Intel Xeon Platinum 8358P processor

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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® 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® 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.

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.

Intel® Deep Learning Boost (Intel® DL Boost)

A new set of embedded processor technologies designed to accelerate AI deep learning use cases. It extends Intel AVX-512 with a new Vector Neural Network Instruction (VNNI) that significantly increases deep learning inference performance over previous generations.

Intel® Resource Director Technology (Intel® RDT)

Intel® RDT brings new levels of visibility and control over how shared resources such as last-level cache (LLC) and memory bandwidth are used by applications, virtual machines (VMs) and containers.

Intel® Volume Management Device (VMD)

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Zusammenfassung

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Intel Xeon Platinum 8358P, Intel® Xeon® Platinum, LGA 4189, 10 nm, Intel, 8358P, 2.6 GHz

Intel Xeon Platinum 8358P. Processor family: Intel® Xeon® Platinum, Processor socket: LGA 4189, Processor lithography: 10 nm. Memory channels: Octa-channel, Maximum internal memory supported by processor: 6.14 TB, Memory types supported by processor: DDR4-SDRAM. Market segment: Server, Supported instruction sets: SSE4.2, AVX, AVX 2.0, AVX-512, Scalability: 2S. Maximum Enclave Size Support for Intel® SGX: 8 GB. Processor package size: 77.5 x 56.5 mm

Merkmale

Logistics data

Harmonized System (HS) code	85423119

Operational conditions

Tcase	80 °C

Other features

Maximum internal memory	6 TB

Weight & dimensions

Processor package size	77.5 x 56.5 mm

Graphics

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

Memory

Maximum internal memory supported by processor	6.14 TB
Memory types supported by processor	DDR4-SDRAM
Memory clock speeds supported by processor	3200 MHz
Memory channels	Octa-channel
ECC	Y

Technical details

Target market	Cloud Computing
Launch date	Q2'21
Status	Launched
Supported memory types	DDR4-SDRAM
Memory speed (max)	3200 MHz
Number of UPI links	3
Servicing status	Baseline Servicing

Features

Execute Disable Bit	Y
Market segment	Server
Maximum number of PCI Express lanes	64
PCI Express slots version	4.0
Supported instruction sets	SSE4.2, AVX, AVX 2.0, AVX-512
Scalability	2S
Embedded options available	N
Export Control Classification Number (ECCN)	5A992CN3
Commodity Classification Automated Tracking System (CCATS)	G178966

Processor

Processor manufacturer	Intel
Processor generation	3rd Generation Intel® Xeon® Scalable
Processor model	8358P
Processor base frequency	2.6 GHz
Processor family	Intel® Xeon® Platinum
Processor cores	32
Processor socket	LGA 4189
Component for	Server/workstation
Processor lithography	10 nm
Processor threads	64
System bus rate	11.2 GT/s
Processor operating modes	64-bit
Processor boost frequency	3.4 GHz
Processor cache	48 MB
Thermal Design Power (TDP)	240 W
Box	N
Cooler included	N
Processor codename	Ice Lake
Processor ARK ID	212308

Processor special features

Intel® Hyper Threading Technology (Intel® HT Technology)	Y
Intel® Turbo Boost Technology	2.0
Intel® AES New Instructions (Intel® AES-NI)	Y
Intel Trusted Execution Technology	Y
Intel® Speed Shift Technology	Y
Intel® Transactional Synchronization Extensions	Y
Intel® Total Memory Encryption	Y
Intel® Crypto Acceleration	Y
Intel® Platform Firmware Resilience Support	Y
Maximum Enclave Size Support for Intel® SGX	8 GB
Intel VT-x with Extended Page Tables (EPT)	Y
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
AVX-512 Fused Multiply-Add (FMA) units	2
Intel® Deep Learning Boost (Intel® DL Boost)	Y
Intel® Resource Director Technology (Intel® RDT)	Y
Intel® Volume Management Device (VMD)	Y
Intel® Run Sure Technology	Y
Mode-based Execute Control (MBE)	Y
Intel® Optane™ DC Persistent Memory Supported	Y