

Huawei FusionServer

# V5 Rack Server

Boundless Computing

Inspire an Intelligent Digital World



HUAWEI TECHNOLOGIES CO., LTD.



## | High-Density Deployment with Lower OPEX |



1288H V5 (4-drive)



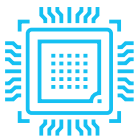
1288H V5 (8-drive)



1288H V5 (10-drive)

- 2 Intel® Xeon® Scalable processors in 1U space, with 24 DDR4 DIMMs
- Up to 4 3.5-inch or 10 2.5-inch hard drives for local storage, or 4/8 NVMe SSDs
- 2 10GE and 2 GE LAN on motherboard (LOM) ports, and 5 PCIe expansion slots
- Leverages intelligent energy saving to improve performance per watt by 16%; combines intelligent management features to enable up to 93% accuracy for fault locating

Delivers high computing density, which is especially suitable for scenarios such as virtualization, high-performance computing (HPC), and big data analytics.



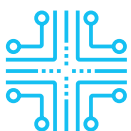
### Superior Performance, Ultra-high Density

- Supports 2 Intel® Xeon® Scalable Processors in a 1U space. Its Ultra Path Interconnect (UPI) bus supports rates of up to 10.4 GT/s, and a single CPU supports up to 28 cores. The server supports the Intel® Turbo Boost, hyper-threading, and Advanced Vector Extensions (AVX-512). A single processor delivers up to 65% higher compute power than the previous-generation processor.
- Provides 24 DDR4 DIMM slots, and delivers memory speeds of up to 2,666 MT/s. This is ideal for application scenarios that require large-capacity memory.
- Supports heterogeneous computing acceleration, configurable with 2 single-slot half-height half-length (HHHL) GPU or FPGA accelerator cards.
- Supports two GE and two 10GE LAN on motherboard (LOM) ports, meeting networking requirements of 98% scenarios with streamlined configuration.



### Smart Power Saving and Better Energy Efficiency

- Leverages patented Dynamic Energy Management Technology (DEMT), and multiple power-saving measures such as component hibernation, proportional-integral-derivative (PID) algorithm based fan speed tuning, and active-standby power supplies, driving down overall equipment power consumption by up to 16% without compromising workload performance.
- Supports 80 Plus® Titanium power supply units (PSUs), with up to 96% conversion efficiency and compliant with ENERGY STAR and China Environmental Labelling.
- Supports 550 W, 900 W, 1,200 W, and 1,500 W PSU options, flexibly adapting to different power requirements. The 1,200 W and 1,500 W PSUs support DC and high-voltage DC (HVDC) technologies, enabling better energy utilization.



### Unmatched Intelligent Manageability, Integration, and Openness

- Uses patented intelligent Fault Diagnosis & Management (FDM) technology, delivering up to 93% accuracy in diagnosing core component faults.
- Integrates eSight for smart entire-lifecycle O&M, boosting deployment and O&M efficiency.
  - » Supports batch OS installation, slashing the average OS installation time of each server from hours to minutes.
  - » Supports automated firmware upgrade, with flexible and configurable upgrade policies for different components and drivers.
  - » Supports stateless computing, allowing for rapid replication of live-network configuration and swift failover.
- Integrates fault diagnosis LEDs on the front panel to display error codes in real time, enabling maintenance personnel to rapidly locate a fault.
- Provides standardized open interfaces and development guides, facilitating seamless integration with third-party management software.

