

Datasheet

Fujitsu Server PRIMEQUEST 2400E2

Mission Critical



The mission critical open system Fujitsu PRIMEQUEST provides high-end server functionality using superior Fujitsu technology, long cultivated and refined over generations of computer system development.

The most cost-efficient enterprise server

The mission critical x86 server "Fujitsu PRIMEQUEST" is a high-end data center system focused on the needs of the growing enterprise. Based on technologies and innovations Fujitsu has refined over generations of highly reliable mainframe and UNIX servers, it provides mission critical class high-performance, excellent service availability and the openness of x86 servers.

Global standard Linux® and/or Microsoft® Windows® operating systems, with highly advanced Fujitsu reliability, stability and manageability technologies, make Fujitsu PRIMEQUEST a highly cost effective mission critical open platform.

Customer investment is fully secured by:

- Ability to operate a 24-hour, 365-day business.
- Outstanding performance and reliability.
- Excellent flexibility and scalability in an open server.
- A radically improved cost/performance profile.
- Use optimization and scalability for the future.

Platform of standards and high availability

With outstanding redundancy, Fujitsu PRIMEQUEST 2400E2 provides the high uptime required from true enterprise platforms. The heart of the server, the system boards including CPUs and memory modules, can be instantly recovered on failure, enabling smooth operation of mission-critical workloads. In fact, almost every component can be redundantly configured.

This new PRIMEQUEST is the world-first open server platform which enables online addition and replacement of system boards and I/O boards – Customers can be freed from system business disruption.

Under the strict quality standards in Fujitsu's production processes - from server design to manufacturing and quality assurance – Fujitsu PRIMEQUEST can dramatically reduce failure rates.

Platform of excellent performance per cost

PRIMEQUEST 2400E2 helps reduce running costs for mission critical systems including software support charges.

So, marriage of PRIMEQUEST 2400E2 and Oracle Database Standard Edition can slash down your operational costs for enterprise system.



redhat.



Windows Server 2012

Main features	Benefits
<p>Complete redundancy and online recovery function</p> <ul style="list-style-type: none"> ■ Almost all the components can be redundantly configured ■ Unique redundancy at the heart of server, including system boards and system interconnects, offers even greater protection ■ System Boards or I/O Units can be replaced online if any of them fails. 	<ul style="list-style-type: none"> ■ Systems on Fujitsu PRIMEQUEST 2400E2 can continue operation even if a component fails ■ Central component failure is usually fatal for continued system operation. Fujitsu PRIMEQUEST's unique levels of redundancy eliminate such causes of major system failure making it suitable for enterprise operation. ■ Dynamic Reconfiguration can help recover from failure without system interruption
<p>Highest data throughput in mission critical arena</p> <ul style="list-style-type: none"> ■ Highest level of database performance in Mission Critical arena ■ High performance for computation, memory access, and I/O ■ High data throughput even for very large data 	<ul style="list-style-type: none"> ■ Fujitsu PRIMEQUEST 2400E2 can satisfy customers demand to expand business platform without disruption
<p>Only grow as you need, only buy for that growth</p> <ul style="list-style-type: none"> ■ Online addition of System Board or I/O Units can increase performance in simple manner. 	<ul style="list-style-type: none"> ■ Customers can save money for system investment until business growth requires system expansion
<p>Rich variety of I/O products</p> <ul style="list-style-type: none"> ■ Solid State Drive products for disk drives and flash memory connected through PCIe are selectable according to customers demands such as cost efficiency and high performance 	<ul style="list-style-type: none"> ■ For demands for cost-efficiency and performance upgrade, SSD disk drives can be the best solution. For demands for high performance upgrade, PCIe SSD can be the best solution
<p>Secure confidential data</p> <ul style="list-style-type: none"> ■ Even if confidential data is stolen, the stolen data cannot be used maliciously 	<ul style="list-style-type: none"> ■ Intel Xeon's on-chip encryption greatly reduces encryption/decryption time making database encryption a practical solution for protecting intellectual property
<p>Much lower operational costs</p> <ul style="list-style-type: none"> ■ Fujitsu PRIMEQUEST 2400E2 can slash down license and support charge for Oracle database 	<ul style="list-style-type: none"> ■ With Oracle Database Standard Edition available for max. 4 socket servers, license and support charges can be much reduced compared to other enterprise server which only Oracle Database Enterprise Edition is available.
<p>Simplified server lifecycle management</p> <ul style="list-style-type: none"> ■ An integrated suite of tools takes care of servers and their component products in your datacenter over the entire life of the server 	<ul style="list-style-type: none"> ■ Human resource costs for server management, including: installation, integration, monitoring, maintenance, and upgrading are reduced
<p>Risk-free virtualization</p> <ul style="list-style-type: none"> ■ Physical Partitioning of up to four partitions and Extended Partitioning of up to eight partitions are available. 	<ul style="list-style-type: none"> ■ For customers undertaking system virtualization for the first time, Physical partitioning is the best entry strategy. There are no performance overheads and no incompatibilities with applications. Extended Partitioning, doubling the number of partitions, can save operational costs by server consolidation.

