INTEL® XEON® PROCESSOR E3-1500 V5 PRODUCT FAMILY (CODENAMED "SKYLAKE-H" BGA) WITH IRIS PRO GRAPHICS PERFORMANCE

May 2016

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Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors.

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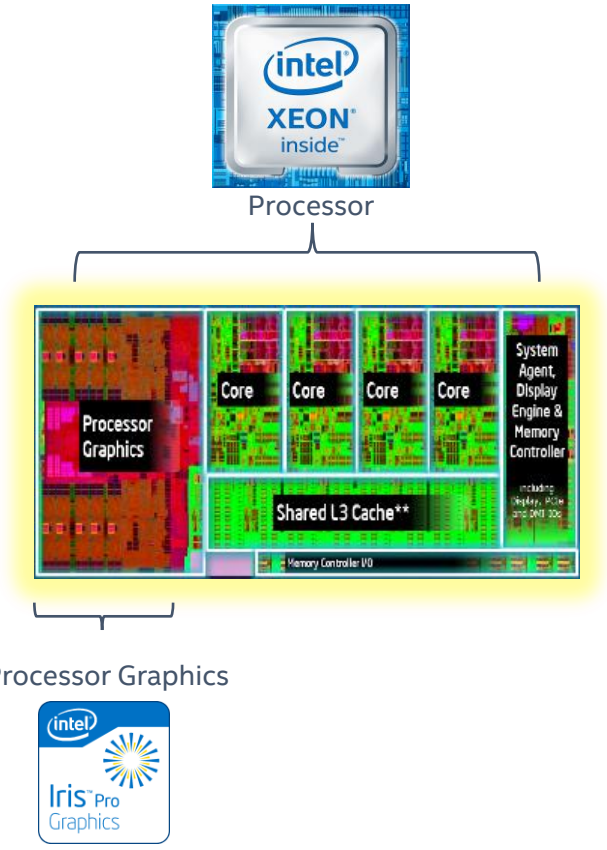
Intel® Advanced Vector Extensions (Intel® AVX)* provides higher throughput to certain processor operations. Due to varying processor power characteristics, utilizing AVX instructions may cause a) some parts to operate at less than the rated frequency and b) some parts with Intel® Turbo Boost Technology 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.

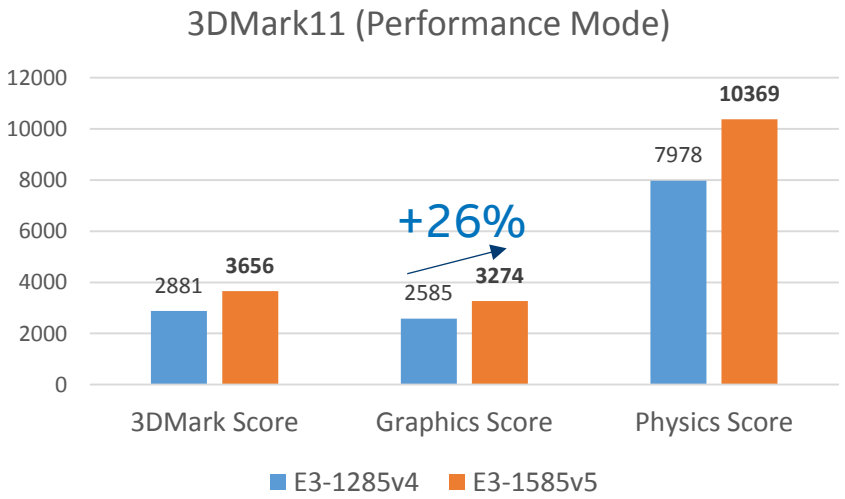
LAUNCHING FIVE PROCESSOR OPTIONS

Performance optimized	Reliability optimized
E3-1585 v5 65W, 4C/GT4e, 8M 3.5/3.9GHz, 0.35/1.15GHz	E3-1578L v5 45W, 4C/GT4e, 8M 2.0/3.4GHz, 0.7/1GHz
E3-1585L v5 45W, 4C/GT4e, 8M 3.0/3.7GHz 0.35/1.15GHz	E3-1558L v5 45W, 4C/GT3e, 8M 1.9/3.3GHz, 0.65/1GHz
E3-1565L v5 35W, 4C/GT4e, 8M 2.5/3.5GHz, 0.35/1.05GHz	**LEGEND:** Model Number TDP, Cores/GPU, L3 Cache Marked/Max Frequencies (CPU, GPU)

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



GRAPHICS PERFORMANCE (E3-1285V4 VS E3-1585V5)