# Huawei FusionServer 1288H V5 Server



Form factor	1U rack server
Processors	1 or 2 Intel® Xeon® Scalable Processors of up to 205 W
Chipset platform	Intel C622
Memory	24 DDR4 DIMM slots, up to 2,666 MT/s
Internal storage	<p>Three types of hard drive configurations supported:</p> <ul style="list-style-type: none"> <li>10 x 2.5-inch hard drives (6–8 NVMe SSDs and 2–4 SAS/SATA HDDs, total number of drives ≤ 10), which can be: <ul style="list-style-type: none"> <li>0–6 NVMe SSDs + 0–4 SAS/SATA hard drives, or</li> <li>0–7 NVMe SSDs + 0–3 SAS/SATA hard drives, or</li> <li>0–8 NVMe SSDs + 0–2 SAS/SATA hard drives</li> </ul> </li> <li>8 x 2.5-inch SAS/SATA hard drives (the NVMe model supports 4 NVMe SSDs)</li> <li>4 x 3.5-inch SAS/SATA hard drives</li> </ul> <p>Flash storage:</p> <ul style="list-style-type: none"> <li>2 M.2 SSDs</li> </ul>
RAID support	<ul style="list-style-type: none"> <li>RAID 0, 1, 10, 5, 50, 6, or 60</li> <li>Configured with a supercapacitor for cache power-off protection</li> <li>Supports RAID level migration, drive roaming, self-diagnosis, and web-based remote configuration</li> </ul>
Network ports	<p>LOM: 2 x 10GE + 2 x GE ports</p> <p>Flexible NIC: 2 x GE, 4 x GE, 2 x 10GE, or 1/2 x 56G FDR IB ports</p>
PCIe expansion	Up to 5 PCIe 3.0 slots, including 1 for a RAID controller card and 1 for a flexible NIC
Heterogeneous accelerator cards	<p>2 single-slot HDDL GPU or FPGA heterogeneous accelerator cards</p> <p>For details, visit <a href="http://support.huawei.com/online/tools/web/ftca/indexEn?serise=2">http://support.huawei.com/online/tools/web/ftca/indexEn?serise=2</a>.</p>
Fan modules	7 hot-swappable counter-rotating fan modules with support for N+1 redundancy
Power supply units	<p>2 hot-swappable PSUs with support for 1+1 redundancy and the following configuration options (Note 1):</p> <ul style="list-style-type: none"> <li>550 W AC Platinum PSUs (input: 100 V to 240 V AC, or 192 V to 288 V DC)</li> <li>900 W AC Platinum/Titanium PSUs (input: 100 V to 240 V AC, or 192 V to 288 V DC)</li> <li>1500 W AC Platinum PSUs <ul style="list-style-type: none"> <li>1000 W (input: 100 V to 127 V AC)</li> <li>1500 W (input: 200 V to 240 V AC, or 192 V to 288 V DC)</li> </ul> </li> <li>1500 W 380 V HVDC PSUs (input: 260 V to 400 V DC)</li> <li>1200 W -48 V to -60 V DC PSUs (input: -38.4 V to -72 V DC)</li> </ul>
Management	<ul style="list-style-type: none"> <li>Provides management features such as fault diagnosis, dynamic energy management technology (DEMT), and hardware security hardening based on Huawei iBMC chips; provides mainstream interfaces, such as Redfish interfaces, enabling easy integration.</li> <li>Optionally configured with the Huawei eSight management software to provide advanced management features such as batch OS deployment and automated firmware upgrade, enabling automated entire-lifecycle management.</li> </ul>
Operating Systems	<ul style="list-style-type: none"> <li>Microsoft Windows Server</li> <li>Red Hat Enterprise Linux</li> <li>SUSE Linux Enterprise Server</li> <li>CentOS</li> <li>Citrix XenServer</li> <li>VMware ESXi</li> </ul> <p>For details, visit <a href="http://support.huawei.com/online/tools/web/ftca/indexEn?serise=2">http://support.huawei.com/online/tools/web/ftca/indexEn?serise=2</a>.</p>
Security	<ul style="list-style-type: none"> <li>Power-on password</li> <li>Administrator password</li> <li>Trusted Platform Module (TPM)</li> <li>Security front panel</li> </ul>
Operating temperature	5°C to 45°C (41°F to 113°F), compliant with ASHRAE A3 and A4
Certification	CE, UL, FCC, CCC, and RoHS
Installation suite	L-shaped guide rails, adjustable guide rails, and holding rails
Dimensions (H x W x D)	<p>Chassis with 3.5-inch hard drives: 43 mm x 447 mm x 748 mm (1.70 in. x 17.60 in. x 29.45 in.)</p> <p>Chassis with 2.5-inch hard drives: 43 mm x 447 mm x 708 mm (1.70 in. x 17.60 in. x 27.87 in.)</p>

Remarks:

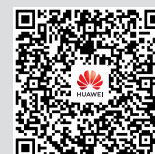
Note 1: The Titanium PSU is planned for release in Q1 2019.

\*Last updated on November 20, 2018

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## | Flexible Configurations for Diverse Workloads |



2288 V5  
(8-drive)



2288H V5  
(8-drive)



2288/2288H V5  
(12-drive)



2288/2288H V5  
(25-drive)

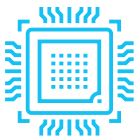


2288H V5  
(24-drive)

The Huawei FusionServer 2288/2288H V5 is a 2U 2-socket rack server that supports various configurations and can be widely used in scenarios such as cloud computing virtualization, databases, and big data. The server can be configured with two Intel® Xeon® Scalable processors, 16/24<sup>1</sup> DDR4 DIMM slots (2666 MT/s), 8/10<sup>2</sup> PCIe slots, and large-capacity local storage resources.

It incorporates patented technologies such as Dynamic Energy Management Technology (DEMT) and Fault Diagnosis & Management (FDM), and integrates Huawei's eSight software for entire-lifecycle management, helping customers drive down OPEX and improve ROI.

<sup>1</sup> The 2288 V5 supports 16 DIMM slots, and the 2288H V5 supports 24. <sup>2</sup> The 2288 V5 supports 8 PCIe slots, and the 2288H V5 supports 10.



