HUAWEI Tecal RH2285H V2 Rack Server
V100R002

White Paper

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About This Document

Purpose

This document describes the appearance, features, technical specifications, and configurations of the HUAWEI Tecal RH2285H V2 rack server.

Intended Audience

This document is intended for:

- Marketing personnel
- Sales engineers
- Server customers

Change History

Changes between document issues are cumulative. The latest document issue contains all changes made in previous issues.

Issue V1.0 (2013-04-30)

This issue is the first official release.

Contents

1 Overview

1.1 Product Positioning

The HUAWEI Tecal RH2285H V2 (RH2285H V2 for short) is a generic 2 U dual-socket rack server launched by Huawei to meet customers' requirements for the Internet, Internet Data Center (IDC), cloud computing, enterprise market applications, and telecom service applications.

The RH2285H V2 features high-performance computing, large capacity, low power consumption, high scalability and reliability, and easy management and deployment. It applies to the scenarios that use databases, videos, photo sharing, backup servers, web search, basic enterprise applications, and telecom service applications.

The RH2285H V2 has three models:

- RH2285H V2 (8 hard disks)

  Provides eight front 2.5" SAS/SATA hard disks or SSDs. Figure 1-1 shows the RH2285H V2 (8 hard disks).

- RH2285H V2 (14 hard disks)

  Provides 12 front 3.5" SAS/SATA disks, or twelve 2.5-inch SAS/SATA hard disks or SDDs and two rear 2.5-inch SAS/SATA disks. Figure 1-2 shows the RH2285H V2 (14 hard disks).

- RH2285H V2 (26 hard disks)

  Provides 24 front 2.5-inch SAS/SATA hard disks or SDDs and 2 rear 2.5-inch SAS/SATA disks. Figure 1-3 shows the RH2285H V2 (26 hard disks).

Figure 1-1 RH2285H V2 (8 hard disks)

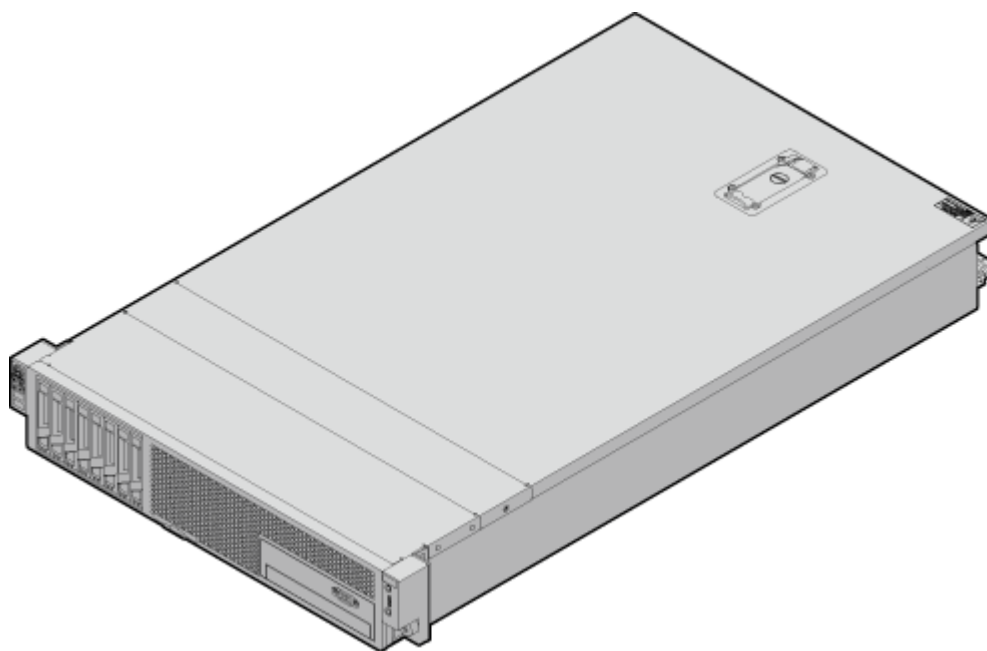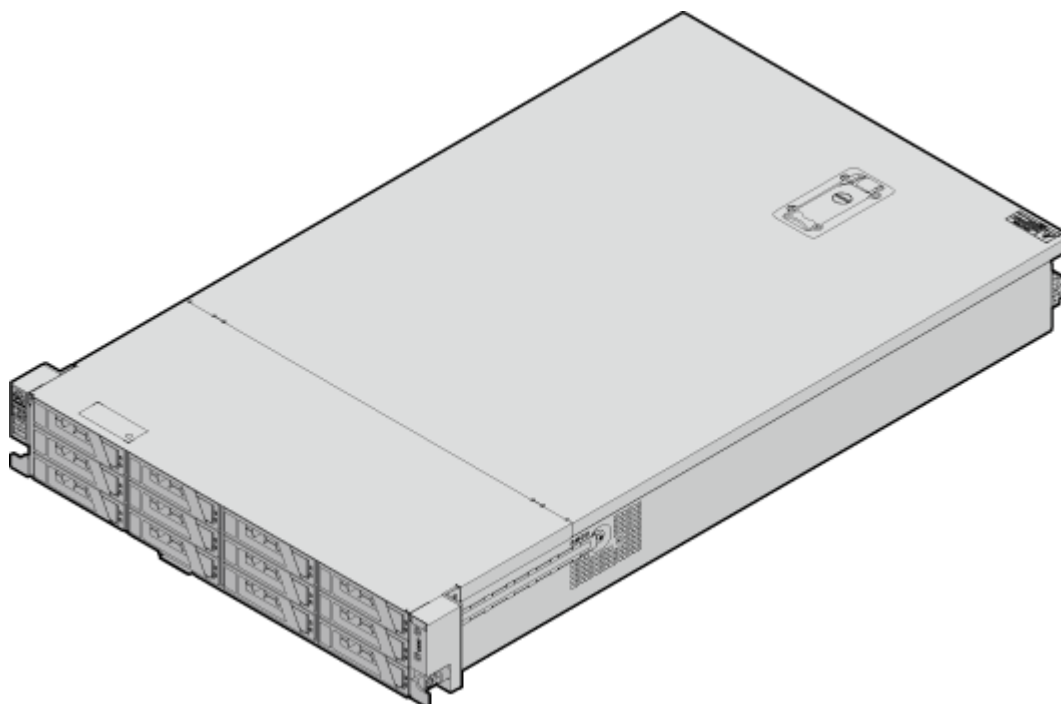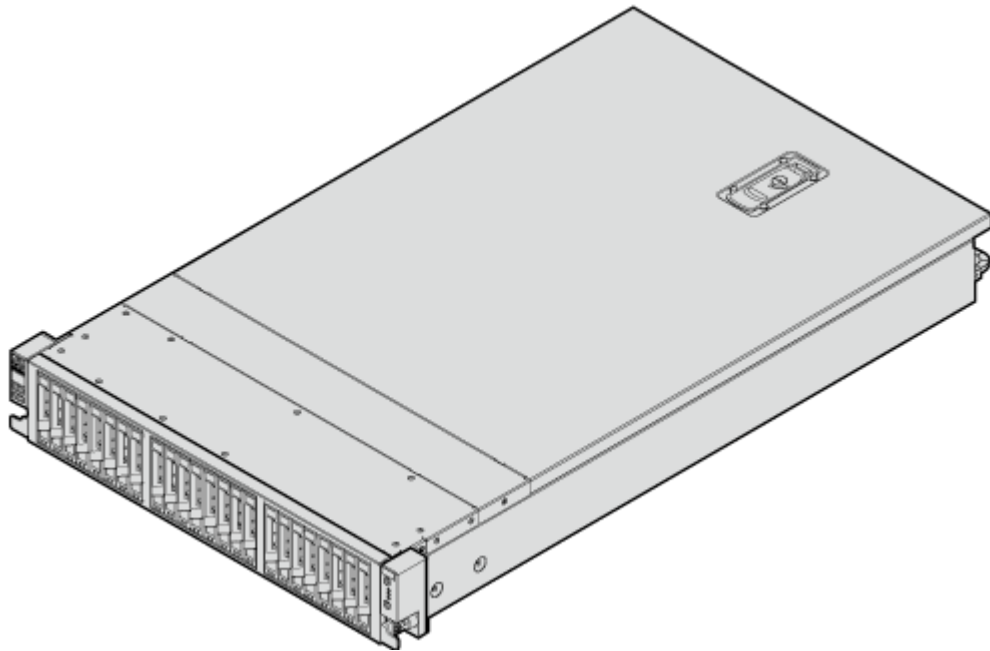**Figure 1-2** RH2285H V2 (14 hard disks)
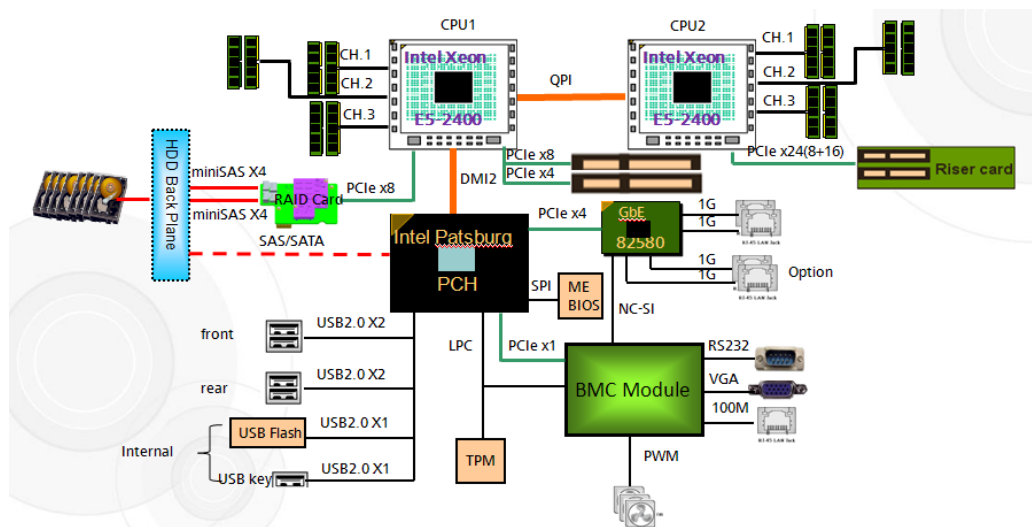
Figure 1-3 RH2285H V2 (26 hard disks)

1.2 System Design

The RH2285H V2 is developed based on the latest Intel Romley-EN platform and supports Intel® Xeon® E5-2400 series processors and up to 12 double data rate 3 (DDR3) dual in-line memory modules (DIMMs).

Figure 1-4 shows the RH2285H V2 system design.

Figure 1-4 RH2285H V2 system design

2 Features

Performance and Scalability

The RH2285H V2 offers the following features to boost performance and improve scalability:

- The RH2285H V2 uses the Intel® Xeon® E5-2400 series processors. Each processor has up to eight cores and a L3 cache of 20 MB and 64-bit instruction set at a frequency of 2.3 GHz, with one 8 GT/s QuickPath Interconnect (QPI) link between processors. This enables the RH2285H V2 to provide optimal processing performance.

- Each RH2285H V2 supports two processors, 16 cores, and 32 threads to maximize the concurrent execution of multithreaded applications.

- Intelligent and adaptive system performance provided by Intel's Turbo Boost Technology 2.0 enables the processor cores to run at maximum speeds during peak workloads by temporarily going beyond the processor thermal design power (TDP).

- Intel's Hyper-Threading Technology boosts performance for multithreaded applications by enabling concurrent execution of multithreaded applications within each processor core, up to two threads per core.

