

Model	Intel Xeon Scalable processor†	Memory	RAID	Drive bays and drives	LOM	Slots	Power supply	Front VGA	XCC	Rail kit
7X06A0CKSG	1x Gold 6252 24C 150W 2.1G	1x 16GB 2Rx8 2933	930-8i	8x 3.5" SAS/8, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt
7X06A0CLSG	1x Gold 6254 18C 200W 3.1G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	Open	3x PCIe x8, 1x PCIe x16	1x 750W	Opt	Std	Opt

† Processor description: Processor model, number of cores, thermal design power (TDP), core frequency

Models for Japan

Table 10. Models for Japan

Model	Intel Xeon Scalable processor†	Memory	RAID	Drive bays and drives	LOM	Slots	Power supply	Front VGA	XCC	Rail kit
Standard models with a 3-year warranty (machine type 7X06)										
7X06A0KSJP	1x Silver 4214R 12C 100W 2.4G	1x 16GB 1Rx4 2666	Option	Option 16x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0KNJP	1x Silver 4215R 8C 130W 3.2G	1x 16GB 1Rx4 2666	Option	Option 16x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0KPJP	1x Gold 5218R 20C 125W 2.1G	1x 16GB 1Rx4 2666	Option	Option 16x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0KVJP	1x Gold 5220R 24C 150W 2.2G	1x 16GB 1Rx4 2666	Option	Option 24x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06A0KUJP	1x Gold 6226R 16C 150W 2.9G	1x 16GB 1Rx4 2933	Option	Option 24x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06A0CGJP	1x Gold 6230 20C 125W 2.1G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0KTJP	1x Gold 6230R 26C 150W 2.1G	1x 16GB 1Rx4 2933	Option	Option 16x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06A0KRJP	1x Gold 6238R 28C 165W 2.2G	1x 16GB 1Rx4 2933	Option	Option 16x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06A0DVJP	1x Gold 6240 18C 150W 2.6G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06A0KMJP	1x Gold 6240R 24C 165W 2.4G	1x 16GB 1Rx4 2933	Option	Option 24x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06A0DRJP	1x Gold 6242 16C 150W 2.8G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06A0KXJP	1x Gold 6242R 20C 205W 3.1G	1x 16GB 1Rx4 2933	Option	Option 24x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06A0DPJP	1x Gold 6244 8C 150W 3.6G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 1600W	Opt	Adv	Slide
7X06A0DWJP	1x Gold 6244 8C 150W 3.6G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06A0KQJP	1x Gold 6246R 16C 205W 3.4G	1x 16GB 1Rx4 2933	Option	Option 24x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06A0DTJP	1x Gold 6248 20C 150W 2.5G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06A0KWJP	1x Gold 6248R 24C 205W 3.0G	1x 16GB 1Rx4 2933	Option	Option 24x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06A0DUJP	1x Gold 6252 24C 150W 2.1G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 1100W	Opt	Adv	Slide

Model	Intel Xeon Scalable processor†	Memory	RAID	Drive bays and drives	LOM	Slots	Power supply	Front VGA	XCC	Rail kit
7X06A0DSJP	1x Gold 6254 18C 200W 3.1G	1x 16GB 2Rx8 2933	930-8i	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06A0L0JP	1x Gold 6258R 28C 205W 2.7G	1x 16GB 1Rx4 2933	Option	Option 24x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 1100W	Opt	Adv	Slide
TopSeller models with a 3-year warranty (machine type 7X06)										
7X06A0BKJP	1x Bronze 3204 6C 85W 1.9G	1x 16GB 1Rx4 2666	730-8i 2GB	8x 3.5" SAS/8, Open bay	4x1Gb	5x PCIe x8	1x 550W	Opt	Adv	Slide
7X06A0BQJP	1x Bronze 3204 6C 85W 1.9G	1x 16GB 1Rx4 2666	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0KZJP	1x Bronze 3206R 8C 85W 1.9G	1x 16GB 1Rx4 2666	Option	Option 16x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0BPJP	1x Silver 4208 8C 85W 2.1G	1x 16GB 1Rx4 2666	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0BGJP	1x Silver 4210 10C 85W 2.2G	1x 16GB 1Rx4 2666	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0CAJP	1x Silver 4210 10C 85W 2.2G	1x 16GB 1Rx4 2666	930-16i 4GB	12x 3.5" SAS/12, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0KYJP	1x Silver 4210R 10C 100W 2.4G	1x 16GB 1Rx4 2666	Option	Option 16x 2.5", Open bay	4x1Gb	2x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0BFJP	1x Silver 4214 12C 85W 2.2G	1x 16GB 1Rx4 2666	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0BJJP	1x Silver 4215 8C 85W 2.5G	1x 16GB 1Rx4 2666	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0BZJP	1x Silver 4216 16C 100W 2.1G	1x 16GB 1Rx4 2666	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0C2JP	1x Silver 4216 16C 100W 2.1G	1x 16GB 1Rx4 2666	930-16i 4GB	12x 3.5" SAS/12, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0C1JP	1x Gold 5215 10C 85W 2.5G	1x 16GB 1Rx4 2666	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0CVJP	1x Gold 5217 8C 115W 3.0G	1x 16GB 1Rx4 2666	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0CWJP	1x Gold 5218 16C 125W 2.3G	1x 16GB 1Rx4 2666	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0CSJP	1x Gold 5220 18C 125W 2.2G	1x 16GB 1Rx4 2666	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide
7X06A0CFJP	1x Gold 5222 4C 105W 3.8G	1x 16GB 1Rx4 2666	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Opt	Adv	Slide

† Processor description: Processor model, number of cores, thermal design power (TDP), core frequency

Models for Latin American countries (except Brazil)

Table 11. Models with a 3-year warranty for Latin American countries (except Brazil)

Model	Intel Xeon Scalable processor†	Memory	RAID	Drive bays and drives	LOM	Slots	Power supply	Front VGA	XCC	Rail kit
Standard models with a 3-year warranty (machine type 7X06)										
7X06A0H8LA	1x Silver 4210 10C 85W 2.2G	1x 32GB 2933	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Yes	Std	Slide
7X06A0M6LA	1x Silver 4210R 10C 100W 2.4G	1x 16GB 2Rx8 2933	730-8i 1GB	8x 2.5" SAS/16, Open bay	4x1Gb	5x PCIe x8	1x 750W	Yes	Std	Slide
7X06A0M4LA	1x Silver 4214R 12C 100W 2.4G	1x 32GB 2933	730-8i 1GB	8x 2.5" SAS/16, Open bay	4x1Gb	5x PCIe x8	1x 750W	Yes	Std	Slide
7X06A0MBLA	1x Gold 5218R 20C 125W 2.1G	1x 32GB 2933	930-16i 4GB	8x 2.5" SAS/16, Open bay	2x10Gb RJ45	5x PCIe x8	2x 750W	Yes	Ent	Slide
7X06A0HBLA	1x Gold 5220 18C 125W 2.2G	1x 32GB 2933	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 1100W	Yes	Std	Slide
7X06A0MCLA	1x Gold 6230R 26C 150W 2.1G	2x 32GB 2933	930-16i 4GB	16x 2.5" SAS/16, Open bay	4x10Gb RJ45	5x PCIe x8	2x 1100W	Yes	Ent	Slide
7X06A0M9LA	1x Gold 6240R 24C 165W 2.4G	2x 32GB 2933	930-16i 4GB	16x 2.5" SAS/16, Open bay	4x10Gb RJ45	5x PCIe x8	2x 1100W	Yes	Ent	Slide
TopSeller models with a 3-year warranty (machine type 7X06)										
7X06A0H9LA	1x Silver 4214 12C 85W 2.2G	1x 32GB 2933	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Yes	Std	Slide
7X06A0HALA	1x Silver 4216 16C 100W 2.1G	1x 32GB 2933	730-8i 2GB	8x 2.5" SAS/24, Open bay	4x1Gb	5x PCIe x8	1x 750W	Yes	Std	Slide

