

PRODUCT BRIEF

WORKSTATIONS POWERED BY INTEL® XEON® W-3200 PROCESSORS

Built for Advanced Workstation Professionals in a Single Socket Solution

The Intel® Xeon® W-3200 Processors are purpose built and optimized for advanced workstation professionals in a single-socket solution. These processors are designed for heavily and lightly threaded, I/O-intensive workloads across architecture, engineering, and construction (AEC), media and entertainment (M&E), artificial intelligence (AI), oil & gas, and data sciences.

OUTSTANDING PERFORMANCE

Spend less time waiting and more time creating. Fast visualization, simulations and rendering with up to 28 cores, 56 threads, and 2 TB DDR4 RDIMM in a single-socket solution. Intel® Turbo Boost Max Technology 3.0 for performance boost when you need it and accelerate AI performance with the new Intel® Deep Learning Boost.

EXPANDED PLATFORM CAPABILITIES

Total of 84 platform PCI Express* 3.0 lanes for more I/O throughput for graphics, storage, and network expandability. Enhanced media performance with Intel® VROC.

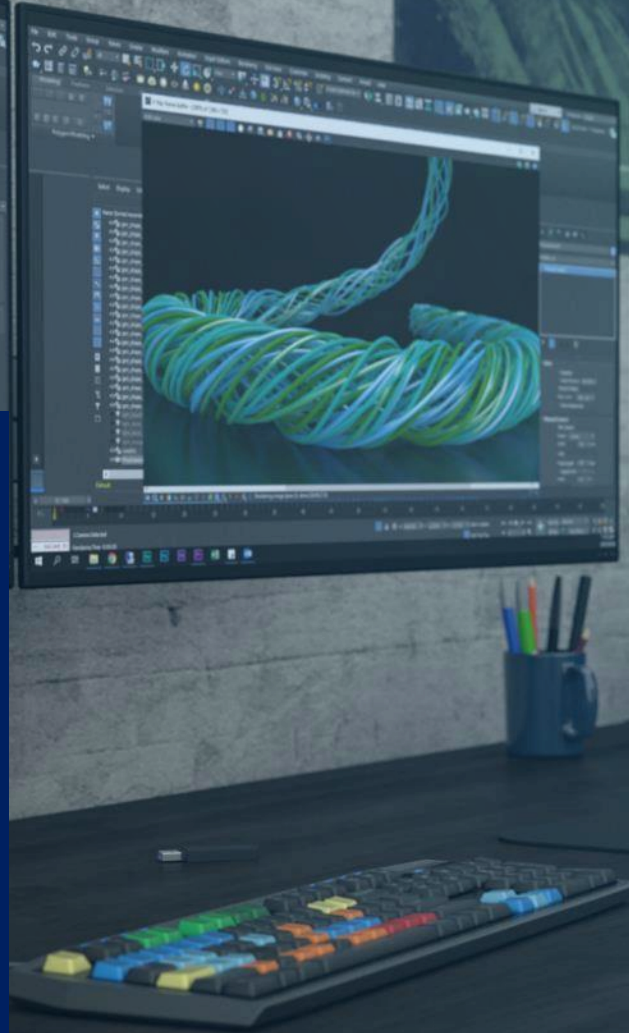
RELIABLE, MANAGEABLE, MORE SECURE

Increased accuracy in designs and simulations by eliminating workloads or system crashes with built-in Error Correction Code (ECC) hardware circuitry. Ensure platform and data integrity with built-in RAS. Utilize hardware-enhanced security features, identity protection technology and manageability with the Intel® vPro™ platform.



