Huawei FusionServer

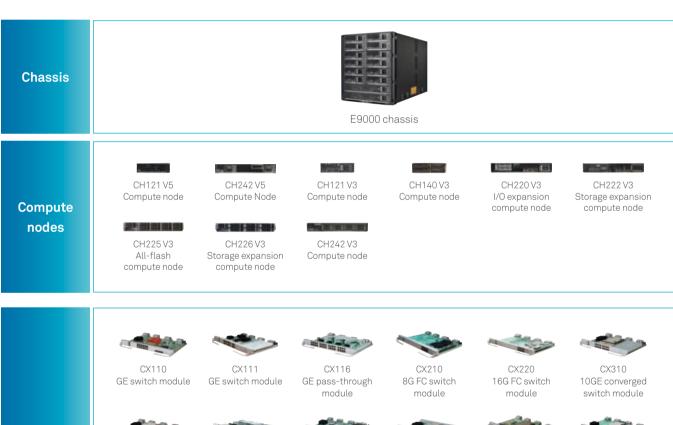# E9000 Converged Architecture Blade Server

Huawei FusionServer
E9000 Converged Architecture Blade Server

Huawei FusionServer E9000 Converged Architecture Blade Server is the latest-generation infrastructure platform presented by Huawei. It delivers superior computing, storage, switching, and management power out of one tightly integrated package, and is ideal for scenarios such as data center infrastructure, high-performance database, virtualization, high-performance computing (HPC), and carrier network function virtualization infrastructure (NFVI).

Chassis	
Chassis	 E9000 chassis

Compute nodes

CH121 V5 Compute node	CH242 V5 Compute Node	CH121 V3 Compute node	CH140 V3 Compute node	CH220 V3 I/O expansion compute node	CH222 V3 Storage expansion compute node
CH225 V3 All-flash compute node	CH226 V3 Storage expansion compute node	CH242 V3 Compute node			

Switch modules

CX110 GE switch module	CX111 GE switch module	CX116 GE pass-through module	CX210 8G FC switch module	CX220 16G FC switch module	CX310 10GE converged switch module
CX311 10GE/FCoE/FC converged switch module	CX317/CX318 10GE pass-through module	CX320 10GE/40GE/FCoE/FC converged switch module	CX611 IB QDR/FDR switch module	IB EDR switch module	CX710 40GE switch module
CX912 10GE/FC multi-plane switch module	CX915 GE/FC multi-plane switch module	CX916 10GE/FC multi-plane switch module			

Huawei FusionServer E9000 Converged Architecture Blade Server runs on an industry-leading technology platform and architecture, and leverages Huawei's longstanding, extensive experience and expertise in the ICT space, to empower customers with a diversity of features that help them differentiate themselves admist the intensifying competition.

Leading Performance

- Supports the Intel® Xeon® E5/E7 and the new-generation Scalable Processor Families
- Supports I/O expansion for accelerating M.2, NVMe SSD, GPU, and FPGA
- Support leading-edge all-flash blade, and accommodates 12 built-in NVMe SSDs in a full-width node, unlocking exceptional data throughput
- Supports fifteen 2.5-inch built-in hard drives on a full-width storage expansion compute node

Intelligent Management

- Intelligent O&M with full-lifecycle management, significantly improving deployment and O&M efficiency
- Supports automated firmware upgrade, automated OS deployment, and stateless computing
- Full Restful APIs, compatible with the Intel RSD architecture

High-Speed Network

- Midplane switching capacity of up to 32 Tbit/s, supporting evolution to 100GE
- Multi-plan switching and SDN intelligent networking
- Supports GE, 10GE, 40GE, FCoE, FC, and IB EDR switching

Flexible Expansion

- Supports flexible combinations of 2-socket and 4-socket compute nodes
- Supports PCIe standard card expansion on half-width compute nodes
- Supports expansion with 6 PCIe standard cards on a full-width compute node
- 4-socket compute nodes support PCIe standard card expansion

Typical Applications

Huawei FusionServer E9000 converges computing, storage, and networking to power the high-end, core applications of carriers and enterprises. It is the choicest platform for enterprises to run private clouds, high-end corporation applications, and HPC workloads.

Huawei FusionServer
E9000 Chassis
(E9000 chassis for short)

The E9000 chassis is engineered as a 12U 16-blade form factor. It provides a fully redundant modular design for power supply, heat dissipation, management, and switching.

The layout inside the chassis enables optimal space utilization. It can be installed in standard 19-inch cabinets with a 1,000 mm depth and above. According to the PSUs configured, the E9000 can run in an AC-powered or DC-powered chassis.

Feature

Superior Performance

- Supports evolution of the next three generations of Intel® high-performance processors
- Full-width slot supports up to fifteen 2.5-inch or six 3.5-inch hard drives, or 12 NVMe SSDs
- Supports I/O expansion for acclerating M.2, NVMeSSD, GPU, and FPGA
- Supports half-width 700 W or full-width 1400 W heat dissipation and power supply
- Supports 40GE and IB EDR, and evolution to 100GE

Converged Architecture

- Modular design for computing, storage, switching, heat dissipation, and power supply
- Provides an architecture for dynamic expansion by using 2S and 4S compute nodes
- Supports various switch modules (GE, 10GE, 40GE, FC, FCoE, and IB), flexibly configurable to meet diverse service requirements

High Energy Efficiency and Rock-solid Reliability

- Supports the liquid cooling solution, enabling over 40% energy conservation and PUE equal to or smaller than 1.1.
- Powered by 80 Plus Platinum/Titanium PSUs with conversion efficiency of up to 96%, and supports Dynamic Energy Management Technology (DEMT)
- Optimized system air ducts and industry's highest heat dissipation efficiency
- Fully redundant functional modules, enabling seamless failover in case of faults
- Passive midplane, avoiding single points of failure

