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Intel® Xeon® Processor E5-2650
(20M Cache, 2.00 GHz, 8.00 GT/s Intel® QPI)

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SPECIFICATIONS

SPECIFICATIONS

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COMPATIBLE PRODUCTS

PRODUCT IMAGES

ORDERING / SSPECS / STEPPINGS

▬ Essentials

Status	Launched
Launch Date	Q1'12
Processor Number	E5-2650
# of Cores	8
# of Threads	16
Clock Speed	2 GHz
Max Turbo Frequency	2.8 GHz
Intel® Smart Cache	20 MB
Intel® QPI Speed	8 GT/s
# of QPI Links	2
Instruction Set	64-bit
Instruction Set Extensions	AVX
Embedded Options Available 🔍	No
Lithography	32 nm
Scalability	2S Only
Max TDP	95 W
VID Voltage Range	0.60V-1.35V
Recommended Customer Price	

▬ Memory Specifications

Max Memory Size (dependent on memory type)	384 GB
Memory Types	DDR3-800/1066/1333/1600
# of Memory Channels	4
Max Memory Bandwidth	51.2 GB/s
ECC Memory Supported ‡ 🔍	Yes

▬ Expansion Options

PCI Express Revision	3.0
Max # of PCI Express Lanes	40

▬ Package Specifications

Max CPU Configuration	2
T CASE	77.4°C
Package Size	52.5mm x 45.0mm

RELATED PRODUCTS

- Intel® Xeon® Processor E5 Family
- Intel® Xeon® Processor E5-2600 Product Family
- Products formerly Sandy Bridge-EP

QUICK LINKS

- Download Datasheet
- Export Full Specifications
- Search Distributors
- Software Downloads
- Support Overview
- Search all of intel.com

PCN/MDDS INFORMATION

SR0KQ
919090: PCN | MDDS
919841: PCN | MDDS
SR0H4
917891: PCN | MDDS

Newsroom   Chip Shot: New Intel IT Mobile App Spotlights How IT Innovation Delivers Business Value

USA (English) ⌄

Sockets Supported	FCLGA2011
Low Halogen Options Available	See MDDS

Advanced Technologies

Intel® Turbo Boost Technology ‡		2.0
Intel® vPro Technology ‡	🔍	Yes
Intel® Hyper-Threading Technology ‡	🔍	Yes
Intel® Virtualization Technology (VT-x) ‡	🔍	Yes
Intel® Virtualization Technology for Directed I/O (VT-d) ‡	🔍	Yes
Intel® VT-x with Extended Page Tables (EPT) ‡	🔍	Yes
Intel® 64 ‡	🔍	Yes
Idle States		Yes
Enhanced Intel SpeedStep® Technology	🔍	Yes
Intel® Demand Based Switching	🔍	Yes
Thermal Monitoring Technologies		Yes
Intel® Flex Memory Access		No
Intel® Identity Protection Technology ‡		No

Intel® Data Protection Technology

AES New Instructions	🔍	Yes

Intel® Platform Protection Technology

Trusted Execution Technology ‡	🔍	Yes
Execute Disable Bit ‡		Yes

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"Announced" SKUs are not yet available. Please refer to the Launch Date for market availability.

Some products can support AES New Instructions with a Processor Configuration update, in particular, i7-2630QM/i7-2635QM, i7-2670QM/i7-2675QM, i5-2430M/i5-2435M, i5-2410M/i5-2415M. Please contact OEM for the BIOS that includes the latest Processor configuration update.

‡ This feature may not be available on all computing systems. Please check with the system vendor to determine if your system delivers this feature, or reference the system specifications (motherboard, processor, chipset, power supply, HDD, graphics controller, memory, BIOS, drivers, virtual machine monitor-VMM, platform software, and/or operating system) for feature compatibility. Functionality, performance, and other benefits of this feature may vary depending on system configuration.

See http://www.intel.com/content/www/us/en/architecture-and-technology/hyper-threading/hyper-threading-technology.html?wapkw=hyper+threading for more information including details on which processors support Intel® HT Technology.

Max Turbo Frequency refers to the maximum single-core processor frequency that can be achieved with Intel® Turbo Boost Technology. See www.intel.com/technology/turboboost/ for more information.

The Recommended Customer Price ("RCP") is pricing guidance for Intel products. Prices are for direct Intel customers and are subject to change without notice. Taxes and shipping, etc. not included. Prices may vary for other package types and shipment quantities, and special promotional arrangements may apply. Listing of these RCP does not constitute a formal pricing offer from Intel. Please work with your appropriate Intel representative to obtain a formal price quotation.

System and Maximum TDP is based on worst case scenarios. Actual TDP may be lower if not all I/Os for chipsets are used.

Low Halogen: Applies only to brominated and chlorinated flame retardants (BFRs/CFRs) and PVC in the final product. Intel components as well as purchased components on the finished assembly meet JS-709 requirements, and the PCB / substrate meet IEC 61249-2-21 requirements. The replacement of halogenated flame retardants and/or PVC may not be better for the environment.

For benchmarking data see http://www.intel.com/performance.

Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See http://www.intel.com/content/www/us/en/processors/processor-numbers.html for details.

Processors that support 64-bit computing on Intel® architecture require an Intel 64 architecture-enabled BIOS.

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