



# THE ULTIMATE WORKSTATIONS FUELED BY INTEL® XEON® PROCESSORS

Data Center Product Marketing  
Intel Data Center Group

Content Revision Date: 11 July 2018

INTEL® XEON® SCALABLE PROCESSORS  
INTEL® XEON® W PROCESSORS  
INTEL® XEON® E PROCESSORS



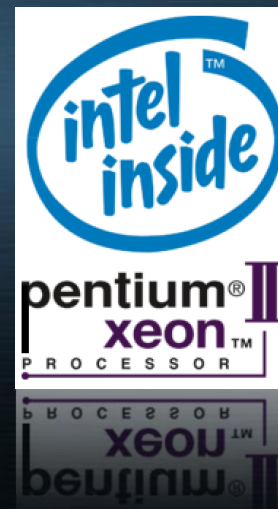
**CELEBRATE  
WONDERFUL**  
[50thanniversary.intel.com](http://50thanniversary.intel.com)

1985



UP TO **40** MHz  
UP TO **1 CORE**

1998



CELEBRATING  
**20 YEARS**  
OF INTEL® XEON® PROCESSORS

# THE ULTIMATE **WORKSTATIONS**



**INTEL® XEON® SCALABLE PROCESSOR**  
**BREAKTHROUGH PERFORMANCE FOR EXPERT WORKSTATIONS**

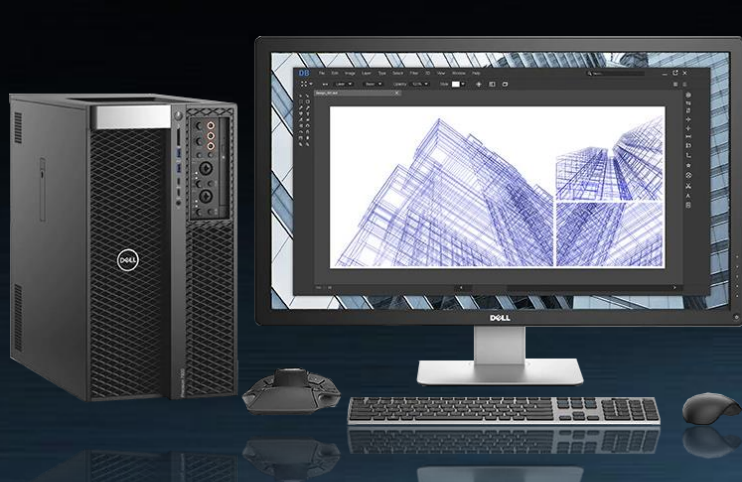


**INTEL® XEON® W PROCESSOR**  
**PERFORMANCE OPTIMIZED FOR MAINSTREAM WORKSTATIONS**



**NEW INTEL® XEON® E PROCESSOR**  
**ESSENTIAL PERFORMANCE AND VISUALS FOR ENTRY WORKSTATIONS**

# FAST FORWARD TO YOUR <NEXT> CREATION



DELL\* PRECISION 7910 WORKSTATION



HP\* Z8 G4 WORKSTATION



LENOVO\* THINKSTATION P920 WORKSTATION



## BREAKTHROUGH PERFORMANCE FOR EXPERT WORKSTATIONS

# THE ULTIMATE WORKSTATIONS

UP TO **1.55X**  
FASTER<sup>1</sup>

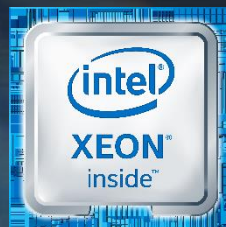
vs. 2016 Dual-Socket Intel® Xeon® E5-2600 v4 Processors



**INTEL® XEON®  
SCALABLE PROCESSORS**

UP TO **1.45X**  
FASTER<sup>2</sup>

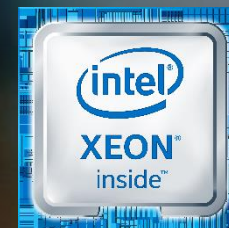
vs. 2016 Intel® Xeon® E5-1600 v4 Processor



**INTEL® XEON® W  
PROCESSORS**

UP TO **1.36X**  
FASTER<sup>3</sup>

vs. 2017 Intel® Xeon® E3-1200 v6 Processor



**INTEL® XEON® E  
PROCESSORS**

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 [www.intel.com/benchmarks](http://www.intel.com/benchmarks). Results have been estimated or simulated using internal Intel analysis or architecture simulation or modeling, and provided to you for informational purposes. Any differences in your system hardware, software or configuration may affect your actual performance. Please see Slide 19 for complete details on the performance claims and configurations.

