PRODUCT BRIEF

Industry
Intel® Xeon® D-2100 Processor

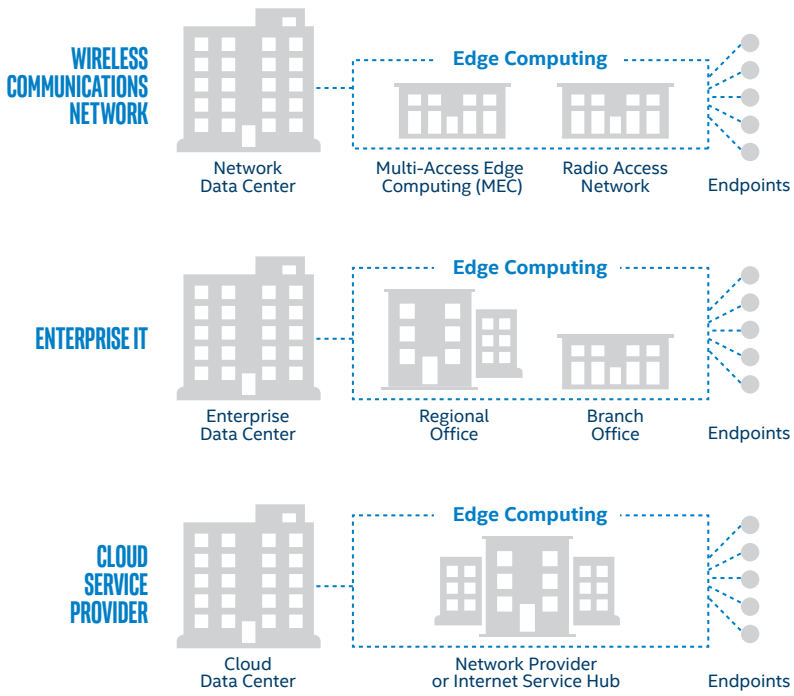
Advanced Intelligence for High-Density Edge Solutions

Data Center Expansion to the Edge

The data center is expanding outward, closer-and-closer to the data generating and consuming endpoints

Technology is constantly changing our world, disrupting the lives of both industries and individuals. With the rise of new technologies and data-driven services, people and devices that consume and generate data are growing exponentially, from smart phones to IOT-enabled industrial equipment to autonomous cars. This rapid growth of data requires advanced intelligence closer to the endpoints that are both generating and consuming data. To capture and accelerate this opportunity, the powerful data processing and analytics capabilities that have traditionally lived in the heart of the data center must be strategically placed closer-and-closer to the data generating and consuming endpoints, at the "edge." By expanding the powerful capabilities of the data center outward, service and network providers can deliver more powerful services, reduce application latency by processing more data closer to the edge, and optimize TCO.

Industries and Customers Use the Edge Differently



The Intel® Xeon® Scalable processor delivers the ultimate performance to support the largest variety of high-demand applications and services, from the data center core to the edge. As the needs of the edge become more complex and varied, some services and applications will require a different balance of performance, power consumption and size. The new Intel® Xeon® D-2100 processor brings the advanced intelligence of the Intel® Xeon® Scalable processor architecture into an optimized, dense, lower-power system-on-a-chip (SoC) form factor for environments constrained by space and power. And at the outermost edge, the Intel Atom® C3000 processor delivers data center-class capabilities to purpose-built edge use cases requiring small physical size, very low power and operating in extreme temperatures.

Along all points, from the data center core, to the edge, to the endpoint device, Intel offers a portfolio of products with advanced data center intelligence to build and accelerate data-driven services and solutions.

Intel's Edge Computing Portfolio

INTEL® XEON® SCALABLE PROCESSOR
Best Performance, Most Scalable
Designed for Edge environments with flexible operating space and power.

Learn more at
www.intel.com/xeonscalable

INTEL® XEON® D PROCESSOR
Optimized for Density, Lower Power
Designed for Edge environments constrained by operating space and power.

Learn more at
www.intel.com/xeond

INTEL ATOM® C3000 PROCESSOR
Purpose-Built for Very Low Power
Designed for Edge environments constrained by physical size and extreme temperatures.

Learn more at
www.intel.com/atomc

Introducing the new Intel® Xeon® D-2100 Processor

The new Intel® Xeon® D-2100 processor delivers Intel's most transformative and ground-breaking data center processor architecture in a form factor optimized for flexible, scalable, high-density network, storage and cloud edge solutions. It brings the architectural innovations of the Intel® Xeon® Scalable platform to a system-on-a-chip (SoC) processor for lower-power, high-density solutions, integrating essential network, security and acceleration capabilities. A software-programmable platform featuring robust virtualization support, with low latency, high-bandwidth capabilities through a flexible design, for a variety of solution and service deployments in space and power constrained environments. Design innovation delivers seamless solution scalability from the data center to the network edge.

