

**Intel**  
**Intel Xeon Gold 6403N**  
**Processor**  
**(PK8071305451400)**  
**Datasheet**



## Product Overview

- The Intel Xeon Gold 6403N is a 4th Gen Intel Xeon Scalable processor for network, edge, communications, and server workloads.
- It delivers 24 cores and 48 threads, with a 1.90 GHz base frequency, up to 3.60 GHz Intel Turbo Boost frequency, 45 MB cache, and a 185 W TDP.
- Built on Intel 7 process technology, the processor is designed for single-socket platforms and supports eight DDR5 memory channels with ECC support.
- DDR5-4000 memory and 64 PCI Express 4.0 lanes provide bandwidth for network adapters, storage, accelerators, and other platform I/O.
- Intel DL Boost, Intel vRAN Boost, AVX-512, two AVX-512 FMA units, and one default Intel DSA device support selected data-plane and communications workloads.
- Security and platform features include Intel SGX with Intel SPS, Total Memory Encryption, Boot Guard, Control-Flow Enforcement Technology, and Intel virtualization technologies.

## Product Highlights

- **24-Core Edge Compute:** 24 cores and 48 threads provide parallel processing capacity for communications servers, edge nodes, virtualized network functions, and service workloads.
- **1.90 to 3.60 GHz Frequency Range:** The processor combines a 1.90 GHz base frequency with up to 3.60 GHz Intel Turbo Boost frequency for responsive burst performance.
- **DDR5 and PCIe 4.0 Expansion:** Eight DDR5-4000 memory channels and 64 PCIe 4.0 lanes support high-throughput memory and I/O designs in single-socket servers.
- **vRAN and Security Acceleration:** Intel vRAN Boost, Intel DL Boost, SGX with Intel SPS, Total Memory Encryption, Boot Guard, and VT-d support communications and protected workloads.

## Detailed Features



Intel Xeon Gold 6403N Processor (PK8071305451400)

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| Component            | Specification                                    |
|----------------------|--------------------------------------------------|
| Processor            | Intel Xeon Gold 6403N, 24 cores / 48 threads     |
| Ordering Information | PK8071305451400, FC-LGA16A Tray, Spec Code SRN2E |
| Frequency and Cache  | 1.90 GHz base, up to 3.60 GHz turbo, 45 MB cache |
| Memory               | Up to 4 TB DDR5-4000, 8 channels, ECC supported  |
| Power and Expansion  | 185 W TDP, 1S, PCIe 4.0 with 64 lanes            |



24-Core Edge-Server Compute

The 6403N combines 24 physical cores with 48 threads and a 185 W TDP. This gives network and edge servers more parallel compute capacity for virtualized network functions, analytics, security services, and consolidated infrastructure workloads.

Network-Optimized N-Series Design

As an N-series 4th Gen Intel Xeon Scalable processor, the 6403N is positioned for communications, 5G, vRAN, NFV, and edge infrastructure. Intel vRAN Boost and Intel DL Boost help accelerate selected network and machine-learning workloads.

Frequency and Cache Balance

The 1.90 GHz base frequency can reach up to 3.60 GHz with Intel Turbo Boost Technology 2.0. A 45 MB cache helps keep frequently accessed data close to the cores, supporting responsive control-plane and service processing.

Single-Socket Platform Efficiency

The processor is specified for 1S scalability and uses the FCLGA4677 socket. A single-socket design can simplify topology and reduce platform complexity in compact edge, security, storage, and network-function deployments.

High-Capacity ECC Memory

The processor supports up to 4 TB of DDR5-4000 memory across eight channels, with ECC support for server-class reliability. The memory capacity gives single-socket systems room for virtualized network functions, caches, analytics, and service containers.

PCIe 4.0 I/O for Data-Plane Devices

Sixty-four PCIe 4.0 lanes provide expansion capacity for Ethernet adapters, storage controllers, accelerators, and other high-bandwidth devices. The lane budget helps designers build balanced I/O around one processor socket.

Acceleration for Communications Workloads

Intel vRAN Boost targets virtualized radio access network processing, while Intel DSA provides one default device for data movement. Intel DL Boost and AVX-512 support selected inference, packet-processing, and analytics operations.

Security and Virtualization Foundation

The processor includes Intel SGX with Intel SPS, Total Memory Encryption, Boot Guard, Control-Flow Enforcement Technology, AES instructions, VT-x, VT-d, and Extended Page Tables. These capabilities help protect workloads and support virtualized server platforms.

Technical Specifications

Product Specifications

| Feature             | Value                                           |
|---------------------|-------------------------------------------------|
| User SKU            | INTL-6403N                                      |
| Intel ordering code | PK8071305451400                                 |
| Intel Spec Code     | SRN2E                                           |
| Processor model     | Intel Xeon Gold 6403N Processor                 |
| Product collection  | 4th Gen Intel Xeon Scalable Processors          |
| Code name           | Products formerly Sapphire Rapids Edge Enhanced |
| Vertical segment    | Server                                          |
| Processor number    | 6403N                                           |
| Lithography         | Intel 7                                         |
| Marketing status    | Launched                                        |
| Launch date         | Q3 2023                                         |
| Total cores         | 24                                              |
| Total threads       | 48                                              |



