

Datasheet

Fujitsu PRIMERGY/PRIMEQUEST Server Systems for Windows Server 2019 (OEM & ROK)

With the release of Windows Server 2019, Fujitsu proudly presents the new lineup of its best-selling PRIMERGY and PRIMEQUEST servers!



Windows Server 2019

Windows Server (WS) 2019, the latest iteration of Microsoft's renowned Windows Server operating system, helps you thrive in the cloud-driven modern computing environment. Windows Server 2019 helps you update your digital infrastructure for the cloud-computing age, boosting the performance of your servers while maintaining their resilience and security. Much anticipated Windows Server 2019

- Helps you manage your servers and incorporate Microsoft's Azure services into them via Windows Admin Center.
- Uses Hyper-V Containers for enhanced isolation of containerized applications without any changes to container images.
- Enables agile application deployment and management through Windows Server Containers.
- Allows the deployment of applications on Linux-based operating systems with best-in-class support for Hyper-V on Linux.
- Protects your servers from attacks and threats with such robust security measures as Shielded Virtual Machine and Windows Defender Advanced Threat Protection.
- Let's you manage your data easily with Storage Spaces Direct, highly scalable software-defined storage, and helps you recover effortlessly from catastrophic system failures with Storage Replica.

Fujitsu ServerView

Fujitsu ServerView Installation Manager, available with Fujitsu PRIMERGY server systems, makes the installation of Windows Server 2019 easy. For the installation of Windows Server 2019 (whether OEM or ROK) on VMware hosts, please consult the readme file on Fujitsu VMware OEM media.

Delivery

Fujitsu OEM and ROK Windows Server Base Licenses ship with Fujitsu PRIMERGY server systems. FUJITSU OEM and ROK Windows Server Client Access Licenses, Remote Desktop Services Client Access Licenses, and Windows Server Additional Licenses may be obtained separately after PRIMERGY server systems are purchased.

Warranty

Fujitsu products include a country-specific warranty.

Support Policy

Please refer to Fujitsu's PRIMERGY support policy as well as Microsoft's support lifecycle. <https://support.microsoft.com/en-us/help/14085>

Windows Server 2019 Editions

The following editions of Windows Server 2019 are available: Datacenter, Standard, and Essentials. All editions include English, German, French, Italian, Spanish, Japanese, Chinese, and Korean by default. Downloadable Language Packs are available for other languages.



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Fujitsu Product Order Numbers

- **Windows Server 2019 Datacenter Base License 16 core**

OEM: S26361-F2567-E610
ROK: S26361-F2567-D610

— **w/Reassignment 16 core**

OEM: S26361-F2567-E611
ROK: S26361-F2567-D611

- **Windows Server 2019 Datacenter Additional License 16 core, No Media/Key**

OEM: S26361-F2567-E612
ROK: S26361-F2567-D612

— **4 core, No Media/Key**

OEM: S26361-F2567-E613
ROK: S26361-F2567-D613

— **2 core, No Media/Key**

OEM: S26361-F2567-E614
ROK: S26361-F2567-D614

- **Windows Server 2019 Standard Base License 16 core**

OEM: S26361-F2567-E620
ROK: S26361-F2567-D620

- **Windows Server 2019 Standard Additional License 16 core, No Media/Key, POS Only**

OEM: S26361-F2567-E622
ROK: S26361-F2567-D622

— **4 core, No Media/Key, POS Only**

OEM: S26361-F2567-E623
ROK: S26361-F2567-D623

— **2 core, No Media/Key, POS Only**

OEM: S26361-F2567-E624
ROK: S26361-F2567-D624

- **Windows Server 2019 Standard Additional License 16 core, No Media/Key, APOS**

OEM/ROK: S26361-F2567-L622

— **4 core, No Media/Key, APOS**

OEM/ROK: S26361-F2567-L623

— **2 core, No Media/Key, APOS**

OEM/ROK: S26361-F2567-L624

- **Windows Server 2019 Essentials**

OEM: S26361-F2567-E630
ROK: S26361-F2567-D630

- **Windows Server 2019 CAL**

— **100 Device**

S26361-F2567-E668
S26361-F2567-L668

— **50 Device**

S26361-F2567-E666
S26361-F2567-L666

— **10 Device**

S26361-F2567-E664
S26361-F2567-L664

— **5 Device**

S26361-F2567-E662
S26361-F2567-L662

— **1 Device**

S26361-F2567-E660
S26361-F2567-L660

- **Windows Server 2019 CAL**

— **100 User**

S26361-F2567-E669
S26361-F2567-L669

— **50 User**

S26361-F2567-E667
S26361-F2567-L667

— **10 User**

S26361-F2567-E665
S26361-F2567-L665

— **5 User**

S26361-F2567-E663
S26361-F2567-L663

— **1 User**

S26361-F2567-E661
S26361-F2567-L661

- **Windows Server 2019 RDS CAL**

— **100 Device**

S26361-F2567-E678
S26361-F2567-L678

— **50 Device**

S26361-F2567-E676
S26361-F2567-L676

— **10 Device**

S26361-F2567-E674
S26361-F2567-L674

— **5 Device**

S26361-F2567-E672
S26361-F2567-L672

— **1 Device**

S26361-F2567-E670
S26361-F2567-L670

- **Windows Server 2019 RDS CAL**

— **100 User**

S26361-F2567-E679
S26361-F2567-L679

— **50 User**

S26361-F2567-E677
S26361-F2567-L677

— **10 User**

S26361-F2567-E675
S26361-F2567-L675

— **5 User**

S26361-F2567-E673
S26361-F2567-L673

— **1 User**

S26361-F2567-E671
S26361-F2567-L671

Windows Server 2019 – Editions and Features

Windows Server 2019 Editions at a Glance

Windows Server 2019 Datacenter

Windows Server 2019 Datacenter is for highly virtualized datacenters and cloud environments. It provides unprecedented levels of security and brings cutting-edge innovations to modern computing infrastructure. Windows Server 2019 Datacenter is the only edition of Windows Server 2019 that includes all of its functionalities (while Standard and Essentials offer their subsets). For a server to be properly licensed, all physical cores in that server must be licensed. Each server must be licensed for a minimum of 16 cores. Each physical processor must be licensed for a minimum of 8 cores. If there are more than 16 physical cores in a server, additional licenses are needed to cover excess cores. Client Access Licenses (CALs) are needed to access servers licensed with Windows Server 2019 Datacenter.

