

FusionCube BigData Machine-5288 V5 Configuration Help

1. **Notice:**The V5 servers which install VMware system should avoid using the Intel X710/XL710 NIC, should configure and use the NIC which is in the compatibility list configuration except X7xx/XL7xx serial NIC. The reason is detailed in the warning notice:

<http://support.huawei.com/enterprise/en/bulletins-product/NEWS2000000641>

Notice: The V5 servers which install VMware system should avoid using the Intel X710/XL710 NIC, should configure and use the NIC which is in the compatibility list configuration except X7xx/XL7xx serial NIC. The reason is detailed in the warning notice: <http://support.huawei.com/enterprise/en/bulletins-product/NEWS2000000641>

2. Chassis module type

A chassis module includes the chassis, mainboard, and other components, but not PSUs, DVD-ROM drive, and RAID controller cards.

3. Onboard network card type

The ports include optical and electrical ports.

4. ===CPU===

o 4.1 CPU type

1. Preferred, Sub-preferred: recommended optimum commercial model.
2. Recommended configuration order: Preferred -> Sub-preferred.
3. Intel 3100 series CPUs support DIMMs of 2133 MHz and higher. However, DIMMs whose frequency is higher than 2133 MHz can only work at the maximum frequency of 2133 MHz in actual operating.
4. Intel 4100 and 5100 series CPUs support the actual maximum frequency of 2400 MHz, and Intel 6100 and 8100 series CPUs support the actual maximum frequency of 2666 MHz.

o 4.2 Number of CPUs

The server supports up to 2 CPUs.

5. ===Memory===

o 5.1 DIMM type

The DIMMs installed on the same server must be the same type.

- **5.2 Number of DIMMs**

One CPU supports 1 to 12 DIMMs, and two CPUs support 1 to 24 DIMMs.

6. **===3.5" Hard Disk===**

- **6.1 Hard disk type1**

1. The SMR disk only supports the Linux kernel 4.10 or higher, and the application software does not have a random write operation in the zone.
2. When the SMR disk is elected, only the 03022CDE (SR-130 3008 IR card) is supported.

- **6.2 Hard disk type2**

1. The SMR disk only supports the Linux kernel 4.10 or higher, and the application software does not have a random write operation in the zone.
2. When the SMR disk is elected, only the 03022CDE (SR-130 3008 IR card) is supported.

7. **===RAID===**

- **7.1 RAID controller card**

1. You must configure a mezzanine or standard RAID controller card if hard disks other than NVMe SSDs are installed.
2. RAID controller cards with supercapacitor are preferred.
3. The following RAID controller cards support out-of-band management functions: 430C-M 1G, 430C-M 2G, 450C-M 2G, 450C-M 4G, 530C-M 1G, and 530C-M 2G.

8. **===Flexible PCIe NIC===**

- **8.1 PCIe NIC**

Dedicated network interface card (NIC), which does not occupy any standard PCIe slot.

9. **=== M.2 SSD===**

- **9.1 Number of M.2 SSDs**

Two M.2 SSD are configured by default.

10. **===Riser Card or Rear Hard Drive Module===**

- **10.1 Riser Card or Rear Hard Drive Module**

1. A three-slot PCIe riser card provides three x8 slots (bus bandwidth: x16) for three PCIe x8 cards.

2. A two-slot PCIe riser card provides one x16 slot and one x8 slot (bus bandwidth: x16) for one PCIe x16 card and one PCIe x8 card, or one PCIe x16 double-slot card.
3. A 2 x 3.5" rear hard disk module supports two 3.5" hard disks.

- 10.2 **Riser Card or Rear Hard Drive Module**

1. A three-slot PCIe riser card provides three x8 slots (bus bandwidth: x16) for three PCIe x8 cards.
2. A two-slot PCIe riser card provides one x16 slot and one x8 slot (bus bandwidth: x16) for one PCIe x16 card and one PCIe x8 card, or one PCIe x16 double-slot card.
3. A 2 x 3.5" rear hard disk module supports two 3.5" hard disks.

- 10.3 **Riser Card or Rear Hard Drive Module**

1. A two-slot PCIe riser card provides one x8 slot and one x8 slot (bus bandwidth: x16) for two PCIe x8 cards.
2. A one-slot PCIe riser card provides one x16 slot for one PCIe x16 card.
3. A 4 x 2.5" rear hard disk module supports four 2.5" hard disks.

