

# Data Sheet

## Fujitsu PRIMERGY CX1640 M1 PRIMERGY Cloud Servers

Parallel computing node powered by Intel® Xeon Phi™ 7200 Processor

---

### PRIMERGY CX1640 M1

The FUJITSU Server PRIMERGY CX1640 M1 is a modular server node enabling new levels of computing density with eight independent servers in 2U. It is ideal for high performance computing for scientific research, product development and business intelligence. Combined in a PRIMERGY CX600 M1 modular server system the nodes provide an aggregated scale-out performance of eight Intel® Xeon Phi™ 7200 processors, 576 cores and 3 TB of DDR4 memory in an ultra-condensed 2U chassis.



# Features & Benefits

Main Features	Benefits
<p><b>Maximum compute density</b></p> <ul style="list-style-type: none"> <li>■ A fully configured PRIMERGY CX600 M1 hosts eight PRIMERGY CX1640 M1 server nodes in a condensed 2U rack enclosure.</li> </ul> <p><b>Specialized for parallel workloads</b></p> <ul style="list-style-type: none"> <li>■ Each processor of the Intel® Xeon Phi™ 7200 product family features up to 72 cores, 16 GB high-bandwidth on-package MCDRAM memory and an optionally integrated fabric.</li> <li>■ 6 DIMMs per server node with up to 384 GB DDR4 memory and up to 2,400 MHz DRAM bandwidth.</li> </ul> <p><b>Shared infrastructure &amp; easy serviceability</b></p> <ul style="list-style-type: none"> <li>■ Server nodes share central cooling fans and hot-plug power supplies in the 2U PRIMERGY CX600 M1 chassis.</li> <li>■ Hot-plug for server nodes, power supplies and disk drives enable enhanced availability and easy serviceability.</li> </ul> <p><b>Optional liquid cooling solution</b></p> <ul style="list-style-type: none"> <li>■ The optional direct-to-chip hot water (45 °C / 113 °F) based Cool-Central® Liquid Cooling captures up to 70% of the servers heat.</li> <li>■ Removes heat directly from CPU and voltage regulator module (VRM) within the server, eliminating the need to cool these components.</li> </ul>	<ul style="list-style-type: none"> <li>■ 9x the performance per U in comparison with standard rack servers for extremely high density.</li> <li>■ Significant performance boost for parallel-processing versus traditional Intel Xeon platforms.</li> <li>■ Take your parallel computing power to the next level.</li> <li>■ Decreased energy consumption, lower investment, yet still redundant operation. Lower energy budgets for a comparable performance as with standard rack servers.</li> <li>■ Each single server can be serviced without affecting the other nodes in the chassis. Redundancy for shared components provides uniform higher availability.</li> <li>■ Helps to reduce data center cooling costs by over 50% and leads to less power draw of servers.</li> <li>■ Allows for 2.5-5x higher data center density to realize even ambitious projects.</li> </ul>

# Technical details

## PRIMERGY CX1640 M1

Housing types	Air-cooled node	Liquid-cooled node
Product Type	Mono Socket 1U half-wide Server Node	Mono Socket 1U half-wide Server Node

### Mainboard

Mainboard type	D3727
Chipset	Intel® C610
Processor quantity and type	1 x Intel® Xeon Phi™ 7200 product family
Memory slots	6 / 6 channels with 1 DIMMs per CPU = 6 DIMMs in total.
Memory slot type	16 GB CPU-integrated MCDRAM memory + DIMM (DDR4) ECC
Memory capacity (min. - max.)	16 GB - 384 GB
Memory protection	Advanced ECC SDDC
Memory notes	Supports R-DIMM, LR-DIMM (available soon) Currently configuration is limited to 6 DIMMs. Support for 0 configured DIMMs will be available soon.
Upgrade notes	8x in CX600 M1

### Interfaces

USB 3.0 ports	2 x USB 3.0 (rear)
Graphics (15-pin)	1 x VGA (1x rear)
LAN / Ethernet (RJ-45)	2 / 2x Gbit/s Ethernet (1x shared service LAN from iRMC)
Management LAN (RJ45)	Management LAN traffic can be switched to shared onboard Gbit LAN port

### Onboard or integrated Controller

SATA Controller	Intel® C610
LAN Controller	2 x 10/100/1000 Mbit/s Ethernet (TCP/IP acceleration)
Remote management controller	Integrated Remote Management Controller (iRMC S4, 256 MB attached memory incl. graphics controller) IPMI 2.0 compatible

