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.
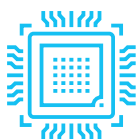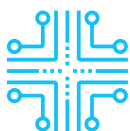
## Superior Performance, Ultra-high Density

- 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.

| | |
|---|---|
| Form factor | 1U rack server |
| Processors | 1 or 2 Intel® Xeon® Scalable Processors of up to 205 W |
| Chipset platform | Lewisburg-2 |
| Memory | 24 DDR4 DIMM slots, up to 2,666 MT/s |
| Internal storage | Three types of hard drive configurations supported:<br>• 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:<br>  » 0–6 NVMe SSDs + 0–4 SAS/SATA hard drives, or<br>  » 0–7 NVMe SSDs + 0–3 SAS/SATA hard drives, or<br>  » 0–8 NVMe SSDs + 0–2 SAS/SATA hard drives<br>• 8 x 2.5-inch SAS/SATA hard drives (the NVMe model supports 4 NVMe SSDs)<br>• 4 x 3.5-inch SAS/SATA hard drives<br>Flash storage:<br>• 2 M.2 SSDs |
| RAID support | • RAID 0, 1, 10, 5, 50, 6, or 60<br>• Configured with a supercapacitor for cache power-off protection<br>• Supports RAID level migration, drive roaming, self-diagnosis, and web-based remote configuration |
| Network ports | LOM: 2 x 10GE + 2 x GE ports<br>Flexible NIC: 2 x GE, 4 x GE, 2 x 10GE, or 1/2 x 56G FDR IB ports |
| PCIe expansion | Up to 5 PCIe slots:<br>• 2 x16 slots for 2 HHHL PCIe 3.0 x16 standard cards<br>• 1 x8 slot for 1 FHHL PCIe 3.0 x16 standard card<br>• 1 PCIe slot dedicated for 1 RAID controller card<br>• 1 PCIe slot for 1 flexible network interface card (NIC) |
| Heterogeneous accelerator cards | 2 single-slot HHHL GPU or FPGA heterogeneous accelerator cards<br>For details, visit http://support.huawei.com/onlinetoolsweb/ftca/indexEn?serise=2. |
| Fan modules | 7 hot-swappable counter-rotating fan modules with support for N+1 redundancy |
| Power supply units | 2 hot-swappable PSUs with support for 1+1 redundancy and the following configuration options (Note1):<br>• 550 W AC Platinum PSUs<br>• 900 W AC Platinum/Titanium PSUs<br>• 1,500 W AC Platinum PSUs<br>• 1,500 W 380 V HVDC PSUs<br>• 1,200 W -48 V to -60 V DC PSUs |
| Management | • 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.<br>• 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. |
| Operating Systems | • Microsoft Windows Server<br>• Red Hat Enterprise Linux<br>• SUSE Linux Enterprise Server<br>• CentOS<br>• Citrix XenServer<br>• VMware ESXi<br>For details, visit http://support.huawei.com/onlinetoolsweb/ftca/indexEn?serise=2. |
| Security | • Power-on password<br>• Administrator password<br>• Trusted Platform Module (TPM)<br>• Security front panel |
| Power supply | 110 V/220 V AC or 240 V/380 V DC or -48 V DC |
| Operating temperature | 5ºC to 45ºC (41ºF to 113ºF), 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) | Chassis with 3.5-inch hard drives: 43 mm x 436 mm x 748 mm (1.70 in. x 17.17 in. x 29.45 in.)<br>Chassis with 2.5-inch hard drives: 43 mm x 436 mm x 708 mm (1.70 in. x 17.17 in. x 27.87 in.) |

Remarks:
Note 1: The 1,200 W and 1,500 W PSUs are planned for release in Q3 2018.
The Titanium PSU is planned for release in Q1 2019.

