



PRODUCT BRIEF | Intel® Xeon® W-1200 Workstation Processors

PROFESSIONAL PERFORMANCE

POWER AN ENTRY-LEVEL PROFESSIONAL WORKSTATION WITH AN INTEL® XEON® W-1200 PROCESSOR

Intel® Xeon® W-1200 processors (succeeding the Intel® Xeon® E-2200 processors) deliver great performance for entry workstation users with integrated processor graphics alongside the added reliability and confidence of Error Correcting Code (ECC) memory. Get outstanding performance plus best-in-class manageability features and support for groundbreaking technologies that enable you to visualize, simulate, research and work with greater accuracy than ever before.



PROFESSIONAL PERFORMANCE WHEN IT MATTERS

- Up to 10 Cores | Up to 20 Threads
- Up to 4.1 GHz Base
- Up to 5.3 GHz with Intel® Thermal Velocity Boost¹
- NEW Intel® Turbo Boost Max Technology 3.0
- Support for up to 128 GB DDR4-2933 ECC Memory²
- Intel® Wi-Fi AX202 (Gig+) support using CNVi³



FEATURED TECHNOLOGIES

- Intel® Hyper-Threading Technology
- Up to 40 processor PCIe* lanes
- Error-correcting code (ECC) memory support
- Thunderbolt™ 3 support
- Intel® Optane™ technology support
- Intel vPro® platform support



A NEW LEVEL OF PERFORMANCE

Designed to deliver an entry-level platform for professionals requiring a true workstation, Intel® Xeon® W-1200 processors are specially optimized for a wide range of workflows and industries such as health and life sciences, financial services, architecture, engineering and construction (AEC).

INCREASED CAPABILITY

NEW—Intel® Thermal Velocity Boost Technology

Get up to a blazing 5.3 GHz clock speed, right out of the box for fast performance. Intel® Thermal Velocity Boost increases processor frequency when there is available thermal headroom.¹

ENHANCED PERFORMANCE

NEW—UP TO 5.3 GHz

Even the most complex workflows won't slow down—enhanced core frequencies enable you to work with breath-taking speed.

FAST CONNECTIVITY

NEW—2.5G Intel® Ethernet Controller i225 support⁴

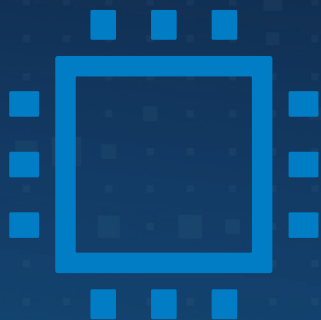
Network speed is essential in today's fast-paced work environment. The 2.5G Intel® Ethernet Controller i225 sets the standard for fast, flexible and easy connectivity to make the most of existing network infrastructure.

Support for Dual-Channel ECC DDR4-2933²

Fast ECC memory support for exceptional uptime, elite multi-tasking and uncompromised responsiveness—enabling you to easily analyze large files and keep things moving.

NEW—Intel® Wi-Fi 6 AX201 & Thunderbolt™ 3 support

Get best-in-class connectivity with 2.5G Intel® Ethernet Connection I225⁴, integrated Intel® Wi-Fi 6 AX201.^{5,6} & Thunderbolt™ 3 support.⁷



PROFESSIONAL PERFORMANCE THAT'S BUILT TO WORK

Experience the great performance of the latest Intel® Xeon® W-1200 processors and Intel® W480 chipset, a platform designed for the next-generation workstations and intended for use by professionals seeking performance and reliability.



ENTERPRISE-GRADE RELIABILITY

When it comes to business, data integrity and system up-time is a priority for workstation users. That's why Intel® Xeon® W-1200 processors feature Intel® vPro™ manageability and support for fast ECC memory so your critical data is protected from random soft-memory bit-errors and IT can easily manage the system.