- Intel's Virtualization Technology integrates hardware-level virtualization functions to allow operating system (OS) vendors to better use hardware for addressing virtualization workloads.

- Integrated with Intel Advanced Vector Extensions (AVX), the RH2285H V2 improves floating-point computing performance for computing-intensive applications.

- A total of 12 DDR3 error checking and correcting (ECC) registered DIMMs (RDIMMs) provide a maximum speed of 1600 MHz and a maximum memory capacity of 384 GB.

- The Intel® Xeon® E5-2400 series processors provide a maximum memory bandwidth of 76.8 GB/s in theory.

- The use of solid-state drives (SSDs) provides better I/O performance than using hard disks or using SSDs and hard disks. An SSD supports up to 100 times more I/O operations per second (IOPS) than a typical hard disk.

- The RH2285H V2 supports flexible hard disk configurations and provides elastic and scalable memory capacities to satisfy capacity and upgrade requirements.

- The RH2285H V2 provides optional three types of integrated NICs.

- The RH2285H V2 supports peripheral component interconnect express (PCIe) 3.0, which increases the maximum I/O bandwidth by 60% (8 GB/s) compared with PCIe 2.0.

- The Intel integrated I/O technology enables the PCIe 3.0 controller to be integrated into the Intel® Xeon® E5-2400 series processors. This shortens I/O latency and enhances overall system performance.

Availability and Serviceability

The RH2285H V2 provides the following features to improve availability and serviceability:

- The RH2285H V2 uses carrier-class components and follows the engineering process, which dramatically improves system reliability.

- The RH2285H V2 provides hot-swappable serial advanced technology attachment (SATA) hard disks, serial attached small computer system interface (SAS) hard disks, or SSDs. It supports RAID 0, 1, 1E, 10, 5, 50, 6, and 60 with a RAID cache, and uses backup battery units (BBU) or supercapacitor for power-off protection.

- The UID and HLY indicators on the front panel and the baseboard management controller (BMC) web user interface (WebUI) help O&M personnel quickly locate the faulty components. This simplifies servicing, accelerates troubleshooting, and helps improve system availability.

- SSDs offer better reliability than hard disks, prolonging system uptime.

- The integrated BMC module (iMana) continuously monitors system parameters, triggers alarms, and performs recovery actions to minimize system downtime caused by failures.

- For the RH2285H V2 used in China, Huawei provides three-year warranty and 5 x 9 x Next Business Day (NBD) return for repair services. Huawei also provides optional service upgrades. For details about the 5 x 9 x NBD, see Table 7-2.

- For the RH2285H V2 used outside China, Huawei provides three-year warranty and 9 x 5 x 45 calendar days shipment (CDS) return for repair services. For details about the 9 x 5 x 45 CDS, see Table 7-2.

Manageability and Security

The RH2285H V2 provides the following features to enhance manageability and security:

- The built-in iMana monitors server running status and provides remote management.

- Adopts the basic input output system (BIOS) that conforms to unified extensible firmware interface (UEFI) for powering on and detecting devices. UEFI increases setting, configuring, and updating efficiencies, and simplifies error handling.

- The optional trusted platform module (TPM) 1.2 provides advanced encryption functions, such as digital signatures and remote authentication.

- The industry-standard advanced encryption standard–new instruction (AES NI) implements fast and strong encryption.

- The Intel Execute Disable Bit (EDB) function works with the supported OS to prevent certain types of malicious buffer overflow attacks.

- The Intel Trusted Execution Technology provides enhanced security by using hardware-based resistance against malicious software attacks, allowing an application to run in an isolated space that is protected from all other applications running on the OS.

- The network controller sideband interface (NC-SI) feature supports multiplexing of management and service network ports, maximizing return on investment (ROI). The NC-SI function is enabled or disabled by the iMana 200 intelligent management system or BIOS. The NC-SI is disabled by default.

- The network ports support wake on LAN (WOL), preboot execution environment (PXE) and port binding, which enrich the manageability and flexibility of the server.

- The RAID controller support to monitor the disk S.M.A.R.T. predictive failure

- The RAID controller support to be managed by management software.

📖 **NOTE**

The NCSI feature supports the following configurations:

- The service network port can be bound to the network port NIC Mezz of the NIC on the server or any network port of the NIC. The host network port 1 is used by default.
- The service network port supports enabling and disabling the virtual local network ID (VLAN ID) and its configuration. The VLAN ID is disabled by default. The default value is 0.
- The service network port supports IPv4 and IPv6 addresses. You can configure the IP address, subnet mask, default gateway, or prefix length of the IPv6 address.

Energy Efficiency

The RH2285H V2 offers the following features to save energy:

- The RH2285H V2 uses 460 W or 800 W 80 Plus Platinum power supply units (PSUs) with 94% power efficiency at 50% loads.
- The Intel® Xeon® E5-2400 series processors provide better performance than the previous-generation processors while supporting the same TDP.
- The Intel Intelligent Power Capability powers on or off a processor based on site requirements to reduce power consumption.
- Low-voltage Intel® Xeon® processors consume less energy to satisfy demands of power and thermally constrained data centers and telecommunication environments.
- Low-voltage 1.35 V DDR3 RDIMMs consume 15% less energy than 1.5 V DDR3 RDIMMs.
- SSDs consume 80% less power than hard disks.
- The improved thermal design with energy-efficient fan modules reduces power consumption.
- The efficient voltage regulator down (VRD) PSUs reduce the loss in DC/DC power conversion.
- The RH2285H V2 supports partition-based and intelligent fan speed adjustment and intelligent processor frequency adjustment, reducing power consumption.
- The RH2285H V2 provides power capping and power control functions.
- Hard disks are not powered on at the same time, which reduces the server startup power consumption.

Customization

- Huawei designs the product and owns the intellectual property.
- Huawei provides quick customized development and delivery.

3 Appearance and Structure

3.1 Appearance

3.1.1 Front Panel

The RH2285H V2 has three models: RH2285H V2 (8 hard disks), RH2285H V2 (14 hard disks), and RH2285H V2 (8 hard disks).

Components on the Front Panel

Figure 3-1 shows the front view of the RH2285H V2 (8 hard disks).

Figure 3-1 RH2285H V2 (8 hard disks) front view
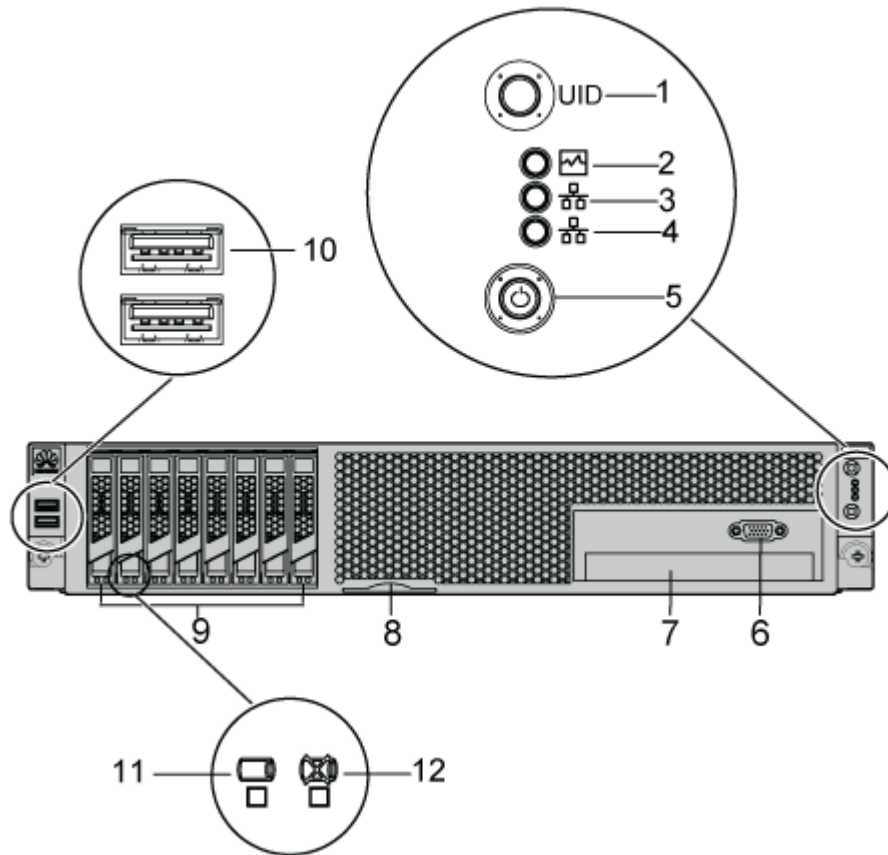
1	UID button/indicator	2	HEALTHY indicator
3	Ethernet port indicator 1	4	Ethernet port indicator 2
5	Power button/indicator	6	VGA port
7	RH2285H V2 (8 hard disks) (optional)	8	Label (showing the RH2285H V2 hardware configurations)
9	Hard disk (numbered 0 to 7 from left to right)	10	USB port
11	Hard disk active indicator	12	Hard disk fault indicator

Figure 3-2 shows the front view of the RH2285H V2 (14 hard disks).

Figure 3-2 RH2285H V2 (14 hard disks) front view
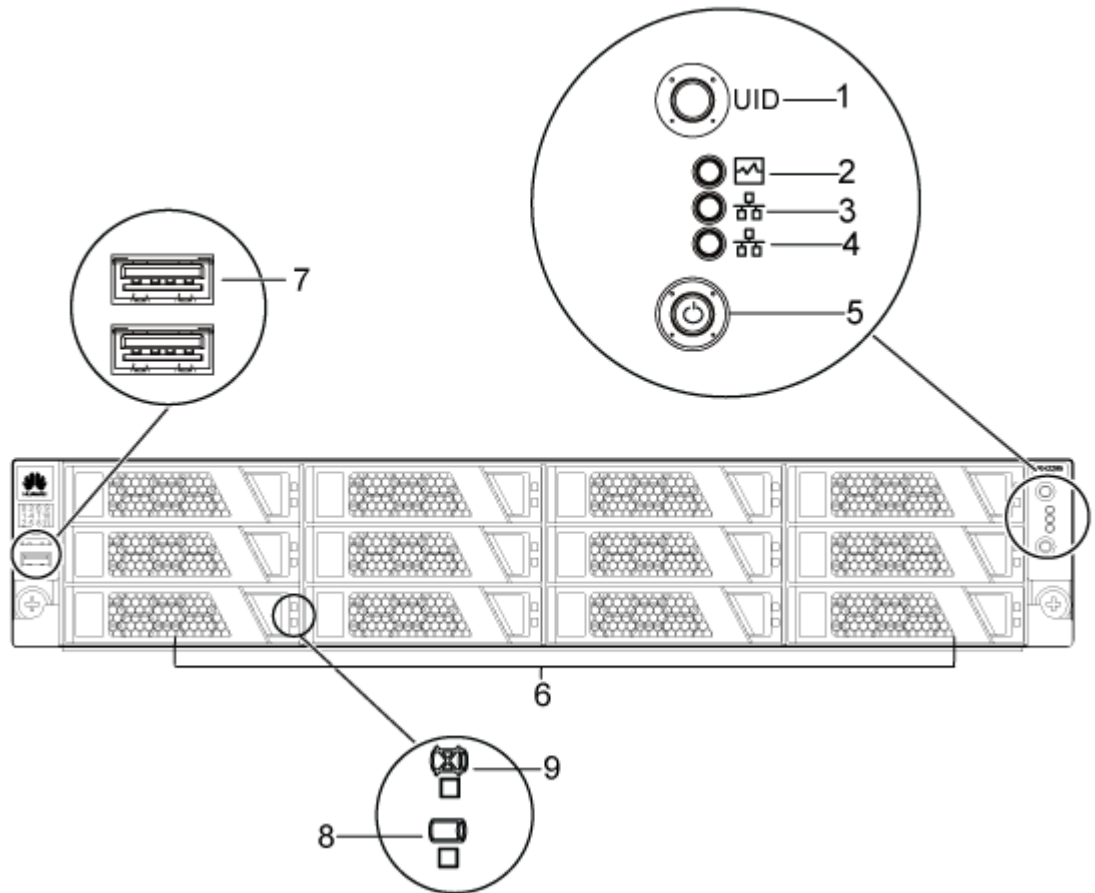
1	UID button/indicator	2	HEALTHY indicator
3	Ethernet port indicator 1	4	Ethernet port indicator 2
5	Power button/indicator	6	Hard disk (numbered 0 to 11 from left to right and from top to bottom)
7	USB port	8	Hard disk active indicator
9	Hard disk fault indicator		

Figure 3-3 shows the front view of the RH2285H V2 (26 hard disks).

