

Data Sheet

Fujitsu PRIMERGY RX900 S1 8 socket Multi-Core Xeon 7500 series rack server

Datasheet for Red Hat certification

It starts where 4 socket servers end up!

The PRIMERGY RX Rack Server family is the perfect platform to form dynamic infrastructures for your business processes today and in the coming decade. You will thus benefit several times over from our recognized experience in optimized data center technology and our innovative strength in developing energy-efficient and cost/performance-optimized rack systems for universal use. PRIMERGY rack servers, built upon industry standards, focus from a functional viewpoint on core features: energy efficiency, reliability, optimized for virtualization, ease of operation and maintenance, flexibility for your future. And thus they notably meet your requirements for outstanding cost efficiency. Optimal operating costs and long-term usability comply with the IT quality required by your customers. Our responsibility goes way beyond the hardware as our tailor-made service packages mean that you can rely on the best support for your IT during its whole lifecycle.

PRIMERGY RX900 S1

PRIMERGY RX900 S1 is a new x86 based 8-socket rack server, designed for mission-critical back-end services, scale-up corporate workloads and high performance database processing. It constitutes a highly scalable, next-generation Xeon 7500 based server that significantly extends the economic advantages of x86 industry standard scale-up solutions.

It scales the usage patterns for single operating system deployment to new frontiers far beyond the 4 socket standard server classes- yet it is build on common industry standard x86 components. RX900 S1 enables the Enterprise Editions / Advanced Platform editions of Windows® Server 2008 R2, Red Hat Enterprise Linux®, SUSE® Linux Enterprise Server or VMware® VSphere 4

to exploit the platform's extreme scalability to the max, as regards the processing performance (64 cores), memory expandability (1 TB RAM) and its aggregated peak I/O bandwidth of more than 100 Gigabyte/s with 14 x PCIe8 and 2x 10 GbE onboard. The PRIMERGY RX900 S1 provides linear scale-up for I/O, memory and CPUs inside the 8 U rack system unit without the need for infrastructure changes. Very large corporate databases and heavy load transactional processing applications, where response time and throughput is paramount, will benefit best from the efficient scalability and high I/O bandwidth of the RX900. Likewise, corporate SAP/ERP, Decision Support services and Business Intelligence solutions, where "performance for time-to-results" constitutes the business critical value, will profit from its enormous processing power. The RX900 combines high availability by design and outstanding performance to provide an ideal fit. With enterprise virtualization suites such as VMware, Hyper-V and Xen, PRIMERGY RX900 as well enables for large scale consolidation of virtual servers to a central point, running many "big VMs" without performance barriers. Until now, IT managers running applications that require scale-up systems larger than 4 cores have had limited platform choices, mostly with proprietary and expensive RISC-based servers. The PRIMERGY RX900 drives the economical benefits of x86 industry standards to the next frontiers while retaining all the mission critical attributes for a constantly reliable IT production.