*Last updated on June 30, 2018

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## | Flexible Configurations for Diverse Workloads |

2288H V5 (8-drive)        2288H V5 (12-drive)        2288H V5 (25-drive)

- 2 Intel® Xeon® Scalable processors in 2U space, with 24 DDR4 DIMMs
- Up to 20 3.5-inch or 31 2.5-inch hard drives for local storage, or 28 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

Supports flexible configuration, which is especially suitable for scenarios such as virtualization, database, HPC, and big data analytics.
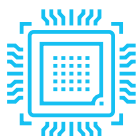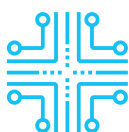
## Supreme Performance with Flexible Configurations

- Supports 2 Intel® Xeon® Scalable Processors in a 2U 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 dual-slot full-height full-length (FHFL) GPU or FPGA accelerator cards.

- Supports up to 20 3.5-inch or 31 2.5-inch local hard drives (configurable with 4, 8, 12, 24, or 28 NVMe SSDs), providing flexible configurations to meet diversified storage and performance demands.

- 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.

- Comes with a touchscreen LCD panel for fault diagnosis, allowing O&M personnel to quickly locate faults.

- Provides standardized open interfaces and development guides, facilitating seamless integration with third-party management software.

# Huawei FusionServer
# 2288H V5 Server

| | |
|---|---|
| Form factor | 2U rack server |
| Processors | 1 or 2 Intel® Xeon® Scalable Processors of up to 205 W |
| Chipset platform | Lewisburg-2 |
| Memory | 24 DDR4 DIMM slots, up to 2,666 MT/s |
| Internal storage | Supports the following hard drive configuration options:<br>• 8 x 2.5-inch SAS/SATA hard drives<br>• 12/16/20 x 3.5-inch SAS/SATA hard drives<br>• 4, 8, 12, 24, or 28 NVMe SSDs<br>• 31 x 2.5-inch SAS/SATA hard drives<br>Flash storage:<br>• 2 M.2 SSDs |
| RAID support | • RAID 0, 1, 10, 1E, 5, 50, 6, or 60<br>• Configured with a supercapacitor for cache power-off protection<br>• Supports RAID level migration, drive roaming, self-diagnosis, and web-based remote configuration |
| Network ports | LOM: 2 x 10GE + 2 x GE ports<br>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 slots:<br>• 4 x8 slots for 4 FHFL PCIe 3.0 x16 standard cards<br>• 3 x8 slots for 3 FHHL PCIe 3.0 x16 standard cards<br>• 1 x8 slot for 1 FHHL PCIe 3.0 x8 standard card<br>• 1 PCIe slot dedicated for 1 RAID controller card<br>• 1 PCIe slot for 1 flexible network interface card (NIC) |
| Heterogeneous accelerator cards | 2 dual-slot FHFL GPU or FPGA heterogeneous accelerator cards<br>For details, visit http://support.huawei.com/onlinetoolsweb/ftca/indexEn?serise=2. |
| Fan modules | 4 hot-swappable counter-rotating fan modules with support for N+1 redundancy |
| Power supply units | 2 hot-swappable PSUs with support for 1+1 redundancy and the following configuration options (Note 1):<br>• 550 W AC Platinum PSUs<br>• 900 W AC Platinum/Titanium PSUs<br>• 1,500 W AC Platinum PSUs<br>• 1,500 W 380 V HVDC PSUs<br>• 1,200 W -48 V to -60 V DC PSUs |
| Management | • 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.<br>• 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. |
| Operating Systems | • Microsoft Windows Server<br>• Red Hat Enterprise Linux<br>• SUSE Linux Enterprise Server<br>• CentOS<br>• Citrix XenServer<br>• VMware ESXi<br>For details, visit http://support.huawei.com/onlinetoolsweb/ftca/indexEn?serise=2. |
| Security | • Power-on password<br>• Administrator password<br>• Trusted Platform Module (TPM)<br>• Security front panel |
| Power supply | 110 V/220 V AC or 240 V/380 V DC or -48 V DC |
| Operating temperature | 5ºC to 45ºC (41ºF to 113ºF), 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) | Chassis with 3.5-inch hard drives: 86.1 mm x 436 mm x 748 mm (3.39 in. x 17.17 in. x 29.45 in.)<br>Chassis with 2.5-inch hard drives: 86.1 mm x 436 mm x 708 mm (3.39 in. x 17.17 in. x 27.87 in.) |

Remarks:
Note 1: The 1,200 W and 1,500 W PSUs are planned for release in Q3 2018.
The Titanium PSU is planned for release in Q1 2019.