11. **===PCIe Card===**

- 11.1 **PCIe card of slot 1**

1. A three-slot PCIe riser card provides three x8 slots (bus bandwidth: x16) for three PCIe x8 cards.
2. A two-slot PCIe riser card provides one x16 slot and one x8 slot (bus bandwidth: x16) for one PCIe x16 card and one PCIe x8 card, or one PCIe x16 double-slot card.
3. Support for up to 1pcs M.2 PCIe Raid card.
4. P4 GPU card is computing GPU with no cable port, doesn't support video export, and only support X8 brand width.



EMULEX FCoE-SFP+ 2 ports(with
Optical Transceiver)



Optical Interface NIC(with Optical Transceiver)

INTEL 2*10GE



RJ45 Electrical Interface NIC

INTEL 2*GE



Electrical Interface NIC

INTEL 4*GE RJ45



Qlogic Dual-port 8G HBA (with Optical

Transceiver)

o 11.2 **PCIe card of slot 2**

1. A three-slot PCIe riser card provides three x8 slots (bus bandwidth: x16) for three PCIe x8 cards.
2. A two-slot PCIe riser card provides one x16 slot and one x8 slot (bus bandwidth: x16) for one PCIe x16 card and one PCIe x8 card, or one PCIe x16 double-slot card.
3. Support for up to 1pcs M.2 PCIe Raid card.
4. P4 GPU card is computing GPU with no cable port, doesn't support video export, and only support X8 bandwidth.



EMULEX FCoE-SFP+ 2 ports (with

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Optical Interface NIC(with Optical Transceiver)

INTEL 2*10GE



RJ45 Electrical Interface NIC

INTEL 2*GE



Electrical Interface NIC

INTEL 4*GE RJ45



Qlogic Dual-port 8G HBA (with Optical

Transceiver)

o 11.3 **PCIe card of slot 3**

1. A three-slot PCIe riser card provides three x8 slots (bus bandwidth: x16) for three PCIe x8 cards.
2. A two-slot PCIe riser card provides one x16 slot and one x8 slot (bus bandwidth: x16) for one PCIe x16 card and one PCIe x8 card, or one PCIe x16 double-slot card.
3. Support for up to 1pcs M.2 PCIe Raid card.
4. P4 GPU card is computing GPU with no cable port, doesn't support video export, and only support X8 bandwidth.



EMULEX FCoE-SFP+ 2 ports (with

Optical Transceiver)



Optical Interface NIC(with Optical Transceiver)

INTEL 2*10GE



RJ45 Electrical Interface NIC

INTEL 2*GE



Electrical Interface NIC

INTEL 4*GE RJ45



Qlogic Dual-port 8G HBA (with Optical

Transceiver)

o 11.4 **PCIe card of slot 4**

1. A three-slot PCIe riser card provides three x8 slots (bus bandwidth: x16) for three PCIe x8 cards.
2. A two-slot PCIe riser card provides one x16 slot and one x8 slot (bus bandwidth: x16) for one PCIe x16 card and one PCIe x8 card, or one PCIe x16 double-slot card.
3. Support for up to 1pcs M.2 PCIe Raid card.
4. P4 GPU card is computing GPU with no cable port, doesn't support video export, and only support X8 bandwidth.



EMULEX FCoE-SFP+ 2 ports (with

Optical Transceiver)



Optical Interface NIC(with Optical Transceiver)

INTEL 2*10GE



RJ45 Electrical Interface NIC

INTEL 2*GE



Electrical Interface NIC

INTEL 4*GE RJ45



Qlogic Dual-port 8G HBA (with Optical

Transceiver)

o 11.5 **PCIe card of slot 5**

1. A three-slot PCIe riser card provides three x8 slots (bus bandwidth: x16) for three PCIe x8 cards.
2. A two-slot PCIe riser card provides one x16 slot and one x8 slot (bus bandwidth: x16) for one PCIe x16 card and one PCIe x8 card, or one PCIe x16 double-slot card.
3. Support for up to 1pcs M.2 PCIe Raid card.
4. P4 GPU card is computing GPU with no cable port, doesn't support video export, and only support X8 bandwidth.



