Intel Xeon 4210 processor

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Intel

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).

# of AVX-512 FMA Units

Intel® Advanced Vector Extensions 512 (AVX-512), new instruction set extensions, delivering ultra-wide (512-bit) vector operations capabilities, with up to 2 FMAs (Fused Multiply Add instructions), to accelerate performance for your most demanding computational tasks.

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.

Intel® Speed Shift Technology

Intel® Speed Shift Technology uses hardware-controlled P-states to deliver dramatically quicker responsiveness with single-threaded, transient (short duration) workloads, such as web browsing, by allowing the processor to more quickly select its best operating frequency and voltage for optimal performance and power efficiency.

Zusammenfassung

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Intel Xeon 4210, Intel Xeon Silver, LGA 3647 (Socket P), 14 nm, Intel, 2.2 GHz, 64-bit

Intel Xeon 4210. Processor family: Intel Xeon Silver, Processor socket: LGA 3647 (Socket P), Processor lithography: 14 nm. Memory channels: Hexa-channel, Maximum internal memory supported by processor: 1.02 TB, Memory types supported by processor: DDR4-SDRAM. Market segment: Server, Supported instruction sets: SSE4.2, AVX, AVX 2.0, AVX-512, Scalability: 2S. Package type: Retail box. Processor package size: 76mm x 56.5mm

Merkmale

Logistics data

Harmonized System (HS) code	85423119

Memory

Maximum internal memory supported by processor	1.02 TB
Memory types supported by processor	DDR4-SDRAM

Operational conditions

Tcase	78 °C

Other features

Maximum internal memory	1 TB

Packaging data

Package type	Retail box

Weight & dimensions

Processor package size	76mm x 56.5mm

Graphics

On-board graphics card	N
Discrete graphics card	N
On-board graphics card model	Not available
Discrete graphics card model	Not available

Memory clock speeds supported by processor	2400 MHz
Memory channels	Hexa-channel
ECC	Y

Technical details

Launch date	Q2'19
Product type	Processor
Status	Launched
Supported memory types	DDR4-SDRAM
Memory speed (max)	2400 MHz
Number of UPI links	2
Servicing status	Baseline Servicing

Features

Execute Disable Bit	Y
Market segment	Server
Maximum number of PCI Express lanes	48
PCI Express slots version	3.0
Supported instruction sets	SSE4.2, AVX, AVX 2.0, AVX-512
Scalability	2S
Embedded options available	Y
PCI Express CEM revision	3.0
Export Control Classification Number (ECCN)	5A992C
Commodity Classification Automated Tracking System (CCATS)	G077159

Processor

Processor manufacturer	Intel
Processor generation	2nd Generation Intel® Xeon® Scalable
Processor model	4210
Processor base frequency	2.2 GHz
Processor family	Intel Xeon Silver
Processor cores	10
Processor socket	LGA 3647 (Socket P)
Component for	Server/workstation
Processor lithography	14 nm
Processor threads	20
Processor operating modes	64-bit
Processor boost frequency	3.2 GHz
Processor cache	13.75 MB
Thermal Design Power (TDP)	85 W
Box	N
Cooler included	N
Processor codename	Cascade Lake
Processor ARK ID	193384

Processor special features

Intel® Hyper Threading Technology (Intel® HT Technology)	Y
Intel® Turbo Boost Technology	2.0
Intel® AES New Instructions	Y

(Intel® AES-NI)	
Enhanced Intel SpeedStep Technology	Y
Intel Trusted Execution Technology	Y
Intel® Speed Shift Technology	Y
Intel® Transactional Synchronization Extensions	Y
Intel VT-x with Extended Page Tables (EPT)	Y
Intel TSX-NI	Y
Intel 64	Y
Intel Virtualization Technology (VT-x)	Y
Intel Virtualization Technology for Directed I/O (VT-d)	Y
Intel Turbo Boost Max Technology 3.0	N
AVX-512 Fused Multiply-Add (FMA) units	1
Intel® Deep Learning Boost (Intel® DL Boost)	Y
Intel® Speed Select technology - Performance Profile (Intel® SST-PP)	N
Intel® Resource Director Technology (Intel® RDT)	Y
Intel® Volume Management Device (VMD)	Y
Intel® Run Sure Technology	N
Mode-based Execute Control (MBE)	Y
Intel® Optane™ DC Persistent Memory Supported	N
Intel® vPro™ Platform Eligibility	Y
Intel Speed Select Technology (SST)	N
Intel® Speed Select Technology - Base Frequency (Intel® SST-BF)	N
Intel® Optane™ DC Persistent Memory technology	N