Benefits

- Windows Admin Center makes it a breeze not only to manage the most complex of server systems but also to take advantage of Microsoft Azure services.
- With Hyper-V, virtual machines can be run on top of (i.e., can be nested in) other virtual machines.
- Easy configuration of virtual environments.
- Highly scalable storage to accommodate ever accumulating data (Storage Spaces Direct).

Windows Server 2019 Standard

Windows Server 2019 Standard is for physical or minimally virtualized environments. As such, Standard does not include some functionalities that are available in Datacenter. Licensing details for Windows Server 2019 Datacenter apply to Windows Server 2019 Standard. CALs are required to access servers licensed with Windows Server 2019 Standard. Windows Server 2019 Standard allows two instances of virtual machines.

Benefits

- Container management by PowerShell and efficient use of virtual environment resources.
- Enhanced security through the ability to set required minimum security levels.
- Highly reliable disaster recovery to keep data from being lost (Storage Replica).

Windows Server 2019 Essentials

Affordable and user-friendly, Windows Server 2019 Essentials is ideal for small businesses with up to 25 users and 50 devices.

Benefits

- Unlike Datacenter or Standard, CALs are not required.

Feature Comparisons across WS 2019 Datacenter, WS 2019 Standard, and WS 2016 Datacenter

	Windows Server 2019		Windows Server 2016
	Datacenter	Standard	Datacenter
Storage Migration Service	Yes	Yes	No
System Insights	Yes	Yes	No
Server Management by Windows Admin Center	Yes	Yes	Yes
Storage Spaces Direct (S2D)	Yes	No	Yes
Storage Replica	Yes	Yes (up to 2TB/Vol.)	Yes
Network Controller	Yes	No	Yes
Leap Second	Yes	Yes	No
Windows Defender Exploit Guard	Yes	Yes	No
Shielded VM for Windows	Yes	No	Yes
Shielded VM for Linux	Yes	No	No
Windows Server Container	Yes	Yes	Yes
Hyper-V Container	Yes (Unlimited)	Yes (2 VMs)	Yes (Unlimited)
Linux Container	Yes	Yes	No
Server Core Features on Demand	Yes	Yes	No
Kubernetes Platform Support	Yes	Yes	No
Licensing Model	Core based	Core based	Core based

Windows Server 2019 – Editions and Technical Specifications

Technical Specification	WS 2019 Datacenter	WS 2019 Standard	WS 2019 Essentials
Maximum physical CPUs / cores supported by Fujitsu PRIMERGY	4 CPUs / 112 cores	4 CPUs / 112 cores	2 CPUs / 56 cores
Maximum physical CPUs / cores supported by Fujitsu PRIMEQUEST	8 CPUs / 224 cores	8 CPUs / 224 cores	---
VM-use rights included per product	Unlimited VMs	2 VMs ¹	1 VM ²
Maximum physical RAM supported	24TB	24TB	64GB
Hyper-V role supported	Yes (incl. Shielded VMs)	Yes	Yes ³
Maximum number of 64-bits sockets	64	64	2
Active virtual machines supported	1,024	1,024	1 ²
Maximum nodes per cluster	64	64	Not supported
Maximum number of users / devices	Unlimited ⁴	Unlimited ⁴	25 / 50
Remote Desktop Services supported	Yes	Yes	No ⁵
CALs required / included in Base License	Yes / 0	Yes / 0	No
RDS CALs required for RDS / included in Base License	Yes / 0	Yes / 0	N/A
Admin connections allowed w/o CAL	2	2	2
Can act as Domain Controller (AD)	Yes	Yes	Yes ⁶

¹ Can support as many VMs as needed (i.e., unlimited) with the purchase of Additional Licenses.

² Only Windows Server 2019 Essentials as a guest OS.

³ Hyper-V guests can use no more than 64 virtual CPUs, 1 TB of memory, or 64 TB VHDs.

⁴ Certain hardware limitations, specifications, and configurations may limit the maximum number of users and devices, though Datacenter and Standard themselves can support unlimited numbers of users and devices.

⁵ Two admin remote sessions, included in the product license, are allowed.

⁶ Domain Controller, or AD, must be configured for maximum 25 users and 50 devices, must be the root of a forest, must not be a child domain, and must not have a trust relationship with any other domains.

Technical Details

Please note that the information provided below is current as of **27 November 2019**.

