Data Sheet
Fujitsu PRIMERGY CX1000 S1 with 38 cloud server nodes

The Cool-Central™ architecture for Scale-Out Cloud Data Centers:
Scale Big- Spend Small

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 CX1000 S1 with 38 cloud server nodes

PRIMERGY CX1000 is an innovative Scale-Out Cloud server infrastructure platform that simultaneously solves the 4 biggest challenges for large enterprises and their cloud, hosting or HPC datacenter strategies: It enables you to SCALE BIG by packaging 38 industry standard x86 server nodes that come without fans into a dedicated data center rack unit with a shared cooling architecture and a low footprint: the CX1000 S1 System. PRIMERGY CX1000 provides massive scale-out computing power and optimizes the data center density, power consumption and heat dissipation problems in a one-step approach. Its innovative shared cooling architecture enables to build new economics into scale-out data centers by significant reduction of energy consumption coupled with dramatic savings in data center space thus removing the strong inhibitors for cloud data center setup.

Features and Benefits

Main Features	Benefits
Scale-out performance	
■ CX1000 enables easy scale-out computing from 100s to thousands of server nodes, packaging 38 industry standard x86 server nodes into a dedicated data center rack with shared cooling technology, low physical footprint and full integration at the Fujitsu factory. Your selection of aggregated node performance enables for replicable deployment and provides easy serviceability with all front access.	■ Easy scale out with replicable building blocks ■ Fully factory assembled CX1000 shortens the time to operation ■ Choice of aggregated performance levels by selection of server node types ■ Cool-Central Architecture cools IT better, thus more performance per square meter can be achieved
Power / Heat Economics	
■ The Cool-Central Architecture of CX1000 delivers new power heat economics to scale-out data centers. Cool-Central works with the laws of air thermo dynamics and does not require to enter into the associated risks of liquid cooling techniques. Using only two central exhaust fans instead of hundreds of local server fans reduces aggregated power consumption and associated heat dissipation costs substantially.	■ CX1000 and its Cool-Central Architecture cools IT for less energy costs ■ These savings come in addition to the low-energy consumption Intel Xeon processor technologies ■ No need to invest into liquid cooling technologies
Data Center Space Reduction	
■ CX1000 and its Cool-Central Architecture eliminate the physical footprint space required for the Hot Air aisle. By architectural design, the hot air is exhausted to the top of the rack, controlled by a sub pressure plenum inside the CX1000 Rack enclosure. This allows to stage multiple CX1000 Rack units in a Back-to-Back setup-saving precious datacenter space.	■ More @ less space: Up to 40 % less datacenter space as compared to traditional Rack server scale-out setup ■ More @ less cost: Reduction of facilities cost by using more server nodes at less data center space
Less costs for acquisition and ownership	
■ Cooling & heat dissipation are made functions of the chassis with the CX1000 System by using shared components. ■ In addition the x86 server units come with less and non redundant components and thus cut costs out with each unit. Simplicity in operation is accomplished with all front access- no need to access the rear of rack. The rip-and-replace server trays are customer replaceable units, supporting lower maintenance cost strategies.	■ Less expensive than scale-out standard rack configurations ■ Affordable and attractive costs by streamlined, non redundant server functions ■ Scalable system management functions and ease in servicing cut operating costs

Technical details

Enclosure

Characteristics	PRIMERGY CX1000 is an innovative x86 Scale-Out Cloud server infrastructure platform for large Enterprises and their Cloud, Hosting or HPC datacenter strategies. It enables to scale-out big and spent small, proving new economics for datacenter Space, Power, Cooling and Density.
System unit type	Cloud Server Rack Infrastructure
Server trays	38 cloud server trays
Upgrade notes	Includes 3x 2U vertical bays for max. 5 LAN switches to be integrated; 2x 2U + 1x 1U
Fan configuration	Cooling Unit with two centralized redundant fans produces low pressure plenum in a chimney area at rear side.
Fan notes	In case CX1000 S1 cooling system is in degraded mode (only one FAN is running), performance in some server may be reduced dependent on system load.

Operating panel

Status LEDs	Power (amber / green) System status (orange) CSS (yellow) Identification (blue) LAN speed (green / yellow) LAN connection (green)

Rack Management Unit

Type of Unit	RMU (Rack Management Unit) included in delivery
LAN / Ethernet (RJ-45)	1 One Service LAN port
Serial 1 (9-pin)	1 x1 DSUB9 male connector for COM1 / UART0

Dimensions / Weight

Dimensions (W x D x H)	700 x 850 x 2083 mm
Dimension notes	Rack 38 U + 5 U Cooling Unit; Rack and cooling unit 250 Kg; CX1000 incl. 38x server nodes + 5x IP Switch and all cabling max weight 470Kg
Height Unit Rack	43 U
Weight	470 kg
Weight (packed)	500 kg
Weight notes	Actual weight may vary depending on configuration

Electrical values

Power supply configuration note	Each server tray has its own PSU with 350W max.
Rated voltage range	Single Phase: EMEA 6x 200 V - 240 V; NEMA 6x 200 V - 240 V Tripple Phase: EMEA 2x 200 V - 240 V (star), NEMA 2x 200 V - 240 V (delta)
Rated frequency range	47 Hz - 63 Hz
Rated current max.	14 A (200V) / 12 A (240V) max. per input phase; Bulding fuse EMEA 16A / NORAM 20A per phase per input phase
Rated current in basic configuration	8,8A (200V) / 7,5 A (240V) per input phase
Active power (min. configuration)	6300 W
Active power (max. configuration)	14000 W
Apparent power (max. configuration)	14000 VA
Heat emission	50400.0 kJ/h (47770.0 BTU/h)

Environmental

Operating ambient temperature	10 - 35℃
Operating temperature note	DIN IEC 721-3-3 class 3K2
Operating relative humidity	10 - 85 % (non condensing)
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
Noise emission	Measured according to ISO 7779 and declared according to ISO 9296

Environmental

Sound pressure (LpAm)	fan speed profile: 63 dB(A) low / 69 dB(A) medium / 75 dB(A) high @ 23℃
Sound power (LWAd; 1B = 10dB)	fan speed profile: 8.4 B (low) / 8.9 B (medium) / 9.7 B (high) @ 23℃
Noise notes / description	3 workload (FAN speed) profiles pre-selectable in RMU
Air flow rate	Max. air flow at full load 2800 m / h

Compliance

Europe	CE Class A * EN
USA/Canada	UL/CSA FCC Class A ICES-003 Class A
Global	CB RoHS (Restriction of hazardous substances) WEEE (Waste electrical and electronical equipment)
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	http://sp.ts.fujitsu.com/sites/certificates/

Cloud Server Nodes

Product Model name	Product Type	Processor quantity support	Number of nodes	Memory slots total	Supported capacity RAM (max.)
PRIMERGY CX122 S1	Dual Socket Cloud Server Node (Intel) http://docs.ts.fujitsu.com/dl.aspx?id=3b669e1d-f014-4a1f-8cab-b14e8ea919ac	2	38	18	144 GB

Connection type

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	5 years
Service Weblink	http://ts.fujitsu.com/Supportservice

More information

Fujitsu platform solutions

In addition to Fujitsu PRIMERGY CX1000 S1 with 38 cloud server nodes, 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 CX1000 S1 with 38 cloud server nodes, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.
 http://www.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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