### Supreme Performance with Flexible Configurations

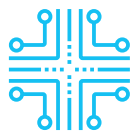
- Supports 2 Intel® Xeon® Scalable processors in a 2U space, with an Ultra Path Interconnect (UPI) bus speed of up to 10.4 GT/s. Each CPU supports up to 20/28<sup>3</sup> cores. The server supports the Intel® Turbo Boost, hyper-threading, and Advanced Vector Extensions (AVX-512). A single processor delivers up to 65% higher compute power than its predecessor.
- Provides 16/24 DDR4 DIMM slots, and delivers memory speeds of up to 2,666 MT/s and memory capacities of up to 2 TB or 3 TB (with 128 GB DIMMs), making it ideal for application scenarios that require large-capacity memory.
- The 2288H V5 supports heterogeneous computing acceleration. It can be configured with two dual-slot full-height full-length GPU or FPGA accelerator cards.
- The 2288 V5 supports 16 x 3.5-inch or 27 x 2.5-inch local storage drives. The 2288H V5 supports 20 x 3.5-inch or 31 x 2.5-inch (4/8/12/24/28 NVMe SSDs) local storage drives.
- The 2288 V5 supports 2 GE LOM ports. The 2288H V5 supports 2 GE and 2 x 10GE LOM ports, meeting the networking requirements of 98% scenarios with streamlined configuration.

<sup>3</sup> For the 2288 V5, a single CPU supports up to 20 computing cores. For the 2288H V5, a single CPU supports up to 28 computing cores.



### Smart Power Saving and Better Energy Efficiency

- Leverages patented Dynamic Energy Management Technology (DEMT), and multiple power-saving measures such as component hibernation, proportional-integral-derivative (PID) algorithm based fan speed tuning, and active-standby power supplies, driving down overall equipment power consumption by up to 16% without compromising workload performance.
- Supports 80 Plus® Titanium power supply units (PSUs), with up to 96% conversion efficiency and compliant with ENERGY STAR and China Environmental Labelling.
- Supports 550 W, 900 W, 1,200 W, and 1,500 W PSU options, flexibly adapting to different power requirements. The 1,200 W and 1,500 W PSUs support DC and high-voltage DC (HVDC) technologies, enabling better energy utilization.



### Unmatched Intelligent Manageability, Integration, and Openness

- Uses patented intelligent Fault Diagnosis & Management (FDM) technology, delivering up to 93% accuracy in diagnosing core component faults.
- Integrates eSight for smart entire-lifecycle O&M, boosting deployment and O&M efficiency.
  - » Supports batch OS installation, slashing the average OS installation time of each server from hours to minutes.
  - » Supports automated firmware upgrade, with flexible and configurable upgrade policies for different components and drivers.
  - » Supports stateless computing, allowing for rapid replication of live-network configuration and swift failover.
- 2288H V5 comes with a touchscreen LCD panel for fault diagnosis, allowing O&M personnel to quickly locate faults (supported only by the 2288H V5 8-drive model).
- Provides standardized open interfaces and development guides, facilitating seamless integration with third-party management software.