† Processor description: Processor model, number of cores, thermal design power (TDP), core frequency

Models for USA and Canada

Table 12. Models for USA and Canada

Model	Intel Xeon Scalable processor†	Memory	RAID	Drive bays and drives	LOM	Slots	Power supply	Front VGA	XCC	Rail kit
Standard models with a 3-year warranty (machine type 7X06)										
7X06A0FHNA	1x Silver 4208 8C 85W 2.1G	1x 16GB 2Rx8 2933	Option	Option 24x 2.5", Open bay	Open	2x PCIe x8	1x 750W	Yes	Ent	Slide
7X06A0KLNA	1x Silver 4208 8C 85W 2.1G	1x 16GB 2Rx8 2933	530-8i	8x 3.5" SAS/8, Open bay	Open	2x PCIe x8	1x 750W	Yes	Ent	Slide
7X06A0NDNA	1x Silver 4208 8C 85W 2.1G	1x 32GB 2933	Option	Option 3.5", Open bay	Open	2x PCIe x8	1x 750W	Yes	Ent	Slide
7X06A0NFNA	1x Silver 4208 8C 85W 2.1G	1x 32GB 2933	Option	Option 24x 2.5", Open bay	Open	2x PCIe x8	1x 750W	Yes	Ent	Slide
7X06A0M1NA	1x Silver 4210 10C 85W 2.2G	2x 64GB 2933	530-16i	8x 2.5" Any/24, 2x 240GB PM883+ 3x 3.84TB PM983	4x10Gb SFP+	3x PCIe x8, 1x PCIe x16	2x 750W	Opt	Ent	Slide
7X06A0FENA	1x Silver 4214 12C 85W 2.2G	1x 16GB 2Rx8 2933	Option	Option 24x 2.5", Open bay	Open	2x PCIe x8	1x 750W	Yes	Ent	Slide

Model	Intel Xeon Scalable processor†	Memory	RAID	Drive bays and drives	LOM	Slots	Power supply	Front VGA	XCC	Rail kit
7X06A0NGNA	1x Silver 4214 12C 85W 2.2G	1x 32GB 2933	Option	Option 24x 2.5", Open bay	Open	2x PCIe x8	1x 750W	Yes	Ent	Slide
7X06A0NHNA	2x Silver 4214 12C 85W 2.2G	6x 32GB 2933	930-16i 8GB	12x 3.5" SAS/12, 2x 3.2TB PM1645a 2x 128GB M.2	4x1Gb	3x PCIe x8, 2x PCIe x16	2x 750W	Opt	Ent	Slide
7X06A0PNNA	2x Silver 4214 12C 85W 2.2G	6x 32GB 2933	930-16i 8GB	12x 3.5" SAS/12, 2x 3.2TB PM1645a 2x 128GB M.2	4x1Gb	3x PCIe x8, 2x PCIe x16	2x 750W	Opt	Ent	Slide
7X06A0FKNA	1x Silver 4216 16C 100W 2.1G	1x 32GB 2933	Option	Option 24x 2.5", Open bay	Open	2x PCIe x8	1x 750W	Yes	Ent	Slide
7X06A0N8NA	1x Silver 4216 16C 100W 2.1G	1x 32GB 2933	Option	Option 24x 2.5", Open bay	Open	2x PCIe x8	1x 750W	Yes	Ent	Slide
7X06A0FLNA	1x Gold 5218 16C 125W 2.3G	1x 32GB 2933	Option	Option 24x 2.5", Open bay	Open	2x PCIe x8	1x 750W	Yes	Ent	Slide
7X06A0NANA	1x Gold 5218 16C 125W 2.3G	1x 32GB 2933	Option	Option 24x 2.5", Open bay	Open	2x PCIe x8	1x 750W	Yes	Ent	Slide
7X06100UNA	1x Gold 6208U 16C 150W 2.9G	2x 8GB 2933	Option	Option 24x 2.5", Open bay	2x1Gb	5x PCIe x8	1x 1100W	Opt	Adv	Slide
7X06100SNA	1x Gold 6230 20C 125W 2.1G	2x 8GB 2933	Option	Option 3.5", Open bay	2x1Gb	2x PCIe x8	1x 1100W	Opt	Std	Slide
7X06100TNA	1x Platinum 8253 16C 125W 2.2G	2x 8GB 2933	Option	Option 3.5", Open bay	2x1Gb	5x PCIe x8	1x 1100W	Opt	Adv	Slide

† Processor description: Processor model, number of cores, thermal design power (TDP), core frequency

Processors

The SR650 server supports one or two Intel Xeon Bronze, Silver, Gold, or Platinum processors. The following table lists the specifications of the processors for the SR650 server.

Processor support: Both 1st Gen and 2nd Gen Intel Xeon SP processors are supported. For supported 1st Gen processors, see the [Continued support for 1st Gen Intel Xeon Scalable processors](#) section.

Abbreviations used in the table:

- UPI: Ultra Path Interconnect
- TDP: Thermal Design Power
- HT: Hyper-Threading
- TB: Turbo Boost 2.0
- VT-x: Virtualization Technology
- VT-d: Virtualization Technology for Directed I/O
- SST-PP: Speed Select Technology - Performance Profile
- FMA: Fused-Multiply Add (AVX-512)
- DCPMM: DC Persistent Memory Module
- RAS: Reliability, Availability, and Serviceability
 - Std: Standard RAS
 - Adv: Advanced RAS

Table 13. Processor specifications

CPU model	Cores / threads	Core speed (Base / TB Max)	Cache	Max DDR4 speed	Max memory capacity per socket	UPI speed	TDP	HT	TB	VT-x	VT-d	SST-PP	FMA units	DCPMM	RAS
Intel Xeon Bronze processors															
3204	6 / 6	1.9 / 1.9 GHz	8.25 MB	2133 MHz	1 TB	9.6 GT/s	85 W	N	N	Y	Y	N	1	N	Std
3206R	8 / 8	1.9 / 1.9 GHz	11 MB	2133 MHz	1 TB	9.6 GT/s	85 W	N	N	Y	Y	N	1	N	Std
Intel Xeon Silver processors															
4208	8 / 16	2.1 / 3.2 GHz	11 MB	2400 MHz	1 TB	9.6 GT/s	85 W	Y	Y	Y	Y	N	1	N	Std
4209T	8 / 16	2.2 / 3.2 GHz	11 MB	2400 MHz	1 TB	9.6 GT/s	70 W	Y	Y	Y	Y	N	1	N	Std
4210	10 / 20	2.2 / 3.2 GHz	13.75 MB	2400 MHz	1 TB	9.6 GT/s	85 W	Y	Y	Y	Y	N	1	N	Std
4210R	10 / 20	2.4 / 3.2 GHz	13.75 MB	2400 MHz	1 TB	9.6 GT/s	100 W	Y	Y	Y	Y	N	1	N	Std
4210T	10 / 20	2.3 / 3.2 GHz	13.75 MB	2400 MHz	1 TB	9.6 GT/s	95 W	Y	Y	Y	Y	N	1	N	Std
4214	12 / 24	2.2 / 3.2 GHz	16.5 MB	2400 MHz	1 TB	9.6 GT/s	85 W	Y	Y	Y	Y	N	1	N	Std
4214R	12 / 24	2.4 / 3.5 GHz	16.5 MB	2400 MHz	1 TB	9.6 GT/s	100 W	Y	Y	Y	Y	N	1	N	Std
4214Y	12 / 24	2.2 / 3.2 GHz	16.5 MB	2400 MHz	1 TB	9.6 GT/s	85 W	Y	Y	Y	Y	Y	1	N	Std
	10 / 20	2.3 / 3.2 GHz													
	8 / 16	2.4 / 3.2 GHz													
4215	8 / 16	2.5 / 3.5 GHz	11 MB	2400 MHz	1 TB	9.6 GT/s	85 W	Y	Y	Y	Y	N	1	Y	Std
4215R	8 / 16	3.2 / 4.0 GHz	11 MB	2400 MHz	1 TB	9.6 GT/s	130 W	Y	Y	Y	Y	N	1	Y	Std
4216	16 / 32	2.1 / 3.2 GHz	22 MB	2400 MHz	1 TB	9.6 GT/s	100 W	Y	Y	Y	Y	N	1	N	Std
Intel Xeon Gold processors															
5215	10 / 20	2.5 / 3.4 GHz	13.75 MB	2666 MHz	1 TB	10.4 GT/s	85 W	Y	Y	Y	Y	N	1	Y	Adv