Designed and manufactured with Intel® Mesh Architecture and using Intel's industry-leading 14nm silicon process technology, the Intel® Xeon® D-2100 processor is the first offering of a line of processors that will address a broad range of lower-power, high-density edge computing needs.

Intel® Xeon® D-2100 Processor
Advanced Intelligence for High-Density Edge Solutions

With a range of 4 to 18 cores, up-to 512 GB of addressable memory, this system-on-a-chip (SoC) has an integrated platform controller hub (PCH), integrated high-speed I/O, up-to four integrated 10 Gigabit Intel® Ethernet ports, and a thermal design point (TDP) of 60 watts to 110 watts. It can run the same instruction set as more robust Intel Xeon Scalable processors to provide software consistency and scale from the data center to the edge. It also provides advanced server-class capabilities, including:

- New Intel® Advanced Vector Extensions 512 (Intel® AVX-512) delivers workload-optimized performance and throughput increases for advanced analytics, compute-intensive applications, cryptography and data compression.†
- Enhanced Intel® QuickAssist Technology (Intel® QAT), available as an integrated option, delivers chipset-based hardware acceleration, up-to 100 Gbps, for growing cryptography, encryption, and decryption workloads for greater efficiency while delivering enhanced transport and protection across server, storage and network infrastructure.†
- Built-In Hardware Virtualization using Intel® Virtualization Technology (Intel® VT) to enable dynamic provisioning of services as communication service providers extend network functions virtualization (NFV) to the network edge.
- Intel x86 64-bit Software Support for scalable performance and broad application compatibility.
- Enhanced Reliability, Availability, and Serviceability (RAS) features, including support for error-correcting code (ECC) memory and platform-level error management and resilience.
- Intel® Platform Storage Extensions to enable smarter and more cost-effective storage solutions through integrated technologies that accelerate data movement, protect data, and simplify data management.
- Fast Encryption and Decryption Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI) accelerates data encryption and decryption for secure websites.

Comparing the Intel® Xeon® D-2187NT Processor to the Intel® Xeon® D-1553N Processor Network Series

	Intel® Xeon® D-1553N Processor Network Series	Intel® Xeon® D-2187NT Processor	Comparison
Introduction	Q3 2017	Q1 2018	6 Months
Lithography	14nm	14nm	Enhanced Lithography
Micro-Architecture	Broadwell	Skylake	New Intel® Mesh Architecture
Cores/ Threads	8 Cores/ 16 Threads	18 Cores/ 36 Threads	1.125X More Cores/Threads
Processor Cache	LLC: 1.5 MB/Core MLC: 256k/Core	LLC: 1.375/Core MLC: 1 MB/Core	LCC: - 0.125 MB/Core MLC: +768k/Core
Maximum Single-Core Intel® Turbo Boost 2.0 Technology Frequency	Up to 2.7 GHz	Up to 3.0 GHz	1.11X Frequency Increase
Memory Capacity	128 GB	512 GB	4X More Memory Capacity
Memory Frequency	2 channels DDR4 2400 MHz	4 channels DDR4 2666 MHz	2X More Memory Channels 1.1X Faster Memory Support
PCIe* Support	32 Lanes PCIe* Gen 3 Up to 20 Lanes PCIe* Gen 3 Flexible HSIO	32 Lanes PCIe* Gen 3 Up to 20 Lanes PCIe* Gen 3 Flexible HSIO	No change
SATA Support	6 Ports	14 Ports	2.3X More SATA Ports
Intel® Advanced Vector Extensions (Intel® AVX)	Intel® AVX-256	Intel® AVX-512	2X Intel® AVX Capability
Integrated Intel® Ethernet	4 – 10 GbE/ 1 Gbe Adapters	4 – 10 GbE/ 1 Gbe Adapters	No change
Integrated Crypto/ Encrypt/ Decrypt Offload Acceleration	Intel® QuickAssist Technology Up to 40 Gbps	Intel® QuickAssist Technology Up to 100 Gbps	Up to 2.5X More Cryptography, Encryption, and Decryption Offload Acceleration

Comparing the Intel® Xeon® D-2187NT Processor to the Intel® Xeon® D-1567 Processor

