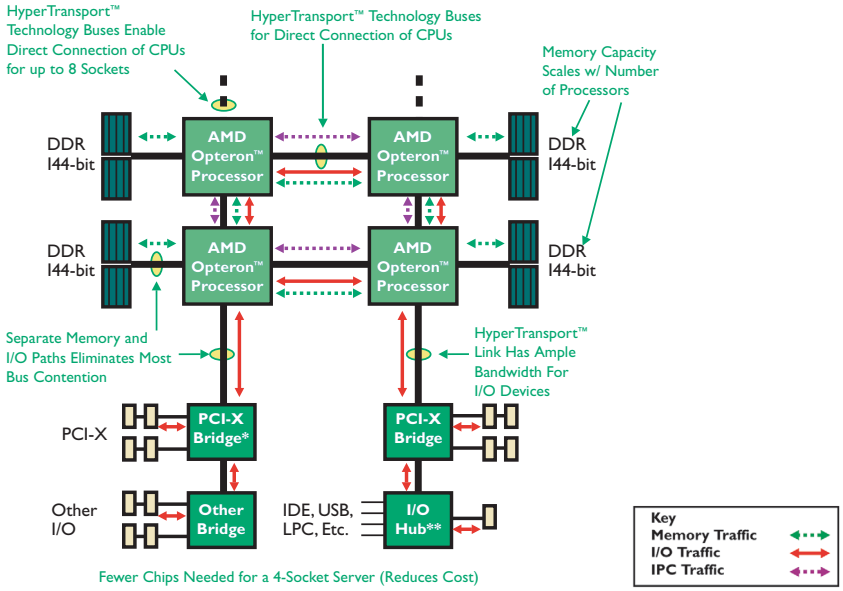
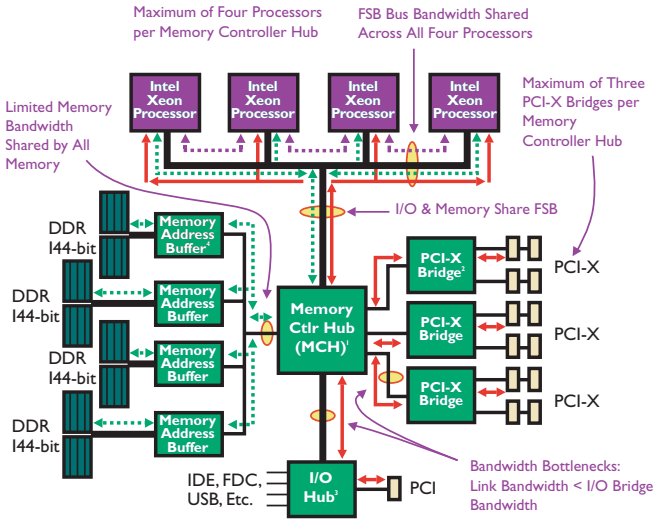
AMD Opteron™ Processor with Direct Connect Architecture
4-Socket Server Comparison

AMD Opteron™ Processor-based Server



Fewer Chips Needed for a 4-Socket Server (Reduces Cost)

Intel Xeon MP Processor-based Server



9-Chip Chipset Needed for a 4-Socket Server

	AMD Opteron Processor-based Server	Intel Xeon MP Processor-based Server
Architecture	**AMD64 with Direct Connect Architecture** • Direct connection of CPUs for up to 8 sockets • Provides simultaneous high-performance 32- and 64-bit computing • Increases memory performance, provides more balanced I/O throughput, and allows for more linear symmetrical multiprocessing	**IA32 Architecture** • High-performance 32-bit computing only • Businesses needing 64-bit benefits must switch to a new architecture
Memory Access Technology	**Integrated Memory Controller** • Memory is directly connected to the CPU providing optimized memory performance • Provides low-latency memory access and bandwidth that scales as processors are added	**"Northbridge"-style Memory Controller via Front Side Bus** • Passage through memory controller hub delays memory reads • Processors compete for FSB bandwidth • 8-socket solutions require even more chips
Primary Bus Technology	**HyperTransport™ Technology** • At up to 6.4GB/s bandwidth per link, designed to provide a high-speed connection between processors and core logic with sufficient bandwidth for supporting new and existing interconnects	**Proprietary Hub I/O Buses** • Bridge and hub devices can be overwhelmed by the I/O demands of attached peripherals

* AMD-8131™ HyperTransport™ PCI-X Tunnel
** AMD-8111™ HyperTransport I/O Hub

[1] ServerWorks CMIC HE Memory Controller Hub (MCH)
[2] ServerWorks CIOB-X 64-bit PCI/PCI-X Controller Hub
[3] ServerWorks CSB5 I/O Controller Hub
[4] ServerWorks REMC Memory Address Buffer