BUILT TO HANDLE TODAY'S DEMANDING APPLICATIONS

Today's professional applications—from game development to health and life sciences modelling to complex engineering—demand high-performance computing. With Intel® Xeon® W-1200 processors, these applications can take advantage of frequencies of up to 5.3 GHz with Intel® Thermal Velocity Boost¹ and new Intel® Turbo Boost Max Technology 3.0—which provides an automatic performance boost for single-threaded applications. Support for up to 128GB of DDR4-2933 ECC memory completes the package—enabling fast memory speeds while also helping ensure data integrity for critical uses.²

BOOST PRODUCTIVITY

Intel® Xeon® W-1200 processors can help you get to the finish line fast and with accuracy.



REDUCED WAIT TIME

Up to 10 Cores | 20 Threads

Your time is too valuable to waste waiting for an answer. With up to 10 cores, 20 threads and support for 128 GB of ECC DDR4 memory, rendering and simulation modelling can be achieved quickly and accurately.

EXPANDED PLATFORM CAPABILITIES

With up to 40 available platform PCIe 3.0 lanes, Intel® Xeon® W-1200 processors enable unparalleled I/O throughput for networking, graphics and storage. You can run multiple graphics cards, storage devices, accelerators, capture cards and/or network controllers.



ENHANCED RELIABILITY

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 memory errors on-the-fly resulting in enhanced reliability.

ADVANCED CONNECTIVITY & VISUAL SUPPORT

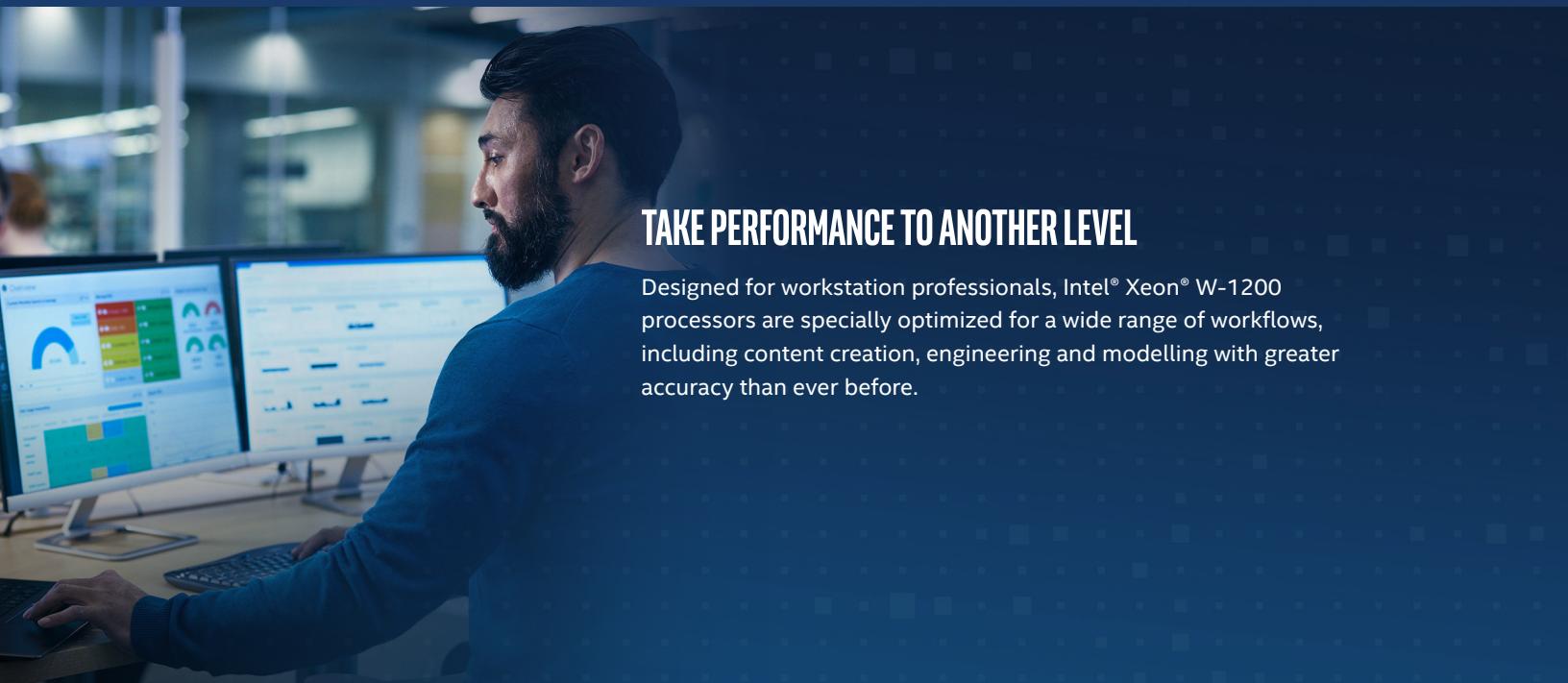
Unleash the flexibility to do more with best-in-class connectivity and integrated graphics enabling advanced visual support.

