

Data Sheet

PRIMEQUEST 3800E2 Rack Server

Redefining mission-critical server architecture

Combining the power of Intel® Xeon® Processor Scalable Family, the standard specifications of Microsoft Windows and Linux operating systems and the wealth of market solutions with innovative RAS features for highest availability and business continuity, PRIMEQUEST server systems provide new levels of operational efficiency for business and mission critical computing with truly open standards and deliver highest performance. PRIMEQUEST server systems combine the efficiency of an x86-architecture with the reliability levels rivaling that of a UNIX/mainframe architecture. This makes it ideal for processing Big Data, In-memory solutions such as SAP HANA® and Business Intelligence applications, while preserving all the RAS qualities for maximum uptime.

PRIMEQUEST 3800E2

The PRIMEQUEST 3800E2 server is purpose-built to optimize efficiency while maximizing performance and uptime in the most demanding mission-critical environments. It unifies the economic and flexibility benefits of x86 industry standard systems with mission-critical uptime features. The PRIMEQUEST 3800E2 dramatically simplifies server architecture for mission-critical computing and comes in a compact 7U form factor. This octo-socket server features the Intel® Xeon® Platinum processors with up to 28 cores per processor for a total of 224 cores and delivers high compute performance leading to efficient business results. With high memory capacity of up to 24TB (DDR4 only), the system can support large amounts of data for in-memory databases such as SAP HANA® and Microsoft SQL Server, thereby making it the right choice for the most complex mission-critical workloads in big data processing environments. The PRIMEQUEST 3800E2 provides

enhanced performance in a significantly smaller form factor, resulting in lower power consumption and helps reduce the environmental footprint in a data center leading to significant cost savings. Moreover, the advanced reliability, availability and serviceability (RAS) features makes this server a robust and cost-effective solution for mission-critical environments. Customers running SAP, financial or big data applications will thus continuously benefit from a radically optimized cost effectiveness compared to UNIX®/Mainframe-based enterprise platforms, while preserving all the RAS qualities so that the system always remains active. The PRIMEQUEST 3800E2 is an ideal choice for high-volume, high-value workloads such as online transaction processing (OLTP), batch processing, and database applications. Mission-critical features of the 3800E2 also enable outstanding platform reliability with innovative error prevention and self-healing capabilities, such as a Reserved System Board, flexible I/O as well as physical hardware partitioning (PPAR). With Reserved System Board, recovery from System Board failures happens in a matter of minutes.



Features & Benefits

Main Features	Benefits
<p>Dynamic, scalable platform for the most demanding mission-critical environments</p> <ul style="list-style-type: none"> 8x Intel® Xeon® Platinum/Gold processors with up to 224 cores. High memory capacity of 24TB (DDR4 only). Many I/O expansion options for up to 56 PCIe slots. Compact 7U form-factor. 'Glue-less' design, no external UPI cables. Economic scaling from 1 to 8 sockets. <p>Mission critical uptime leads to highest availability values in the x86 industry standard</p> <ul style="list-style-type: none"> Different partitioning available: From software partitioning to completely isolated physical partitioning (PPAR). Up to four physical partitions (PPAR): Failures of one partition do not influence other partitions. Active reserved system board for fast automatic recovery of services. Flexible I/O ensures availability of PCIe devices. Almost everything is redundant. <p>High serviceability</p> <ul style="list-style-type: none"> Smart architecture with high serviceability. <p>Cost efficiency for your data center</p> <ul style="list-style-type: none"> Combines x86 industry standard with mission-critical features. Compact 7U form-factor. The iRMC S5 delivers optimal administration across the lifecycle. 	<ul style="list-style-type: none"> Unprecedented performance and memory capacity for high-volume, high-value workloads such as online transaction processing (OLTP) and database applications. Cost-efficient 7U chassis packs superior performance in an economic, space-saving footprint. Business continuity ensured even if there is a failure in one of the partitions. Built-in error prevention/correction and self-healing capabilities result in outstanding platform reliability. All serviceable system modules can be accessed from the front or rear of the system without any cabling hassle. Online maintenance. Unity of x86 efficiency and flexibility with mission-critical availability; Eliminate costs related to the UNIX world. Enhanced performance in a significantly smaller form factor.