# WORKSTATION LANDSCAPE

## EXPERT

*Breakthrough performance for real-time design, modeling, content creation and insights*



INTEL® XEON® SCALABLE PROCESSOR

## MAINSTREAM

*Performance optimized for increasing workload demands*



INTEL® XEON® W-2100 PROCESSOR

## ENTRY

*Essential performance and visuals*



INTEL® XEON® E-2100 PROCESSOR

## MOBILE

*Creativity and collaboration from anywhere*



INTEL® XEON® E-2100M PROCESSOR

# WORKSTATION OPPORTUNITY BY VERTICAL



# ENGINEERING



# ENTERTAINMENT



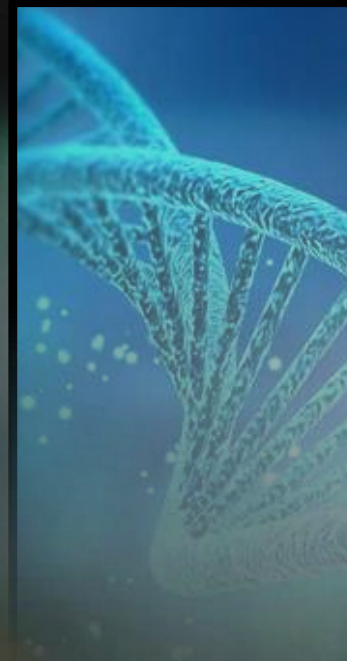
# FINANCE



# ENERGY



## EDUCATION



## HEALTHCARE

# ESSENTIAL PERFORMANCE AND VISUALS FOR ENTRY WORKSTATIONS



UP TO **1.73X** PERFORMANCE  
IMPROVEMENT  
4-YEAR REFRESH<sup>4</sup>

UP TO **1.36X** PERFORMANCE  
IMPROVEMENT  
GEN-ON-GEN<sup>3</sup>

UP TO **4.7** <sup>G</sup><sub>H</sub><sup>Z</sup> WITH INTEL<sup>®</sup>  
**TURBO**  
BOOST TECHNOLOGY 2.0

UP TO **64 GB** <sup>DDR4</sup>  
**2666** <sup>M</sup><sub>H</sub><sup>Z</sup>

UP TO **6 CORES**

UP TO **12 THREADS**

**ESSENTIAL** PERFORMANCE AND VISUALS WITH  
EXPANDABILITY, RELIABILITY, SECURITY<sup>†</sup>

AVAILABLE IN SINGLE-SOCKET CONFIGURATION ONLY

New Intel<sup>®</sup> Xeon<sup>®</sup> E Processor



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 [www.intel.com/benchmarks](http://www.intel.com/benchmarks). Results have been estimated or simulated using internal Intel analysis or architecture simulation or modeling, and provided to you for informational purposes. Any differences in your system hardware, software or configuration may affect your actual performance. Please see Slide 19 for complete details on the performance claims and configurations.