CPU model	Cores / threads	Core speed (Base / TB Max)	Cache	Max DDR4 speed	Max memory capacity per socket	UPI speed	TDP	HT	TB	VT-x	VT-d	SST-PP	FMA units	DCPMM	RAS
5215L	10 / 20	2.5 / 3.4 GHz	13.75 MB	2666 MHz	4.5 TB	10.4 GT/s	85 W	Y	Y	Y	Y	N	1	Y	Adv
5217	8 / 16	3.0 / 3.7 GHz	11 MB	2666 MHz	1 TB	10.4 GT/s	115 W	Y	Y	Y	Y	N	1	Y	Adv
5218	16 / 32	2.3 / 3.9 GHz	22 MB	2666 MHz	1 TB	10.4 GT/s	125 W	Y	Y	Y	Y	N	1	Y	Adv
5218B	16 / 32	2.3 / 3.9 GHz	22 MB	2666 MHz	1 TB	10.4 GT/s	125 W	Y	Y	Y	Y	N	1	Y	Adv
5218R	20 / 40	2.1 / 4.0 GHz	27.5 MB	2666 MHz	1 TB	10.4 GT/s	125 W	Y	Y	Y	Y	N	1	Y	Adv
5218N	16 / 32	2.3 / 3.7 GHz	22 MB	2666 MHz	1 TB	10.4 GT/s	110 W	Y	Y	Y	Y	N	1	Y	Adv
5218T	16 / 32	2.1 / 3.8 GHz	22 MB	2666 MHz	1 TB	10.4 GT/s	105 W	Y	Y	Y	Y	N	1	Y	Adv
5220	18 / 36	2.2 / 3.9 GHz	24.75 MB	2666 MHz	1 TB	10.4 GT/s	125 W	Y	Y	Y	Y	N	1	Y	Adv
5220R	24 / 48	2.2 / 4.0 GHz	35.75 MB	2666 MHz	1 TB	10.4 GT/s	150 W	Y	Y	Y	Y	N	1	Y	Adv
5220S	18 / 36	2.7 / 3.9 GHz	24.75 MB	2666 MHz	1 TB	10.4 GT/s	125 W	Y	Y	Y	Y	N	1	Y	Adv
5220T	18 / 36	1.9 / 3.9 GHz	24.75 MB	2666 MHz	1 TB	10.4 GT/s	105 W	Y	Y	Y	Y	N	1	Y	Adv
5222	4 / 8	3.8 / 3.9 GHz	16.5 MB	2933 MHz	1 TB	10.4 GT/s	105 W	Y	Y	Y	Y	N	2	Y	Adv
6208U	16 / 32	2.9 / 3.9 GHz	22 MB	2933 MHz	1 TB	No UPI	150 W	Y	Y	Y	Y	N	2	Y	Adv
6222V	20 / 40	1.8 / 3.6 GHz	27.5 MB	2400 MHz	1 TB	10.4 GT/s	115 W	Y	Y	Y	Y	N	2	Y	Adv
6226	12 / 24	2.7 / 3.7 GHz	19.25 MB	2933 MHz	1 TB	10.4 GT/s	125 W	Y	Y	Y	Y	N	2	Y	Adv
6226R	16 / 32	2.9 / 3.9 GHz	22 MB	2933 MHz	1 TB	10.4 GT/s	150 W	Y	Y	Y	Y	N	2	Y	Adv
6230	20 / 40	2.1 / 3.9 GHz	27.5 MB	2933 MHz	1 TB	10.4 GT/s	125 W	Y	Y	Y	Y	N	2	Y	Adv
6230N	20 / 40	2.3 / 3.9 GHz	27.5 MB	2933 MHz	1 TB	10.4 GT/s	125 W	Y	Y	Y	Y	N	2	Y	Adv
6230R	26 / 52	2.1 / 4.0 GHz	35.75 MB	2933 MHz	1 TB	10.4 GT/s	150 W	Y	Y	Y	Y	N	2	Y	Adv
6230T	20 / 40	2.1 / 3.9 GHz	27.5 MB	2933 MHz	1 TB	10.4 GT/s	125 W	Y	Y	Y	Y	N	2	Y	Adv
6234	8 / 16	3.3 / 4.0 GHz	24.75 MB	2933 MHz	1 TB	10.4 GT/s	130 W	Y	Y	Y	Y	N	2	Y	Adv
6238	22 / 44	2.1 / 3.7 GHz	30.25 MB	2933 MHz	1 TB	10.4 GT/s	140 W	Y	Y	Y	Y	N	2	Y	Adv
6238L	22 / 44	2.1 / 3.7 GHz	30.25 MB	2933 MHz	4.5 TB	10.4 GT/s	140 W	Y	Y	Y	Y	N	2	Y	Adv
6238R	28 / 56	2.2 / 4.0 GHz	38.5 MB	2933 MHz	1 TB	10.4 GT/s	165 W	Y	Y	Y	Y	N	2	Y	Adv
6238T	22 / 44	1.9 / 3.7 GHz	30.25 MB	2933 MHz	1 TB	10.4 GT/s	125 W	Y	Y	Y	Y	N	2	Y	Adv
6240	18 / 36	2.6 / 3.9 GHz	24.75 MB	2933 MHz	1 TB	10.4 GT/s	150 W	Y	Y	Y	Y	N	2	Y	Adv
6240L	18 / 36	2.6 / 3.9 GHz	24.75 MB	2933 MHz	4.5 TB	10.4 GT/s	150 W	Y	Y	Y	Y	N	2	Y	Adv
6240R	24 / 48	2.4 / 4.0 GHz	35.75 MB	2933 MHz	1 TB	10.4 GT/s	165 W	Y	Y	Y	Y	N	2	Y	Adv
6240Y	18 / 36	2.6 / 3.9 GHz	24.75 MB	2933 MHz	1 TB	10.4 GT/s	150 W	Y	Y	Y	Y	Y	2	Y	Adv
	14 / 28	2.8 / 3.9 GHz													
	8 / 16	3.1 / 3.9 GHz													
6242	16 / 32	2.8 / 3.9 GHz	22 MB	2933 MHz	1 TB	10.4 GT/s	150 W	Y	Y	Y	Y	N	2	Y	Adv
6242R	20 / 40	3.1 / 4.1 GHz	35.75 MB	2933 MHz	1 TB	10.4 GT/s	205 W	Y	Y	Y	Y	N	2	Y	Adv