| Feature                                             | Value             |
|-----------------------------------------------------|-------------------|
| Processor base frequency                            | 1.90 GHz          |
| Max turbo frequency                                 | 3.60 GHz          |
| Cache                                               | 45 MB             |
| TDP                                                 | 185 W             |
| Scalability                                         | 1S only           |
| Sockets supported                                   | FCLGA4677         |
| Package carrier                                     | E1B               |
| Package size                                        | 77.5 mm x 56.5 mm |
| DTS max                                             | 97 °C             |
| TCASE                                               | 85 °C             |
| Max memory size                                     | 4 TB              |
| Memory types                                        | DDR5-4000         |
| Maximum memory speed                                | 4000 MHz          |
| Max memory channels                                 | 8                 |
| ECC memory supported                                | Yes               |
| Intel Optane persistent memory                      | No                |
| PCI Express revision                                | 4.0               |
| Max PCI Express lanes                               | 64                |
| Intel DL Boost                                      | Yes               |
| Intel vRAN Boost                                    | Yes               |
| Intel On Demand Activation Model                    | No                |
| Intel QuickAssist Technology                        | 0 default devices |
| Intel Dynamic Load Balancer                         | 0 default devices |
| Intel Data Streaming Accelerator                    | 1 default device  |
| Intel In-memory Analytics Accelerator               | 0 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 - Performance Profile | Yes               |
| Intel Speed Select Technology - Base Frequency      | No                |



| Feature                                        | Value                                              |
|------------------------------------------------|----------------------------------------------------|
| 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 SSE4.2, Intel AVX, Intel AVX2, Intel AVX-512 |
| AVX-512 FMA units                              | 2                                                  |
| Intel QuickAssist Software Acceleration        | Yes                                                |
| Intel Control-Flow Enforcement Technology      | Yes                                                |
| Intel Total Memory Encryption                  | Yes                                                |
| Intel AES New Instructions                     | Yes                                                |
| Intel SGX                                      | Yes with Intel SPS                                 |
| Intel Trusted Execution Technology             | Yes                                                |
| Execute Disable Bit                            | Yes                                                |
| Intel OS Guard                                 | Yes                                                |
| Intel Boot Guard                               | Yes                                                |
| Intel Run Sure Technology                      | Yes                                                |
| Mode-based Execute Control                     | Yes                                                |
| Intel Platform Firmware Resilience             | Yes                                                |
| Default maximum SGX EPC size                   | 128 GB                                             |
| Intel Crypto Acceleration                      | Yes                                                |
| Intel Virtualization Technology                | VT-x, VT-d, and VT-x with EPT                      |
| Shipping media                                 | Tray                                               |
| Stepping                                       | L0                                                 |



## Product Comparison

| Feature                     | Intel Xeon Gold 6403N / PK8071305451400                 | Intel Xeon Gold 5403N / PK8071305554700                  | Intel Xeon Gold 6423N / PK8071305451300               |
|-----------------------------|---------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------|
| Processor family            | 4th Gen Intel Xeon Scalable                             | 4th Gen Intel Xeon Scalable                              | 4th Gen Intel Xeon Scalable                           |
| Network or edge positioning | N-series Edge Enhanced                                  | N-series Edge Enhanced                                   | N-series Edge Enhanced                                |
| Total cores                 | 24                                                      | 12                                                       | 28                                                    |
| Total threads               | 48                                                      | 24                                                       | 56                                                    |
| Processor base frequency    | 1.90 GHz                                                | 2.00 GHz                                                 | 2.00 GHz                                              |
| Max turbo frequency         | 3.60 GHz                                                | 3.90 GHz                                                 | 3.60 GHz                                              |
| Cache                       | 45 MB                                                   | 22.5 MB                                                  | 52.5 MB                                               |
| TDP                         | 185 W                                                   | 115 W                                                    | 195 W                                                 |
| Scalability                 | 1S only                                                 | 1S only                                                  | 1S only                                               |
| Max memory size             | 4 TB                                                    | 4 TB                                                     | 4 TB                                                  |
| Memory channels             | 8                                                       | 8                                                        | 8                                                     |
| Memory support              | DDR5-4000                                               | DDR5-4000                                                | DDR5-4400                                             |
| ECC memory                  | Yes                                                     | Yes                                                      | Yes                                                   |
| PCI Express                 | 4.0, 64 lanes                                           | 4.0, 48 lanes                                            | 4.0, 64 lanes                                         |
| Intel DL Boost              | Yes                                                     | Yes                                                      | Yes                                                   |
| Intel vRAN Boost            | Yes                                                     | Yes                                                      | Yes                                                   |
| AMX                         | No                                                      | No                                                       | No                                                    |
| Best-fit role               | Higher-core-count single-socket network and edge server | Balanced low-power single-socket network and edge server | Higher-capacity single-socket network and edge server |

## Accessories



| Category             | Accessories                                                                                                                |
|----------------------|----------------------------------------------------------------------------------------------------------------------------|
| Included Accessories | - Intel Xeon Gold 6403N processor (tray shipping media)                                                                    |
| Optional Accessories | - FCLGA4677-compatible server board and CPU cooling solution<br>- DDR5 ECC memory and PCIe 4.0 network or storage adapters |



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## References

- [1] Intel. (2026). Intel Xeon Gold 6403N Processor Specifications. <https://www.intel.com/content/www/us/en/products/sku/236592/intel-xeon-gold-6403n-processor-45m-cache-2-00-ghz/specifications.html>
- [2] Intel. (2026). Intel Xeon Gold 6403N Processor Ordering and Spec Information. <https://www.intel.com/content/www/us/en/products/sku/236592/intel-xeon-gold-6403n-processor-45m-cache-2-00-ghz/ordering.html>
- [3] Intel. (2026). 4th Gen Intel Xeon Scalable Processors. <https://www.intel.com/content/www/us/en/ark/products/series/228622/4th-gen-intel-xeon-scalable-processors.html>
- [4] Intel. (2026). Intel Xeon Gold Processor. <https://www.intel.com/content/www/us/en/products/details/processors/xeon/scalable/gold.html>