Figure 3-3 RH2285H V2 (26 hard disks) front view
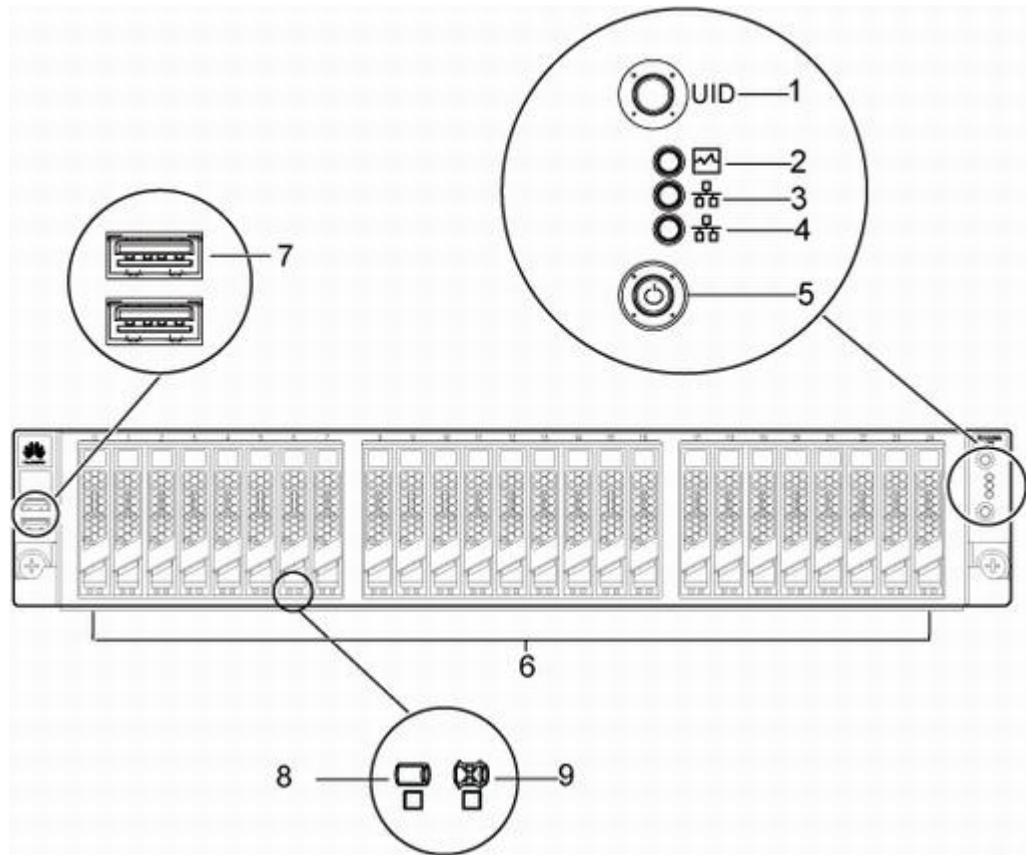
1	UID button/indicator	2	HEALTHY indicator
3	Ethernet port indicator 1	4	Ethernet port indicator 2
5	Power button/indicator	6	Hard disk (numbered 0 to 23 from left to right)
7	USB port	8	Hard disk active indicator
9	Hard disk fault indicator		

Indicators and Buttons

Table 3-1 lists the components on the front panel, using the RH2283 V2 (8 hard disks) as an example. The RH2283 V2 (8 hard disks) front panel provides UID button/indicator, HEALTHY indicator, network port indicator, power button/indicator, and hard disk indicators.

Table 3-1 Indicators on the front panel

Indicator/Button	Color	State
UID button/indicator	Blue	Steady on: The UID button is pressed down. Off: The UID button is not pressed.

HEALTHY indicator	Red and green	Steady green: The server is operating properly. Blinking red: – 2 Hz: A major alarm is generated. – 4 Hz: A critical alarm is generated.
Ethernet port indicator 1	Green	The indicator corresponds to the GE port 1 on the rear panel. See item 6 in Figure 3-4. Steady on: The network port is connected properly. Off: The port is not in use.
Ethernet port indicator 2	Green	The indicator corresponds to the GE port 2 on the rear panel. See item 5 in Figure 3-4. Steady on: The network port is connected properly. Off: The port is not in use.
Power button/indicator	Yellow and green	Steady green: The system is properly powered on. Blinking yellow at 1 Hz: The iMana is being started. Steady yellow: The system is in the standby state. Off: The server is not powered on.
Hard disk active indicator	Green	Steady on: The hard disk is operating properly. Blinking: The data on the hard disk is being accessed. Off: The hard disk is not properly installed or is not powered on, or no hard disk is installed in the slot.
Hard disk fault indicator	Yellow	Steady on: The hard disk fails. Blinking: The RAID on the hard disk is being reconstructed. Off: The hard disk is operating properly.

The RH2283 V2 (8 hard disks) front panel provides two USB2.0 ports and two DB15 ports (for 8 hard disks). Table 3-2 lists the port information.

Table 3-2 Ports on the front panel

Port	Type	Description
USB port	USB 2.0	The port is connected to a USB device, such as, USB flash drive USB keyboard and mouse USB CD-ROM drive for installing an operating system (OS)
VGA port (for 8 hard disks)	DB15	The port is connected to a terminal, such as, a

Port	Type	Description
		monitor or keyboard, video, and mouse (KVM)

3.1.2 Rear Panel

Components on the Rear Panel

Figure 3-4 shows the rear view of the RH2285H V2 with four GE ports.

Figure 3-4 Rear view of the chassis (four GE ports)
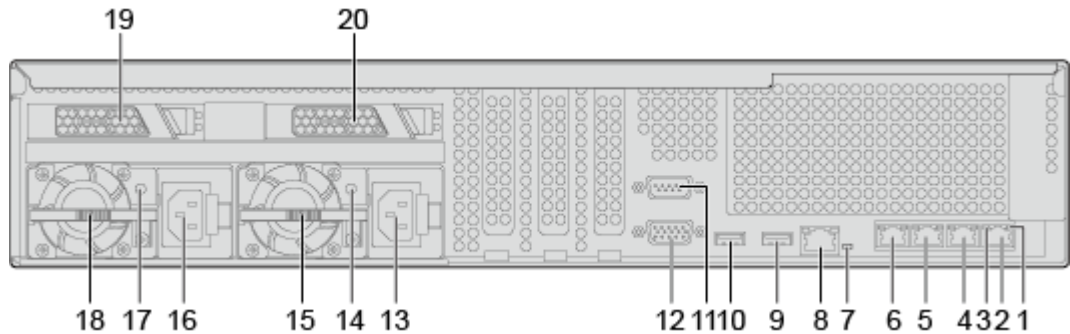
1	Data transmission status indicator	2	GE port 4
3	Data transmission status indicator	4	GE port 3
5	GE port 2	6	GE port 1
7	UID indicator	8	Management network port
9	USB port 2	10	USB port 1
11	Serial port	12	VGA port
13	Power socket of PSU 2	14	PSU 2 indicator
15	PSU 2	16	Power socket of PSU 1
17	PSU 1 indicator	18	PSU 1
19	Rear 2.5" hard disk (an optional configuration for the RH2285H V2 14 hard disks and 26 hard disks)	20	Rear 2.5" hard disk (an optional configuration for the RH2285H V2 14 hard disks and 26 hard disks)

Figure 3-5 shows the rear view of the RH2285H V2 with two 10GE ports.

Figure 3-5 Rear view of the chassis (two 10GE ports)
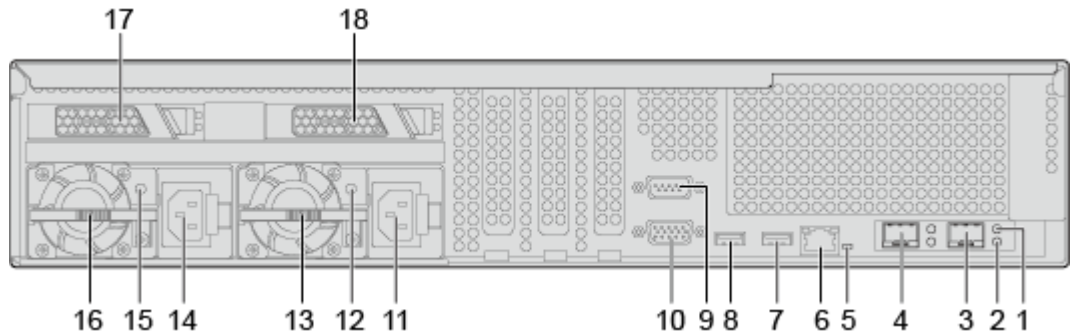
1	Connection status indicator	2	Data transmission status indicator
3	10GE optical port 2	4	10GE optical port 1
5	UID indicator	6	Management network port
7	USB port 2	8	USB port 1
9	Serial port	10	VGA port
11	Power socket of PSU 2	12	PSU 2 indicator
13	PSU 2	14	Power socket of PSU 1
15	PSU 1 indicator	16	PSU 1
17	Rear 2.5" hard disk (an optional configuration for the RH2285H V2 14 hard disks and 26 hard disks)	18	Rear 2.5" hard disk (an optional configuration for the RH2285H V2 14 hard disks and 26 hard disks)

Indicators and Buttons

Table 3-3 describes the indicators and buttons on the rear panel, using the RH2283 V2 (8 hard disks) as an example.

Table 3-3 Indicators

Indicator	Color	Status
Data transmission status indicator	Orange	• Blinking: Data is being transmitted. • Off: No data is being transmitted.
Connection status indicator	Green	• Steady on: The network port is connected properly. • Off: The network port is not connected.
UID indicator	Blue	• Steady on: The button is pressed down. • Off: The button is not pressed.
PSU indicator	Green	• Steady on: The power input is normal.

Indicator	Color	Status
		• Off: No AC power is supplied.
Hard disk active indicator	Green	• Steady on: The hard disk is operating properly. • Blinking: Data on the hard disk is being accessed. • Off: The hard disk is not properly installed or not powered on, or no hard disk is installed.
Hard disk fault indicator	Yellow	• Steady on: The hard disk fails. • Blinking: The RAID on the hard disk is being rebuilt. • Off: The hard disk is operating properly.

Ports

Table 3-4 describes the ports on the rear panel.