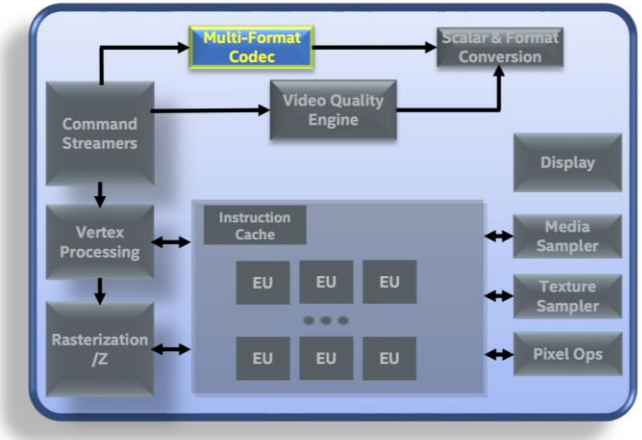
- Increased performance for remote application delivery
- More performance available to complex CAD and content creation application in virtualized environments

26% increase in Graphics Performance vs E3-1285Lv4

3DMark11* benchmark used as proxy to remote graphics relative performance
Benchmark platform configuration: Processor: Intel® Xeon® processor E3-1585Lv5 @ 3.0GHz, Ring @ 3.0GHz and GT @1.15GHz; primary BIOS Version: SKLSE2R1.R00.B104.B01.1511110114; driver: 20.19.15.4323. platform: RVP11 halo fab 2; OS: Windows* 8.1x64 Enterprise, 16 GB memory, 2 DIMMS 2133 MHz, one socket, four cores, Intel®Iris™ Pro Graphics P580, Intel® Hyper-threading Technology enabled, Intel® Virtualization technology enabled.
Intel® Xeon® workstation platform (Intel S1200RP Board) with one Intel Xeon processor E3-1285 v4 (quad-core, 3.5GHz, 6M cache) BIOS S1200RP.86B.03.01.0002.041520151123, Intel HT Technology best configuration, 32GB memory (4x8GB DDR3-1866 ECC UDIMM), Intel Iris™ Pro graphics P6300 with driver 10.18.10.3980, Microsoft Windows 8.1*.

VIDEO TRANSCODING PERFORMANCE: HEVC

Multistream Performance (1xRT=30fps)		Number of Real-time(30fps) streams	Number of Real-time(60fps) streams
1080p-to-1080p	AVC-to-HEVC	15	7
	HEVC-to-HEVC	8	4
4K-to-4K	AVC-to-HEVC	4	2
	HEVC-to-HEVC	2	1



E3-1500 v5 HEVC is fully accelerated targeting 4K60 capability

NEW! Up to TWO Real-time HEVC streams per processor[1]

1 15 real-time HD AVC-HEVC or 4 realtime UHD AVC-HEVC transcode , 8 real-time HD HEVC-HEVC or 2 realtime UHD HEVC-HEVC transcode using Intel MediaSDK (Target usage 7), all content 8-bit 4:2:0.
Benchmark platform configuration: Processor: Intel® Xeon® processor E3-1585Lv5 @ 3.0GHz, Ring @ 3.0GHz and GT @1.15GHz; primary BIOS Version: SKLSE2R1.R00.B104.B01.1511110114;
driver: 20.19.15.4444. platform: RVP11 halo fab 2; OS: Windows* 8.1x64 Enterprise, 16 GB memory, 2 DIMMS 2133 MHz, one socket, four cores, Intel®Iris™ Pro Graphics P580, Intel® Hyper-threading Technology enabled, Intel® Virtualization technology enabled.

VIDEO TRANSCODING RACK LEVEL DENSITY

	Number of simultaneous streams per socket[1]	Number of simultaneous streams/ rack[2]
AVC (1080p30)	18	7290
HEVC (4kp30)	2	810

1 Number of real time threads transcoded simultaneously: 18 on both E3-1285Lv4 and E3-1585Lv5 using 1080p30 20Mbps streams and Intel MediaSDK (Target Usage 7). Note: for AVC, performance is the same as E3-1285v4
Benchmark platform configuration: Processor: Intel® Xeon® processor E3-1585Lv5 @ 3.0GHz, Ring @ 3.0GHz and GT @1.15GHz; primary BIOS Version: SKLSE2R1.R00.B104.B01.1511110114; driver: 20.19.15.4377. platform: RVP11 halo fab 2; OS: Windows* 8.1x64 Enterprise, 16 GB memory, 2 DIMMS 2133 MHz, one socket, four cores, Intel®Iris™ Pro Graphics P580, Intel® Hyper-threading Technology enabled, Intel® Virtualization technology enabled.

2 Rack density based on the HP Moonshot with 45 cartridges. Each cartridge contains 1 Intel® Xeon® E3-1585L v5 for a total of 45 E3-1500 v5 processors per 4.3U chassis . Assuming 2U for top of rack switches, 9 4.3U chassis could fit in each rack, giving 9*45=405 sockets in a 42u rack. E3-1585Lv5 AVC streams=405*18=7290, E3-1585Lv5 HEVC streams=405*2=810