FUJITSU

Data Sheet
Fujitsu PRIMERGY CX122 S1 Cloud server unit for PRIMERGY CX1000

Datasheet for Red Hat certification

PRIMERGY CX1000 is a new product category within the PRIMERGY x86 server family. Its focus is on providing large scale-out data centers with massive scaling x86 server power while at the same time delivering new data center economics for density, power, heat and acquisition costs. PRIMERGY CX1000 delivers a cloud- enabled server infrastructure platform for internet scale-out data centers (ISP), application service providers (ASP), Managed Domains, "as- a-service" providers , hosting industries and Cloud Computing markets. For High Performance Computing, the use of hundreds of parallel processing x86 server units, running parallel application programs in a combined cluster has already become a de facto design standard. The common factor is the demand to "Scale Big", using massive scale-out server computing resources on x86 industry standards to compete in and benefit from the rapid growth of those markets. Yet, traditional data center facilities do not easily keep pace with those massive compute capacity demands, since they have to master additional challenges:
• Substantial decrease in power envelopes and cooling requirements for those servers and related infrastructure
• Overcome the limitation in data center floor space, and the requirement for more computing power per square meter
• The need for more efficient manageability and less complexity in the operation of massive scale-out compute resources
• Limited budgets enforcing lowered initial purchase costs and less operational spending

The new PRIMERGY CX1000 system platform is designed to overcome those four major challenges, breaking down the barriers to scale big and spend small.

PRIMERGY CX122 S1
38 cloud server PRIMERGY CX122 S1 units, each in a 1U Rip & Replace housing, are packaged as a set into a single CX1000 rack providing an aggregated scale-out performance of a total of 76 Intel Xeon CPUs. The 2 socket server units combine high performance and attractive acquisition costs with extreme energy efficiency and come without any local fans. With 18 Memory DIMM slots and a choice of different Intel Xeon processor performance classes, CX122 S1 servers have a great versatility to match different server profiles and workload scenarios.
The Cool-Central™ architecture of the PRIMERGY CX1000 ensures optimum shared air cooling and heat dissipation for all the 38 independent Cloud server units – saving overall energy costs and reducing the datacenter working footprint required. CX122 S1 cloud servers support ongoing reduction of operational expenses by their simplicity of design. Not only do they contribute to lower acquisition costs by eliminating surplus redundancy functions, not required in large scale-out deployments. Their streamlined functionalities with front access I/O, direct Plug&Go power connectors and Rip&Replace handles support simplified maintenance and management strategies that directly lower the operational costs. By packaging 38 identical server units into a single CX1000 Cool-Central™ rack, homogeneity for management and maintenance pays back to reduce the running costs.

Features and Benefits

Main Features	Benefits
■ The CX122 S1 server unit comes without local fans	■ Significant energy reduction. All 38 server units are cooled with the Cool-Central shared Air cooling architecture, using only two redundant exhauster fans.
■ 18 Memory DIMM slots per two socket server node enable for large memory configurations	■ Great versatility to match different server profiles and workload demands with same server unit. Enables for lower costs using lower capacity DIMMs; likewise enables for more virtual machines per node using higher memory configured.
■ Highly efficient local power supply per server node, providing 92% percent efficiency which conforms to the 80 plus GOLD PSU standard certification.	■ 80 PlusGold is the highest rating for power supply energy efficiency. To be 92 percent efficient means 92 percent of the energy that goes into the computer is actually used by the computer. Thus a more efficient power supply cuts down on the wasted excess heat. ■ Failure of a power supply will only cause the failure of a single CX122 server unit as opposed to shared power supply techniques that result in shutting down multiple nodes.
■ All front I/O access enables quick and easy maintenance	■ No need to access the servers from rear of chassis-keeps operational efforts at low level of complexity and costs
■ Choice of different processor performance classes with latest Intel Xeon processor series	■ Optimally balance performance per watt and capital spending
■ Optional local hard disks	■ Improve application performance with high speed local disk capacities, enable for local OS boot and mirrored boot disk
■ Pre- cabled LAN Networking out of factory	■ Depending on configuration choice, all 38 servers come factory pre-cabled for the LAN IP setup and the LAN switches- this saves time to operation and improves scale-out growth with reduced complexity
■ Fully factory assembled solution delivered to customer premises	■ Server units, CX1000 solution, switches and LAN cabling come fully factory tested and assembled- no need for time consuming and error–prone self assembly