# ENTRY WORKSTATION PERFORMANCE



UP TO  
**1.45X**

FASTER FINANCIAL  
SERVICES APPLICATIONS<sup>5</sup>

vs. 2017 Intel® Xeon® E3-1200 v6 Processor



UP TO  
**1.36X**

COMPUTE INTENSIVE  
APPLICATIONS<sup>3</sup>

vs. 2017 Intel® Xeon® E3-1200 v6 Processor



UP TO  
**1.45X**

FASTER 3D MODELING &  
ANIMATION APPLICATIONS<sup>6</sup>

vs. 2017 Intel® Xeon® E3-1200 v6 Processor

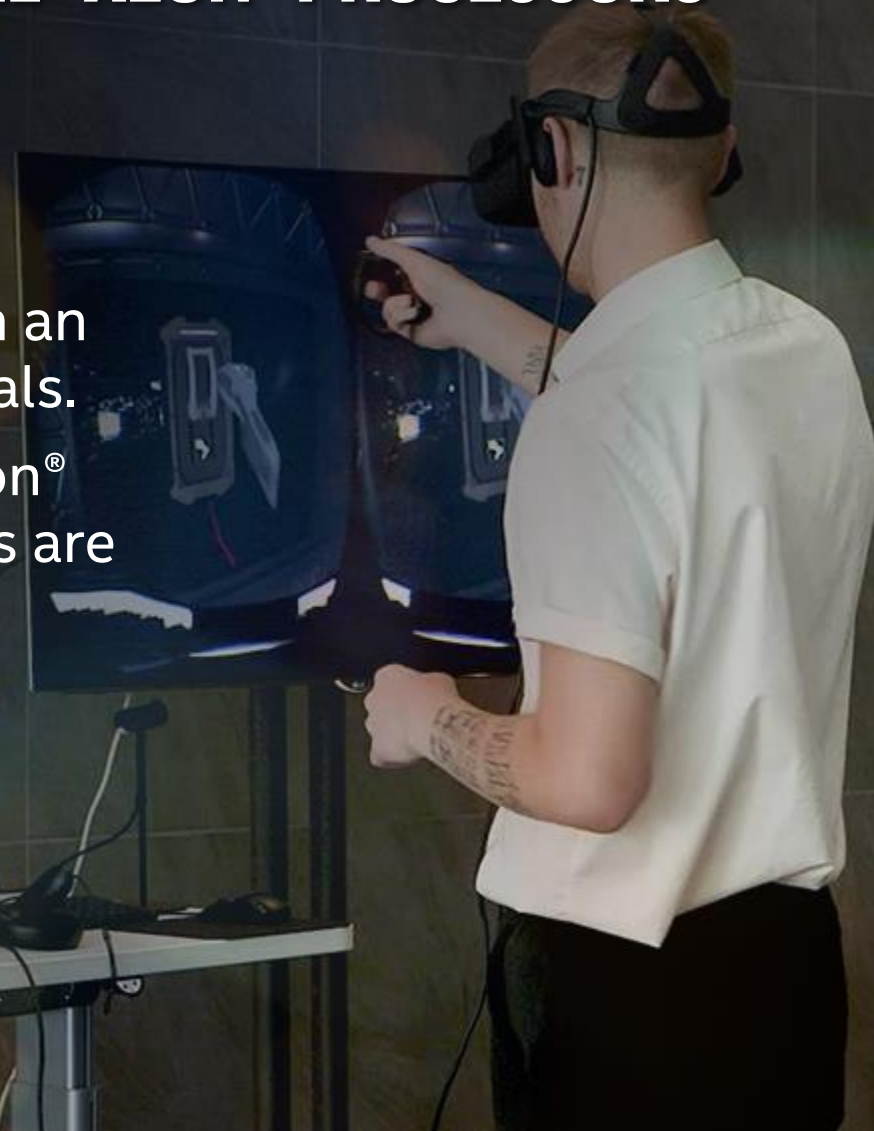
New Intel® Xeon® E Processor



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 [www.intel.com/benchmarks](http://www.intel.com/benchmarks). Results have been estimated or simulated using internal Intel analysis or architecture simulation or modeling, and provided to you for informational purposes. Any differences in your system hardware, software or configuration may affect your actual performance. Please see Slides 19 and 20 for complete details on the performance claims and configurations.

# THE BEST VR EXPERIENCES RUN ON INTEL® XEON® PROCESSORS

- Today's professional quality virtual reality experiences offer an entirely new level of immersion, interactivity and creativity.
- Accelerate your creation and take control in an expansive virtual world with incredible visuals.
- Intel® Xeon® Scalable processors, Intel® Xeon® W processors and Intel® Xeon® E processors are professional quality VR ready and exceeds minimum processor specs for Oculus\* and HTC\*.



# WORKSTATION MEGATASKING PERFORMANCE

## TURNING SIX 4K VIDEO CLIPS INTO ONE 4K VR VIDEO

2017 INTEL® XEON®  
E3-1275 V6 PROCESSOR

DECODE + STITCH + RENDER + ENCODE 4K VIDEO  
6 MINUTES, 8 SECONDS

2018 INTEL® XEON®  
E-2176G PROCESSOR

DECODE + STITCH + RENDER + ENCODE 4K VIDEO  
4 MINUTES, 39 SECONDS

PERFORMING MULTIPLE  
CPU INTENSIVE  
WORKSTATION TASKS

UP  
TO **24%**

TIME SAVINGS<sup>7</sup>

vs. 2017 Intel® Xeon® E3-1275 v6 Processor

New Intel® Xeon® E Processor



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 [www.intel.com/benchmarks](http://www.intel.com/benchmarks). Results have been estimated or simulated using internal Intel analysis or architecture simulation or modeling, and provided to you for informational purposes. Any differences in your system hardware, software or configuration may affect your actual performance. Please see Slide 20 for complete details on the performance claims and configurations.



