



Intel® Xeon® 5500

Quad-Core Intel® Microarchitecture Nehalem Processor

Intel® Xeon® Processor 5500 Series are multi-core processors, based on 45 nm process technology. The processor family features a range of Thermal Design Power (TDP) envelopes from 38W TDP up to 130W TDP. These processors feature two Intel QuickPath Interconnect point-to-point links capable of up to 6.4 GT/s, up to 8 MB of shared cache, and an integrated memory controller. The processors support all the existing Streaming SIMD Extensions 2 (SSE2), streaming SIMD Extensions 3 (SSE3) and Streaming SIMD Extensions 4 (SSE4). The processors support several Advanced Technologies: Execute Disable Bit, Intel® 64 Technology, and Enhanced Intel SpeedStep® Technology, Intel® Virtualization Technology (Intel® VT), Intel® Hyper-Threading Technology (Intel® HT Technology), and Intel® Turbo Boost Technology (Intel® TBT).

Applications

- Web servers
- E-mail servers
- File server
- Bandwidth-intensive applications
- HPC clusters
- Multi-tasking user environments
- Multi-media content creation
- Graphic-intensive applications
- Quieter, cooler, more power-efficient workstations

Features

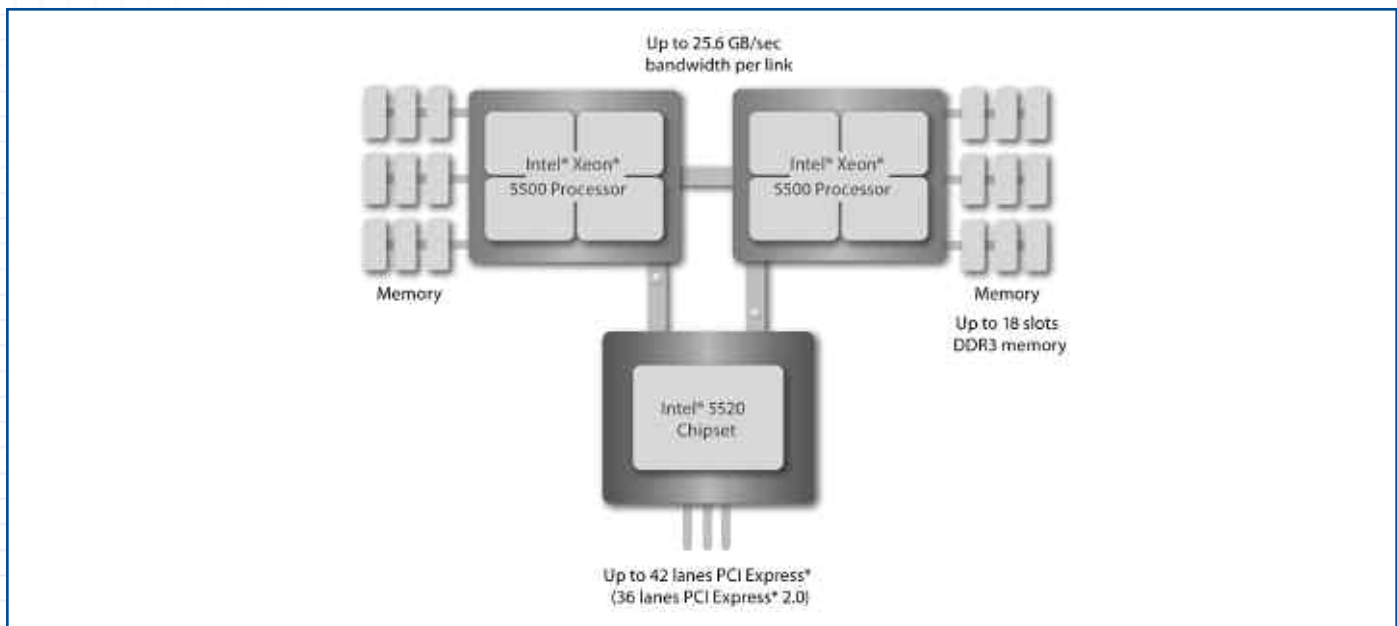
Intel® Xeon® 5500

- Intel® Turbo Boost technology
- Intel® QuickPath technology up to 5.86 GT/s
- Intel® Hyper-Threading technology
- 144 GB DDR3 memory capacity
- Shared 4 MB or 8 MB L3 cache
- Integrated Power Gates reduces power
- Flexible virtualization

Intel® 5520 and 5500 chipset

- Point-to-point connections via the Intel QuickPath Interconnect at 4.8, 5.86, and 6.4 GT/s speeds
- Dual IOH configuration for up to 72 lanes for PCI Express 2.0
- Multiple x16 or x8 PCI Express 2.0 graphics card support
- Intel VT-c and Intel VT-d virtualization technology enhancements
- Intel Dynamic Power Node Manager system management
- Intel ICH10 and ICH10R
- Intel 6700PXH 64-bit PCI Hub