Topics

Almost every component redundant

With Fujitsu PRIMEQUEST 2400E2, your most important business operations can be strictly protected from errors as follows:

- Partitions using multiple system boards (SB) can continue operation even if one full system board fails. Service may degrade a little, but the failed system board can be immediately replaced by a reserved System Board. This means normal service levels can be very quickly resumed
- Dynamic Reconfiguration help recover from failures on System Boards or I/O Units without system stoppage
- Memory can be mirrored. This means that even if a memory failure occurs the application will continue using the correct data. With Double Data Device Correction (DDDC), even if two memory chips fail, the system can continue operation without interruption
- Failed processor cores can be replaced by reserved cores using extended partitioning
- System Interconnect, called Quick Path Interconnect (QPI), provides multiple access routes. This ensures continued operation even if one route fails
- Fans, PCI Express switches, PCI Express cards, and Ethernet ports, are redundant as standard
- HDD can be configured redundant using hardware or software RAID
- Management Boards (MMB) and Power Supply Units (PSU) can be optionally configured as redundant

With new memory technology called DDR4 inside the box, data protection of PRIMEQUEST 2400E2 has become more resilient.

- Bank SDDC/DDDC is expanded recovery from SDDC/DDDC recovery in units of DRAM to recovery in units of bank of DRAM. Memory recovery in more granular level strengthens data protection of PRIMEQUEST – even if Maximum five banks fail all at once, read/write operations from/to memory can continue
- Multi Memory Rank Sparing allows reserves Memory Ranks of DIMM to replace Memory Ranks in correctable errors with the reserved ones without intervention of operation.

With enhancement of problem prevention mechanism called eMCA Gen2, PRIMEQUEST 2800E2 helps eliminate problems in CPU, memory, or IO by detections of recoverable errors via system trace. Even if such recoverable errors happen, servers can continue their operations.

Only grow as you need, only buy for that growth

With up to 72 cores and maximum 6TB of memory, Fujitsu PRIMEQUEST 2400E2 has the resources to accommodate hundreds of workloads. Performance has doubled ensuring Fujitsu PRIMEQUEST 2400E2 capability as an enterprise workload platform continues to expand. Outstanding performance from such a compact chassis means Fujitsu PRIMEQUEST 2400E2 is the “platform for success” when you really need to improve performance and cost-efficiency.

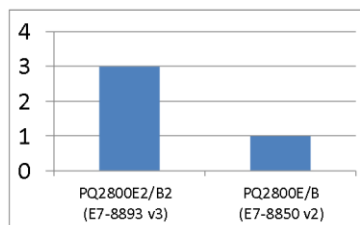
Secure confidential data

Fujitsu PRIMEQUEST embeds security measures into its hardware and OS. Due to swift encryption by Advanced Encryption Standard New Instructions (AES-NI) with the Intel Xeon E7-8800 v3 product family, a hacker could never maliciously use any stolen data. As an example, Oracle Database 12c and Xeon processors shrink the encryption time to one-tenth.

Much lower operational costs

Fujitsu PRIMEQUEST 2400E2 can reduce operational costs: power consumption, datacenter space, and Oracle license and support changes. And it triples OLTP performance per Oracle database license and support charge compared to previous generation of PRIMEQUEST.

OLTP performance per Oracle core license



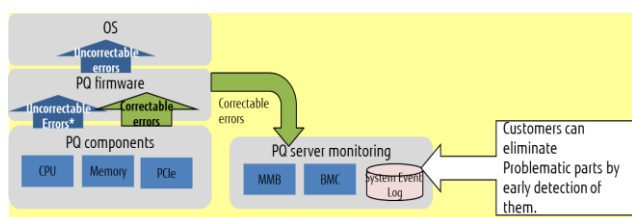
Simplified server lifecycle management

During a server’s life cycle you must undertake a variety of actions including installation, integration, monitoring, maintenance, and upgrading of all servers in your datacenter. To do this you have to use different tools for different actions. It can be a nightmare. Fully integrated tools through the lifecycle are what our customers are demanding.

