Fujitsu recommends Windows 10 Pro.

Data Sheet
FUJITSU Workstation CELSIUS R970

Unleash The Monster Inside

Do you require the maximum in performance for simulations, analysis, rendering or High Performance Computing? Fujitsu's CELSIUS R970 desktop workstation is designed to surpass all expectations. Achieving first-class benchmark results, this reliable, high-end dual processor desktop workstation is optimized for extremely demanding and memory intensive multi-threaded applications.



Unleash the power

Achieve the optimum out of any demanding application

- Intel® Xeon® processor Scalable Family up to 2 x 28 cores
- Support of Windows 10 Pro for Workstations
- Support of up to 1024 GB DDR4 2,666 ECC memory
- Fujitsu SSD PCIe card (up to 2 x 1 TB)

Maximum expandability

Broad selection and configurability options

- Broad choice of ISV certified professional graphics cards from AMD and Nvidia
- Up to two ultra-high-end, three high-end 3D or four mid-range graphic cards for simulation or photorealistic renderings
- Compute graphics cards of up to NVIDIA® Tesla® M60

Work around the clock

Certain components can be configured to support an extended lifetime usage

- Selection of top-quality components and comprehensive testing in certified in-house laboratories
- Full support for ISV applications and easy integration into existing IT environments
- Server capabilities: SAS RAID controller, Windows® Server 2016, Dual 10 Gigabit Ethernet

Made in Germany

Design, engineering and production in Germany

- In-house developed systemboard
- Comprehensive testing in certified in-house laboratories for 24/7 operation
- Excellent thermal management concept allows for an optimal cooling of key components
- Whisper quiet: 23 dB(A)

We are (VR) ready

Enjoy a fully immersive and real-time Virtual Reality experience with low latency at high frame rates

- Powered by the NVIDIA® Quadro® P4000, P5000 and P6000 VR-ready graphics cards

Fujitsu recommends Windows 10 Pro.