Table 3-4 Ports on the rear panel

Port Name	Port Type	Description
Serial port	DB-9	The port is used as the system serial port by default. You can set it to the iMana serial port by using jumpers. The port is used for commissioning.
VGA port	DB-15	The port is connected to a terminal, such as a monitor or KVM.
Management network port	RJ 45	The port is used to log in to the iMana for management.
GE port	RJ 45	The port is connected to a network.
10G optical port	SFP+	The port is used for networking by using optical cables.
USB port	USB 2.0	The port is connected to any of the following USB devices: • USB flash drive • USB keyboard or mouse • USB DVD-ROM drive containing an OS installation package
Power connector	Standard power connector	The connector connects PSUs and the AC input power.

3.1.3 Component

Figure 3-6 shows the RH2285H V2 components, using the RH2285H V2 (8 hard disks) as an example.

Figure 3-6 RH2285H V2 components
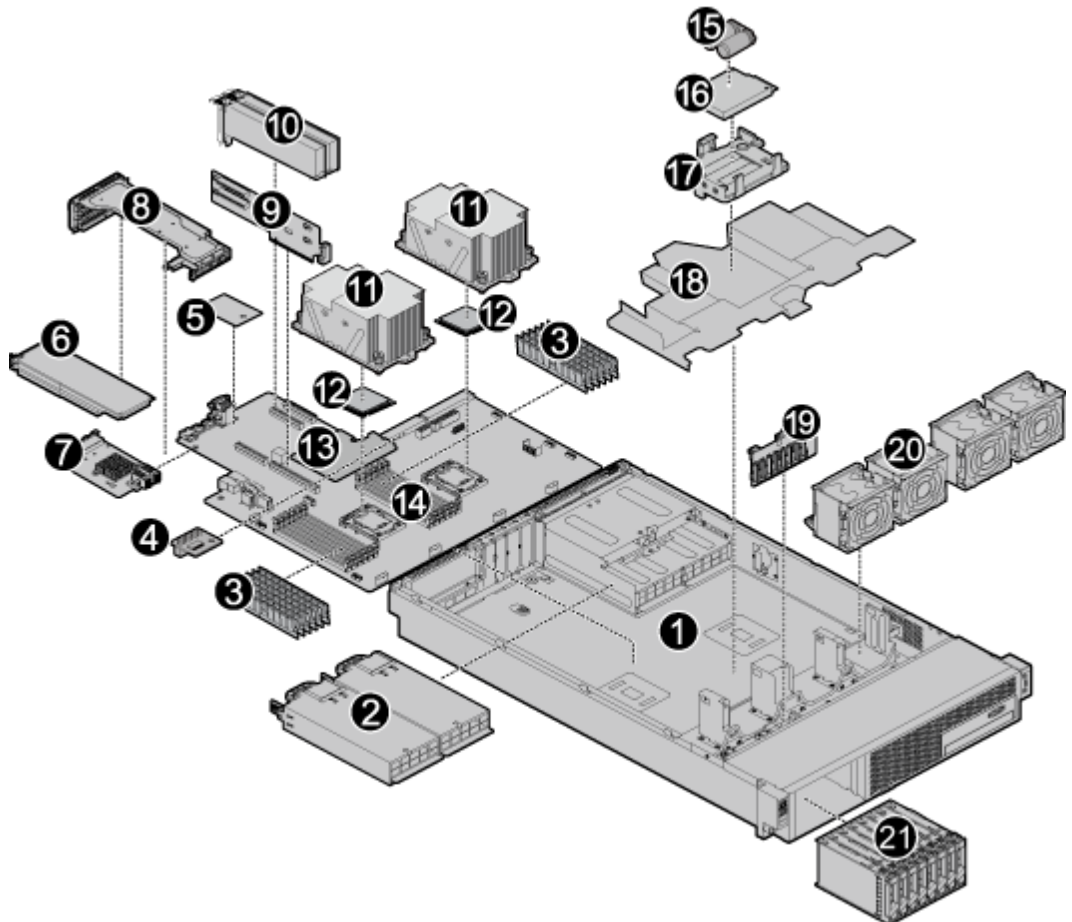
Table 3-5 lists the components of the RH2285H V2.

Table 3-5 Component description of the RH2285H V2

No.	Component	Description
1	Chassis	A chassis provides space for installing all the components.
2	PSUs	The RH2285H V2 uses two AC/DC PSUs in 1+1 redundancy mode. • AC PSU: converts AC power into DC power for the RH2285H V2. • DC PSUs: converts DC power into −12 V DC power for the RH2285H V2. 📖 **NOTE** The PSUs support double-pole/neutral fusing.

No.	Component	Description
3	Memory	• Maximum number of DDR3 RDIMMs: 12 • Maximum memory capacity: 384 GB • Capacity of a single DIMM: 4 GB, 8 GB, 16 GB, or 32 GB • Memory speed: 800/1066/1333/1600 MHz
4	Trusted platform module (TPM)	The TPM is optional. It is a cost-effective solution that complies with the trusted computing group (TCG) standards. It prevents viruses or unauthorized operations, enhancing platform security.
5	Flash card	The flash card is optional. The RH2285H V2 adopts a USB flash storage card, which provides a maximum capacity of 8 GB.

6	PCIe card (installed on the Riser card)	1. PCIe cards connect to two PCIe 3.0x16 ports on Riser card 1. The two ports support:
		  • one PCIe 3.0x16 card of full height and full length
		  • One PCIe 3.0 x8 card of full height and three fourths length. (The physical slot is PCIe 3.0x16.)
		2. PCIe cards connect to three PCIe 3.0x8 ports on Riser card 2. The three ports support:
		  • One PCIe 3.0x8 card of full height and full length
		  • One PCIe 3.0 x8 card of full height and three fourths length.
		  • One PCIe 3.0x8 card of full height and half length
		For details about the PCIe card, see *Huawei Tecal RH2285H V2 Server Compatibility List*.
		📖 **NOTE**
		• Supports GPU cards of the Quadro 2000. GPU cards can be installed on Riser card 1.
		• Supports a maximum of two Quadro 2000 cards of the same specification. Quadro 2000 cards are not permitted to be used at the same time.

7	Network interface card (NIC) controller card	Three types of NICs are supported, providing the following network ports: • Two GE electrical ports, supporting Network Controller Sideband Interface (NCSI). • Four GE electrical ports, supporting NCSI. • Two 10GE optical ports, supporting NCSI.
8	Riser card tray	The tray supports a riser card and its expansion card.
9	Riser card	Two types of riser cards are supported, at the same time, you may choose one of the following types of PCIe slots: • One PCIe 3.0 x16 slot and one PCIe 3.0 x8 slot • Three PCIe 3.0 x8 slots
10	PCIe card (installed on the	PCIe cards connect to the a PCIe 3.0 x4 port and a PCIe 2.0 x4

No.	Component	Description
	mainboard)	port support two standard half-height PCIe cards.
11	CPU heat sink	The heat sink adopts fool-proofing design and cools the CPU.
12	CPU	The RH2285H V2 uses Intel® new-generation high-performance Xeon® E5-2400 (Sandy Bridge-EP) series CPUs to provide a powerful data processing capability. A CPU integrates a memory controller and PCIe controller.

13	Storage controller card	The RH2285H V2 supports the following RAID controller cards:
		• SR120 (LSISAS2308)
		  – Supports RAID 0, 1, 1E, and 10
		  – Provides no battery protection
		• SR220 (LSISAS2208-08)
		  – Supports RAID 0, 1, 10, 5, and 50
		  – Provides iBBU battery protection or super capacitor protection
		• SR320 (LSISAS2208-16)
		  – Supports RAID 0, 1, 10, 5, and 50
		  – Provides iBBU battery protection or super capacitor protection
		• SR420 (LSISAS2208-32)
		  – Supports RAID 0, 1, 10, 5, 50, 6, and 60
		  – Provides iBBU battery protection or super capacitor protection
		• SR520 (LSISAS2208–32)
		  – Supports RAID 0, 1, 10, 5, 50, 6, and 60
		  – Provides iBBU battery protection or super capacitor protection
		• SR620 (LSISAS2208-8)
		  – Supports RAID 0, 1, 10, 5, 50, 6, and 60
		  – Provides iBBU battery protection or super capacitor protection
		The RAID controller cards provide following options:
		• RAID state migration
		• RAID configuration memory
		• Self-diagnosis
		• Web-based remote configuration
		📖 **NOTE**
		The above information is for reference only. For details,see *Huawei Tecal RH2285H V2 Server Compatibility List*.

14	Mainboard	As a basic key component of a server, a mainboard integrates basic components such as the BIOS chip, PCH chip, and expansion slots and provides sockets for installing components

No.	Component	Description
		such as CPUs and DIMMs.
15	Supercapacitor	The supercapacitor is required to provide power-off protection when the RH2285H V2 uses the SR220, SR320, SR420, SR520, or SR620 controller card. The supercapacitor supports RAID data migration and RAID configuration memory for the RH2285H V2.
16	iBBU	The iBBU is required to provide power-off protection when the RH2285H V2 uses the SR220, SR320, SR420, or SR620 controller card. 📖 NOTE Either a supercapacitor or an iBBU is configured for providing the power-off protection for the preceding RAID controller card.
17	Battery tray	A battery tray supports and secures a cache battery.
18	Air duct	The air duct is a ventilation duct in a chassis.
19	Hard disk backplane	The backplane supplies power to HDDs and provides data transmission channels.
20	Fan module	The fan modules dissipate heat for the RH2285H V2. If one fan fails, the other fans run at full speed to ensure heat dissipation. The fan modules are hot-swappable.
21	Hard disk	Hard disks are hot-swappable and store data for the RH2285H V2. The RH2285H V2 supports the following hard disk configurations: • RH2285H V2 (8 hard disks): eight front 2.5" SAS/SATA/SDD hard disks • RH2285H V2 (14 hard disks): 12 front 3.5" SAS/SATA hard disks, or 12 front 2.5" SAS/SATA/SDD hard disks and two rear 2.5" SAS/SATA hard disks 📖 NOTE When you use the upgrade ROM, the server supports twelve 3.5-inch or 2.5-inch and two 2.5-inch SATA HDDs. • RH2285H V2 (26 hard disks): 24 front 2.5" SAS/SATA/SDD hard disks and two rear 2.5" SAS/SATA/SDD hard disks

4 Technical Specifications

Table 4-1 lists the RH2285H V2 technical specifications.