*Last updated on June 30, 2018

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# Huawei FusionServer
# 5288 V5 Server

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.
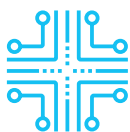
## Ultralarge Capacity, Tiered Storage

- 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 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.
- 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.

| 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:<br>• 24 x 3.5-inch SAS/SATA hard drives<br>Embedded:<br>• 4 x 3.5-inch SAS/SATA hard drives (Note 1)<br>Rear:<br>• 16 x 3.5-inch SAS/SATA hard drives<br>• 16 x 3.5-inch SAS/SATA hard drives + 4 x 2.5-inch SAS/SATA hard drives or NVMe SSDs<br>• 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<br>(This configuration does not support internal hard disk and I/O module 1)<br>Flash storage:<br>• Two M.2 SSDs |
| 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<br>Flexible NIC: 2 x GE, 4 x GE, 2 x 10GE, or 1/2 x 56G FDR IB ports |
| PCIe Expansion | Up to 8 PCIe slots:<br>• 5 PCIe 3.0 x16 standard cards (in x8 slots)<br>• 2 PCIe 3.0 x16 standard cards<br>• 1 PCIe 3.0 x8 standard card |
| 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:<br>900 W AC Platinum PSU or 1500 W AC Platinum PSU |
| Management | • 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.<br>• 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. |
| Operating Systems | Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, CentOS, Citrix XenServer, VMware ESXi<br>For details, see http://support.huawei.com/onlinetoolsweb/ftca/index?serise=2. |
| Security | • Power-on password<br>• Administrator password<br>• Trusted Platform Module (TPM)<br>• Security front panel |
| Power Supply | 100 V to 240 V AC<br>192 V to 288 V HVDC |
| 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.) |

Remarks:
Note 1: 44 x 3.5-inch model is planned for release in 2018Q3.

*Last updated on June 30, 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.
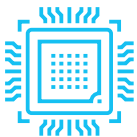
## Superior Performance with Higher Efficiency

- 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*, 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%** OPEX in the virtualization scenario compared with two traditional 2U 2S servers.
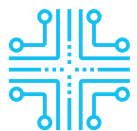
    * The FusionServer 2488 V5 supports up to 32 DIMMs and FusionServer 2488H V5 supports 48 DIMMs.