CPU model	Cores / threads	Core speed (Base / TB Max)	Cache	Max DDR4 speed	Max memory capacity per socket	UPI speed	TDP	HT	TB	VT-x	VT-d	SST-PP	FMA units	DCPMM	RAS
6244	8 / 16	3.6 / 4.4 GHz	24.75 MB	2933 MHz	1 TB	10.4 GT/s	150 W	Y	Y	Y	Y	N	2	Y	Adv
6246	12 / 24	3.3 / 4.2 GHz	24.75 MB	2933 MHz	1 TB	10.4 GT/s	165 W	Y	Y	Y	Y	N	2	Y	Adv
6246R	16 / 32	3.4 / 4.1 GHz	35.75 MB	2933 MHz	1 TB	10.4 GT/s	205 W	Y	Y	Y	Y	N	2	Y	Adv
6248	20 / 40	2.5 / 3.9 GHz	27.5 MB	2933 MHz	1 TB	10.4 GT/s	150 W	Y	Y	Y	Y	N	2	Y	Adv
6248R	24 / 48	3.0 / 4.0 GHz	35.75 MB	2933 MHz	1 TB	10.4 GT/s	205 W	Y	Y	Y	Y	N	2	Y	Adv
6250	8 / 16	3.9 / 4.5 GHz	35.75 MB	2933 MHz	1 TB	10.4 GT/s	185 W	Y	Y	Y	Y	N	2	Y	Adv
6252	24 / 48	2.1 / 3.7 GHz	35.75 MB	2933 MHz	1 TB	10.4 GT/s	150 W	Y	Y	Y	Y	N	2	Y	Adv
6252N	24 / 48	2.3 / 3.6 GHz	35.75 MB	2933 MHz	1 TB	10.4 GT/s	150 W	Y	Y	Y	Y	N	2	Y	Adv
6254	18 / 36	3.1 / 4.0 GHz	24.75 MB	2933 MHz	1 TB	10.4 GT/s	200 W	Y	Y	Y	Y	N	2	Y	Adv
6256	12 / 24	3.6 / 4.5 GHz	33 MB	2933 MHz	1 TB	10.4 GT/s	205 W	Y	Y	Y	Y	N	2	Y	Adv
6258R	28 / 56	2.7 / 4.0 GHz	38.5 MB	2933 MHz	1 TB	10.4 GT/s	205 W	Y	Y	Y	Y	N	2	Y	Adv
6262V	24 / 48	1.9 / 3.6 GHz	33 MB	2400 MHz	1 TB	10.4 GT/s	135 W	Y	Y	Y	Y	N	2	Y	Adv
Intel Xeon Platinum processors															
8253	16 / 32	2.2 / 3.0 GHz	22 MB	2933 MHz	1 TB	10.4 GT/s	125 W	Y	Y	Y	Y	N	2	Y	Adv
8256	4 / 8	3.8 / 3.9 GHz	16.5 MB	2933 MHz	1 TB	10.4 GT/s	105 W	Y	Y	Y	Y	N	2	Y	Adv
8260	24 / 48	2.4 / 3.9 GHz	35.75 MB	2933 MHz	1 TB	10.4 GT/s	165 W	Y	Y	Y	Y	N	2	Y	Adv
8260L	24 / 48	2.4 / 3.9 GHz	35.75 MB	2933 MHz	4.5 TB	10.4 GT/s	165 W	Y	Y	Y	Y	N	2	Y	Adv
8260Y	24 / 48	2.4 / 3.9 GHz	35.75 MB	2933 MHz	1 TB	10.4 GT/s	165 W	Y	Y	Y	Y	Y	2	Y	Adv
	20 / 40	2.5 / 3.9 GHz													
	16 / 32	2.7 / 3.9 GHz													
8268	24 / 48	2.9 / 3.9 GHz	35.75 MB	2933 MHz	1 TB	10.4 GT/s	205 W	Y	Y	Y	Y	N	2	Y	Adv
8270	26 / 52	2.7 / 4.0 GHz	35.75 MB	2933 MHz	1 TB	10.4 GT/s	205 W	Y	Y	Y	Y	N	2	Y	Adv
8276	28 / 56	2.2 / 4.0 GHz	38.5 MB	2933 MHz	1 TB	10.4 GT/s	165 W	Y	Y	Y	Y	N	2	Y	Adv
8276L	28 / 56	2.2 / 4.0 GHz	38.5 MB	2933 MHz	4.5 TB	10.4 GT/s	165 W	Y	Y	Y	Y	N	2	Y	Adv
8280	28 / 56	2.7 / 4.0 GHz	38.5 MB	2933 MHz	1 TB	10.4 GT/s	205 W	Y	Y	Y	Y	N	2	Y	Adv
8280L	28 / 56	2.7 / 4.0 GHz	38.5 MB	2933 MHz	4.5 TB	10.4 GT/s	205 W	Y	Y	Y	Y	N	2	Y	Adv

Configuration notes:

- The Intel Xeon Gold 5218 and 5218B processors have similar specifications; however, they use different silicon designs and cannot be mixed in the same system.
- Processors with a U suffix are only supported in single-processor configurations. This limits the PCIe slots that can be used.
- The processors that support SST-PP offer three distinct operating points that are defined by a core count with a base speed associated with that core count. The operating point is static, it is selected during the boot process and cannot be changed at runtime.

For the SR650 server models that come standard with one processor, the second processor can be ordered, if required (see the following table for ordering information). The second processor must be of the same model as the first processor. The second processor option includes a processor and a heatsink; an additional system fan is not included and needs to be purchased with the second processor (see [Cooling](#) for details).

Table 14. Processor options

Part number	Feature*	Description
Intel Xeon Bronze processors		
4XG7A37938	B4HU	SR550/SR590/SR650 Intel Xeon Bronze 3204 6C 85W 1.9GHz Processor w/o FAN
4XG7A37983	B7N3	SR550/SR590/SR650 Intel Xeon Bronze 3206R 8C 85W 1.9GHz Processor w/o FAN
Intel Xeon Silver processors		
4XG7A37935	B4HT	SR550/SR590/SR650 Intel Xeon Silver 4208 8C 85W 2.1GHz Processor w/o FAN
4XG7A37944	B4P4	SR550/SR590/SR650 Intel Xeon Silver 4209T 8C 70W 2.2GHz Processor w/o FAN
4XG7A37932	B4HS	SR550/SR590/SR650 Intel Xeon Silver 4210 10C 85W 2.2GHz Processor w/o FAN
4XG7A37981	B7N5	SR550/SR590/SR650 Intel Xeon Silver 4210R 10C 100W 2.4GHz Processor w/o FAN
4XG7A63276	BAZT	SR650 Intel Xeon Silver 4210T 10C 95W 2.3GHz Processor w/o FAN
4XG7A37929	B4HR	SR550/SR590/SR650 Intel Xeon Silver 4214 12C 85W 2.2GHz Processor w/o FAN
4XG7A37980	B7N6	SR550/SR590/SR650 Intel Xeon Silver 4214R 12C 100W 2.4GHz Processor w/o FAN
4XG7A37941	B4NW	SR550/SR590/SR650 Intel Xeon Silver 4214Y 12/10/8C 85W 2.2GHz Processor w/o FAN
4XG7A37926	B4HQ	SR550/SR590/SR650 Intel Xeon Silver 4215 8C 85W 2.5GHz Processor w/o FAN
4XG7A63274	BAZU	SR590/SR650 Intel Xeon Silver 4215R 8C 130W 3.2GHz Processor w/o FAN
4XG7A37923	B4HP	SR550/SR590/SR650 Intel Xeon Silver 4216 16C 100W 2.1GHz Processor w/o FAN
Intel Xeon Gold processors		
4XG7A37916	B4HN	SR550/SR590/SR650 Intel Xeon Gold 5215 10C 85W 2.5GHz Processor w/o FAN
4XG7A37910	B4P9	SR550/SR590/SR650 Intel Xeon Gold 5215L 10C 85W 2.5GHz Processor w/o FAN
4XG7A37919	B4HM	SR550/SR590/SR650 Intel Xeon Gold 5217 8C 115W 3.0GHz Processor w/o FAN
4XG7A37895	B4HL	SR550/SR590/SR650 Intel Xeon Gold 5218 16C 125W 2.3GHz Processor w/o FAN
4XG7A37958	B6BS	SR550/SR590/SR650 Intel Xeon Gold 5218B 16C 125W 2.3GHz Processor w/o FAN
4XG7A63272	BAZS	SR550/SR590/SR650 Intel Xeon Gold 5218R 20C 125W 2.1GHz Processor w/o FAN
4XG7A37955	B5S0	SR650 Intel Xeon Gold 5218N 16C 110W 2.3GHz Processor Option Kit w/o FAN
4XG7A38016	B4P3	SR550/SR590/SR650 Intel Xeon Gold 5218T 16C 105W 2.1GHz Processor w/o FAN
4XG7A37892	B4HK	SR550/SR590/SR650 Intel Xeon Gold 5220 18C 125W 2.2GHz Processor w/o FAN
4XG7A37974	B7N9	SR590/SR650 Intel Xeon Gold 5220R 24C 150W 2.2GHz Processor w/o FAN
4XG7A38019	B6CW	SR550/SR590/SR650 Intel Xeon Gold 5220S 18C 125W 2.7GHz Processor w/o FAN
4XG7A38005	B6CQ	SR550/SR590/SR650 Intel Xeon Gold 5220T 18C 105W 1.9GHz Processor w/o FAN

