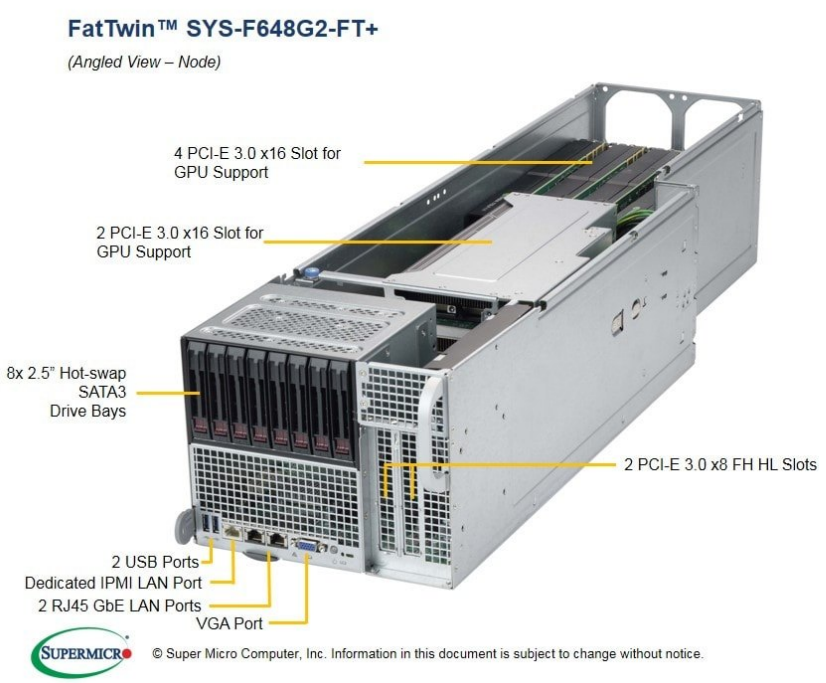
TECHNICAL DATASHEET

SUPERMICRO · RACKMOUNT SERVERS

Supermicro Server SYS-F648G2-FT

SKU SYS-F648G2-FT | 4U | Supermicro



FORM FACTOR	MAX POWER (BASE)	HEAT OUTPUT	PRICE
4U	602 W	2,054 BTU/h	On request

REQUEST A QUOTATION ONLINE
serverinvest.com/product/sys-f648g2-ft

01 Product overview

The Supermicro SYS-F648G2-FT is a server built on dual Intel Xeon processor E5-2600 v4 † / v3 family (up to 145W TD processors with up to 2 TB of memory in 4 DIMM slots.

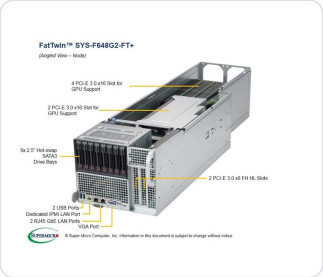
ServerInvest configures every SYS-F648G2-FT to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

HIGHLIGHTS

- Dual Intel Xeon processor E5-2600 v4 † / v3 family (up to 145W TD
- Up to 2 TB memory · 4 DIMM slots
- 8x 2.5" Hot-swap drive bays
- Power: 1000W: 100 – 127Vac
- Networking: Intel i350 Dual Port GbE LAN

KEY SPECIFICATIONS

Form factor	**4U**
Processor	**2× Intel Xeon processor E5-2600 v4 † / v3 family (up to 145W TD**
Memory	**4 DIMM slots, up to 2 TB**
Drive bays	**8**
Power supply	**1× 1000 W**
Typical power draw	**750 W**
Networking	**Intel i350 Dual Port GbE LAN**
Dimensions (W×H×D)	**437 × 178 mm**



02 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
143 W	**374 W**	**602 W**	**2,054 BTU/h**	**0.6 kW**	**60%**