Typical 8 Processor Server Implementation



Intel® Microarchitecture Nehalem

- Intel® Turbo Boost technology allows processors to deliver higher speed execution on demand by using available power to run at a higher frequency
- Intel® QuickPath technology provides high-speed (up to 25.6 GB/s), point-to-point connections between processors, and between processors and the I/O hub
- Intel® Hyper-Threading technology and workstation enables simultaneous multi-threading within each processor core, up to two threads per core or eight threads per quad-core processor

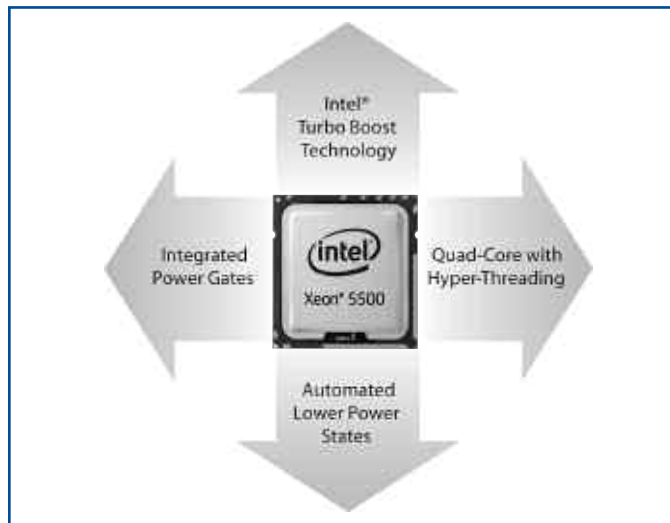
Intel® Intelligent Power Technology

- Integrated power gates reduce idle cores to near-zero power independent of other operating cores
- Reduces server idle power consumption over previous generation Xeon processors
- Automated low-power states automatically put processor and memory into the lowest available power states

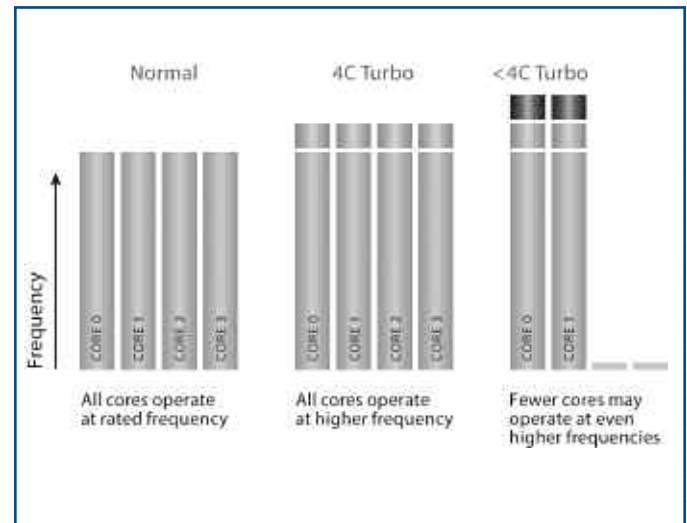
Intel® Virtualization Technology

- Intel Virtualization Technology (Intel VT-x) for hardware-assisted page-table management
- Chipset: Intel Virtualization Technology for directed I/O acceleration
- Network Adapter: Intel Virtualization Technology for Connectivity (Intel VT-c)

Intel® Microarchitecture Nehalem



Intel® Intelligent Power Technology



Intel® Xeon® 5500 Embedded Processors

Name	Intel® Xeon® E5504	Intel® Xeon® L5518	Intel® Xeon® L5508	Intel® Xeon® E5540
Lithography	45 nm	45 nm	45 nm	45 nm
Maximum TDP	80W	60W	38W	80W
Processor number	E5504	L5518	L5508	E5540
Number of cores	4	4	2	4
Clock speed	2 GHz	2.13 GHz	2 GHz	2.53 GHz
Cache	4 MB L2 cache	8 MB L2 cache	8 MB L2 cache	8 MB L2 cache
Bus type	QPI	QPI	QPI	QPI
System bus	4.8 GT/s	5.86 GT/s	5.86 GT/s	5.86 GT/s
Number of QPI links	2	2	2	2
Instruction set	64-bit	64-bit	64-bit	64-bit
Core voltage	0.9V to 1.99V	0.9V to 1.99V	0.9V to 1.99V	0.9V to 1.99V

For more information, such as datasheets and app notes, visit www.arrow.com/arrowedge.