Compare Intel® Products

	Intel® Xeon® Processor D-1541	Intel® Xeon® Processor E3-1241 v3	Intel® Xeon® Processor E5-2620 v4	Intel® Xeon® Processor E5-2640 v4	Intel® Xeon® Processor E5-2630 v4

Essentials

Product Collection	Intel® Xeon® Processor D Family	Intel® Xeon® Processor E3 v3 Family	Intel® Xeon® Processor E5 v4 Family	Intel® Xeon® Processor E5 v4 Family	Intel® Xeon® Processor E5 v4 Family
Vertical Segment	Server	Server	Server	Server	Server
Processor Number	D-1541	E3-1241V3	E5-2620V4	E5-2640V4	E5-2630V4
Status	Launched	Launched	Launched	Launched	Launched
Launch Date	Q4'15	Q2'14	Q1'16	Q1'16	Q1'16
Lithography	14 nm	22 nm	14 nm	14 nm	14 nm
Recommended Customer Price Price	$581.00	$262.00 - $273.00	$417.00 - $422.00	$939.00	$667.00 - $671.00

Performance

# of Cores	8	4	8	10	10
# of Threads	16	8	16	20	20
Processor Base Frequency	2.10 GHz	3.50 GHz	2.10 GHz	2.40 GHz	2.20 GHz
Max Turbo Frequency	2.70 GHz	3.90 GHz	3.00 GHz	3.40 GHz	3.10 GHz
Cache	12 MB	8 MB SmartCache	20 MB SmartCache	25 MB SmartCache	25 MB SmartCache
TDP	45 W	80 W	85 W	90 W	85 W
Bus Speed		5 GT/s DMI2	8 GT/s QPI	8 GT/s QPI	8 GT/s QPI
# of QPI Links		0	2	2	2
VID Voltage Range			0	0	0

Supplemental Information ⌃

Embedded Options Available	No	No	Yes	Yes	No
Datasheet	View now	View now	View now	View now	View now
Conflict Free	Yes	Yes	Yes	Yes	Yes
Product Brief	View now				

Memory Specifications ⌃

Max Memory Size (dependent on memory type)	128 GB	32 GB	1.54 TB	1.54 TB	1.54 TB
Memory Types	DDR4, DDR3	DDR3 and DDR3L 1333/1600 at 1.5V	DDR4 1600/1866/2133	DDR4 1600/1866/2133	DDR4 1600/1866/2133
Max # of Memory Channels	2	2	4	4	4
ECC Memory Supported ‡	Yes	Yes	Yes	Yes	Yes
Max Memory Bandwidth		25.6 GB/s	68.3 GB/s	68.3 GB/s	68.3 GB/s
Physical Address Extensions			46-bit	46-bit	46-bit

Graphics Specifications ⌃

Processor Graphics ‡	None	None	None	None	None

Expansion Options ⌃

Scalability	1S Only	1S Only	2S	2S	2S
PCI Express Revision	2.0/3.0	3.0	3.0	3.0	3.0
PCI Express Configurations ‡	x4 x8 x16	1x16, 2x8, 1x8/2x4	x4, x8, x16	x4, x8, x16	x4, x8, x16
Max # of PCI Express Lanes	32	16	40	40	40

I/O Specifications ⌃

USB Revision	2.0/3.0				
# of USB Ports	8				

‹ Total # of SATA Ports ›	6				
‹ Integrated LAN ›	Yes				
‹ General Purpose IO ›	Yes				
‹ UART ›	Yes				

Networking Specifications ⌃

‹ SFI Interface ›	Yes				
‹ KR Interface ›	Yes				
‹ KR4 Interface ›	No				
‹ KX Interface ›	Yes				
‹ KX4 Interface ›	No				
‹ 100Base-T ›	No				
‹ 1000Base-T ›	Yes				
‹ 10GBase-T ›	Yes				

Package Specifications ⌃

‹ Sockets Supported ›	FCBGA1667	FCLGA1150	FCLGA2011-3	FCLGA2011-3	FCLGA2011-3
‹ Max CPU Configuration ›	1	1	2	2	2
‹ Package Size ›	37.5mm x 37.5mm	37.5mm x 37.5mm	45mm x 52.5mm	45mm x 52.5mm	45mm x 52.5mm
‹ Low Halogen Options Available ›	See MDDS	See MDDS	See MDDS	See MDDS	See MDDS
‹ Thermal Solution Specification ›		PCG 2013D			
‹ T$_{CASE}$ ›			74°C	76°C	74°C

Advanced Technologies ⌃

‹ Intel® Turbo Boost Technology ‡ ›	2.0	2.0	2.0	2.0	2.0
‹ Intel® Hyper-Threading Technology ‡ ›	Yes	Yes	Yes	Yes	Yes
‹ Intel® Virtualization Technology (VT-x) ‡ ›	Yes	Yes	Yes	Yes	Yes

‹ Intel® Virtualization Technology for Directed I/O (VT-d) ‡ ›	Yes	Yes	Yes	Yes	Yes
‹ Intel® VT-x with Extended Page Tables (EPT) ‡ ›	Yes	Yes	Yes	Yes	Yes
‹ Intel® TSX-NI ›	Yes	Yes	Yes	Yes	Yes
‹ Intel® 64 ‡ ›	Yes	Yes	Yes	Yes	Yes
‹ Instruction Set ›	64-bit	64-bit	64-bit	64-bit	64-bit
‹ Instruction Set Extensions ›	AVX 2.0	SSE4.1/4.2, AVX 2.0	AVX 2.0	AVX 2.0	AVX 2.0
‹ Idle States ›	Yes	Yes	Yes	Yes	Yes
‹ Enhanced Intel SpeedStep® Technology ›	Yes	Yes	Yes	Yes	Yes
‹ Thermal Monitoring Technologies ›	Yes	Yes	Yes	Yes	Yes
‹ Intel® vPro™ Technology ‡ ›		Yes	Yes	Yes	Yes
‹ Intel® Fast Memory Access ›		Yes			
‹ Intel® Flex Memory Access ›		Yes	No	No	No
‹ Intel® Identity Protection Technology ‡ ›		Yes	No	No	No
‹ Intel® Stable Image Platform Program (SIPP) ›		Yes			
‹ Intel® Demand Based Switching ›			Yes	Yes	Yes

Security & Reliability ⌃

‹ Intel® AES New Instructions ›	Yes	Yes	Yes	Yes	Yes
‹ Secure Key ›	Yes	Yes	Yes	Yes	Yes
‹ Intel® Trusted Execution Technology ‡ ›	Yes	Yes	Yes	Yes	Yes
‹ Execute Disable Bit ‡ ›	Yes	Yes	Yes	Yes	Yes
‹ OS Guard ›	Yes	Yes	Yes	Yes	Yes
‹ Anti-Theft Technology ›		Yes			

Refer to Datasheet for formal definitions of product properties and features.