Features and Benefits

Main Features	Benefits
<p>8 sockets scale-up performance</p> <ul style="list-style-type: none"> ■ With PRIMERGY RX900 S1, the Intel QPI architecture in PRIMERGY x86 systems is used for the first time in combination with 8-socket scalability and the new INTEL 75xx Xeon processor series with up to 8 cores per CPU. ■ The result is a new scale-up server, that sets a new performance reach achievable with x86 rack server technology. ■ Compared to 4 socket servers with predecessor Xeon 7400 series processors, the new RX900 S1 with Xeon 7500 processor series scales up to 64 cores and 128 threads- a 5 times improvement in number of threads per system. Combined with the quadrupled maximum memory capacity on up to 128 memory sockets, the RX900 S1 truly constitutes a new 8 socket x86 performance class which starts where the 4-socket x86 server reach is ending up. <p>Linear Scalability</p> <ul style="list-style-type: none"> ■ RX900S1 provides linear scalability by simultaneously expanding I/O capacity, memory capacity and CPU performance, once upgrading the system with combined CPU/Memory boards. Not only will CPU performance scale up in line with additional 16 memory slots per configurable board. With Intel QPI link technology, a fully populated 8 CPU system will have 4 activated I/O hubs, providing aggregated peak I/O bandwidth of more than 100 GByte/s. The two onboard 10 Gigabit Ethernet controllers plus 6 x 1000 baseT onboard Ethernet ports ensure ample IP network bandwidth from the very start. <p>Scale-up growth without a change</p> <ul style="list-style-type: none"> ■ The new PRIMERGY RX900 S1 packs its scalability for 8 socket performance, 16 x PCIe slots, up to 128 memory sockets on 8 CPU/Memory boards, and 2+1 or 2+2 power supply redundancy features into a space saving 8U rack unit. ■ Starting with a 4 socket basic configuration, it enables to scale up the system to its upper limits, inside the same chassis and without having to modify the rack infrastructure. <p>Integrated High Availability as Standard</p> <ul style="list-style-type: none"> ■ Memory Sparing and Mirroring, ECC and SDDC, hot-plug redundant fans, hot-plug power supplies(2+1 and 2+2 redundancy), up to 8 x hot-plug SAS /SATA hard disks and hot-plug PCIe slots, integrated RAID controller ■ LocalView display and integrated Baseboard Management Controller, ■ new RAS features of Xeon 75xx processor series enable for enhanced error correction/circumvention activities with support of the Operating systems 	<ul style="list-style-type: none"> ■ This comprehensive portfolio expansion will give you the opportunity to benefit from extreme scale-up performance and reliability of PRIMERGY industry standard servers in datacenter scenarios that so far had been closed for x86 servers. RX900 S1 is driving the x86 price performance benefits into to the segments of proprietary UNIX bastions. ■ Linear scalability ensures for efficient growth in CPU/ Memory and I/O capacities. Irrespective of the server usage as Database, ERP, Decision Support or Virtualization system- once additional processor/memory boards are added to the system, the performance gains will equally benefit from the incremental I/O resources activated in the same step. ■ This system is designed to enable for scale-up growth as necessities dictate. Due to the "glueless" system design with latest Intel QPI link architecture, all scale up performance upgrades are "inside" the RX900 S1 system. Thus scale-up with PRIMERGY RX900 S1 does not need addition of external boxes or controllers that would necessarily change and re-arrange the given infrastructure of a datacenter rack setup and thus cause unwanted additional downtimes. ■ New RAS features have been built in to the Xeon 7500 processor series to enable advanced actions for error circumvention, assisted by the enterprise x86 operating systems. This perfectly combines with the built in High Availability features of the RX900 S1 platform. The result is an IT business platform that provides unprecedented operational continuity and more value for money in the high end server range.