SOFTWARE	
Server Operating System	Windows Server 2019
Windows Server 2019 Editions	Datacenter, Standard, and Essentials
Product Update	Windows Update
HARDWARE	
Minimum Hardware Requirement	Minimum hardware requirements are set by Microsoft. FUJITSU PRIMERGY/PRIMEQUEST server systems, scale-out servers (formerly server blades), and nodes are (or will be) certified—"logo'd," so to speak—by Microsoft and hence meet (or will meet) the minimum hardware requirements.
Fujitsu Server Systems for Microsoft Hyper-V Server 2019 (Hypervisor Download) (Models that are yet to support Hyper-V Server 2019 are underlined)	-PRIMERGY: RX4770 M4, RX4770 M3, RX2560 M2, RX2540 M4, RX2540 M2, RX2530 M4, RX2530 M2, RX2520 M4, RX1330 M4, RX1330 M3, TX2560 M2, TX2550 M4, TX1330 M4, TX1330 M3, TX1320 M4, TX1320 M3, TX1310 M3, CX2570 M2, CX2560 M4, CX2550 M4, CX2550 M2, <u>BX2580 M2</u> , <u>BX2560 M2</u> -PRIMEQUEST: 3800B, 3800E, 3400E, 3800B2, 3800E2, 2800B3, 2800E3, 2400E3
Fujitsu Server Systems for Windows Server 2019 Datacenter (Models that are yet to support WS2019 are underlined)	-PRIMERGY: RX4770 M4, RX4770 M3, RX2560 M2, RX2540 M4, RX2540 M2, RX2530 M4, RX2530 M2, RX2520 M4, RX1330 M4, RX1330 M3, TX2560 M2, TX2550 M4, TX1330 M4, TX1330 M3, TX1320 M4, TX1320 M3, TX1310 M3, CX2570 M2, CX2560 M4, CX2550 M4, CX2550 M2, <u>BX2580 M2</u> , <u>BX2560 M2</u> -PRIMEQUEST: 3800B, 3800E, 3400E, 3800B2, 3800E2, 2800B3, 2800E3, 2400E3
Fujitsu Server Systems for Windows Server 2019 Standard (Models that are yet to support WS2019 are underlined)	-PRIMERGY: RX4770 M4, RX4770 M3, RX2560 M2, RX2540 M4, RX2540 M2, RX2530 M4, RX2530 M2, RX2520 M4, RX1330 M4, RX1330 M3, TX2560 M2, TX2550 M4, TX1330 M4, TX1330 M3, TX1320 M4, TX1320 M3, TX1310 M3, CX2570 M2, CX2560 M4, CX2550 M4, CX2550 M2, <u>BX2580 M2</u> , <u>BX2560 M2</u> -PRIMEQUEST: 3800B, 3800E, 3400E, 3800B2, 3800E2, 2800B3, 2800E3, 2400E3
Fujitsu Server Systems for Windows Server 2019 Essentials (Models that are yet to support WS2019 are underlined)	-PRIMERGY: RX2560 M2, RX2540 M4, RX2540 M2, RX2530 M4, RX2530 M2, RX2520 M4, RX1330 M4, RX1330 M3, TX2560 M2, TX2550 M4, TX1330 M4, TX1330 M3, TX1320 M4, TX1320 M3, TX1310 M3, CX2570 M2, CX2560 M4, CX2550 M2, <u>BX2580 M2</u> , <u>BX2560 M2</u>
Fujitsu Storage Systems	ETERNUS: JX40 S2, JX60 S2
System Requirements for Fujitsu Servers	Processor. ECC Memory. DVD drive. Disk. RAID (Redundant Array of Independent Disks) is supported, but not required. The system volume can be MBR or GPT. Keyboard. Video. Mouse. Certification logo requirements are the same for all Windows Server 2019 editions.
BIOS Requirements for Fujitsu Servers	BIOS requirements for the following PRIMERGY/PRIMEQUEST models are as follows: <ul style="list-style-type: none"> • RX4770 M4: version 1.18 or higher • RX4770 M3: version 1.20.0 or higher • RX2560 M2: version 1.22 or higher • RX2540 M4: version 1.28 or higher • RX2540 M2: version 1.22 or higher • RX2530 M4: version 1.28 or higher • RX2530 M2: version 1.22 or higher • RX2520 M4: version 1.28 or higher • RX1330 M4: version 1.04 or higher • RX1330 M3: version 1.22 or higher • TX2560 M2: version 1.22 or higher

- **TX2550 M4:** version 1.28 or higher
- **TX1330 M4:** version 1.04 or higher
- **TX1330 M3:** version 1.22 or higher
- **TX1320 M4:** version 1.04 or higher
- **TX1320 M3:** version 1.22 or higher
- **TX1310 M3:** version 1.22 or higher
- **CX2570 M2:** version 1.17 or higher
- **CX2560 M4:** version 1.34 or higher
- **CX2550 M4:** version 1.34 or higher
- **CX2550 M2:** version 1.17 or higher
- **PRIMEQUEST 3800B:** version 1.0.0.0 - R1.71.0 or higher
For the case of TPM2.0, BIOS should be updated to R1.87.0 or later.
- **PRIMEQUEST 3800E:** version 01.78 or higher (included in Firmware PA19-02-5 or higher)
For the case of TPM2.0, BIOS should be updated to 01.85 or later.
- **PRIMEQUEST 3400E:** version 01.78 or higher (included in Firmware PA19-02-5 or higher)
For the case of TPM2.0, BIOS should be updated to 01.85 or later.
- **PRIMEQUEST 3800B2:** version 1.6.0 or higher
- **PRIMEQUEST 3800E2:** version 01.10 or higher
- **PRIMEQUEST 2800B3:** version 1.47 or higher (included in Firmware BC19-04-1 or higher)
- **PRIMEQUEST 2800E3:** version 1.47 or higher (included in Firmware BC19-04-1 or higher)
- **PRIMEQUEST 2400E3:** version 1.47 or higher (included in Firmware BC19-04-1 or higher)

BIOS files for the above **PRIMERGY models** can be obtained from <http://support.ts.fujitsu.com/IndexDownload.asp?lng=COM&SoftwareGUID=> . Click on "Product Search" and enter the model number. Choose "Microsoft Hyper-V Server 2019" or "Windows Server 2019" from the operating system drop-down menu. Click on the **"BIOS" tab** and find the requisite BIOS file.

BIOS files for PRIMEQUEST 3800B, 3800E, and 3400E can be obtained from <http://support.ts.fujitsu.com/IndexDownload.asp?lng=COM&SoftwareGUID=> . Click on "Product Search" and enter the model number, but, in doing so, DO NOT abbreviate the word PRIMEQUEST. Choose "OS Independent (BIOS, Firmware, etc.)" from the operating system drop-down menu.