EMULEX FCoE-SFP+ 2 ports (with

Optical Transceiver)



Optical Interface NIC(with Optical Transceiver)

INTEL 2*10GE



RJ45 Electrical Interface NIC

INTEL 2*GE



Electrical Interface NIC

INTEL 4*GE RJ45



Qlogic Dual-port 8G HBA (with Optical

Transceiver)

o 11.6 **PCIe card of slot 6**

1. A three-slot PCIe riser card provides three x8 slots (bus bandwidth: x16) for three PCIe x8 cards.
2. A two-slot PCIe riser card provides one x16 slot and one x8 slot (bus bandwidth: x16) for one PCIe x16 card and one PCIe x8 card, or one PCIe x16 double-slot card.
3. Support for up to 1pcs M.2 PCIe Raid card.
4. P4 GPU card is computing GPU with no cable port, doesn't support video export, and only support X8 bandwidth.



EMULEX FCoE-SFP+ 2 ports (with

Optical Transceiver)



Optical Interface NIC(with Optical Transceiver)

INTEL 2*10GE



RJ45 Electrical Interface NIC

INTEL 2*GE



Electrical Interface NIC

INTEL 4*GE RJ45



Qlogic Dual-port 8G HBA (with Optical

Transceiver)

o 11.7 **PCIe card of slot 7**

1.A two-slot PCIe riser card provides one x8 slot and one x8 slot (bus bandwidth: x16) for two PCIe x8 cards.

2.Support for up to 1pcs M.2 PCIe Raid card.



EMULEX FCoE-SFP+ 2 ports(with

Optical Transceiver)



Optical Interface NIC(with Optical Transceiver)

INTEL 2*10GE



RJ45 Electrical Interface NIC

INTEL 2*GE



Electrical Interface NIC

INTEL 4*GE RJ45



Qlogic Dual-port 8G HBA (with Optical

Transceiver)

o 11.8 **PCIe card of slot 8**

1.A two-slot PCIe riser card provides one x8 slot and one x8 slot (bus bandwidth: x16) for two PCIe x8 cards.

2.Support for up to 1pcs M.2 PCIe Raid card.



EMULEX FCoE-SFP+ 2 ports(with

Optical Transceiver)



Optical Interface NIC(with Optical Transceiver)

INTEL 2*10GE



RJ45 Electrical Interface NIC

INTEL 2*GE



Electrical Interface NIC

INTEL 4*GE RJ45



Qlogic Dual-port 8G HBA (with Optical

Transceiver)

12. === Optical Transceiver and High Speed Cable ===

○ 12.1 **Optical Transceiver-SFP+-850nm-10Gb/s-LC-Multimode-0.3km**

1. This Optical transceiver is connected to a 10GE SFP+ NIC. The total number of SFP+ cables and optical transceivers cannot exceed that of 10GE ports.
2. The SFP+ cable comes with an interface module, an no additional optical transceiver or optical cable is required.
3. Intel NICs with 2 x 10GE optical ports (Intel X710) (without optical transceivers) do not support this cable.

○ 12.2 **Optical Transceiver-SFP+-1310nm-10Gb/s-LC-Singlemode-10km**

1. This Optical transceiver is connected to a 10GE SFP+ NIC. The total number of SFP+ cables and optical transceivers cannot exceed that of 10GE ports.
2. The SFP+ cable comes with an interface module, an no additional optical transceiver or optical cable is required.
3. Intel NICs with 2 x 10GE optical ports (Intel X710) (without optical transceivers) do not support this cable.

○ 12.3 **1m Passive SFP+ High-speed Cable-include Interface Module**

1. This Optical transceiver is connected to a 10GE SFP+ NIC. The total number of SFP+ cables and optical transceivers cannot exceed that of 10GE ports.
2. The SFP+ cable comes with an interface module, an no additional optical transceiver or optical cable is required.
3. Intel NICs with 2 x 10GE optical ports (Intel X710) (without optical transceivers) do not support this cable.

○ 12.4 **3m Passive SFP+ High-speed Cable-include Interface Module**

1. This Optical transceiver is connected to a 10GE SFP+ NIC. The total number of SFP+ cables and optical transceivers cannot exceed that of 10GE ports.
2. The SFP+ cable comes with an interface module, an no additional optical transceiver or optical cable is required.
3. Intel NICs with 2 x 10GE optical ports (Intel X710) (without optical transceivers) do not support this cable.