	Intel® Xeon® D-1567 Processor	Intel® Xeon® D-2187NT Processor	Comparison
Introduction	Q1 2015	Q1 2018	3 years
Lithography	14nm	14nm	Enhanced Lithography
Micro-Architecture	Broadwell	Skylake	New Intel® Mesh Architecture
Cores/ Threads	16 Cores/ 32 Threads	18 Cores/ 36 Threads	1.125X More Cores/Threads
Processor Cache	LLC: 1.5 MB/Core MLC: 256k/Core	LLC: 1.375/Core MLC: 1 MB/Core	LCC: - 0.125 MB/Core MLC: +768k/Core
Maximum Single-Core Intel® Turbo Boost 2.0 Technology Frequency	Up to 2.7 GHz	Up to 3.0 GHz	1.11X Frequency Increase
Memory Capacity	128 GB	512 GB	4X More Memory Capacity
Memory Frequency	2 channels DDR4 2400 MHz	4 channels DDR4 2666 MHz	2X More Memory Channels 1.1X Faster Memory Support
PCIe* Support	24 Lanes PCIe* Gen 3 8 Lanes PCIe* Gen 2 Flexible HSIO	32 Lanes PCIe* Gen 3 Up to 20 Lanes PCIe* Gen 3 Flexible HSIO	1.3X More PCIe* Gen 3 Lanes
SATA Support	6 Ports	14 Ports	2.3X More SATA Ports
Intel® Advanced Vector Extensions (Intel® AVX)	Intel® AVX-256	Intel® AVX-512	2X Intel® AVX Capability
Integrated Intel® Ethernet	2 – 10 GbE/ 1 Gbe Adapters	4 – 10 GbE/ 1 Gbe Adapters	2X Integrated Intel® Ethernet Adapters
Integrated Crypto/ Encrypt/ Decrypt Offload Acceleration	Not Available Integrated	Intel® QuickAssist Technology Up to 100 Gbps	Up to 100 Gbps Cryptography, Encryption, and Decryption Offload Acceleration

Up to 2.9X NETWORK
performance improvement vs. D-1500 NS[1]

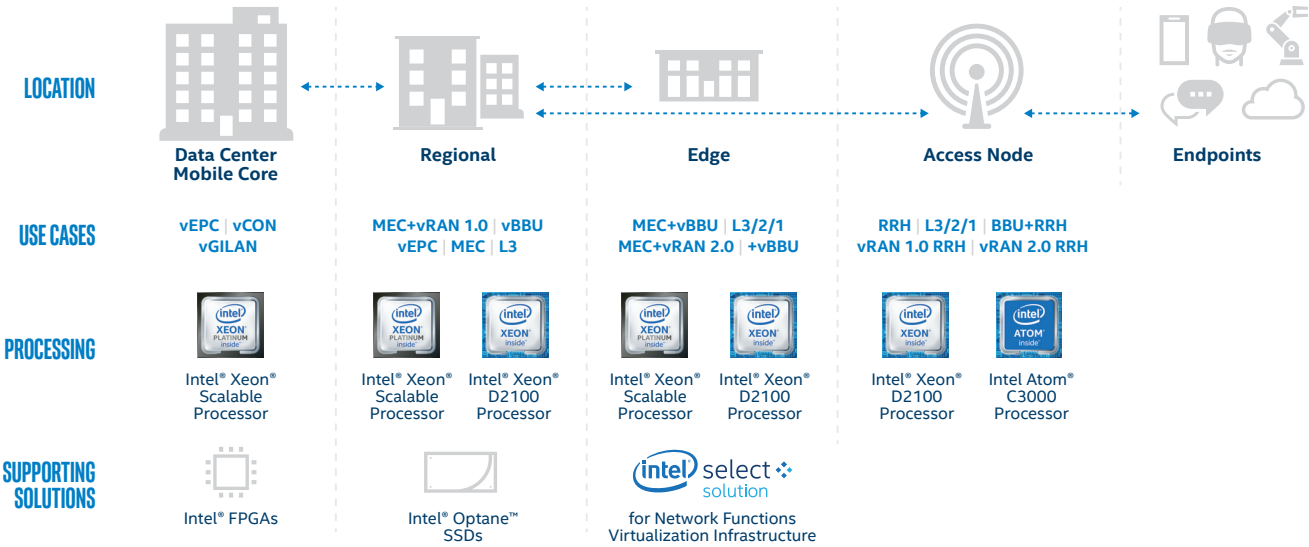
Up to 2.8X STORAGE
performance improvement vs. D-1500[2]

Up to 1.6X COMPUTE
performance improvement vs. D-1500[3]

Network Transformation at the Edge

As network traffic volume and complexity increases, operators must both optimize their infrastructure and increase value-added services to drive revenue. This requires more compute capability at all points of the network including the edge. These highly scalable, compact, and energy efficient SoCs are an ideal solution for equipment makers seeking the best performance per watt when edge computing is constrained by operational space and lower power requirements.