Lenovo

# THE ULTIMATE **WORKSTATIONS**



**INTEL® XEON® SCALABLE PROCESSOR**  
**BREAKTHROUGH PERFORMANCE FOR EXPERT WORKSTATIONS**



**INTEL® XEON® W PROCESSOR**  
**PERFORMANCE OPTIMIZED FOR MAINSTREAM WORKSTATIONS**



**INTEL® XEON® E PROCESSOR**  
**ESSENTIAL PERFORMANCE AND VISUALS FOR ENTRY WORKSTATIONS**

**INTEL® XEON® PROCESSOR-BASED WORKSTATIONS: PERFORMANCE. PROFESSIONAL-GRADE. BUILT FOR TODAY'S PROS.**

# NEW INTEL® XEON® E PROCESSOR

Improvements in processor speed, enhanced memory capabilities, advanced hardware-enhanced security and reliability features available with support for 4K UHD Intel® graphics technology.

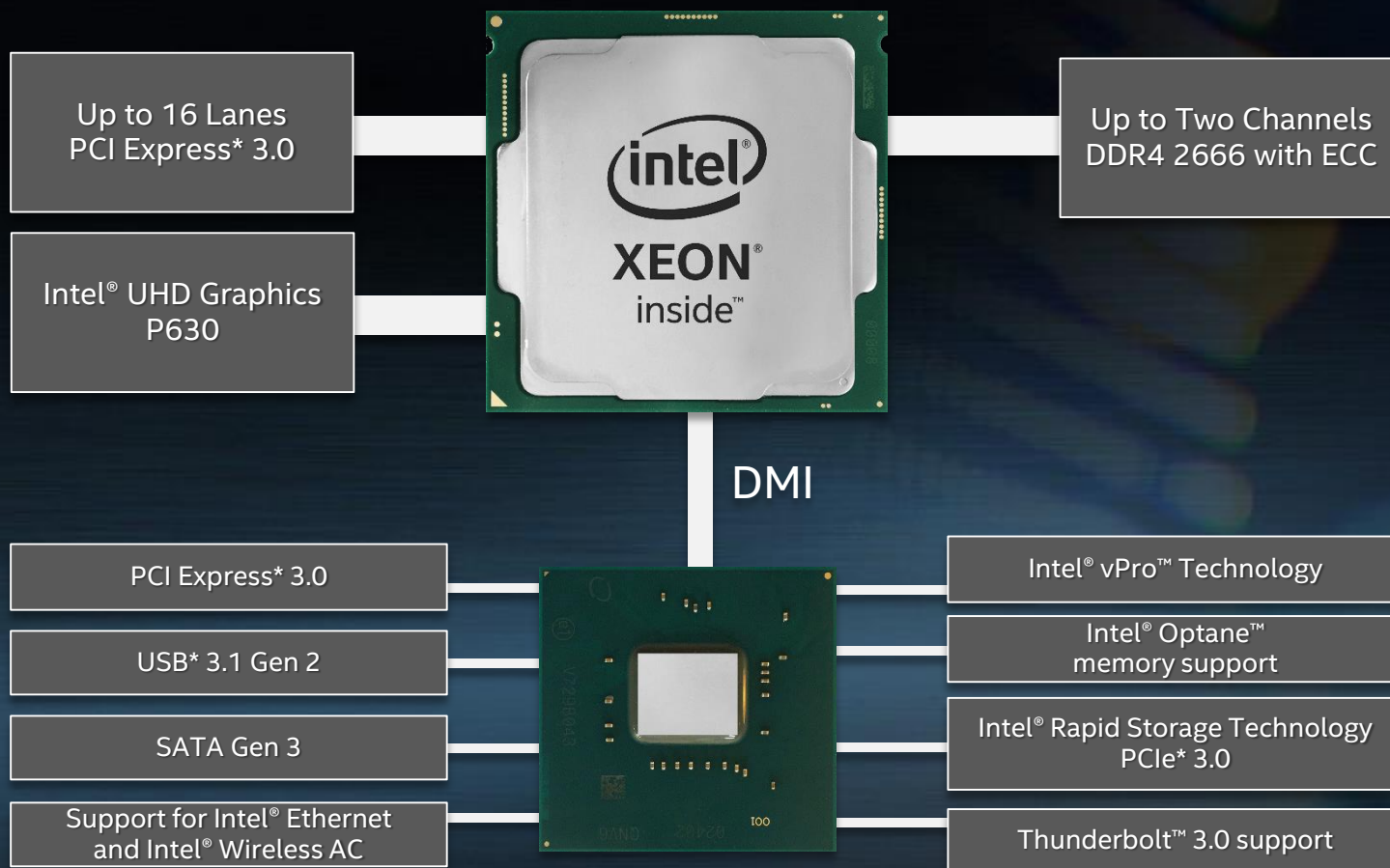
- Up to 6 cores, 12 threads
- Up to 64GB DDR4 ECC 2666 MHz memory
- Intel® Hyper-Threading Technology (Intel® HT Technology)
- Intel® Turbo Boost Technology 2.0
- Intel® Advanced Vector Extensions 2.0
- Support for LGA 1151 socket
- Up to 40 PCI Express 3.0 lanes
- Support for USB\* 3.1 Gen 2 (Up to 10 Gbps)
- Support for Thunderbolt™ 3.0 technology
- Intel® vPro™ Technology
- Enhanced Intel® Software Guard Extensions (Intel® SGX)
- Available with Intel® UHD Graphics P630
- Support for Intel® Optane™ memory
- Support for 1 Gigabit Intel® Ethernet and Intel® Wireless-AC