Part number	Feature*	Description
4XG7A37951	B5S1	SR550/SR590/SR650 Intel Xeon Gold 5222 4C 105W 3.8GHz Processor w/o FAN
None**	BAZV	Intel Xeon Gold 6208U 16C 150W 2.9GHz Processor
4XG7A38023	B6CV	SR550/SR590/SR650 Intel Xeon Gold 6222V 20C 115W 1.8GHz Processor w/o FAN
4XG7A38021	B6CL	SR550/SR590/SR650 Intel Xeon Gold 6226 12C 125W 2.7GHz Processor w/o FAN
4XG7A38082	BAZW	SR590/SR650 Intel Xeon Gold 6226R 16C 150W 2.9GHz Processor w/o FAN
4XG7A37889	B4HJ	SR550/SR590/SR650 Intel Xeon Gold 6230 20C 125W 2.1GHz Processor w/o FAN
4XG7A38028	B5RY	SR550/SR590/SR650 Intel Xeon Gold 6230N 20C 125W 2.3GHz Processor w/o FAN
4XG7A38081	BAZX	SR590/SR650 Intel Xeon Gold 6230R 26C 150W 2.1GHz Processor w/o FAN
4XG7A38006	B6CP	SR550/SR590/SR650 Intel Xeon Gold 6230T 20C 125W 2.1GHz Processor w/o FAN
4XG7A38001	B6CK	SR590/SR650 Intel Xeon Gold 6234 8C 130W 3.3GHz Processor w/o FAN
4XG7A38008	B6CJ	SR590/SR650 Intel Xeon Gold 6238 22C 140W 2.1GHz Processor w/o FAN
4XG7A38003	B6CR	SR590/SR650 Intel Xeon Gold 6238L 22C 140W 2.1GHz Processor w/o FAN
4XG7A38080	BAZL	SR650 Intel Xeon Gold 6238R 28C 165W 2.2GHz Processor w/o FAN
4XG7A37906	B4P2	SR550/SR590/SR650 Intel Xeon Gold 6238T 22C 125W 1.9GHz Processor w/o FAN
4XG7A15895	B4HH	SR650 Intel Xeon Gold 6240 18C 150W 2.6GHz Processor w/o FAN
4XG7A38015	B6CS	SR590/SR650 Intel Xeon Gold 6240L 18C 150W 2.6GHz Processor w/o FAN
4XG7A38079	BAZM	SR650 Intel Xeon Gold 6240R 24C 165W 2.4GHz Processor w/o FAN
4XG7A37903	B4NV	SR590/SR650 Intel Xeon Gold 6240Y 18/14/8C 150W 2.6GHz Processor w/o FAN
4XG7A37886	B4HG	SR590/SR650 Intel Xeon Gold 6242 16C 150W 2.8GHz Processor w/o FAN
4XG7A38078	BAZN	SR650 Intel Xeon Gold 6242R 20C 205W 3.1GHz Processor w/o FAN
4XG7A15874	B4HF	SR590/SR650 Intel Xeon Gold 6244 8C 150W 3.6GHz Processor w/o FAN
4XG7A37963	B6PD	SR650 Intel Xeon Gold 6246 12C 165W 3.3GHz Processor Option Kit w/o FAN
4XG7A38077	BAZP	SR650 Intel Xeon Gold 6246R 16C 205W 3.4GHz Processor w/o FAN
4XG7A15892	B4HE	SR650 Intel Xeon Gold 6248 20C 150W 2.5GHz Processor w/o FAN
4XG7A38076	BAZQ	SR650 Intel Xeon Gold 6248R 24C 205W 3.0GHz Processor w/o FAN
4XG7A38075	B96C	SR650 Intel Xeon Gold 6250 8C 185W 3.9GHz Processor w/o FAN
4XG7A15889	B4HC	SR650 Intel Xeon Gold 6252 24C 150W 2.1GHz Processor w/o FAN
4XG7A38011	B6CT	SR590/SR650 Intel Xeon Gold 6252N 24C 150W 2.3GHz Processor w/o FAN
4XG7A15872	B4HD	SR650 Intel Xeon Gold 6254 18C 200W 3.1GHz Processor w/o FAN
4XG7A38074	B96D	SR650 Intel Xeon Gold 6256 12C 205W 3.6GHz Processor w/o FAN
4XG7A38073	BAZR	SR650 Intel Xeon Gold 6258R 28C 205W 2.7GHz Processor w/o FAN
4XG7A38010	B6CU	SR590/SR650 Intel Xeon Gold 6262V 24C 135W 1.9GHz Processor w/o FAN
Intel Xeon Platinum processors		
4XG7A37898	B5RZ	SR550/SR590/SR650 Intel Xeon Platinum 8253 16C 125W 2.2GHz Processor w/o FAN
4XG7A37947	B5S2	SR550/SR590/SR650 Intel Xeon Platinum 8256 4C 105W 3.8GHz Processor w/o FAN
4XG7A15887	B4HB	SR650 Intel Xeon Platinum 8260 24C 165W 2.4GHz Processor w/o FAN
4XG7A15883	B4P7	SR650 Intel Xeon Platinum 8260L 24C 165W 2.4GHz Processor w/o FAN
4XG7A37901	B4NU	SR650 Intel Xeon Platinum 8260Y 24/20/16C 165W 2.4GHz Processor w/o FAN
4XG7A15870	B4HA	SR650 Intel Xeon Platinum 8268 24C 205W 2.9GHz Processor w/o FAN
4XG7A15868	B4H9	SR650 Intel Xeon Platinum 8270 26C 205W 2.7GHz Processor w/o FAN
4XG7A15881	B4H8	SR650 Intel Xeon Platinum 8276 28C 165W 2.2GHz Processor w/o FAN

Part number	Feature*	Description
4XG7A15877	B4P6	SR650 Intel Xeon Platinum 8276L 28C 165W 2.2GHz Processor w/o FAN
4XG7A15866	B4H7	SR650 Intel Xeon Platinum 8280 28C 205W 2.7GHz Processor w/o FAN
4XG7A15862	B4P5	SR650 Intel Xeon Platinum 8280L 28C 205W 2.7GHz Processor w/o FAN

* For CTO configurations, the feature code represents a processor, and fans and heatsinks are derived by the configuration tool.

** Factory-installed only; no field upgrade. Supported in the single-processor configurations only.

Configuration notes:

- Processors with 200 W or 205 W TDP, or Gold 6230N, 6240Y, 6244, or 6250 processors are supported in the following hardware configurations and ambient temperature requirements:
 - 24x 2.5" chassis.
 - Ambient temperature and drive bay configurations:
 - Up to 35 °C (95 °F): 8x 2.5" SAS/SATA drive bays (drive backplane in the middle).
 - Up to 30 °C (86 °F):
 - 4x 2.5" SAS/SATA and 4x 2.5" AnyBay (up to 4 NVMe SSDs).
 - 8x 2.5" SAS/SATA and 8x 2.5" AnyBay (up to 8 NVMe SSDs).

Note: Gold 6242R, 6246R, 6248R, 6250, 6256, and 6258R processors are supported only at the ambient temperature of up to 30 °C (86 °F) and only with 8x 2.5" SAS/SATA drive bays (drive backplane in the middle).

- No rear HDD kit installed.
- No PCIe flash adapters installed.
- No GPU adapters installed, or up to four T4 GPU adapters installed.
- The server performance might be impacted in case of a system fan failure.
- Gold 6230T, 6246, or 6252N processors are supported in the following hardware configurations:
 - 8x 3.5" SAS/SATA drive bays.
 - 8x 2.5" SAS/SATA drive bays.
 - 4x 2.5" SAS/SATA and 4x 2.5" AnyBay drive bays.