# Huawei FusionServer 2288/2288H V5 Server



	2288 V5	2288H V5
<b>Form factor</b>	2U rack server	
<b>Processors</b>	1 or 2 Intel® Xeon® Scalable processors of up to 125 W	1 or 2 Intel® Xeon® Scalable Processors of up to 205 W
<b>Chipset platform</b>	Intel C621	Intel C622
<b>Memory</b>	16 DDR4 DIMM slots, up to 2,666 MT/s	24 DDR4 DIMM slots, up to 2,666 MT/s
<b>Internal storage</b>	<p>Hard drive configurations supported include:</p> <ul style="list-style-type: none"> <li>8 x 2.5-inch SAS/SATA HDDs or SSDs</li> <li>12/16 x 3.5-inch SAS/SATA HDDs</li> <li>27 x 2.5-inch SAS/SATA HDDs or SSDs</li> </ul> <p>Flash storage:</p> <ul style="list-style-type: none"> <li>2 M.2 SSDs</li> </ul>	<p>Supports the following hard drive configuration options:</p> <ul style="list-style-type: none"> <li>8 x 2.5-inch SAS/SATA hard drives</li> <li>12/16/20 x 3.5-inch SAS/SATA hard drives</li> <li>4, 8, 12, 24, or 28 NVMe SSDs</li> <li>31 x 2.5-inch SAS/SATA hard drives</li> </ul> <p>Flash storage:</p> <ul style="list-style-type: none"> <li>2 M.2 SSDs</li> </ul>
<b>RAID support</b>	<ul style="list-style-type: none"> <li>RAID 0, 1, 10, 1E, 5, 50, 6, or 60</li> <li>Configured with a supercapacitor for cache power-off protection</li> <li>Supports RAID level migration, drive roaming, self-diagnosis, and web-based remote configuration</li> </ul>	
<b>Network ports</b>	LOM: 2 GE ports Flexible NIC: 2 x GE, 4 x GE, 2 x 10GE, or 1/2 x 56G FDR IB ports	LOM: 2 x 10GE + 2 x GE ports Flexible NIC: 2 x GE, 4 x GE, 2 x 10GE, or 1/2 x 56G FDR IB ports
<b>PCIe expansion</b>	Up to 8 PCIe 3.0 slots, including 1 for a RAID controller card and 1 for a flexible NIC.	Up to 10 PCIe 3.0 slots, including 1 for a RAID controller card and 1 for a flexible NIC.
<b>Heterogeneous accelerator cards</b>	/	2 dual-slot FHFL GPU or FPGA heterogeneous accelerator cards For details, visit <a href="http://support.huawei.com/online/toolsweb/ftca/indexEn?serise=2">http://support.huawei.com/online/toolsweb/ftca/indexEn?serise=2</a> .
<b>Fan modules</b>	4 hot-swappable counter-rotating fan modules with support for N+1 redundancy	
<b>Power supply units</b>	<p>2 hot-swappable PSUs with support for 1+1 redundancy and the following configuration options:</p> <ul style="list-style-type: none"> <li>550 W AC Platinum PSUs (input: 100 V to 240 V AC, or 192 V to 288 V DC)</li> <li>900 W AC Platinum PSUs (input: 100 V to 240 V AC, or 192 V to 288 V DC)</li> <li>1500 W AC Platinum PSUs</li> <li>1000 W (input: 100 V to 127 V AC)</li> <li>1500 W (input: 200 V to 240 V AC, or 192 V to 288 V DC)</li> </ul>	<p>2 hot-swappable PSUs with support for 1+1 redundancy and the following configuration options (Note 1):</p> <ul style="list-style-type: none"> <li>550 W AC Platinum PSUs (input: 100 V to 240 V AC, or 192 V to 288 V DC)</li> <li>900 W AC Platinum/Titanium PSUs (input: 100 V to 240 V AC, or 192 V to 288 V DC)</li> <li>1500 W AC Platinum PSUs</li> <li>1000 W (input: 100 V to 127 V AC)</li> <li>1500 W (input: 200 V to 240 V AC, or 192 V to 288 V DC)</li> <li>1500 W 380 V HVDC PSUs (input: 260 V to 400 V DC)</li> <li>1200 W -48 V to -60 V DC PSUs (input: -38.4 V to -72 V DC)</li> </ul>
<b>Management</b>	Provides management features such as fault diagnosis, dynamic energy management technology (DEMT), and hardware security hardening based on Huawei iBMC chips; provides mainstream interfaces, such as Redfish interfaces, enabling easy integration. Optionally configured with the Huawei eSight management software to provide advanced management features such as batch OS deployment and automated firmware upgrade, enabling automated entire-lifecycle management.	
<b>Operating Systems</b>	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, CentOS, Citrix XenServer, VMware ESXi For details, visit <a href="http://support.huawei.com/online/toolsweb/ftca/indexEn?serise=2">http://support.huawei.com/online/toolsweb/ftca/indexEn?serise=2</a> .	
<b>Security</b>	Power-on password, Administrator password, Trusted Platform Module (TPM), Security front panel	
<b>Operating temperature</b>	5°C to 40°C (41°F to 104°F), compliant with ASHRAE A2 and A3	5°C to 45°C (41°F to 113°F), compliant with ASHRAE A3 and A4
<b>Certification</b>	CE, UL, FCC, CCC, and RoHS	
<b>Installation suite</b>	L-shaped guide rails, adjustable guide rails, and holding rails	
<b>Dimensions (H x W x D)</b>	Chassis with 3.5-inch hard drives: 86.1 mm x 447 mm x 748 mm (3.39 in. x 17.60 in. x 29.45 in.) Chassis with 2.5-inch hard drives: 86.1 mm x 447 mm x 708 mm (3.39 in. x 17.60 in. x 27.87 in.)	

Remarks:

Note 1: The Titanium PSU is planned to release in Q1 2019.

\*Last updated on November 20, 2018

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5288 V5

## | Hybrid Storage Architecture, Tiered Data Storage |

- 2 Intel® Xeon® Scalable processors in 4U space, with 24 DDR4 DIMMs
- Up to 44 3.5-inch hard drives for local storage, or 4/8 NVMe SSDs
- 2 10GE and 2 GE LOM ports, and 10 PCIe expansion slots
- Leverages intelligent energy saving to improve performance per watt by 16%; combines intelligent management features to enable up to 93% accuracy for fault locating

Offers ultra-large storage capacities, which is ideal for hot, warm, and cold data tiered storage in scenarios such as Content Delivery Network (CDN), video cloud, and massive data archiving.



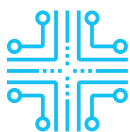
### Ultralarge Capacity, Tiered Storage

- Supports 2 Intel® Xeon® Scalable Processors in a 4U space. Its Ultra Path Interconnect (UPI) bus supports rates of up to 10.4 GT/s, and a single CPU supports up to 28 cores. The server supports Intel® Turbo Boost, hyper-threading, and Advanced Vector Extensions (AVX-512). A single processor delivers up to 65% higher compute power than the previous-generation processor.
- Provides 24 DDR4 DIMM slots, and delivers memory speeds of up to 2,666 MT/s. This is ideal for application scenarios that require large-capacity memory.
- Ultra-large storage space with 44 3.5-inch and 4 2.5-inch hard drives (up to 8 NVMe SSDs), ideal for tiered storage of hot, warm, and cold data.
- Supports two GE and two 10GE LAN on motherboard (LOM) ports, meeting networking requirements of 98% scenarios with streamlined configuration.



