Product Brief

Intel® Xeon® 6300-Series Processors
Small Business

Essential Performance, Reliability, and Security for Businesses

Achieve more with Intel Xeon 6300-series processors, which are designed to intelligently support the growth of small businesses and entry-level cloud services.

1.57x
average performance gains over Intel Xeon E-2388 processors.[1]

Technology investments and business outcomes are increasingly interconnected. The workplace and workforce have changed rapidly in recent years, and organizations have responded by accelerating their digital transformations. Smaller businesses are no exception. These businesses have specialized needs for their technologies, especially those that can help them run multi-user applications such as email servers, messaging and videoconferencing, print servers, scheduling programs, databases, and enterprise resource planning (ERP) and customer relationship management (CRM) software.

Small businesses and entry-level cloud services can run daily operations smoothly in today's digital-first marketplace with business-ready, server-grade Intel Xeon 6300-series processors. These processors are built from the ground up with these businesses' needs in mind. Intel Xeon 6300-series processors are specifically designed with server-grade reliability and manageability features using criteria and testing standards that are more stringent than those for desktop processors. They also feature numerous improvements over the previous generation, including support for two channels of DDR5 memory, the ability to deliver speeds of up to 4,800 megatransfers per second (MT/s), and 16-lane PCIe 5.0 for more bandwidth. PCIe 5.0 doubles the throughput of the previous generation, making it ideal for fast networking and storage.

Power- and cost-efficient Intel Xeon 6300-series processors are designed for single-processor server platforms, and they provide the features and capabilities needed for entry-level hardware solutions.

An enterprise-grade solution for on-premises deployments

Small businesses and entry-level cloud services require server solutions with professional-grade reliability, expandability, and enhanced security capabilities that can help control costs. Intel Xeon 6300-series processors are ideal for on-premises servers that provide a foundation of essential capabilities while complementing bare-metal cloud-based services and other IT investment options.

Meet a wide variety of needs

A dedicated, on-premises server can help address a number of the challenges facing businesses with limited infrastructure and IT resources, including:

- Bandwidth constraints, application latency, or heavy data usage, which can cause performance issues
- Uncertainty and inability to plan for the setup and ongoing costs of cloud services
- Preference for up-front payment over extended payment schedules
- Legacy applications that cannot be migrated to the cloud
- Regulatory, compliance, or data-sovereignty requirements that can mandate on-premises data security

The cost of downtime exceeds **$300,000/hour for 90 percent** of businesses.[2]

Servers powered by Intel Xeon 6300-series processors support the latest operating systems, which can help small businesses and entry-level cloud services integrate their new applications and tools and benefit from up-to-date security patches. Keeping their systems up to date can help protect sensitive business data from cyberthreats. A server based on Intel Xeon 6300-series processors can deliver improved performance for any device on the network, which allows fast access to information and shorter customer response times.

The latest memory and I/O interconnect features

The latest generation of Intel Xeon 6300-series processors features DDR5 support for higher performance, in addition to support for error correction code (ECC). ECC helps avoid business interruptions with automatic correction of memory data errors that cause inadvertent data changes or system crashes. DDR5 memory delivers continued scalability for bandwidth, capacity, and power efficiency compared to DDR4 memory.

Like the latest top-of-the-line server-grade Intel Xeon 6 processors, Intel Xeon 6300-series processors support PCIe 5.0, which doubles the input/output (I/O) bandwidth of PCIe 4.0. PCIe 5.0 provides opportunities to enable the highest possible throughput between the CPU and connected devices while maintaining backward compatibility with previous generations of PCIe. Entry-level, bare-metal servers can now take advantage of high-speed I/O for faster storage and network connectivity.

Intel Xeon 6300-series processor specifications

Intel Xeon 6300-series processors are available in eight SKUs, including options with four, six, or eight cores and thermal design power (TDP) ranging from 55 W up to 95 W. With Intel® Turbo Boost Technology frequencies as high as 5.7 GHz, these processors provide 1.57x average performance gains over Intel Xeon E-2388 processors.[1] The Intel Xeon 6300-series processor platform supports Serial ATA (SATA) 3.0 and, when coupled with Intel® C260 Series Chipsets, offers more I/O bandwidth and speed and more USB 3.2 Gen 2x2 (20 Gb) ports than the previous generation.