Components

Processor	Intel® Xeon® Platinum processor 8176 (28C, 2.10 GHz, up to 2.8 GHz, 10.4 GT/s)	
	Intel® Xeon® Platinum processor 8160 (24C, 2.10 GHz, up to 2.8 GHz, 10.4 GT/s)	
	Intel® Xeon® Gold processor 6150 (18C, 2.70 GHz, up to 3.7 GHz, 10.4 GT/s)	
	Intel® Xeon® Gold processor 6144 (8C, 3.50 GHz, up to 4.1 GHz, 9.6 GT/s)	
	Intel® Xeon® Gold processor 6140 (18C, 2.30 GHz, up to 3.0 GHz, 9.6 GT/s)	
	Intel® Xeon® Gold processor 6136 (12C, 3.00 GHz, up to 3.3 GHz, 9.6 GT/s)	
	Intel® Xeon® Gold processor 6134 (8C, 3.20 GHz, up to 3.7 GHz, 10.4 GT/s)	
	Intel® Xeon® Gold processor 6128 (6C, 3.40 GHz, up to 3.7 GHz, 10.4 GT/s)	
	Intel® Xeon® Gold processor 5122 (4C, 3.60 GHz, up to 3.7 GHz, 10.4 GT/s)	
	Intel® Xeon® Gold processor 5120 (14C, 2.20 GHz, up to 3.2 GHz, 10.4 GT/s)	
	Intel® Xeon® Gold processor 5118 (12C, 2.30 GHz, up to 3.2 GHz, 10.4 GT/s)	
	Intel® Xeon® Silver processor 4114 (10C, 2.20 GHz, up to 3.0 GHz, 9.6 GT/s)	
	Intel® Xeon® Silver processor 4112 (4C, 2.60 GHz, up to 2.9 GHz, 9.6 GT/s)	
	Intel® Xeon® Silver processor 4110 (8C, 2.10 GHz, up to 2.4 GHz, 9.6 GT/s)	
Operating systems		
Operating system pre-installed	Windows 10 Pro for Workstations Windows 7 Professional (available through downgrade rights from Windows 10 Pro)	Windows 10 Pro for Workstations Windows 7 Professional (available through downgrade rights from Windows 10 Pro)
Operating system compatible	Windows® Server 2016 Linux	Windows® Server 2016 Linux
Operating system notes	Certified for Red Hat© Enterprise Linux Certified for SUSE Enterprise Desktop Certified for SUSE Enterprise Server	Certified for Red Hat© Enterprise Linux Certified for SUSE Enterprise Desktop Certified for SUSE Enterprise Server
Memory modules	8 GB (1 module(s) 8 GB) DDR4, registered, ECC, 2,666 MHz	
	16 GB (1 module(s) 16 GB) DDR4, registered, ECC, 2,666 MHz	
	32 GB (1 module(s) 32 GB) DDR4, registered, ECC, 2,666 MHz	
	64 GB (1 module(s) 64 GB) DDR4, registered, ECC, 2,666 MHz	
Graphics	Midrange 3D: AMD Radeon™ Pro WX 7100 , 8 GB, PCIe x16, 4 x DisplayPort	
	Ultra-high-end 3D: NVIDIA® Quadro® P6000, 24 GB, PCIe x16, 1x Dual Link DVI-D, 4 x DisplayPort	
	Ultra-high-end 3D: NVIDIA® Quadro® P5000, 16 GB, PCIe x16, 1x Dual Link DVI-D, 4 x DisplayPort	
	High-end 3D: NVIDIA® Quadro® P4000, 8 GB, PCIe x16, 4 x DisplayPort	
	Midrange 3D: NVIDIA® Quadro® P2000, 5 GB, PCIe x16, 4 x DisplayPort	
	Entry 3D: NVIDIA® Quadro® P1000, 4 GB, PCIe x16, 4x miniDP	
	Entry 3D: AMD Radeon™ Pro WX 3100, 4 GB, 320 stream processors, PCIe x16, 1x DisplayPort, 2x miniDP	
	Entry 3D: NVIDIA® Quadro® P600, 2 GB, PCIe x16, 4x miniDP	
	Entry 3D: AMD Radeon™ Pro WX 2100, 2 GB, 320 stream processors, PCIe x16, 1x DisplayPort, 2x miniDP	
	Entry 3D: NVIDIA® Quadro® P400 , 2 GB, PCIe x16, 3x miniDP	
	Remote Graphics: CELSIUS RemoteAccess Quad Card, PCIe x1, 4x miniDP, PCoIP	
	Remote Graphics: CELSIUS RemoteAccess Dual Card, PCIe x1, 2x miniDP, PCoIP	
Personal Supercomputing	Coprocessor: NVIDIA® Tesla® K40, 12 GB, PCIe x16	
	Coprocessor: NVIDIA® Tesla® M60, 16 GB, 4,096 cores, PCIe x16	
	Coprocessor: NVIDIA® Tesla® K80, 2x 12 GB, PCIe x16	