- **12.5 1m IB FDR High-speed Passive Cable(DAC)-Include Interface Module**

1. IB cable costs vary greatly with cable length. Select the cable type and quantity based on actual requirements.
2. Cables of other length specifications are to be introduced in future. If you need cables of other length specifications, contact RD personnel.
3. The QSFP+ cable comes with an interface module, an no additional optical transceiver or optical cable is required.

- **12.6 3m IB FDR High-speed Passive Cable(DAC)-Include Interface Module**

1. IB cable costs vary greatly with cable length. Select the cable type and quantity based on actual requirements.
2. Cables of other length specifications are to be introduced in future. If you need cables of other length specifications, contact RD personnel.
3. The QSFP+ cable comes with an interface module, an no additional optical transceiver or optical cable is required.

- **12.7 Optical Transceiver-SFP28-850nm-25Gb/s-LC-Multimode-0.1km**

This optical transceiver is used for a 25GE QSFP+ NIC. The total number of QSFP+ cables and optical transceivers cannot exceed that of 25GE ports.

- **12.8 25G SFP28 Passive High Speed Cable,1m**

This optical transceiver is used for a 25GE QSFP+ NIC. The total number of QSFP+ cables and optical transceivers cannot exceed that of 25GE ports.

- **12.9 25G SFP28 Passive High Speed Cable,3m**

This optical transceiver is used for a 25GE QSFP+ NIC. The total number of QSFP+ cables and optical transceivers cannot exceed that of 25GE ports.

- **12.10 Optical Transceiver-QSFP+-850nm-41.25Gb/s-MPO-Multimode-0.15km**

Optical Transceiver is required when 40GE QSFP+ Network Card is selected and the quantity can't exceed the port of 40GE interfaces without optical transceiver.

13. **===Rear Hard Disk Module Expand Hard Drive===**

○ 13.1 **1st rear hard disk module type**

1. The SMR disk only supports the Linux kernel 4.10 or higher, and the application software does not have a random write operation in the zone.
2. When the SMR disk is elected, only the 03022CDE (SR-130 3008 IR card) is supported.

○ 13.2 **Number of the 1st rear hard disks**

A 2 x 3.5" rear hard disk module supports two 3.5" hard disks.

○ 13.3 **2nd rear hard disk module type**

1. The SMR disk only supports the Linux kernel 4.10 or higher, and the application software does not have a random write operation in the zone.
2. When the SMR disk is elected, only the 03022CDE (SR-130 3008 IR card) is supported.

○ 13.4 **Number of the 2nd rear hard disks**

A 2 x 3.5" rear hard disk module supports two 3.5" hard disks.

○ 13.5 **Number of the 3rd rear hard disks**

A 4 x 2.5" rear hard disk module supports four 2.5" hard disks.

14. **===Power Supply===**

○ 14.1 **PSU**

1. For more accurate power information, use the power calculator at <http://support.huawei.com/onlinetoolsweb/ftpa/en>.
2. 900 W, and 1500 W Platinum AC PSUs support 192 V to 288 V high voltage DC
3. If the requirements cannot be met after PSU derating, replace the PSU or consult the product contact person (Wang Jiangtao, wangjiangtao@huawei.com).

○ 14.2 **C13 AC power cord**

1. Power Cable recommend Wall Plug and PDU Style, if the use condition is clear, it could select the Wall Plug or PDU Style.
2. 2000W and below power supply use C13 power cable, PDU power cable is 12A in Japan, other countries is 10A; wall plug cable is 12A in Japan, other countries is 10A.
3. If use the wall plug, please select power cable by select Area model(C13 to C13)

Wall plug, normal extension cord);

4.If use the PDU plug, please select C13 PDU power cable(C13 to C14 PDU plug, PDU extension cord).



PDU-IEC plug



PDU

Wall plug for



Normal wall plug

o 14.3 C13 wall plug power cord

1.Power Cable recommend Wall Plug and PDU Style, if the use condition is clear, it could select the Wall Plug or PDU Style.

2.2000W and below power supply use C13 power cable, PDU power cable is 12A in Japan, other countries is 10A; wall plug cable is 12A in Japan, other countries is 10A.

3.If use the wall plug, please select power cable by select Area model(C13 to C13 Wall plug, normal extension cord);

4.If use the PDU plug, please select C13 PDU power cable(C13 to C14 PDU plug, PDU extension cord).