    ** 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.

| | 2488 V5 | 2488H V5 |
|---|---|---|
| Form factor | 2U rack server | |
| Processors | 2 or 4 Intel® Xeon® Scalable Processors of up to 205 W: Platinum 8100, Gold 6100, or Gold 5100 series | |
| Chipset platform | Intel C622 | |
| Memory | 32 DDR4 DIMM slots, up to 2,666 MT/s | 48 DDR4 DIMM slots, up to 2,666 MT/s |
| Internal storage | Supports hot-swappable hard drives with the following configuration options:<br>• 8 x 2.5-inch SAS/SATA hard drives<br>• 25 x 2.5-inch SAS/SATA hard drives<br>• 8 x 2.5-inch NVMe SSDs and 16 x 2.5-inch SAS/SATA hard drives<br>Flash storage:<br>• 2 M.2 SSDs | Supports hot-swappable hard drives with the following configuration options:<br>• 8 x 2.5-inch SAS/SATA hard drives<br>• 25 x 2.5-inch SAS/SATA hard drives<br>• 24 x 2.5-inch SAS/SATA hard drives<br>• 8 x 2.5-inch NVMe SSDs and 16 x 2.5-inch SAS/SATA hard drives<br>Flash storage:<br>• 2 M.2 SSDs |
| RAID support | • RAID 0, 1, 10, 1E, 5, 50, 6, or 60<br>• Configured with a supercapacitor for cache power-off protection<br>• Supports RAID level migration, drive roaming | |
| LOM network ports | 2 x GE + 2 x 10GE ports | |
| PCIe expansion | Up to 9 PCIe 3.0 slots:<br>• 5 slots provide PCIe x8 ports<br>• 4 slots provide PCIe x16 ports | Up to 11 PCIe 3.0 slots:<br>• 1 slot (PCIe x8) provides PCIe x4 ports<br>• 7 slots provide PCIe x8 ports<br>• 3 slots provide PCIe x16 ports |
| Fan modules | 4 hot-swappable fan modules, providing protection against single-fan failures | |
| Power supply units | 2 hot-swappable PSUs, with support for 1+1 redundancy. The following PSUs are supported:<br>• 2,000 W AC PSUs<br>• 1,500 W AC PSUs (power supply: 100 V AC to 127 V AC; 200 V AC to 240 V AC; or 190 V DC to 300 V DC)<br>• 900 W AC PSUs (power supply: 100 V AC to 240 V AC; or 190 V DC to 290 V DC)<br>• 1,200 W DC PSUs (power supply: -38.4 V DC to -72 V DC) | |
| Management | • 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.<br>• 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. | |
| Operating Systems | • SUSE Linux Enterprise Server<br>• Red Hat Enterprise Linux<br>• Windows Server<br>• Citrix<br>• CentOS<br>• Ubuntu<br>For details, visit http://support.huawei.com/onlinetoolsweb/ftca/index?serise=2. | |
| Security | • Power-on password<br>• Administrator password<br>• Trusted Platform Module (TPM)<br>• Secure startup<br>• Security front panel | |
| Operating temperature | 5°C to 45°C (41°F to 113°F), compliant with ASHRAE Classes A3 and A4 | |
| Certification | CE, ENERGY STAR, FCC, CCC, RoHS | |
| Installation suite | L-shaped guide rails, adjustable guide rails, and holding rails | |
| Dimensions (H x W x D) | 86.1 mm (2 U) x 447 mm x 748 mm (3.39 in. x 17.60 in. x 29.45 in.) | |

*Last updated on June 30, 2018

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# 5885H V5 Server

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.
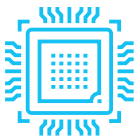
## High Efficiency, Stability, and Expandability

- 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 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.
- 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:<br>• 8 x 2.5-inch SAS/SATA hard drives (front)<br>• 24 x 2.5-inch SAS/SATA hard drives (front)<br>• 25 x 2.5-inch SAS/SATA hard drives (front)<br>• 16 x 2.5-inch SAS/SATA hard drives and 8 x 2.5-inch NVMe SSDs (front)<br>Flash storage:<br>• Two M.2 SSDs |
| 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 standard cards (3 x4, 8 x8, and 4 x16)<br>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:<br>• 1500 W AC PSU (power supply: 100 V–127 V AC, 200 V–240 V AC, or 190 V–300 V DC)<br>• 900 W AC PSU (power supply: 100 V–240 V AC or 190 V–290 V DC)<br>• 1200 W DC PSU (power supply: –38.4 V to –72 V DC) (Note 1) |
| Management | • 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.<br>• 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. |
| Operating Systems | • Microsoft Windows Server<br>• Red Hat Enterprise Linux<br>• SUSE Linux Enterprise Server<br>• CentOS<br>• Citrix XenServer<br>• VMware ESXi<br>For details, see http://support.huawei.com/onlinetoolsweb/ftca/index?serise=2. |
| Security | • Power-on password<br>• Administrator password<br>• Trusted Platform Module (TPM)<br>• Security front panel |
| Operating Temperature | 5ºC to 45ºC (41ºF to 113ºF) (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.) |

Remarks:
Note 1: The 1200 W PSU is planned for release in Q3 2018.