Table 4-1 RH2285H V2 technical specifications

Component	Specifications
Form factor	2U rack server

Microprocessor	• Up to two Intel® new-generation high-performance Xeon® Sandy Bridge-EN
	• Core options: 6 (2.4 GHz), or 8 (2.3 GHz)
	    – Optional for one or two 4-/6-/8-core processors
	    – Maximum frequency: 2.4 GHz
	    – Maximum power consumption: 95 W
	    – Maximum L3 cache: 20 MB
	• One QPI link, up to 8.0 GT/s
	• Maximum memory speed: 1600 MHz
	• Maximum L3 cache: 20 MB
	• Support 64-bit instruction set

Memory	• Maximum number of double data rate 3 (DDR3) DIMMs: 12 • Maximum memory capacity: 384 GB • Capacity of a single DIMM: 4 GB, 8 GB, 16 GB, or 32 GB • Memory speed: DDR3 800/1066/1333/1600 MHz

Storage	The RH2285H V2 supports three types of hard disk configurations:
	• 8 front 2.5" SAS/SATA hard disks or SSDs
	  Maximum storage capacity:
	    – 7.2 TB (SAS hard disks)
	    – 8 TB (SATA hard disks)
	    – 4.8 TB (SDDs)
	• 12 front 3.5" SAS/SATA hard disks and two rear 2.5"SAS/SATA hard disks or SSDs

Component	Specifications
	Maximum storage capacity: – 12.6 TB (SAS hard disks) – 38 TB (SATA hard disks) • 24 front 2.5" SAS/SATA hard disks or SSDs and 2 rear 2.5" SAS/SATA hard disks Maximum storage capacity: – 23.4 TB (SAS hard disks) – 26 TB (SATA hard disks) – 14.4 TB (SSDs) • The hard disk is hot-swappable. • Mixed configuration of SAS and SATA hard disks and SSDs is supported.. The RAID controller cards provide following options: • RAID 0, 1, 10, 5, 50, 6, and 60 • RAID state migration • RAID configuration memory • Self-diagnosis • Web-based remote configuration 📖 **NOTE** RAID is not supported in upgrade ROM. • SAS or SAS RAID cards are optional for the mainboard, which improves the disk storage performance and protects data security. • The RAID card is a controller card, which does not occupy the standard PCIe slot, enhancing system expansion scalability.
Chipset	Intel® C602 chipset.
Network port	Three types of NICs are supported, providing the following network ports: • Two GE electrical ports, supporting Network Controller Sideband Interface (NCSI). • Four GE electrical ports, supporting NCSI. • Two 10GE optical ports, supporting NCSI.
I/O port	• Supports 2 x 2.5" SATA/SAS hard disks ports (for 14 hard disks and 26 hard disks; rear panel) • One internal DVD-ROM connector • Six USB2.0 ports (front panel: 2; rear panel: 2; mianboard: 2; one port on the mainboard is USB Flash port) • One USB Flash port (mainborad) • Four RJ45 network ports or two optical ports (rear panel) • Two VGA ports (one on the front panel, and one on the rear panel) • RS-232 serial port (rear panel) • RJ45 management network port (rear panel)

Component	Specifications
Drive	DVD-ROM (optional for RH2285H V2 8 hard disks)

Expansion slot	• Supports a maximum of six PCIe cards.
	    • one PCIe card of full height and full length
	    • One PCIe card of full height and three fourths length
	    • One PCIe card of full height and half length
	    • Two PCIe cards of half length
	    • One PCIe expansion card for RAID card
	• Supports Huawei PCIe intelligent NIC, improving the IO bandwidth and throughput.
	• Supports two Huawei SDD storage cards, improving the I/O performance on service search, Cache services, and service loading.
	• Supports two GPU cards of Quadro 2000.
	• For details about PCIe cards supported by the RH2285H V2, see *Huawei Tecal RH2285H V2 Server Compatibility List*.

Certification	Including CCC, CE, FCC, IC, VCCI, and C-tick.
Port	Front panel: • Two USB 2.0 ports • One DB-15 video port (only on the RH2285H V2 8 hard disks) Rear panel: • Two USB 2.0 ports • One DB-15 video port • One DB-9 serial port • One RJ-45 system management port • Two RJ-45 GE network ports • One internal USB port • One built-in USB flash port (for the embedded system management program)
Fan module	hot-swappable counter-rotating fans, allowing single-fan failures

PSU	• Two 1+1 redundant hot-swappable PSUs:
	    – 460 W or 800 W AC
	    – 800 W -48 V DC
	• Conversion efficiency: Up to 94% (for 460 W or 800 W AC PSUs and 800 W -48 V DC PSUs)

System management	UEFI, support information query or configuration of memory, processor and other board based devices. Huawei iMana, support IPMI, SOL, KVM over IP, and virtual media. One 10/100 Mbit/s RJ45 management network port.
Security feature	Power-on password, administrator's password, and TPM
Display adapter	Z11 video chip with 64 MB display memory integrated into the

Component	Specifications
	mainboard. The maximum resolution is 1600 x 1200 at 70 Hz with 16 M colors.
Supported OSs	• Microsoft Windows Server 2008 SP2 32bit • Microsoft Windows Server 2008 R2 SP1 64bit • Microsoft Windows Server 2012 64bit • Red Hat Enterprise Linux 6. Update 1 Server for x86/Intel EM64T • SUSE Linux Enterprise Server 11 Service Pack 1 for x86/Intel EM64T • SUSE Linux Enterprise Server 11 Service Pack 2 for x86/Intel EM64T • Oracle Enterprise Linux 6.1 Server X86_64 • Oracle Server VM 3.0.2 • Citrix XenServer 5.6.0 • Citrix XenServer 6.0.0 • VMware ESX 4.1 update2 • VMware ESXi 4.1 update2.0 • VMware ESXi 5.0.0 📖 **NOTE** The above information is for reference only. For details,see *Huawei Tecal RH2285H V2 Server Compatibility List*.

5 System Components

5.1 Processors

The RH2285H V2 supports Intel® Xeon® E5-2400 series processors. If full processor configuration is not required, processor 1 shown in Figure 5-1 is mandatory. Table 5-1 lists the compatible processors for the RH2285H V2. The RH2285H V2 supports a maximum of two processors.

Table 5-1 Compatible processors

No.	BOM	Description
1	41020308	Intel Xeon Processor E5-2403 SandyBridge-EN - 4 Core - 1.8 GHz - QPI 6.4 GT/s - L3 Cache 10 M – 80 W
2	41020309	Intel Xeon Processor E5-2407 SandyBridge-EN - 4 Core - 2.2 GHz - QPI 6.4 GT/s - L3 Cache 10 M – 80 W
3	41020229	Intel Xeon Processor E5-2420 SandyBridge-EN - 6 Core - 1.9 GHz - QPI 7.2 GT/s - L3 Cache 15 M – 95 W
4	41020302	Intel Xeon Processor E5-2430 SandyBridge-EN - 6 Core - 2.2 GHz - QPI 7.2 GT/s - L3 Cache 15 M – 95 W
5	41020303	Intel Xeon Processor E5-2440 SandyBridge-EN - 6 Core - 2.4 GHz - QPI 7.2 GT/s - L3 Cache 15 M – 95 W
6	41020306	Intel Xeon Processor E5-2430L SandyBridge-EN - 6 Core - 2.0 GHz - QPI 7.2 GT/s - L3 Cache 15 M – 60 W
7	41020304	Intel Xeon Processor E5-2450 SandyBridge-EN - 4 Core - 2.1 GHz - QPI 8.0 GT/s - L3 Cache 10 M – 95 W
8	41020307	Intel Xeon Processor E5-2450L SandyBridge-EN - 8 Core - 1.8 GHz - QPI 8.0 GT/s - L3 Cache 20 M – 70 W
9	41020305	Intel Xeon Processor E5-2470 SandyBridge-EN - 8 Core - 2.3 GHz - QPI 8.0 GT/s - L3 Cache 20 M – 95 W

5.2 Memory

Memory Configuration Rules

The RH2285H V2 supports a maximum of 6 DIMMs when one processor is installed and supports a maximum of 12 DIMMs when two processors are installed. Each processor comes with three memory channels, and each channel supports two DIMMs.

Observe the following rules to configure DIMMs:

1. The RH2285H V2 can be configured with either RDIMMs or LRDIMMs.
2. 1.5 V and 1.35 V DIMMs cannot be used in the same server.
3. DIMMs of a server must be of the same specifications.
4. If RDIMMs or UDIMMs are used, each channel supports a maximum of eight ranks.

📖 **NOTE**

> *A channel supports more than eight ranks for LRDIMMs, because a quad-rank LRDIMM generates the same electrical load as a single-rank RDIMM on a memory bus.*

5. The maximum number of DIMMs that can be installed in the server depends on the processor type, DIMM type, number of ranks, and operating voltage. See "Maximum number of DIMMs" in Table 5-2 and Table 5-3.

📖 **NOTE**

> *Number of DIMMs supported by each channel ≤ Number of ranks supported by each channel/Number of ranks supported by each DIMM*

6. All DIMMs in the server operate at the same speed, whichever of the following is the lowest:

- Memory speed supported by a specific processor
- The maximum operating speed varies, depending on the operating voltage and the number of DIMMs for each channel. See "Maximum operating speed" in Table 5-2 and Table 5-3.

Table 5-2 RDIMM configuration rules

Parameter	RDIMM							
Rank	Single rank			Dual rank			Quad rank	
Rated speed (MHz)	1333		1600	1333		1600	1066	
Rated voltage (V)	1.35		1.5	1.35		1.5	1.35	
Operating voltage (V)	1.35	1.5	1.5	1.35	1.5	1.5	1.35	1.5
Maximum number of DIMMs	12	12	12	12	12	12	12	12
Maximum DIMM capacity (GB)	4	4	4	16	16	8	16	16
Maximum memory capacity (GB)	48	48	48	192	192	96	192	192

Parameter	RDIMM							
Maximum memory capacity at the maximum operating speed (GB)	48	48	48	192	192	96	192	192
Maximum operating speed (MHz) — 1 DIMM per channel	1333	1333	1600	1333	1333	1600	800	800
Maximum operating speed (MHz) — 2 DIMMs per channel	1333	1333	1600	1333	1333	1600	800	800

📖 **NOTE**

- The maximum number of DIMMs is given for two-processor configuration. If the RH2285H V2 uses one processor, the maximum number of DIMMs is half the values given in this table.
- The cells highlighted in gray indicate that all DIMM slots are occupied.

Table 5-3 LRDIMM configuration rules

Parameter	LRDIMM	
Rank	Quad rank	
Rated speed (MHz)	1333	
Rated voltage (V)	1.35	
Operating voltage (V)	1.35	1.5
Maximum number of DIMMs	12	12
Maximum DIMM capacity (GB)	32	32
Maximum memory capacity (GB)	384	384
Maximum memory capacity at the maximum operating speed (GB)	128	256
Maximum operating speed (MHz) — 1 DIMM per channel	1333	1333
Maximum operating speed (MHz) — 2 DIMMs per channel	1066	1333

Parameter	LRDIMM

📖 **NOTE**

- The maximum number of DIMMs is given for two-processor configuration. If the RH2285H V2 uses one processor, the maximum number of DIMMs is half the values given in this table.
- The cells highlighted in gray indicate that all DIMM slots are occupied.

Memory Slot Configuration Rules

- The RH2285H V2 supports 4 GB, 8 GB, 16 GB, and 32 GB DIMMs with a maximum memory capacity of 384 GB in full configuration.

- The RH2285H V2 provides 12 DDR3 slots for installing DIMMs. Each processor integrates three memory channels. The memory channels for processor 1 are 1A, 1B, and 1C, and those for processor 2 are 2A, 2B, and 2C. Table 5-4 lists memory channels for each processor.

Table 5-4 Memory channels for each processor

Channel Location	Memory channel	Composition
Processor 1	1A	J76 DIMM010 (1A1)
		J77 DIMM011 (1A2)
	1B	J78 DIMM020 (1B1)
		J79 DIMM021 (1B2)
	1C	J80 DIMM030 (1C1)
		J81 DIMM031 (1C2)
Processor 2	2A	J82 DIMM110 (2A1)
		J83 DIMM111 (2A2)
	2B	J84 DIMM120 (2B1)
		J85 DIMM121 (2B2)
	2C	J86 DIMM130 (2C1)
		J87 DIMM131 (2C2)

Slots 1A1, 1B1, 1C1, 2A1, 2B1 and 2C1 are the primary slots of channels 1A, 1B, 1C, 2A, 2B, and 2C respectively.

Figure 5-1 shows the positions for installing DIMMs.