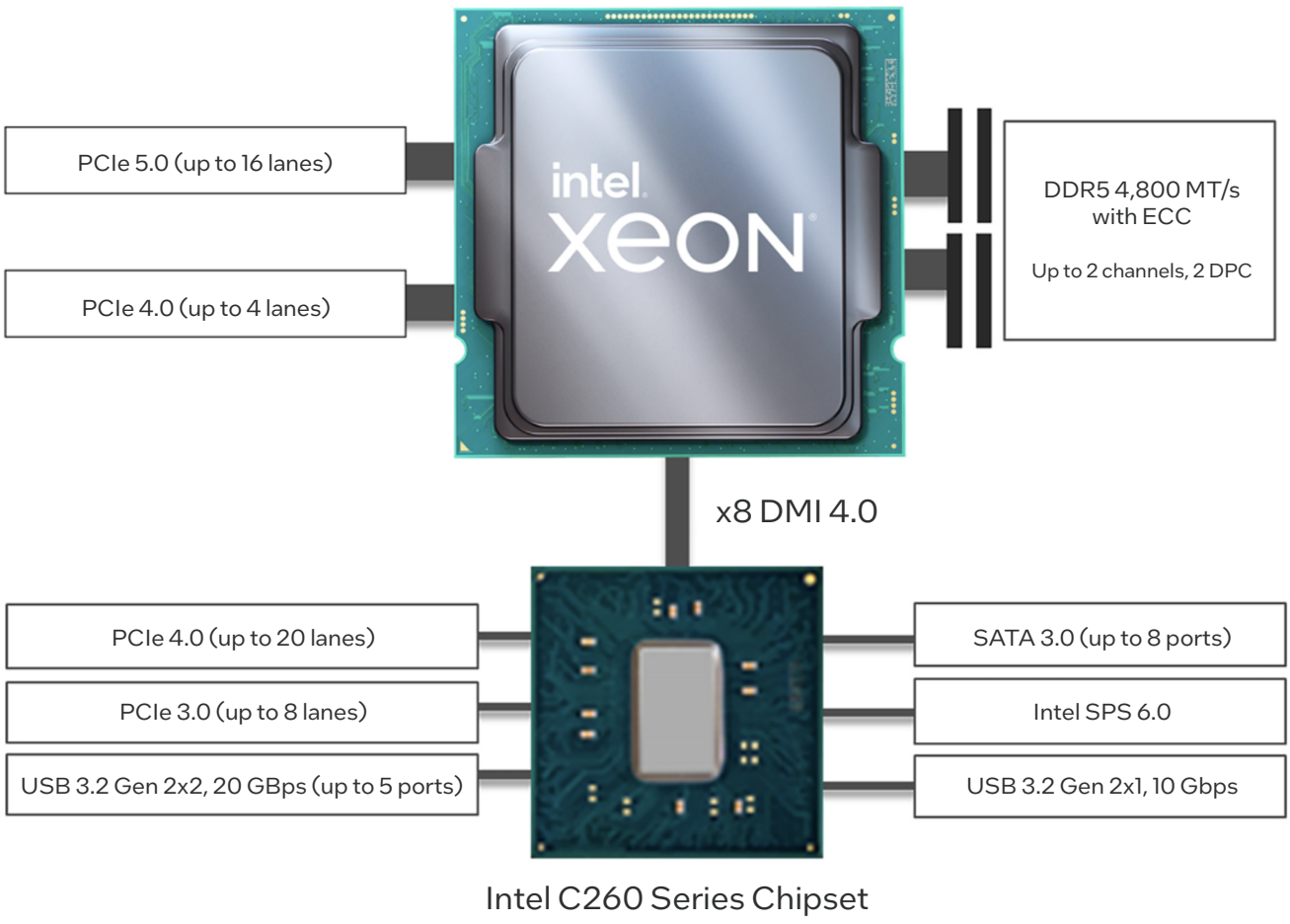
The platform is validated for compatibility with the latest server operating systems, including Windows Server 2025, and it supports Intel® Server Platform Services (Intel® SPS). Intel SPS provides a suite of tools to control and monitor power, thermal, and resource utilization, with support for Intel® Node Manager.