For **PRIMEQUEST 3800B** and **PRIMEQUEST 3800B2**, click on the **"BIOS" tab** and find the requisite BIOS file.

For **PRIMEQUEST 3800E**, **PRIMEQUEST 3400E** and **PRIMEQUEST 3800E2**, click on the **"Driver" tab** and find the "PA19-02-5" (or higher) firmware file in the "Flash – Firmware" section. The PA19-02-5 (or higher) file contains the BIOS file for PRIMEQUEST 3800E, PRIMEQUEST 3400E PRIMEQUEST 3800E2. Click on the "File description" link to confirm that the BIOS version is 01.78 (or higher).

For **PRIMEQUEST 2800B3**, **PRIMEQUEST 2800E3**, and **PRIMEQUEST 2400E3**, click on the **"Driver" tab** and find the "BC19-04-1" (or higher) firmware file in the "Flash – Firmware" section. The BC19-04-1 (or higher) file contains the BIOS file for PRIMEQUEST 2800B3, PRIMEQUEST 2800E3, and PRIMEQUEST 2400E3. Click on the "File description" link to confirm that the BIOS version is 1.47 (or higher).

WINDOWS SERVER 2019 INSTALLATION OPTIONS

"Server with Desktop Experience" & "Server Core" Installations "Server with Desktop Experience" and "Server Core" installation options are available for Windows Server 2019.

"Nano Server" Installation The "Nano Server" installation option, which was available for Windows Server 2016, is no longer available for Windows Server 2019. If the "Nano Server" installation option is desired, please use the Semi-Annual Channel release of Windows Server.

FUJITSU OEM/ROK WS 2019 INSTALLATION ON VMWARE HOSTS

Fujitsu OEM/ROK Windows Server 2019 can be installed as a guest operating system on VMware hosts. But do not use ServerView Installation Manager to install Fujitsu OEM/ROK Windows Server 2019 on virtual machines.

FUJITSU SERVERVIEW SUITE

The Fujitsu ServerView Suite — consisting of ServerView Installation Manager (v. 13.18.12 or higher), ServerView Operations Manager (v. 8.50.02 or higher), ServerView Agent (v. 8.51.08 or higher), and ServerView RAID Manager (v. 6.7.2 or higher) — supports Windows Server 2019.

The Fujitsu ServerView Suite compatible with Windows Server 2019 is available at http://support.ts.fujitsu.com/prim_supportcd/SVSoftware/Software/Hints_and_readmes/English/ServerView_Links/ServerView_links.htm. At the Fujitsu ServerView Suite page, open the "ServerView Suite" folder and then the "Software downloads" folder. Click on the "ISO images" page and choose the link that suits your need.

LANGUAGES

Windows Server 2019 Datacenter, Standard, and Essentials are multilingual and include the following languages by default: English, German, French, Italian, Spanish, Japanese, Chinese, and Korean. Language Packs for Arabic, Brazilian Portuguese, Bulgarian, Croatian, Czech, Danish, Dutch, Estonian, Finnish, Greek, Hebrew, Hungarian, Latvian, Lithuanian, Norwegian, Polish, Portuguese, Romanian, Russian, Serbian, Slovak, Slovenian, Swedish, Thai, Turkish, and Ukrainian are available as end-user downloads from Microsoft. Install Language Packs from the command line by issuing the "lpksetup" command. For more information about Language Packs, see <https://docs.microsoft.com/en-us/windows-hardware/manufacture/desktop/available-language-packs-for-windows>.

HYPER-V

Hyper-V Windows Server 2019 Datacenter, Standard, and Essentials provide Hyper-V. Hyper-V enables you to create and manage virtualized computing environments through Windows Server 2019's built-in virtualization technology. Hyper-V is supported on all PRIMERGY servers.

Supported Guest Operating Systems (Server & Client) Operating systems that can be used as guest operating systems (whether server or client) in Windows Server 2019's Hyper-V environment will be announced later.

Install Integration Services after you set up the operating system in the virtual machine. Supported guest operating systems and Service Packs can be found at <https://docs.microsoft.com/en-us/windows-server/virtualization/hyper-v/Hyper-V-Technology-Overview>. Guest operating systems must be properly licensed.

SPECIAL FUNCTIONS

Storage Spaces Direct (S2D) Storage Spaces Direct (S2D), a storage feature exclusive to Windows Server 2019 Datacenter, harnesses servers' physical disks into a highly scalable software-defined storage space.

Before using S2D (and other Software-Defined Data Center features), please apply the latest update for Windows Server.

For PRIMERGY models where S2D can be implemented, please see *Datasheet Windows Server 2016/2019 Addendum: Storage Spaces Direct*.

Hardware Assurance

Hardware Assurance-certified systems are capable of supporting all hardware and firmware technologies required for higher levels of security. Those technologies are:

- Trusted Platform Module version 2.0 or later
- UEFI version 2.31c or higher firmware support
- SecureBoot
- IO Memory Management Unit (IOMMU)

The following PRIMERGY and PRIMEQUEST models are *Hardware Assurance*-certified:

-PRIMERGY: RX4770 M4, RX2540 M4, RX2530 M4, RX2520 M4, RX1330 M4, RX1330 M3, TX2550 M4, TX1330 M4, TX1330 M3, TX1320 M4, TX1320 M3, TX1310 M3, CX2570 M4, CX2560 M4, CX2550 M4

-PRIMEQUEST: 3800B, 3800E, 3400E

Intel Optane DCPMM Module

Intel Optane DCPMM App Direct Mode can be used with Windows Server 2019 if a Windows Server's latest cumulative update (LCU) released in August 2019 or later is applied.

