



# AMD Opteron™ 6000 Series Platform and VMware Virtualization Products

Optimized for real-world performance of demanding workloads

- More cores and memory support for greater virtual machine density<sup>1</sup>
- Power efficiency and scalability to meet application demands
- Outstanding performance through advanced memory management



## Optimal Virtualization with AMD Virtualization™ (AMD-V™) Technology and VMware vSphere™

**VMware vSphere™ 4 is a robust virtualization environment optimized to support the AMD Opteron™ 6000 Series platform to drive demanding, business-critical workloads.**

A highly memory-intensive workload, virtualization is currently one of the most sweeping and pervasive trends in IT. By the end of 2010, industry analysts IDC and Gartner predict there will be greater penetration of virtual machines among companies with 100 to 999 employees.

AMD along with VMware, a leader in cloud infrastructure, deliver customer-proven virtualization solutions that can significantly reduce IT complexity. Together they offer the trusted solutions to support this penetration and deliver significant virtualization advances needed today, and the flexibility to grow with your company tomorrow.

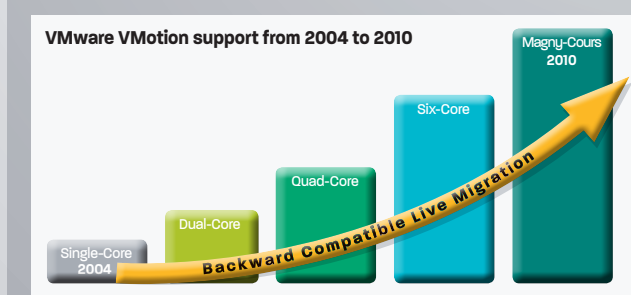
To meet the demands of virtualization, you need a platform that provides the computing and memory capabilities to handle the rigors of virtualization while maintaining power efficiency. With up to 48 cores and 512GB of memory in a 4P configuration<sup>2</sup>, AMD Opteron™ 6000 Series platform is designed to help reduce power consumption, support more users, more transactions, and more resource-intensive applications – all while helping you achieve higher levels of efficiency and utilization in your virtual environment.

The AMD Opteron™ 6000 Series platform features AMD Virtualization™ (AMD-V™) 2.0 technology, which is designed to help simplify virtualization solutions, enabling a more satisfying user experience and near native application performance.

## Exceptional price/performance from servers with up to 48 cores and 512GB of memory

AMD Opteron™ 6000 Series Platform with AMD-V™ 2.0	VMware vSphere™
Up to 48 cores and 512GB RAM <sup>2</sup>	64 logical CPUs and 256GB RAM per VM
Supports robust VM environment	256 powered-on VMS; up to 8 vcpu per VM
Rapid Virtualization Indexing (RVI)	Supports performance increase for many workloads
AMD Extended Migration	Enables live migrations all currently-available AMD Opteron™ processors
AMD PowerNow!™ technology	Supported
C1E Power Management	Supported
I/O virtualization	Experimental Support – fully supported in ESX v 4.2 VMDirectPath

Consistency of platform enables seamless Live Migration with VMware VMotion™ across all available generations of AMD Opteron™ processors.



AMD Extended Migration is a hardware feature that enables VMware to provide live migration capabilities between different generations of AMD Opteron™ processors.

- Allows VMware to identify processor features and support live migration between processor revisions with varying functionality
- Enables users to create Virtualization Pools that can include a broad range of AMD Opteron™ processor-based systems
- AMD Extended Migration capability has been available in all AMD Opteron™ processors beginning with Rev C (2003)

## Putting AMD Virtualization™ Technology and VMware to Work

Virtualization is widely regarded as a powerful tool for solving resource utilization challenges. From consolidating servers to running legacy applications to easing desktop image management, virtualization can help organizations reduce data center complexity, lower power consumption, and save money. AMD Opteron™ processors with AMD Virtualization™ (AMD-V™) 2.0 technology help to streamline IT management and can help maximize your investment in the following use cases:

### Consolidation

Helps reduce costs and increase utilization

### Test and Development

Fast provisioning and deployment

### Legacy App Support

Run older applications on new hardware

### Business Continuity

Helps decrease downtime to increase productivity

### Desktop Virtualization Solutions

Enables increased security

### Cloud Computing

On-demand scalability and capacity

## Desktop Virtualization with AMD Opteron™ 6000 Series Platforms and VMware View 4

Desktop virtualization is becoming a critical aspect to gaining control and reducing costs of your company's desktop and mobile environments. Desktop virtualization can give the users the flexible access they demand while simplifying the management and increasing control over your company's valuable investment.

With an increased number of processor cores (compared to previous generations), 4 memory channels per processor and up to 512GB of memory bandwidth in a 4P server configuration<sup>2</sup>, the AMD Opteron™ 6000 Series platform and VMware View 4 are perfectly suited to providing high levels of performance and efficiency on virtual desktops running on a single physical server.

VMware View and AMD Opteron™ 6000 Series platform-based servers can help you deliver a robust virtual desktop experience which can enable you to:

- Streamline management and deployment of desktops and applications
- Bring business continuity and enable disaster recovery solutions for the desktop
- Help ensure corporate security and vendor licensing compliance
- Help reduce help desk calls and provide high levels of service to end users
- Meet regulatory guidelines with desktops and applications that are up-to-date and in compliance.

## Tackle virtualization cost effectively, with configurations offering 4P performance at 2P economics<sup>3</sup>

4P servers make great host devices for virtual machines, as they offer the generous CPU and memory resources needed to lower physical server counts while retaining and often improving overall computational and memory capabilities. They can support large numbers of users, and accommodate virtual machines running more robust applications that require above-average CPU and memory capacity. By melding 4P performance with 2P economics, volume 4P servers based on the AMD Opteron™ 6000 Series platforms enable organizations to virtualize and consolidate their servers while avoiding exorbitant upfront investments in new hardware.

### Using Value 4P servers to host virtual machines helps you:

- Reduce the number of host virtualization software images you must maintain, patch, and upgrade
- Increase energy efficiency without feature compromises – Each power band of the AMD Opteron™ 6100 Series processors has the same full set of features as the standard power product, making no compromises on cache, memory speed and interconnect speeds
- Improve power efficiency, with AMD-P technology, a suite of advanced features that can help reduce energy usage – in addition, fewer servers mean fewer power supplies
- Cut memory expenses: greater quantity of DIMM slots on 4P servers allows you to run larger memory configurations using smaller, less expensive DIMMs.

<sup>1</sup> Compared to previous-generation AMD Opteron™ processors.

<sup>2</sup> Based on 4 sockets x 8 quad-rank DDR3 DIMMs per socket x 16GB per DIMM = 512GB total capacity. 768GB capability expected upon availability of 16GB dual-rank DDR3 DIMMs (4 sockets x 12 dual-rank DIMMs per socket x 16GB per DIMM = 768GB total capacity).

<sup>3</sup> Based on standard power Six-Core AMD Opteron™ processor Model 2435 Iku pricing of \$989 as of 10/19/09 vs. standard power AMD Opteron™ processor Model 6172 ("Magny-Cours") Iku planned pricing of \$989 at time of launch.