OUTSTANDING PERFORMANCE

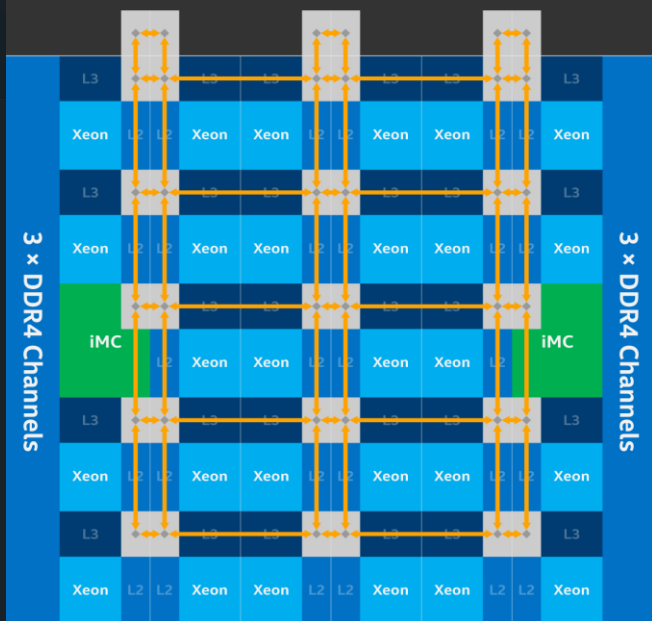
From its new Intel® Mesh Architecture and widely expanded resources to its hardware-accelerating technologies like Intel® AVX-512, Intel® Xeon® W-3200 processor-based workstation platforms enable a new level of outstanding performance. Whether your application scales based on processor frequency or on the number of cores and threads, Intel® Xeon® W-3200 processors provide a flexible range of options with processor increased frequencies of up to 4.6 GHz Intel® Turbo Boost Max Technology 3.0.



PERVASIVE BREAKTHROUGH PERFORMANCE

In the Intel® Xeon® W-3200 processor platform, the Intel® Mesh Architecture delivers up to 28 cores, the Last Level Cache (LLC), total of 6 DDR4 memory channels, and 64 processor PCIe* lanes are shared among all the cores, giving access to large resources across the entire die and creating dynamic scalability without sacrificing performance.

4 × PCIe* X16 Gen3



FOUNDATIONAL ENHANCEMENTS



- **NEW** – Intel® Deep Learning Boost for Artificial Intelligence Development workloads
- **NEW** – High frequency performance of up to 4.6 GHz with Intel® Turbo Boost Max Technology 3.0
- **NEW** – DDR4 memory capacity of up to 2TB with speeds of up to 2933 MHz
- **NEW** – Increased total number of Processor PCIe* lanes of up to 64 lanes
- Built-in Error-Correcting Code (ECC) support
- Built-in Reliability, Availability and Serviceability (RAS) support
- Hardware enhanced security features with Intel® vPro™ platform support
- Intel® Virtual RAID On CPU (VROC) support
- Intel® Optane™ SSD 905P support

RELIABLE, MANAGEABLE, MORE SECURE



More Protected Data

Help protect workstations from potential crashes and changes in data due to single-bit errors. Error-Correcting Code (ECC) memory is a platform technology that automatically detects and repairs single-bit errors on-the-fly to help keep heavily or lightly workloads running reliably and free of data corruption delivering accuracy to simulations and designs.

Data Integrity

Reliability, availability, and serviceability (RAS) is a built-in platform feature that helps ensure platform and data integrity via fault avoidance, detection, correction/recovery, and failure identification and reconfiguration.

Security and Manageability

Intel® vPro™ technology is supported on the Intel® Xeon® W-3200 processor-based platform and delivers hardware-enhanced security features, identity protection technology and manageability.

