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

**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 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

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.


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Migration Service</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>System Insights</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Server Management by Windows Admin Center</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Storage Spaces Direct (S2D)</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Storage Replica</td>
<td>Yes</td>
<td>Yes (up to 2TB/Vol.)</td>
<td>Yes</td>
</tr>
<tr>
<td>Network Controller</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Leap Second</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Windows Defender Exploit Guard</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Shielded VM for Windows</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Shielded VM for Linux</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Windows Server Container</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Hyper-V Container</td>
<td>Yes (Unlimited)</td>
<td>Yes (2 VMs)</td>
<td>Yes (Unlimited)</td>
</tr>
<tr>
<td>Linux Container</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Server Core Features on Demand</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Kubernetes Platform Support</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Licensing Model</td>
<td>Core based</td>
<td>Core based</td>
<td>Core based</td>
</tr>
</tbody>
</table>
Windows Server 2019 – Editions and Technical Specifications

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum physical CPUs / cores supported by Fujitsu PRIMERGY</td>
<td>4 CPUs / 112 cores</td>
<td>4 CPUs / 112 cores</td>
<td>2 CPUs / 56 cores</td>
</tr>
<tr>
<td>Maximum physical CPSS / cores supported by Fujitsu PRIMEQUEST</td>
<td>8 CPUs / 224 cores</td>
<td>8 CPUs / 224 cores</td>
<td>---</td>
</tr>
<tr>
<td>VM-use rights included per product</td>
<td>Unlimited VMs</td>
<td>2 VMs¹</td>
<td>1 VM²</td>
</tr>
<tr>
<td>Maximum physical RAM supported</td>
<td>24TB</td>
<td>24TB</td>
<td>64GB</td>
</tr>
<tr>
<td>Hyper-V role supported</td>
<td>Yes (incl. Shielded VMs)</td>
<td>Yes</td>
<td>Yes³</td>
</tr>
<tr>
<td>Maximum number of 64-bits sockets</td>
<td>64</td>
<td>64</td>
<td>2</td>
</tr>
<tr>
<td>Active virtual machines supported</td>
<td>1,024</td>
<td>1,024</td>
<td>1²</td>
</tr>
<tr>
<td>Maximum nodes per cluster</td>
<td>64</td>
<td>64</td>
<td>Not supported</td>
</tr>
<tr>
<td>Maximum number of users / devices</td>
<td>Unlimited⁴</td>
<td>Unlimited⁴</td>
<td>25 / 50</td>
</tr>
<tr>
<td>Remote Desktop Services supported</td>
<td>Yes</td>
<td>Yes</td>
<td>No⁵</td>
</tr>
<tr>
<td>CALs required / included in Base License</td>
<td>Yes / 0</td>
<td>Yes / 0</td>
<td>No</td>
</tr>
<tr>
<td>RDS CALs required for RDS / included in Base License</td>
<td>Yes / 0</td>
<td>Yes / 0</td>
<td>N/A</td>
</tr>
<tr>
<td>Admin connections allowed w/o CAL</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Can act as Domain Controller (AD)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes⁶</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Operating System</td>
<td>Windows Server 2019</td>
</tr>
<tr>
<td>Windows Server 2019 Editions</td>
<td>Datacenter, Standard, and Essentials</td>
</tr>
<tr>
<td>Product Update</td>
<td>Windows Update</td>
</tr>
</tbody>
</table>

### HARDWARE

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Hardware Requirement</td>
<td>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—&quot;logo’d,&quot; so to speak—by Microsoft and hence meet (or will meet) the minimum hardware requirements.</td>
</tr>
</tbody>
</table>
| Fujitsu Server Systems for Microsoft Hyper-V Server 2019 (Hypervisor Download) | - **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 M4, TX1310 M3, CX2570 M2, CX2560 M4, CX2550 M4, CX2550 M2, BX2580 M2, BX2560 M2  
  - **PRIMEQUEST**: 3800B, 3800E, 3400E, 3800B2, 3800E2, 2800B3, 2800E3, 2400E3 |
| Fujitsu Server Systems for Windows Server 2019 Datacenter | - **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 M4, TX1310 M3, CX2570 M2, CX2560 M4, CX2550 M4, CX2550 M2, BX2580 M2, BX2560 M2  
  - **PRIMEQUEST**: 3800B, 3800E, 3400E, 3800B2, 3800E2, 2800B3, 2800E3, 2400E3 |
| Fujitsu Server Systems for Windows Server 2019 Standard | - **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 M4, TX1310 M3, CX2570 M2, CX2560 M4, CX2550 M4, CX2550 M2, BX2580 M2, BX2560 M2  
  - **PRIMEQUEST**: 3800B, 3800E, 3400E, 3800B2, 3800E2, 2800B3, 2800E3, 2400E3 |
| Fujitsu Server Systems for Windows Server 2019 Essentials | - **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 M4, CX2550 M2, BX2580 M2, BX2560 M2  
  - **PRIMEQUEST**: 3800B, 3800E, 3400E, 3800B2, 3800E2, 2800B3, 2800E3, 2400E3 |
| 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:

- **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
• OX2570 M2: version 1.17 or higher
• OX2560 M4: version 1.34 or higher
• OX2550 M4: version 1.34 or higher
• OX2550 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
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
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 and 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

<table>
<thead>
<tr>
<th>Installation Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Server with Desktop Experience&quot; &amp; &quot;Server Core&quot;</td>
<td>&quot;Server with Desktop Experience&quot; and &quot;Server Core&quot; installation options are available for Windows Server 2019.</td>
</tr>
<tr>
<td>&quot;Nano Server&quot; Installation</td>
<td>The &quot;Nano Server&quot; installation option, which was available for Windows Server 2016, is no longer available for Windows Server 2019. If the &quot;Nano Server&quot; installation option is desired, please use the Semi-Annual Channel release of Windows Server.</td>
</tr>
</tbody>
</table>

### 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/SVSSoftware/Software/Hints_and_readme/English/ServerView_Links/ServerView_links.htm](http://support.ts.fujitsu.com/prim_supportcd/SVSSoftware/Software/Hints_and_readme/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/manufacturer/desktop/available-language-packs-for-windows](https://docs.microsoft.com/en-us/windows-hardware/manufacturer/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](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-define 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
- I/O 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 DPCMM 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.

- **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.

- **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?lng=COM&SoftwareGUID=](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 "LAN" section.


**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 servers.

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**Mellanox LAN Cards**


**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.

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**Emulex/Cavium Converged Network Adapters**

The inbox drivers currently support LAN only.

-Applicable to: PCNA EP OCE14102 2x 10Gb do not support the following functions:
  - FCoE
  - iSCSI

The inbox drivers currently support LAN only.


**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.

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**Intel LAN Cards**

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

-Applicable to: PLAN Intel 4x1Gb T OCP

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

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**Trusted Platform Modules (TPM)**

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 assess 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?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. 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.


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?lng=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?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 "Fibre Channel" section.

- Applicable to: PFC EP LPe32000 1x 32Gb; PFC EP LPe32000 1x 32Gb LP; PFC EP LPe32000 1x 32Gb; PFC EP LPe32000 1x 32Gb LP; PFC EP LPe32000 1x 32Gb; PFC EP LPe32000 1x 32Gb LP; PFC EP LPe32020 2x 32Gb; PFC EP LPe32002 2x 32Gb LP; PFC EP LPe32020 2x 32Gb; PFC EP LPe32020 2x 32Gb LP; PFC EP LPe32020 2x 32Gb; PFC EP LPe32020 2x 32Gb LP; PFC EP LPe32020 2x 32Gb; PFC EP LPe32020 2x 32Gb LP; PFC EP LPe32020 2x 32Gb; PFC EP LPe32020 2x 32Gb LP; PFC EP LPe32020 2x 32Gb; PFC EP LPe32020 2x 32Gb LP; PFC EP LPe32020 2x 32Gb; PFC EP LPe32020 2x 32Gb LP; PFC EP LPe32020 2x 32Gb; PFC EP LPe32020 2x 32Gb LP; PFC EP LPe32020 2x 32Gb; PFC EP LPe32020 2x 32Gb LP

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

**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

### SAS Controller Cards

**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

### NVIDIA Graphics Cards

**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

### PCIe SSD

**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.


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.

### LICENSING

**Right to Use – Base License**

Windows Server 2019 products are licensed on the per-core basis.

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.

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.

**Right to Use – Additional License**

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.

**Right to Use – Client Access License (CAL)**

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.
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.

End User License Agreement
Delivered with license products as a printed document. By using the software, you accept its license terms. If you do not accept them, do not use it. Instead, contact Fujitsu to inquire about our return policy and apply for a refund or credit.

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 telephone (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 Windows Server 2019 pre-activated.

Product Activation Notice to End Users – ROK
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 telephone (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 basis, while Windows Server 2012 R2 and earlier WS versions are licensed 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).


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
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.

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:
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