Technical details

PRIMEQUEST 3800E2

Mainboard type	up to 4 x System boards
Chipset	Intel® C621
Processor quantity and type	up to 8 x Intel® Xeon® Gold 6xxx processor / Intel® Xeon® Platinum 8xxx processor
Intel® Xeon® Gold Processor	<p>Intel® Xeon® Gold 6222V (20C, 1.80 GHz, TLC: 27.5 MB, Turbo: 2.40 GHz, 10.4 GT/s, 2,933 MHz, 115 W, AVX Base 1.60 GHz, AVX Turbo 2.40 GHz)</p> <p>Intel® Xeon® Gold 6226 (12C, 2.70 GHz, TLC: 19.25 MB, Turbo: 3.50 GHz, 10.4 GT/s, 2,933 MHz, 125 W, AVX Base 2.30 GHz, AVX Turbo 3.10 GHz)</p> <p>Intel® Xeon® Gold 6230 (20C, 2.10 GHz, TLC: 27.5 MB, Turbo: 2.80 GHz, 10.4 GT/s, 2,933 MHz, 125 W, AVX Base 1.60 GHz, AVX Turbo 2.40 GHz)</p> <p>Intel® Xeon® Gold 6234 (8C, 3.30 GHz, TLC: 24.75 MB, Turbo: 4.00 GHz, 10.4 GT/s, 2,933 MHz, 130 W, AVX Base 2.80 GHz, AVX Turbo 3.70 GHz)</p> <p>Intel® Xeon® Gold 6238 (22C, 2.10 GHz, TLC: 30.25 MB, Turbo: 3.70 GHz, 10.4 GT/s, 2,933 MHz, 140 W, AVX Base 1.70 GHz, AVX Turbo 2.50 GHz)</p> <p>Intel® Xeon® Gold 6238L (22C, 2.10 GHz, TLC: 30.25 MB, Turbo: 3.70 GHz, 10.4 GT/s, 2,933 MHz, 140 W, AVX Base 2.70 GHz, AVX Turbo 3.40 GHz)</p> <p>Intel® Xeon® Gold 6240 (18C, 2.60 GHz, TLC: 24.75 MB, Turbo: 3.30 GHz, 10.4 GT/s, 2,933 MHz, 150 W, AVX Base 2.00 GHz, AVX Turbo 2.80 GHz)</p> <p>Intel® Xeon® Gold 6240L (18C, 2.60 GHz, TLC: 24.75 MB, Turbo: 3.30 GHz, 10.4 GT/s, 2,933 MHz, 150 W, AVX Base 2.00 GHz, AVX Turbo 2.80 GHz)</p> <p>Intel® Xeon® Gold 6242 (16C, 2.80 GHz, TLC: 22 MB, Turbo: 3.50 GHz, 10.4 GT/s, 2,933 MHz, 150 W, AVX Base 2.30 GHz, AVX Turbo 3.10 GHz)</p> <p>Intel® Xeon® Gold 6244 (8C, 3.60 GHz, TLC: 24.75 MB, Turbo: 4.30 GHz, 10.4 GT/s, 2,933 MHz, 150 W, AVX Base 3.00 GHz, AVX Turbo 3.90 GHz)</p> <p>Intel® Xeon® Gold 6246 (12C, 3.30 GHz, TLC: 24.75 MB, Turbo: 4.10 GHz, 10.4 GT/s, 2,933 MHz, 165 W, AVX Base 2.90 GHz, AVX Turbo 3.80 GHz)</p> <p>Intel® Xeon® Gold 6248 (20C, 2.50 GHz, TLC: 27.5 MB, Turbo: 3.20 GHz, 10.4 GT/s, 2,933 MHz, 150 W, AVX Base 1.90 GHz, AVX Turbo 2.80 GHz)</p> <p>Intel® Xeon® Gold 6252 (24C, 2.10 GHz, TLC: 35.75 MB, Turbo: 2.80 GHz, 10.4 GT/s, 2,933 MHz, 150 W, AVX Base 1.70 GHz, AVX Turbo 2.40 GHz)</p> <p>Intel® Xeon® Gold 6254 (18C, 3.10 GHz, TLC: 24.75 MB, Turbo: 3.90 GHz, 10.4 GT/s, 2,933 MHz, 200 W, AVX Base 2.70 GHz, AVX Turbo 3.40 GHz)</p> <p>Intel® Xeon® Gold 6262V (24C, 1.90 GHz, TLC: 33 MB, Turbo: 2.50 GHz, 10.4 GT/s, 2,933 MHz, 135 W, AVX Base 1.60 GHz, AVX Turbo 2.80 GHz)</p>