The Diverse Requirements of 5G



Multi-Access Edge Computing (MEC)

Growing data capacity and performance to serve endpoint growth

Intel® Xeon® D-2100 processor based platforms enable Communication Service Providers to bring Multi-access Edge Computing (MEC) next generation, low latency and high bandwidth applications to end-users in power and space efficient commercial off the shelf servers with advanced analytics. Communications Service Providers will be able to scale and deploy these applications and analytics either at the edge, core or cloud to optimize business agility and efficiency. Enhanced memory support and enhanced I/O deliver more capacity and faster processing. New Intel® Advanced Vector Extension 512 (Intel® AVX-512) and enhanced Intel® QuickAssist Technology enable faster data transfer, faster encryption and cryptography processing. End users will be able to benefit from a much richer user experience, like Virtual Reality/Augmented Reality and Autonomous Driving, today on the path to the upcoming 5G world thanks to the increased capacity, enhanced security and performance delivered by the Intel® Xeon® D-2100 processor.

Customer Premise Equipment (CPE)

Enhanced capabilities and capacity for space-constrained vCPE solutions

Intel® Xeon® D-2100 processor based platforms enable Communications Service Providers to bring intelligent services to the network edge by reducing the total cost of ownership for enterprises to establish next generation branch office Software Defined Wide Area Network (SD-WAN) applications, in power and space efficient commercial off-the-shelf servers. Enhanced memory support and enhanced Intel® QuickAssist Technology deliver greater application scale combined with faster cryptography processing. With enhanced I/O and higher core count, Intel® Xeon® D-2100 processor offers increased implementation flexibility supporting more virtualized network functions (NFVi). Communications Service Providers can choose which Intel Architecture based-processor (Intel Atom® C3000 processor, Intel® Xeon D-2100 processor, Intel® Xeon® Scalable Processor) meets the performance, space efficiency requirement based on the number of end users (from 10s to 1000s) and size of each enterprise's branch office.

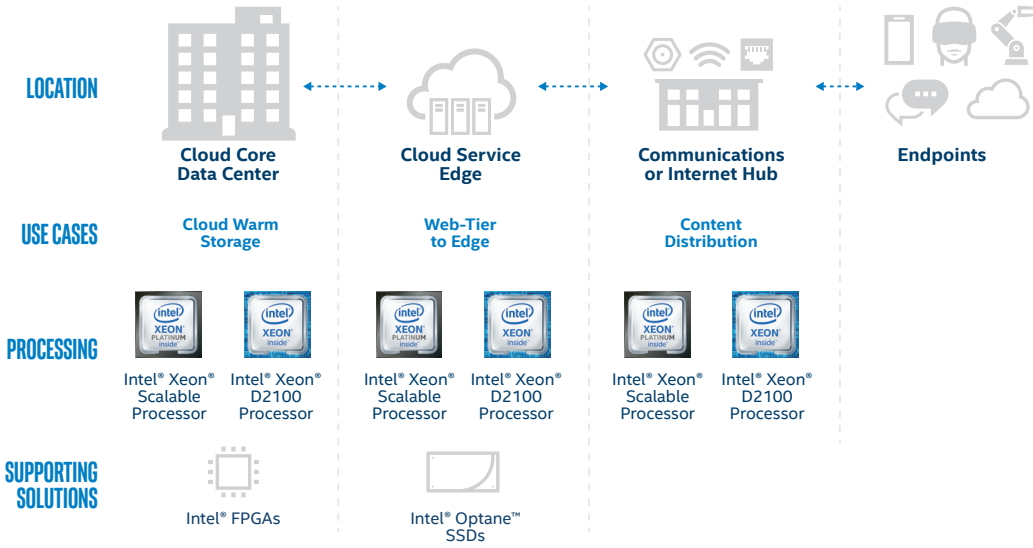
Up to
29%
L3 DATA TRANSFER
performance improvement compared to an Intel® Xeon® D-1500 Processor Network Series[4]

Up to
2.9X
NETWORK
performance improvement compared to an Intel® Xeon® D-1500 Processor Network Series[1]

Supporting Endpoint Demand at the Cloud Service Edge

As the number of endpoints increase, cloud services must optimize their infrastructure and increase capacity to support service quality and drive revenue. This requires more compute capability positioned closer to the endpoints at the edge. These highly scalable, compact and energy efficient SoCs are an ideal solution for specialty cloud services such as web-tier and content distribution seeking the best performance per watt when strategically placing service resources closer to the endpoints.

