



# PRIMERGY RX300 S5

## *Dual-Processor Rack Server*



The PRIMERGY® RX300 S5 server is ideal for space-constrained data centers, providing an optimum balance of processing power, hard drive capacity, and expandability in a scalable and efficient 2U chassis.

### **The features of this server speak for themselves:**

Powerful Intel Dual- and Quad-Core Xeon® 5500 series processors

Memory high availability with hot spare memory or mirroring support

Up to 144 GB of DDR3-RAM

Choice of integrated SAS RAID controllers with as much as 512 MB cache

Highly expandable with 7 PCI Express slots

Up to 12x hard drives and support for up to 6 TB storage

Integrated Remote Management Controller (iRMC) providing advanced management features

### **PRIMERGY = Performance**

The PRIMERGY RX300 S5 server combines advanced processor and memory technology with a robust I/O to easily handle the demands of today's increasingly virtualized data centers. This server's "next generation" architecture is built around Quad Core Intel® Xeon™ 5500 series processors that deliver a dramatic increase in performance. The PRIMERGY RX300 S5 combines these new processors with a memory subsystem supporting up to 144 GB of RAM – more than double the amount of previous dual socket PRIMERGY servers. Demanding database applications or large-scale virtualized environments that previously could only be supported on larger systems can now be consolidated on the PRIMERGY RX300 S5.

### **Rock Solid Reliability and Efficiency**

Reliability is of the utmost importance to Fujitsu. The PRIMERGY RX300 S5 is one of the first Intel Xeon 5500 series processor servers in the industry to offer memory high availability features such as memory sparing and mirroring. These are critical features for systems with large amounts of memory. The PRIMERGY RX300 S5 server provides hot-plug capabilities for critical components, such as power supply units, drives, and system fans to guard against the failure of an individual component. Chassis cooling design is another key feature of this server. The PRIMERGY RX300 S5 server's advanced Cool-Safe design optimizes airflow to keep critical components cool and minimize the power spent on cooling. This maximizes server reliability and power efficiency. The PRIMERGY RX300 S5 server's combination of memory and hardware reliability features, and advanced cooling design make it a rock-solid platform for your business.

### **Complete Lifecycle Management**

For a quick ramp up of your new server, the ServerStart Suite of tools from Fujitsu allows you to install and configure an OS load quickly and easily. Once the server is up, our ServerView software agents deliver fail-safe operation by providing in-band management, monitoring, and control of PRIMERGY RX300 S5 hardware. New power management features optimize the power profile of PRIMERGY servers to save on power costs. A powerful integrated Remote Management Controller chip is integrated into the PRIMERGY RX300 S5 server and provides complete out-of-band monitoring, test, diagnosis, and alarm management. With PRIMERGY remote management solutions, you are always in control of your servers.

### **Quality and Reliability**

Fujitsu is a worldwide leader in Intel, Linux, and UNIX® architecture servers with industry leading reliability and extensive availability features. The close integration between Fujitsu design, manufacturing, and service engineers creates some of the highest quality products in the server market. With global support capabilities, Fujitsu offers complete solutions that will allow us to meet all your present and future needs.



