Data Sheet
FUJITSU Server PRIMEQUEST 3800E

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, FUJITSU Server PRIMEQUEST systems provide new levels of operational efficiency for business and mission critical computing with truly open standards and deliver highest performance. FUJITSU Server PRIMEQUEST 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 3800E

The FUJITSU Server PRIMEQUEST 3800E 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 3800E dramatically simplifies server architecture for mission-critical computing and comes in an all-new compact 7U form factor. This octo-socket server features the latest Intel® Xeon® Platinum processors with up to 28 cores per processor for a total of 224 cores and delivers superior compute performance leading to efficient business results. With high capacity 12TB DDR4 memory at 2,666 MHz, populated over 96 DIMM slots, the system can support large amounts of data for in-memory databases such as SAP HANA®, real-time data analytics. The PRIMEQUEST 3800E 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 PRIMEQUST 3800E 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 3800E 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. Moreover, unique features, such as Dynamic Reconfiguration enable the efficient use of available resources while simplifying resource management without any need for a reboot of the system. Therefore, the PRIMEQUEST 3800E is an ideal target platform for critical UNIX workloads/UNIX migrations that require inherent robustness built in to the system.

Features & Benefits

Main Features	Benefits
Dynamic, scalable platform for the most demanding mission-critical environments ■ 8x Intel® Xeon® Platinum processors with up to 224 cores ■ Huge memory capacity of 12TB (DDR4, 2,666 MHz) over 96 DIMMs ■ 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 2 to 8 sockets	■ Unprecedented performance and memory capacity for high-volume, high-value workloads such as online transaction processing (OLTP), batch processing, and database applications ■ Fast memory and I/O throughput ensured ■ Cost-efficient 7U chassis packs superior performance in an economic, space-saving footprint ■ No external UltraPath Interconnect (UPI) cables ensure a high level of serviceability ■ This system is designed to enable simple scale-up as required components are "inside" the system thanks to the "glue-less" system design
Mission critical uptime leads to highest availability values in the x86 industry standard ■ 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, in many cases without downtime ■ Flexible I/O ensures availability of PCIe devices ■ Almost everything is redundant ■ Online maintenance	■ Flexible platform to best meet individual requirements ■ Business continuity ensured even if there is a failure in one of the partitions ■ Its 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. Moreover, Dynamic Reconfiguration enables online maintenance without the need for restarts or planned downtimes
Cost efficiency for your data center ■ Combines x86 industry standard with mission-critical features ■ Compact 7U form-factor	■ 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; Lower power consumption and helps reduce the environmental footprint in a data center leading to significant cost savings