The Increasing Demands of Endpoint Growth



Intelligent Foundation for Cloud Warm Storage

Enhanced capabilities and capacity for cloud warm storage scale-out

The Intel® Xeon® D-2100 processor provides an intelligent, highly reliable foundation for large-capacity warm storage solutions in cloud environments. Powerful reliability, availability, and serviceability (RAS) features support error-correcting code (ECC) as well as memory and platform-level error management and resilience. Because the processors have built-in hardware virtualization technology and lower-power versions ranging from around 60 to 110 watts, cloud service providers can pack more storage and performance into each rack, improving performance and availability within the same footprint and reducing total cost of ownership. Intel® SSD Data Center Family for NVMe* delivers fully-featured line of solid-state drives to accelerate changes in cloud storage infrastructure and compliment the Intel® Xeon® D-2100 platform.

Specialty Cloud Services with Web-Tier to Edge

Enhancing service scalability for the increasing requirements of content-rich, low-latency, dense data endpoints

The Intel® Xeon® D-2100 processor provides an intelligent, highly reliable foundation for dense cloud content edge services. Delivers a feature-rich platform to drive a lower total cost of ownership (TCO) for specialty, service-optimized solutions such as web-tier and content delivery cloud edge solutions. Additional cores and threads combined with lower TDP requirements deliver more compute per rack with improved performance/watt. New Intel® Advanced Vector Extensions 512 (Intel® AVX-512) and enhanced Intel® QuickAssist Technology deliver enhanced integrations for faster data transfers, faster encryption and faster cryptography processing, enhancing service scalability for the increasing requirements of content-rich, low-latency, data dense cloud edge services.

Up to
2.8X
STORAGE
performance improvement compared to an Intel® Xeon® D-1500 Processor[2]

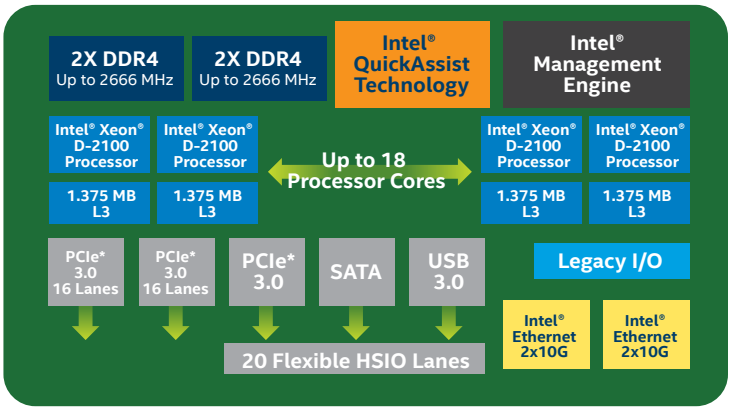
Up to
1.6X
COMPUTE
performance improvement compared to an Intel® Xeon® D-1500 Processor[3]

Intel® Xeon® D-2100 Processor Overview/Product Details

Intel® Xeon® Scalable Processor Intelligence in a Lower-Power SoC	Up to 2.9X[1] the networking performance and up to 2.8X[2] the storage performance of the Intel® Xeon® D-1500 processor. Includes up to 18 cores, up to four integrated ports of 10 Gigabit Intel® Ethernet, plus support for up to 512 GB of memory. Also includes Intel® 64-bit software support, Intel® Turbo Boost 2.0 Technology, Intel® Speed Shift Technology and Intel® Hyper-Threading Technology.
Intel® Mesh Architecture	Designed and manufactured with Intel® Mesh Architecture and using Intel's industry-leading 14nm silicon process technology enables high density, lower power system designs with thermal design points of 60W to 110W.
Intel® QuickAssist Technology (Intel® QAT)	Hardware acceleration for compute-intensive workloads, such as cryptography, encryption, and decryption, by offloading the functions to a specialized logic engine (integrated into the chipset), freeing the processor to focus on other workload operations delivering up to 100 Gbps of offload acceleration performance. Available as an integrated option.
Intel® Advanced Vector Extensions 512 (Intel® AVX-512)	Hardware acceleration for compute-intensive workloads delivers workload-optimized performance and throughput increases for advanced analytics, compute-intensive applications, cryptography and data compression.
Built-In Intel® Virtualization Technology	Delivers near-native compute and I/O performance in virtualized data centers, network infrastructure, and cloud computing, with advanced monitoring of cache and memory bandwidth for better service level and infrastructure management.
Server-Class Reliability, Availability, and Serviceability (RAS)	Provides high system reliability and data integrity with support for error correction code (ECC) memory, single device data correction (SDDC), memory demand and patrol scrubbing, and much more.
Hardware-Enhanced Security and Compliance	Intel Advanced Encryption Standard New Instructions (Intel AES-NI) provide integrated support for fast, low-overhead encryption and Intel® Trusted Execution Technology (Intel® TXT) provides platform verification (through authenticated boot) to enable strong security with reduced performance impact.
Server-Class Manageability	Includes Intel® Node Manager Base for adaptive power management.
Intel® Platform Storage Extensions	Enables fast data movement and high availability through integrated support for non-transparent bridging (NTB), asynchronous DRAM self-refresh (ADR), and Intel® QuickData Technology, which provides a direct memory access (DMA) engine within the SoC.