Table 1. Intel Xeon 6300-series processor details

Feature	Specifications
Maximum core count	Up to eight cores
Maximum base frequency	3.6 GHz
Processor cache memory	Up to 24 MB Intel® Smart Cache Technology
Processor performance technologies	Intel® Turbo Boost Max Technology 3.0 Intel® Hyper-Threading Technology (Intel® HT Technology)
Intel Turbo Boost Max Technology 3.0 frequency	Up to 5.7 GHz
Maximum socket number	Up to one socket per server
Socket type	LGA 1700 socket
TDP	Up to 95 watts
System memory	2 channels of DDR5 Up to 4,800 MT/s 2 DPC UDIMMs ECC
Maximum system memory	Up to 128 GB
Supported chipset	Intel® C262 Chipset or Intel® C266 Chipset

Feature	Specifications
I/O	PCIe 5.0—Up to 16 lanes (CPU) PCIe 4.0—Up to 20 lanes (PCH) and up to 4 lanes (CPU) PCIe 3.0—Up to 8 lanes (PCH) USB 3.2 Gen2x2 (20G)—Up to 5 ports USB 3.2 Gen2x1 (10G)—Up to 10 ports SATA 3.0—Up to 8 ports Direct Media Interface (DMI)—8 lanes, Gen 4
Intel SPS	Intel SPS 6.0 with Intel Node Manager
Intel® Virtual RAID on CPU (Intel® VROC)	SATA RAID
Support for Intel Ethernet	1 gigabit Ethernet (GbE) Intel® Ethernet Controller I210 (LOM/AIC) 10 GbE Intel® Ethernet Network Adapter X710 (AIC) 25 GbE Intel Ethernet Network Adapter E810 (AIC)
Manufacturing process	Intel® 7 process technology

Note: Contact your hardware or equipment manufacturer for a full list of supported features and capabilities.



Note: Available in single-socket configurations only. Processors, chipsets, and diagram are provided for illustration purposes only; this is not a comprehensive list of all features and capabilities.

Figure 1. A typical Intel Xeon 6300-series platform configuration

Table 2. Intel Xeon 6300P-series processor SKUs

Processor number	Cores	Base clock speed (GHz)	All core turbo boost frequency (GHz)	Max turbo boost frequency (GHz)	Intel Smart Cache Technology cache (MB)	PCIe 5.0, 4.0, and 3.0 lanes (CPU + chipset)	Memory support	TDP (W)	Socket (LGA)	Max scalability
Intel Xeon 6369P processor	8	3.3	5.3	5.7	24	48	Two channels DDR5-4800	95	1,700	1 socket
Intel Xeon 6375P processor	8	3.0	4.7	5.4	24	48	Two channels DDR5-4800	80	1,700	1 socket
Intel Xeon 6353P processor	8	2.7	4.6	5.4	24	48	Two channels DDR5-4800	65	1,700	1 socket
Intel Xeon 6349P processor	6	3.6	5.3	5.7	18	48	Two channels DDR5-4800	95	1,700	1 socket
Intel Xeon 6337P processor	6	3.5	4.8	5.4	18	48	Two channels DDR5-4800	80	1,700	1 socket
Intel Xeon 6333P processor	6	3.1	4.6	5.2	18	48	Two channels DDR5-4800	65	1,700	1 socket
Intel Xeon 6325P processor	4	3.5	4.8	5.2	12	48	Two channels DDR5-4800	55	1,700	1 socket
Intel Xeon 6315P processor	4	2.8	4.5	4.7	12	48	Two channels DDR5-4800	55	1,700	1 socket

A strong foundation for growth

Help your employees be more productive, serve customers faster, and keep valuable business data safe with powerful and affordable small-business servers based on Intel Xeon 6300-series processors.

For more information on Intel Xeon 6300-series processors, visit intel.com/xeon.

[1] "1.57x average performance gains over Intel Xeon E-2388 processors": Performance varies by use, configuration and other factors. Ask your Intel representative for configuration details.

[2] Information Technology Intelligence Consulting (ITIC). "ITIC 2024 Hourly Cost of Downtime Report Part 1." September 2024. https://itic-corp.com/itic-2024-hourly-cost-of-downtime-report/. And: ITIC. "ITIC 2024 Hourly Cost of Downtime Part 2." September 2024. https://itic-corp.com/itic-2024-hourly-cost-of-downtime-part-2/. See also: ITIC and Calyptix Security. "Hourly Cost of Downtime Part 2." 2024. calyptix.com/wp-content/uploads/ITIC-2024-Hourly-Cost-of-Downtime-Survey-Results-Part-2.pdf.

Performance varies by use, configuration and other factors. Learn more at www.Intel.com/PerformanceIndex.

Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See configuration disclosure for additional details.

No product or component can be absolutely secure.

Your costs and results may vary.

Results have been estimated or simulated.

Intel technologies may require enabled hardware, software or service activation.

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