Technical details

PRIMEQUEST 3800E

Mainboard type	up to 4 x Systemboards
Chipset	Intel® C621
Processor quantity and type	2, 4, 6, 8
Intel® Xeon® Platinum Processor	Intel® Xeon® Platinum 8153 processor (16C, 2.00 GHz, TLC: 22 MB, Turbo: 2.30 GHz, 10.4 GT/s, Mem bus: 2,667 MHz, 125 W, AVX Base 1.60 GHz, AVX Turbo 2.00 GHz)
	Intel® Xeon® Platinum 8156 processor (4C, 3.60 GHz, TLC: 16.5 MB, Turbo: 3.70 GHz, 10.4 GT/s, Mem bus: 2,667 MHz, 105 W, AVX Base 3.30 GHz, AVX Turbo 3.60 GHz)
	Intel® Xeon® Platinum 8158 processor (12C, 3.00 GHz, TLC: 24.75 MB, Turbo: 3.60 GHz, 10.4 GT/s, Mem bus: 2,667 MHz, 150 W, AVX Base 2.60 GHz, AVX Turbo 3.30 GHz)
	Intel® Xeon® Platinum 8160M processor (24C, 2.10 GHz, TLC: 33 MB, Turbo: 2.80 GHz, 10.4 GT/s, Mem bus: 2,667 MHz, 150 W, AVX Base 1.80 GHz, AVX Turbo 2.50 GHz)
	Intel® Xeon® Platinum 8160 processor (24C, 2.10 GHz, TLC: 33 MB, Turbo: 2.80 GHz, 10.4 GT/s, Mem bus: 2,667 MHz, 150 W, AVX Base 1.80 GHz, AVX Turbo 2.50 GHz)
	Intel® Xeon® Platinum 8164 processor (26C, 2.00 GHz, TLC: 35.75 MB, Turbo: 2.70 GHz, 10.4 GT/s, Mem bus: 2,667 MHz, 150 W, AVX Base 1.60 GHz, AVX Turbo 2.30 GHz)
	Intel® Xeon® Platinum 8168 processor (24C, 2.70 GHz, TLC: 33 MB, Turbo: 3.40 GHz, 10.4 GT/s, Mem bus: 2,667 MHz, 205 W, AVX Base 2.30 GHz, AVX Turbo 3.00 GHz)
	Intel® Xeon® Platinum 8170M processor (26C, 2.10 GHz, TLC: 35.75 MB, Turbo: 2.80 GHz, 10.4 GT/s, Mem bus: 2,667 MHz, 165 W, AVX Base 1.70 GHz, AVX Turbo 2.40 GHz)
	Intel® Xeon® Platinum 8170 processor (26C, 2.10 GHz, TLC: 35.75 MB, Turbo: 2.80 GHz, 10.4 GT/s, Mem bus: 2,667 MHz, 165 W, AVX Base 1.70 GHz, AVX Turbo 2.40 GHz)
	Intel® Xeon® Platinum 8176M processor (28C, 2.10 GHz, TLC: 38.5 MB, Turbo: 2.80 GHz, 10.4 GT/s, Mem bus: 2,667 MHz, 165 W, AVX Base 1.70 GHz, AVX Turbo 2.40 GHz)
	Intel® Xeon® Platinum 8176 processor (28C, 2.10 GHz, TLC: 38.5 MB, Turbo: 2.80 GHz, 10.4 GT/s, Mem bus: 2,667 MHz, 165 W, AVX Base 1.70 GHz, AVX Turbo 2.40 GHz)
	Intel® Xeon® Platinum 8180M processor (28C, 2.50 GHz, TLC: 38.5 MB, Turbo: 3.20 GHz, 10.4 GT/s, Mem bus: 2,667 MHz, 205 W, AVX Base 1.70 GHz, AVX Turbo 2.30 GHz)
	Intel® Xeon® Platinum 8180 processor (28C, 2.50 GHz, TLC: 38.5 MB, Turbo: 3.20 GHz, 10.4 GT/s, Mem bus: 2,667 MHz, 205 W, AVX Base 1.70 GHz, AVX Turbo 2.30 GHz)
Memory slots	96 Max. 12 TB
Memory slot type	DIMM (DDR4)
Memory capacity (min. - max.)	16 GB - 12 TB
Memory protection	ECC Advanced ECC Memory Mirroring support Address Range Memory Mirroring support Rank sparing memory support Memory Scrubbing SDDC+1 ADDDC-MR
Memory notes	Up to 96 DIMM slots per server within 4 system boards.
Memory options	256 GB (2 module(s) 128 GB) DDR4 3DS, registered, ECC, 2,666 MHz, PC4-2666, DIMM, 8Rx4
	16 GB (2 module(s) 8 GB) DDR4, registered, ECC, 2,666 MHz, PC4-2666, DIMM, 1Rx4
	32 GB (2 module(s) 16 GB) DDR4, registered, ECC, 2,666 MHz, PC4-2666, DIMM, 1Rx4
	64 GB (2 module(s) 32 GB) DDR4, registered, ECC, 2,666 MHz, PC4-2666, DIMM, 2Rx4
	128 GB (2 module(s) 64 GB) DDR4 3DS, registered, ECC, 2,666 MHz, PC4-2666, DIMM, 4Rx4
	128 GB (2 module(s) 64 GB) DDR4, registered, ECC, 2,666 MHz, PC4-2666, LRDIMM, 4Rx4
Memory modules notes	Memory modules will be delivered in set´s of 2 DIMMs per order code

Interfaces

USB 3.0 ports	4 (up to 16 x USB, 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 (RJ45)
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	Management Board (MMB), located on the rear side of the system. 2nd MMB as option
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)

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, Dynamic Reconfiguration, 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	Not all OSes, OS versions and server functions will be released at server release. For details refer to link below.

Server Management

Standard	ServerView Suite - Maintain
	Remote Management (iRMC)
	Update Management (BIOS, Firmware, Windows Drives and SV Agents)
	Performance Measurement
	Asset Management
	Online Diagnostics
	ServerView Suite (Integrate)
	ServerView Integration packs for MS System Center, VMware vCenter, VMware vRealize, Nagios and HP SIM
	Deployment tools and others
	ServerView Suite - Deploy
	SV Installation Manager
	ServerView Suite - Control
	Operations Manager
	Agents and CIM Providers / Agentless Service
	System Monitor
	RAID Manager
	Capacity Management
	Storage Support
Option	ServerView embedded Lifecycle Management (eLCM)
	Lifecycle management

Dimensions / Weight

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

Environment

Operating ambient temperature	5 - 40 °C (41 - 104 °F)
Operating relative humidity	20 - 80 %
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)	65dB
Sound power (LWAd; 1B = 10dB)	7.5B

Electrical values

Power supply configuration	Up to 4 hot-plug power supplies.
	Base unit equipped with 2 power supplies, redundancy as option.
Max. input of single power supply	2200 W (240 V)
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.	12A
Rated current in basic configuration	10A
Active power (max. configuration)	5,480 W
Heat emission (max. configuration)	19728.0 kJ/h (18698.5 BTU/h)