Denmark C13-C13



Korea C13-C13



Argentina C13-C13



Australia C13-C13



Brazil C13-C13



Britain C13-C13



China C13-C13



Europe C13-C13



South Africa C13-C13



India C13-C13



Italy C13-C13



Japan C13-C13



North America C13-C13



Switzerland C13-C13

○ 14.4 **C13 PDU power cord**

1.Power Cable recommend Wall Plug and PDU Style, if the use condition is clear, it could select the Wall Plug or PDU Style.

2.2000W and below power supply use C13 power cable, PDU power cable is 12A in Japan, other countries is 10A; wall plug cable is 12A in Japan, other countries is 10A.

3.If use the wall plug, please select power cable by select Area model(C13 to C13 Wall plug, normal extension cord);

4.If use the PDU plug, please select C13 PDU power cable(C13 to C14 PDU plug, PDU extension cord).



China(PDU) C13-14

15. **===Accessory===**

○ 15.1 **Rack rail**



Static Rail Kit(21240142)

Guide Rail: 4U

16. **===Insert Part===**

○ 16.1 **Security encryption function**

- 1.The security chip module and TPM are used for system and disk encryption;
- 2.TPM 2.0 support only Windows Server 2012, Windows Server 2012 R2, and Windows Server 2016.

17. **===Operating System===**

○ 17.1 **Operating System type**

Huawei is only a reseller and OS services are provided by original manufacturers.

○ 17.2 **Operating System**

1. SUSE Linux, Red Hat Linux, and Windows Server 2008/2012 OSs are licensed based on the number of CPUs.
2. Windows Server 2016 is licensed based on the number of CPU cores. Additional license files are required when there are more than 16 CPU cores.
- 3.According to the operating system manufacturer's life cycle strategy, entering the version(eg: suse 12.2) of the LTSS cycle requires an additional purchase of LTSS expand maintenance.

Please confirm the customer's operating system version before placing the order. If the LTSS version is involved, the customer needs to purchase it from the operating system manufacturer separately.

- 4.According to the operating system manufacturer's life cycle strategy, entering the version(eg: redhat 7.2) of the EUS/ELS cycle requires an additional purchase of EUS/ELS expand maintenance.

Please confirm the customer's operating system version before placing the order. If the EUS/ELS version is involved, the customer needs to purchase it from the operating system manufacturer separately.

○ 17.3 **Windows Server 2016 Additional 16**

Core,English,Standard,x86,64bit,General OEM,COA Lic,No DVD,No Product Service,No CAL

1. Windows Server 2016-English-Standard-License for additional CPU cores;
2. Each additional license file supports 16 cores.

○ 17.4 **Windows Server 2016 Additional 16**

Core,Chinese,Standard,x86,64bit,General OEM,COA Lic,No DVD,No Product Service,No CAL

1. Windows Server 2016-Chinese-Standard-License for additional CPU cores;
2. Each additional license file supports 16 cores.

- **17.5 Windows Server 2016 Additional 4 Core,English,Standard,x86,64bit,General OEM,COA Lic,No DVD,No Product Service,No CAL**

1. Windows Server 2016-English-Standard-License for additional CPU cores;
2. Each additional license file supports four cores.

- **17.6 Windows Server 2016 Additional 4 Core,Chinese,Standard,x86,64bit,General OEM,COA Lic,No DVD,No Product Service,No CAL**

1. Windows Server 2016-Chinese-Standard-License for additional CPU cores;
2. Each additional license file supports four cores.

- **17.7 Windows Server 2016 Additional 2 Core,English,Standard,x86,64bit,General OEM,COA Lic,No DVD,No Product Service,No CAL**

1. Windows Server 2016-English-Standard-License for additional CPU cores;
2. Each additional license file supports two cores.

- **17.8 Windows Server 2016 Additional 2 Core,Chinese,Standard,x86,64bit,General OEM,COA Lic,No DVD,No Product Service,No CAL**

1. Windows Server 2016-Chinese-Standard-License for additional CPU cores;
2. Each additional license file supports two cores.

- **17.9 Windows Server 2016 Additional 16 Core,English,Data Center,x86,64bit,General OEM,COA Lic,No DVD,No Product Service,No CAL**

1. Windows Server 2016-English-DataCenter-License for additional CPU cores;
2. Each additional license file supports 16 cores.