For DCPMM's installation requirements and PRIMERGY and PRIMEQUEST models with which DCPMM App Direct Mode can be used, please see PRIMERGY and PRIMEQUEST hardware documentations (such as Datasheets and Configurators).

COMPONENT RESTRICTIONS

Onboard LAN Devices without the OCP

PRIMERGY When the OCP is not installed, onboard LAN devices will be flagged with an "Intel (R) Ethernet Connection X722" warning or displayed as "unknown devices" in the Device Manager. This phenomenon, however, does not indicate any functional problems with PRIMERGY servers or Windows Server 2019.

-Solutions: The Intel SW Kit 24.x, scheduled to be released in December 2019 will fix this problem.

-Applicable to: PRIMERGY RX4770 M4, RX2540 M4, RX2530 M4

Display Resolution

PRIMERGY Display resolution is fixed at 1024 x 768 when the onboard VGA is used.

-Solutions: The "iRMCS4 and iRMCS5 Windows Server 2012 R2, 2016, and 2019 VGA driver for Matrox G200e," version R507 - 4.4.50.4 or later, available at <http://support.ts.fujitsu.com/IndexDownload.asp?Ing=COM&SoftwareGUID=>, fixes this problem. At the download page, please click on "Product Search," enter the model number, click on "Continue," click on the "Driver" tab on a given model's product support page, and select Windows Server 2019 from the "Select Operating System" dropdown menu.

-Applicable to: PRIMERGY RX4770 M4, RX2540 M4, RX2530 M4, RX2520 M4, RX1330 M4, TX2550 M4, TX1330 M4, TX1320 M4, CX2560 M4, CX2550 M4

Onboard SATA Controllers

PRIMERGY WS2019 does not recognize devices connected to the onboard SATA controller when it is set to the RAID mode in the BIOS.

-Solutions: The PRAID AS200i driver for Windows Server 2019 WHQL certified (version 18.02.2018.1105 or higher), available at

<http://support.ts.fujitsu.com/IndexDownload.asp?Ing=COM&SoftwareGUID=>, fixes this problem. At the download page, please click on "Product Search," enter the model number, click on "Continue," click on the "Driver" tab on a given model's product support page, and select Windows Server 2019 from the "Select Operating System" dropdown menu.

-Applicable to: PRIMERGY RX1330 M4, TX1330 M4, TX1320 M4

QLogic/Cavium LAN Cards

PRIMERGY If QLogic/Cavium LAN cards listed below are to be used with Windows Server 2019, please apply the "QL41xxx, QL45611, Windows Driver Installer" (version 20.30.1.22 or later) available at

<http://support.ts.fujitsu.com/IndexDownload.asp?Ing=COM&SoftwareGUID=>. At the download page, please click on "Product Search," enter a PRIMERGY model that

supports Windows Server 2019 (e.g., RX2540 M4), click on "Continue," select "Windows Server 2019" from the "Select Operating System" dropdown menu, and click on the "Driver" tab. Scroll down to the "LAN" section.

-Applicable to: PLAN EP QL41112 2X 10GBASE-T, LP, FH; PLAN EP QL41112 2X 10GBASE-T, LP; PLAN EP QL41112 2X 10GBASE-T, FH; PLAN EP QL41212 25Gb 2p SFP28 LP, FH; PLAN EP QL41212 25Gb 2p SFP28 LP; PLAN EP QL41212 25Gb 2p SFP28 FH; PLAN EP QL45611 100Gb 1p QSFP28 LP, FH; PLAN EP QL45611 100Gb 1p QSFP28 LP; PLAN EP QL45611 100Gb 1p QSFP28 FH; PCNA EP QL41262 2X 25G SFP28, LP, FH; PCNA EP QL41262 2X 25G SFP28, FH; PLAN EP QL41132 2X 10G SFP+, LP, FH; PLAN EP QL41132 2X 10G SFP+, LP; PLAN EP QL41132 2X 10G SFP+, FH

PRIMEQUEST Fujitsu is assessing QLogic/Cavium LAN Cards that can be used with Windows Server 2019 and will announce as soon as supportable on PRIMEQUEST

Mellanox LAN Cards

PRIMEQUEST If network interface cards listed below are to be used with Windows Server 2019, please apply *both* the the "Mellanox mlx up Firmware Bundle" (version 4.5.1 or later) *and* the "Mellanox driver package (WinOF-2) for Windows" (version 2.10 or later), available at

<http://support.ts.fujitsu.com/IndexDownload.asp?Ing=COM&SoftwareGUID=>.

Click on "Product Search," enter a PRIMERGY model that supports Windows Server 2019 (e.g., RX2540 M4), click on "Continue" and select "Windows Server 2019" from the "Select Operating System" dropdown menu. Click on the "Driver" tab and scroll down to the "LAN" section.

-Applicable to: PLAN EP MCX4-EN 100Gb 1p QSFP28 LP, FH; PLAN EP MCX4-EN 100Gb 1p QSFP28 LP; PLAN EP MCX4-EN 100Gb 1p QSFP28 FH; PLAN EP MCX4-EN 40Gb 2p QSFP LP, FH; PLAN EP MCX4-EN 40Gb 2p QSFP LP; PLAN EP MCX4-EN 40Gb 2p QSFP FH; PLAN EP MCX4-LX 25Gb 2p SFP28 LP, FH; PLAN EP MCX4-LX 25Gb 2p SFP28 LP; PLAN EP MCX4-LX 25Gb 2p SFP28 FH; PLAN EP MCX4-LX 25Gb 2p SFP28 OCP; PLAN EP MCX4-LX 25Gb 2p SFP28 OCP

PRIMEQUEST Fujitsu is assessing Mellanox LAN Cards that can be used with Windows Server 2019 and will announce as soon as supportable on PRIMEQUEST servers.