Figure 5-1 Positions for installing DIMMs
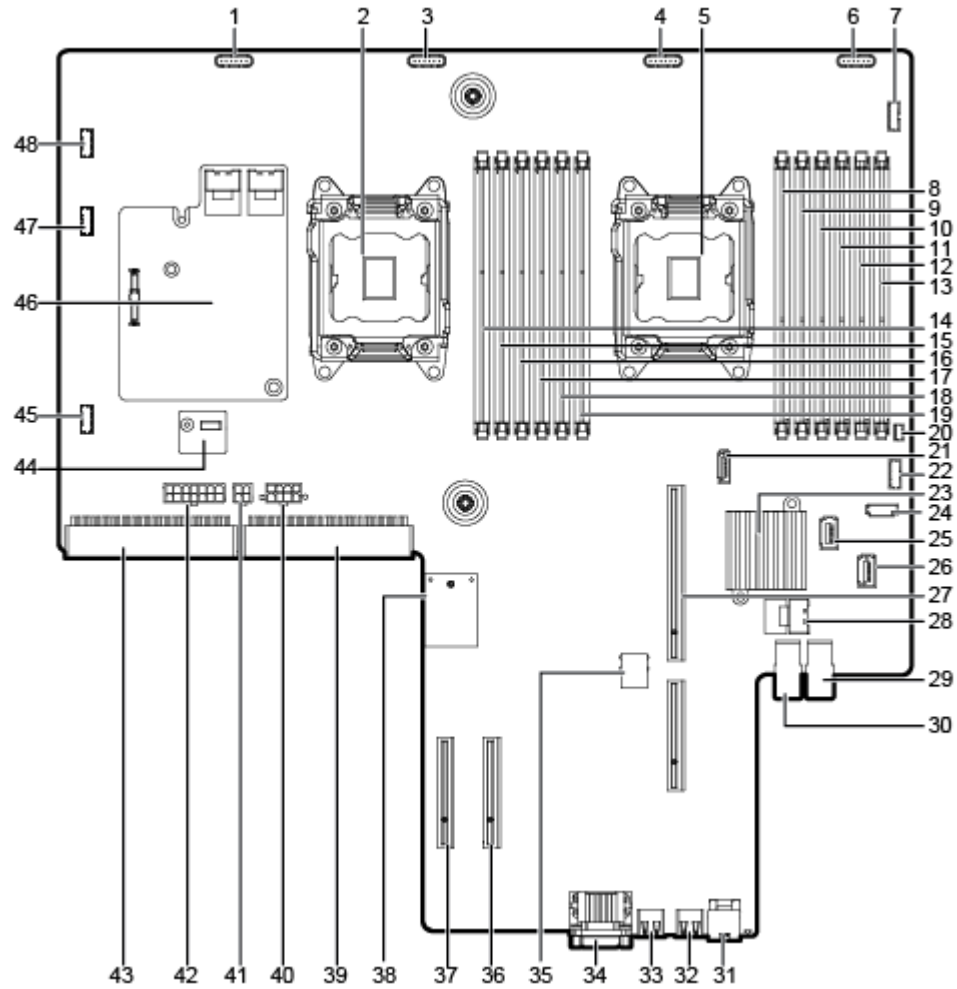
1	J109 FAN4 port	2	CPU1
3	J108 FAN3 port	4	J107 FAN2 port
5	CPU2	6	J106 FAN1 port
7	J101 LCIA CARD port	8	J87 DIMM131 (2C2)
9	J86 DIMM130 (2C1)	10	J85 DIMM121 (2B2)
11	J84 DIMM120 (2B1)	12	J83 DIMM111 (2A2)
13	J82 DIMM110 (2A1)	14	J81 DIMM031 (1C2)
15	J80 DIMM030 (1C1)	16	J79 DIMM021 (1B2)
17	J78 DIMM020 (1B1)	18	J77 DIMM011 (1A2)
19	J76 DIMM010 (1A1)	20	J163 LSI_KEY CONN
21	J127 SATA4 port	22	J102 HDD_BP port
23	PCH	24	J132 SATA5 port

25	J137 mini SAS CONN2	26	J129 mini SAS CONN1
27	J158 RISER SLOT (for CPU2)	28	J138 SATA CONN1
29	J162 IO CARD port	30	J161 IO CARD port
31	J73 FE PORT	32	J3 USB CONN2
33	J2 USB CONN1	34	J4 VGA + COM CONN
35	J120 USB CONN3	36	J111 x4 PCIE SLOT (for PCH)
37	J110 x4 PCIE SLOT (for CPU1)	38	J91 USB FLASH_ACT port
39	J10 PSU CONN2	40	J148 GPU_PWR port
41	J160 F_HDD_PWR port	42	J93 B_HDD_PWR port
43	J9 PSU CONN1	44	J128 TPM slot
45	J141 REAR_HDD port	46	J142 RAID_CARD port
47	J157 VGA_CARD port	48	J103 RCIA_CARD port

Table 5-5 describes the sequence in which the DIMMs are installed.

Table 5-5 DIMM installation sequence

Processor	DIMM Slot Installation Sequence
Processor 1	1A1, 1B1, 1C1, 1A2, 1B2, 1C2
Processor 1 and processor 2	1A1, 2A1, 1B1, 2B1, 1C1, 2C1, 1A2, 2A2, 1B2, 2B2, 1C2, 2C2

Memory Protection

The RH2285H V2 employs the ECC for memory protection.

Supported DIMM Models

Table 5-6 lists the DIMMs supported by the RH2285H V2.

NOTE

Table 5-6 is for reference only. For details about the components that can be purchased, consult the local Huawei sales representatives.

Table 5-6 DIMMs supported by the RH2285H V2

No.	BOM	Description	Maximum Number of DIMMs
1	06200110	DDR3 RDIMM-4 GB-2Rx8 2 Gbit-LV 1.35 V 1333-Height 30 mm	

No.	BOM	Description	Maximum Number of DIMMs
2	06200111	DDR3 RDIMM-8 GB-2Rx4 2 Gbit-LV 1.35 V 1333-Height 30 mm	
3	06200107	DDR3 RDIMM-16 GB-2Rx4 4 Gbit-LV 1.35 V 1333-Height 30 mm	
4	06200121	DDR3 RDIMM-16 GB-2Rx4 4 Gbit-1.5 V 1600-Height 30 mm	

5.3 Storage

The RH2285H V2 supports the following hard disk configurations:

- RH2285H V2 (8 hard disks): 8 x 2.5" SAS/SATA hard disks or SSDs.
- RH2285H V2 (14 hard disks): 12 x 3.5" and 2 x 2.5" SAS/SATA hard disks.
- RH2285H V2 (26 hard disks): 24 x 2.5" SAS/SATA hard disks or SDDs and 2 x 2.5" SAS/SATA hard disks.

Table 5-7 lists the compatible hard disks.

📖 **NOTE**

Table 5-7 is for reference only. For details about the components that can be purchased, consult the local Huawei sales representatives.

Table 5-7 Compatible hard disks

No.	BOM	Description
1	02310KPR	10000 RPM - 2.5" SAS 6 Gbps – 300 GB HDD
2	02310KPU	10000 RPM - 2.5" SAS 6 Gbps – 600 GB HDD
3	02310LYS	10000 RPM - 2.5" SAS 6 Gbps – 900 GB HDD
4	02310LHE	15000 RPM - 2.5" SAS 6 Gbps – 146 GB HDD
5	02310MMV	15000 RPM - 2.5" SAS 6 Gbps – 300 GB HDD
6	02310LBB	7200 RPM - 2.5" SATA 6 Gbps – 500 GB HDD
7	02310LAY	7200 RPM - 2.5" SATA 6 Gbps – 1000 GB HDD
8	02310MLB	7200 RPM - 2.5" NL SAS 6 Gbps – 1000 GB HDD
9	02310KSX	MLC - 2.5" SATA 3 Gbps – 160 GB SSD
10	02310LTB	MLC - 2.5" SATA 3 Gbps – 300 GB SSD
11	02310MMS	MLC - 2.5" SATA 3 Gbps – 600 GB SSD
12	02310LAV	15000 RPM - 3.5" SAS 6 Gbps – 300 GB HDD

No.	BOM	Description
13	02310LAX	15000 RPM - 3.5" SAS 6 Gbps – 600 GB HDD
14	02310MKV	7200 RPM - 3.5" NL SAS 6 Gbps – 1000 GB HDD
15	02310MKX	7200 RPM - 3.5" NL SAS 6 Gbps – 2000 GB HDD
16	02310MLA	7200 RPM - 3.5" NL SAS 6 Gbps – 3000 GB HDD
17	02310LHB	7200 RPM - 3.5" SATA 6 Gbps – 500 GB HDD
18	02310LGW	7200 RPM - 3.5" SATA 3 Gbps – 1000 GB HDD
19	02310LGY	7200 RPM - 3.5" SATA 6 Gbps – 1000 GB HDD
20	02310LGX	7200 RPM - 3.5" SATA 3 Gbps – 2000 GB HDD
21	02310LHA	7200 RPM - 3.5" SATA 6 Gbps – 2000 GB HDD
22	02310QKW	7200 RPM - 3.5" SATA 6Gbps - 2000GB HDD
23	02310MKT	7200 RPM - 3.5" SATA 6 Gbps – 3000 GB HDD

Table 5-8 lists the RAID controller cards compatible with the RH2285H V2.

📖 **NOTE**

- Table 5-8 is for reference only. For details about the components that can be purchased, consult the local Huawei sales representatives.
- If SR220, SR320, SR420, or SR620 is installed, a BBU is required.

Table 5-8 Compatible RAID controller cards

No.	BOM	Description
1	03021ENL	SR120 Server RAID Controller- SAS 6 GB/SATA 6 GB - RAID0/RAID1/RAID1E/RAID10
2	02310KTK	SR220 Server RAID Controller- SAS 6 GB/SATA 6 GB - Cache 512 MB - 8 Disk- RAID0/RAID1/RAID10/RAID5/RAID50
3	02310KTM	SR620 Server RAID Controller- SAS 6 GB/SATA 6 GB - Cache 512 MB - Disk- RAID0/RAID1/RAID10/RAID5/RAID6 /RAID50/RAID60
4	02310KTL	SR320 Server RAID Controller- SAS 6 GB/SATA 6 GB - Cache 512 MB - 6 Disk- RAID0/RAID1/RAID10/RAID5/RAID50
5	02310MGE	SR320 Server RAID Controller- SAS 6 GB/SATA 6 GB - Cache 1 GB - 6 Disk- RAID0/RAID1/RAID10/RAID5/RAID50
6	02310MGD	SR220 Server RAID Controller- SAS 6G/SATA 6G - Cache 1G -8 Disk- RAID0 / RAID1 / RAID10 /RAID5 / RAID50

No.	BOM	Description
7	02310MGF	SR620 Server RAID Controller- SAS 6 GB/SATA 6 GB - Cache 1 GB - Disk- RAID0/RAID1/RAID10/RAID5/RAID6/RAID50/RAID60
8	02310MGS	SR320C Server RAID Controller- SAS 6 GB/SATA 6 GB - Cache 1 GB - 6 Disk- RAID0/RAID1/RAID10/RAID5/RAID50-Only Support SuperCap
9	02310MXP	SR420 Server RAID Controller- SAS 6G/SATA 6G - Cache 512MB -32 Disk- RAID0 / RAID1 / RAID10 /RAID5 / RAID6 /RAID50 /RAID60
10	02310MGT	SR620C Server RAID Controller- SAS 6 GB/SATA 6 GB - Cache 1 GB - Disk- RAID0/RAID1/RAID10/RAID5/RAID6/RAID50/RAID60 - Only Support SuperCap
11	02310MXU	SR420C Server RAID Controller- SAS 6G/SATA 6G - Cache 1G -32 Disk- RAID0 / RAID1 / RAID10 /RAID5 / RAID6 /RAID50 /RAID60 - Only Support SuperCap
12	02310MXS	SR420 Server RAID Controller- SAS 6G/SATA 6G - Cache 1G -32 Disk- RAID0 / RAID1 / RAID10 /RAID5 / RAID6 /RAID50 /RAID60 - Only Support Battery
13	02310NKT	SR520C Server RAID Controller- SAS 6G/SATA 6G - Cache 1G -32 Disk- CacheCade2.0 -RAID0 / RAID1 / RAID10 /RAID5 / RAID6 /RAID50 /RAID60 - Only Support SuperCap

Table 5-9 lists the performance of different RAID levels, the minimum number of hard disks required, and hard disk utilization.