Hard disk drives (internal)	
	SSD PCIe, 1024 GB M.2 NVMe Highend module
	SSD PCIe, 512 GB M.2 NVMe Highend module
	SSD PCIe, 256 GB M.2 NVMe Highend module
	SSD PCIe, 2x 1024 GB M.2 NVMe Highend card
	SSD PCIe, 2x 512 GB M.2 NVMe Highend card
	SSD PCIe, 2x 256 GB M.2 NVMe Highend card
	SSD PCIe, 1x1024 GB M.2 NVMe Highend card
	SSD PCIe, 1x 512 GB M.2 NVMe Highend card
	SSD PCIe, 1x 256 GB M.2 NVMe Highend card
	SSD PCIe, 1024 GB M.2 NVMe module
	SSD PCIe, 512 GB M.2 NVMe module
	SSD PCIe, 256 GB M.2 NVMe module
	SSD PCIe, 128 GB M.2 NVMe module
	SSD PCIe, 2x 1024 GB M.2 NVMe card
	SSD PCIe, 2x 512 GB M.2 NVMe card
	SSD PCIe, 2x 256 GB M.2 NVMe card
	SSD PCIe, 1x 1024 GB M.2 NVMe card
	SSD PCIe, 1x 512 GB M.2 NVMe card
	SSD PCIe, 1x 256 GB M.2 NVMe card
	SSD SATA III, 960 GB High Endurance, 2.5-inch
	SSD SATA III, 480 GB High Endurance, 2.5-inch
	SSD SATA III, 240 GB High Endurance, 2.5-inch
	SSD SATA III, 1024 GB, 2.5-inch
	SSD SATA III, 512 GB, 2.5-inch
	SSD SATA III, 256 GB, 2.5-inch
	SSD SATA III, 128 GB, 2.5-inch
	SSD SATA III, 512 GB, 2.5-inch, SED
	SSD SATA III, 256 GB, 2.5-inch, SED
	HDD SAS, 10,000 rpm, 1800 GB, 2.5-inch
	HDD SAS, 10,000 rpm, 1200 GB, 2.5-inch
	HDD SAS, 10,000 rpm, 900 GB, 2.5-inch
	HDD SAS, 10,000 rpm, 600 GB, 2.5-inch
	HDD SATA III, 7,200 rpm, 6,000 GB, 3.5-inch, business critical
	HDD SATA III, 7,200 rpm, 4,000 GB, 3.5-inch, business critical
	HDD SATA III, 7,200 rpm, 2,000 GB, 3.5-inch, business critical
	HDD SATA III, 7,200 rpm, 1,000 GB, 3.5-inch, business critical
	HDD SATA III, 7,200 rpm, 2,000 GB, 2.5-inch, business critical
	HDD SATA III, 7,200 rpm, 1,000 GB, 2.5-inch, business critical
	HDD SATA III, 7,200 rpm, 2,000 GB, 3.5-inch
	HDD SATA III, 7,200 rpm, 1,000 GB, 3.5-inch
	HDD SATA III, 7,200 rpm, 500 GB, 3.5-inch
Hard disk notes	One Gigabyte equals one billion bytes, when referring to hard disk drive capacity. 24/7 ready (Business Critical HDDs or SAS HDDs or High Endurance SSDs required) Up to 20 GB of HDD space is reserved for system recovery SED (Self-Encrypting Drive) SSD (Solid State Disk)
Drives (optional)	BD Triple Writer SATA ultra slim (tray)
	DVD-ROM
	DVD Super Multi
	DVD Super Multi ultra slim (tray)
	MultiCard Reader 24in1 USB 2.0 3.5"

SCSI / SAS Controller	LSI RAID Ctrl SAS 1GB (D3216) RAID 5/6 Ctrl. 12 Gbit/s 8 ports int.	
	LSI RAID Ctrl SAS (D3327) RAID 0/1 Ctrl. 12 Gbit/s 8 ports int.	
	Intel VROC HW key Standard M.2	
Interface add on cards/components (optional)		
	WLAN 802.11ac (2x2) PCIe x1 FH and BT 4.1 (dedicated regions only, up to BT 4.2 depending on OS version)	
	WLAN 802.11ac (2x2) PCIe x1 FH (dedicated regions only)	
	PLAN EP X550-T2 2x10GBASE-T	
	PLAN EM X557-T2 2x10GBASE-T	
	PLAN EM 2x10Gb SFP+	
	Gigabit Ethernet PCIe x1, DS	
	eSATA Interface	
	Dual serial card PCIe x1	
	Dual 10 Gigabit Ethernet PCIe x8	
Base unit	CELSIUS R970 (S26361-K1449-V515)	CELSIUS R970power (S26361-K1449-V615)
Mainboard		
Mainboard type	D3488	
Formfactor	proprietary	
Chipset	Intel® C624	
Processor socket	Socket P	
Processor quantity maximum	2	
Supported capacity RAM (max.)	1,024 GB	
Memory slots	16 (8 per processor) DIMM (DDR4) ECC	
Memory frequency	2,666 MHz	
Memory notes	6 memory channels, thereof 2 channels supporting 2 DIMMs per channel. For optimized 6 channel performance, a minimum of 6 memory modules have to be ordered and the capacity per channel has to be the same. DDR4 2,666MHz may be clocked down to 2,400 or 2,133 depending on the processor.	
LAN	10/100/1,000 MBit/s Intel® I219LM and Intel® I210	
BIOS version	AMI Aptio V	
BIOS features	BIOS Flash EPROM update by software Recovery BIOS Unified Extensible Firmware Interface (UEFI)	
Audio type	On board	
Audio codec	Realtek ALC671	
Audio features	High Definition Audio	
I/O controller on board		
Serial ATA total	10	
thereof SATA III	10	
Controller functions	Serial ATA III (6 Gbit) AHCI RAID 0/1/5/10	
Interfaces		
Audio: in (rear)	1	
Audio: out (rear)	1	
Audio: in	1	
Audio: out	1	
Internal speakers	1	
USB 2.0 total	9	
USB 3.1 Gen1 (USB 3.0) total	4	
USB 3.1 Gen2 total	optional via add on card	