### Slots

PCI-Express 3.0 x16	1 x (for low profile)
---------------------	-----------------------

### Drive bays

Storage drive bays	Air cooling: 1x DOM SATA, or 1x 2.5" non hot-plug HDD, or 2x 2.5" non hot-plug SSD Liquid cooling: 1x DOM SATA only
--------------------	--

### Fan Configuration

Number of fans	0
Fan configuration	Centralized non hot plug fans part of CX600 Chassis

### Operating panel

Operating buttons	On/off switch
Status LEDs	Power (green) System status (orange) LAN speed (green / yellow) LAN connection (green) Identification (blue)

**BIOS**

<b>BIOS features</b>	UEFI compliant Legacy BIOS compatibility customer configuration option Secure boot support ROM based setup utility GPT support for boot drives larger than 2.2 TB IPMI support Recovery BIOS BIOS settings save and restore Local BIOS update from USB device Online update tools for main Linux versions Local and remote update via ServerView Update Manager IPv4/IPv6 remote PXE & iSCSI boot support
----------------------	--

**Operating Systems and Virtualization Software****Operating system notes**

<b>Operating system release link</b>	<a href="http://docs.ts.fujitsu.com/dl.aspx?id=d4ebd846-aa0c-478b-8f58-4cfb3230473">http://docs.ts.fujitsu.com/dl.aspx?id=d4ebd846-aa0c-478b-8f58-4cfb3230473</a>
--------------------------------------	---

**Dimensions**

<b>Weight</b>	3 kg
<b>Node size</b>	1 U half wide (W177.8 x D395.1 x H41.4 mm)

**Environment**

<b>Operating ambient temperature</b>	5 - 40 °C (41 - 104 °F)
<b>Operating relative humidity</b>	10 - 85 % (non condensing)
<b>Temperature and humidity notes</b>	Cool-safe® Advanced Thermal Design (above 35 °C or below 10 °C) depending on configuration. For detailed information see relevant system configurator.
<b>Maximum altitude</b>	3,000 m
<b>Operating environment</b>	FTS 04230 – Guideline for Data Center (installation specification)
<b>Operating environment link</b>	<a href="http://docs.ts.fujitsu.com/dl.aspx?id=e4813edf-4a27-461a-8184-983092c12dbe">http://docs.ts.fujitsu.com/dl.aspx?id=e4813edf-4a27-461a-8184-983092c12dbe</a>

**Compliance**

<b>Global</b>	CB RoHS (Substance limitations in accordance with global RoHS regulations) WEEE (Waste electrical and electronical equipment) IEC 60950
<b>Europe</b>	CE Class A * EN 60950 - 1 EN 50371 EN 55022 EN 61000-3-3 EN 55024
<b>USA/Canada</b>	UL/CSA ICES-003 / NMB-003 Class A
<b>Japan</b>	VCCI Class A
<b>Taiwan</b>	CNS 13436 CNS 13438 class A
<b>Compliance link</b>	<a href="https://sp.ts.fujitsu.com/sites/certificates">https://sp.ts.fujitsu.com/sites/certificates</a>
<b>Compliance notes</b>	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.