- **GET BEST-IN-CLASS CONNECTIVITY** with 2.5G Intel® Ethernet Connection I225⁴, Thunderbolt™ 3, & integrated Intel® Wi-Fi 6 AX201.^{5,6}
- **ENABLE MODERN VISUAL EXPERIENCES** with decode and encode support for 4K, HDR, Wide Color Gamut, HDCP 2, and HEVC 10b.
- **DELIVER FLEXIBLE SYSTEM DESIGNS** with integrated Intel® UHD Graphics P630.
- **OPTIMIZE VISUAL COMPUTE WORKFLOWS** with Intel® Quick Sync Video's support for hardware acceleration across the latest video codecs.

ENTERPRISE-GRADE SECURITY & RELIABILITY

Keep your systems up and running with built-in features that reduce errors, help enhance security and improve manageability.⁸

- **HELP PROTECT YOUR SYSTEM FROM POTENTIAL CRASHES AND CHANGES IN DATA** with Error Correcting Code (ECC) memory.
- **GET ADDITIONAL PEACE OF MIND** with hardware-enhanced security features and identity protection technologies, via the Intel® vPro™ platform.⁶
- **MANAGEABILITY** for organizations with managed IT. When Intel® vPro™ is enabled on Intel® Xeon® W-1200 processor-based systems, IT gains a full set of capabilities available for system management.⁶



TAKE PERFORMANCE TO ANOTHER LEVEL

Designed for workstation professionals, Intel® Xeon® W-1200 processors are specially optimized for a wide range of workflows, including content creation, engineering and modelling with greater accuracy than ever before.

Up to
15% FASTER

in media and entertainment workloads
vs. previous gen¹⁰

Up to
9% FASTER

in product development
vs. previous gen¹¹

CHOOSE YOUR IDEAL INTEL® XEON® W-1200 PROCESSOR

A lineup with options—all built to meet the needs of demanding professionals.