Technical Specifications

E9000 Chassis	
Form factor	12U blade server chassis
Compute node	16 half-width slots or 8 full-width slots, supporting flexible configurations of single-slot, dual-slot, full-width, and half-width nodes and accommodating up to 16 Huawei CH series half-width single-slot compute nodes; supports up to 64 Intel Xeon E5-2600 v3/v4 processors
Switching system	Provides 4 slots for installing Huawei CX series switch modules, provides a midplane switching capability of up to 32 Tbit/s, supports the following types of switch modules: • CX110 GE switch module: 12 x GE + 4 x 10GE uplinks, 32 x GE downlinks • CX111 GE switch module: 12 x GE + 4 x 10GE uplinks, 32 x GE downlinks • CX116 GE pass-through module: 32 x GE uplinks, 32 x GE downlinks • CX210 8G FC switch module: 8 x 8G FC uplinks, 16 x 8G FC downlinks • CX220 16G FC switch module: 8 x 8G FC uplinks, 16 x 16G FC downlinks • CX310 10GE switch module: supports FCoE ports, 16 x 10GE uplinks, 32 x 10GE downlinks • CX311 10GE switch module: supports FCoE and FC ports, 16 x 10GE + 8 x 8G FC uplinks, 32 x 10GE downlinks • CX317 10GE pass-through module: 32 x 10GE uplinks, 32 x 10GE downlinks • CX318 10GE pass-through module: 32 x 10GE uplinks, 32 x 10GE downlinks • CX320 10GE switch module: supports 40GE, FCoE, and FC ports, 8 x 10GE + 2 x 40GE uplinks (supports 8 x 10GE/8G FC Flexible interface card), 32 x 10GE downlinks • CX611 IB QDR/FDR switch module: 18 x QDR/FDR uplinks, 16 x QDR/FDR downlinks • CX620 IB EDR switch module: 18 x EDR uplinks, 16 x EDR downlinks • CX710 40GE switch module: 8 x 40GE uplinks, 16 x 40GE downlinks • CX912 multi-plane switch module: supports FC ports, 16 x 10GE + 8 x 8G FC uplinks, 32 x 10GE + 16 x 8G FC downlinks • CX915 multi-plane switch module: supports FC ports, 4 x 10GE +12 x GE + 8 x 8G FC uplinks, 32 x GE + 16 x 8G FC downlinks • CX916 multi-plane switch module: supports FC ports, 8 x 10GE/25GE + 2 x 40GE + 8 x 16G FC uplinks, one Flexible interface card optional , 32 x 10GE + 16 x 16G FC downlinks
Power supply units	6 x 3000 W/2000 W AC or 6 x 2500 W DC hot-swappable PSUs, support N+N or N+M redundancy
Fan modules	14 hot-swappable fan modules, support intelligent speed tuning and N+1 redundancy
Management	Complies with IPMI V2.0 standard, supports remote start-up and shut-down, reset, logging, SOL, KVM over IP, virtual media, and monitoring of hardware including fan modules and PSUs Supports 1+1 redundancy Provides local KVM port for server management
Power supply	110 V/220 V AC or -48 V DC or HVDC
Operating temperature	5ºC–40ºC, ASHRAE Class A3 compliant
Certification	UL, CE, FCC, and VCCI etc.
Dimensions (H x W x D)	530 mm x 442 mm x 840 mm

Huawei CH121 V5 Compute Node
(CH121 V5 for short)

The CH121 V5 is optimized for virtualization, cloud computing, high-performance computing (HPC), and network function virtualization (NFV) applications.

It provides dense computing capability and super large memory capacity.

The CH121 V5 supports the full series of new-generation Intel® Xeon® Scalable Processors (with CPU power of up to 205 W), and provides up to 24 DDR4 DIMM slots, 2 hard drive slots (supporting NVMe SSDs or 4 M.2 SSDs), and one half-height half-length PCIe x16 standard card.

Feature

Superior Computing Power, Flexibility, and Openness

- Runs on the latest-generation Intel® Xeon® Scalable Processors, with an UltraPath Interconnect (UPI) bus speed of up to 10.4 GT/s between processors. Each processor supports up to 28 computing cores.
- Supports Intel® Turbo Boost, hyper-threading, and Advanced Vector Extensions (AVX-512), delivering enhanced computing performance for computing-intensive applications.
- Provides 24 DDR4 DIMM slots, and delivers memory speeds of up to 2,666 MT/s and memory capacities of up to 3 TB (with 128 GB DIMMs). This is ideal for application scenarios that require large-capacity memory.
- Supports 2 PCIe NVMe SSDs or 4 M.2 SSDs, flexibly meeting storage demands.
- Supports standard PCIe expansion slots, allowing customers to accelerate services as desired.

Intelligent Energy Conservation and Better Performance

- Employs innovative Dynamic Energy Management Technology (DEMT) to support smart energy conservation, and drives down power consumption by leveraging different technologies. These include component hibernation, automatic power-on/-off for multi-phase power supplies, speed tuning using the proportional-integral-derivative (PID) algorithm, and active-standby power supplies.
- Adopts carrier-class design, manufacturing processes, and stringent component selection to ensure high reliability and stability.