Interfaces		
USB front	2x USB 2.0; 2x USB 3.1 (Gen1); optional: 1x USB 3.1 Type-C (Gen2) via add on card and front adapter bay	
USB rear	6	
USB internal	3, thereof 1 type A	
Ethernet (RJ-45)	2	
eSATA	1 (optional)	
Interface Module notes	Anytime USB charge functionality	
Input device / components		
	Optical USB wheel mouse	
Input devices (optional)	Keyboard Optical USB tilt wheel mouse Optical USB wheel mouse	
Drive bays		
Drive bays total	12	
2.5-inch internal bays	8	
3.5-inch internal bays	4	
3.5-inch external bays	2	
5.25-inch external bays	1	
Drive bay notes	Up to 8x 2.5-inch HDDs (cold plug) and 1x 2.5-inch SSD or Up to 4x 3.5-inch HDDs (cold plug) and 1x 2.5-inch SSD or Up to 2x 2.5-inch and 2x 3.5-inch HDDs (cold plug) and 1x 2.5-inch SSD	
M.2-2280	1 x on mainboard (for PCIe SSD modules)	
Slots		
PCI-Express 3.0 x8	2 x (200 mm) Full height (1x PCIe 3.0x8 per processor)	
PCI-Express 3.0 x16	4 x (340 mm / 13.39 inch) Full height (2x PCIe 3.0x16 per processor)	
PCI (32-bit / 33 MHz)	1 x (312 mm / 12.29 inch) Full height	
PCI-Express 3.0 x8 (internal)	1 x (170 mm / 6.69 inch) Full height (available with 2nd CPU)	
Electrical values		
Power consumption note	500 W depending on configuration	650 W depending on configuration
Rated voltage range	100 V - 240 V	100 V - 240 V
Rated frequency range	50 Hz - 60 Hz	50 Hz - 60 Hz
Operating voltage range	90 V - 264 V	90 V - 264 V
Operating line frequency range	47 Hz - 63 Hz	47 Hz - 63 Hz
Max. output of single power supply	1000 W up to 90% efficiency	1300 W up to 90% efficiency for an input voltage above 115 V
Power factor correction/active power	active	active
Power supply output	2 graphics power rails (8pin connector / 18.5A@12V)	1000 W for an input voltage below 115 V 3 graphics power rails (8pin connector / 18.5A@12V)
Noise for standard configuration (HDD, ODD)		
Related Processors for noise	Intel® Xeon® Gold processor 6128	Intel® Xeon® Gold processor 6128
Standard noise emission	8x4 GB, HDD, ODD, Windows According to ISO 7779:2010, ECMA-74	8x4 GB, HDD, ODD, Windows According to ISO 7779:2010, ECMA-74
Standard noise notes / description	A-weighted sound power level Lwad (in B) / Workplace related A-weighted sound pressure level LpAm (in dB(A))	A-weighted sound power level Lwad (in B) / Workplace related A-weighted sound pressure level LpAm (in dB(A))
Standard noise operation mode: CPU 50% load	4.0 B / 24 dB(A) Bystander position	4.0 B / 24 dB(A) Bystander position
Standard noise operation mode: CPU 90% load	4.0 B / 24 dB(A) Bystander position	4.0 B / 24 dB(A) Bystander position
Standard noise operation mode: HDD load	4.0 B / 24 dB(A) Bystander position	4.0 B / 24 dB(A) Bystander position
Standard noise operation mode: Idle mode	4.0 B / 23 dB(A) Bystander position	4.0 B / 23 dB(A) Bystander position