*Not a comprehensive of all features and capabilities.*



# NEW INTEL® XEON® E PROCESSORS

ESSENTIAL PERFORMANCE AND VISUALS FOR ENTRY WORKSTATIONS



*Processor, chipset and diagram provided for illustration purposes only.  
Diagram and table are not a comprehensive of all features and capabilities.*

Processor Manufacturing Process	Intel's 14nm process technology
Maximum Core Count Supported	6
Maximum Base Frequency Supported	3.8 GHz
Maximum Intel® Turbo Boost Technology 2.0 Frequency Supported	4.7 GHz
Processor Cache Memory Support	Up to 12MB Intel® Smart Cache
Processor Performance Support	Intel® Turbo Boost 2.0 Technology, Intel® Hyper-Threading Technology (Intel® HT)
Processor Graphics Support	Available with integrated Intel® UHD Graphics P630 (Maximum Video Memory up to 64GB), supporting up to 3 display outputs)
Maximum Number of Processor Sockets Supported	One Socket
Thermal Design Point (TDP)	Up to 95 Watts
Socket Type	LGA-1151 Socket
System Memory Support	2 channels of DDR4 ECC 2666 MHz 2 DPC
Maximum System Memory Supported	Up to 64GB
Supported Chipset	Intel® C246 Series Workstation Chipset
I/O	PCI Express* 3.0 – Up to 40 lanes (CPU + Chipset) USB* 3.1 – Up to 6 ports USB* 3.0 – Up to 10 ports SATA* 3.0 – Up to 8 ports DMI – Up to 4 lanes, Gen 3
Intel® Manageability Engine (Intel® ME)	Intel® ME v12 with Intel® Active Management Technology (Intel® AMT) and Intel® vPro™ Technology
Intel® Rapid Storage Technology	Intel® Rapid Storage Technology PCIe* 3.0

# NEW INTEL® XEON® E PROCESSORS

Processor Number <sup>1</sup>	Base Clock Speed (GHz)	Intel® Turbo Boost Technology 2.0 Frequency (GHz)	Cores/Threads	Intel® UHD Graphics 630	Cache (MB)	PCI Express 3.0 Lanes (CPU + Chipset)	Memory Support	Thermal Design Power (TDP)	Socket (LGA)	Recommended Customer Pricing (\$ US Dollars)
Intel® Xeon® E-2186G Processor	3.8	4.7	6/12	Yes	12MB SmartCache	40	Two channels DDR4-2666	95W	1151	\$450
Intel® Xeon® E-2176G Processor	3.7	4.7	6/12	Yes	12MB SmartCache	40	Two channels DDR4-2666	80W	1151	\$362
Intel® Xeon® E-2174G Processor	3.8	4.7	4/8	Yes	8MB SmartCache	40	Two channels DDR4-2666	71W	1151	\$328
Intel® Xeon® E-2146G Processor	3.5	4.5	6/12	Yes	12MB SmartCache	40	Two channels DDR4-2666	80W	1151	\$311
Intel® Xeon® E-2144G Processor	3.6	4.5	4/8	Yes	8MB SmartCache	40	Two channels DDR4-2666	71W	1151	\$272
Intel® Xeon® E-2136 Processor	3.3	4.5	6/12	No	12MB SmartCache	40	Two channels DDR4-2666	80W	1151	\$284
Intel® Xeon® E-2134 Processor	3.5	4.5	4/8	No	8MB SmartCache	40	Two channels DDR4-2666	71W	1151	\$250
Intel® Xeon® E-2126G Processor*	3.3	4.5	6/6	Yes	12MB SmartCache	40	Two channels DDR4-2666	80W	1151	\$255
Intel® Xeon® E-2124G Processor*	3.4	4.5	4/4	Yes	8MB SmartCache	40	Two channels DDR4-2666	71W	1151	\$213
Intel® Xeon® E-2124 Processor*	3.3	4.3	4/4	No	8MB SmartCache	40	Two channels DDR4-2666	71W	1151	\$193