Typical 374 W · max 602 W · single PSU rating 1000 W

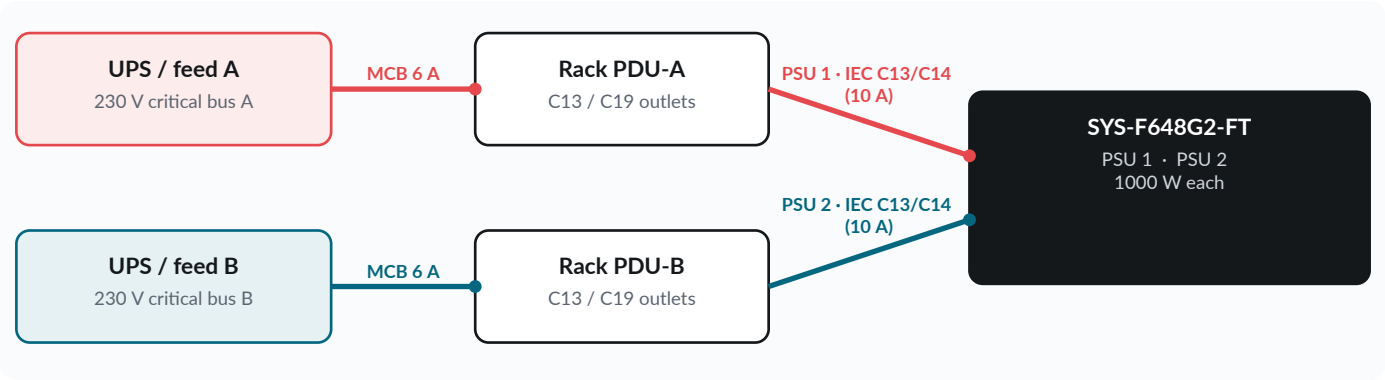
Annual IT energy (24/7)	2,669 kWh
Annual facility energy (PUE 1.5)	4,004 kWh
Annual energy cost	€534 IT · €801 incl. cooling (at 0.20 €/kWh)
CO_2 emissions / year	1.04 t (grid factor 0.26 kg/kWh)
Power supplies	1× 1000 W

POWER BY COMPONENT	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	72 W	112 W	**160 W**
2× CPU (base configuration)	50 W	220 W	**370 W**
4× Memory (base configuration)	12 W	20 W	**36 W**

DC loads converted to wall power at 94% PSU efficiency; typical load assumed 70% of the time. Engineering estimates — confirm with the manufacturer's power calculator for critical designs.

03 Power connection diagram

Dual-feed (A/B) connection for redundant power supplies



- Connect PSU 1 to PDU-A and PSU 2 to PDU-B (independent feeds) using IEC C13/C14 (10 A) power cords.
- Maximum current per feed: 2.8 A at 230 V — each feed must be able to carry the full load if the other fails.
- Recommended protection per PDU circuit: MCB 6 A, curve C; RCD according to local regulations.
- Heat to remove at full load: 602 W = 2,054 BTU/h (0.6 kW).

04 Full specifications

PROCESSOR/CACHE	
CPU	Intel Xeon processor E5-2600 v4 † / v3 family (up to 145W TDP) * Dual Socket R3 (LGA 2011)
Cores / Cache	Up to 22 Cores † / Up to 55MB † Cache
System Bus	QPI up to 9.6 GT/s
Note	† BIOS version 2.0 or above is required
Note	* Please contact Supermicro Technical Support for additional information about frequency optimized CPUs and specialized system optimization.

SYSTEM MEMORY	
Memory Capacity	16x 288-pin DDR4 DIMM slots Up to 2TB † ECC 3DS LRDIMM, 1TB ECC RDIMM
Memory Type	2400 † /2133/1866/1600MHz ECC DDR4 SDRAM 72-bit
DIMM Sizes	RDIMM: 32GB, 16GB, 8GB, 4GB LRDIMM: 64GB, 32GB 3DS LRDIMM: 128GB
Memory Voltage	1.2 V
Error Detection	Corrects single-bit errors

ON-BOARD DEVICES	
Chipset	Intel C612 chipset
SATA	SATA3 (6Gbps) with RAID 0, 1, 5, 10