Intelligent Management, Integration, and Openness

- Intelligent O&M with full-lifecycle management, significantly improving deployment and O&M efficiency.
  - » Batch installation of OSs, slashing the average time taken by each server to minutes.
  - » Automated firmware upgrade, with flexible and configurable upgrade policies for different components and drivers.
  - » Stateless computing, allowing for the rapid replication of live-network configurations and swift active/standby failover.
  - » Fault Diagnosis and Management (FDM) for in-depth fault diagnosis, with an accuracy of up to 93% when diagnosing faults in core components.
- Provides standardized open interfaces and development guides, facilitating seamless integration with third-party management software.

Technical Specifications

CH121 V5	
Form factor	2-socket blade server node in a half-width slot
Processors	1 or 2 Intel® Xeon® Scalable Processors of up to 205 W
Memory	24 DDR4 DIMM slots, with memory speeds of up to 2,666 MT/s, and memory capacity of up to 3 TB
Internal storage	2 x 2.5-inch SSDs, or SAS/SATA hard drives; 2 NVMe SSDs supported Or up to 4 x M.2 SSDs (SATA interface), individually hot-swappable
RAID support	2 x 2.5-inch SSDs or SAS/SATA hard drives (RAID 0 or 1) 4 x M.2 SSDs support RAID 0, 1, 5, 6, or 10
PCIe expansion	2 mezzanine cards (x16) Supports 1 half-height half-length PCIe x16 standard card (front accessible) for expansion
Operating systems	Microsoft Windows Server 2012 Red Hat Enterprise Linux SUSE Linux Enterprise Server Citrix XenServer VMware ESXi
Operating temperature	5ºC to 40ºC (ASHRAE CLASS A3 compliant)
Dimensions (H x W x D)	60.46 mm × 210 mm × 537.2 mm

Huawei CH242 V5 Compute Node

(CH242 V5 for short)

The CH242 V5, based on the latest-generation Intel® Xeon® Scalable Processors, provides high processing performance, scalability, and reliability to address computing-intensive applications and supports efficient, flexible mission-critical enterprise services. Use the CH242 V5 for large data sets and transaction-intensive databases, ERP, BI platform. It can also apply to cloud computing and virtualization.

Feature

Superior Computing Power, Flexibility, and Openness

- Runs on the latest-generation Intel® Xeon® Scalable Processors, with an UltraPath Interconnect (UPI) bus speed of up to 10.4 GT/s between processors. Each processor supports up to 28 computing cores.
- 4-socket compute node installed in a full-width slot, supports up to 48 DDR4 DIMMS.
- Supports a maximum of four 2.5-inch SAS HDDs, SATA HDDs, or SSDs, four of them are compatible with NVMe SSDs, and provides one PCIe slot for standard PCIe card.
- Supports a maximum of eight M.2 SSD with hot-swappable.

Intelligent Energy Conservation and Better Performance

- Employs innovative Dynamic Energy Management Technology (DEMT) to support smart energy conservation, and drives down power consumption by leveraging different technologies. These include component hibernation, automatic power-on/-off for multi-phase power supplies, speed tuning using the proportional-integral-derivative (PID) algorithm, and active-standby power supplies.
- Adopts carrier-class design, manufacturing processes, and stringent component selection to ensure high reliability and stability.

Intelligent Management, Integration, and Openness

- Intelligent O&M with full-lifecycle management, significantly improving deployment and O&M efficiency.
  - » Batch installation of OSs, slashing the average time taken by each server to minutes.
  - » Automated firmware upgrade, with flexible and configurable upgrade policies for different components and drivers.
  - » Stateless computing, allowing for the rapid replication of live-network configurations and swift active/standby failover.
  - » Fault Diagnosis and Management (FDM) for in-depth fault diagnosis, with an accuracy of up to 93% when diagnosing faults in core components.
- Provides standardized open interfaces and development guides, facilitating seamless integration with third-party management software.

Technical Specifications

	CH242 V5
Form factor	Full-width 4-socket compute node
Processors	2 or 4 Intel® Xeon® Scalable Processors of up to 205 W
Memory	48 DDR4 DIMMs
Internal storage	4 x 2.5 " SAS/SATA HDDs, or SSDs, four of them are compatible with NVMe SSDs Or up to 8 x M.2 SSDs (SATA interface), individually hot-swappable
RAID support	RAID 0, 1, 10, 5, 50, 6, 60
PCIe expansion	4 PCIe x16 mezzanine cards Supports one full-height half-length PCIex16 standard card
Operating systems	MicrosoftWindowsServer2008/2012 RedHatEnterpriseLinux SUSELinuxEnterpriseServer CitrixXenServer VMware ESXi
Operating temperature	5ºC-40ºC (ASHRAE Class A3 compliant)
Dimensions (H x W x D)	60.5 mm x 423 mm x 525 mm

Huawei CH121 V3 Compute Node
(CH121 V3 for short)

The CH121 V3 is optimized for virtualization, cloud computing,

and high-performance computing (HPC) applications. It provides dense computing capability and super large memory capacity. The CH121 V3 uses Intel® Xeon® E5-2600 v3/v4 series 145 W processors and provides up to 24 DIMM slots, two hard drives, and one full-height half-length PCIe x16 standard card.

Feature

High Density and Large Memory

- Supports the Intel® Xeon® E5-2600 v3/v4 series processors, providing 2 x 22-core superior computing capability.
- Provides 24 DDR4 DIMM slots with up to 1.5 TB memory capacity.
- Supports up to 2 x 2.5-inch SSDs or SAS/SATA hard drives, or 2 x 2.5-inch NVMe SSDs

Exceptional Energy Efficiency

- Adopts the dynamic energy management technology (DEMT) and power capping technologies for best power consumption control, which remarkably reduces power consumption in low-load operating.
- Delivers superior quality through leading-edge architecture design, manufacturing techniques, and stringent component selection.