Technical details

Mainboard	
Chipset	Intel® 7500 / 7500 Scalable Memory Buffer
Processor quantity and type	4 - 8 x Intel® Xeon® processor 7500 series
Processor	
	Intel® Xeon® processor E7540 (6C/12T, 2.00 GHz, SLC: -, TLC: 18 MB, Turbo: 0/1/1/2, 6.4 GT/s, 105 W)
	Intel® Xeon® processor X7542 (6C/6T, 2.66 GHz, SLC: -, TLC: 18 MB, Turbo: 0/1/1/1, 5.86 GT/s, 130 W)
	Intel® Xeon® processor X7550 (8C/16T, 2.00 GHz, SLC: -, TLC: 18 MB, Turbo: 1/2/3/3, 6.4 GT/s, 130 W)
	Intel® Xeon® processor X7560 (8C/16T, 2.26 GHz, SLC: -, TLC: 24 MB, Turbo: 1/2/3/3, 6.4 GT/s, 130 W)
Memory slots	128 (distributed on 8 CPU / Memory Riser cards with 16 memory slots each)
Memory slot type	DIMM (DDR3) registered
Memory capacity (min. - max.)	8 GB - 1024 GB
Memory protection	Advanced ECC Memory Scrubbing SDDC (Chipkill™) Memory Mirroring support Advanced ECC
Memory modules	
	8 GB (4 module(s) 2 GB) DDR3, registered, ECC, 1333 MHz, PC3-10600, DIMM
	16 GB (4 module(s) 4 GB) DDR3, registered, ECC, 1333 MHz, PC3-10600, DIMM
	32 GB (4 module(s) 8 GB) DDR3, registered, ECC, 1333 MHz, PC3-10600, DIMM
Memory modules notes	Memory modules will be delivered in set's of 4 DIMMs per order code. The Intel memory controller supports max. 1066MHz memory clock speed. 2TB memory capacity will be possible when 16GB DIMM modules are available.
Interfaces	
USB ports	8 x USB 2.0 (3 x front, 4 x rear, 1 x internal)
Graphics (15-pin)	2 x VGA (1 x front, 1 x rear)
Serial 1 (9-pin)	1 x RS-232-C
LAN / Ethernet (RJ-45)	6 x Gbit/s Ethernet, 2x 10 Gbit/s Ethernet
Service LAN (RJ45)	1 x dedicated service LAN port for iRMC S2 (10/100 Mbit/s) Service LAN traffic can be switched to shared onboard Gbit LAN port
Onboard or integrated Controller	
RAID Controller	8 Port SAS RAID 5/6 controller as option See under Components RAID controller
Remote Management Controller	Integrated Remote Management Controller (iRMC S2, 32 MB attached memory incl. graphics controller), IPMI 2.0 compatible
Trusted Platform Module (TPM)	Infineon / separate module; TCG V1.2 compliant (option)
Slots	
PCI-Express 2.0 x4 (mech. x8)	2 x full height (all ½ length)
PCI-Express 2.0 x8	14 x full height (all ½ length)
Drive bays	
Hard disk bays	8 x 2.5-inch hot-plug SAS
Accessible drive bays	1 x 5.25/0.5-inch for CD-RW/DVD
General system information	
Number of fans	4

General system information

Fan configuration	hot plug
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Operating panel

Operating buttons	On/off switch NMI button
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Status LEDs	System status (amber / yellow) Identification (blue) Hard disks access (green) Power (amber / green) At system rear side: System status (amber / yellow) Identification (blue)
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Service display	ServerView Local Service Display (LSD)
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BIOS

BIOS features	ROM based setup utility Recovery BIOS BIOS settings save and restore Local BIOS update from USB device Online update tools for main Windows and Linux versions Local and remote update via ServerView Update Manager SMBIOS V2.4 Remote PXE boot support Remote iSCSI boot support
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Operating Systems and Virtualization Software**Operating system notes**

Operating system release link	http://docs.ts.fujitsu.com/dl.aspx?id=a9e600b9-e4cb-4f48-aa41-632f69058421
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Server Management

Standard	ASR&R Automatic Server Recovery and Restart PDA Prefailure Detection and Analysis ServerView Suite: SV Installation Manager SV Operation Manager SV RAID Manager SV Update Management SV Power Management SV Agents Online update packages for BIOS, firmware drivers and ServerView Agents ServerView Integration solutions for Microsoft SMS, MOM, SCOM, SCCM and Altiris Deployment Solution ServerView Deployment Manager (fully functional 30-day trial version) ServerView Integration solutions for Microsoft SMS, MOM, SCOM, SCCM and Altiris Deployment Solution ServerView Deployment Manager (fully functional 30-day trial version)
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Option	ServerView Remote Management ServerView Integration for Tivoli TEC®, Tivoli NetView, HP NNM and HP Operations Manager ServerView Deployment Manager (fully functional unlimited version) iRMC S2 Advanced Pack
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Server Management notes	Regarding Operating System dependencies and product details for ServerView Suite Software Products see dedicated Product Data sheets.
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Dimensions / Weight