Intel® Xeon® Platinum Processor	<p>Intel® Xeon® Platinum 8253 (16C, 2.20 GHz, TLC: 22 MB, Turbo: 2.50 GHz, 10.4 GT/s, 2,933 MHz, 125 W, AVX Base 1.70 GHz, AVX Turbo 2.00 GHz)</p> <p>Intel® Xeon® Platinum 8256 (4C, 3.80 GHz, TLC: 16.5 MB, Turbo: 3.90 GHz, 10.4 GT/s, 2,933 MHz, 105 W, AVX Base 3.30 GHz, AVX Turbo 3.80 GHz)</p> <p>Intel® Xeon® Platinum 8260 (24C, 2.40 GHz, TLC: 35.75 MB, Turbo: 3.10 GHz, 10.4 GT/s, 2,933 MHz, 165 W, AVX Base 1.90 GHz, AVX Turbo 2.60 GHz)</p> <p>Intel® Xeon® Platinum 8260L (24C, 2.40 GHz, TLC: 35.75 MB, Turbo: 3.10 GHz, 10.4 GT/s, 2,933 MHz, 165 W, AVX Base 1.90 GHz, AVX Turbo 2.60 GHz)</p> <p>Intel® Xeon® Platinum 8268 (24C, 2.90 GHz, TLC: 35.75 MB, Turbo: 3.50 GHz, 10.4 GT/s, 2,933 MHz, 205 W, AVX Base 2.40 GHz, AVX Turbo 3.00 GHz)</p> <p>Intel® Xeon® Platinum 8270 (26C, 2.70 GHz, TLC: 35.75 MB, Turbo: 3.40 GHz, 10.4 GT/s, 2,933 MHz, 205 W, AVX Base 2.20 GHz, AVX Turbo 2.90 GHz)</p> <p>Intel® Xeon® Platinum 8276 (28C, 2.20 GHz, TLC: 38.5 MB, Turbo: 3.00 GHz, 10.4 GT/s, 2,933 MHz, 165 W, AVX Base 1.70 GHz, AVX Turbo 2.60 GHz)</p> <p>Intel® Xeon® Platinum 8276L (28C, 2.20 GHz, TLC: 38.5 MB, Turbo: 3.00 GHz, 10.4 GT/s, 2,933 MHz, 165 W, AVX Base 1.70 GHz, AVX Turbo 2.60 GHz)</p> <p>Intel® Xeon® Platinum 8280 (28C, 2.70 GHz, TLC: 38.5 MB, Turbo: 3.30 GHz, 10.4 GT/s, 2,933 MHz, 205 W, AVX Base 2.20 GHz, AVX Turbo 2.90 GHz)</p> <p>Intel® Xeon® Platinum 8280L (28C, 2.70 GHz, TLC: 38.5 MB, Turbo: 3.30 GHz, 10.4 GT/s, 2,933 MHz, 205 W, AVX Base 2.20 GHz, AVX Turbo 2.90 GHz)</p>
Memory slots	96 Max. 24 TB (DDR4 DIMM 2,933MHz only), Max. 36 TB with DCPMM (DDR-T 2,666MHz).
Memory slot type	DIMM (DDR4 / DDR-T for non-volatile memory modules)
Memory capacity (min. - max.)	32 GB - 36 TB
Memory protection	<p>ECC</p> <p>Advanced ECC</p> <p>Memory Mirroring support</p> <p>Address Range Memory Mirroring support</p> <p>Rank sparing memory support</p> <p>Memory Scrubbing</p> <p>SDDC+1</p> <p>ADDDC-MR</p>
Memory notes	Up to 96 DIMM slots per server within 4 system boards.
Standard memory modules	<p>32 GB (2 module(s) 16 GB) DDR4, registered, ECC, 2,933 MT/s, PC4-2933, DIMM, 1Rx4</p> <p>64 GB (2 module(s) 32 GB) DDR4, registered, ECC, 2,933 MT/s, PC4-2933, DIMM, 2Rx4</p> <p>128 GB (2 module(s) 64 GB) DDR4, registered, ECC, 2,933 MT/s, PC4-2933, DIMM, 2Rx4</p> <p>128 GB (2 module(s) 64 GB) DDR4, registered, ECC, 2,933 MT/s, PC4-2933, LRDIMM, 4Rx4</p> <p>256 GB (2 module(s) 128 GB) DDR4 3DS, registered, ECC, 2,933 MT/s, PC4-2933, LRDIMM, 8Rx4</p> <p>512 GB (2 module(s) 256 GB) DDR4 3DS, registered, ECC, 2,933 MT/s, PC4-2933, LRDIMM, 8Rx4</p>
Non-volatile memory modules	128 GB (1 module(s) 128 GB) DDR-T, registered, ECC, 2,666 MT/s, NVM, DCPMM, 1Rx4
Memory modules notes	<p>DDR4 DIMM will be delivered in set's of 2 DIMMs per order code.</p> <p>Single DCPMM will be delivered per order code.</p>
Interfaces	
USB 3.x ports	4 x USB per Partition
Graphics (15-pin)	1 x VGA per Partition
Management LAN (RJ45)	Dedicated Service LAN port for MMB (10/100 Mbit/s)
Onboard or integrated Controller	
LAN controller	2 x 10 Gbit/s Ethernet
Remote management controller	PQ3000 Management Board (MMB)
Slots	
PCI-Express 3.0 x8	12 x Low profile (3slots / IOU, Max. 4 IOUs / Chassis)
PCI-Express 3.0 x16	4 x Low profile (1slot / IOU, Max. 4 IOUs / Chassis)
Service Processor	
General	<p>Management Board (MMB), located on the rear side of the system.</p> <p>2nd MMB as option</p>

