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**Intel® Xeon® Processor E5-4640**  
(20M Cache, 2.40 GHz, 8.00 GT/s Intel® QPI)

**SPECIFICATIONS**


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**Specifications**

Essentials	
Status	Launched
Launch Date	Q2' 12
Processor Number	E5-4640
# of Cores	8
# of Threads	16
Clock Speed	2.4 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	S4S
Max TDP	95 W
VID Voltage Range	0.6V-1.35V
Recommended Customer Price	TRAY BOX :

Memory Specifications	
Max Memory Size (dependent on memory type)	1500 GB
Memory Types	DDR3-800/1066/1333/1600
# of Memory Channels	4
Max Memory Bandwidth	51.2 GB/s
ECC Memory Supported	Yes

Graphics Specifications	
Integrated Graphics	

Expansion Options	
PCI Express Revision	3.0

Graphics Specifications	
Integrated Graphics	
Expansion Options	
PCI Express Revision	3.0
# of PCI Express Lanes	40
Package Specifications	
Max CPU Configuration	4
Package Size	52.5mm x 45.0mm
Sockets Supported	FCLGA2011
Low Halogen Options Available	See MDDS
Advanced Technologies	
Intel® Turbo Boost Technology	2.0
Intel® vPro Technology	
Intel® Hyper-Threading Technology	 Yes
Intel® Virtualization Technology (VT-x)	 Yes
Intel® Virtualization Technology for Directed I/O (VT-d)	 Yes
Intel® Trusted Execution Technology	 Yes
AES New Instructions	 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	Yes
Execute Disable Bit	Yes
Intel® VT-x with Extended Page Tables (EPT)	Yes

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**PCN/MDDS Information****SR0QT**920363: [PCN](#) | [MDDS](#)921535: [PCN](#) | [MDDS](#)

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

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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.

Hyper-Threading Technology (HT Technology) requires a computer system with an Intel® processor supporting HT Technology and an HT Technology enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. 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 HT Technology.

64-bit computing on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. Consult with your system vendor for more information.

Max Turbo Frequency refers to the maximum single-core frequency that can be achieved with Intel® Turbo Boost Technology, which requires a PC with a processor with Intel Turbo Boost Technology capability. Intel Turbo Boost Technology performance varies depending on hardware, software, and overall system configuration. Check with your PC manufacturer on whether your system delivers Intel Turbo Boost Technology. See [www.intel.com/technology/turboboost/](http://www.intel.com/technology/turboboost/) for more information.

Graphics output, multiple displays, ECC memory, specific PCI Express configurations, Intel® vPro™ Technology, Intel® Trusted Execution Technology, and Intel® Virtualization Technology for Directed I/O (VT-d) may not be available on all computing systems. Please reference the system, motherboard or chipset specifications for compatibility.

Enabling Execute Disable Bit functionality requires a PC with a processor with Execute Disable Bit capability and a supporting operating system. Check with your PC manufacturer on whether your system delivers Execute Disable Bit functionality.

Intel® Virtualization Technology requires a computer system with a processor, chipset, BIOS, virtual machine monitor (VMM) and for some uses, certain platform software, enabled for it. Functionality, performance or other benefit will vary depending on hardware and software configurations. Intel Virtualization Technology-enabled VMM applications are currently in development.

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

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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.

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.

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