PERFORMANCE WHEN IT MATTERS

CORE & THREAD COUNT

UP TO **28** Cores | UP TO **56** Threads

IT MATTERS FOR WORKLOADS THAT UTILIZE HIGH CORE & THREAD COUNT

Rendering & Ray Tracing

KeyShot*, Arnold Renderer*, Pixar RenderMan* and Maxwell Render*

Deep Learning Frameworks***

Caffe, Kaldi*, MXNet*, ONNX*, TensorFlow, OpenVINO™, PyTorch*

TURBO & TURBO BOOST MAX FREQUENCY

UP TO **4.4** GHz Turbo** | UP TO **4.6** GHz Turbo Boost Max**

IT MATTERS FOR WORKLOADS THAT UTILIZE HIGH CORE FREQUENCIES

Simulation

ANSYS Solvers*, SolidWorks Simulation*, Creo Simulate*

Design & Modeling

Autodesk Inventor*, Revit*, SolidWorks, Creo, Siemens NX PLM*, Autodesk Civil 3D*

WORKLOADS FOR HIGH CORE & THREAD COUNTS OR HIGH CORE FREQUENCY

3D, VR, Game Development & VR Content Creation

Adobe Dimension*, 3dsMax*, Maya*, Autodesk VRED*, Autodesk Stingray*, Autodesk ReCap*, Unity*, Unreal Engine*, Maxon Cinema 4D*, Blender*

Video Editing, Post Production & Motion Graphics

Adobe Premiere Pro*, Adobe After Effects*, Avid Media Composer*, Blackmagic DaVinci Resolve*, Autodesk Flame*, Foundry Nuke*, SideFX Houdini*

*

*** Increased benefit for Artificial Intelligence development with Intel® Deep Learning Boost

BREAKING THE BOTTLENECKS



ENHANCE I/O

Professional Workstation Storage Support

A balanced workstation platform goes beyond just raw compute, memory, and network performance. Storage innovations can drive significant improvements in efficiency and performance of data-hungry workloads. Intel® Xeon® W-3200 processors feature key storage enhancements delivering high throughput and low latency to break through data access bottlenecks

INTEL® SOFTWARE FOR STORAGE

Intel® Virtual RAID on CPU (Intel® VROC)

Directly attach NVMe* SSDs to the CPU PCIe lanes to unleash NVMe* RAID performance at low power and low TCO.

Intel® Rapid Storage Technology for SATA (Intel® RSTe)

Dynamic storage accelerator accelerates the performance of your SSD by dynamically adjusting system power management policies to deliver faster performance during heavy multitasking compared to default power management.

Intel® Cache Acceleration Software (Intel® CAS)

A cost-effective way to accelerate applications, combined with Intel® Solid State Drives, Intel® CAS interoperates with system memory to create a multilevel cache that automatically determines the best cache level for active data.

ADVANCE PROFESSIONAL WORKSTATIONS WITH THUNDERBOLT™ 3

Thunderbolt™ 3 is available on the Intel® Xeon® W-3200 processor based platforms via Thunderbolt™ 3 add-in cards. 4K video editing, 3D rendering, and content creation strongly benefit from ultra-fast bandwidth with Thunderbolt™ 3.

Fastest connection** speed of 40 Gbps directional bandwidth ideal for file transfers. That is 8x faster than USB 3.0 and 40X faster than FireWire* 1

Daisy chain up to six devices on a single port, including dual 4K displays, or connect 2 PCs at a greater than 10 gigabit Ethernet (GbE) speeds

Results have been estimated or simulated using internal Intel® analysis or architecture simulation or modeling and provided to you for information purposes. Any differences in your system hardware, software, or configuration may affect your actual performance.

1. As compared to any other connection to the PC

RESPONSIVE AND RAPID PRO WORKSTATIONS SSD



Substantiation for industry leading combination of low latency, high endurance, and high throughput. The Intel® Optane™ SSD 905P is an innovative solution optimized to break through storage bottlenecks providing a new data tier. The Intel® Optane™ SSD 905P is for high-performance desktops and workstations targeted at professional users, creators, and enthusiasts.