See [intel.com/products/processor/number](https://www.intel.com/products/processor/number) for details. \*Intel® Xeon® E-2126G, E-2124G and E-2124 processors do not support Intel® Hyper-Threading Technology (Intel® HT technology). Processor details, features, cost and availability are subject to change without notice. Please visit [intel.com/xeone](https://www.intel.com/xeone) for the latest product information.

# NOTICES AND DISCLAIMERS

Statements in this presentation that refer to business outlook, future plans and expectations are forward-looking statements that involve a number of risks and uncertainties. Words such as "anticipates," "expects," "intends," "goals," "plans," "believes," "seeks," "estimates," "continues," "may," "will," "would," "should," "could," and variations of such words and similar expressions are intended to identify such forward-looking statements. Statements that refer to or are based on projections, uncertain events or assumptions also identify forward-looking statements. Such statements are based on management's expectations as of April 26, 2018 and involve many risks and uncertainties that could cause actual results to differ materially from those expressed or implied in these forward-looking statements. Important factors that could cause actual results to differ materially from the company's expectations are set forth in Intel's earnings release dated April 26, 2018, which is included as an exhibit to Intel's Form 8-K furnished to the SEC on such date. Additional information regarding these and other factors that could affect Intel's results is included in Intel's SEC filings, including the company's most recent reports on Forms 10-K and 10-Q. Copies of Intel's Form 10-K, 10-Q and 8-K reports may be obtained by visiting our Investor Relations website at [www.intc.com](http://www.intc.com) or the SEC's website at [www.sec.gov](http://www.sec.gov).

All information in this presentation reflects management's views as of July 9, 2018. Intel does not undertake, and expressly disclaims any duty, to update any statement made in this presentation, whether as a result of new information, new developments or otherwise, except to the extent that disclosure may be required by law.

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration.

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. For more complete information about performance and benchmark results, visit <http://www.intel.com/benchmarks>

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.

Performance varies depending on hardware, software, and system configuration. For more information, visit <http://www.intel.com/go/turbo>

All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest Intel product specifications and roadmaps.

© Copyright 2018 Intel Corporation

Intel, the Intel logo, Intel Xeon, Intel Optane and Thunderbolt are trademarks of Intel Corporation in the U.S. and/or other countries.

\*Other names and brands may be claimed as the property of others.

# PERFORMANCE BENCHMARK DISCLOSURES [1/3]

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Learn more at [intel.com](https://www.intel.com), or from the OEM or retailer.

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

Intel processors of the same SKU may vary in frequency or power as a result of natural variability in the production process.

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. Optimization Notice: 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. Notice Revision #20110804.

The benchmark results may need to be revised as additional testing is conducted. The results depend on the specific platform configurations and workloads utilized in the testing, and may not be applicable to any particular user's components, computer system or workloads. The results are not necessarily representative of other benchmarks and other benchmark results may show greater or lesser impact from mitigations.

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 [www.intel.com/benchmarks](https://www.intel.com/benchmarks).

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

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at [www.intel.com](https://www.intel.com).

The cost reduction scenarios described are intended to enable you to get a better understanding of how the purchase of a given Intel based product, combined with a number of situation-specific variables, might affect future costs and savings. Circumstances will vary and there may be unaccounted-for costs related to the use and deployment of a given product. Nothing in this document should be interpreted as either a promise of or contract for a given level of costs or cost reduction.