### Smart Power Saving and Better Energy Efficiency

- Leverages patented DEMA, and multiple power-saving measures such as component hibernation, proportional-integral-derivative (PID) algorithm based fan speed tuning, and active-standby power supplies, driving down overall equipment power consumption by up to 16% without compromising workload performance.
- Fitted with 80 Plus® Platinum power supply units (PSUs), up to 94% conversion efficiency; complies with ENERGY STAR standards and has passed the China Energy Conservation and Environmentally-Friendly Certification.
- PSUs with 900 W, 1500 W and more power options to flexibly adapt to different power requirements, improving energy utilization.



### Unmatched Intelligent Manageability, Integration, and Openness

- Uses patented intelligent Fault Diagnosis & Management (FDM) technology, delivering up to 93% accuracy in diagnosing core component faults.
- Integrates eSight for smart entire-lifecycle O&M, boosting deployment and O&M efficiency.
  - » Supports batch OS installation, slashing the average OS installation time of each server from hours to minutes.
  - » Supports automated firmware upgrade, with flexible and configurable upgrade policies for different components and drivers.
  - » Supports stateless computing, allowing for rapid replication of live-network configuration and swift failover.
- Integrates fault diagnosis LEDs to display error codes in real time, enabling maintenance personnel to rapidly locate a fault.
- Provides standardized open interfaces and development guides, facilitating seamless integration with third-party management software.

# Huawei FusionServer 5288 V5 Server



Form Factor	4U rack server
Processors	1 or 2 Intel® Xeon® Scalable processors of up to 205 W
Chipset	Intel C622
Memory	24 DDR4 DIMM slots, up to 2666 MT/s memory speeds
Internal Storage	Front: <ul style="list-style-type: none"><li>• 24 x 3.5-inch SAS/SATA hard drives</li></ul> Embedded: <ul style="list-style-type: none"><li>• 4 x 3.5-inch SAS/SATA hard drives (Note 1)</li></ul> Rear: <ul style="list-style-type: none"><li>• 16 x 3.5-inch SAS/SATA hard drives</li><li>• 16 x 3.5-inch SAS/SATA hard drives + 4 x 2.5-inch SAS/SATA hard drives or NVMe SSDs</li><li>• 14 x 3.5-inch SAS/SATA hard drives (configurable with 4 NVMe SSDs) + 4 x 2.5-inch SAS/SATA hard drives or NVMe SSDs (This configuration does not support internal hard disk and I/O module 1)</li></ul> Flash storage: <ul style="list-style-type: none"><li>• Two M.2 SSDs</li></ul>
RAID	RAID 0, 1, 5, 50, 6, or 60; optional supercapacitor to protect cache data from power failures; RAID level migration, drive roaming, self-diagnosis, and web-based remote configuration
Network Ports	LAN on motherboard (LOM): 2 x 10GE + 2 x GE ports Flexible NIC: 2 x GE, 4 x GE, 2 x 10GE, or 1/2 x 56G FDR IB ports
PCIe Expansion	Up to 10 PCIe 3.0 slots, including 1 for a RAID controller card and 1 for a flexible NIC
Fan Modules	4 hot-swappable counter-rotating fan modules with optional N+1 redundancy
Power Supply	2 hot-swappable PSUs with optional 1+1 redundancy. Supported options include: <ul style="list-style-type: none"><li>• 900 W AC Platinum/Titanium PSUs (input: 100 V to 240 V AC, or 192 V to 288 V DC)</li><li>• 1500 W AC Platinum PSUs</li><li>• 1000 W (input: 100 V to 127 V AC)</li><li>• 1500 W (input: 200 V to 240 V AC, or 192 V to 288 V DC)</li></ul>
Management	<ul style="list-style-type: none"><li>• Provides management features such as fault diagnosis, dynamic energy management technology (DEMT), and hardware security hardening based on Huawei iBMC chips; provides mainstream interfaces, such as Redfish interfaces, enabling easy integration.</li><li>• Optionally configured with the Huawei eSight management software to provide advanced management features such as batch OS deployment and automated firmware upgrade, enabling automated entire-lifecycle management.</li></ul>
Operating Systems	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, CentOS, Citrix XenServer, VMware ESXi For details, see <a href="http://support.huawei.com/online/toolsweb/ftca/index?serise=2">http://support.huawei.com/online/toolsweb/ftca/index?serise=2</a> .
Security	<ul style="list-style-type: none"><li>• Power-on password</li><li>• Administrator password</li><li>• Trusted Platform Module (TPM)</li><li>• Security front panel</li></ul>
Operating Temperature	5°C to 40°C (41°F to 104°F) (ASHRAE Class A3 compliant)
Certification	CE, UL, FCC, CCC, and RoHS
Installation Suite	L-shaped guide rails, adjustable guide rails, and holding rails
Dimensions (H x W x D)	175 mm x 447 mm x 748 mm (6.89 in. x 17.60 in. x 29.45 in.)

