Intel® Xeon® Processor E5-2648L (20M, 1.80 GHz, 8.0 GT/s Intel® QPI)

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⊖ Essentials

Status	Launched
Launch Date	Q1'12
Processor Number	E5-2648L
Intel® Smart Cache	20 MB
Intel® QPI Speed	8 GT/s
# of QPI Links	2
Instruction Set	64-bit
Instruction Set Extensions	YES
Embedded Options Available 🔍	Yes
Lithography	32 nm
Recommended Customer Price	TRAY: $1346.00
Datasheet	Link

⊖ Performance

# of Cores	8
# of Threads	16
Processor Base Frequency	1.8 GHz
Max Turbo Frequency	2.1 GHz
TDP	70 W

⊖ Memory Specifications

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

⊖ Expansion Options

PCI Express Revision	3.0
PCI Express Configurations *	Gen 3.0
Max # of PCI Express Lanes	40

⊖ Package Specifications

Max CPU Configuration	2
Sockets Supported	FCLGA2011
Low Halogen Options Available	See MDDS

⊖ Advanced Technologies

Intel® Turbo Boost Technology *	2.0
Intel® vPro Technology * 🔍	No
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
Enhanced Intel SpeedStep® Technology 🔍	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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Refer to Datasheet for formal definitions of product properties and features.

"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.

"Conflict free" and "conflict-free" means "DRC conflict free", which is defined by the U.S. Securities and Exchange Commission rules to mean products that do not contain conflict minerals (tin, tantalum, tungsten and/or gold) that directly or indirectly finance or benefit armed groups in the Democratic Republic of the Congo (DRC) or adjoining countries. Intel also uses the term "conflict-free" in a broader sense to refer to suppliers, supply chains, smelters and refiners whose sources of conflict minerals do not finance conflict in the DRC or adjoining countries. Intel processors manufactured before January 1, 2013 are not confirmed conflict free. The conflict free designation refers only to product manufactured after that date. For Intel Boxed Processors, the conflict free designation refers to the processor only, not to any additional included accessories, such as heatsinks/coolers.

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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