Intel® Xeon® D-2100 Processor Design Flexibility

Intel® Xeon® D-2100 Processor
(System on a Chip - SoC)



Diagrams are provided for illustration purposes only. Diagrams (above) and table (right) are not a comprehensive list of product features or capabilities. Product details and features are subject to change without notice.

Processor Manufacturing Process	Intel's optimized 14nm process technology featuring Intel® Mesh Architecture
Maximum Core Count Supported	Up to 18
Maximum Base Frequency Supported	Up to 2.3 GHz
Maximum Intel® Turbo Boost Technology 2.0 Frequency Supported (Single Core)	Up to 3.0 GHz
Processor Cache Memory Support	L3 is 1.375 MB/Core, up-to 24.75 MB featuring rebalanced Intel® Cache hierarchy
Processor Performance Support	Intel® Turbo Boost 2.0 Technology, Intel® Hyper-Threading Technology (Intel® HT), Intel® Speed Shift Technology
Intel® Advanced Vector Extension 512 (Intel® AVX-512) Support	Intel® AVX-512 with up to 1 FMA support
Intel® QuickAssist Technology Support	Available integrated with up to 100 Gbpps of crypto, decrypt and encrypt accelerated throughput
Thermal Design Point (TDP) Range	Approximately 60 to 110 Watts
Socket Type and Size	Socket FCBGA 45 mm x 52.5 mm
System Memory Support	Up to 64GB per DIMM. 4 channels of DDR4 2666 MHz, 2 DPC RDIMM and LRDIMM with ECC support
Maximum System Memory Supported	Up to 512 GB
PCI Express* Gen 3 Support	Up to 32 lanes
Flexible High-Speed I/O (HSIO)	PCI Express* 3.0 - Up to 20 lanes SATA* 3.0 - Up to 14 lanes USB* 3.0 - Up to 4 ports
Intel® Management Engine (Intel® ME)	Intel® ME 11.11
Intel® Ethernet Support	Available integrated with up to four, 10 GbE adapters with Accelerated Remote Direct Memory Access (FDMA) and native Software Fault Isolation (SFI)

Intel® Xeon® D-2100 Processor SKU List

Processor Number	CPU Cores	Base Frequency	All-Core Intel® Turbo Boost Technology 2.0 Frequency	Single-Core Intel® Turbo Boost Technology 2.0 Frequency	TDP Power (in Watts)	High-Speed Input/Output (HSIO)	Memory Support (Up to 512 GB DDR4 ECC)	Integrated Intel® Ethernet	Integrated Intel® QuickAssist Technology	Recommended Customer Pricing ($US Dollars)
Server and Cloud SKUs										
Intel® Xeon® D-2191 Processor	18	1.6 GHz	2.2 GHz	3.0 GHz	86W	20	2400 MHz, 4 CH	No	No	$2,407
Intel® Xeon® D-2161I Processor	12	2.2 GHz	2.8 GHz	3.0 GHz	90W	20	2133 MHz, 4 CH	4 x 10 GbE	No	$962
Intel® Xeon® D-2141I Processor	8	2.2 GHz	2.7 GHz	3.0 GHz	65W	20	2133 MHz, 4 CH	4 x 10 GbE	No	$555
Network and Enterprise Storage SKUs										
Intel® Xeon® D-2183T Processor	16	2.2 GHz	2.8 GHz	2.8 GHz	100W	20	2400 MHz, 4 CH	4 x 10 GbE	No	$1,762
Intel® Xeon® D-2173IT Processor	14	1.7 GHz	2.3 GHz	3.0 GHz	70W	20	2133 MHz, 4 CH	4 x 10 GbE	No	$1,229
Intel® Xeon® D-2163IT Processor	12	2.1 GHz	2.6 GHz	3.0 GHz	75W	20	2133 MHz, 4 CH	4 x 10 GbE	No	$930
Intel® Xeon® D-2143IT Processor	8	2.2 GHz	2.7 GHz	3.0 GHz	65W	20	2133 MHz, 4 CH	4 x 10 GbE	No	$566
Intel® Xeon® D-2142IT Processor	8	1.9 GHz	2.5 GHz	3.0 GHz	65W	20	2133 MHz, 4 CH	4 x 10 GbE	No	$438
Intel® Xeon® D-2123IT Processor	4	2.2 GHz	2.7 GHz	3.0 GHz	60W	20	2400 MHz, 4 CH	4 x 10 GbE	No	$213
Integrated Intel® QuickAssist Technology SKUs										
Intel® Xeon® D-2187NT Processor	16	2.0 GHz	2.4 GHz	3.0 GHz	110W	20	2666 MHz, 4 CH	4 x 10 GbE	Up to 100 Gbps	$1,989
Intel® Xeon® D-2177NT Processor	14	1.9 GHz	2.3 GHz	3.0 GHz	105W	20	2666 MHz, 4 CH	4 x 10 GbE	Up to 100 Gbps	$1,443
Intel® Xeon® D-2166NT Processor	12	2.0 GHz	2.3 GHz	3.0 GHz	85W	20	2133 MHz, 4 CH	4 x 10 GbE	Up to 40 Gbps	$1,005
Intel® Xeon® D-2146NT Processor	8	2.3 GHz	2.5 GHz	3.0 GHz	80W	20	2133 MHz, 4 CH	4 x 10 GbE	Up to 40 Gbps	$641
Intel® Xeon® D-2145NT Processor	8	1.9 GHz	2.5 GHz	3.0 GHz	65W	20	2133 MHz, 4 CH	4 x 10 GbE	Up to 20 Gbps	$502