Continued support for 1st Gen Intel Xeon Scalable processors

The SR650 also continues to support the 1st Gen Intel Xeon Scalable processors (formerly codenamed "Skylake") listed in the following table.

Table 15. Long-life 1st Gen Intel Xeon Scalable processors

Part number	Feature code	Description
7XG7A05570	AWEH	ThinkSystem SR650 Intel Xeon Bronze 3106 8C 85W 1.7GHz Processor Option Kit
7XG7A05574	AWET	ThinkSystem SR650 Intel Xeon Silver 4109T 8C 70W 2.0GHz Processor Option Kit
7XG7A05575	AWEE	ThinkSystem SR650 Intel Xeon Silver 4110 8C 85W 2.1GHz Processor Option Kit
7XG7A05579	AWES	ThinkSystem SR650 Intel Xeon Silver 4114T 10C 85W 2.2GHz Processor Option Kit
7XG7A05576	AWER	ThinkSystem SR650 Intel Xeon Silver 4116 12C 85W 2.1GHz Processor Option Kit
7XG7A05573	AWEA	ThinkSystem SR650 Intel Xeon Silver 4116T 12C 85W 2.1GHz Processor Option Kit
7XG7A05596	No CTO*	ThinkSystem SR650 Intel Xeon Gold 5115 10C 85W 2.4GHz Processor Option Kit
7XG7A05580	AWEP	ThinkSystem SR650 Intel Xeon Gold 5118 12C 105W 2.3GHz Processor Option Kit
7XG7A05581	AWEQ	ThinkSystem SR650 Intel Xeon Gold 5119T 14C 85W 1.9GHz Processor Option Kit
7XG7A05582	AWE8	ThinkSystem SR650 Intel Xeon Gold 5120T 14C 105W 2.2GHz Processor Option Kit
7XG7A05590	AWEL	ThinkSystem SR650 Intel Xeon Gold 6126 12C 125W 2.6GHz Processor Option Kit
7XG7A05589	AWE5	ThinkSystem SR650 Intel Xeon Gold 6126T 12C 125W 2.6GHz Processor Option Kit

Part number	Feature code	Description
7XG7A05587	AWEN	ThinkSystem SR650 Intel Xeon Gold 6130 16C 125W 2.1GHz Processor Option Kit
7XG7A05586	AWE4	ThinkSystem SR650 Intel Xeon Gold 6130T 16C 125W 2.1GHz Processor Option Kit
7XG7A05605	No CTO*	ThinkSystem SR650 Intel Xeon Gold 6134 8C 130W 3.2GHz Processor Option Kit
7XG7A05585	AWDZ	ThinkSystem SR650 Intel Xeon Gold 6138 20C 125W 2.0GHz Processor Option Kit
7XG7A05584	AWEM	ThinkSystem SR650 Intel Xeon Gold 6138T 20C 125W 2.0GHz Processor Option Kit
7XG7A05601	No CTO*	ThinkSystem SR650 Intel Xeon Gold 6142 16C 150W 2.6GHz Processor Option Kit
7XG7A05600	No CTO*	ThinkSystem SR650 Intel Xeon Gold 6144 8C 150W 3.5GHz Processor Option Kit
7XG7A05599	No CTO*	ThinkSystem SR650 Intel Xeon Gold 6146 12C 165W 3.2GHz Processor Option Kit
7XG7A05597	No CTO*	ThinkSystem SR650 Intel Xeon Gold 6150 18C 165W 2.7GHz Processor Option Kit
7XG7A05593	No CTO*	ThinkSystem SR650 Intel Xeon Platinum 8153 16C 125W 2.0GHz Processor Option Kit
7XG7A05592	No CTO*	ThinkSystem SR650 Intel Xeon Platinum 8156 4C 105W 3.6GHz Processor Option Kit
7XG7A05617	No CTO*	ThinkSystem SR650 Intel Xeon Platinum 8158 12C 150W 3.0GHz Processor Option Kit
7XG7A05616	No CTO*	ThinkSystem SR650 Intel Xeon Platinum 8160 24C 150W 2.1GHz Processor Option Kit
7XG7A05614	AWEK	ThinkSystem SR650 Intel Xeon Platinum 8160T 24C 150W 2.1GHz Processor Option Kit
7XG7A05610	No CTO*	ThinkSystem SR650 Intel Xeon Platinum 8176 28C 165W 2.1GHz Processor Option Kit
7XG7A05607	No CTO*	ThinkSystem SR650 Intel Xeon Platinum 8180M 28C 205W 2.5GHz Processor Option Kit

* Only available as a field upgrade for existing customers. Not available in CTO (configure to order) configurations.

For specifications of these processors, see the Intel Xeon Scalable Processor Reference for Lenovo ThinkSystem Servers:

<https://lenovopress.com/lp1262-intel-xeon-sp-processor-reference#term=SKL>

Configuration note for 1st Gen processors: If processors with 200 W or 205 W TDP are used, or if Gold 6126T, 6144, or 6146, or Platinum 8160T processors are used, the following conditions must be met:

- 24x 2.5" chassis only.
- Ambient temperature and drive bay configurations:
 - Up to 35 °C (95 °F):
 - Except Gold 6137: 8x 2.5" SAS/SATA drive bays (drive backplane in the middle).
 - Up to 30 °C (86 °F):
 - Gold 6137 only: 8x 2.5" SAS/SATA drive bays (drive backplane in the middle).
 - Except Gold 6137:
 - 4x 2.5" SAS/SATA and 4x 2.5" AnyBay (up to 4 NVMe SSDs).
 - 8x 2.5" SAS/SATA and 8x 2.5" AnyBay (up to 8 NVMe SSDs).
- No rear HDD kit installed.
- No PCIe flash adapters installed.
- No GPUs installed.
- The server performance might be impacted in case of a fan failure.

Memory

The SR650 server supports up to 12 TruDDR4 memory when one processor is installed and up to 24 DIMMs when two processors are installed. Each processor has six memory channels (two integrated memory controllers with three memory channels per memory controller), and there are two DIMMs per channel.

With 2nd Gen Xeon SP processors, the server supports memory up to 2933 MHz. With 1st Gen Xeon SP processors, the server supports memory up to 2666 MHz.

Lenovo TruDDR4 memory uses the highest-quality components sourced from Tier 1 DRAM suppliers and only memory that meets strict requirements is selected. It is compatibility tested and tuned on every ThinkSystem server to maximize performance and reliability. TruDDR4 memory has a unique signature programmed into the DIMM, which enables Lenovo servers to verify whether the memory installed is qualified and supported. Lenovo qualified and supported TruDDR4 memory is covered by Lenovo warranty, and service and support provided worldwide.

The following maximum memory capacities are supported by the server with 2nd Gen Xeon SP processors (up to 2933 MHz):

- RDIMMs: 1.5 TB (768 GB per processor)
- 3DS RDIMMs: 3 TB (1.5 TB per processor)

The following maximum memory capacities supported by the server with 1st Gen Xeon SP processors (up to 2666 MHz):

- RDIMMs: 768 GB (384 GB per processor)
- LRDIMMs: 1.5 TB (768 GB per processor)
- 3DS RDIMMs: 3 TB (1.5 GB per processor)

The following memory protection technologies are supported by the processor's integrated memory controllers:

- ECC
- SDDC (for x4-based memory DIMMs)
- ADDDC (for x4-based memory DIMMs; Gold and Platinum processors only)
- Memory mirroring
- Memory rank sparing
- Patrol scrubbing
- Demand scrubbing

The following table lists memory options are supported by the server. The table also indicates which processor generation is supported for each memory option.

