Intel Xeon E-2234 processor

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EAN	5032037161190

Intel

Intel® Optane™ Memory Supported

Intel® Optane™ memory is a revolutionary new class of non-volatile memory that sits in between system memory and storage to accelerate system performance and responsiveness. When combined with the Intel® Rapid Storage Technology Driver, it seamlessly manages multiple tiers of storage while presenting one virtual drive to the OS, ensuring that data frequently used resides on the fastest tier of storage. Intel® Optane™ memory requires specific hardware and software configuration.

Intel® Turbo Boost Technology

Intel® Turbo Boost Technology dynamically increases the processor's frequency as needed by taking advantage of thermal and power headroom to give you a burst of speed when you need it, and increased energy efficiency when you don’t.

Intel® vPro™ Platform Eligibility

Intel® vPro™ Technology is a set of security and manageability capabilities built into the processor aimed at addressing four critical areas of IT security: 1) Threat management, including protection from rootkits, viruses, and malware 2) Identity and web site access point protection 3) Confidential personal and business data protection 4) Remote and local monitoring, remediation, and repair of PCs and workstations.

Intel® Hyper-Threading Technology

Intel® Hyper-Threading Technology (Intel® HT Technology) delivers two processing threads per physical core. Highly threaded applications can get more work done in parallel, completing tasks sooner.

Intel® Virtualization Technology (VT-x)

Intel® Virtualization Technology (VT-x) allows one hardware platform to function as multiple “virtual” platforms. It offers improved manageability by limiting downtime and maintaining productivity by isolating computing activities into separate partitions.

Intel® Virtualization Technology for Directed I/O (VT-d)

Intel® Virtualization Technology for Directed I/O (VT-d) continues from the existing support for IA-32 (VT-x) and Itanium® processor (VT-i) virtualization adding new support for I/O-device virtualization. Intel VT-d can help end users improve security and reliability of the systems and also improve performance of I/O devices in virtualized environments.

Intel® VT-x with Extended Page Tables (EPT)

Intel® VT-x with Extended Page Tables (EPT), also known as Second Level Address Translation (SLAT), provides acceleration for memory intensive virtualized applications. Extended Page Tables in Intel® Virtualization Technology platforms reduces the memory

and power overhead costs and increases battery life through hardware optimization of page table management.

Intel® TSX-NI

Intel® Transactional Synchronization Extensions New Instructions (Intel® TSX-NI) are a set of instructions focused on multi-threaded performance scaling. This technology helps make parallel operations more efficient via improved control of locks in software.

Intel® 64

Intel® 64 architecture delivers 64-bit computing on server, workstation, desktop and mobile platforms when combined with supporting software.[1] Intel 64 architecture improves performance by allowing systems to address more than 4 GB of both virtual and physical memory.

Instruction Set

An instruction set refers to the basic set of commands and instructions that a microprocessor understands and can carry out. The value shown represents which Intel's instruction set this processor is compatible with.

Instruction Set Extensions

Instruction Set Extensions are additional instructions which can increase performance when the same operations are performed on multiple data objects. These can include SSE (Streaming SIMD Extensions) and AVX (Advanced Vector Extensions).

Idle States

Idle States (C-states) are used to save power when the processor is idle. C0 is the operational state, meaning that the CPU is doing useful work. C1 is the first idle state, C2 the second, and so on, where more power saving actions are taken for numerically higher C-states.

Enhanced Intel SpeedStep® Technology

Enhanced Intel SpeedStep® Technology is an advanced means of enabling high performance while meeting the power-conservation needs of mobile systems. Conventional Intel SpeedStep® Technology switches both voltage and frequency in tandem between high and low levels in response to processor load. Enhanced Intel SpeedStep® Technology builds upon that architecture using design strategies such as Separation between Voltage and Frequency Changes, and Clock Partitioning and Recovery.

Thermal Monitoring Technologies

Thermal Monitoring Technologies protect the processor package and the system from thermal failure through several thermal management features. An on-die Digital Thermal Sensor (DTS) detects the core's temperature, and the thermal management features reduce package power consumption and thereby temperature when required in order to remain within normal operating limits.

