Intel®Xeon®E7-4800/8800 v4 Broadwell-EX Platform Guide

Silicon Mechanics Platform Guides provide a high-level overview of server platforms including CPU details and memory population guidelines.

If you have questions about the information in this Platform Guide, please contact us.
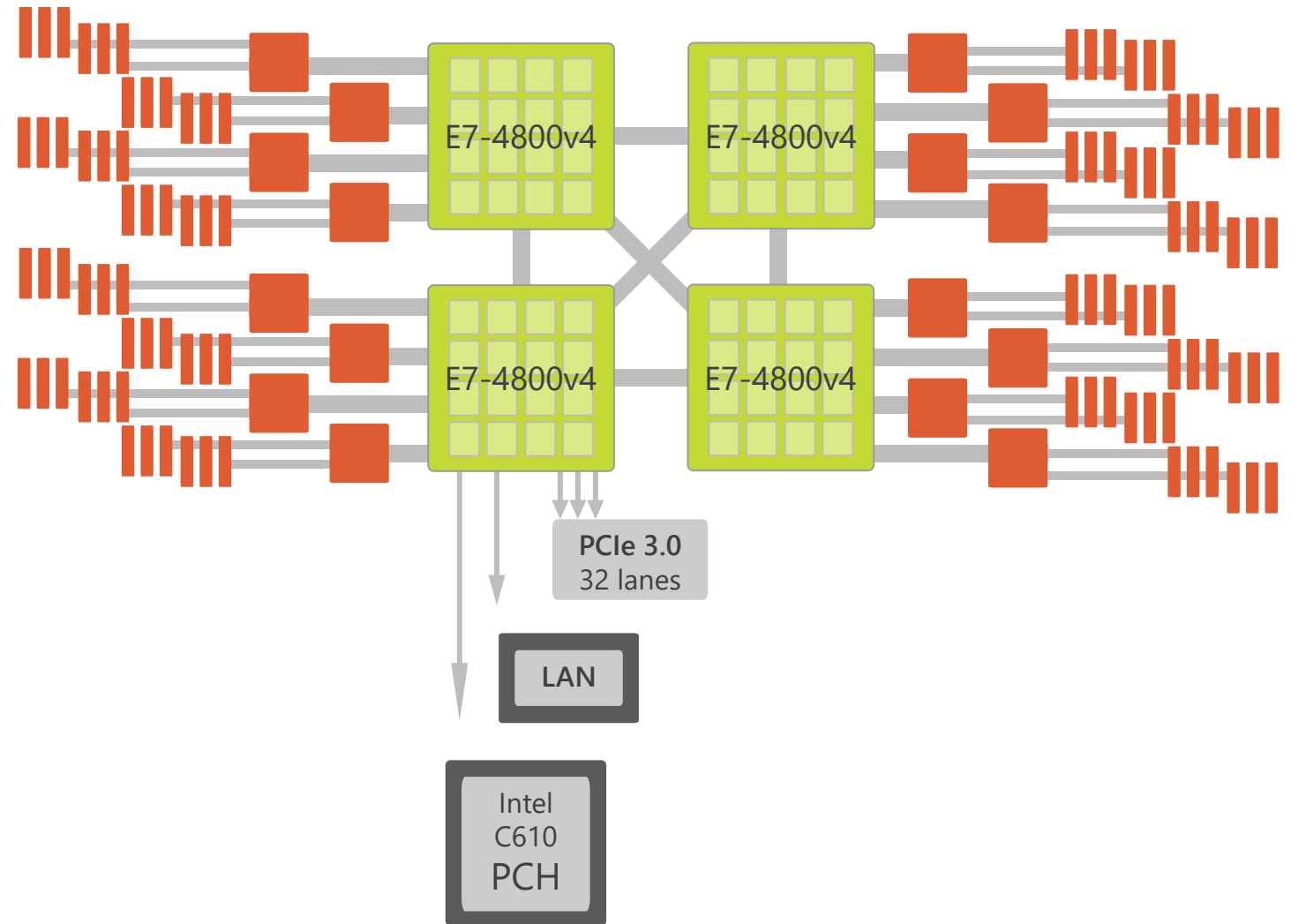
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Intel Xeon E7 Platform Overview
Formerly Known as "Brickland"

E7-4800v4 / 8800v4 CPU (Broadwell-EX)	24 cores Up to 60MB LLC Up to 165W TDP
Memory	4 Scalable Memory Buffers per Socket Up to 24 DIMMs per Socket Up to 6 TB capacity
	DDR3 or DDR4 RDIMMs / LRDIMMs
PCIe	PCIe 3.0 (8, 5, 2.5 GT/s)
	32 x PCIe 3.0 per Socket
LAN	40GbE (Fortville), 10GbE (Sageville)

E7-4800v4 · E7-4800v4 · E7-4800v4 · E7-4800v4

PCIe 3.0
32 lanes

LAN

Intel
C610
PCH

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Comparing E7 v3 and E7 v4 Platforms
Haswell vs Broadwell

Feature	E7 v3 Platform	E7 v4 Platform
Architecture	Haswell	Broadwell
Technology	22 nm	14 nm
TDP	165W	165W
Max Core Count	Up to 18	Up to 24
QPI	3 Links per Socket	3 Links per Socket
Max LL Cache	Up to 45 MB	Up to 60 MB
Memory Channels	8 DDR3 or DDR4 channels	8 DDR3 or DDR4 channels
Max Memory Speed DDR3	1600 MT/s	1600 MT/s
Max Memory Speed DDR4	1600 MT/s	1600 MT/s
Max DIMM Slots / Capacity	96 DIMMs / 6 TB DDR4	96 DIMMs / 6 TB DDR4
PCI	32 lanes PCIe 3.0	32 lanes PCIe 3.0
Chipset	Intel® C602 series (Patsburg PCH)	Intel® C602 series (Patsburg PCH)
Memory Controller	Jordan Creek 2	Jordan Creek 2