Easy Management Based on an Intelligent Platform

- Complies with IPMI V2.0 and supports remote deployment and fault locating methods. Supports remote maintenance using SOL, KVM over IP, virtual CD-ROM drive, and WebUI to reduce the O&M cost.
- Provides efficient and secure power consumption analysis and control capabilities.
  » Complies with Intel® NM 3.0 dynamic power capping specifications.
  » Completes power capping operations within 3 seconds.
  » Supports an intelligent, secure power-on mode.
- Provides the black box function to facilitate fault locating and service recovery.
- Supports the Fault Diagnosis & Management (FDM 2.0) system, precisely locating 93% of hardware faults and improving O&M efficiency

Technical Specifications

	CH121 V3
Form factor	2-socket blade server node in a half-width slot
Processors	1 or 2 Intel® Xeon® E5-2600 v3/v4 processors
Memory	24 DDR4 DIMMs, up to 1.5 TB memory capacity
Internal storage	2 x 2.5-inch SSDs, or SAS/SATA hard drives; 2 NVMe SSDs supported Built-in flash memory: 2 x SATADOMs 2 x MicroSD cards (RAID 1) 1 x USB device (USB 3.0))
RAID support	RAID 0 or 1
PCIe expansion	2 mezzanine cards (x16) 1 full-height half-length PCIe x16 standard card
Operating systems	Microsoft Windows Server 2008/2012 Red Hat Enterprise Linux SUSE Linux Enterprise Server Oracle Linux CentOS Huawei FusionSphere Citrix XenServer VMware
Operating temperature	5ºC to 40ºC (ASHRAE CLASS A3 compliant)
Dimensions (H x W x D)	60.46 mm × 210 mm × 537.2 mm

Huawei CH140 V3 Compute Node

(CH140 V3 for short)

The CH140 V3 is optimized for HPC and computing-intensive enterprise service demands. It supports ultra-high density and computing capabilities. Each half-width compute slot supports two 2S compute nodes, and each compute node is individually pluggable for maintenance. The CH140 V3 is powered by Intel® Xeon® E5-2600v3/v4 processors. Each node supports full-bandwidth configuration for memory and accommodates one 2.5-inch hard drive.

Feature

Outstanding Computing Performance Based on Ultra High Density

- Supports the full series of Intel® Xeon® E5-2600 v3/v4 processors to deliver up to 2 x 22 cores of computing capacity; a half-width slot supports two small slots in two layers for installing two independent 2-socket compute nodes.
- Provides eight DIMM slots on a 2-socket compute node, supporting a DDR4 memory capacity of up to 512 GB on a 2-socket compute node.
- Supports 2 MicroSD cards on a 2-socket compute node, supporting RAID 1.
- Supports one internal 2.5" SATA HDD or SSD on a 2-socket compute node.

High Efficiency and Energy-saving

- Uses the dynamic energy saving and power capping technologies to optimally manage and control power consumption with power reduced in low-load operating.
- Adopts the carrier-class design, manufacturing process, and component selection to ensure high quality.

Easy management with the intelligent platform

- Reduces O&M costs by using remote deployment and fault locating methods including SOL, KVM over IP, virtual CD-ROM drive, and WebUI in compliance with IPMI 2.0.
- Supports efficient and secure power consumption analysis and control capabilities.
  - » Complies with Intel® NM 3.0.
  - » Implements efficient power consumption control by supporting power capping operations within 3s on a compute node.
  - » Supports an intelligent and secure power-on mode for compute nodes.
- Supports the black box function to facilitate fault location, quickly recovering services.
- Fault Diagnostic Management 2.0 (FDM 2.0) accurately locates 93% hardware faults, greatly improving O&M efficiency.

Technical Specifications

	CH140 V3
Form factor	Two 2-socket twin compute nodes in a half-width slot
Processors	1 or 2 Intel® Xeon® E5-2600 v3/v4 processors in each 2-socket compute node
Memory	8 DDR4 DIMMs for each 2-socket compute node, up to 512 GB supported by each node
Internal storage	1 x 2.5-inch SSD/SATA for each 2-socket compute node 2 x MicroSD cards (RAID 1)
PCIe expansion	2 twin nodes share 2 mezzanine cards
Operating systems	Microsoft Windows Server 2008/2012 Red Hat Enterprise Linux SUSE Linux Enterprise Server Oracle Linux CentOS Citrix XenServer VMware
Operating temperature	5ºC-35ºC

Huawei CH220 V3
I/O Expansion Compute Node
(CH220 V3 for short)

Designed for application acceleration scenarios, VDI, virtualization and databases, the CH220 V3 provides superior scalability. Featuring Intel® Xeon® E5-2600 v3/v4 series processors and support for up to 16 DIMM slots, 2 internal hard disks, and 6 standard PCI cards for various PCIe configurations, the CH220 V3 can be expanded for I/O acceleration components such as PCIe SSDs, GPUs, and HPC acceleration components.

Feature

Outstanding expandability

- Supports the full series of Intel® Xeon® E5-2600 v3/v4 processors to deliver up to 2 x 22 cores of computing capacity.
- Provides 6 standard PCIe x16 full-height slots for supporting various PCIe configuration modes, including 6 full-height half-length single-slots, 1 full-height full- length dual-slot and four full-height half-length single slots, or 2 full-height full-length dual-slots. The cables to the 2 standard PCIe cards are routed from the front panel.
- Provides 16 DDR4 DIMMs with the maximum total memory capacity of 1 TB.