*Last updated on June 30, 2018

# Huawei FusionServer
# 8100 V5 Rack Server
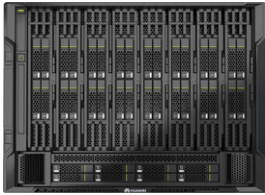
8100 V5

## | 8S Server with Top-Rate Performance to Supercharge Your Business |

- 8 Intel® Xeon® Scalable processors in 8U space, with 96 DDR4 DIMMs
- Up to 48 2.5-inch hard drives for local storage, or 40 NVMe SSDs
- 2 10GE and 2 GE LOM ports, and 18 PCIe expansion slots
- Incorporates FusionPar physical partitioning technology, allowing the server to run as one 8-socket or two 4-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 superior performance and unrivaled reliability, ideal for compute-intensive scenarios such as mission-critical applications, virtualization consolidation, in-memory computing, and HPC fat nodes.
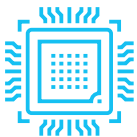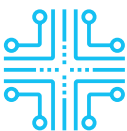
## Leading Performance and Rock-Solid Reliability

- Supports 8 Intel® Xeon® Platinum 8100 Scalable Processors in an 8U 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) technologies. A single processor delivers up to 65% higher compute power than the previous-generation processor.
- Provides 96 DDR4 DIMM slots, and delivers memory speeds of up to 2,666 MT/s and memory capacities of up to 12 TB (configured with 128 GB DIMMs*). This is ideal for application scenarios that require large-capacity memory.
- Supports 48 2.5-inch SAS/SATA hard drives or 40 2.5-inch NVMe SSDs for local storage, which deliver 2x and 5x improvement respectively compared with previous-generation products. Mixed configuration of NVMe and SAS/SATA hard drives is supported, meeting different requirements of diverse applications for storage capacity and performance.
- Supports the Huawei FusionPar physical partitioning technology. The server can be switched through one click on the iBMC interface to the Dual-System Mode. The two systems are electrically isolated to prevent fault propagation.
- Supports the Intel advanced RAS features, and provides the ADDDC-MR feature to improve the online correction capabilities for memory correctable errors. Leverages Huawei enhanced algorithms such as fault isolation re-examination and interrupt storm suppression, to improve the precision of memory fault isolation and mitigate the impact of the handling process on system performance.

## Smart Power Saving and Higher 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 PSU options including 2,000 W AC Titanium, 2,500 W DC Platinum, and 3,000 W AC Platinum, flexibly adapting to various power requirements. The Titanium PSU supports an up to 96% conversion efficiency.
- The PSUs meet the requirements of ENERGY STAR and China Environmental Labelling requirements.

