



## AMD Opteron™ Processor Benefits

The AMD Opteron processor provides a highly scalable architecture that delivers next-generation performance as well as a flexible upgrade path from 32- to 64-bit computing. With a single architecture designed to meet current and future business needs, the AMD Opteron processor can help to minimize the integration complexities presented by business environments today and in the future.



## Putting the AMD Opteron™ Processor to Work

The AMD Opteron processor is available in 1 to 8-way servers and 1 to 4-way workstation solutions. Usage segments for the processor include:

- Worldwide Enterprises, Small-Medium Businesses, and Government/Education Institutions
- Companies who require faster database transactions, or support for more users on e-commerce type applications
- Customers needing quick graphics response such as CAD and DCC
- Industries with computational intensive tasks for financial modeling and scientific applications

Feature	Benefit
Simultaneous 32- and 64-bit computing capabilities	Allows users to run 32-bit and/or 64-bit applications and operating systems as they desire—without sacrificing performance
Support of up to three (3) coherent HyperTransport links, providing up to 19.2GB/s peak bandwidth per processor	Provides substantial I/O bandwidth for your current and future application needs
256 Terabytes of memory address space	Creates a significant performance benefit for applications in which large (or many) datasets are held in memory
Scales from 1-way to 8-way across entire data or compute centers utilizing the same hardware and software infrastructure	Allows for maximum flexibility in IT infrastructure, helping contribute to bottom line success
Integrated memory controller reduces latencies during memory access in a SMP server system	Yields fast computational processing for increased performance and productivity

For more information visit [www.amd.com/opteron](http://www.amd.com/opteron).

### About AMD

Founded in 1969 and based in Sunnyvale, California, AMD (NYSE: AMD) is a global supplier of integrated circuits for the personal and networked computer and communications markets with manufacturing facilities in the

United States, Europe, Japan, and Asia. AMD, a Standard & Poor's 500 company, produces microprocessors, Flash memory devices, and silicon-based solutions for communications and networking applications.

## The AMD Opteron™ Processor

for Servers and Workstations



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One Enterprise.

One Platform.



**The benefit of 32-bit and 64-bit technology in one solution.**

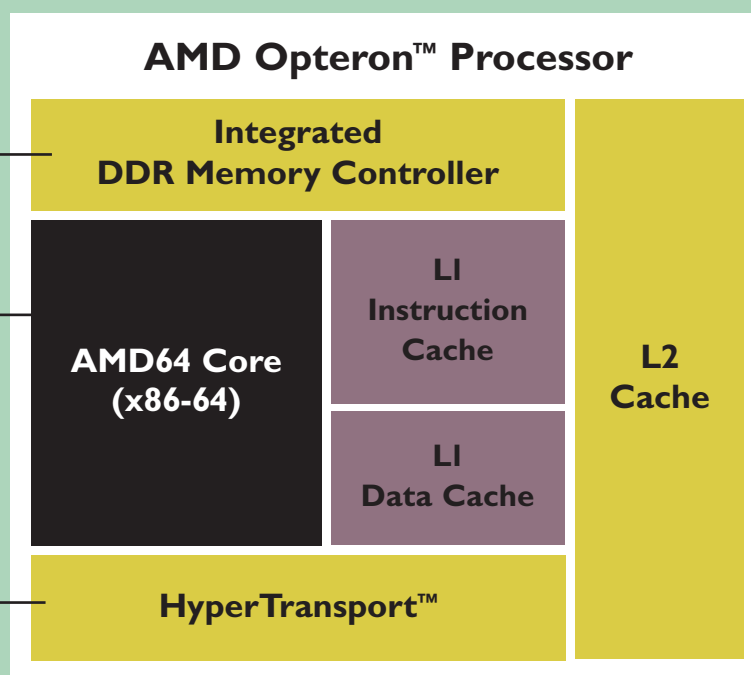
The AMD Opteron™ processor, enabling simultaneous 32- and 64-bit computing, represents the landmark introduction of the AMD64 architecture. The AMD Opteron processor is designed to run existing 32-bit applications with outstanding performance and offers customers a simplified migration path to 64-bit computing. This evolutionary processor provides a dramatic leap forward in compatibility, performance, investment protection, and reduced total cost of ownership (TCO). The AMD Opteron processor is offered in three series: the 100 series (1-way), the 200 series (1 to 2-way), and the 800 series (up to 8-way).

**AMD64 (Formerly known as “Hammer” or “x86-64”)**

AMD64 represents a new class of computing, enabling a single architecture to support both 32- and 64-bit environments. AMD64 is an AMD innovation that extends x86—the industry’s most widely supported instruction set. It is designed to enable 64-bit computing while remaining compatible with the vast x86 software infrastructure. Processors based on the AMD64 architecture allow end users to run their existing installed base of 32-bit applications and operating systems, while providing a migration path that is 64-bit capable.



**The AMD Opteron™ processor integrates key system elements:**



Increases application performance by dramatically reducing memory latency

Enables simultaneous 32- and 64-bit computing

Eliminates the 4GB memory barrier imposed by 32-bit only systems

Provides up to 19.2GB/s peak bandwidth per processor – reducing I/O bottlenecks

Offers HyperTransport scalability enabling glueless multiprocessing

**Integrated DDR DRAM Memory Controller**

The integrated memory controller changes the way the AMD Opteron processor accesses main memory, resulting in increased bandwidth, reduced memory latencies, and increased processor performance.

- Available memory bandwidth scales with the number of processors
- 128-bit wide integrated DDR DRAM memory controller capable of supporting up to eight (8) registered DDR DIMMs per processor
- Available memory bandwidth up to 5.3GBs (with PC2700) per processor

**HyperTransport™ Technology**

The AMD Opteron processor with built-in HyperTransport™ technology links provides a scalable bandwidth interconnect between processors, I/O subsystems, and other chipsets.

- Helps to increase overall system performance by removing I/O bottlenecks and efficiently integrating with legacy buses, increasing bandwidth and speed, and reducing latency
- Up to 6.4GB/s bandwidth per link providing sufficient bandwidth for supporting new interconnects including PCI-X, DDR, InfiniBand, and IOG Ethernet
- Offers low power consumption (1.2 volts) to help reduce a system’s thermal budget

For more information visit [www.hypertransport.org](http://www.hypertransport.org)