Rack (W x D x H)	482.6 x 724 x 352 mm
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Mounting Depth Rack	724 mm
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Height Unit Rack	8 U
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19" rackmount	Yes
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Weight notes	Actual weight may vary depending on configuration
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Environmental	
Operating ambient temperature	10 - 35°C
Operating relative humidity	10 - 85 % (non condensing)
Operating environment	FTS 04230 – Guideline for Data Center (installation locations)
Operating environment Link	http://docs.ts.fujitsu.com/dl.aspx?id=e4813edf-4a27-461a-8184-983092c12dbe
Electrical values	
Power supply configuration	Up to 4 hot plug power supplies. Base unit equipped with 2 power supplies, redundancy as option.
Max. output of single power supply	2000 W
Hot-plug power supply redundancy	Yes
Rated voltage range	100 V - 240 V
Rated frequency range	50 Hz - 60 Hz
Compliance	
Germany	GS
Europe	CE Class A *
USA/Canada	FCC Class A CSA UL
Global	CB RoHS (Restriction of hazardous substances) WEEE (Waste electrical and electronic equipment)
Japan	VCCI
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.
Compliance link	https://sp.ts.fujitsu.com/sites/certificates/default.aspx

Components

Hard disk drives	SSD SATA, 3 Gb/s, 64 GB, SLC, hot-plug, 2.5-inch, enterprise SSD SATA, 3 Gb/s, 32 GB, SLC, hot-plug, 2.5-inch, enterprise HDD SAS, 6 Gb/s, 300 GB, 10000 rpm, hot-plug, 2.5-inch, enterprise HDD SAS, 6 Gb/s, 146 GB, 15000 rpm, hot-plug, 2.5-inch, enterprise HDD SAS, 6 Gb/s, 146 GB, 10000 rpm, hot-plug, 2.5-inch, enterprise HDD SAS, 6 Gb/s, 73 GB, 15000 rpm, hot-plug, 2.5-inch, enterprise
Hard disk notes	One Gigabyte equals one billion bytes, when referring to hard disk drive capacity. Accessible capacity may vary, also depending on used software
Optical drives	Blu-ray Disc™ Combo Drive, (2x BD-ROM; 8x DVD; 24x CD), slimline, SATA I DVD Super Multi, (8xDVD/DVD+RW, 6xDVD-RW, 5xDVD-RAM; 24xCD/CD-R, 16xCD-RW), slimline, SATA I
SCSI / SAS Controller	SAS Ctrl. 3 Gb 4 ports int. / 4 ports ext. PCIe x4
RAID Controller	RAID 5/6 Ctrl., HDD SAS 6 Gb, LSI , 8 ports ext. RAID level: 0, 1, 10, 5, 50, 6, 60, 512 MB Cache, optional BBU (based on LSI SAS2108) Integrated RAID 5/6 Ctrl., HDD SAS 6 Gb, Fujitsu , 8 ports int. RAID level: 0, 1, 10, 5, 50, 6, 60, 512 MB Cache, optional BBU (based on LSI SAS2108)
Fibre Channel controller	Fibre Channel Host Bus Adapter 2 x 8 Gb Emulex LPe12002 MMF LC-style Fibre Channel Host Bus Adapter 1 x 8 Gb Emulex LPe1250 MMF LC-style

LAN Controller

Ethernet Ctrl. 1 x 1 Gb Intel® PRO/1000 PF Server Adapter
Ethernet Ctrl. 2 x 10 Gb Intel® Ethernet Server Adapter X520-DA2
Ethernet Ctrl. 2 x 1 Gb Intel® PRO/1000 PT Dual Port Server Adapter
Ethernet Ctrl. 4 x 1 Gb Intel® PRO/1000 PT Quad Port Server Adapter

Rack infrastructure

Cable Arm 2U for 3rd party racks
Rackmount kit full extraction (760mm)

Warranty

Standard Warranty 3 years
Service level On-site Service (depending on country)

Maintenance and Support Services - the perfect extension

Recommended Service 7x24, Onsite Response Time: 4h - For locations outside of EMEA please contact your local Fujitsu partner.
Spare Parts availability 5 years
Service Weblink <http://ts.fujitsu.com/Supportservice>

More information

Fujitsu platform solutions

In addition to Fujitsu PRIMERGY RX900 S1, 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/

Software

www.fujitsu.com/software/

More information

Learn more about Fujitsu PRIMERGY RX900 S1, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.
<http://ts.fujitsu.com/Primergy>

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 <http://www.fujitsu.com/global/about/environment/>



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2011-01-10 CE-EN

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