## 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 fault error codes in real time; also supports an optional touchscreen LCD fault diagnosis panel* to help maintenance personnel quickly locate faults.
- Provides standardized open interfaces and development guides, facilitating seamless integration with third-party management software.
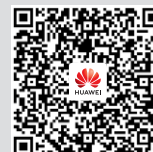
| | |
|---|---|
| Form factor | 8U rack server |
| Processors | 4 or 8 Intel® Xeon® Platinum 8100 Scalable Processors, with Thermal Design Power (TDP) of up to 205 W |
| Chipset platform | Intel C622 |
| Memory | Supports up to 96 DDR4 DIMM slots (12 DDR4 DIMM slots per processor), with memory speeds of up to 2,666 MT/s; supports RDIMMs and LRDIMMs:<br>• RDIMMs with memory of up to 3 TB<br>• LRDIMMs with memory of up to 12 TB |
| Internal storage | Uses a fully modular design; supports 48 2.5-inch SAS/SATA hard drives or 40 x 2.5-inch NVMe SSDs; provides the following compute modules (CMs) and front I/O modules (FMs), which provide storage functions and support flexible combinations.<br>• FM with storage function<br>  » The front I/O module of model B (FM-B) with storage-enhanced configuration. It supports up to 24 hot-swappable SAS/SATA hard drives, which require configuration of 1 or 2 RAID controller cards.<br>  » The front I/O module of model D (FM-D) with support for NVMe. It supports up to 8 U.2 hard drive connectors, which can be connected to SAS/SATA hard drives or NVMe SSDs. FM-D provides 2 built-in RAID slots. When FM-D is populated with NVMe SSDs, it does not require configuring RAID controller cards.<br>• CM with storage function<br>  » Compute module of model B (CM-B) with SAS support. Each CM-B supports up to 4 SAS/SATA hard drives. A single server supports up to 6 CM-B modules, and each CM-B requires one RAID controller card.<br>  » Compute module of model C (CM-C) with NVMe support. Each CM-C supports up to 4 NVMe SSDs. A single server supports up to 8 CM-C modules, and the CM-C modules do not require RAID controller cards.<br><br>The SAS/SATA hard drives are hot-swappable. The NVMe SSDs support scheduled hot swap (which requires coordination of the OS).<br>Supports flash storage:<br>• Each High-performance Fusion Console (HFC) provides 2 built-in M.2 slots. |
| RAID support | • Supports RAID 0, 1, 10, 5, 50, 6, or 60<br>• Supports 2 GB or 4 GB cache; supports a supercapacitor for cache power-off protection<br>• Supports RAID level migration, drive roaming, self-diagnosis, and web-based remote configuration |
| LOM network ports | 2 10GE SFP+ ports and 2 GE RJ45 network ports |
| PCIe expansion | Up to 18 PCIe 3.0 slots<br>• Back I/O module supports 10 rear PCIe standard cards:<br>  » 2 hot-swappable x16 standard cards<br>  » 2 hot-swappable x8 standard cards<br>  » 6 non-hot-swappable x8 standard cards<br>• Front I/O module:<br>  » The FM-B or FM-D supports up to 2 RAID controller card slots<br>• Compute module<br>  » Each CM-B supports 1 RAID controller card slot (up to 6 CM-B modules supported by a single server) |
| Fan modules | 8 hot-swappable counter-rotating fans that support N+1 redundancy and can be maintained without opening the chassis |
| Power supply units | 4 hot-swappable PSUs with support for N+N redundancy and the following configuration options:<br>• 2,000 W AC Titanium PSUs<br>• 2,500 W DC Platinum PSUs<br>• 3,000 W AC Platinum PSUs |
| Management | • 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.<br>• 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. |
| Operating systems | • SUSE Linux<br>• Red Hat Linux<br>• Windows Server<br>• VMware<br>• Citrix<br>For details, visit http://support.huawei.com/onlinetoolsweb/ftca/index?serise=2. |
| Security | • Power-on password<br>• Administrator password<br>• Trusted Platform Module (TPM)/Trusted Cryptography Module (TCM) |
| Power supply | • 2,000 W or 3,000 W AC PSUs, typical input voltage 220 V or 110 V AC<br>• 2,500 W DC PSUs, typical input voltage -48 V DC |
| Operating temperature | 5°C to 40°C (41°F to 104°F), compliant with ASHRAE Class A3<br>Remarks: Processors of TDP 150 W and below (including 8153, 8156, 8158, and 8164) support 45°C operating temperature (ASHRAE Class A4); when the server is configured with FM-B, the supported maximum operating temperature is 35°C. |
| Certification | CE, ENERGY STAR, FCC, RoHS |
| Installation suite | L-shaped guide rails and adjustable guide rails |
| Dimensions (H x W x D) | 352 mm x 447 mm x 855 mm (13.86 in. x 17.60 in. x 33.66 in.) |

*Last updated on June 30, 2018

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servers have been recognized for their
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extraordinary performance, ease of
management, energy efficiency, and
security. Huawei servers have served over
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industries around the globe, including
government, finance, electric power,
Internet, telecom, energy, transportation,
and education.