- **17.10 Windows Server 2016 Additional 16 Core,Chinese,Data Center,x86,64bit,General OEM,COA Lic,No DVD,No Product Service,No CAL**

1. Windows Server 2016-Chinese-DataCenter-License for additional CPU cores;
2. Each additional license file supports 16 cores.

- **17.11 Windows Server 2016 Additional 4 Core,English,Data Center,x86,64bit,General OEM,COA Lic,No DVD,No Product Service,No CAL**

1. Windows Server 2016-English-DataCenter-License for additional CPU cores;
2. Each additional license file supports four cores.

- **17.12 Windows Server 2016 Additional 4 Core,Chinese,Data Center,x86,64bit,General OEM,COA Lic,No DVD,No Product Service,No CAL**

1. Windows Server 2016-Chinese-DataCenter-License for additional CPU cores;
2. Each additional license file supports four cores.

- **17.13 Windows Server 2016 Additional 2 Core,English,Data Center,x86,64bit,General OEM,COA Lic,No DVD,No Product Service,No CAL**

1. Windows Server 2016-English-DataCenter-License for additional CPU cores;
2. Each additional license file supports two cores.

- **17.14 Windows Server 2016 Additional 2 Core,Chinese,Data Center,x86,64bit,General OEM,COA Lic,No DVD,No Product Service,No CAL**

1. Windows Server 2016-Chinese-DataCenter-License for additional CPU cores;
2. Each additional license file supports two cores.

- **17.15 Client Access License (CAL),1 device,for Windows Server 2016/2012/2012R2,Chinese,General OEM,without product services**

1. Windows Server 2016-Chinese-Additional device CAL;
2. Each additional license file supports access to one device.

- **17.16 Client Access License (CAL),1 device,for Windows Server 2016/2012/2012R2,English,General OEM,without product services**

1. Windows Server 2016-English-Additional device CAL;
2. Each additional license file supports access to one device.

- **17.17 Client Access License (CAL),10 device,for Windows Server 2016/2012/2012R2,Chinese,General OEM,without product services**

1. Windows Server 2016-Chinese-Additional device CAL;
2. Each additional license file supports access to 10 devices.

- **17.18 Client Access License (CAL),10 device,for Windows Server 2016/2012/2012R2,English,General OEM,without product services**

1. Windows Server 2016-English-Additional device CAL;
2. Each additional license file supports access to 10 devices.

- **17.19 Client Access License (CAL),1 User,for Windows Server 2016/2012/2012R2,Chinese,General OEM,without product services**

1. Windows Server 2016-Chinese-Additional user CAL;
2. Each additional license file supports access by one user.

- **17.20 Client Access License (CAL),1 User,for Windows Server 2016/2012/2012R2,English,General OEM,without product services**

1. Windows Server 2016-English-Additional user CAL;
2. Each additional license file supports access by one user.

- **17.21 Client Access License (CAL),10 User,for Windows Server 2016/2012/2012R2,Chinese,General OEM,without product services**

1. Windows Server 2016-Chinese-Additional user CAL;
2. Each additional license file supports access by 10 users.

- **17.22 Client Access License (CAL),10 User,for Windows Server 2016/2012/2012R2,English,General OEM,without product services**

1. Windows Server 2016-English-Additional user CAL;
2. Each additional license file supports access by 10 users.

- **17.23 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2019,Chinese,1 User,without Service,General OEM**

If you need to use Remote Desktop Services, please choose

- **17.24 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2019,English,1 User,without Service,General OEM**

If you need to use Remote Desktop Services, please choose

- **17.25 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2019,Chinese,1 Device,without Service,General OEM**

If you need to use Remote Desktop Services, please choose

- **17.26 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2019,English,1 Device,without Service,General OEM**

If you need to use Remote Desktop Services, please choose

- **17.27 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2019,Chinese,5 User,without Service,General OEM**

If you need to use Remote Desktop Services, please choose

- **17.28 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2019,English,5 User,without Service,General OEM**

If you need to use Remote Desktop Services, please choose

- **17.29 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2019,Chinese,5 Device,without Service,General OEM**

If you need to use Remote Desktop Services, please choose

- **17.30 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2019,English,5 Device,without Service,General OEM**

If you need to use Remote Desktop Services, please choose

- **17.31 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2016,Chinese,1 Device,without Service,General OEM**

1. Optional
2. One server is configured with one RDS CAL license.
3. The standard edition and data center edition are not distinguished.
4. The purchasing quantity is subject to actual requirements.