No computer system can be absolutely secure.

# PERFORMANCE BENCHMARK DISCLOSURES [2/3]

**1: Up to 1.55X faster** vs. 2016 Dual-Socket Intel® Xeon® E5-2600 v4 Processors. Configuration: Estimates based on Intel internal testing as of June 2018 on SPECint\*\_rate\_base2006 : 1-Node, 2 x Intel® Xeon® Platinum 8180M Processor on Wolf Pass SKX with 384 GB Total Memory on Red Hat Enterprise Linux\* 7.4 using Benchmark software: SPEC CPU® 2017, Compiler: Intel® Compiler IC18 OEM, Optimized libraries: AVX512. Data Source: Request Number: 40, Benchmark: SPECrate\*2017\_int\_base (estimated), Score: 281 Higher is better vs. 1-Node, 2 x Intel® Xeon® Processor E5-2699 v4 on Wildcat Pass with 256 GB Total Memory on Red Hat Enterprise Linux\* 7.4 using Benchmark software: SPEC CPU® 2017 v1.2, Optimized libraries: IC18.0\_20170901, Other Software: MicroQuill SMART HEAP, Script / config files : xCORE-AVX2. Data Source: Request Number: 40, Benchmark: SPECrate\*2017\_int\_base(estimated), Score: 181 Higher is better.

**2: Up to 1.45X faster** vs. 2016 Intel® Xeon® E5-1600 v4 Processor. Configuration: Estimates based on Intel internal testing as of June 2018 on 1x Intel® Xeon® W-2155 Processor, Platform: BSF, 4 x 32GB DDR4 2666MHz ,OS: Ubuntu 17.10 (Kernel 4.13.0-30-generic), Benchmark: SPECrate\*2017\_int\_base (Estimated), Compiler: ICC 18.0.2,BIOS: BSFSWSR1.R00.X060.B42.1802230717 02/23/2018, (uCode: 0x2000043), SNC enabled, IMC 2-way interleaving, Storage: SSD S3710 Series 400GB, Score: 70.5 vs 1x Intel® Xeon® Processor E5-1680 v4, Platform: Supermicro X10SRA, 4 x 32GB DDR4 2400MHz,OS: Ubuntu 17.10 (Kernel 4.13.0-35-generic), Benchmark: SPECrate\*2017\_int\_base (Estimated), Compiler: ICC 18.0.2,BIOS: American Megatrends Inc. 2.1 03/29/2018, (uCode: 0xb00002a), Storage: SSD S3710 Series 800GB, Score: 48.4.

**3: Up to 1.36X faster** vs. 2017 Intel® Xeon® E3-1200 v6 Processor. Configuration: Estimates based on Intel internal testing as of June 2018 on 1x Intel® Xeon® E-2186G Processor, Platform: Moss Beach, 4 x 8GB DDR4 2666 ECC(32GB 2666MHz ) ,OS: Ubuntu 17.10 (Kernel 4.13.0-35-generic) ,Benchmark: SPECrate2017\_int\_base (Estimated), Compiler: ICC 18.0.2,BIOS: CNLSE2R1.R00.X119.B54.1803131307, 03/13/2018 (uCode:0x84), Storage: SSD S3710 Series 800GB, Score: 40.9 compared to 1x Intel® Xeon® Processor E3-1285 v6, Platform: S1200SP, 4 x 8GB DDR4 2400MHz, OS: Ubuntu 17.10 (Kernel 4.13.0-35-generic) ,Benchmark: SPECrate2017\_int\_base (Estimated), Compiler: ICC 18.0.2,BIOS: S1200SP.86B.03.01.1029.012520180838 (uCode:0x84), Storage: SSD S3710 Series 800GB, Score: 29.9.

**4: Up to 1.73X performance improvement** vs. 4-year old entry workstation. Configuration: Estimates based on Intel internal testing as of June 2018 on 1x Intel® Xeon® E-2186G Processor, Platform: Moss Beach, 4 x 8GB DDR4 2666 ECC(32GB 2666MHz ) ,OS: Ubuntu 17.10 (Kernel 4.13.0-35-generic) ,Benchmark: SPECrate\*2017\_fp\_base (Estimated), Compiler: ICC 18.0.128,BIOS: CNLSE2R1.R00.X119.B54.1803131307, 03/13/2018 (uCode:0x84), Storage: SSD S3710 Series 800GB, Score: 35.3 compared to 1x Intel® Xeon® E3-1286v3 Processor Platform: S1200RP, 4 x 8GB DDR4 1600 (32GB 1600MHz ) ,OS: Ubuntu 17.10 (Kernel 4.13.0-35-generic), Benchmark: SPECrate\*2017\_fp\_base (Estimated), Compiler: ICC 18.0.0.128,BIOS: S1200RP.86B.03.04.0006.030520181328, 03/05/2018 (uCode:0x24), Storage: SSD S3710 Series 800GB, Score: 20.3.