\*Last updated on November 20, 2018

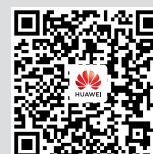
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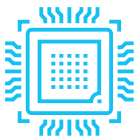


2488/2488H V5

## | New Option for Distributed Deployment with Higher Computing Efficiency |

- 4 Intel® Xeon® Scalable processors in 2U space, with 32/48 DDR4 DIMMs
- Up to 25 2.5-inch hard drives for local storage, or 8 NVMe SSDs
- 2 10GE and 2 GE LOM ports, and 9/11 PCIe expansion slots
- Delivers lower OPEX than 2U 2-socket servers; leverages intelligent energy saving to improve performance per watt by 16%; combines intelligent management features to enable up to 93% accuracy for fault locating

Unlocks high computing efficiency for scenarios such as virtualization, HPC, database, and SAP HANA in-memory computing.



### Superior Performance with Higher Efficiency

- Supports 4 Intel® Xeon® Scalable Processors (Platinum 8100, Gold 6100, or Gold 5100 series) in a 2U space. Its Ultra Path Interconnect (UPI) bus supports rates of up to 10.4 GT/s, and a single processor supports up to 28 cores. The server supports Intel® Turbo Boost, hyper-threading, and Advanced Vector Extensions (AVX-512). A single processor delivers up to 65% higher compute power than the previous-generation processor.
- Provides 32/48 DDR4 DIMM slots<sup>1</sup>, and delivers memory speeds of up to 2,666 MT/s, ideal for application scenarios that require large-capacity memory.
- Supports two GE and two 10GE LAN on motherboard (LOM) ports, meeting networking requirements of 98% scenarios with streamlined configuration.
- Supports up to 25 2.5-inch local hard drives (configurable with 8 NVMe SSDs).
- One FusionServer 2488/2488H V5 saves up to 32%<sup>2</sup> OPEX in the virtualization scenario compared with two traditional 2U 2S servers.

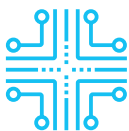
<sup>1</sup> The 2488 V5 supports up to 32 DIMMs and 2488H V5 supports 48 DIMMs.

<sup>2</sup> Data is derived from Huawei lab tests; actual improvement depends on the real-world scenario.



### Smart Power Saving and Better Energy Efficiency

- Leverages patented Dynamic Energy Management Technology (DEMT), and multiple power-saving measures such as component hibernation, proportional-integral-derivative (PID) algorithm based fan speed tuning, and active-standby power supplies, driving down overall equipment power consumption by up to 16% without compromising workload performance.
- Supports 2,000 W Platinum AC power supply unit (PSU), meeting ultra-high performance requirements; leverages the DC and high-voltage DC (HVDC) technologies to improve energy utilization.
- PSUs meet the requirements of ENERGY STAR and China Environmental Labelling.



### Unmatched Intelligent Manageability, Integration, and Openness

- Uses patented intelligent Fault Diagnosis & Management (FDM) technology, delivering up to 93% accuracy in diagnosing core component faults.
- Integrates eSight for smart entire-lifecycle O&M, driving a leap in deployment and O&M efficiency.
  - » Supports batch OS installation, slashing the average OS installation time of each server from hours to minutes.
  - » Supports automated firmware upgrade, with flexible and configurable upgrade policies for different components and drivers.
  - » Supports stateless computing, allowing for rapid replication of live-network configuration and swift failover.
- Integrates fault diagnosis LEDs on the front panel to display error codes in real time, enabling maintenance personnel to rapidly locate a fault.
- Provides standardized open interfaces and development guides, facilitating seamless integration with third-party management software.