- **17.32 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2016,English,1 Device,without Service,General OEM**

1. Optional
2. One server is configured with one RDS CAL license.
3. The standard edition and data center edition are not distinguished.
5. The purchasing quantity is subject to actual requirements.

- **17.33 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2016,Chinese,5 User,without Service,General OEM**

1. Optional
2. One server is configured with one RDS CAL license.
3. The standard edition and data center edition are not distinguished.
6. The purchasing quantity is subject to actual requirements.

- **17.34 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2016,English,5 User,without Service,General OEM**

1. Optional
2. One server is configured with one RDS CAL license.
3. The standard edition and data center edition are not distinguished.
7. The purchasing quantity is subject to actual requirements.

- **17.35 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2016,Chinese,1 User,without Service,General OEM**

1. Optional
2. One server is configured with one RDS CAL license.
3. The standard edition and data center edition are not distinguished.
8. The purchasing quantity is subject to actual requirements.

- **17.36 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2016,English,1 User,without Service,General OEM**

1. Optional
2. One server is configured with one RDS CAL license.
3. The standard edition and data center edition are not distinguished.
9. The purchasing quantity is subject to actual requirements.

- **17.37 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2012/2012R2,Chinese,1 Device,without Service,General OEM**

1. Optional
2. One server is configured with one RDS CAL license.
3. The standard edition and data center edition are not distinguished.
10. The purchasing quantity is subject to actual requirements.

- **17.38 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2012/2012R2,English,1 Device,without Service,General OEM**

1. Optional
2. One server is configured with one RDS CAL license.
3. The standard edition and data center edition are not distinguished.
11. The purchasing quantity is subject to actual requirements.

- **17.39 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2012/2012R2,Chinese,5 User,without Service,General OEM**

1. Optional
2. One server is configured with one RDS CAL license.
3. The standard edition and data center edition are not distinguished.
12. The purchasing quantity is subject to actual requirements.

- **17.40 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2012/2012R2,English,5 User,without Service,General OEM**

1. Optional
2. One server is configured with one RDS CAL license.
3. The standard edition and data center edition are not distinguished.
13. The purchasing quantity is subject to actual requirements.

- **17.41 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2012/2012R2,Chinese,1 User,without Service,General OEM**

1. Optional
2. One server is configured with one RDS CAL license.
3. The standard edition and data center edition are not distinguished.
14. The purchasing quantity is subject to actual requirements.

- **17.42 Operating System Software,Remote Desktop Services Client Access License For Windows Server 2012/2012R2,English,1 User,without Service,General OEM**

1. Optional
2. One server is configured with one RDS CAL license.
3. The standard edition and data center edition are not distinguished.
15. The purchasing quantity is subject to actual requirements.

18. ===Enhanced software===

- **18.1 RAS features lift kit (ECC, eMCA2, SDDC, PFA)**

Dedicated for operators outside China except Brazilian operators.

- **18.2 Memory expansion kit**

Dedicated for operators outside China except Brazilian operators.

- **18.3 Hard Disk expansion kit**

Dedicated for operators outside China except Brazilian operators.

- **18.4 Integrated Network features (NCSI)**

Dedicated for operators outside China except Brazilian operators.

- **18.5 A firmware upgrade (to support remote batch upgrade function BMC, BIOS, CPLD and other firmware)**

Dedicated for Brazilian operators.

- **18.6 Serial port redirection (SOL) (originally only output from the proximal end of the serial cable system serial data output redirected to a network device, and can accept input remote network devices for easy Remote Maintenance)**

Dedicated for Brazilian operators.

- **18.7 Hard Disk Pre-diagnostic tools**

Dedicated for Brazilian operators.

- **18.8 Virtual KVM (virtual local keyboard, monitor, and mouse to the remote device tool)**

Dedicated for Brazilian operators.

- **18.9 Virtual Media (including virtual CDROM, virtual folder, virtual floppy and other virtual media)**

Dedicated for Brazilian operators.

- **18.10 Intelligent energy management (including power capping, power statistics history and dynamic energy-saving technology)**

Dedicated for Brazilian operators.