

Essentials

Product Collection	5th Gen Intel® Xeon® Scalable Processors
Code Name	Products formerly Emerald Rapids
Vertical Segment	Server
Processor Number ?	6530
Lithography ?	Intel 7
Recommended Customer Price ?	\$2128.00-\$2138.00

CPU Specifications

Total Cores ?	32
Total Threads ?	64
Max Turbo Frequency ?	4 GHz
Processor Base Frequency ?	2.1 GHz
Cache ?	160 MB
Intel® UPI Speed	20 GT/s
Max # of UPI Links ?	3
TDP ?	270 W

Supplemental Information

Marketing Status	Launched
Launch Date ?	Q4'23
Servicing Status ?	Baseline Servicing
Embedded Options Available ?	Yes
Use Conditions ?	Server/Enterprise

Memory Specifications

Max Memory Size (dependent on memory type) ?	4 TB
Memory Types ?	DDR5 @ 4800 MT/s (1 DPC)
Max # of Memory Channels ?	8
ECC Memory Supported [†] ?	Yes

Expansion Options

Scalability	25
PCI Express Revision ?	5.0
Max # of PCI Express Lanes ?	80

Package Specifications

Sockets Supported ?	FCLGA4677
Package Carrier	E1A
DTS Max	91 °C
T _{CASE} ?	74
Package Size	77.5mm x 56.5mm

Intel® On Demand Available Upgrades

Activation Model	QAT	DLB	DSA	IAA	SGX512
Analytics Suite 4			4	4	
SGX 512GB					512
Intel® Virtual RAID on CPU (Intel® VROC) Activation Options ?			VROC RAID1 Only, VROC Standard, VROC Premium		

Advanced Technologies

Intel® On Demand Activation Model ?	Yes
Intel® Data Streaming Accelerator (DSA)	1 default devices
Intel® Volume Management Device (VMD) ?	Yes
Intel® Advanced Matrix Extensions (AMX)	Yes
Intel® Speed Select Technology – Core Power ?	Yes
Intel® Speed Select Technology – Turbo Frequency ?	Yes
Intel® Deep Learning Boost (Intel® DL Boost) on CPU ?	Yes
Intel® Speed Select Technology - Base Frequency ?	Yes
High Priority Cores	12
High Priority Core Frequency	2.3 GHz
Low Priority Cores	20
Low Priority Core Frequency	1.9 GHz
Intel® Resource Director Technology (Intel® RDT) ?	Yes
Intel® Speed Shift Technology ?	Yes
Intel® Turbo Boost Technology [†] ?	2.0
Intel® Hyper-Threading Technology [†] ?	Yes
Intel® Transactional Synchronization Extensions ?	Yes
Intel® 64 [†] ?	Yes
Instruction Set Extensions ?	Intel® AMX, Intel® SSE4.2, Intel® AVX, Intel® AVX2, Intel® AVX-512
# of AVX-512 FMA Units ?	2

Security & Reliability

Intel® Trust Domain Extensions (Intel® TDX) ?	Yes
Intel® Software Guard Extensions (Intel® SGX) ?	Yes with Intel® SPS
Default Maximum Enclave Page Cache (EPC) Size for Intel® SGX	128 GB
Intel® Crypto Acceleration ?	Yes
Intel® QuickAssist Software Acceleration	Yes
Intel® Platform Firmware Resilience Support	Yes
Intel® Control-Flow Enforcement Technology ?	Yes
Intel® Total Memory Encryption - Multi Key	Yes
Intel® Total Memory Encryption ?	Yes
Intel® AES New Instructions ?	Yes
Intel® OS Guard	Yes
Intel® Trusted Execution Technology [†] ?	Yes
Execute Disable Bit [†] ?	Yes
Intel® Boot Guard ?	Yes
Intel® Run Sure Technology ?	Yes
Mode-based Execute Control (MBEC) ?	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