# RX300 S5 SPECIFICATIONS

Main Features	Benefits
<p>Dual, Quad and Turbo Quad-Core Intel Xeon 5500 series and up to 8 MB TLC</p> <p>Up to 144 GB state-of-the-art DDR3 main memory</p> <p>7 PCIe Gen2 double I/O throughput</p> <p>2 x Gb/s Ethernet LAN with TCP/IP accelerator</p> <p>Patented IOOP on certain pairs of PCIe slots (auto-accumulated 2x x4 PCIe to 1x x8 PCIe slot)</p>	<p>New processor instructions enable VMs to run more efficiently and with better security. More virtual machines and applications can be consolidated on one server.</p> <p>Doubled I/O bandwidth so that the combined SAN and network accesses achieve optimal throughput.</p> <p>Flexible PCIe design gives users a choice between a large number of slots, or a smaller number of high performance slots for demanding devices.</p>
<p>Memory sparing and memory mirroring option</p> <p>Cool-safe system design with high air throughput</p> <p>Integrated iRMC S2 Advanced Pack, integrated Remote Management Controller</p>	<p>Enables particularly high levels of availability and reliability needed for larger memory configurations.</p> <p>Better cooling results in increased component lifespan and optimized performance.</p> <p>Easy, fast remote access from a web browser reduces costs by increasing troubleshooting and management efficiency.</p>
<p>Highly efficient power supply units</p> <p>Sensor-controlled fan management</p> <p>Large, slow-rotation cooling fans</p> <p>Power limiting and power budgeting</p>	<p>Optimized energy-efficiency reduces stress on the data center cooling system and your budget.</p> <p>Pre-set energy levels prevent consumption levels being exceeded.</p>
<p>ServerView Local Service Panel (LSP) or display (LSD)</p> <p>New standardized design with illuminated green touch-points for servicing hot-plug components</p>	<p>Easy and accurate diagnosis of problems to minimize downtime – enables quick hardware troubleshooting by remote users and lowered service costs.</p> <p>Easy-to-use for quick servicing of PRIMERGY systems</p>
<p>ServerView Suite - Proven tools for the efficient management of physical and virtual resources throughout the entire lifecycle:</p> <ul style="list-style-type: none"> <li>- Perfect installation</li> <li>- Stable operations</li> <li>- Secure updates</li> <li>- Exact (remote) maintenance</li> <li>- Easy integration in specific corporate management solutions</li> </ul>	<p>Reduced operational and service costs: greater reliability, lower downtimes, and improved service quality.</p>

## Technical Details

Hard disk architecture	12x 2.5" SAS/SATA	6x 3.5" SAS/SATA	8x 2.5" SAS/SATA
<b>Mainboard</b>			
Mainboard type	D 2619		
Chipset	Intel® 5520		
Processor quantity and type	1 - 2 x Intel® Xeon® processor 5500 series		
Processor options	Intel® Xeon® E5502 (2C, 1.86 GHz, SLC: 4 MB, Turbo: No, 4.8 GT/s, Mem bus: 800 MHz, 80 W) Intel® Xeon® E5504 (4C, 2.00 GHz, SLC: 4 MB, Turbo: No, 4.8 GT/s, Mem bus: 800 MHz, 80 W) Intel® Xeon® E5506 (4C, 2.13 GHz, SLC: 4 MB, Turbo: No, 4.8 GT/s, Mem bus: 800 MHz, 80 W) Intel® Xeon® E5520 (4C, 2.26 GHz, SLC: 8 MB, Turbo: Yes, 5.86 GT/s, Mem bus: 1066 MHz, 80 W) Intel® Xeon® E5540 (4C, 2.53 GHz, SLC: 8 MB, Turbo: Yes, 5.86 GT/s, Mem bus: 1066 MHz, 80 W) Intel® Xeon® L5506 (4C, 2.13 GHz, SLC: 4 MB, Turbo: No, 4.8 GT/s, Mem bus: 800 MHz, 60 W) Intel® Xeon® L5520 (4C, 2.26 GHz, SLC: 8 MB, Turbo: Yes, 5.86 GT/s, Mem bus: 1066 MHz, 60 W) Intel® Xeon® X5550 (4C, 2.67 GHz, SLC: 8 MB, Turbo: Yes, 6.4 GT/s, Mem bus: 1333 MHz, 95 W) Intel® Xeon® X5570 (4C, 2.93 GHz, SLC: 8 MB, Turbo: Yes, 6.4 GT/s, Mem bus: 1333 MHz, 95 W)		
Memory slots	18 (9 DIMMs per CPU, 3 channels with 3 slots per channel)		
Memory slot type	DIMM (DDR3) registered		
Memory capacity (min. - max.)	2 GB - 144 GB		
Memory Protection	Advanced ECC Memory Scrubbing SDDC (Chipkill™) Hot-spare memory support Memory Mirroring support		
Memory notes	max. 144 GB registered, min. 2 GB registered;		
Deleted rows			
Memory Modules Independent Mode	2 GB (1 module(s) with 2 GB), DDR3-SDRAM, registered, ECC, 1066 MHz, PC3-8500 2 GB (1 module(s) with 2 GB), DDR3-SDRAM, registered, ECC, 1333 MHz, PC3-10600 4 GB (1 module(s) with 4 GB), DDR3-SDRAM, registered, ECC, 1066 MHz, PC3-8500 4 GB (1 module(s) with 4 GB), DDR3-SDRAM, registered, ECC, 1333 MHz, PC3-10600 8 GB (1 module(s) with 8 GB), DDR3-SDRAM, registered, ECC, 1066 MHz, PC3-8500 8 GB (1 module(s) with 8 GB), DDR3-SDRAM, registered, ECC, 1333 MHz, PC3-10600		