## Components

<b>Hard disk drives</b>	HDD SATA, 6 Gb/s, 2 TB, 7,200 rpm, 512n, non hot plug, 2.5-inch, business critical HDD SATA, 6 Gb/s, 2 TB, 7,200 rpm, 512e, non hot plug, 2.5-inch, business critical HDD SATA, 6 Gb/s, 1 TB, 7,200 rpm, 512n, non hot plug, 2.5-inch, business critical HDD SATA, 6 Gb/s, 1 TB, 7,200 rpm, 512e, non hot plug, 2.5-inch, business critical
<b>Notes storage drives</b>	At time of product launch only DOM SATA is released. Support for HDD / SSD drives will be available soon.
<b>Notes storage drives</b>	At time of product launch only DOM SATA is released. Support for HDD / SSD drives will be available soon.
<b>Notes storage drives</b>	At time of product launch only DOM SATA is released. Support for HDD / SSD drives will be available soon.
<b>Notes storage drives</b>	At time of product launch only DOM SATA is released. Support for HDD / SSD drives will be available soon.
<b>PCIe SSD &amp; SATA DOM SSD</b>	DOM SATA, 6 Gb/s, 128 GB, non hot plug, enterprise, 0.13 DDPD (Drive Writes Per Day for 5 years) DOM SATA, 6 Gb/s, 64 GB, non hot plug, enterprise, 0.14 DDPD (Drive Writes Per Day for 5 years)
<b>Notes storage drives</b>	At time of product launch only DOM SATA is released. Support for HDD / SSD drives will be available soon.
<b>Communication, Network</b>	Converged Network Adapter 2 x 10 Gbit/s PCIe 3.0 x8 SFP+ ( Emulex ) Ethernet Ctrl. 2 x 10 Gbit/s ; 1 Gbit/s PCIe 3.0 x8 RJ45 ( Intel® ) Ethernet Ctrl. 2 x 10 Gbit/s PCIe 3.0 x8 10Gbit/s Eth (RJ45) ( Emulex ) Ethernet Ctrl. 2 x 10 Gbit/s PCIe 3.0 x8 SFP+ ( Emulex ) Ethernet Ctrl. 2 x 10 Gbit/s PCIe 3.0 x8 SFP+ ( Intel® ) Ethernet Ctrl. 2 x 1 Gbit/s PCIe 2.1 x4 RJ45 ( Intel® ) Ethernet Ctrl. 4 x 1 Gbit/s PCIe 2.1 x4 RJ45 ( Intel® ) InfiniBand HCA 1 x 100 Gbit/s PCIe 3.0 x16 QSFP for the US market max. one IB HCA 100Gb controller can be installed ( Mellanox ) InfiniBand HCA 1 x 56 Gbit/s PCIe 3.0 x8 QSFP for the US market max. one IB HCA 56Gb controller can be installed ( Mellanox ) InfiniBand HCA 2 x 100 Gbit/s PCIe 3.0 x16 QSFP for the US market max. one IB HCA 100Gb controller can be installed ( Mellanox ) InfiniBand HCA 2 x 56 Gbit/s PCIe 3.0 x8 QSFP for the US market max. one IB HCA 56Gb controller can be installed ( Mellanox ) Omni Path 1 x PCIe 3.0 x16 ( Intel® )
<b>Warranty</b>	
<b>Warranty period</b>	3 years
<b>Warranty type</b>	Onsite warranty
<b>Product Support Services - the perfect extension</b>	
<b>Recommended Service</b>	24x7, Onsite Response Time: 4h - For locations outside of EMEA please contact your local Fujitsu partner.
<b>Spare Parts availability</b>	5 years
<b>Service Weblink</b>	<a href="http://ts.fujitsu.com/Supportservice">http://ts.fujitsu.com/Supportservice</a>

# More information

## Fujitsu platform solutions

In addition to Fujitsu PRIMERGY CX1640 M1, 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/products/computing/](http://www.fujitsu.com/global/products/computing/)

### Software

[www.fujitsu.com/software/](http://www.fujitsu.com/software/)

## More information

Learn more about Fujitsu PRIMERGY CX1640 M1, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.  
<http://ts.fujitsu.com/Primergy>

## Fujitsu green policy innovation

## Copyrights

All rights reserved, including intellectual property rights. Changes to technical data reserved. Delivery subject to availability. Any liability that the data and illustrations are complete, actual or correct is excluded. Designations may be trademarks and/or copyrights of the respective manufacturer, the use of which by third parties for their own purposes may infringe the rights of such owner.  
For further information see [http://ts.fujitsu.com/terms\\_of\\_use.html](http://ts.fujitsu.com/terms_of_use.html)  
Copyright © Fujitsu Technology Solutions

## Disclaimer

Technical data are subject to modification and delivery subject to availability. Any liability that the data and illustrations are complete, actual or correct is excluded. Designations may be trademarks and/or copyrights of the respective manufacturer, the use of which by third parties for their own purposes may infringe the rights of such owner

## Contact

FUJITSU LIMITED  
Mies-van-der-Rohe-Straße 8  
80807 München  
Germany  
Website: [www.ts.fujitsu.com](http://www.ts.fujitsu.com)  
2019-07-20 CE-EN

All rights reserved, including intellectual property rights. Changes to technical data reserved. Delivery subject to availability. Any liability that the data and illustrations are complete, actual or correct is excluded. Designations may be trademarks and/or copyrights of the respective manufacturer, the use of which by third parties for their own purposes may infringe the rights of such owner.  
For further information see [http://ts.fujitsu.com/terms\\_of\\_use.html](http://ts.fujitsu.com/terms_of_use.html)  
Copyright © Fujitsu Technology Solutions