Service Processor

Interfaces	For Maintenance: - Local: 10/100M RJ45 for local maintenance. - Remote: 10/100M RJ45 for REMCS, AIS-Connect, ACA and ServiceLink connection (Remote monitoring service). For Management - 0/1 10M/100M/1G RJ45
Redundancy	2nd MMB as option

Drive bays

Storage drive bays	2.5-inch hot-plug SAS
Storage drive bay configuration	Max. 24 x 2.5-inch

General system information

Number of fans	6
Fan configuration	hot-plug

Operating panel

Status LEDs	System status (orange / yellow) Power (amber / green) Identification (blue)
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RAS Features

Standard	SDDC+1, ECC, redundant fans and power supply
Advanced	Intra-socket memory mirroring, MCA, ADDDC-MR
Mission-Critical	Physical Partition, Extended Partition, Reserved Systemboard, flex IO, redundant MMB, hot-plug PCIe

Operating Systems and Virtualization Software

Operating system release link	http://docs.ts.fujitsu.com/dl.aspx?id=d4ebd846-aa0c-478b-8f58-4cfbf3230473
Operating system notes	

Infrastructure and Server Management

DC Infrastructure Management	Infrastructure Manager (ISM) Essential Edition Advanced Edition
Server Management	Infrastructure Manager (ISM) Essential Edition Advanced Edition ServerView Suite
Management notes	For further information regarding ISM and ServerView Suite see dedicated data sheets.
Manageability link	http://docs.ts.fujitsu.com/dl.aspx?id=9e92297a-16fb-4c69-8559-e38e7b42fee6

Dimensions / Weight

Rack (W x D x H)	445 x 820 x 308 mm
Height Unit Rack	7 U
19" rackmount	Yes
Weight	Up to 110 kg
Weight notes	Fully assembled Actual weight may vary depending on configuration

Environment

Operating ambient temperature	5 - 35 °C (5 - 40 °C with Advanced Thermal Design option)
Operating relative humidity	10 - 85 % (non condensing)
Maximum altitude	3.000 m
Operating environment	FTS 04230 – Guideline for Data Center (installation specification)
Operating environment link	http://docs.ts.fujitsu.com/dl.aspx?id=e4813edf-4a27-461a-8184-983092c12dbe
Noise emission	Measured according to ISO 7779 and declared according to ISO 9296
Sound pressure (LpAm)	61dB
Sound power (LWAd; 1B = 10dB)	8.0B

Electrical values

Power supply configuration	Up to 4 hot-plug power supplies. Minimum 2 power supplies, redundancy as option.
Power supply efficiency	94 % (80 PLUS platinum)
Hot-plug power supply redundancy	Yes
Rated voltage range	200 V - 240 V
Rated frequency range	47 Hz - 63 Hz
Rated current max.	16A
Rated current in basic configuration	12.6A
Active power (max. configuration)	5,940 W
Heat emission (max. configuration)	21384.0 kJ/h (20268.1 BTU/h)

Compliance

Product	PRIMEQUEST 3800E2
Model	MCKyAxxxx
Global	CB RoHS (Substance limitations in accordance with global RoHS regulations) WEEE (Waste electrical and electronical equipment) - planned
Europe	CE Class A *
Japan	VCCI
Compliance link	https://sp.ts.fujitsu.com/sites/certificates
Compliance notes	There is general compliance with the safety requirements of all European countries and North America. National approvals required in order to satisfy statutory regulations or for other reasons can be applied for on request. * Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Components