Compliance

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	
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, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 600 GB, 15,000 rpm, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 600 GB, 10,000 rpm, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 300 GB, 15,000 rpm, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 300 GB, 10,000 rpm, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 1.8 TB, 10,000 rpm, hot-plug, 2.5-inch, enterprise
	HDD SAS, 12 Gb/s, 1.2 TB, 10,000 rpm, 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 (Drive Writes Per Day for 5 years)
	SSD SAS, 12 Gb/s, 800 GB, Mixed-use, hot-plug, 2.5-inch, enterprise, 3 DWPD (Drive Writes Per Day for 5 years)
	SSD SAS, 12 Gb/s, 400 GB, Write-Intensive, hot-plug, 2.5-inch, enterprise, 10 DWPD (Drive Writes Per Day for 5 years)
	SSD SAS, 12 Gb/s, 3.2 TB, Mixed-use, hot-plug, 2.5-inch, enterprise, 2.3 DWPD (Drive Writes Per Day for 5 years)
	SSD SAS, 12 Gb/s, 1.6 TB, Write-Intensive, hot-plug, 2.5-inch, enterprise, 10 DWPD (Drive Writes Per Day for 5 years)
	SSD SAS, 12 Gb/s, 1.6 TB, Mixed-use, hot-plug, 2.5-inch, enterprise, 3 DWPD (Drive Writes Per Day for 5 years)
PCIe SSD	PCIe-SSD AIC, 4 TB, Mixed-use, HHHL, Flash drive, 3.1 DWPD (Drive Writes Per Day for 5 years)
	PCIe-SSD AIC, 2 TB, Mixed-use, HHHL, Flash drive, 3.0 DWPD (Drive Writes Per Day for 5 years)
SCSI / SAS Controller	LSI PSAS CP400e LP SAS Ctrl. 12 Gbit/s 8 ports ext. PCIe 3.0 x8
RAID Controller	Fujitsu PRAID EP420i, RAID 5/6 Ctrl., SAS/SATA 12 Gbit/s, 8 ports int. RAID level: 0, 1, 10, 5, 50, 6, 60, 2 GB, Optional FBU based on LSI SAS3108
	Fujitsu PRAID EP420e LP, RAID 5/6 Ctrl., SAS/SATA 12 Gbit/s, 8 ports ext. RAID level: 0, 1, 10, 5, 50, 6, 60, 2 GB, Optional FBU based on LSI SAS3108
Fibre Channel controller	Fibre Channel Host Bus Adapter 1 x 16 Gbit/s Emulex LPe31000-M6-F MMF LC-style
	Fibre Channel Host Bus Adapter 2 x 16 Gbit/s Emulex LPe31002-M6-F MMF LC-style
	Fibre Channel Host Bus Adapter 1 x 32 Gbit/s Cavium QLE2740 MMF LC-style
	Fibre Channel Host Bus Adapter 2 x 32 Gbit/s Cavium QLE2742 MMF LC-style
	Fibre Channel Host Bus Adapter 1 x 32 Gbit/s Emulex LPe32000-M6-F MMF LC-style
	Fibre Channel Host Bus Adapter 2 x 32 Gbit/s Emulex LPe32002-M6-F MMF LC-style
	Fibre Channel Host Bus Adapter 1 x 16 Gbit/s Qlogic QLE2690 LC-style
	Fibre Channel Host Bus Adapter 2 x 16 Gbit/s Qlogic QLE2692 LC-style

Communication, Network	Converged Network Adapter 2 x 10 Gbit/s PCIe 3.0 x8 SFP+ (Emulex)
	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 10Gbit/s Eth (RJ45) (Emulex)
	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+ (Emulex)
	Ethernet Ctrl. 2 x 10 Gbit/s PCIe 3.0 x8 SFP+ (Intel®)
	Ethernet Ctrl. 2 x 1 Gbit/s PCIe 2.1 x4 RJ45 (Intel®)
	Ethernet Ctrl. 2 x 40 Gbit/s PCIe 3.0 x16 QSFP (Mellanox)
	Ethernet Ctrl. 4 x 1 Gbit/s PCIe 2.1 x4 RJ45 (Intel®)
	InfiniBand HCA 1 x 100 Gbit/s PCIe 3.0 x16 QSFP (Mellanox)
	InfiniBand HCA 1 x 56 Gbit/s PCIe 3.0 x8 QSFP (Mellanox)
	InfiniBand HCA 2 x 100 Gbit/s PCIe 3.0 x16 QSFP (Mellanox)
	InfiniBand HCA 2 x 56 Gbit/s PCIe 3.0 x8 QSFP (Mellanox)

Warranty	
Warranty period	3 years
Warranty type	Onsite Service
Warranty Terms & Conditions	http://support.ts.fujitsu.com/warranty/Index.asp?LNG=COM
Product Related Services - the perfect extension	
Service Lifecycle	5 years after end of product life
Service Weblink	www.fujitsu.com/support

More information

Fujitsu OPTIMIZATION Services

In addition to Fujitsu Server PRIMEQUEST 3800E, 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 FUJITSU Server PRIMEQUEST 3800E, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.
http://www.fujitsu.com/fts/products/computing/servers/mission-critical/primequest-3800e/

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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