Emulex/Cavium Converged Network Adapters

PRIMEQUEST WS2019 inbox drivers for the Emulex/Cavium converged network adapter PCNA EP OCe14102 2x 10Gb do not support the following functions:

- FCoE
- iSCSI

The inbox drivers currently support LAN only.

-Solutions: The driver scheduled to be released in late December 2019 or later is expected to support the FCoE and iSCSI functions.

-Applicable to: PCNA EP OCe14102 2x 10Gb, PCNA EP OCe14102 2x 10Gb LP, PCNA EP OCe14401 1x 40Gb, PCNA EP OCe14401 1x 40Gb LP, PLAN EP OCe14102 2x 10Gb, PLAN EP OCe14102 2x 10Gb LP, PLAN EP OCe14102 2x 10Gb FH, PLAN EP OCe14102 2x 10Gb Base-T, PLAN EP OCe14102 2x 10Gb Base-T LP

PRIMEQUEST Fujitsu is assessing Emulex/Cavium Converged Network Adapters that can be used with Windows Server 2019 and will announce as soon as supportable on PRIMEQUEST servers.

Intel LAN Cards

PRIMEQUEST When the LAN card PLAN Intel 4x1Gb T OCP is used, a Hyper-V virtual switch cannot be created.

-Solutions: The Intel SW Kit 24.x, scheduled to be released in December 2019 will fix this problem.

-Applicable to: PLAN Intel 4x1Gb T OCP

PRIMEQUEST Intel LAN Cards PLAN Intel 4x1Gb T OCP is not relevant to PRIMEQUEST models.

Trusted Platform Modules (TPM)

PRIMEQUEST TPM 2.0 chips S26361-F3552-L10 and S26361-F3552-E10 can be used with Windows Server 2019 on all *Hardware Assurance*-certified PRIMERGY models if these models are configured with these chips. This is the case with PRIMERGY RX1330 M3, TX1330 M3, and TX1310 M3.

When used with Windows Server 2019, TPM 2.0 chips must be used as TPM 2.0 components.

But these TPM 2.0 chips cannot be used with the PRIMERGY models listed below.

-Applicable to: PRIMERGY RX4770 M3, RX2560 M2, RX2540 M2, RX2530 M2, TX2560 M2

PRIMEQUEST TPM 2.0 chips can be used with Windows Server 2019 on PRIMEQUEST 3800B, 3800E and 3400E. Whether use TPM 2.0 chips on these models, please refer to "BIOS Requirements for Fujitsu Servers" for BIOS version requirements.

However, as soon as assesses its operation, Fujitsu will announce other PRIMEQUEST servers models that will support the TPM 2.0 chips.

QLogic Fibre Channel Cards

PRIMERGY If fibre channel cards listed below are to be used with Windows Server 2019, please apply *both* the "MultiBoot Image for QLE269x and QLE274x" software package (version 1.60.34 or later) *and* the "StorPort Miniport Driver Windows 2016/2019" software package (version 9.2.9.23 or later), available at <http://support.ts.fujitsu.com/IndexDownload.asp?Ing=COM&SoftwareGUID=>.

Click on "Product Search," enter a PRIMERGY model that supports Windows Server 2019 (e.g., RX2540 M4), click on "Continue" and select "Windows Server 2019" from the "Select Operating System" dropdown menu. For the "MultiBoot Image" package, click on the "BIOS" tab and scroll down to the "Fibre Channel" section. For the "StorPort Miniport Driver" package, click on the "Driver" tab and scroll down to the "Fibre Channel" section.

-Applicable to: PFC EP QLE2740 1x 32Gb, PFC EP QLE2740 1x 32Gb LP, PFC EP QLE2742 2x 32Gb, PFC EP QLE2742 2x 32Gb LP, PFC EP QLE2690 1x 16Gb, PFC EP QLE2690 1x 16Gb LP, PFC EP QLE2692 2x 16Gb, PFC EP QLE2692 2x 16Gb LP

PRIMEQUEST If fibre channel cards listed below are to be used with Windows Server 2019, please apply *both* the "MultiBoot Image for QLE269x and QLE274x" software package (version 1.60.34 or later) *and* the "StorPort Miniport Driver Windows 2016/2019" software package (version 9.2.9.23 or later), available at <http://support.ts.fujitsu.com/IndexDownload.asp?Ing=COM&SoftwareGUID=>.

Click on "Product Search" and enter the model number (e.g., PRIMEQUEST 3800B), but, in doing so, DO NOT abbreviate the word PRIMEQUEST. Select "Windows Server 2019" from the "Select Operating System" dropdown menu. For the "MultiBoot Image" package, click on the "BIOS" tab and scroll down to the "Fibre Channel" section. For the "StorPort Miniport" package, click on the "Driver" tab and scroll down to the "Fibre Channel" section.

-Applicable to: PFC EP QLE2690 1x 16Gb Qlogic, PFC EP QLE2692 2x 16Gb Qlogic, PFC EP QLE 2740 1x32Gb, PFC EP QLE 2742 2x32Gb, FC CTRL QLE2560, FC CTRL QLE2562, PFC EP QLE2670 1x 16Gb, PFC EP QLE2672 2x 16Gb

Broadcom Fibre Channel Cards

PRIMERGY If fibre channel cards listed below are to be used with Windows Server 2019, please apply the "Universal Boot and FW for LPe3100x / LPe3200x" (version 12.0.261.33 or later), available at

<http://support.ts.fujitsu.com/IndexDownload.asp?Ing=COM&SoftwareGUID=>.

Click on "Product Search," enter a PRIMERGY model that supports Windows Server 2019 (e.g., RX2540 M4), click on "Continue" and select "Windows Server 2019" from the "Select Operating System" dropdown menu. Click on the "Driver" tab and scroll down to the "Fibre Channel" section.