NEW INTEL® XEON® W-3200 PROCESSORS

BUILT FOR ADVANCED WORKSTATION PROFESSIONALS IN A SINGLE SOCKET SOLUTION

THE RIGHT PROCESSOR FOR THE JOB

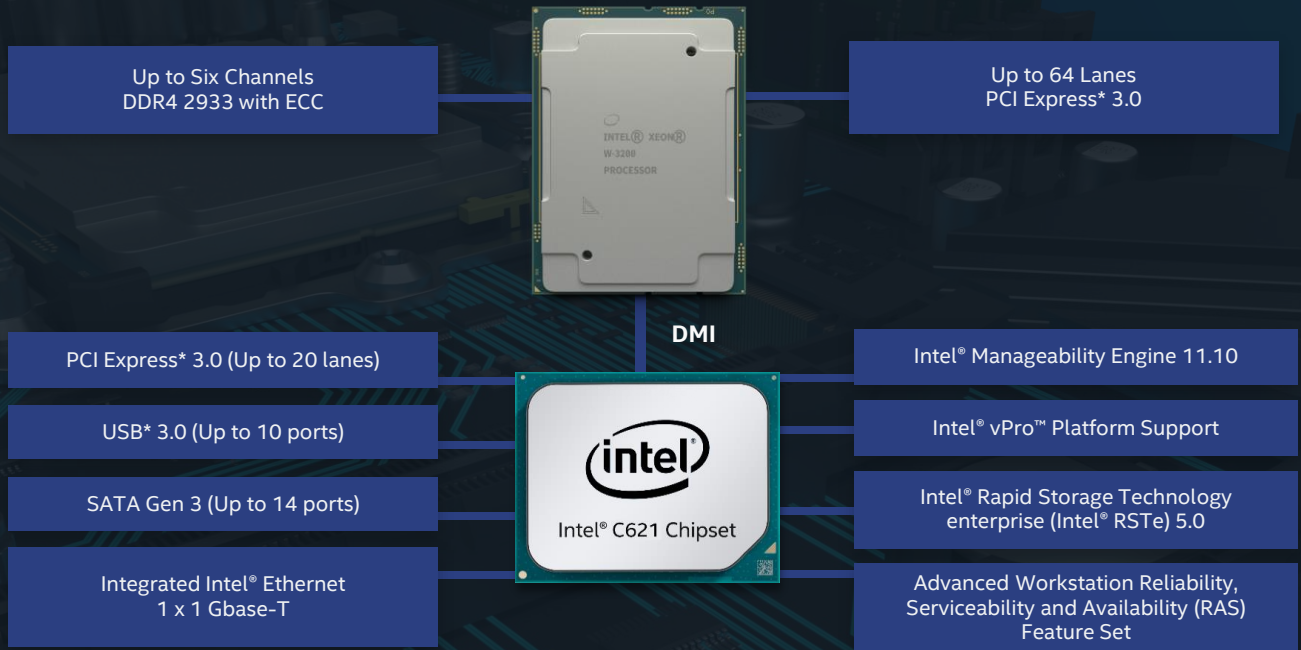
Understanding the workload is the key for choosing the right Intel® Xeon® W-3200 processor for the job. When application multitasking demand increases, then processor core count increases to meet the demand. It is important to note overall workstation capability presents as combination of compute, storage and network subsystems working systemically. Ensure that the appropriate ancillary components are factored in at design stage.

Intel® Xeon® W-3200 Processor Selection

	Intel® Xeon® W-3223	Intel® Xeon® W-3225	Intel® Xeon® W-3235	Intel® Xeon® W-3245	Intel® Xeon® W-3265	Intel® Xeon® W-3275	Intel® Xeon® W-3245M	Intel® Xeon® W-3265M	Intel® Xeon® W-3275M
Cores/Threads	8/16	8/16	12/24	16/32	24/48	28/56	16/32	24/48	28/56
Max Turbo Frequency	4.2 GHz	4.4 GHz	4.5GHz	4.6 GHz	4.6 GHz	4.6 GHz	4.6 GHz	4.6 GHz	4.6 GHz
Intel® Smart Cache	16.5 MB	16.5MB	19.25 MB	22 MB	33 MB	38.5 MB	22 MB	33 MB	38.5 MB
DDR4 w ECC RDIMM/UDIMM	1TB	1TB	1TB	1TB	1TB	1TB	2TB	2TB	2TB
Memory Channels	6	6	6	6	6	6	6	6	6
Reliability, Availability, Serviceability	ECC. Standard RAS								