Table 5-9 RAID level comparison

RAID Level	Reliability	Read Performance	Write Performance	Minimum Number of Hard Disks	Hard Disk Utilization
RAID 0	Low	High	High	2	100%
RAID 1	High	Low	Low	2	1/N
RAID 5	Medium	High	Medium	3	(N-1)/N
RAID 6	Medium	High	Medium	4	(N-2)/N
RAID 10	High	Medium	Medium	4	M/N
RAID 50	High	High	Medium	6	(N-M)/N
RAID 60	High	High	Medium	8	(N-M x 2)/N
NOTE					
N indicates the number of member hard disks in a RAID group. M indicates the number of subgroups of a RAID group.					

The RH2285H V2 connects to external storage devices by using host bus adapter (HBA) cards. Table 5-10 lists the compatible external storage devices.

Table 5-10 Compatible external storage devices

No.	BOM	Description	Auxiliary HBA Cards
1	0125G03H	OceanStorTM S3900 series storage	06030220, 06030221 06030217, 06030216

5.4 I/O Expansion

The RH2285H V2 provides 16 PCIe I/O expansion cards and four PCIe SSD cards. You can select the following expansion cards by card type and rate:

- GE expansion card
- 10GE expansion card
- LC expansion card
- Fiber channel (FC) expansion card
- SSD card

Table 5-11 lists the expansion cards compatible with the RH2285H V2.

NOTE

- Table 5-11 is for reference only. For details about the components that can be purchased, consult the local Huawei sales representatives.
- The standard PCIe cards numbered from 1 to 9 can only pass the compatibility authentication of Windows2008 SP2, Windows2008 R2 SP1, and RHEL 6U1/SLES 11.1.
- The standard PCIe card numbered 20 can only pass the compatibility authentication of NeoKylin3.2-skl for Intel EM64T 64bit, Solaris 10 update 9 32bit, and Ubuntu V10.04.3 for Intel EM64T.

Table 5-11 Compatible expansion cards

No.	BOM	Description	Vendor	Chip Type
1	06310023	Dual Port Gigabit Ethernet Server Adapter, RJ45 Copper, PCIe 2.0 x4 - Half-height half-length	Intel	82576
2	06310025	Quad Port Gigabit Ethernet Card, RJ45 Copper, PCIe 2.0 x4 - Half-height half-length	Intel	82580
3	06310024	Dual Port 10 Gigabit Ethernet Server Adapter, SFP+ Direct Attach Copper, PCIe 2.0 x8 - Half-height half-length	Intel	82599
4	06310026	Dual Port 10 Gigabit Ethernet Server Adapter, LC Fiber Optic, PCIe 2.0 x8 - Half-height half-length	Intel	82599

No.	BOM	Description	Vendor	Chip Type
5	06310038	Dual Port Gigabit Ethernet Server Adapter, RJ45 Copper, PCIe 2.0 x4 - Half-height half-length	Silicom	82576
6	06310039	Dual Port 10 Gigabit Ethernet Server Adapter, SFP+ Direct Attach Copper, PCIe 2.0 x8 - Half-height half-length	Silicom	82599
7	06310040	Quad Port Gigabit Ethernet Card, RJ45 Copper, PCIe 2.0 x4 - Half-height half-length	Silicom	82580
8	06310041	Dual Port 10 Gigabit Ethernet Server Adapter, LC Fiber Optic, PCIe 2.0 x8 - Half-height half-length	Silicom	82599
9	06310042	Quad Port Gigabit Ethernet Card, LC Fiber Optic, PCIe 1.0 x4 - Half-height half-length	Silicom	82571
10	03030PWD	Dual Port 10 Gigabit Ethernet Card, XFP/SFP+, PCIe 2.0 x8 - Half-height half-length	Huawei	82599

□ NOTE

- Table 5-11 is for reference only. For details about the components that can be purchased, consult the local Huawei sales representatives.
- The standard PCIe cards numbered from 1 to 9 can only pass the compatibility authentication of Windows2008 SP2, Windows2008 R2 SP1, and RHEL 6U1/SLES 11.1.
- The standard PCIe card numbered 20 can only pass the compatibility authentication of NeoKylin3.2-skl for Intel EM64T 64bit, Solaris 10 update 9 32bit, and Ubuntu V10.04.3 for Intel EM64T.

5.5 Power Supply

The PSUs in the server chassis provide power for the RH2285H V2.

The input voltage of the PSUs:

- AC: 100 V to 240 V AC power with an input frequency of 50 Hz or 60 Hz
- DC: –48 V to –60 V DC

The output voltage of the PSUs is 12 V DC.

Table 5-12 lists the PSUs compatible with the RH2285H V2.

□ NOTE

- Table 5-12 is for reference only. For details about the components that can be purchased, consult the local Huawei sales representatives.
- DIMMs of a server must be of the same specifications.

Table 5-12 Compatible PSUs

No.	BOM	Description	Vendor	Certification	Power Efficiency	Maximum Input Current
1	02130957	AC/DC Power Module 460 W 90 V-264 V/6~3 A +12 V/38 A 94.0% Platinum	LITEON	CCC, TUV, UL	Platinum	6.0 A
2	02270113	DC/DC Power Module 824 W -38 V- -75 V/26 A +12 V/65 A 93.5% Gold	Emerson	CCC, TUV, UL, CE	Gold	26 A
3	02130950	AC/DC Power Module 824 W 100 V-240 V/10 A +12 V/65 A 94.0% Platinum	Emerson	CCC, TUV, UL, CE	Platinum	10 A

5.6 Peripherals

Table 5-13 lists the peripherals supported on the RH2285H V2.

Table 5-13 Peripherals supported on the RH2285H V2

No.	BOM	Description
1	06020085	DVDRW-CD 24X/DVD 8X, Embedded, SATA, 5 V power
2	06020088	DVDRW-CD 24X/DVD 8X, USB2.0, External, USB 2.0, 5 V power
3	06010186	Solid-State Flash Disk, 8.0 G, USB2.0 interface
4	06010162	Solid-State Flash Disk - SLC - NAND flash- 4.0 G - USB Flash Module

5.7 OSs

Table 5-14 lists the OSs compatible with the RH2285H V2.

📖 NOTE

- Table 5-14 is for reference only. For details about the components that can be purchased, consult the local Huawei sales representatives.
- The Solaris 10u10 does not support virtual CD-ROMs or DVD-ROMs.

Table 5-14 Compatible Oss

No.	Version	Description
1	Windows2008 SP2	Microsoft Windows Server 2008 SP2 32bit Windows Certification URL: ►
2	Windows2008 R2 SP1	Microsoft Windows Server 2008 R2 SP1 64bit Windows Certification URL: ►
3	Windows 2012	Microsoft Windows Server 2012 64bit
4	RHEL 6U1	Red Hat Enterprise Linux 6. Update 1 Server for x86/Intel EM64T Redhat Certification URL: ►
5	SLES 11.1	SUSE Linux Enterprise Server 11 Service Pack 1 for x86/Intel EM64T SUSE Certification URL: ►and ►
6	Oracle 6.1	Oracle Enterprise Linux 6.1 Server X86_64 Oracle Certification URL: ►
7	Oracle VM 3.0.2	Oracle Server VM 3.0.2 Oracle Certification URL: ►
8	Citrix 6.0	Citrix XenServer 6.0.0
9	VMware 4.1	VMware ESX 4.1 update2
10	VMware 4.1	VMware ESXi 4.1 update2
11	VMware 5.0	VMware ESXi 5.0.0 VMware Certification URL: ►

6 Management

The RH2285H V2 uses Huawei's proprietary iMana 200 intelligent management system to implement remote server management. The iMana 200 complies with the intelligent platform management interface (IPMI) V2.0 standards and provides reliable hardware monitoring and management.

The iMana 200 provides the following features:

- Supports KVM and text console redirection.
- Supports remote virtual media.
- Supports IPMI V2.0.
- Supports Simple Network Management Protocol (SNMP) V2c and V3.
- Supports the common information model (CIM).
- Supports web-based logins.

Table 6-1 lists the iMana 200 specifications.

Table 6-1 iMana 200 specifications

Item	Description
Management interface	Supports various management interfaces to implement system integration. The iMana 200 can integrate with any standard management system over the following interfaces: • IPMI V2.0 • CLI • SM_CLP • HTTPS • SNMPV2c and SNMP V3 • WSMAN
Fault detection	Detects faults and accurately locates faults in hardware.
Alarm management	Supports alarm management and reports alarms in various ways such as the SNMP trap, Simple Mail Transfer Protocol (SMTP), and syslog service, to ensure uninterrupted system operation.
Integrated virtual KVM	Provides remote maintenance measures for troubleshooting. The maximum resolution is 1280 x 1024.
Integrated virtual media	Virtualizes local media devices or images to media devices on a remote server, which simplifies OS installation. The virtual DVD-ROM drive supports a transmission rate of up to 8 MB/s.

Item	Description
WebUI	Provides visual WebUIs for quick configuration and information queries. The following web browsers are supported: • IE 6.0 • IE 8.0 • Firefox 9.0 • Chrome 13.0 • Safari
Fault reproduction	Reproduces faults to facilitate rapid fault diagnosis.
Screenshots and videos	Allows you to view screenshots and videos without login, which helps facilitate preventive maintenance inspection (PMI).
DNS/directory service	Supports domain management and directory services, which significantly simplifies network and configuration management.
Dual-image backup	Starts from an image backup if the software fails.
Asset management	Provides intelligent asset management to increase efficiency.
Intelligent power management	Provides the power capping technology to increase deployment density and dynamic energy saving technology to lower operating costs.
IPv6	Supports IPv6 to ensure sufficient IP addresses.
NCSI function	Supports the NC-SI function, helping you access the iMana system over service network ports.

7 Warranty

According to the *Huawei Warranty Policy for Servers & Storage Products*, the RH2285H V2 has a three-year warranty, the DVD-ROM drives and BBUs have a one-year warranty, and the software media has a three-month warranty. The *Warranty Policy* is a series of warranty maintenance upgrades and post-warranty maintenance agreements with a well-defined scope of services, including service hours, response time, terms of service, and service agreement terms and conditions.

The *Warranty Policy* is country-specific. The service types, service levels, response time, and terms and conditions may vary with the countries where the product is used. Not all services described in the *Warranty Policy* are provided to users in all countries. For more information about warranty services in your country, contact Huawei technical support or your local representative office.

Table 7-1 describes the warranty service response time.