Minimum energy for maximum efficiency

- Adopts the dynamic energy saving and power capping technologies to optimally manage and control power consumption with power remarkably reduced in low-load operating.
- Applies superb design, manufacturing processes, and components to ensure high quality.

Intelligent platform for strong management

- Reduces O&M costs by supporting remote deployment and fault location technologies such as SOL, KVM over IP, virtual DVD-ROM drive, WebUI and IPMI 2.0-compliant.
- Provides efficient and secure power consumption analysis and control capabilities.
  » Complies with Intel® NM 3.0.
  » Provides a sub-3s power capping response on each compute node to optimize power consumption control.
  » Supports an intelligent and secure power-on mode for compute nodes.
- Supports the black box function to facilitate quick fault location and service recovery.
- Fault Diagnosis & Management 2.0 (FDM 2.0) accurately locates 93% hardware faults, greatly improving O&M efficiency.

Technical Specifications

	CH220 V3
Form factor	Full-width 2-socket compute node
Processors	1 or 2 Intel® Xeon® E5-2600 v3/v4 processors
Memory	16 DDR4 DIMMs, providing a maximum memory capacity of 1 TB
Internal storage	2 x 2.5-inch SSDs, SAS/SATA HDDs Built-in flash memory: 2 x SATADOMs 2 x MicroSD cards (RAID 1) 1 x USB 3.0 Disk
RAID support	RAID 0 or 1
PCIe expansion	2 PCIe x16 + 2 PCIe x8 mezzanine cards, supporting six standard PCIe cards. The following configuration modes are supported: 6 full-height half-length single-slots 1 full-height full-length dual-slot and four full-height half-length single-slots 2 full-height full-length dual-slots
Operating systems	Microsoft Windows Server 2008/2012 Red Hat Enterprise Linux SUSE Linux Enterprise Server Oracle Linux CentOS Citrix XenServer Huawei FusionSphere VMware
Operating temperature	5ºC-40ºC (ASHRAE Class A3 compliant)
Dimensions (H x W x D)	60.46 mm x 423 mm x 537.2 mm

Huawei CH222 V3
Storage Expansion Compute
(CH222 V3 for short)

The CH222 V3 provides superior computing performance and a large storage capacity. Featuring Intel® Xeon® E5-2600 v3/v4 series processors (up to 145 W) and support for up to 24 DIMM slots, 15 x 2.5" hard disks, and a 1 GB RAID cache, the CH222 V3 is suitable for big-data analysis and processing applications that require large storage capacity and high computing performance, such as videos, searches, and biological sciences.

Feature

Super storage and computing capabilities

- Supports the full series of Intel® Xeon® E5-2600 v3/v4 processors to deliver up to 2 x 22 cores of computing capacity.
- Provides 24 DDR4 DIMMs. Provides a maximum capacity of 1.5 TB
- Supports 15 x 2.5-inch SAS/SATA HDDs or SSDs, which provide the highest storage capacity on a single node.

Minimum energy for maximum efficiency

- Adopts the dynamic energy saving and power capping technologies to optimally manage and control power consumption with power remarkably reduced in low-
- load operating.
- Applies superb design, manufacturing processes, and components to ensure high quality.

Intelligent platform for strong management

- Reduces O&M costs by supporting remote deployment and fault location technologies such as SOL, KVM over IP, virtual DVD-ROM drive, WebUI and IPMI 2.0-compliant.
- Provides efficient and secure power consumption analysis and control capabilities.
  - » Complies with Intel® NM 3.0.
  - » Provides a sub-3s power capping response on each compute node to optimize power consumption control.
  - » Supports an intelligent and secure power-on mode for compute nodes.
- Supports the black box function to facilitate quick fault location and service recovery.
- Fault Diagnosis & Management 2.0 (FDM 2.0) accurately locates 93% hardware faults, greatly improving O&M efficiency.

Technical Specifications

CH222 V3	
Form factor	Full-width 2-socket compute node
Processors	1 or 2 Intel® Xeon® E5-2600 v3/v4 processors
Memory	24 DDR4 DIMMs, providing a maximum memory capacity of 1.5 TB
Internal storage	15 x 2.5-inch SSDs, SAS/SATA HDDs Built-in flash memory: 2 x SATADOMs 2 x MicroSD cards (RAID 1) 1 x USB 3.0 Disk
RAID support	RAID 0, 1, 10, 5, 50, 6, or 60 512 MB/1 GB RAID Cache
PCIe expansion	2 PCIe x16 mezzanine cards 1 full-height half-length PCIe x16 standard card
Operating systems	Microsoft Windows Server 2008/2012 Red Hat Enterprise Linux SUSE Linux Enterprise Server Oracle Linux CentOS Citrix XenServer Huawei Fusionsphere VMware
Operating temperature	5ºC-40ºC (ASHRAE Class A3 compliant)
Dimensions (H x W x D)	60.46 mm x 423 mm x 537.2 mm

Huawei CH225 V3
All-Flash Compute Node
(CH225 V3 for short)

The CH225 V3 provides superior computing performance and large storage capacity. It uses Intel® Xeon® E5-2600 v3/v4 series processors and supports up to 24 DIMM slots, 12 x 2.5" NVMe SSDs, and 2 x 2.5" hard disks. The CH225 V3 is suitable for scenarios that require high computing performance and large storage capacity, such as high-performance databases, real-time data analysis, and search.

Feature

Superior performance, ultra-large flash memory
- Supports up to 12 x 2.5-inch NVMe SSDs and 2 x 2.5-inch SAS/SATA HDDs or SSDs. Delivers industry-leading NVMe storage capacity per node.
- Supports the full series and all specifications of Intel® Xeon® E5-2600 v3/v4 series processors. Provides 2 x 22-core processors to deliver superior computing capability.
- Provides 24 DDR4 DIMM slots with up to 1.5 TB memory capacity.