-Applicable to: PFC EP LPe32000 1x 32Gb; PFC EP LPe32000 1x 32Gb LP; PFC EP LPe32000 1x 32Gb; PFC EP LPe32002 2x 32Gb; PFC EP LPe32002 2x 32Gb LP; PFC EP LPe32002 2x 32Gb; FC Ctrl 8Gb/s 2 Chan LPe12002 MMF LC LP; FC Ctrl 8Gb/s 2 Chan LPe12002 MMF LC; FC Ctrl 8Gb/s 2 Chan LPe12002 MMF LC LP; FC Ctrl 8Gb/s 2 Chan LPe12002 MMF LC LP; FC CTRL 8GBIT/S LPE1250 MMF LC LP; FC CTRL 8GBIT/S LPE1250 MMF LC FH; FC Ctrl 8Gb/s 1 Chan LPe1250 MMF LC LP; FC Ctrl 8Gb/s 1 Chan LPe1250 MMF LC; PFC EP LPe16000; PFC EP LPe16000 LP; PFC EP LPe16000; PFC EP LPe16002; PFC EP LPe16002 LP; PFC EP LPe16002; PFC EP LPe31000 1x 16Gb; PFC EP LPe31000 1x 16Gb LP; PFC EP LPe31000 1x 16Gb; PFC EP LPe31002 2x 16Gb; PFC EP LPe31002 2x 16Gb LP; PFC EP LPe31002 2x 16Gb

PRIMEQUEST Fujitsu is assessing Broadcom Fibre Channel Cards that can be used with Windows Server 2019 and will announce as soon as supportable on PRIMEQUEST servers.

Internal Battery Units	<p>PRIMERGY Battery units listed below can be used with Windows Server 2019 only on the following PRIMERGY models: RX2530 M2; RX1330 M3; TX1330 M3; TX1320 M3. -Applicable to: Fujitsu battery units 380 W, 12V</p>
SAS Controller Cards	<p>PRIMERGY The SAS controller card listed below does not work when connected to SAS backup devices, though it does work when connected to internal storage units. -Applicable to: PSAS CP400i FH/LP</p>
NVIDIA Graphics Cards	<p>PRIMERGY If graphics cards listed below are to be used with Windows Server 2019, please apply the "Windows 2016 and 2019 driver NVIDIA Graphic cards" driver (version 419.17 or later) available at http://support.ts.fujitsu.com/IndexDownload.asp?lng=COM&SoftwareGUID=. At the download page, please click on "Product Search," enter a PRIMERGY model that supports Windows Server 2019 (e.g., RX2540 M4), click on "Continue," select "Windows Server 2019" from the "Select Operating System" dropdown menu, and click on the "Driver" tab. Scroll down to the "Graphic" section. -Applicable to: NVIDIA Quadro P400 2GB, Low Profile; NVIDIA Quadro P400 2GB, Full Height</p>
PCIe SSD	<p>PRIMERGY If PCIe SSDs listed below are to be used with Windows Server 2019, please apply the "PACC EP P4800X AIC" (version 4.2.0.1002 or later) available at http://support.ts.fujitsu.com/IndexDownload.asp?lng=COM&SoftwareGUID=. Click on "Product Search," enter a PRIMERGY model that supports Windows Server 2019 (e.g., RX2540 M4), click on "Continue" and select "Windows Server 2019" from the "Select Operating System" dropdown menu. Click on the "Driver" tab and scroll down to the "PCIe SSD" section. -Applicable to: PACC EP P4800X AIC 750GB; PACC EP P4800X AIC 375GB; PACC EP P4800X AIC 750GB; PACC EP P4800X AIC 375GB However, the PCIe SSD listed above cannot be used as a boot drive for Windows Server 2019. Storage for OS startup is required separately. PRIMEQUEST PACC EP 4800X AIC are not relevant to PRIMEQUEST models.</p>

LICENSING

Right to Use – Base License	<p>Windows Server 2019 products are licensed on the per-core basis.</p> <p>The Windows Server (WS) Base License is permanently assigned to the Fujitsu PRIMERGY server with which you acquired that software. (It is, however, possible to move a Base License from one server to another with the purchase of reassignment licenses.) You may not assign a single WS Base License to multiple servers. WS 2019 Datacenter and Standard require Client Access Licenses (CALs), though they are not included in WS 2019 Base Licenses. CALs are required for every user or every device that accesses servers licensed with Windows Server.</p> <p>Virtual machines (VMs) are not tied to servers permanently. All types of WS licenses support VM portability. VM instances are license agnostic (whether OEM, VL, or Retail), and you can dynamically move VM instances to any servers, capable of running VMs, licensed with proper WS editions. You have the right to run as many VM instances on your servers as license terms allow.</p>
Right to Use – Additional License	<p>There are two kinds of OEM Additional Licenses: POS (i.e., Point of Sale) and APOS (i.e., After POS). POS Additional Licenses must be purchased with base licenses, and may not be purchased after the initial server sale. APOS Additional Licenses can be purchased after the initial server sale and also can be reassigned from the server for which they are purchased to another server as long as the latter server is properly licensed with a base license.</p>
Right to Use – Client Access License (CAL)	<p>CALs are no longer included in Windows Server Base Licenses, but CALs are still required to access any WS 2019 Datacenter or Standard instances (physical or virtual). CALs must be purchased separately from base licenses. OEM CALs are not tied to servers. Additional OEM CALs may be purchased after the initial server sale. CALs are channel agnostic; any CALs (whether OEM, VL, or Retail) can be used to access any WS (whether OEM, VL, or Retail) machines.</p>

OEM CALs are independent of base licenses and remain valid even after base licenses are retired. CALs are required for every user or every device that directly accesses servers licensed with Windows Server. CALs are not required for anonymous users who access such servers over the internet.