Noise for standard configuration (HDD, ODD)		
Standard noise operation mode: ODD load	4.5 B / 28 dB(A) Bystander position	4.5 B / 28 dB(A) Bystander position
Standard noise operation mode: Office applications 2.0	4.0 B / 23 dB(A) Bystander position	4.0 B / 23 dB(A) Bystander position

Dimensions / Weight / Environmental	
Dimensions (W x D x H)	186 x 618 x 430 mm 7.32 x 24.3 x 16.9 inch
Operating position	Vertical / horizontal
Weight	approx. 20 kg
Weight (lbs)	approx. 44.8 lbs
Weight notes	Actual weight may vary depending on configuration
Operating ambient temperature	10 - 35 °C (50 - 95 °F)
Operating relative humidity	5 - 85 % (relative humidity)

Compliance		
Product	CELSIUS R970	CELSIUS R970power
Model	ETNA-L	
Germany	GS depending on configuration	
Europe	CE	
USA/Canada	FCC Class B cCSAus	
Global	RoHS (EU & China) Microsoft Operating Systems (HCT / HCL entry / WHQL) WEEE (Waste electrical and electronic equipment) Energy Star® 6.1 (dedicated regions, depending on configuration) EPEAT® Silver (dedicated regions) (planned)	
China	CCC (planned) TPM 2.0 for China (optional)	
Compliance notes	Product Name maybe followed by suffixes	
Compliance link	https://sp.ts.fujitsu.com/sites/certificates	

Additional Software	
Additional software (preinstalled)	Workplace Protect (secure authentication solution) McAfee Multi Access Security (anti-virus and internet security software; 60 days trial version) Microsoft Office (buy license to activate the pre-installed Microsoft Office)
Additional software (optional)	Recovery DVD for Windows® Drivers & Utilities DVD (DUDVD) CyberLink PowerDVD BD (playback software for Blu-ray Disc™) CyberLink PowerDVD DVD (playback software for DVD) Nero Essentials XL

Security		
Physical Security	Kensington Lock support Eye for padlock Intrusion switch Integrated cabinet lock (optional)	Kensington Lock support Eye for padlock Intrusion switch Integrated cabinet lock (optional)
System and BIOS Security	Embedded security (TPM 2.0) EraseDisk Boot sector virus protection Write protect option for the Flash EPROM Control of all USB interfaces External USB ports can be disabled separately Control of external interfaces	Embedded security (TPM 2.0) EraseDisk Boot sector virus protection Write protect option for the Flash EPROM Control of all USB interfaces External USB ports can be disabled separately Control of external interfaces