Low energy consumption and high efficiency
- Adopts the dynamic energy management technology (DEMT) and power capping technologies for best power consumption control, which remarkably reduces power consumption in low-load operating.
- Delivers high quality thanks to its carrier-class design, mature manufacturing process, and carefully selected components.

Intelligent platform for easy management
- Complies with IPMI V2.0 and supports remote deployment and maintenance functions such as remote maintenance using SOL, KVM over IP, virtual CD-ROM drive, and WebUI to reduce O&M costs.
- Provides efficient and secure power consumption analysis and control capabilities. SSDs can be separately unloaded on the OS.
- Fault Diagnosis & Management 2.0 (FDM 2.0) accurately locates 93% hardware faults, greatly improving O&M efficiency.

Technical Specifications

CH225 V3	
Form factor	Full-width 2-socket compute node
Processors	1 or 2 Intel® Xeon® E5-2600 v3/v4 processors
Memory	24 DDR4 DIMMs, providing a maximum memory capacity of 1.5 TB
Internal storage	12 x 2.5-inch NVMe SSDs and 2 x 2.5-inch SSDs or SAS/SATA hard drives
Built-in flash memory	2 x SATADOMs 2 x MicroSD cards (RAID 1) 1 x USB 3.0 Disk
RAID support	2 x 2.5-inch SSDs or SAS/SATA hard drives (RAID 0 or 1)
PCIe expansion	4 x mezzanine cards (x16)
Operating systems	Microsoft Windows Server 2008/2012 Red Hat Enterprise Linux SUSE Linux Enterprise Server Oracle Linux CentOS Huawei FusionSphere Citrix XenServer Vmware
Operating temperature	5ºC-40ºC (ASHRAE Class A3 compliant)
Dimensions (H x W x D)	60.46 mm x 423 mm x 537.2 mm

Huawei CH226 V3
Storage Expansion Compute Node
(CH226 V3 for short)

The CH226 V3 provides superior computing performance and a large storage capacity. Featuring Intel® Xeon® E5-2600 v3/v4 series processors (up to 145 W) and support for up to 24 DIMM slots, 6 x 3.5" and 2 x 2.5" hard disks, and a 2GB RAID cache, the CH226 V3 is suitable for big-data analysis and processing applications that require large storage capacity and high computing performance, such as Server SAN, biological sciences or VDI.

Feature

◉ High density and large memory

- Supports the full series of Intel® Xeon® E5-2600 v3/v4 processors to deliver up to 2 x 22 cores of computing capacity.
- Provides 24 DDR4 DIMMs. Provides a maximum capacity of 1.5TB.
- Supports 6 x 3.5-inch SAS/SATA HDDs and 2 x 2.5-inch SAS/SATA HDDs or SSDs, which provide the highest storage capacity on a single node.

◉ Minimum energy for maximum efficiency

- Adopts the dynamic energy saving and power capping technologies to optimally manage and control power consumption with power remarkably reduced in low-load operating.
- Applies superb design, manufacturing processes, and components to ensure high quality.

◉ Intelligent platform for strong management

- Reduces O&M costs by supporting remote deployment and fault location technologies such as SOL, KVM over IP, virtual DVD-ROM drive, WebUI and IPMI 2.0-compliant.
- Provides efficient and secure power consumption analysis and control capabilities.
  - » Complies with Intel® NM 3.0.
  - » Provides a sub-3s power capping response on each compute node to optimize power consumption control.
  - » Supports an intelligent and secure power-on mode for compute nodes.
- Supports the black box function to facilitate quick fault location and service recovery.
- Fault Diagnosis & Management 2.0 (FDM 2.0) accurately locates 93% hardware faults, greatly improving O&M efficiency.

Technical Specifications

	CH226 V3
Form factor	Full-width 2-socket compute node
Processors	1 or 2 Intel® Xeon® E5-2600 v3/v4 processors
Memory	24 DDR4 DIMMs, providing a maximum memory capacity of 1.5 TB
Internal storage	6 x 3.5-inch SAS/SATA hard drives and 2 x 2.5-inch SSDs or SAS/SATA hard drives
Built-in flash memory	2 x SATADOMs 2 x MicroSD cards (RAID 1) 1 x USB 3.0 Disk
RAID support	RAID 0, 1, 10, 5, 50, 6, 60, 512MB/1GB/2GB RAID cache
PCIe expansion	2 PCIe x16 mezzanine cards 1 PCIe x8 full-height half-length standard card
Operating systems	Microsoft Windows Server 2008/2012 Red Hat Enterprise Linux SUSE Linux Enterprise Server Citrix XenServer VMware
Operating temperature	5ºC-40ºC (ASHRAE Class A3 compliant)
Dimensions (H x W x D)	60.46 mm x 423 mm x 537.2 mm

Huawei CH242 V3 Compute Node
(CH242 V3 for short)

The CH242 V3, based on the E7 v3/E7 v4 processor, provides high processing performance, scalability, and reliability to address computing-intensive applications and supports efficient, flexible mission-critical enterprise services. Use the CH242 V3 for large data sets and transaction-intensive databases, ERP, BI platform. It can also apply to cloud computing and virtualization.

Feature

◉ High computing performance, scalability, and reliability

- Supports the full series of Intel® Xeon® E7 v3/v4 processors to deliver up to 4 x 24 cores of computing capacity.
- 4-socket compute node installed in a full-width slot, supports up to a maximum of 32 DDR4 DIMMs.
- Supports a maximum of eight 2.5-inch SAS HDDs, SATA HDDs, or SSDs, four of them are compatible with NVMe SSDs, and provides a maximum of 2 PCIe slots for standard PCIe cards.
- Uses a real-time, accurate error-checking and fault tolerance mechanism, and supports WHEA and eMCA Gen1.