NEW INTEL® XEON® W-3200 PROCESSORS

BUILT FOR ADVANCED WORKSTATION PROFESSIONALS IN A SINGLE SOCKET SOLUTION



Processors, chipset and diagram provided for illustration purposes only

FEATURE	DESCRIPTION
Processor Manufacturing Process	Intel® 's 14nm process technology featuring Intel® Mesh Architecture
Maximum Core Count Supported	Up to 28
Maximum Base Frequency Supported	Up to 3.7 GHz
Intel® Turbo Max Boost Technology 3.0 Frequency Supported	Up to 4.6 GHz
Intel® Smart Cache	Up to 38.5 MB of L3 Cache featuring rebalanced Intel® Cache hierarchy
Intel® Advanced Vector Extension 512 (Intel® AVX-512) Support	Intel® AVX-512 with up to 2 FMA support
Socket Type	LGA-3647
System Memory Support	6 channels 1DPC/2DPC of DDR4 2933 MHz with ECC support
Maximum System Memory Supported	Up to 3 TB in a dual-socket configuration
Supported Chipset	Intel® C621 Chipset
PCH I/O	PCI Express* 3.0 – Up to 20 lanes USB* 3.0 – Up to 10 ports SATA* 3.0 – Up to 14 ports DMI – Up to 4 lanes, Gen 3

WORKSTATION PROCESSORS REFERENCE TABLE

THE NEW INTEL® XEON® W-3200 PROCESSOR SKUS

Processor Number	Base Clock Speed (GHz)	Intel® Smart Cache	Cores/Threads	Intel® Turbo Boost Max Technology 3.0 (GHz)	Intel® Turbo Boost Technology maximum single core turbo frequency (GHz)	Processor PCIe* Lanes	Memory Speed	Memory Channels	Maximum Memory Capacity	TDP (W)	RAS	ECC Support	Intel® Technologies	
													Intel® vPro™	ISM ²
Socket 3647														
W-3275 W-3275M	2.5	38.5 MB	28/56	4.6	4.4	64	DDR4-2933 ³	6	1TB/2TB (M)	205	✓	✓	✓	✓
W-3265 W-3265M	2.7	33 MB	24/48	4.6	4.4	64	DDR4-2933 ³	6	1TB/2TB (M)	205	✓	✓	✓	✓
W-3245 W-3245M	3.2	22 MB	16/32	4.6	4.4	64	DDR4-2933 ³	6	1TB/2TB (M)	205	✓	✓	✓	✓
W-3235	3.3	19.25 MB	12/24	4.5	4.4	64	DDR4-2933 ³	6	1TB	180	✓	✓	✓	✓
W-3225	3.7	16.5 MB	8/16	4.4	4.3	64	DDR4-2666	6	1TB	160	✓	✓	✓	✓
W-3223	3.5	16.5 MB	8/16	4.2	4.0	64	DDR4-2666	6	1TB	140	✓	✓	✓	✓

For more information on the Intel® Xeon® processors for workstations, visit www.intel.com/products/server/processors



Intel® processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. All processors are lead-free (per EU RoHS directive July 2006) and halogen free (residual amounts of halogens are below November 2007 proposed IPC/JEDEC J-STD-709 standards) All processors support Intel® Virtualization Technology (Intel® VT-x)

1. Intel® Optane™ memory requires specific hardware and software configuration. Visit www.intel.com/Optanememory for configuration requirements
2. Intel® Standard Manageability
3. With 1 DIMM per channel. Additional DIMM loading on any channel may impact maximum memory speed by one bin.

Performance results are based on testing as of the date set forth in the configurations and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.

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 intel.com/benchmarks

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