# Huawei FusionServer 2488/2488H V5 Server



	2488 V5	2488H V5
<b>Form factor</b>	2U rack server	
<b>Processors</b>	2 or 4 Intel® Xeon® Scalable Processors of up to 205 W	
<b>Chipset platform</b>	Intel C622	
<b>Memory</b>	32 DDR4 DIMM slots, up to 2,666 MT/s	48 DDR4 DIMM slots, up to 2,666 MT/s
<b>Internal storage</b>	Supports hot-swappable hard drives with the following configuration options: <ul style="list-style-type: none"> <li>• 8 x 2.5-inch SAS/SATA hard drives</li> <li>• 25 x 2.5-inch SAS/SATA hard drives</li> <li>• 8 x 2.5-inch NVMe SSDs and 16 x 2.5-inch SAS/SATA hard drives</li> </ul> Flash storage: <ul style="list-style-type: none"> <li>• 2 M.2 SSDs</li> </ul>	Supports hot-swappable hard drives with the following configuration options: <ul style="list-style-type: none"> <li>• 8 x 2.5-inch SAS/SATA hard drives</li> <li>• 25 x 2.5-inch SAS/SATA hard drives</li> <li>• 24 x 2.5-inch SAS/SATA hard drives</li> <li>• 8 x 2.5-inch NVMe SSDs and 16 x 2.5-inch SAS/SATA hard drives</li> </ul> Flash storage: <ul style="list-style-type: none"> <li>• 2 M.2 SSDs</li> </ul>
<b>RAID support</b>	<ul style="list-style-type: none"> <li>• RAID 0, 1, 10, 1E, 5, 50, 6, or 60</li> <li>• Configured with a supercapacitor for cache power-off protection</li> <li>• Supports RAID level migration, drive roaming</li> </ul>	
<b>LOM network ports</b>	2 x GE + 2 x 10GE ports	
<b>PCIe expansion</b>	Up to 9 PCIe 3.0 slots	Up to 11 PCIe 3.0 slots
<b>Fan modules</b>	4 hot-swappable fan modules, providing protection against single-fan failures	
<b>Power supply units</b>	2 hot-swappable PSUs, with support for 1+1 redundancy. The following PSUs are supported: <ul style="list-style-type: none"> <li>• 2000 W AC Platinum PSUs               <ul style="list-style-type: none"> <li>1800 W (input: 200 V to 220 V AC, or 192 V to 200 V DC)</li> <li>2000 W (input: 200 V to 240 V AC, or 200 V to 288 V DC)</li> </ul> </li> <li>• 1500 W AC Platinum PSUs               <ul style="list-style-type: none"> <li>1000 W (input: 100 V to 127 V AC)</li> <li>1500 W (input: 200 V to 240 V AC, or 192 V to 288 V DC)</li> </ul> </li> <li>• 900 W AC Platinum PSUs (input: 100 V to 240 V AC, or 192 V to 288 V DC)</li> <li>• 1200 W DC PSUs (input: -38.4 V to -72 V DC) (Note1)</li> </ul>	
<b>Management</b>	<ul style="list-style-type: none"> <li>• Provides management features such as fault diagnosis, dynamic energy management technology (DEMT), and hardware security hardening based on Huawei iBMC chips; provides mainstream interfaces, such as Redfish interfaces, enabling easy integration.</li> <li>• Optionally configured with the Huawei eSight management software to provide advanced management features such as batch OS deployment and automated firmware upgrade, enabling automated entire-lifecycle management.</li> </ul>	
<b>Operating Systems</b>	<ul style="list-style-type: none"> <li>• SUSE Linux Enterprise Server</li> <li>• Red Hat Enterprise Linux</li> <li>• Windows Server</li> <li>• Citrix</li> <li>• CentOS</li> <li>• Ubuntu</li> </ul> For details, visit <a href="http://support.huawei.com/online/toolsweb/ftca/index?serise=2">http://support.huawei.com/online/toolsweb/ftca/index?serise=2</a> .	
<b>Security</b>	<ul style="list-style-type: none"> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Trusted Platform Module (TPM)</li> <li>• Secure startup</li> <li>• Security front panel</li> </ul>	
<b>Operating temperature</b>	5°C to 45°C (41°F to 113°F), compliant with ASHRAE Classes A3 and A4	
<b>Certification</b>	CE, ENERGY STAR, FCC, CCC, RoHS	
<b>Installation suite</b>	L-shaped guide rails, adjustable guide rails, and holding rails	
<b>Dimensions (H x W x D)</b>	86.1 mm x 447 mm x 748 mm (3.39 in. x 17.60 in. x 29.45 in.)	

\*Last updated on November 20, 2018

## For more information

To learn more about Huawei servers, contact Huawei sales representatives or business partners, or visit:

<http://e.huawei.com/en/products/cloud-computing-dc/servers>



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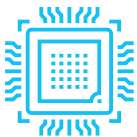


5885H V5

## | Deliver Excellent Performance and Scalability to Enable Fast and Stable Mission-Critical Services |

- 4 Intel® Xeon® Scalable processors in 4U space, with 48 DDR4 DIMMs
- Up to 25 2.5-inch hard drives for local storage, or 8 NVMe SSDs
- 2 10GE and 2 GE LOM ports, and 15 PCIe expansion slots
- Leverages intelligent energy saving to improve performance per watt by 16%; combines intelligent management features to enable up to 93% accuracy for fault locating

Delivers excellent stability and reliability for scenarios such as virtualization, HPC, and database.



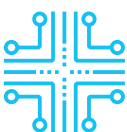
### High Efficiency, Stability, and Expandability

- Supports four Intel® Xeon® Scalable processors in a 4U space. Its Ultra Path Interconnect (UPI) bus supports a speed of up to 10.4 GT/s, and a single CPU supports up to 28 computing cores. The server supports Intel® Turbo Boost, hyper-threading, and Advanced Vector Extensions (AVX-512). A single processor delivers up to 65% higher compute performance than the previous-generation processor.
- 48 DDR4 DIMMs, up to 2666 MT/s memory speed, meeting large-capacity memory application requirements.
- 15 PCIe slots, providing excellent scalability.
- Two GE and two 10GE LAN on motherboard (LOM) ports with streamlined configuration, meeting networking requirements of 98% scenarios.
- Supports up to 25 x 2.5-inch local hard drives (configurable with 8 NVMe SSDs).