◉ High efficiency and energy-saving

- Adopts the dynamic energy saving and power capping technologies to optimally manage and control power consumption with power remarkably reduced in low-load operating.
- Applies superb design, manufacturing processes, and components to ensure high quality.

◉ Easy management with the intelligent platform

- Reduces O&M costs by supporting remote deployment and fault location technologies such as SOL, KVM over IP, virtual DVD-ROM drive, WebUI and IPMI 2.0-compliant.
- Provides efficient and secure power consumption analysis and control capabilities.
  » Complies with Intel® NM 3.0.
  » Provides a sub-3s power capping response on each compute node to optimize power consumption control.
  » Supports an intelligent and secure power-on mode for compute nodes.
- Supports the black box function to facilitate quick fault location and service recovery.
- Fault Diagnosis & Management 2.0 (FDM 2.0) accurately locates 93% hardware faults, greatly improving O&M efficiency.

Technical Specifications

	CH242 V3
Form factor	Full-width 4-socket compute node
Processors	2 or 4 Intel® Xeon® E7 v3/v4 processors, up to 24 cores per processor, 165 W
Memory	32 DDR4 DIMMs, providing a maximum memory capacity of 2 TB
Internal storage	Eight 2.5" SAS/SATA HDDs, or SSDs, four of them are compatible with NVMe SSDs 2 x MicroSD cards 1 x USB2.0 Disk
RAID support	RAID 0, 1, 10, 5, 50, 6, 60, 2 GB RAID Cache
PCIe expansion	4 PCIe x16 mezzanine cards Supports two full-height half-length PCIe x16 standard cards
Operating systems	Microsoft Windows Server 2008/2012 Red Hat Enterprise Linux SUSE Linux Enterprise Server Citrix XenServer VMware ESXi
Operating temperature	5ºC-40ºC (ASHRAE Class A3 compliant)
Dimensions (H x W x D)	60.5 mm x 423 mm x 525 mm

Huawei E9000 Switch Modules

The E9000 supports several types of switch modules: CX110 GE switch module, CX111 GE switch module,CX116 GE pass through module, CX210 8G FC switch module, CX220 16G FC switch module, CX310 10GE switch module, CX311 10GE/FCoE converged switch module, CX317 10GE pass through module, CX318 10GE pass through module, CX320 converged switch module, CX611 InfiniBand switch module, CX620 InfiniBand EDR switch module, CX710 40GE switch module, and CX912 10GE/FC multi-plane switch module, CX915 GE/FC multi-plane switch module, CX916 10GE/FC multiplane switch module. You can select the one that best suits your service requirements for network I/O. Their detailed specifications are described in the tables below.

CX110 GE switch module

Network interface	12 x GE +4 x 10GE SFP+ uplink 32 x GE downlink Midplane interconnect (can be used as a stack)
Network features	L2:VLAN/MSTP/LACP/Stack/IGMP/Smart Link/Monitor Link L3:RIP/OSPF/ISIS/BGP/VRRP/BFD/PIM/IPV6 QoS:ACL/CAR/DiffServ Security:IPSG/MFF/FSB/DAI/DHCP Snooping/sFlow/Netstream
Management port	2x RS232 management serial ports (one each for services and management)
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

CX111 GE switch module

Network interface	4 x 10GE SFP+, 12 x GE electrical uplink 32 x GE downlink Uplink stacking supported
Network features	L2: VLAN/MSTP/LACP/Stack/IGMP/Smart Link/Monitor Link L3: RIP/OSPF/ISIS/BGP/VRRP/BFD/PIM/IPV6 QoS: ACL/CAR/DiffServ Security: IPSG/MFF/FSB/DAI/DHCP Snooping/sFlow/Netstream
Management port	2 x RS232 management serial ports (one each for services and management)
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

CX116 GE pass-through module

Network interface	32 x GE uplink 32 x GE downlink
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

CX210 8G FC switch module

Network interface	8 x 8G FC uplink ports(SFP+), 4 ports activate in default, other 4 ports activate by license 16 x 8G FC downlink
Network features	Supports the FC mode and AG mode (NPV) Supports the F_Port, E_Port (license required), and N_Port Supports NPIVs, up to 255 NPIVs per port Supports the aggregation of up to eight 8GE ports by using a license Supports advanced zoning (default zoning, port/WWN zoning, and broadcast zoning)
Management port	2 x RS232 management serial ports (one each for services and management)
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

CX220 16G FC switch module

Network interface	12 x GE +4 x 10GE SFP+ uplink 32 x GE downlink Midplane interconnect (can be used as a stack)
Network features	Supports the FC mode and AG mode (NPV) Supports the F_Port, E_Port (license required), and N_Port Supports NPIVs, up to 255 NPIVs per port Supports the aggregation of up to eight 16GE ports by using a license Supports advanced zoning (default zoning, port/WWN zoning, and broadcast zoning)
Management port	2 console (RS232) port, one for device management, the other for FC switch module Support SOL/console, SSH, Web (https), SNMPv1/v3
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

CX310 10GE converged switch module

Network interface	16 x 10GE uplink 32 x 10GE downlink Midplane interconnect supported
Network features	L2: VLAN/MSTP/LACP/TRILL/Stack/IGMP/Smart Link/Monitor Link L3: RIP/OSPF/ISIS/BGP/VRRP/BFD/PIM/IPV6 QoS: DCBX/PFC/ETS/ACL/CAR/DiffServ Security: IPSG/MFF/FSB/DAI/DHCP Snooping/sFlow/Netstream
Management port	2 x RS232 management serial ports (one each for services and management)
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