Table 7-1 Response time

Service	Response Time	Description	Remarks
Help Desk	24 x 7	Available 24 hours a day, 7 days a week (00:00 to 24:00, Monday to Sunday)	None
Remote troubleshooting		Available 24 hours a day, 7 days a week (00:00 to 24:00, Monday to Sunday)	Response time starts from the moment the technical support accepts a customer's service request to the time technical support contacts the customer to provide remote troubleshooting service.
Online technical support		Huawei support website: available 24 hours a day, 7 days a week (00:00 to 24:00, Monday to Sunday)	None

Service	Response Time		Description	Remarks
Licensing of software updates			Huawei support website: available 24 hours a day, 7 days a week (00:00 to 24:00, Monday to Sunday)	None
Return for repair	Outside China	45 calendar days shipment (CDS), 9 hours a day, 5 days a week	Available 9 hours a day, 5 days a week, excluding official holidays (09:00 to 18:00, Monday to Friday).	The repaired or replacement parts will be shipped within 45 calendar days after Huawei receives the defective parts.
	In China	NBD, 9 hours a day, 5 days a week	Available 9 hours a day, 5 days a week, excluding official holidays (09:00 to 18:00, Monday to Friday).	Service requests submitted after 15:30 will be handled the next workday.

Table 7-2 describes warranty services provided by Huawei.

Table 7-2 Huawei warranty services

Service	Description
Help Desk	Huawei provides 24-hour after-sales technical support such as handling customers requests for troubleshooting or hardware replacement, responding to customer inquiries, handling customer complaints, and collecting suggestions using the dedicated hotline.
Remote troubleshooting	After receiving a service request for rectifying a network or system fault, Huawei technical support engineers first analyze and handle the fault remotely and then resolve the issue as soon as possible. There are two remote troubleshooting methods: telephone support and remote access.
Online technical support	The Huawei support website provides product technical materials, such as product manuals, configuration guides, networking case studies, and maintenance records. Authorized users can access the website, download documents, get up-to-date maintenance and skills development information, and learn about the latest products.
Licensing of software updates	Huawei provides patches whenever necessary to ensure stable and reliable equipment operation.
Return for repair	Huawei provides repair or replacement services for customers within the defined time period to meet customer needs for spare parts. You can return defective parts to the designated Huawei

Service	Description
	customer service center after submitting a service request.
	For the products with a three-year warranty used in China, Huawei provides NBD service, 9 hours a day, 5 days a week.
	For the products with a three-year warranty used outside China, Huawei provides CDS service, 9 hours a day, 5 days a week.

8 Physical Specifications

Table 8-1 lists the RH2285H V2 physical specifications.

Table 8-1 RH2285H V2 physical specifications

Item	Specifications
Dimensions (H x W x D)	87.5 mm (2 U) x 447 mm x 740 mm (3.44 in. x 17.60 in. x 29.92 in.)
Cable Management	The optional cable management arm for the RH2285H V2
Rated power	The rated power for compatible PSUs: • 460 W • 800 W
Weight (in full configuration)	Net weight: • 8 hard disks: 27 kg • 14 hard disks: 30 kg • 26 hard disks: 30 kg Packing material weight: 5 kg
Input voltage	• AC: 100 V to 240 V AC power • DC: -48 V to -60 V DC power **NOTE** • The switch module "LITEON 460W-AC (PS-2461-7H)" and "LITEON 750W-AC (PS-2751-2H)" support high-voltage DC, and the voltage range is 180 V DC to 288 V DC. • The switch module "Emerson 800W-AC (EPW800W-AC)" and DC modules so not support high-voltage DC.
Operating temperature	5 ℃ to 40 ℃ (41 ℉ to 104 ℉)
Storage temperature	-40 ℃ to +65 ℃ (-40 ℉ to +149 ℉)
Temperature	Operating temperature: 5 ℃ to 40 ℃ (41 ℉ to 104 ℉) Storage temperature: -40 ℃ to +65 ℃ (-40 ℉ to +149 ℉) The temperature change rate is smaller than 20 ℃ (36 ℉)/h.

Item	Specifications
	NOTE If the ES3000 PCIe SSD is installed on the RH2285H V2, the temperature cannot be higher than 35 ℃ (95 ℉), ensuring that the ES3000 PCIe SSD can dissipate heat and work normally.
Altitude	≤ 3000 m (9842 ft). When the altitude is higher than 900 m (2952.72 ft), the operating temperature decreases by 1 ℃ (1.8 ℉) per 300 m (984.24 ft).
Humidity	Operating humidity: 8% to 85% RH (non-condensing) Storage humidity: 5% to 95% RH (non-condensing) The humidity change rate is smaller than 20% RH/h.
Mean time between failures (MTBF)	183084 h
Mean time to repair (MTTR)	174s

9 Certifications

Table 9-1 lists the certifications passed by the RH2285H V2 and the standards to which the RH2285H V2 conforms.

NOTE

The following certifications are for reference only. For details,see *Huawei Tecal RH2285H V2 Server Compatibility List*.

Table 9-1 Certifications and standards

No.	Country/Region	Certification	Standard
1	China	RoHS	SJ/T-1136320006 SJ/T-1136420006 GB/T 26572—2011
2	China	CCC	GB4943-2001 GB9254-2008 (Class A) GB17625.1-2003
3	China	China Environmental Labeling	GB/T24024:2001 idt ISO14024:1999 HJ 2507-2011
4	China	Energy Conservation	CQC3135-2011"Energy Conservation Certification Criteria for Servers"
5	Europe	RoHS	2002/95/EC
6	Europe	REACH	EC 1907/2006
7	Europe	WEEE	2002/96/EC

No.	Country/Region	Certification	Standard
9	Europe	CE	Safety: IEC 60950-1:2005 (2nd Edition) + A1:2009 and/or EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 EMC: EN 55022:2010 CISPR 22:2008 EN 55024:2010 CISPR 24:2010 ETSI EN300 386 V1.5.1:2010 ETSI ES 201 468 V1.3.1:2005 IEC61000-3-2:2005+A1:2008+A2:2009/EN 61000-3-2:2006+A1:2009+A2:2009 IEC 61000-3-3:2008/EN 61000-3-3:2008
9	Russia	GOST	GOST R IEC60950-1-2009 GOST 26329-84 GOST R 51318.22-2006 GOST R 51318.24-99 GOST R 51317.3.2-2006 GOST R 51317.3.3-2008
10	Turkey	CE	Safety: IEC 60950-1:2005 (2nd Edition) + A1:2009 and/or EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 EMC: EN 55022:2010 CISPR 22:2008 EN 55024:2010 CISPR 24:2010 ETSI EN 300 386 V1.5.1:2010 ETSI ES 201 468 V1.3.1:2005 IEC61000-3-2:2005+A1:2008+A2:2009/EN 61000-3-2:2006+A1:2009+A2:2009 IEC 61000-3-3:2008/EN 61000-3-3:2008
11	America	FCC	FCC CFR47 Part 15:2005 Class A
12	America	NTRL-UL	UL 60950-1, 2nd Edition, 2011-12-19 (Information Technology Equipment - Safety - Part 1: General Requirements)
13	America	ENERGY STAR	ENERGY STAR® Program Requirements for Computer Servers Eligibility Criteria V1.1
14	Canada	IC	ICES-003:2004 Class A

No.	Country/Region	Certification	Standard
15	Canada	NTRL-UL	CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12 (Information Technology Equipment - Safety - Part 1: General Requirements)
16	Australia	C-tick	AS/NZS CISPR 22: 2009
17	Japan	VCCI	VCCI V3:2012
18	Kingdom of Saudi Arabia (KSA)	SASO	IEC 60950-1: 2005 (2nd Edition) + A1:2009 EN 60950-1:2006+A11:2009+A1:2010 + A12:2011
19	Nigeria	SONCAP	idt IEC 60950-1: 2005 (2nd Edition) + A1:2009 EN 60950-1:2006+A11:2009+A1:2010 + A12:2011
20	Global	CB	IEC 60950-1:2005 (2nd Edition); Am 1:2009

A Acronyms and Abbreviations

A

AC	alternating current
AES NI	Advanced Encryption Standard New Instruction Set
ARP	Address Resolution Protocol
AVX	advanced vector extensions

B

BBU	backup battery unit
BIOS	basic input output system
BMC	baseboard management controller

C

CD	calendar day
CE	Conformite Europende
CIM	Common Information Model
CLI	command-line interface

D

DC	direct current
DDR3	double data rate 3
DDDC	double device data correction
DEMT	dynamic energy management technology
DIMM	dual in-line memory module
DRAM	dynamic random-access memory

DVD	digital video disc	
E		
ECC	error checking and correcting	
ECMA	European Computer Manufacturers Association	
EDB	Execute Disable Bit	
EN	European Efficiency	
ERP	enterprise resource planning	
ETS	European Telecommunication Standards	
F		
FB-DIMM	fully buffered DIMM	
FC	fiber channel	
FCC	Federal Communications Commission	
FCoE	fiber channel over Ethernet	
FTP	File Transfer Protocol	
G		
GE	gigabit Ethernet	
GPIO	general purpose input/output	
GPU	graphics processing unit	
H		
HA	high availability	
HDD	hard disk drive	
HPC	high-performance computing	
HTTP	Hypertext Transfer Protocol	
HTTPS	Hypertext Transfer Protocol Secure	
I		
IC	Industry Canada	
ICMP	Internet Control Message Protocol	
IDC	internet data center	

IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IGMP	Internet Group Message Protocol
iMana	integrated management
IOPS	input/output operations per second
IP	Internet Protocol
IPC	Intelligent Power Capability
IPMB	Intelligent Platform Management Bus
IPMI	Intelligent Platform Management Interface

K

KVM	keyboard, video, and mouse

L

LC	Lucent connector
LDIMM	local dual in-line memory module
LED	light emitting diode
LOM	LAN on motherboard

M

MAC	Media Access Control

N

NBD	next business day
NC-SI	Network Controller Sideband Interface
MMC	module management controller

P

PCIe	peripheral component interconnect express
PHY	physical layer
PMBUS	Power Management Bus
POK	power OK
PWM	pulse-width modulation

PXE   preboot execution environment

Q

QPI   QuickPath interconnect

R

RAID   redundant array of independent disks

RAS   reliability, availability, and serviceability

RDIMM   registered dual in-line memory module

REACH   Registration Evaluation and Authorization of Chemicals

RJ45   registered jack 45

RoHS   Restriction of the Use of Certain Hazardous Substances in Electrical
                     and Electronic Equipment

S

SAS   Serial Attached Small Computer System Interface

SATA   Serial Advanced Technology Attachment

SCM   supply chain management

SDDC   single device data correction

SERDES   serializer/deserializer

SGMII   Serial Gigabit Media Independent Interface

SMI   Serial Management Interface

SMTP   Simple Mail Transfer Protocol

SM_CLP   Server Management Command Line Protocol

SNMP   Simple Network Management Protocol

SOL   serial over LAN

SONCAP   Standards Organization of Nigeria—Conformity Assessment
                     Program

SSD   solid-state drive

SSE   streaming SIMD extension

T

TACH   tachometer signal

TBT   Turbo Boost Technology

TCG	trusted computing group
TCO	total cost of ownership
TDP	thermal design power
TELNET	Telecommunication Network Protocol
TET	Trusted Execution Technology
TFTP	Trivial File Transfer Protocol
TOE	TCP offload engine
TPM	trusted platform module

U

UDIMM	unbuffered dual in-line memory module
UEFI	Unified Extensible Firmware Interface
UID	unit identification light
UL	Underwriter Laboratories Inc.
USB	Universal Serial Bus

V

VCCI	Voluntary Control Council for Interference by Information Technology Equipment
VGA	video graphics array
VLAN	virtual local area network
VRD	voltage regulator-down

W

WEEE	Waste Electrical and Electronic Equipment
WSMAN	Web Service Management