Table 16. Memory options

Part number	Feature code	Description	Maximum quantity*	Gen 1 CPU	Gen 2 CPU
RDIMMs - 2933 MHz Performance+					
4X77A12184	B5N6	ThinkSystem 16GB TruDDR4 Performance+ 2933MHz (2Rx8 1.2V) RDIMM	12 / 24	No	Yes
4X77A12185	B5N7	ThinkSystem 32GB TruDDR4 Performance+ 2933MHz (2Rx4 1.2V) RDIMM	12 / 24	No	Yes
4X77A12186	B5N8	ThinkSystem 64GB TruDDR4 Performance+ 2933MHz (2Rx4 1.2V) RDIMM	12 / 24	No	Yes
RDIMMs - 2933 MHz					
4ZC7A08706	B4H1	ThinkSystem 8GB TruDDR4 2933MHz (1Rx8 1.2V) RDIMM	12 / 24	No	Yes
4ZC7A08707	B4LY	ThinkSystem 16GB TruDDR4 2933MHz (1Rx4 1.2V) RDIMM	12 / 24	No	Yes
4ZC7A08708	B4H2	ThinkSystem 16GB TruDDR4 2933MHz (2Rx8 1.2V) RDIMM	12 / 24	No	Yes
4ZC7A08709	B4H3	ThinkSystem 32GB TruDDR4 2933MHz (2Rx4 1.2V) RDIMM	12 / 24	No	Yes
4ZC7A08710	B4H4	ThinkSystem 64GB TruDDR4 2933MHz (2Rx4 1.2V) RDIMM	12 / 24	No	Yes
3DS RDIMMs - 2933 MHz Performance+					
4X77A12187	B5N9	ThinkSystem 128GB TruDDR4 Performance+ 2933MHz (4Rx4 1.2V) 3DS RDIMM	12 / 24	No	Yes
3DS RDIMMs - 2933 MHz					

Part number	Feature code	Description	Maximum quantity*	Gen 1 CPU	Gen 2 CPU
4ZC7A15113	B587	ThinkSystem 128GB TruDDR4 2933MHz (4Rx4 1.2V) 3DS RDIMM	12 / 24	No	Yes
RDIMMs - 2666 MHz					
7X77A01301	AUU1	ThinkSystem 8GB TruDDR4 2666 MHz (1Rx8 1.2V) RDIMM	12 / 24	Yes	No
7X77A01302	AUNB	ThinkSystem 16GB TruDDR4 2666 MHz (1Rx4 1.2V) RDIMM	12 / 24	Yes	Yes
7X77A01303	AUNC	ThinkSystem 16GB TruDDR4 2666 MHz (2Rx8 1.2V) RDIMM	12 / 24	Yes	Yes
7X77A01304	AUND	ThinkSystem 32GB TruDDR4 2666 MHz (2Rx4 1.2V) RDIMM	12 / 24	Yes	Yes
LRDIMMs - 2666 MHz					
7X77A01305	AUNE	ThinkSystem 64GB TruDDR4 2666 MHz (4Rx4 1.2V) LRDIMM	12 / 24	Yes	No
3DS RDIMMs - 2666 MHz					
4ZC7A08716	AUW5	ThinkSystem 64GB TruDDR4 2666MHz (4Rx4, 1.2V) 3DS RDIMM	12 / 24	No	Yes
7X77A01307	AUNF	ThinkSystem 128GB TruDDR4 2666 MHz (8Rx4 1.2V) 3DS RDIMM	12 / 24	Yes	No

* The maximum quantity shown is with one processor / two processors.

Configuration notes:

- All DIMMs in the server operate at the same speed, which is determined as the lowest value of:
 - DIMM rated speed (2666 MHz or 2933 MHz).
 - Memory speed supported by the specific processor (2133 MHz, 2400 MHz, 2666 MHz, or 2933 MHz).
 - Memory speed for the selected quantity of DIMMs per channel:
 - One DIMM per channel (1 DPC): 2933 MHz.
 - Two DIMMs per channel (2 DPC)
 - Performance+ DIMMs: 2933 MHz.
 - Other supported DIMMs: 2666 MHz.

Note: Maximum memory speed can be achieved when Max performance mode is enabled in UEFI.

- Mixing different types of memory (RDIMMs, LRDIMMs, 3DS RDIMMs) is not supported.
- All Performance+ DIMMs in the server must be of the same type, rank, and capacity (the same part number or feature code) to operate at 2933 MHz in the configurations with two DIMMs per channel. Performance+ DIMMs cannot be mixed with other DIMMs.
- Mixing RDIMMs of different ranks (single- or dual-rank), DRAM chip types (x4 or x8), speeds (2666 MHz or 2933 MHz), and capacities (8 GB, 16 GB, 32 GB, or 64 GB) is supported in the independent channel mode (the default operational mode) (excluding Performance+ RDIMMs).
- Mixing 3DS RDIMMs of different speeds (2666 MHz or 2933 MHz) and capacities (64 GB or 128 GB) is supported in the independent channel mode (excluding Performance+ 3DS RDIMMs).
- The 128 GB Performance+ 2933 MHz 3DS RDIMMs (feature code B5N9) running at 2933 MHz with two DIMMs per channel are supported at the ambient temperature of up to 30 °C (86 °F).
- The maximum quantity of DIMMs supported is reduced by the quantity of DC Persistent Memory Modules used in the configuration.
- Server configurations with more than 1 TB of memory capacity per socket (including DCPMMs and RDIMMs or 3DS RDIMMs) require processors that support up to 4.5 TB (L-suffix) per socket.

- For server configurations with memory protection, the following rules apply:
 - Single Device Data Correction (SDDC) works only in the independent channel mode and supports only x4-based memory DIMMs.
 - Adaptive Double Device Data Correction (ADDDC) works with x4-based memory DIMMs and requires two DIMM ranks per channel, Intel Xeon Gold or Platinum processors, and the Closed Page memory access mode.
 - If memory mirroring is used, then DIMMs must be installed in quantities of 2, 4, or 8 per processor for mirroring across two memory channels, or in quantities of 3, 6, 9, or 12 per processor for mirroring across three memory channels. Mixing two- and three-channel mirroring in the server is allowed (one processor uses two-channel mirroring, and another processor uses three-channel mirroring). All DIMMs in the server must be identical in type and size.
 - If memory rank sparing is used, then a minimum of two ranks must be installed per populated channel (a least one dual-rank or quad-rank DIMM, or two single-rank DIMMs). In rank sparing mode, one rank in each populated channel is reserved as spare memory for other ranks on the same channel. All DIMMs in the server must be identical in type and size.
 - SDDC, memory mirroring, and memory rank sparing modes are mutually exclusive. Only one operational memory mode can be enabled on the server.
 - In the configurations with DCPMMs, memory mirroring is supported only in the App Direct mode (other DCPMM modes do not support memory mirroring) and applies only to the RDIMMs or 3DS RDIMMs (DCPMMs are not mirrored). Memory sparing is not supported in the configurations with DCPMMs.

Persistent memory

Intel Optane DC persistent memory is an innovative technology that delivers a unique combination of affordable large memory capacity and persistence (non-volatility). The persistent memory technology can help boost the performance of data-intensive applications, such as in-memory analytics, databases, content delivery networks, and high performance computing (HPC), as well as deliver consistent service levels at scale with higher virtual machine and container density.

The SR650 server supports up to six TruDDR4 DC Persistent Memory Modules (DCPMMs) when one processor is installed and up to 12 DCPMMs when two processors are installed (up to one DCPMM per processor's memory channel) for a total of up to 6 TB of persistent memory capacity. The DCPMMs are installed in the same memory DIMM slots on the system board that are used for installing RDIMMs or 3DS RDIMMs.

2nd Gen processors only: Persistent Memory is only supported with 2nd Generation Intel Xeon SP processors. Not supported with 1st Generation processors.

The DCPMMs support the following modes of operation:

- **Memory Mode**
Memory Mode seamlessly brings large memory capacity at affordable cost points to legacy applications. In this mode, DCPMMs provide volatile memory that behaves much like traditional RDIMMs or 3DS RDIMMs (the data will not be saved in case of a power loss) and is transparent to the operating system and applications. DCPMMs provide memory capacity and RDIMMs or 3DS RDIMMs provide cache memory that is managed by the processor's memory controller. The total memory capacity that is seen by the operating system is the capacity of the DCPMMs; the capacity of the RDIMMs or 3DS RDIMMs is hidden and does not appear as a memory resource in the operating system. This mode is considered particularly suited for virtualized database deployments and big-data analytics applications.