Huawei E9000 Switch Modules

CX311 10GE/FCoE converged switch module

Network interface	16 x 10GE SFP+ and 8 x 8G FC SFP+ uplink 32 x 10GE downlink Midplane interconnect supported
Network features	L2: VLAN/MSTP/LACP/TRILL/Stack/IGMP/Smart Link/Monitor Link L3: RIP/OSPF/ISIS/BGP/VRRP/BFD/PIM/IPV6 QoS: DCBX/PFC/ETS/ACL/CAR/DiffServ Security: IPSG/MFF/FSB/DAI/DHCP Snooping/sFlow/Netstream FC: supports the FC mode (full fabric) and TR mode (NPV) Supports the F_Port, E_Port (license required), and N_Port Supports NPIVs, up to 255 NPIVs per port Supports hard zoning and soft zoning
Management port	2 x RS232 management serial ports (one each for services and management)
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

CX317 10GE pass-through module

Network interface	Uplink: 32 x 10GE SFP+ ports Downlink: 32 x 10GE ports
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

CX318 10GE pass-through module

Network interface	Uplink: 32 x 10GE SFP+ ports Downlink: 32 x 10GE ports
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

CX320 10GE/40GE/FCoE/FC switch module

Network interface	8 x 10GE + 2 x 40GE uplink, with 8 x 10GE/8G FC flexible interface card optional 32 x 10GE downlink
Network features	L2/L3/SmartLink/Monitor Link/BFD/VRRP/SmartChannel Supports FSB/FCF/NPV Openflow1.3/VXLAN
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

CX611 InfiniBand QDR/FDR switch module

Network interface	18 QDR/FDR InfiniBand QSFP+ uplink 16 QDR/FDR InfiniBand downlink
Network features	Multicast forwarding and replication/load balancing/re-route around failed link/VL/SL/SL to VL mapping/SM/SMA/Low latency forwarding/credit based flow control
Management port	In-band management
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

CX620 InfiniBand EDR switch module

Network interface	18 EDR InfiniBand uplink 16 EDR InfiniBand downlink
Network features	Compliant with IBTA 1.21 and 1.3 9 virtual lanes:8 data + 1 management 256 to 4Kbyte MTU Adaptive Routing
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

CX710 40GE switch module

Network interface	8 x 40GE QSFP+ uplink, among which 6*40GE uplink ports can be converted into four 10GE ports respectively 16 x 40GE downlink, each port can be converted into two 10GE ports Midplane interconnect supported
Network features	L2: VLAN/MSTP/LACP/TRILL/Stack/IGMP/Smart Link/Monitor Link L3: RIP/OSPF/ISIS/BGP/VRRP/BFD/PIM/IPV6 QoS: DCBX/PFC/ETS/ACL/CAR/DiffServ Security: IPSG/MFF/FSB/DAI/DHCP Snooping/sFlow/Netstream
Management port	2 x RS232 management serial ports (one each for services and management)
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

Huawei E9000 Switch Modules

CX912 10GE/F C multi-plane switch module

Network interface	16 x 10GE SFP+ and 8 x 8G FC SFP+ uplink, 4 FC ports activate in default, other 4 FC ports activate by license 32 x 10GE/16 x 8G FC downlink Midplane interconnect supported
Network features	L2: VLAN/MSTP/LACP/TRILL/Stack/IGMP/Smart Link/Monitor Link L3: RIP/OSPF/ISIS/BGP/VRRP/BFD/PIM/IPV6 QoS: DCBX/PFC/ETS/ACL/CAR/DiffServ Security: IPSG/MFF/FSB/DAI/DHCP Snooping/sFlow/Netstream Supports the FC mode and AG mode (NPV) Supports the F_Port, E_Port (license required), and N_Port Supports NPIVs, up to 255 NPIVs per port Supports the aggregation of up to eight 8G ports by using a license Supports advanced zoning (default zoning, port/WWN zoning, and broadcast zoning)
Management port	2 x RS232 management serial ports (one each for services and management)
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

CX915 GE/FC multi-plane module

Network interface	4 x 10GE SFP+ and 12 x GE and 8 x 8G FC SFP+ uplink 32 x GE 16 x 8G FC downlink Stacking through uplink supported
Network features	L2: VLAN/MSTP/LACP/TRILL/Stack/IGMP/Smart Link/Monitor Link L3: RIP/OSPF/ISIS/BGP/VRRP/BFD/PIM/IPV6 QoS: DCBX/PFC/ETS/ACL/CAR/DiffServ Security: IPSG/MFF/FSB/DAI/DHCP Snooping/sFlow/Netstream Integrates a Qlogic FC switch
Management port	2 x RS232 management serial ports (one each for services and management)
Dimensions (H x W x D)	388.55 mm x 35.06 mm x 272.15 mm

CX916-10GE/FC multi-plane switch module

Network interface	8 x 10GE/25GE SFP+ and 2 x 40GE QSFP+ and 8 x 16G FC uplink One flexible interface card optional 32 x 10GE and 16 x 16G FC downlink Stacking through uplink supported
Network features	L2/L3/SmartLink/Monitor Link/BFD/VRRP Openflow1.4/VXLAN FC: Integrate QLogic FC Switch
Management port	1 x RS232 management serial port
Dimensions (H x W x D)	35.06mm x 272.15mm x 388.55mm

For more information

To learn more about Huawei's 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.