

# Intel® Xeon® W-3300 Processors

## Quick Reference Guide



Built for advanced workstation professionals, Intel® Xeon® W-3300 processors offer uncompromised performance, expanded platform capabilities, and enterprise-grade security and reliability in a single-socket solution.



**NEW** Core Architecture

### IMPROVED Performance Across Key Workloads

Up to  
**27%  
Faster**  
Product Development  
Workloads<sup>2</sup>  
Intel® Xeon® W-3365 Processor  
VS AMD Threadripper Pro  
3975WX Processor

Up to  
**26%  
Faster**  
Energy, Oil, and  
Gas Workloads<sup>3</sup>  
Intel® Xeon® W-3335 Processor  
VS AMD Threadripper Pro  
3955WX Processor

Up to  
**36%  
Faster**  
Performance in Data  
Science Operations  
in SciKit Learn<sup>4</sup>  
Intel® Xeon® W-3365 Processor  
VS AMD Threadripper Pro  
3975WX Processor



### Intel® Deep Learning Boost

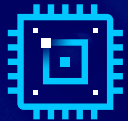
Vastly improving performance  
for deep learning workloads<sup>1</sup>

**NEW** Intel® Optane™ SSD  
P5800X support\*



### Intel® AVX-512 Instruction Support

**NEW** Intel® C621A Chipset



### Error-Correcting Code Memory Support

### NEW Enhanced Expandability

Up to 4TB DDR4-3200  
Up to 64 CPU PCIe 4.0 lanes  
Up to 10 USB3 (5G) ports



<sup>1,2,3,4</sup> See source and performance disclaimers in Notices & Disclaimers for details. See backup for workloads and configurations or visit [www.Intel.com/PerformanceIndex](http://www.Intel.com/PerformanceIndex). Results may vary.  
\* Intel® Optane™ memory requires specific hardware and software configuration. Visit [intel.com/OptaneMemory](http://intel.com/OptaneMemory) for configuration requirements.

# SKU Chart

| Processor Number              | Cores/Threads Per Socket | Base Clock Speed | Intel® Turbo Boost Single Core Turbo Frequency | Intel® Turbo Boost All Core Turbo Frequency | Intel® Smart Cache | Total Processor PCIe* 4.0 Lanes | TDP   | Memory Capacity | Memory Support      | Error Correcting Code (ECC) Memory Support | Reliability, Availability, and Serviceability (RAS) |
|-------------------------------|--------------------------|------------------|--|---|--------------------|---------------------------------|-------|-----------------|---------------------|--|---|
| Intel® Xeon® W-3375 Processor | 38/76                    | 2.5 GHz          | Up to 4.0 GHz                                  | Up to 3.3 GHz                               | 57 MB              | 64                              | 270 W | 4 TB            | 8 Channel DDR4-3200 | ✓  | ✓   |
| Intel® Xeon® W-3365 Processor | 32/64                    | 2.7 GHz          | Up to 4.0 GHz                                  | Up to 3.5 GHz                               | 48 MB              | 64                              | 270 W | 4 TB            | 8 Channel DDR4-3200 | ✓  | ✓   |
| Intel® Xeon® W-3345 Processor | 24/48                    | 3.0 GHz          | Up to 4.0 GHz                                  | Up to 3.7 GHz                               | 36 MB              | 64                              | 250 W | 4 TB            | 8 Channel DDR4-3200 | ✓  | ✓   |
| Intel® Xeon® W-3335 Processor | 16/32                    | 3.4 GHz          | Up to 4.0 GHz                                  | Up to 3.7 GHz                               | 24 MB              | 64                              | 250 W | 4 TB            | 8 Channel DDR4-3200 | ✓  | ✓   |
| Intel® Xeon® W-3323 Processor | 12/24                    | 3.5 GHz          | Up to 3.9 GHz                                  | Up to 3.7 GHz                               | 21 MB              | 64                              | 220 W | 4 TB            | 8 Channel DDR4-3200 | ✓  | ✓   |

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)