Technical details

Mainboard

Mainboard type	D 2899
Chipset	Intel® 5500
Processor quantity and type	2 x Intel® Xeon® processor E5500 series / Intel® Xeon® processor E5600 series / Intel® Xeon® processor L5600 series / Intel® Xeon® processor X5600 series
Processor	Intel® Xeon® processor E5506 (4C/4T, 2.13 GHz, SLC: 4 x 256 KB, TLC: 4 MB, Turbo: No, 4.8 GT/s, Mem bus: 800 MHz, 80 W)
	Intel® Xeon® processor E5620 (4C/8T, 2.40 GHz, SLC: 4 x 256 KB, TLC: 12 MB, Turbo: 1/1/2/2, 5.86 GT/s, Mem bus: 1066 MHz, 80 W)
	Intel® Xeon® processor L5630 (4C/8T, 2.13 GHz, SLC: 4 x 256 KB, TLC: 12 MB, Turbo: 1/1/2/2, 5.86 GT/s, Mem bus: 1066 MHz, 40 W)
	Intel® Xeon® processor L5640 (6C/12T, 2.26 GHz, SLC: 4 x 256 KB, TLC: 12 MB, Turbo: 2/2/3/3/4/4, 6.4 GT/s, Mem bus: 1333 MHz, 60 W)
	Intel® Xeon® processor X5670 (6C/12T, 2.93 GHz, SLC: 4 x 256 KB, TLC: 12 MB, Turbo: 2/2/2/2/3/3, 6.4 GT/s, Mem bus: 1333 MHz, 95 W)
Memory slots	18 (3 channels per CPU with 9 DIMMs per CPU = 18 DIMM in total)
Memory capacity (min. - max.)	12 GB - 144 GB
Memory protection	Advanced ECC SDDC (only for registered DIMMs)
Memory notes	Supports u DIMM and reg DIMM
Memory modules	12 GB (6 module(s) 2 GB) DDR3 LV, unbuffered, ECC, 1333 MHz, PC3-10600, DIMM
	24 GB (6 module(s) 4 GB) DDR3, registered, ECC, 1333 MHz, PC3-10600, DIMM
	48 GB (6 module(s) 8 GB) DDR3, registered, ECC, 1333 MHz, PC3-10600, DIMM
Upgrade notes	Cloud Server Tray

Interfaces

USB ports	2 USB 2.0
Graphics (15-pin)	1 x VGA (1x front)
LAN / Ethernet (RJ-45)	3 2x Gbit/s Ethernet + 1x 100Mbit service LAN Onboard
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

SATA Controller	ICH10R, 2-port for RAID 0,1 (for 2x 2.5-inch HDD´s only)
LAN Controller	2 x Intel® 82576, 2 x 10/100/1000 Mbit/s Ethernet (TCP/IP acceleration), VT-d (I/O acceleration and VMDq), PXE boot via LAN from PXE server, iSCSI boot (also diskless) via onboard LAN
Remote Management Controller	Integrated Remote Management Controller (iRMC S2, 32 MB attached memory incl. graphics controller), IPMI 2.0 compatible

Slots

PCI-Express x16	1 x Low profile ready, full height, long PCI Express x16 riser card PCI gen2 Express x4 w/ x8 / x16 connector; riser card supporting both full-height and low-profile
Slot Notes	Via riser card x16

Drive bays

Hard disk bays	2 x 2.5-inch non hot-plug SATA HDD

General system information

Number of fans	0
Fan configuration	Centralized redundant fans part of Cloud rack infrastructur (CX1000); No fans in CX122

Operating panel

Operating buttons	On/off switch Reset button ID button NMI button
Status LEDs	Hard disks access (green) Power (green) System status (green) LAN speed (green / yellow) LAN connection (green) Identification (blue)

BIOS

BIOS features	ROM based setup utility BIOS settings save and restore Remote PXE boot support Remote iSCSI boot support

Operating Systems and Virtualization Software

Certified or supported operating systems and virtualization software	Microsoft® Windows Server® 2008 R2 Red Hat Enterprise Linux VMware Infrastructure VMware vSphere 4.0

Dimensions / Weight

Dimensions (W x D x H)	483 x 454 x 42 mm
Height Unit Rack	1 U
Weight	up to 6,5 kg
Weight notes	Actual weight may vary depending on configuration
Rack integration kit	No rack integration kit needed

Environmental

Operating ambient temperature	10 - 35°C
Maximum altitude	3000 m
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	high efficient GOLD plus power supply
Max. output of single power supply	350 W
Hot-plug power supply redundancy	No
Rated voltage range	200 V - 240 V
Rated frequency range	47 Hz - 63 Hz
Rated current max.	2 A (230V)
Active power (max. configuration)	350 W
Apparent power (max. configuration)	360 VA
Heat emission	1260.0 kJ/h (1194.2 BTU/h)

Compliance

Europe	CE Class A * EN 60950 - 1 EN 50371 EN 55022 EN 61000-3-3 EN 55024
USA/Canada	UL/CSA ICES-003 Class A FCC Class A

Compliance

Global	CB RoHS (Restriction of hazardous substances) WEEE (Waste electrical and electronical equipment) IEC 60950
Japan	VCCI Class A
China	CCC (G 4943/ GB 9245 / GB 17625)
Australia/New Zealand	AS / NZS CISPR 22
Taiwan	CNS 13436 CNS 13438 class A
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.
Compliance link	https://sp.ts.fujitsu.com/sites/certificates/default.aspx

Components

Hard disk drives	HDD SATA, 3 Gb/s, 500 GB, 7200 rpm, non-hot-plug, 2.5-inch, business critical
	HDD SATA, 3 Gb/s, 320 GB, 5400 rpm, non-hot-plug, 2.5-inch, economic
	HDD SATA, 3 Gb/s, 160 GB, 7200 rpm, non-hot-plug, 2.5-inch, business critical
	HDD SATA, 3 Gb/s, 160 GB, 5400 rpm, non-hot-plug, 2.5-inch, economic
LAN Controller	Ethernet Ctrl. 2 x 10 Gb Intel® Ethernet Server Adapter X520-DA2
	Ethernet Ctrl. 2 x 1 Gb Fujitsu Eth Ctrl 2x1Gbit PCIe x4 D2735 Cu
	Ethernet Ctrl. 4 x 1 Gb Fujitsu Eth Ctrl 4x1Gbit PCIe x4 D2745 Cu

Warranty

Standard Warranty	1 year
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	3 years (depending on country)
Service Weblink	http://ts.fujitsu.com/Supportservice

More information

Fujitsu platform solutions

In addition to Fujitsu PRIMERGY CX122 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 CX122 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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