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E7-4800v4 / -8800v4 Models

	Name	Speed (GHz)	Cores	TDP (W)	Max DDR4 Mem Speed (MT/s)	HT	Turbo Boost	LLC	TDP
Database	E7-8893v4	3.2	4	140		HT	Y	60MB	140W
	E7-8891v4	2.8	10	165		HT	Y	60MB	165W
HPC	E7-8867v4	2.4	18	165	1600	HT	Y	45MB	165W
Advanced	E7-8890v4	2.2	24	165		HT	Y	60MB	165W
	E7-8880v4	2.2	22	150		HT	Y	55MB	150W
	E7-8870v4	2.1	20	140		HT	Y	50MB	140W
	E7-8860v4	2.2	18	140		HT	Y	45MB	140W
Standard	E7-4850v4	2.1	16	115		HT	Y	40MB	115W
	E7-4830v4	2.0	14	115	1333	HT	Y	35MB	115W
Basic	E7-4820v4	2.0	10	115		HT	n	25MB	115W
	E7-4809v4	2.1	8	115		HT	n	20MB	115W

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Memory Population Guidelines
96-DIMM Mainboards
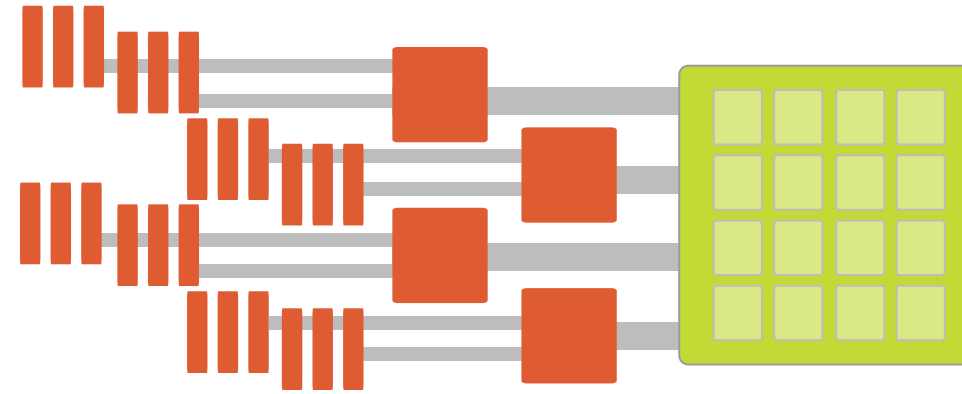
Mainboards with 3 DDR4 DIMMs per Channel
(24 DIMMs / Socket)

	Ranks	Max MT/s, 1.5V or 1.35V DDR4 DIMMs		
		1 DPC	2 DPC	3 DPC
RDIMM	1R or 2R	1600	1600	1600
RDIMM	4R	1600	1600	1333
LRDIMM	4R	1600	1600	1600

Expert included.

Memory Population Guidelines
32-DIMM DDR3 Mainboards
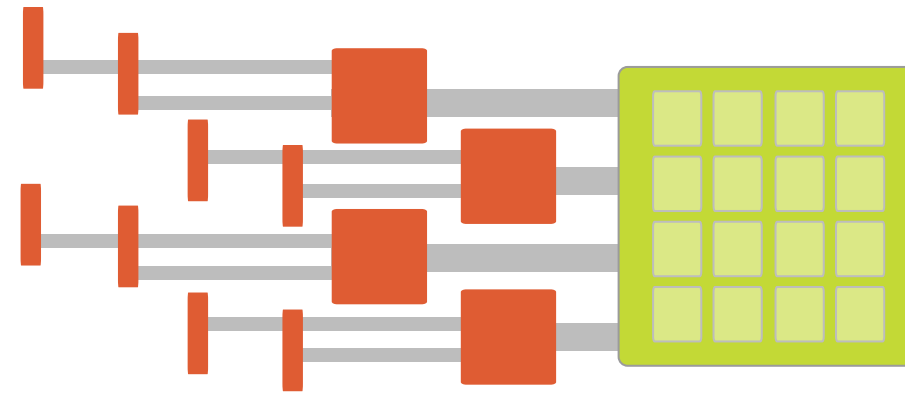
Mainboards with 1 DDR3 DIMM per Channel
(8 DIMMs / Socket)

	Ranks	Max MT/s, 1.5V / 1.35V DDR3 DIMMs	
		1 DPC	2 DPC
RDIMM	1R or 2R	1600 / 1333	1600 / 1333
RDIMM	4R	1066	1066
LRDIMM	4R	1600 / 1333	1600 / 1333

Expert included.

Platforms Based on E7-4800v4 / -8800v4
4 MP Rackform Servers

Server	CPUs	# DIMMs	RAM	Drives	PCIe
R447	4 x E7-4800v3 / 8800v3	32 DDR3 DIMMs	2 TB Max	5 x 3.5-in HS	2 PCIe 3.0 x16, PCIe 3.0 x8
R456.v5.1		96 DDR4 DIMMs	6 TB Max	24 x 2.5-in HS	4 PCIe 3.0 x16, 4 PCIe 3.0 x8

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