IPMI	Support for Intelligent Platform Management Interface v.2.0 IPMI 2.0 with virtual media over LAN and KVM-over-LAN support ASPEED AST2400 BMC
Network Controllers	Intel i350 Dual Port GbE LAN Virtual Machine Device Queues reduce I/O overhead Supports 10BASE-T, 100BASE-TX, and 1000BASE-T, RJ45 output 1x Realtek RTL8211E PHY (dedicated IPMI)
Graphics	ASPEED AST2400 BMC

INPUT / OUTPUT (PER NODE)

SATA	8x SATA3 (6Gbps) ports
LAN	2x RJ45 GbE LAN ports 1x RJ45 Dedicated IPMI LAN port
USB	2x USB 3.0 ports
VGA	1x VGA port

CHASSIS

Form Factor	4U Rackmount
Model	CSE-F442BG-R2K04BP

DIMENSIONS

Width	17.63" (448mm)
Height	6.96" (177mm)
Depth	35" (889mm)
Package	25.6" (W) x 11.8" (H) x 48.0" (D)
Weight	Net Weight: 105 lbs (47.63 kg) Gross Weight: 150 lbs (68.04 kg)
Available Colors	Black

FRONT PANEL

Buttons	Power On/Off button UID button
LEDs	Power status LED UID LED

EXPANSION SLOTS (PER NODE)

PCI-Express	6x PCI-E 3.0 x16 Double-width GPU/Xeon Phi 2x PCI-E 3.0 x8 slots (Full-height, Half-length)

DRIVE BAYS (PER NODE)

Hot-swap	8x 2.5" Hot-swap drive bays

SYSTEM COOLING

Fans/Air Shroud	8x 80mm heavy duty fans with air shroud and PWM fan speed control and additional fans available

POWER SUPPLY (76MM WIDTH)

Total Output Power	1000W: 100 – 127Vac 1800W: 200 – 220Vac 1980W: 220 – 230Vac 2000W: 230 – 240Vac 2000W: 200 – 240Vdc (UL/cUL only)
Dimension (W x H x L)	76 x 40 x 336 mm
Input	1000W: 100-127 Vac / 12-9.5 A / 50-60 Hz 1800W: 200-220 Vac / 10-9.5 A / 50-60 Hz 1980W: 220-230 Vac / 10-9.8 A / 50-60 Hz 2000W: 230-240 Vac / 10-9.8 A / 50-60 Hz 2000W: 200-240 Vac / 11.8-9.8 A / 50-60 Hz (UL/cUL only)
+12V	Max: 83.3A / Min: 0A (100-127 Vac) Max: 150A / Min: 0A (200-220 Vac) Max: 165A / Min: 0A (220-230 Vac) Max: 166.7A / Min: 0A (230-240 Vac) Max: 166.7A / Min: 0A (200-240 Vac) (UL/cUL only)
+5Vsb	Max: 1A / Min: 0A
Output Type	27 Pairs Gold Finger Connector
Certification	Titanium Level [Test Report]

SYSTEM BIOS

BIOS Type	128Mb SPI Flash EEPROM with AMI BIOS
BIOS Features	Plug and Play (PnP) APM 1.2 PCI 2.2 ACPI 1.0 / 2.0 USB Keyboard support SMBIOS 2.3 UEFI

OPERATING ENVIRONMENT / COMPLIANCE

RoHS	RoHS Compliant
Environmental Spec.	Operating Temperature: 10°C to 35°C (50°F to 95°F) Non-operating Temperature: -40°C to 70°C (-40°F to 158°F) Operating Relative Humidity: 8% to 90% (non-condensing) Non-operating Relative Humidity: 5% to 95% (non-condensing)

05 Built, tested & supported by ServerInvest

Engineered configuration
Every option validated for socket, memory channels, PCIe lanes, power and cooling.

48-hour burn-in
Assembled, firmware-updated and stress-tested before it leaves our workshop.

3-year warranty
Standard on every system, with on-site next-business-day upgrades available.

Rack-ready delivery
Rails, cable management and labelling included — delivered across Europe.

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Interested in this solution?
Request a quotation online or talk to a solutions engineer — we reply within one business day.
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