More Information on the Intel® Xeon® D-2100 processor, visit **www.intel.com/xeond**

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. Check with your system manufacturer or retailer or learn more at intel.com.

No computer system can be absolutely secure.

Tests document performance of components on a particular test, in specific systems. Differences in hardware, software, or configuration will affect actual performance. Consult other sources of information to evaluate performance as you consider your purchase. For more complete information about performance and benchmark results, visit http://www.intel.com/benchmarks

Benchmark results were obtained prior to implementation of recent software patches and firmware updates intended to address exploits referred to as "Spectre" and "Meltdown." Implementation of these updates may make these results inapplicable to your device or system.

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more complete information visit http://www.intel.com/benchmarks

Intel's compilers may or may not optimize to the same degree for non-Intel microprocessors for optimizations that are not unique to Intel microprocessors. These optimizations include SSE2, SSE3, and SSSE3 instruction sets and other optimizations. Intel does not guarantee the availability, functionality, or effectiveness of any optimization on microprocessors not manufactured by Intel. Microprocessor-dependent optimizations in this product are intended for use with Intel microprocessors. Certain optimizations not specific to Intel microarchitecture are reserved for Intel microprocessors. Please refer to the applicable product User and Reference Guides for more information regarding the specific instruction sets covered by this notice.

Intel® Advanced Vector Extensions (Intel® AVX)* provides higher throughput to certain processor operations. Due to varying processor power characteristics, utilizing AVX instructions may cause a) some parts to operate at less than the rated frequency and b) some parts with Intel® Turbo Boost Technology 2.0 to not achieve any or maximum turbo frequencies. Performance varies depending on hardware, software, and system configuration and you can learn more at http://www.intel.com/go/turbo.

Cost reduction scenarios described are intended as examples of how a given Intel-based product, in the specified circumstances and configurations, may affect future costs and provide cost savings. Circumstances will vary. Intel does not guarantee any costs or cost reduction.

Intel does not control or audit third-party benchmark data or the web sites referenced in this document. You should visit the referenced web site and confirm whether referenced data are accurate.

[1] Up to 2.9X performance improvement with Intel® Xeon® D-2187NT processor compared with previous generation Intel® Xeon® D-1553N processor on web server throughput with integrated Intel® QuickAssist Technology (Intel® QAT). Configuration and workload details: NGINX webserver: 1-Intel® Xeon® D-1553N Processor (12M, 2.30 GHz) Platform: Echo Canyon, 4x8GB(32GB 2400MHz Samsung* M494A1G43DB0-CPB) ,OS: Ubuntu* 16.04.2(4.4.0-21) ,Benchmark: NGINX (1.9.6*)-Webserver Throughput Intel® QAT (ECDHE-ECDSA Max Performance), Compiler: NA,BIOS: BIOS :GNVDINT1.86B.0010.D22.1611201908, Storage: NA," Network Device: 2x Intel® Ethernet Controller X710 (4x 10G/card), Network Speed: NA, Intel® QAT version: 1.0.3-42, Score: 15.7. compared to 1-Intel® Xeon® D-2187NT Processor (22M, 2.0 GHz) Platform: Yuba City, 4x16GB(64GB 2666MHz Micron* 36ASF2G72PZ-2G6B2) ,OS: Ubuntu*17.10 (4.13.0-21-lowlatency) ,Benchmark: NGINX(1.10.3)-Webserver Throughput Intel® QAT (ECDHE-ECDSA Max Performance), Compiler: NA,BIOS: BIOS :BKVDTRL1.86B.0005.D08.1712070559, Storage: NA," Network Device: 4x Intel® Ethernet Controller X710DA2 (2x 25G/card), Network Speed: NA, Intel® QAT version: 1.0.3-42, Score: 46.8.