### Smart Power Saving and Better Energy Efficiency

- Leverages patented DMT, and multiple power-saving measures such as component hibernation, proportional-integral-derivative (PID) algorithm based fan speed tuning, and active-standby power supplies, driving down overall equipment power consumption by up to 16% without compromising workload performance.
- Fitted with 80 Plus® Platinum power supply units (PSUs), up to 94% conversion efficiency; complies with ENERGY STAR standards and has passed the China Energy Conservation and Environmentally-Friendly Certification.
- PSUs with 900 W, 1200 W, 1500 W, and more power options to flexibly adapt to different power requirements, improving energy utilization



### Unmatched Intelligent Manageability, Integration, and Openness

- Uses patented intelligent Fault Diagnosis & Management (FDM) technology, delivering up to 93% accuracy in diagnosing core component faults.
- Integrates eSight for smart entire-lifecycle O&M, driving a leap in deployment and O&M efficiency.
  - » Supports batch OS installation, slashing the average OS installation time of each server from hours to minutes.
  - » Supports automated firmware upgrade, with flexible and configurable upgrade policies for different components and drivers.
  - » Supports stateless computing, allowing for rapid replication of live-network configuration and swift failover.
- Integrates fault diagnosis LEDs on the front panel to display error codes in real time, enabling maintenance personnel to rapidly locate a fault.
- Provides standardized open interfaces and development guides, facilitating seamless integration with third-party management software.

# Huawei FusionServer 5885H V5 Server



Form Factor	4U rack server
Processors	2 or 4 Intel® Xeon® Scalable processors of up to 205 W
Chipset	Intel C622
Memory	48 DDR4 DIMM slots, up to 2666 MT/s memory speeds
Internal Storage	Supports hot-swappable hard drives with the following configuration options: <ul style="list-style-type: none"><li>• 8 x 2.5-inch SAS/SATA hard drives (front)</li><li>• 24 x 2.5-inch SAS/SATA hard drives (front)</li><li>• 25 x 2.5-inch SAS/SATA hard drives (front)</li><li>• 16 x 2.5-inch SAS/SATA hard drives and 8 x 2.5-inch NVMe SSDs (front)</li></ul> Flash storage: <ul style="list-style-type: none"><li>• Two M.2 SSDs</li></ul>
RAID	RAID 0, 1, 5, 50, 6, or 60; optional supercapacitor to protect cache data from power failures; RAID level migration, drive roaming, self-diagnosis, and web-based remote configuration
Network Ports	LAN on motherboard (LOM): 2 x 10GE + 2 x GE ports
PCIe Expansion	Up to 15 PCIe slots for 15 PCIe 3.0 slots 2 dual-width full-height full-length GPU cards (x16)
Fan Modules	5 hot-swappable counter-rotating fan modules with optional N+1 redundancy
Power Supply	4 hot-swappable PSUs with optional 2+2 redundancy. Supported options include: <ul style="list-style-type: none"><li>• 1500 W AC Platinum PSUs 1000 W (input: 100 V to 127 V AC) 1500 W (input: 200 V to 240 V AC, or 192 V to 288 V DC)</li><li>• 900 W AC PSUs (input: 100 V to 240 V AC, or 192 V to 288 V DC)</li><li>• 1200 W DC PSUs (input: -38.4 V to -72 V DC) (Note 1)</li></ul>
Management	<ul style="list-style-type: none"><li>• Provides management features such as fault diagnosis, dynamic energy management technology (DEMT), and hardware security hardening based on Huawei iBMC chips; provides mainstream interfaces, such as Redfish interfaces, enabling easy integration.</li><li>• Optionally configured with the Huawei eSight management software to provide advanced management features such as batch OS deployment and automated firmware upgrade, enabling automated entire-lifecycle management.</li></ul>
Operating Systems	<ul style="list-style-type: none"><li>• Microsoft Windows Server</li><li>• Red Hat Enterprise Linux</li><li>• SUSE Linux Enterprise Server</li><li>• CentOS</li><li>• Citrix XenServer</li><li>• VMware ESXi</li></ul> For details, see <a href="http://support.huawei.com/online/toolsweb/ftca/index?serise=2">http://support.huawei.com/online/toolsweb/ftca/index?serise=2</a> .
Security	<ul style="list-style-type: none"><li>• Power-on password</li><li>• Administrator password</li><li>• Trusted Platform Module (TPM)</li><li>• Security front panel</li></ul>
Operating Temperature	5°C to 45°C (41°F to 113°F) (ASHRAE A3 and A4 compliant)
Certification	CE, UL, FCC, CCC, and RoHS
Installation Suite	L-shaped guide rails, adjustable guide rails, and holding rails
Dimensions (H x W x D)	175 mm x 447 mm x 790 mm (6.89 in. x 17.60 in. x 31.10 in.)

\*Last updated on November 20, 2018

## For more information

To learn more about Huawei servers, contact Huawei sales representatives or business partners, or visit:

<http://e.huawei.com/en/products/cloud-computing-dc/servers>



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## Why Huawei servers?

Huawei is a world-leading server provider with a broad spectrum of server offerings including rack, high-density, blade servers and KunLun Mission Critical Servers.

Huawei is the industry's only vendor that has the integrated capabilities of server R&D, manufacture, and delivery. Huawei servers have been recognized for their superior quality, rock-solid reliability, extraordinary performance, ease of management, energy efficiency, and security. Huawei servers have served over 5,000 customer accounts across various industries around the globe, including government, finance, electric power, Internet, telecom, energy, transportation, and education.