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Product Activation Notice to End Users – OEM

Certain Microsoft software included on Fujitsu servers may employ copyright protection measures. Unless the software is activated, you have no right to use it after its activation period. This is to prevent its unauthorized use. You may not bypass or circumvent activation. The activation procedure and Microsoft's privacy policy will be displayed when the software is launched for the first time, when it is reinstalled, or when your computer is reconfigured. Product activation may be completed by Internet or tele-phone (toll charges may apply). You will be re-minded to activate until you do so. PRI-MERGY server systems that ship with Windows Server 2019 OEM licenses will have Win-dows Server 2019 pre-activated.

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Certain Microsoft software included in Fujitsu servers may employ copyright protection measures. Unless the software is activated, you have no right to use it after its activation period. This is to prevent its unauthorized use. You may not bypass or circumvent activation. The activation procedure and Microsoft's privacy policy will be displayed when the software is launched for the first time, when it is reinstalled, or when your computer is reconfigured. Product activation may be completed by Internet or tele-phone (toll charges may apply).

Downgrade Rights

Windows Server 2019 Datacenter, Standard, and Essentials licenses include a downgrade or down-edition right, or both. Typically, customers who request a downgrade would already have a server running the (older) version of Windows Server they are seeking to downgrade to; hence, customers who wish to exercise a downgrade right that their Windows Server 2019 license entitles would usually have a server running Windows Server 2016 or an earlier WS version, for example. Those customers may use their existing media and keys to exercise their downgrade right. That customers elect to use a downgrade version does not change the terms and conditions of the license product they purchased. Therefore, customers who purchased a WS 2019 license have to abide by WS 2019 license's terms and conditions even when they exercise their downgrade right. For example, when Windows Server 2012 R2 or Windows Server 2012 is used through a WS 2019 license's downgrade right, all cores on physical processors still have to be licensed because Windows Server 2019 is licensed on the per-core ba-sis, while Windows Server 2012 R2 and earlier WS versions are li-censed on the per-processor basis. Likewise, virtualization rights stay unaltered when downgrade rights are exercised; if WS 2016 Standard is used via a WS 2019 Standard license's downgrade right, that license still permits two instances of virtual machine, for example. Upon re-quest, Fujitsu provides downgrade media or product key (or both).

- Windows Server 2019 Datacenter includes downgrade and down-edition rights to WS 2019 Standard and Essentials; WS 2016 Datacenter, Standard, and Essentials; WS 2012 R2 Datacenter, Standard, Essentials, and Foundation; and WS 2012 Datacenter, Standard, and Essentials.
- Windows Server 2019 Standard includes downgrade and down-edition rights to WS 2019 Essentials; WS 2016 Standard and Essentials; WS 2012 R2 Standard, Essentials, and Foundation; and WS 2012 Standard and Essentials.
- Windows Server 2019 Essentials includes downgrade rights to WS 2016 Essentials, WS 2012 R2 Essentials and Foundation, and WS 2012 Essentials.

Downgrading Windows Server CALs

Downgrading Windows Server 2019 CALs (Client Access Licenses) does not require end users to take special action or obtain separate product keys.

SOFTWARE ASSURANCE

Software Assurance is Microsoft's maintenance program. Its benefits include new version rights, additional use rights, installment payment plans, consulting services, training, and much more. You must sign up for Software Assurance within the 90 days of your software purchase. (Please note use of Nano Server requires Software Assurance.) If you purchase a Software Assurance (SA) policy for your OEM license, use of that software becomes subject to Microsoft Product Use Rights and the terms and conditions of your organization's volume licensing agreement. Your software's OEM terms are reinstated after the expiration of your SA policy.

Software Assurance, Microsoft Volume Licenses, and Microsoft Products and Services Agreements must be obtained from authorized Microsoft Licensing Solution Partners (LSPs). Fujitsu is an authorized Microsoft LSP around the world, including the European Union and European Free Trade Association countries. For assistance, please contact PM-Team-LAR@ts.fujitsu.com.

FUJITSU CUSTOMER SUPPORT

Basic installation support is provided free of charge. Windows Server 2019 initial installation issues that pertain to Fujitsu PRIMERGY server systems' hardware warranty or hardware support services are handled by Fujitsu Maintenance Organizations. Basic installation support covers issues related to the installation of an operating system as a POSE (Physical Operating Software Environment) on Fujitsu PRIMERGY server systems. Support for issues related to VOSE (Virtual Operating System Environment) installation is not free. Customers needing advanced levels of product support are advised to purchase such services as Fujitsu Support Pack Software, Fujitsu Service Contract Software, and Fujitsu Installation Pack. Those services are not included in Windows Server licenses (whether OEM or ROK) and must be purchased separately. For more information about those services, please see <http://www.fujitsu.com/fts/products/product-support-services/>.

PRODUCT SUPPORT LIFE CYCLES

Please refer to Microsoft's support lifecycle for Windows Server 2019 as well as Fujitsu's PRIMERGY lifecycle policy.

Microsoft's Windows Server 2019 support lifecycle begins: on or shortly after GA

Microsoft's Mainstream Support ends: about 5 years after GA

Microsoft's Extended Support ends: about 5 years after Mainstream Support ends

<https://support.microsoft.com/en-us/help/14085/microsoft-business-developer-and-desktop-operating-systems-policy>

More Information

Fujitsu OPTIMIZATION Services

In addition to Fujitsu Windows Server 2019 OEM / ROK for FUJITSU Server PRIMERGY, Fujitsu provides a range of platform solutions. They combine reliable FUJITSU products with the best in services, know-how and worldwide partner-ships.

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/

- PRIMERGY: Industrial standard server
- ETERNUS: Storage system

Software

www.fujitsu.com/global/products/software/

- Windows Server: FUJITSU PRIMERGY Operating System
- ServerView: FUJITSU PRIMERGY Server Management

More information

Learn more about FUJITSU Server PRIMERGY, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website.

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

www.fujitsu.com/global/about/environment/



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