	Memory Modules Mirrored Mode (Two identical modules per bank)	4 GB (2 module(s) with 2 GB), DDR3-SDRAM, registered, ECC, 1066 MHz, PC3-8500 4 GB (2 module(s) with 2 GB), DDR3-SDRAM, registered, ECC, 1333 MHz, PC3-10600 8 GB (2 module(s) with 4 GB), DDR3-SDRAM, registered, ECC, 1066 MHz, PC3-8500 8 GB (2 module(s) with 4 GB), DDR3-SDRAM, registered, ECC, 1333 MHz, PC3-10600 16 GB (2 module(s) with 8 GB), DDR3-SDRAM, registered, ECC, 1066 MHz, PC3-8500 16 GB (2 module(s) with 8 GB), DDR3-SDRAM, registered, ECC, 1333 MHz, PC3-10600
	Memory Modules Spare-Performance Mode (Three identical modules per bank)	6 GB (3 module(s) with 2 GB), DDR3-SDRAM, registered, ECC, 1066 MHz, PC3-8500 6 GB (3 module(s) with 2 GB), DDR3-SDRAM, registered, ECC, 1333 MHz, PC3-10600 12 GB (3 module(s) with 4 GB), DDR3-SDRAM, registered, ECC, 1066 MHz, PC3-8500 12 GB (3 module(s) with 4 GB), DDR3-SDRAM, registered, ECC, 1333 MHz, PC3-10600 24 GB (3 module(s) with 8 GB), DDR3-SDRAM, registered, ECC, 1066 MHz, PC3-8500 24 GB (3 module(s) with 8 GB), DDR3-SDRAM, registered, ECC, 1333 MHz, PC3-10600
<b>Interfaces</b>	USB ports	9 x USB 2.0 (3x front, 4x rear, 2x internal)
<b>Interfaces</b>	Graphics (15-pin)	1 x VGA
	Serial 1 (9-pin)	1 x serial RS-232-C, usable for iRMC or system or shared
	Serial 2 (9-pin)	1 x serial RS-232-C
	LAN / Ethernet (RJ-45)	2 x Gb/s Ethernet
	Service LAN (RJ45)	1 x dedicated service LAN port for iRMC S2 (10/100 Mb/s) Service LAN traffic can be switched to shared onboard Gb LAN port
<b>Onboard or integrated Controller</b>	RAID Controller	Integrated RAID 0/1 or RAID 5/6 controller for SAS base units (occupies one PCIe slot, if at least 1 HDD is configured). See under Components RAID controller
	SATA Controller	ICH10B, with two SATA channels for DVD + backup
	LAN Controller	Intel® Zoar, 2 x 10/100/1000 Mb/s Ethernet (TCP/IP acceleration), PXE Boot or iSCSI boot via onboard LAN
	Remote Management Controller	Integrated Remote Management Controller (iRMC S2, 32 MB attached memory incl. graphics controller), IPMI 2.0 compatible
	TPM (Trusted Platform Module)	Infineon / separate module; TCG V1.2 compliant (option)
<b>Slots</b>	PCI-Express Gen2 x4	5 x low profile
	PCI-Express Gen2 x8	2 x low profile
	Slot Notes	Two of four PCI-Express Gen2 x4 slots can be used as x8, if neighbor slot is empty. One PCIe Gen2 x4 slot may be occupied with a modular RAID controller if configured.
<b>Drive bays</b>	Hard disk bay configuration	6x 3.5-inch, for SAS / SATA or 8 or 12x 2.5-inch for SAS optional
	Accessible drive bays	1 x 5.25/0.5-inch for CD-RW/DVD 1 x 3.5/0.5-inch for ServerView Local Service Panel or Local Service Display 1 x 3.5/1.6-inch for backup devices (occupies 2x 3.5-inch HDD for basic unit 6x 3.5-inch)
	Notes accessible drives	All possible options described in relevant system configurator.
<b>General system information</b>	Number of fans	5 (10 if redundant option added)
	Fan configuration	Hot-plug
<b>Operating panel</b>	Operating buttons	On/off switch NMI button Reset button
	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) LAN connection (green) LAN speed (green / yellow)
	Service display	Optional: ServerView Local Service Panel (LSP) ServerView Local Service Display (LSD)
<b>BIOS</b>	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
<b>Supported operating systems</b>	Supported operating systems	Microsoft® Windows Server® 2008 Microsoft® Windows Server® 2003 Novell SUSE Linux Enterprise Server Red Hat Enterprise Linux VMware Infrastructure