[2] Up to 2.8X on ISA-L (Cryptographic Hashing) with Intel® Xeon® D-2183IT processor compared with previous generation Intel® Xeon® D-1587 processor. Configuration and workload details: ISA-L (Cryptographic Hashing): 1-Intel® Xeon® D-1587 Processor (24M, 1.70 GHz) Platform: Durango, 4x8GB(32GB 2400MHz) ,OS: Red Hat Enterprise Linux* 7.4(Kernel 3.10.0-693.el7.x86_64), Benchmark: ISA-L (2.21)- Crytographic Hasshing (multibinary_sha512), Compiler: NA,BIOS: GNVDINT1.86B.0085.V13.1512071754, Storage: 4 x 2 TB DC P3700 Series PCIe NVMe," Network Device: NA, Network Speed: 1x50GbE, Intel® QuickAssist Technology version: NA, Score: 3.074. compared to 1-Intel® Xeon® D-2183IT Processor (22M, 2.20 GHz) Platform: Yuba City, 4x8GB (32GB 2400MHz) ,OS: Red Hat Enterprise Linux* 7.4(Kernel 3.10.0-693.el7.x86_64) ,Benchmark: ISA-L (2.21)- Crytographic Hasshing (multibinary_sha512), Compiler: NA,BIOS: BKVDTRL1.86B.0005.D08.1712070559, Storage: 4 x 1.6 TB DC P4600 Series PCIe NVMe," Network Device: NA, Network Speed: 2x50GbE, Intel® QuickAssist Technology version: NA, Score: 1.075.

[3] Up to 1.6X performance improvement with Intel® Xeon® D-2183IT processor compared with previous generation Intel® Xeon® D-1581 processor on Integer application throughput. Configuration and workload details: SPECrate*2017_int_base - estimates based on measurements on Intel Internal hardware: 1-Intel® Xeon® D-1581 processor (24M, 1.80 GHz), 4x16GB (64GB 2133MHz Micron 36ASF2G72PZ-2G6B1) ,OS: redhat-7.4(3.10.0-693.el7.x86_64 x86_64) ,Compiler: IC18 ,BIOS: 1.0b, Storage: Intel SSD S3520 800GB," Network Device: NA, Network Speed: NA, QAT version: NA, Score: 44. compared to 1-Intel® Xeon® D-2183IT Processor (22M, 2.20 GHz), 4x16GB(64GB 2400MHz Micron 36ASF2G72PZ-2G6B1) ,OS: redhat-7.4(3.10.0-693.el7.x86_64 x86_64) ,Compiler: IC18 ,BIOS: BKVDTRL1.86B.0005.D08.1712070559, Storage: Intel SSD S3520 800GB," Network Device: NA, Network Speed: NA, QAT version: NA, Score: 72.1.

[4] Claim: Up to 29% performance improvement with Intel® Xeon® D-2183IT processor compared with previous generation Intel® Xeon® D-1553N processor on L3 data transfer over the network. Config: DPDK L3 packet forwarding: 1-Intel® Xeon® D-1553N Processor (12M, 2.30 GHz) Platform: Echo Canyon, 4x8GB(32GB 2400MHz Samsung* M494A1G43DB0-CPB) ,OS: Ubuntu* 16.04.2(4.4.0-21) ,Benchmark: L3 FWD DPDK 17.02 (1420B), Compiler: NA,BIOS: BIOS :GNVDINT1.86B.0010.D22.1611201908, Storage: NA," Network Device: 2x Intel® Ethernet Controller X710 (4x 10G/card), Network Speed: NA, Intel® QuickAssist Technology version: NA, Score: 146990. compared to 1-Intel® Xeon® D-2183IT Processor (22M, 2.20 GHz) Platform: Yuba City, 4x16GB(64GB 2400MHz Micron* 36ASF2G72PZ-2G6B2) ,OS: Ubuntu* 17.10(4.13.0-21-lowlatency) ,Benchmark: L3 FWD DPDK 17.11 (1420B), Compiler: NA,BIOS: BIOS :BKVDTRL1.86B.0005.D08.1712070559, Storage: NA," Network Device: 4x Intel® Ethernet Controller X710DA2 (2x 25G/card), Network Speed: NA, Intel® QuickAssist Technology version: NA, Score: 190357.

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