Zusammenfassung

Intel® Optane™ Memory Supported

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Intel Xeon E-2234, Intel Xeon E, LGA 1151 (Socket H4), 14 nm, Intel, E-2234, 3.6 GHz

Intel Xeon E-2234. Processor family: Intel Xeon E, Processor socket: LGA 1151 (Socket H4), Processor lithography: 14 nm. Memory

channels: Dual-channel, Maximum internal memory supported by processor: 128 GB, Memory types supported by processor: DDR4-SDRAM. Market segment: Server, PCI Express configurations: 1x16, 2x8, 1x8+2x4, Supported instruction sets: SSE4.1, SSE4.2, AVX 2.0. Intel® Turbo Boost Technology 2.0 frequency: 4.8 GHz. Package type: Retail box

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Logistics data

Harmonized System (HS) code	85423119

Packaging data

Package type	Retail box

Weight & dimensions

Processor package size	37.5mm x 37.5mm

Operational conditions

Tcase	69.3 °C
Tjunction	100 °C

Other features

Maximum internal memory	128 GB
Graphics output	N/A

Graphics

On-board graphics card	N
Discrete graphics card	N
On-board graphics card model	Not available
On-board graphics card 4K support	N
Discrete graphics card model	Not available

Memory

Maximum internal memory supported by processor	128 GB
Memory types supported by processor	DDR4-SDRAM
Memory clock speeds supported by processor	2666 MHz
Memory channels	Dual-channel
ECC	Y

Technical details

Launch date	Q2'19
Maximum resolution & refresh rate (DisplayPort)	N/A
Product type	Processor
Status	Launched
Maximum memory	128 GB
Supported memory types	DDR4-SDRAM
Bus speed	8 GT/s
Processor ID	N/A
Servicing status	Baseline Servicing

Features

Execute Disable Bit	Y
Idle States	Y
Thermal Monitoring Technologies	Y
Market segment	Server
Maximum number of PCI Express lanes	16
PCI Express slots version	3.0
PCI Express configurations	1x16, 2x8, 1x8+2x4
Supported instruction sets	SSE4.1, SSE4.2, AVX 2.0
Scalability	1S
CPU configuration (max)	1
Embedded options available	N
PCI Express CEM revision	3.0
Export Control Classification Number (ECCN)	5A992C
Commodity Classification Automated Tracking System (CCATS)	G077159

Processor

Processor manufacturer	Intel
Processor model	E-2234
Processor base frequency	3.6 GHz
Processor family	Intel Xeon E
Processor cores	4
Processor socket	LGA 1151 (Socket H4)
Component for	Server/workstation

Processor lithography	14 nm
Processor threads	8
System bus rate	8 GT/s
Processor operating modes	64-bit
Processor boost frequency	4.8 GHz
Processor cache	8 MB
Processor cache type	Smart Cache
Thermal Design Power (TDP)	71 W
Box	Y
Cooler included	Y
Processor codename	Coffee Lake
Processor ARK ID	191039

Processor special features

Intel® Hyper Threading Technology (Intel® HT Technology)	Y
Intel® Turbo Boost Technology	2.0
Intel® Quick Sync Video Technology	N
Intel® InTru™ 3D Technology	N
Intel® Clear Video HD Technology (Intel® CVT HD)	N
Intel® AES New Instructions (Intel® AES-NI)	Y
Enhanced Intel SpeedStep Technology	Y
Intel Trusted Execution Technology	Y
Intel® Memory Protection Extensions (Intel® MPX)	Y
Intel® Turbo Boost Technology 2.0 frequency	4.8 GHz
Intel® Transactional Synchronization Extensions	Y
Intel VT-x with Extended Page Tables (EPT)	Y
Intel® Secure Key	Y
Intel TSX-NI	Y
Intel® OS Guard	Y
Intel Clear Video Technology	N
Intel Software Guard Extensions (Intel SGX)	Y
Intel 64	Y
Intel Virtualization Technology (VT-x)	Y
Intel Virtualization Technology for Directed I/O (VT-d)	Y
Intel® Optane™ Memory Ready	Y
Intel® Boot Guard	Y
Intel® vPro™ Platform Eligibility	Y