	Operating system release link	<a href="http://solutions.us.fujitsu.com/www/content/support/osrel.xls">http://solutions.us.fujitsu.com/www/content/support/osrel.xls</a>
<b>Server Management</b>	Standard PDA	ASR&R
	Option	ServerView Deployment Manager (fully functional unlimited version) ServerView Remote Management ServerView Integration for Tivoli TEC®, Tivoli NetView, HP OpenView NNM and HP OpenView iRMC S2 Advanced Pack
	Server Management Notes	Regarding operating system dependencies for ServerView Suite Software Products see dedicated product data sheets.
<b>Dimensions / Weight</b>	Rack (W x D x H)	19 x 30.31 x 3.38 inches
	Mounting Depth Rack	28.74 inches
	Height Unit Rack	2 U
	19" rackmount	Yes
	Weight	up to 55 lbs.
	Weight notes	Weight may vary depending on actual configuration
	Rack integration kit	Rack integration kit as option

## Environmental

<b>Noise emission</b>		Measured according to ISO 7779 and declared according to ISO 9296
	Sound pressure (LpAm)	45 dB(A) (idle) / 45 dB(A) (operating)
	Sound power (LWAd; 1B = 10dB)	6.2 B (idle) / 6.2 B (operating)
	Operating ambient temperature	50 - 95°F
	Operating relative humidity	10 - 85 % (non condensing)

## Electrical values

<b>Power supply configuration</b>		hot-plug power supply as standard, redundancy as option (1 + 1 redundancy)
	Max. output of power supply	800 W
	Hot-plug power supply redundancy	Yes
	Rated voltage range	100 - 240 V
	Rated frequency range	50 - 60 Hz
	Rated current max.	8.0 A – 3.5 A (100 V / 240 V)
	Rated current in basic configuration	4.2 A - 1.4 A (100 V / 240 V)
	Active Power max. (per system unit)	733 W
	Apparent Power max. (per system unit)	737 VA
	Heat emission	2638.8 kJ/h (2501.7 BTU)

## Compliance

	Germany	GS
	Europe	CE
	USA/Canada FCC Class A	CSAc/us
	Global	CB RoHS (Restriction of hazardous substances) WEEE (Waste electrical and electronic equipment)
	Japan	VCCI
	China	CCC
	Australia&New Zealand	C-Tick
	Taiwan	BSMI
	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	<a href="http://sp.ts.fujitsu.com/sites/certificates/default.aspx">http://sp.ts.fujitsu.com/sites/certificates/default.aspx</a>