- Intel® Deep Learning Boost 'Up To 3x Average Inference Performance Gains': As measured by the geomean across multiple deep learning framework workloads (Apache MXNet, TensorFlow, PyTorch, and Caffe). Results for Intel® Xeon® W-3300 processors have been estimated based on measured data comparing dual-socket Intel® Xeon® Platinum 8280 processor using 8-bit integer operations with Intel® Deep Learning Boost on ResNet-50 versus dual-socket Intel® Xeon® Platinum 8180 processor using 32-bit floating point operations. Test done by Intel as of 3/1/2019.
- Based on SPECworkstation 3 v3.1 Product Development score results on Intel® Xeon® W-3365 processor vs. AMD Threadripper Pro 3975WX processor. Performance results are based on results as of 05/20/2021 and may not reflect all publicly available updates. See configuration disclosure for details. No product can be absolutely secure. For more complete information about performance and benchmark results, visit [www.intel.com/benchmarks](http://www.intel.com/benchmarks).
- Based on SPECworkstation 3 v3.1 Energy score results on Intel® Xeon® W-3335 processor vs. AMD Threadripper Pro 3955WX processor. Performance results are based on results as of 05/20/2021 and may not reflect all publicly available updates. See configuration disclosure for details. No product can be absolutely secure. For more complete information about performance and benchmark results, visit [www.intel.com/benchmarks](http://www.intel.com/benchmarks).
- Based on SciKitLearn performance across multiple data science algorithms results on Intel® Xeon® W-3365 processor vs. the AMD Threadripper Pro 3975WX processor. Performance results are based on results as of 07/27/2021 and may not reflect all publicly available updates. See configuration disclosure for details. No product can be absolutely secure. For more complete information about performance and benchmark results, visit [www.intel.com/benchmarks](http://www.intel.com/benchmarks).

## Configurations

**SPECworkstation 3 v3.1 performance measured on platforms with:** Intel® Xeon® W-3365 processor, PL1= 270W TDP, 32C/64T, Turbo up to 4.0GHz, Motherboard Name: Gigabyte MU72-SUO (C621A), Motherboard type: Pre-Production, BIOS: D07 Graphics: Nvidia Quadro RTX4000, Gfx version: 461.40, Memory: 128GB (8x16GB) DDR4-3200MHz ECC RDIMMs, Storage: 1TB Samsung 980 Pro, OS: Microsoft Windows® 10 Pro, Build Version 20H2 (19042.630), CPU Cooler: Liquid Cooling, EKWB-PRO LGA4189 1S Validation Kit. **VERSUS:** AMD Threadripper Pro 3975WX, 32C/64T, TDP: 280W, Turbo up to 4.2GHz, System: Lenovo P620, Graphics: Nvidia Quadro RTX4000, Gfx version: 452.57, Memory: 8x8GB (DDR4-3200MHz) ECC RDIMM, Storage: 1TB Samsung 970 EVO Plus SSD, OS: Microsoft Windows® 10 Pro (Build 19042.630) 20H2, CPU Cooler: Air Cooler: Lenovo P620.

**SPECworkstation 3 v3.1 performance measured on platforms with:** Intel® Xeon® W-3335 processor, PL1= 270W TDP, 16C/32T, Turbo up to 4.0GHz, Motherboard Name: Gigabyte MU72-SUO (C621A), Motherboard type: Pre-Production, BIOS: D07 Graphics: Nvidia Quadro RTX4000, Gfx version: 461.40, Memory: 128GB (8x16GB) DDR4-3200MHz ECC RDIMMs, Storage: 1TB Samsung 980 Pro, OS: Microsoft Windows® 10 Pro, Build Version 20H2 (19042.630), CPU Cooler: Liquid Cooling, EKWB-PRO LGA4189 1S Validation Kit. **VERSUS:** AMD Threadripper Pro 3955WX, 16C/32T, TDP: 280W, Turbo up to 4.4GHz, System: Lenovo P620, Graphics: Nvidia Quadro RTX4000, Gfx version: 452.57, Memory: 8x8GB (DDR4-3200MHz) ECC RDIMM, Storage: 1TB Samsung 970 EVO Plus SSD, OS: Microsoft Windows® 10 Pro (Build 19042.630) 20H2, CPU Cooler: Air Cooler: Lenovo P620.

**SciKit Learn performance measured on platforms with:** Intel® Xeon® W-3365, PL1=250W, 32/64, Turbo up to 4.0GHz, Motherboard: ASRock C621A WS, Motherboard Type: Pre-Production, BIOS: 2.21.1280, Graphics: NVIDIA Quadro P2000, GFX Driver Version: 462.96, Memory: 192GB (6x32GB, 3200 MHz) DDR4 ECC RDIMM, Storage: 960GB Intel(R) Optane(TM) 905P, OS: Linux, OS Version: Ubuntu, OS Build: 20.04.2 LTS **VERSUS:** AMD Threadripper Pro 3975WX, PL1=280W, 32/64, Turbo up to 4.2GHz, Motherboard: Lenovo 1046, Motherboard Type: Production, BIOS: 1102, Graphics: NVIDIA Quadro P2000, GFX Driver Version: 462.96, Memory: 256GB (8x32GB, 3200 MHz) DDR4 ECC RDIMM, Storage: 1.5 TB Intel(R) Optane(TM) 905P, OS: Linux, OS Version: Ubuntu, OS Build: 20.04.2 LTS

Performance varies by use, configuration and other factors. Learn more at [www.Intel.com/PerformanceIndex](http://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 backup for configuration details. No product or component can be absolutely secure. Altering clock frequency or voltage may void any product warranties and reduce stability, security, performance, and life of the processor and other components. Check with system and component manufacturers for details. Your costs and results may vary.

Results have been estimated or simulated.

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