Hard disk drives	HDD SAS, 12 Gb/s, 900 GB, 15,000 rpm, 512n, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 900 GB, 10,000 rpm, 512n, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 600 GB, 15,000 rpm, 512n, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 600 GB, 10,000 rpm, 512n, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 300 GB, 15,000 rpm, 512n, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 300 GB, 10,000 rpm, 512n, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 2.4 TB, 10,000 rpm, 512e, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 1.8 TB, 10,000 rpm, 512e, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 1.2 TB, 10,000 rpm, 512n, hot-plug, 2.5-inch, enterprise
Solid-State-Drive	SSD SAS, 12 Gb/s, 800 GB, Write-Intensive, hot-plug, 2.5-inch, enterprise, 10 DWPD
RAID Controller	Fujitsu PRAID EP580i LP, RAID 5/6 Ctrl., SAS/SATA 12 Gbit/s, NVMe-PCIe 8 Gbit/s 16 ports int. RAID level: 0, 1, 10, 5, 50, 6, 60, 8 GB, Optional FBU based on LSI SAS3516
	Fujitsu PRAID EP540i LP, RAID 5/6 Ctrl., SAS/SATA 12 Gbit/s, NVMe-PCIe 8 Gbit/s 16 ports int. RAID level: 0, 1, 10, 5, 50, 6, 60, 4 GB, Optional FBU based on LSI SAS3516
	Fujitsu PRAID EP540e LP, RAID 5/6 Ctrl., SAS/SATA 12 Gbit/s, 8 ports ext. RAID level: 0, 1, 10, 5, 50, 6, 60, 4 GB, Optional FBU based on LSI SAS3516
Communication, Network	Ethernet Ctrl. 2 x 10 Gbit/s / 25 Gbit/s PCIe 3.0 x8 SFP28 (Intel®)
	Ethernet Ctrl. 2 x 10 Gbit/s / 25 Gbit/s PCIe 3.0 x8 SFP28 (Mellanox)
	Ethernet Ctrl. 2 x 10 Gbit/s PCIe 3.0 x8 RJ45 (Intel®)
	Ethernet Ctrl. 2 x 10 Gbit/s PCIe 3.0 x8 SFP+ (Intel®)
	Ethernet Ctrl. 4 x 10 Gbit/s ; 1 Gbit/s PCIe 3.0 x8 RJ45 (Intel®)
	Ethernet Ctrl. 4 x 10 Gbit/s PCIe 3.0 x8 SFP+ (Intel®)
Ethernet Ctrl. 4 x 1 Gbit/s PCIe 2.1 x4 RJ45 (Intel®)	

Fibre Channel controller	Fibre Channel Host Bus Adapter 1 x 16 Gbit/s PCIe 3.0 x8 LC-style (Emulex)
	Fibre Channel Host Bus Adapter 1 x 32 Gbit/s PCIe 3.0 x8 LC-style (Cavium)
	Fibre Channel Host Bus Adapter 1 x 32 Gbit/s PCIe 3.0 x8 LC-style (Emulex)
	Fibre Channel Host Bus Adapter 2 x 16 Gbit/s PCIe 3.0 x8 LC-style (Emulex)
	Fibre Channel Host Bus Adapter 2 x 32 Gbit/s PCIe 3.0 x8 LC-style (Cavium)
	Fibre Channel Host Bus Adapter 2 x 32 Gbit/s PCIe 3.0 x8 LC-style (Emulex)
Communication, Network	Omni Path 1 x 100 Gbit/s PCIe 3.0 x16 QSFP (Intel®)
Warranty	
Manufacturer warranty period	3 years (depending on country)
Warranty type	Onsite Service
Warranty Terms & Conditions	http://support.ts.fujitsu.com/warranty/Index.asp?LNG=COM
Product Support - the perfect extension	
Service Lifecycle	at least 5 years after shipment, for details see https://support.ts.fujitsu.com/
Service Weblink	www.fujitsu.com/support

More information

Fujitsu products, solutions & services

In addition to PRIMEQUEST 3800E2, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Fujitsu Portfolio

Build on industry standards, Fujitsu offers a full portfolio of IT hardware and software products, services, solutions and cloud offering, ranging from clients to datacenter solutions and includes the broad stack of Business Solutions, as well as the full stack of Cloud offering. This allows customers to leverage from alternative sourcing and delivery models to increase their business agility and to improve their IT operation's reliability.

Computing Products

www.fujitsu.com/global/products/computing/

Software

www.fujitsu.com/software/

More information

Learn more about PRIMEQUEST 3800E2, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.

<http://www.fujitsu.com/global/products/computing/servers/mission-critical/primequest-3800e2/>

Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment.

Using our global know-how, we aim to contribute to the creation of a sustainable environment for future generations through IT.

Please find further information at <http://www.fujitsu.com/global/about/environment/>



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