## Components

Hard disk drives	SSD SATA, 1.5 Gb/s 50 GB hot plug, 2.5-inch SATA, 3 Gb/s 750 GB, 7200 rpm, hot plug, 3.5-inch SATA, 3 Gb/s 500 GB, 7200 rpm, hot plug, 3.5-inch SATA, 3 Gb/s 250 GB, 7200 rpm, hot plug, 3.5-inch SATA, 3 Gb/s 1 TB , 7200 rpm, hot plug, 3.5-inch SATA, 120 GB, 5400 rpm, hot plug, 2.5-inch SAS, 3 Gb/s 450 GB, 15000 rpm, hot plug, 3.5-inch SAS, 3 Gb/s 300 GB, 15000 rpm, hot plug, 3.5-inch SAS, 3 Gb/s 146 GB, 15000 rpm, hot plug, 3.5-inch SAS, 3 Gb/s 146 GB, 10000 rpm, hot plug, 2.5-inch SAS, 3 Gb/s 73 GB, 15000 rpm, hot plug, 3.5-inch SAS, 3 Gb/s 73 GB, 15000 rpm, hot plug, 2.5-inch SAS, 3 Gb/s 73 GB, 10000 rpm, hot plug, 2.5-inch SAS, 3 Gb/s 36 GB, 15000 rpm, hot plug, 2.5-inch
Hard disk notes	Mix of 3.5-inch SAS and SATA HDD is possible but requires separate RAID sets. One Gigabyte (GB) equals one billion bytes, when referring to hard disk drive capacity. Accessible capacity may vary, also depending on used software.
Tape Drives	DDS Gen5 3.5", 36 GB , 3 MB/s, half height, USB 2.0 RDX Drive 3.5", 80 GB, 160 GB, 320 GB , 25 MB/s, half height, USB 2.0
Optical drives	Blu-ray 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, 16xCDRW), slimline, SATA I
SCSI / SAS Controller	SCSI Ctrl 320 MB 1x int /1x ext SAS Ctrl 3 Gb 4 ports int. / 4 ports ext.
RAID Controller	RAID 5/6 Ctrl, SAS/SATA 3 Gb, LSI MegaRAID SAS8880E, 8 ports ext. RAID level: 0, 1, 10, 5, 50, 6, 60, 512 MB Cache, optional BBU (based on LSI 1078) RAID 5/6 Ctrl, SAS/SATA 3 Gb, LSI MegaRAID SAS8880E, 8 ports ext. RAID level: 0, 1, 10, 5, 50, 6, 60, 512 MB Cache, inclusive BBU (based on LSI 1078) Integrated RAID 5/6 Ctrl, SAS/SATA 3 Gb, 8 ports int. RAID level: 0, 1, 10, 5, 50, 6, 60, 512 MB Cache, optional BBU (based on LSI 1078) Integrated RAID 5/6 Ctrl, SAS/SATA 3 Gb, 8 ports int. RAID level: 0, 1, 10, 5, 50, 6, 60, 256 MB Cache, optional BBU (based on LSI 1078) Integrated RAID 0/1 Ctrl, SAS/SATA 3 Gb, 8 ports int. RAID level: 0, 1, 1E, no BBU support (based on LSI 1068e)
Fibre Channel controller	Fibre Channel Ctrl 2 x 4 Gb Emulex LPe11002 MMF LC Fibre Channel Ctrl 1 x 4 Gb Emulex LPe1150 MMF LC Fibre Channel Ctrl 1 x 4 Gb Qlogic QLE2460 MMF LC Fibre Channel Ctrl 2 x 4 Gb Qlogic QLE2462 MMF LC Fibre Channel Ctrl 2 x 8 Gb Emulex LPe12002 MMF LC Fibre Channel Ctrl 1 x 8 Gb Emulex LPe1250 MMF LC
LAN Controller	Ethernet Ctrl 1 x 1 Gb Intel® Gigabit CT Desktop Adapter Ethernet Ctrl 1 x 1 Gb Intel® PRO/1000 PF Server Adapter low profile Ethernet Ctrl 1 x 1 Gb Intel® PRO/1000 PT Server Adapter low profile Ethernet Ctrl 2 x 10 Gb Intel® 10 Gigabit XF SR Dual Port Server Adapter Ethernet Ctrl 2 x 1 Gb Intel® PRO/1000 PT Dual Port Server Adapter low profile Ethernet Ctrl 4 x 1 Gb Intel® PRO/1000 PT Quad Port Server Adapter low profile
Rack infrastructure	Cable Arm 2U for 3rd party racks Cable Management for 19-inch Data Center / PRIMECENTER Racks Rackmount kit full extraction (29.921 inches), tool less mounting Rackmount kit partly extraction (20.63 inches), tool less mounting

## Warranty

<b>Standard Warranty</b>		3 years
	Service level	On-site Service
<b>Maintenance and Support Services - the perfect extension</b>	Recommended Service	7x24, Onsite Response Time: 4h
	Spare Parts availability	5 years
	Service Weblink	<a href="http://www.fujitsu.com/us/support/index.html">http://www.fujitsu.com/us/support/index.html</a>

Information about environmental care, policies, programs and our Environmental Guideline FSC 03230:

<http://solutions.us.fujitsu.com/www/content/aboutus/environmental/environment.php>

Take back and recycling information:

[http://solutions.us.fujitsu.com/www/content/products/trade-in\\_program/](http://solutions.us.fujitsu.com/www/content/products/trade-in_program/)



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