Intel

Intel Xeon Platinum 8470N Processor (PK8071305075201)

Datasheet

Product Overview

- The Intel Xeon Platinum 8470N is a 4th Gen Intel Xeon Scalable processor for high-density cloud, enterprise, network, and data-center server workloads.
- It provides 52 cores and 104 threads, with a 1.70 GHz base frequency, up to 3.60 GHz Intel Turbo Boost frequency, 97.5 MB cache, and a 300 W TDP.
- The processor supports two-socket server platforms, eight DDR5 memory channels, and high-bandwidth PCI Express 5.0 expansion.
- Up to DDR5-4800 MT/s at 1DPC and DDR5-4400 MT/s at 2DPC support high-capacity server memory, with ECC support for platform reliability.
- Eighty PCIe 5.0 lanes, 2S scalability, and 16 GT/s UPI with three UPI links support dense compute, networking, storage, and data-processing workloads.
- Four default devices each for QAT, DLB, and DSA provide hardware acceleration options, while Intel SGX with a 128 GB default maximum EPC size supports protected deployments.

Product Highlights

- **52-Core Platinum Compute:** 52 cores and 104 threads provide high parallel processing capacity for network, cloud, enterprise, and data-center workloads.
- **Two-Socket Server Interconnect:** 16 GT/s UPI and three UPI links support multi-processor platforms, while 80 PCIe 5.0 lanes connect accelerators, storage, Ethernet adapters, and other I/O devices.
- **DDR5 Memory Flexibility:** Eight memory channels support up to DDR5-4800 MT/s at 1DPC and DDR5-4400 MT/s at 2DPC, with ECC support for server-class systems.
- **Network and Data Acceleration:** Four default devices each for Intel QAT, DLB, and DSA provide acceleration options for cryptography, load balancing, and data movement.

Detailed Features



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Component	Specification
Processor	Intel Xeon Platinum 8470N, 52 cores / 104 threads
Ordering Information	PK8071305075201, FC-LGA16A Tray, Spec Code SRM7M
Frequency and Cache	1.70 GHz base, up to 3.60 GHz turbo, 97.5 MB cache
Memory	Up to DDR5-4800 MT/s 1DPC or DDR5-4400 MT/s 2DPC, 8 channels, ECC supported
Power and Expansion	300 W TDP, 2S scalability, PCIe 5.0 with 80 lanes, 16 GT/s UPI, 3 UPI links

High-Core-Count Network Performance

The 8470N combines 52 cores and 104 threads with a 1.70 GHz base frequency and up to 3.60 GHz Intel Turbo Boost frequency. This profile suits network infrastructure, cloud services, analytics, and general-purpose data-center workloads.

Two-Socket Platform Design

Intel specifies 2S scalability, 16 GT/s UPI, and three UPI links. This enables the processor to participate in dual-socket platforms that require higher aggregate compute capacity and memory bandwidth.

PCIe 5.0 Expansion Capacity

Eighty PCIe 5.0 lanes provide high-speed connectivity for Ethernet adapters, storage controllers, accelerators, and other I/O devices. The lane budget helps balance high-throughput expansion across a server platform.

DDR5 Memory Bandwidth

Eight memory channels support up to DDR5-4800 MT/s with one DIMM per channel and up to DDR5-4400 MT/s with two DIMMs per channel. ECC support helps maintain data integrity in server environments.

Server Instruction Set

The processor lists SSE4.2, AVX, AVX2, and AVX-512 instruction extensions for supported server workloads.

Integrated Accelerator Portfolio

Intel documents four default devices each for QAT, DLB, and DSA. These engines can offload supported cryptography, load-balancing, and data-movement operations from general-purpose cores.

Speed Select Performance Profiles

Intel Speed Select Technology provides three 52-core operating points: 1.7 GHz at 300 W, 1.8 GHz at 300 W, and 2.1 GHz at 300 W.

Protected Server Execution

Intel SGX with a 128 GB default maximum EPC size, Total Memory Encryption, AES instructions, Boot Guard, and Control-Flow Enforcement Technology help protect data and workloads across the server lifecycle.