Fujitsu provides an integrated suite of tools that take care of server products at your datacenter for the entire life of the server. ServerView Suite, a bundled product with Fujitsu PRIMEQUEST and PRIMERGY, can help ease the pain in dealing with servers. This includes:

- Automated OS installation on multiple servers
- Automated RAID configuration
- Automated driver updates, hot fixes and security patch applications
- Integrated monitoring of multiple Fujitsu PRIMEQUEST and Fujitsu PRIMERGY servers
- Simplified setup and monitoring of disk array controllers, HDD, and logical drives

The suite also enables early problem detection and resolution via intuitive diagnostics, look-and-feel operation and pro-active error alerts.



Topics

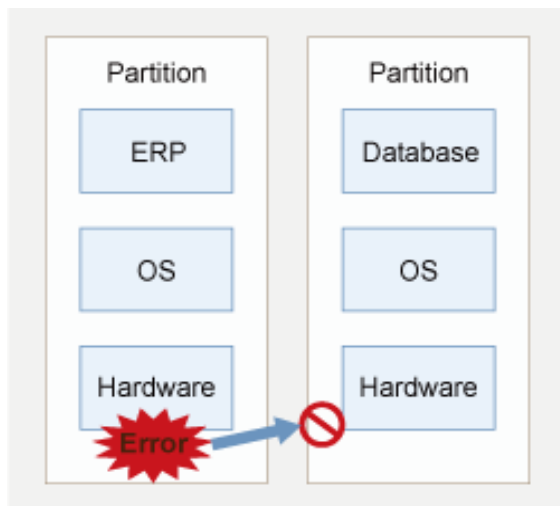
Risk-free virtualization

Using Fujitsu PRIMEQUEST and industry standard virtualization, such as VMware vSphere™ 5, Hyper-V, and KVM lets you more easily create the right platform for your demands. It means, simple migration using Physical Partitioning with no performance overheads. High reliability is guaranteed by Physical Partitioning as failures in one partition can never spread to other partitions. With VMware vSphere™ 5, hundreds of virtual machines can be created on one server.

Fujitsu PRIMEQUEST Physical Partitioning delivers risk-free and reliable virtualization. Such partitioning without performance overheads also requires no elaborate performance testing on your application environments. Further your main mission critical applications, such as databases, can be fully isolated from failures in all other partitions.

If you are planning to accommodate greater numbers of workloads, you can mix standard virtualization products with Physical Partitioning. Such state-of-the-art virtualization means applications can share system resources more flexibly, while main systems remain fully protected.

If you plan to save server operational costs by consolidation of up to four servers, you can use Extended Partitioning.



Physical Partition	Max. two Physical Partitions form from max. two System Boards, max. two Memory Scaleup Boards, max. four IO Units, and max. two Disk Units
Extended Partition	Max. four Extended Partitions
Mainboard type	Up to 2 x System Board
- Note for System Board	System Board selectable from one with Trust Platform Module (TPM) and one without TPM
System Boards	
Processor quantity	2 Processor per System Board
Processor type	Intel Xeon® processor E7-8860v3 (16C/32T, 2.2GHz, TLC:40MB, Turbo: Yes, Mem bus: 140W)
	Intel Xeon® processor E7-8867v3 (16C/32T, 2.5GHz, TLC:45MB, Turbo: Yes, Mem bus: 165W)
	Intel Xeon® processor E7-8870v3 (18C/36T, 2.1GHz, TLC:45MB, Turbo: Yes, Mem bus: 140W)
	Intel Xeon® processor E7-8880v3 (18C/36T, 2.3GHz, TLC:45MB, Turbo: Yes, Mem bus: 150W)
	Intel Xeon® processor E7-8890v3 (18C/36T, 2.5GHz, TLC:45MB, Turbo: Yes, Mem bus: 165W)
	Intel Xeon® processor E7-8891v3 (10C/20T, 2.8GHz, TLC:45MB, Turbo: Yes, Mem bus: 165W)
	Intel Xeon® processor E7-8893v3 (4C/8T, 3.2GHz, TLC:45MB, Turbo: Yes, Mem bus: 140W)
Memory slots	192
Memory slot type	DDR4
Memory capacity (min.- max.)	16GB-12TB
Memory protection	ECC Extended ECC Double Data Device Correction Memory Patrol Memory Mirroring ; full and partial mirroring available Bank DDDC/SDDC Multi Memory Rank Sparing Address Based Memory Mirror
Memory notes	Up to 192 DIMM slots per server within 2 system boards, each equipped with 2 Memory Mezzanine cards. 12TB will be available with 64GB LRDIMM module.
Memory modules	16 GB (2 x 8GB) DDR4, RDIMM, ECC 32 GB (2 x 16GB) DDR4, RDIMM, ECC 64 GB (2 x 32GB) DDR4, RDIMM, , ECC 64 GB (2 x 32GB) DDR4, LRDIMM, , ECC 128 GB (2 x 64GB) DDR4, LRDIMM, ECC
Memory modules notes	Memory modules are delivered in units of 2 DIMMSs per order code
Memory Scaleup Board	
Memory slot	96
Memory slot type	DDR4
Memory capacity (min.- max.)	16GB-6TB
Memory protection	Same memory protection as System Board