- App Direct Mode

App Direct Mode brings persistency to the data and structures (the data will be saved in case of a power loss). This mode requires operating system and application awareness of two types of system memory: Persistent (DCPMMs) and DRAM (RDIMMs or 3DS RDIMMs). The total memory capacity that is seen by the operating system includes the capacity of the DCPMMs and RDIMMs or 3DS RDIMMs. This mode is considered particularly suited for in-memory databases, in-memory analytics frameworks, and ultrafast storage applications.

- Mixed Memory Mode

Mixed Memory Mode is a combination of Memory Mode and App Direct Mode, where a portion of the capacity of the DCPMMs is used for the Memory Mode operations, and the remaining capacity of the DCPMMs is used for the App Direct Mode operations.

The following memory protection technologies are supported by the DCPMM's onboard memory controllers:

- ECC
- SDDC
- DDDC
- Patrol scrubbing
- Demand scrubbing

The following table lists DCPMM options available for the SR650 server.

Table 17. DCPMM options

Description	Part number	Feature code	Maximum quantity*
ThinkSystem 128GB TruDDR4 2666MHz (1.2V) Intel Optane DC Persistent Memory	4ZC7A15110	B4LV	6 / 12
ThinkSystem 256GB TruDDR4 2666MHz (1.2V) Intel Optane DC Persistent Memory	4ZC7A15111	B4LW	6 / 12
ThinkSystem 512GB TruDDR4 2666MHz (1.2V) Intel Optane DC Persistent Memory	4ZC7A15112	B4LX	6 / 12

* The maximum quantity shown is with one processor / two processors.

The following table lists supported combinations of the DCPMMs and memory DIMMs available for the SR650 server.

Table 18. Supported DCPMM and memory DIMM combinations

DCPMM mode	DCPMM quantity*	Supported DCPMM sizes	Memory DIMM quantity*	Supported memory DIMM sizes
App Direct Mode	- / 1	128 GB, 256 GB, 512 GB	- / 12	16 GB, 32 GB, 64 GB, 128 GB
	1 / 2	128 GB, 256 GB, 512 GB	6 / 12	16 GB, 32 GB, 64 GB, 128 GB
	2 / 4	128 GB, 256 GB, 512 GB	4 / 8	16 GB, 32 GB, 64 GB, 128 GB
	2 / 4	128 GB, 256 GB, 512 GB	6 / 12	16 GB, 32 GB, 64 GB, 128 GB
	2 / 4	128 GB, 256 GB, 512 GB	8 / 16	16 GB, 32 GB, 64 GB, 128 GB
	4 / 8	128 GB, 256 GB, 512 GB	6 / 12	16 GB, 32 GB, 64 GB, 128 GB
	6 / 12	128 GB, 256 GB, 512 GB	6 / 12	16 GB, 32 GB, 64 GB, 128 GB
Memory Mode	2 / 4	128 GB	4 / 8	16 GB
	2 / 4	256 GB	4 / 8	32 GB
	2 / 4	512 GB	4 / 8	32 GB, 64 GB
	2 / 4	256 GB	6 / 12	16 GB
	2 / 4	512 GB	6 / 12	16 GB, 32 GB
	4 / 8	128 GB	6 / 12	16 GB
	4 / 8	256 GB	6 / 12	32 GB
	4 / 8	512 GB	6 / 12	32 GB, 64 GB
	6 / 12	128 GB	6 / 12	16 GB, 32 GB
	6 / 12	256 GB	6 / 12	32 GB, 64 GB
	6 / 12	512 GB	6 / 12	32 GB, 64 GB, 128 GB
Mixed Memory Mode	2 / 4	256 GB	6 / 12	16 GB
	2 / 4	512 GB	6 / 12	16 GB, 32 GB
	2 / 4	256 GB	4 / 8	16 GB
	2 / 4	512 GB	4 / 8	16 GB, 32 GB
	4 / 8	128 GB	6 / 12	16 GB
	4 / 8	256 GB	6 / 12	16 GB, 32 GB
	4 / 8	512 GB	6 / 12	16 GB, 32 GB, 64 GB
	6 / 12	128 GB	6 / 12	16 GB
	6 / 12	256 GB	6 / 12	16 GB, 32 GB
	6 / 12	512 GB	6 / 12	16 GB, 32 GB, 64 GB
	6 / 12	512 GB	6 / 12	16 GB, 32 GB, 64 GB

* The supported exact quantity shown is with one processor / two processors.

Configuration notes:

- DCPMMs are supported only in the configurations with 8x 2.5-inch, 16x 2.5-inch, or 8x 3.5-inch drive bays.
- All DCPMMs in the server must be of the same capacity (the same part number or feature code).
- The RDIMMs or 3DS RDIMMs are required in the configurations with DCPMMs, and all RDIMMs or 3DS RDIMMs must be of the same type, rank, and capacity (the same part number or feature code).
- The DCPMMs cannot be mixed with the 8GB TruDDR4 2933 MHz RDIMM (4ZC7A08706).
- For Mixed Memory Mode, the volatile (Memory) portion of the total capacity of DCPMMs is configured in increments of 32 GB multiplied by the number of DCPMMs in the server, and the remaining capacity is allocated to the persistent (App Direct) portion. The ratio of the total capacity of RDIMMs or 3DS RDIMMs to the total capacity of the volatile portion of DCPMMs should be between 1 to 4 and 1 to 16.
- Server configurations with more than 1 TB of memory capacity per socket (including DCPMMs and RDIMMs or 3DS RDIMMs) require processors that support up to 4.5 TB (L-suffix) per socket.
- In the configurations with the processors of 200 W or 205 W TDP, or with Gold 6230N, 6240Y, 6244, or 6250 processors, the DCPMMs require two power supplies.
- Persistent memory is not supported in configurations with GPU adapters
- Persistent memory is not supported in configurations with flash storage adapters

For more information, refer to the Intel Optane DC Persistent Memory (DCPMM) Product Guide:
<http://lenovopress.com/LP1066>

Internal storage

The SR650 server supports the following internal drive bay configurations:

1. Up to 16 SFF (front) and 2 LFF (rear) hot-swap drive bays:
 - a. 8x 2.5" SAS/SATA + 8x 2.5" SAS/SATA + 2x 3.5" SAS/SATA
 - b. 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 8x 2.5" SAS/SATA + 2x 3.5" SAS/SATA
 - c. 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 2x 3.5" SAS/SATA
2. Up to 24 SFF (front) and 2 LFF (rear) hot-swap drive bays:
 - a. 8x 2.5" SAS/SATA + 8x 2.5" SAS/SATA + 8x 2.5" SAS/SATA + 2x 3.5" SAS/SATA
 - b. 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 8x 2.5" SAS/SATA + 8x 2.5" SAS/SATA + 2x 3.5" SAS/SATA
 - c. 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 8x 2.5" SAS/SATA + 2x 3.5" SAS/SATA
 - d. 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 4x 2.5" SAS/SATA & 4x 2.5" AnyBay + 4x 2.5" SAS/SATA & 4x 2.5" AnyBay
 - e. 16x 2.5" U.2 NVMe PCIe + 8x 2.5" SAS/SATA (factory-installed only)
 - f. 20x 2.5" U.2 NVMe PCIe
 - g. 24x 2.5" U.2 NVMe PCIe
3. Up to 10 LFF SAS/SATA hot-swap drive bays: 8x 3.5" SAS/SATA (front) + 2x 3.5" SAS/SATA (rear)
4. Up to 14 LFF hot-swap drive bays:
 - a. 12x 3.5" SAS/SATA (front) + 2x 3.5" SAS/SATA (rear)
 - b. 8x 3.5" SAS/SATA & 4x 3.5" AnyBay (front) + 2x 3.5" SAS/SATA (rear)

In addition, the SR650 server models can be configured with one or two internal M.2 SATA SSDs. The server also supports configurations without drive bays.