Technical Specifications

Product Specifications

Feature	Value
User SKU	INTL-Platinum-8470N
Intel ordering code	PK8071305075201
Intel Spec Code	SRM7M
Processor model	Intel Xeon Platinum 8470N Processor
Product collection	4th Gen Intel Xeon Scalable Processors
Code name	Products formerly Sapphire Rapids
Vertical segment	Server
Processor number	8470N
Lithography	Intel 7
Marketing status	Launched
Launch date	Q1 2023
Use conditions	Server / Enterprise
Total cores	52
Total threads	104

Feature	Value
Processor base frequency	1.70 GHz
Max turbo frequency	3.60 GHz
Cache	97.5 MB
Intel UPI speed	16 GT/s
Max UPI links	3
TDP	300 W
Scalability	2S
Sockets supported	FCLGA4677
Package carrier	E1A
Package size	77.5 mm x 56.5 mm
DTS max	92 °C
TCASE	76 °C
Max memory size	Up to 4 TB, depending on memory type and platform configuration
Memory types	Up to DDR5-4800 MT/s 1DPC; up to DDR5-4400 MT/s 2DPC
Max memory channels	8
ECC memory supported	Yes
PCI Express revision	5.0
Max PCI Express lanes	80
Intel On Demand Activation Model	No
Intel QuickAssist Technology	4 default devices
Intel Dynamic Load Balancer	4 default devices
Intel Data Streaming Accelerator	4 default devices
Intel Advanced Matrix Extensions	No
Intel Speed Select Technology - Core Power	Yes
Intel Speed Select Technology - Turbo Frequency	Yes
Intel Speed Select Technology - Base Frequency	Yes
Intel Speed Select Technology - Performance Profile	Yes
Intel DL Boost	Yes
High Priority Cores	16

Feature	Value
High Priority Core Frequency	1.80 GHz
Low Priority Cores	36
Low Priority Core Frequency	1.30 GHz
Intel Resource Director Technology	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
AVX-512 FMA units	2
Intel Crypto Acceleration	Yes
Intel QuickAssist Software Acceleration	Yes
Intel Platform Firmware Resilience	Yes
Intel Control-Flow Enforcement Technology	Yes
Intel Total Memory Encryption	Yes
Intel AES New Instructions	Yes
Intel SGX	Yes with Intel SPS
Default maximum SGX EPC size	128 GB
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	Yes
Intel Virtualization Technology	VT-x, VT-d, and VT-x with EPT
Shipping media	Tray
Stepping	E5

Product Comparison

Feature	Intel Xeon Platinum 8470N / PK8071305075201	Intel Xeon Platinum 8470	Intel Xeon Platinum 8468V
Processor family	4th Gen Intel Xeon Scalable	4th Gen Intel Xeon Scalable	4th Gen Intel Xeon Scalable
Product positioning	52-core Platinum processor with SST-PP and accelerator devices	52-core, high-power, two-socket Platinum processor	48-core Speed Select Platinum processor
Total cores	52	52	48
Total threads	104	104	96
Processor base frequency	1.70 GHz	2.00 GHz	2.40 GHz
Max turbo frequency	3.60 GHz	3.80 GHz	3.80 GHz
Cache	97.5 MB	105 MB	97.5 MB
TDP	300 W	350 W	330 W
Max memory size	Up to 4 TB, depending on memory type	Up to 4 TB, depending on memory type	Up to 4 TB, depending on memory type
Scalability	2S	2S	2S
UPI	16 GT/s, 3 links	16 GT/s, 4 links	16 GT/s, 3 links
Memory channels	8	8	8
PCI Express lanes	80	80	80
Default accelerator devices	QAT: 4; DLB: 4; DSA: 4	DSA: 1	QAT: 1; DLB: 1; DSA: 1; IAA: 1
Intel AMX	No	Yes	Yes
Best-fit role	Network infrastructure, cloud, and data-center compute	High-performance dual-socket enterprise compute	Configurable two-socket enterprise and data-center compute

Accessories

Category	Accessories
Included Accessories	- Intel Xeon Platinum 8470N processor (tray shipping media)
Optional Accessories	-

Support & Warranty

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[2] Intel. (n.d.). Intel Xeon Platinum 8470N Processor Ordering and Spec Information. Accessed: 2026-10-13. https://www.intel.com/content/www/us/en/products/sku/231748/intel-xeon-platinum-8470n-processor-97-5m-cache-1-70-ghz/ordering.html