# PERFORMANCE BENCHMARK DISCLOSURES [3/3]

**5: Up to 1.45X faster financial services applications** vs. 2017 Intel® Xeon® E3-1200 v6 Processor. Configuration: Estimates based on Intel internal testing as of June 2018 on 1x-Intel® Xeon® E-2186G Processor, Platform: RVP, 4 x 8GB DDR4 2666 ECC(32GB 2666MHz ), OS: Windows 10 Pro (RS3 1709 with Window updates KB4053577,KB4058043,KB4088785,KB4088776 ) ,Benchmark: Estimated Financial Services (Geomean) for SPECwpc, Compiler: ver. 2.1,BIOS: CNLSFWR1.R00.X118.B23.1803070743, 3/7/2018 (uCode 0x02), Storage: SSD 535 Series 480GB, Score: 2.15 (M&E), 1.91 (Product Dev), 1.84 (Life Sciences), 5.39 (Financial Services), 1.93 (Energy), and 1.17 (General Operations) compared to 1x Intel® Xeon® Processor E3-1285 v6, Platform: S1200SP, 4 x 8GB DDR4 2400MHz, OS: Windows 10 Pro (OS version 10.0.16299 N/A Build 16299 with Window updates KB4053577, KB4090914, KB4088785, KB4088776 ), Benchmark: Estimated Financial Services (Geomean) for SPECwpc, Compiler: ver. 2.1,BIOS: S1200SP.86B.03.01.1029.012520180838, 1/25/2018, Storage: SSD 535 Series 480GB, Score: 1.83 (M&E), 1.58 (Product Dev), 1.59 (Life Sciences), 3.7 (Financial Services), 1.56 (Energy), and 1.16 (General Operations).

**6: Up to 1.45X faster 3D modeling and animation applications** vs. 2017 Intel® Xeon® E3-1200 v6 Processor. Configuration: Estimates based on Intel internal testing as of June 2018 on 1x Intel® Xeon® E-2186G Processor, Platform: RVP, 4 x 8GB DDR4 2666 ECC(32GB 2666MHz ), OS: Windows 10 Pro (RS3 1709 with Window updates KB4053577,KB4058043,KB4088785,KB4088776 ) ,Benchmark: Cinebench (Estimated), BIOS: CNLSFWR1.R00.X118.B23.1803070743, 3/7/2018 (uCode 0x02), Storage: SSD 535 Series 480GB, Score: 1396 (CPU(cb)) compared to 1x Intel® Xeon® Processor E3-1285 v6, Platform: S1200SP, 4 x 8GB DDR4 2400MHz, OS: Windows 10 Pro (OS version 10.0.16299 N/A Build 16299 with Window updates KB4053577, KB4090914, KB4088785, KB4088776 ), Benchmark: Cinebench (Estimated), BIOS: S1200SP.86B.03.01.1029.012520180838, 1/25/2018, Storage: SSD 535 Series 480GB, Score: 957 (CPU(cb)).

**7: Up to 24 percent time savings** vs. 2017 Intel® Xeon® E3-1200 v6 Processor. Configuration: Based on internal testing at Intel using 6 4k videos each 50 second clip, stitched and rendered on Autopano Video Pro 2.6.2 and then linear editing on Adobe Premiere Pro CC(Version 12.0, Build 224) and Adobe Media Encoder CC(Version 12.0, Build 202) on a system running Xeon E3: E3-1275v6(4 cores/8 thread, 3.8GHz, 73W) with Nvidia P2000, Intel 535 series 480GB SSD, 32GB (4 x 8GB DDR4 2400MT/s) and a Xeon-E: E-2176G(6 cores/12 threads, 3.7GHz, 80W), Nvidia P2000, Intel 535 series 480GB SSD, 32GB (4 x 8GB DDR4 2666 MT/s).

# OPTIMIZATION NOTICE

Optimization Notice: 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.

Notice revision #20110804