PROCESSOR NUMBER	CORES/ THREADS	BASE FREQUENCY (GHZ)	INTEL® TURBO BOOST MAX TECHNOLOGY 3.0 TURBO FREQUENCY (GHZ) ¹	INTEL® THERMAL VELOCITY BOOST TECHNOLOGY SINGLE/ALL CORE TURBO FREQUENCY (GHZ) ²	INTEL® TURBO BOOST 2.0 FREQUENCY ALL CORE (GHZ)	TDP (W)	TOTAL PLATFORM PCIE 3.0 LANES	INTEL® SMART CACHE	MEMORY SPEED ²	MAXIMUM MEMORY CAPACITY	PROCESSOR GRAPHICS	RELIABILITY, AVAILABILITY & SERVICEABILITY	INTEL® OPTANE™ MEMORY ³
W-1290P	10/20	3.7	5.2	5.3 / 4.9	4.8	125	Up to 40	20M	Dual Channel DDR4-2933	128GB	Intel® UHD Graphics P630	ECC Memory Support	✓
W-1270P	8/16	3.8	5.1	NA	4.7	125	Up to 40	16M	Dual Channel DDR4-2933	128GB	Intel® UHD Graphics P630	ECC Memory Support	✓
W-1250P	6/12	4.1	NA	NA	4.5	125	Up to 40	12M	Dual Channel DDR4-2933	128GB	Intel® UHD Graphics P630	ECC Memory Support	✓
W-1290	10/20	3.2	5.1	5.2 / 4.7	4.6	80	Up to 40	20M	Dual Channel DDR4-2933	128GB	Intel® UHD Graphics P630	ECC Memory Support	✓
W-1270	8/16	3.4	5.0	NA	4.7	80	Up to 40	16M	Dual Channel DDR4-2933	128GB	Intel® UHD Graphics P630	ECC Memory Support	✓
W-1250	6/12	3.3	NA	NA	4.4	80	Up to 40	12M	Dual Channel DDR4-2933	128GB	Intel® UHD Graphics P630	ECC Memory Support	✓
W-1290T	10/20	1.9	4.7	NA	3.8	35	Up to 40	20M	Dual Channel DDR4-2933	128GB	Intel® UHD Graphics P630	ECC Memory Support	✓

INTEL® XEON® W-1200 PROCESSORS SUPPORTED MOTHERBOARD

Make the most of your Intel® Xeon® W-1200 processor with a supporting motherboard based on the Intel® W480 chipset.

Intel® Xeon® W-1200 Processors Features at a Glance

FEATURE	BENEFITS
Intel® Turbo Boost Max Technology 3.0	Identifies the two fastest cores on the processor die to provide enhanced single threaded performance. The driver automatically provided along with this feature allows end users to direct workloads to the fastest core by setting priority to preferred applications.
Intel® Turbo Boost Technology 2.0 ⁹	Dynamically increases the processor's frequency, as needed, by taking advantage of thermal and power headroom when operating below specified limits.
Intel® Hyper-Threading Technology	Delivers two processing threads per physical core. Highly threaded applications can get work done in parallel, completing tasks sooner.
Integrated Memory Controller	Supports up to 2 channels of Error Correct Code (ECC) DDR4-2933 memory with 2 DIMMs per channel.
Intel® Optane™ Memory	Enables performance boosts, plus enhanced app response times for your commonly used applications.
Intel® Smart Cache	Up to 20 MB of shared cached allows fast access to your data by enabling dynamic and efficient allocation of the cache to match the needs of each core designed to reduce latency to frequently used data and refresh performance.
Chipset/Motherboard Compatibility	Supported by the Intel® W480 chipset for workstation platforms.

For more information on the Intel® Xeon® processors for workstations, visit:
www.intel.com/content/www/us/en/products/processors/xeon

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For more information about the data presented, visit www.intel.com/wifi6disclaimers

1. Intel® Thermal Velocity Boost (Intel® TVB) is a feature that opportunistically and automatically increases clock frequency above single-core and multi-core Intel® Turbo Boost Technology frequencies based on how much the processor is operating below its maximum temperature and whether turbo power budget is available. The frequency gain and duration is dependent on the workload, capabilities of the processor and the processor cooling solution.

2. DDR4 maximum speed support is 1 and 2 DPC for UDIMMs but only 1 DPC for SODIMMs. DDR4 2DPC UDIMM 2933 or 2666 is capable when same UDIMM part number are populated with in each channel.

3. Intel® Wi-Fi 6 AX202 requires specific hardware configurations. Discrete Intel® Wi-Fi 6 AX200 available for chipsets not supporting connectivity integration.