Security		
User Security	User and supervisor BIOS password Hard disk password Access protection via external SmartCard reader (optional) Access protection via internal SmartCard reader (optional) Workplace Protect (secure authentication solution)	User and supervisor BIOS password Hard disk password Access protection via external SmartCard reader (optional) Access protection via internal SmartCard reader (optional) Workplace Protect (secure authentication solution)
Workplace Embedded Tools	Auto BIOS Update via Fujitsu Server Auto BIOS Update via customer server (optional) Easy PC Protection (optional) Easy Restore (optional)	Auto BIOS Update via Fujitsu Server Auto BIOS Update via customer server (optional) Easy PC Protection (optional) Easy Restore (optional)
Manageability		
Manageability technology	iAMT 11.6 (depending on processor) DeskUpdate Driver management PXE 2.1 Boot code Wake up from S5 (off mode) WoL (Wake on LAN)	
Manageability software	DeskView Client DeskView Instant BIOS Management	
DeskView components	Inventory Management BIOS Management Driver Management Security Management Alarm Management	
Supported standards	WMI (Windows Management Instrumentation) PXE (Preboot Execution Environment) DMI (Desktop Management Interface) SMBIOS (System Management BIOS) WBEM (Web Based Enterprise Management) CIM (Common Information Model)	
Manageability link	http://www.fujitsu.com/fts/manageability	
Miscellaneous		
	Rack mountable (5U)	Rack mountable (5U)
Spare part availability	5 years	5 years
Packaging information		
Max. quantity / pallet	11	11
Packaging notes	printed user documentation is bleached in chlorine free process	printed user documentation is bleached in chlorine free process
Warranty		
Warranty period	3 years (depending on country)	
Warranty type	Bring-In / Onsite Service (for countries within region EMEIA, for all other countries depending on local regulations)	
Warranty Terms & Conditions	http://support.ts.fujitsu.com/warranty	
Product Related Services - the perfect extension		
Recommended Service	X - 9x5, Onsite Response Time: Next Business Day	
Spare Parts availability	5 years after end of product life	
Service Weblink	http://www.fujitsu.com/fts/services/support	

Recommended Accessories

Display P27-8 TS UHD		The FUJITSU Display P27-8 TS UHD has a 3840 x 2160 Ultra HD resolution ships with a thin bezel housing ideal for multi-monitor use scenarios. The monitor has a 178°/178° wide viewing angle that delivers consistent picture quality, a 100% sRGB color space, ECO function, DisplayView™ IT Suite manageability software and a range of connectivity options ideal for medium- and large-sized businesses.	Order Code: S26361-K1610-V160

Blue LED Mouse GL9000		Blue LED Mouse GL9000 comes in a slim design with proven Fujitsu engineering quality. The state-of-the-art blue LED sensor enables ultra precise switchable resolution at 1,000, 1,500 and 2,000 dpi. Blue LED Mouse GL9000 makes your life easier because it's tailor-made for right handed users. It just feels great in your hand.	Order Code: S26381-K438-L100
SpaceMouse™ Pro		Using the SpaceMouse™ Pro 3D mouse to navigate 3D models or environments is as simple as holding them in your hand. A slight movement of the controller cap delivers easy and precise control. SpaceMouse™ Pro is a companion to the traditional mouse and is operated with the free hand. Your traditional mouse hand is free to select, create and edit.	Order Code: S26381-K459-L100
Keyboard KB900		The KB900 is a very flat keyboard with extra low keys and spill-resistant protection. The elegant design and top-quality construction makes the KB900 the ideal input device for any PC or Notebook user. If you accidently spill some water or coffee onto the keyboard, this special construction helps the liquid to flow away.	S26381-K560-L4** (**: Country specific variation)

More information

Fujitsu products, solutions & services

In addition to the FUJITSU Workstation CELSIUS R970, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Fujitsu Portfolio
Build on industry standards, Fujitsu offers a full portfolio of IT hardware and software products, services, solutions and cloud offering, ranging from clients to datacenter solutions and includes the broad stack of Business Solutions, as well as the full stack of Cloud offering. This allows customers to leverage from alternative sourcing and delivery models to increase their business agility and to improve their IT operation's reliability.

Computing Products
www.fujitsu.com/global/products/computing/

Software
www.fujitsu.com/software/

More information

Learn more about the FUJITSU Workstation CELSIUS R970, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.
www.fujitsu.com/fts/CELSIUS

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 contribute to the creation of a sustainable environment for future generations through IT.
Please find further information at http://www.fujitsu.com/global/about/environment



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2018-01-11 EM-EN

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