Memory Module	All memory modules available for System Boards are available for Memory Scaleup Board
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Drive bays

Hard disk bay configuration	Disks can be mounted in max. two System Bords and in max. two Disk Units - Internal storage : Max. 16 x 2.5-inch for SAS - External storage : Max. 576 x 2.5-inch for SAS
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Hard disk drive	HDD SAS, 12Gb/s, 300 GB, 15,000 rpm, hot-plug, 2.5-inch, enterprise HDD SAS, 12Gb/s, 300 GB, 10,000 rpm, hot-plug, 2.5-inch, enterprise HDD SAS, 12Gb/s, 600 GB, 15,000 rpm, hot-plug, 2.5-inch, enterprise HDD SAS, 12Gb/s, 600 GB, 10,000 rpm, hot-plug, 2.5-inch, enterprise HDD SAS, 12Gb/s, 900 GB, 10,000 rpm, hot-plug, 2.5-inch, enterprise HDD SAS, 12Gb/s, 1.2 TB, 10,000 rpm, hot-plug, 2.5-inch, enterprise HDD SAS, 12Gb/s, 1.8 TB, 10,000 rpm, hot-plug, 2.5-inch, enterprise SSD, 12 Gb/s, 200 GB,MLC, hot-plug, 2.5-inch, enterprise SSD, 12 Gb/s, 400 GB,MLC, hot-plug, 2.5-inch, enterprise SSD, 12 Gb/s, 800 GB,MLC, hot-plug, 2.5-inch, enterprise SSD, 12 Gb/s, 1.6 TB,MLC, hot-plug, 2.5-inch, enterprise
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RAID Controller	PRAID EP420i (2GB cache) RAID 0/1/10/5/50/6/60 and hot spare supported Optional FBU, License Activation Key for CacheCade 2.0 and FastPath for PRAID EP420i
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Interfaces

LAN	LAN ports in max. four IO Units are available. Max. four sets of LAN ports below selectable - 1 x dual 1Gbps Ethernet (RJ45) ports for IOU 1GbE - 1 x dual 10Gbps Ethernet (RJ45) ports for IOU 10GbE
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Graphics (15-pin)	1 per System Board
Serial 1 (9-pin)	1 per Management Board
Management LAN (RJ45)	1 per Management Board

Slots

PCI Express	PCIe slots in max. four IO units and max. four PCI Boxes are available. Max. four sets of PCIe 3 slots below selectable - 4 low profile PCIe 3 slots for IOU 1GbE - 1 low profile PCIe 3 slots and 2 PCIe 3 full height slots for IOU 10GbE
Note	Expandable to 56 slots when using PCI Boxes

Drive bays

Storage drive bays	2.5-inch hot-plug SAS
Storage drive bay configuration	Max. 16 x 2.5-inch

General system information

Number of fans	6 fan modules contained in PSU and FANU
Fan configuration	Hot plug

Operating panel

Status LED	System status (orange / yellow) Power (amber / green) Identification (blue)
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Connectable components