4. I225 v1 (B1 stepping) reaches 2.5GbE on select switches/routers. visit www.intel.com/i225v1 for a list of validated switches/routers. I225 v2 (B2 stepping) is now in production and works at 2.5GbE on all compliant 2.5GbE Link partners.
5. Intel® Wi-Fi 6 AX201 requires specific hardware configurations. Discrete Intel® Wi-Fi 6 AX200 available for chipsets not supporting connectivity integration.
6. 802.11ax 2x2 160MHz enables 2402Mbps maximum theoretical data rates, ~3X (2.8X) faster than standard 802.11ac 2x2 80MHz (867Mbps) as documented in IEEE 802.11 wireless standard specifications and require the use of similarly configured 802.11ax wireless network routers.
7. Thunderbolt 3 delivered 40 Gbps bidirectional bandwidth which is 8x faster than USB 3.0 and 40X faster than FireWire as compared to other PC I/O connection technologies including eSATA, USB, and IEEE 1394 Firewire. Performance will vary depending on the specific hardware and software used. Must use a Thunderbolt-enabled device.
8. OEMs must enable Intel® vPro™ and be vPro™ certified. Not all Intel® Xeon® processor-based systems are vPro™ certified.
9. Requires a system with Intel® Turbo Boost Technology. Intel Turbo Boost Technology and Intel Turbo Boost Technology 2.0 are only available on select Intel® processors. Consult your PC manufacturer. Performance varies depending on hardware, software, and system configuration. For more information, visit <http://www.intel.com/go/turbo>
10. Testing by Intel as of February 21, 2020. Based on SPECworkstation™ 3 v3.0.4 Media and Entertainment score estimates on Intel® Xeon® W-1290P processor vs. Intel® Xeon® E-2288G processor. Configuration and testing details below.
11. Testing done by Intel as of February 21, 2020. Based on SPECworkstation™ 3 v3.0.4 Product Development score estimates on Intel® Xeon® W-1290P processor vs. Intel® Xeon® E-2288G processor. Configuration and testing details below.

SPECworkstation™ 3 is published by the Standard Performance Evaluation Corporation (SPEC), a benchmarking consortium. SPECworkstation 3 measures Workstation Application Performance using workloads addressing the following workstation markets: Media and Entertainment—3D Modeling, Video Transcoding, Ray Tracing and CAD using Blender, HandBrake, LuxRender, Autodesk Maya and 3ds Max; Product Development—heterogeneous computing and CAD/CFD using Rodinia Suite, OpenFOAM, CalculiX, Dassault Systèmes Catia, PTC Creo, Siemens NX, Dassault Systèmes SolidWorks and Autodesk Showcase; Life Sciences—Molecular Dynamics Simulation using LAMMPS, NAMD, Rodinia Suite and Medical Imaging; Financial Services—Financial Modeling using Black-Scholes and Monte Carlo simulations; Energy (Oil & Gas)—Seismic Data Processing and Imaging; General Operations - including 7-Zip, Python scripting and Octave programming; GPU Compute—OpenCL and GPU Compute—CUDA. A CPU, Graphics and Storage scores are also produced. The Rodinia Suite includes workloads for: Data Mining, Bioinformatics, Physics Simulation, Pattern Recognition, Image Processing, Medical Imaging, Graph Algorithms and Web Mining. For Windows*, SPEC Workstation 3 supports Win64.

SPECworkstation™ 3 v3.0.4 performance measured on platforms with: Intel® Xeon® W-1290P processor, PL1= 125W TDP, 10C/20T, Turbo up to 5.3GHz, Motherboard Name: W480ACE, Graphics: Nvidia Quadro P2000, Gfx version: 442.5, Memory: 2x32GB DDR4-2933MHz, Storage: 905P SSD, OS: Microsoft Windows* 10 PRO, Build Version 1909 (v720) 19H2 (RS6) vs. Intel® Xeon® E-2288G processor, PL1= 95W TDP, 8C16T, Turbo up to 5.0GHz, Motherboard Name: C246PRO, Graphics: Nvidia Quadro P2000, Gfx version: 442.5, Memory: 2x32GB DDR4-2666MHz, Storage: 905P SSD, OS: Microsoft Windows* 10 PRO, Build Version 1909 (v720) 19H2 (RS6)

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