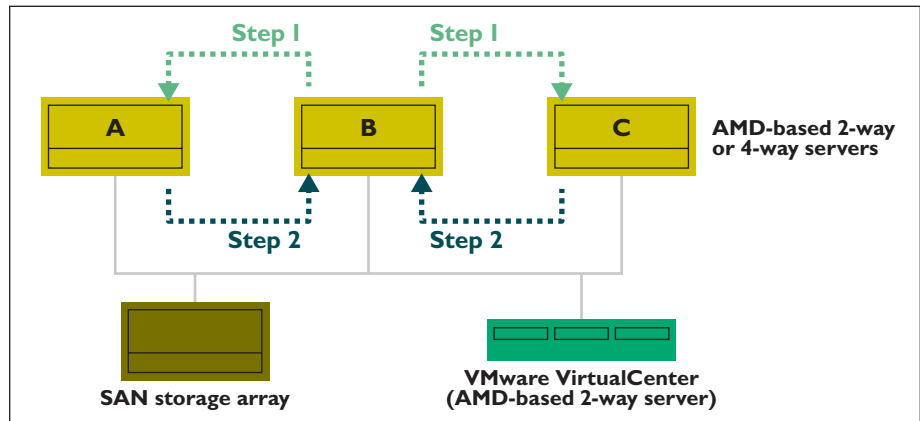
## Flexibility for the future

AMD64 technology extends the x86 instruction set and retains compatibility with x86 software. This means that AMD64-based systems can easily support the heterogeneous server applications and legacy software that run today's enterprises. And they will be ready to run the 64-bit applications of tomorrow.

Start maximizing the return on your IT investments today by utilizing virtualization software on AMD Opteron processor-based servers.

These servers also support the underlying security, information, communications, and management software for your enterprise computing systems. Learn more about using enterprise server virtualization and AMD64 technology for virtualization at [www.amd.com/amd64ecosystem](http://www.amd.com/amd64ecosystem).

## Use of VMware VMotion™ on AMD Opteron™ processor-based servers



VMware VMotion delivers intelligent workload management on a virtual infrastructure. For example, if a fan should fail on Server B, VMotion is utilized to:

**Step 1:** Dynamically move the virtual machines on Server B to either Server A or C without any service interruption.

**Step 2:** After the fan is repaired, VMotion is utilized to move the virtual machines back to Server B.

## About AMD

AMD (NYSE: AMD) designs and produces innovative microprocessors, Flash memory devices, and low-power solutions for the computer, communications, and consumer electronics industries. AMD is dedicated

to helping its customers deliver standards-based, customer-focused solutions for technology users, ranging from enterprises and governments to individual consumers. For more information, visit <http://www.amd.com>.

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