Fibre channel controllers	Single Channel 8Gbps Fiber Channel Card
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	Dual Channel 8Gbps Fiber Channel Card
	Single Channel 16Gbps Fiber Channel Card
	Dual Channel 16Gbps Fiber Channel Card
LAN controllers	Dual Channel 1000BASE-T Card
	Quad Channel 1000BASE-T Card
	Dual Channel 10G BASE-T LAN Card
	Dual Channel 10G BASE LAN Card
	10GBASE-SR SFP+ Optical Module
FcoE Cards	Dual Channel FCoE Card (10Gbps)
	Dual Channel FCoE Card (40Gbps)
InfiniBand controllers	Single Channel 56Gbps Infiniband card
	Dual Channel 56Gbps Infiniband card
	Single Channel 100Gbps Infiniband card
	Dual Channel 100Gbps Infiniband card
SAS Controllers	Dual Channel SAS RAID controll card
	Dual Channel SAS controll card
PCIe SSD	PCIe SSD card (800 GB)
	PCIe SSD card (1.2 TB)
	PCIe SSD card (2.0 TB)
Optional Software	
Server Management	ServerView Suite
Operating System	
Microsoft Windows Server® 2012	Microsoft Windows Server® 2012 Standard Edition (64-bit)
	Microsoft Windows Server® 2012 Datacenter Edition (64-bit)
Microsoft Windows Server® 2012 R2	Microsoft Windows Server® 2012 R2 Standard Edition (64-bit)
	Microsoft Windows Server® 2012 R2 Datacenter Edition (64-bit)
Red Hat Enterprise Linux	Red Hat Enterprise Linux 6 (for Intel64)
	Red Hat Enterprise Linux 7 (for Intel64)
SUSE Linux Enterprise Server	Novell SUSE Linux Enterprise Server 11
	Novell SUSE Linux Enterprise Server 12
VMware	VMware vSphere 5.5
	VMware vShere 6
Optional Software	
Server Management	ServerView Suite – Control SV Operations Manager including PDA and ASR & R (Pre-failure and analysis; Automatic Server Recovery and Restart) SV Performance Manager SV Power Management SV RAID Manager ServerView Suite – Maintain SV Remote Management SV Update Management SV Asset Management SV Online Diagnostics ServerView Suite - Integrate
RAS features	
Problem prevention	eMCA Gen2
Redundant components	Memory (memory mirroring), HDD (RAID0/1/1E/5/6/10), Power Supply Unit (option), PCI card (option), FAN, System Board (Reserved System Board), Management Board (option), Dual Power Supply to server (option),

	Processor core degradation
Online maintenance	Online replacement of IO Units is available using Dynamic Reconfiguration and Red Hat Enterprise Linux 6. Online replacement of System Boards is supported as hardware level. Online replacement of PCIe slots in PCI Box is available. Online Firmware Update
Online upgrade	Online addition of System Boards and IO Units is available using Dynamic Reconfiguration and Red Hat Enterprise Linux 6
Quick Path Interconnect	Data transferred between system boards protected by system interface error detection, re-transmission, and degradation.
Cable-less Design in chassis	Removes cabling errors, cabling work and cable problems when changing partition configurations.
Dimensions / Weight	
Weight	124 Kg (273 lb.)
Rack-mount (W x D x H)	445 x 778 x 438 mm, 10U
Environment	
Noise emission	60 dB
Operating ambient temperature	5 – 35 degree C
Operating relative humidity	20 – 80 %
Operating relative altitude	3000 m
Operating environment	Gaseous and Particulate Contamination Guidelines for Datacenters
Operating environment link	http://www.fujitsu.com/downloads/PRMQST/documents/PQ-Gaseous-Particulate-Contamination-Guidelines-DataCenter.pdf
Electrical values	
Rated operating range	100 - 240 VAC ±10%
Rated frequency range	50/60 Hz +2%, -4%
Active power max.	- Without Memory Scaleup Board : 3870 Watts - With Memory Scaleup Board: 5590 Watts
Heat emission	- With Memory Scaleup Board 13,205 BTU - Without Memory Scaleup Board: 19,074 BTU
Rush current	Max. 20A
Compliance	
Europe	EMC Directive 2004/108/EC Low Voltage Directive 2006/95/EC RoHS Directive(2002/95/EC)
USA/Canada	FCC ICES-003
Japan	VCCI
Service link	
Service link	www.fujitsu.com/support

More information

Fujitsu platform solutions

In addition to Fujitsu PRIMEQUEST 2400E2, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Dynamic Infrastructures

With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure-as-a-Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

Computing products

www.fujitsu.com/global/services/computing/

- PRIMERGY: Industrial standard server
- Fujitsu M10: UNIX server
- PRIMEQUEST: Mission-critical IA server
- ETERNUS: Storage system

Software

www.fujitsu.com/software/

- Interstage: Application infrastructure software
- Systemwalker: System management software

More information

Learn more about Fujitsu PRIMEQUEST 2400E2, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website.
www.fujitsu.com/primequest/

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 resolve issues of environmental energy efficiency through IT. Please find further information at:
www.fujitsu.com/global/about/environment/



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