

# Zhongke Jianyou 2U Rack mounted Server Product Technical White Paper



**Beijing Zhongke Jianyou Technology Co., Ltd**

<b>document version</b>	<b>Release time</b>	<b>Revision notes</b>
<b>V1.0</b>	<b>2025-2-10</b>	<b>First release</b>
<b>V1.1</b>	<b>2025-3-9</b>	<b>Update product overview</b>
<b>V1.2</b>	<b>2025-4-21</b>	<b>Update memory description</b>
<b>V2.0</b>	<b>2025-10-26</b>	<b>Add GPU configuration instructions</b>
<b>V2.1</b>	<b>2025-12-17</b>	<b>Update hard drive compatibility informatio</b>

## 1. Product Overview

FR4220I is a new generation server product launched by Zhongke Jianyou IDC (Internet Data Center). A new generation of 2U 2R servers with wide applications has been launched to meet the needs of cloud computing, enterprise markets, and telecommunications business applications.

This product is suitable for IT core business, cloud computing, virtualization, high-performance computing, distributed storage, and big data management, enterprise or telecommunications business applications, and other complex workloads.

This product has the advantages of low energy consumption, strong scalability, high reliability, easy management, and easy deployment.



Figure 1 Server image

## 2. Product Features

### ➤ Excellent performance

- Support fourth generation Intel® Xeon® Scalable processor (Sapphire Rapids), 5th generation Intel® Xeon® Scalable processors (Emerald Rapids). A single processor has a maximum of 64 cores and 128 threads, supports a maximum TDP 385W processor, has a maximum turbo frequency of 4.2GHz, a single core 2MB L2 cache and 5MB L3 cache, and 4 sets of 20GT/s UPI interconnect links, providing the server with the highest processing performance.
- Supports up to 32 DDR5 RDIMM (Registered Dual Inline Memory Module) memories, with a maximum speed of 5600MT/s, providing excellent speed, high availability, and up to 8192GB of memory capacity (calculated based on the maximum capacity of 256GB per

DDR5 memory module).

➤ **Flexible Expansion**

- Supports multiple flexible hard disk configuration solutions, providing elastic and scalable storage capacity space to meet the needs and upgrade requirements of different storage capacities.
- Maximum support for front mounted 12x3.5-inch hard drives.
- Supports up to 14 (including 4 built-in) standard expansion slots. Supports up to 6 PCIe x16 bandwidth slots, of which 8 slots (including 4 built-in) can support PCIe 5.0.
- Supports 2 OCP 3.0 network cards, upgradable bandwidth to PCIe 4.0 x 16, flexible configuration of GE/10GE/25GE/100GE network cards, and supports notification based hot plugging.

➤ **Intelligent Management**

- Support various management functions such as remote health status monitoring and KVM. Convenient for maintenance personnel to quickly locate faults and improve the speed of data center operation and maintenance.
- Out of band visual management, precise positioning of equipment information, intelligent operation and maintenance.

➤ **Safe and Reliable**

- Exquisite heat dissipation design, the system runs stably at 5-35 °C.
- Monitoring and reporting the health status of key components throughout the entire chain, achieving intelligent services throughout the product lifecycle

## 2. Product Introduction

### 2.1 Server Specifications

The following table shows the technical specifications and features of the server. For detailed server configuration, please refer to the configuration list in the box.

<b>Model</b>	FR4420I
<b>Form</b>	2U rack mounted server

<b>Processor</b>	Support fourth generation Intel® Xeon® Scalable processor (Sapphire Rapids), 5th generation Intel® Xeon® Scalable processors (Emerald Rapids)
<b>GPU</b>	Supports up to 4 dual width AI acceleration cards and provides powerful training application performance
<b>Memory</b>	Supports up to 32 DDR5 memories, supports 32 memory slots, and supports RDIMM or RDIMM-3DS, The maximum memory transfer rate is 5600MT/s.
<b>Storage</b>	Supports up to 12 3.5-inch/2.5-inch SAS/SATA hard drives.
<b>RAID</b>	Supports multiple RAID modes and optional power down protection
<b>Network</b>	Optional 2 OCP3.0 network cards, supporting standard PCIe network cards
<b>PCIe</b>	Supports up to 14 PCIe expansion slots
<b>Other Interfaces</b>	Supports 1 RJ45 management interface, 2 VGA interfaces, and 4 USB interfaces
<b>Fan</b>	4 system fan modules, supporting N+1 redundancy
<b>Power Supply</b>	Supports 1+1 redundancy and 1300W/1600W/2000W CRPS high-efficiency power supply
<b>Management</b>	Integrated BMC chip
<b>Operating System</b>	Windows/Linux operating system
<b>Operating Temperature</b>	5°C~35°C (50°F~95°F)
<b>Operating Humidity</b>	工作 80%RH, 非工作 93%RH
<b>Size</b>	86.1mm×447mm×798mm
<b>Weight</b>	Maximum weight for full hard drive configuration: 23.5kg

### 3. Server Structure

This section introduces the server structure: disk slots and front and rear panel interfaces.



Figure 1 Front panel and disc position

1	hard disk	2	Tag card (Including SN tag)
---	-----------	---	-----------------------------

### 3.2.1 Introduction to the front panel of the chassis






Figure 3 Front panel buttons and LED indicator lights

1	UID button/indicator light	2	Health status indicator light
3	Power button/indicator light	4	Fault diagnosis digital tube
5	FLEXIO card 1 in position indicator light	6	FLEXIO card 2 in position indicator light
6	IBMC direct connection management interface indicator light		

### 3.2.2 Indicator light introduction

Identifi- cation	Indicator lights and buttons	Status Description
888	Fault diagnosis digital	<p>Display: The device is functioning properly.</p> <p>Display fault code: The device has a component malfunction. If multiple fault codes appear simultaneously, the fault codes will be displayed in a loop, with each fault code displaying for 5 seconds</p> <p>For detailed information on fault codes, please refer to BMC alarm handling.</p>

	<p>Health status indicator light</p>	<p>Extinguish: The device is not powered on or in an abnormal state.</p> <p>Red flashing (1Hz): The system has a serious alarm.</p> <p>Red flashing (5Hz): The system has an emergency alarm.</p> <p>Green constantly on: The device is operating normally.</p>
	<p>FLEXIO card in place indicator light</p>	<p>Corresponding to the in place state of the FLEXIO card.</p> <p>Extinguish: FLEXIO card is not in place.</p> <p>Green flashing (0.5Hz): FLEXIO card is in place but not powered.</p> <p>Green flashing (2Hz): The FLEXIO card is in place and has just been inserted.</p> <p>Green constantly on: FLEXIO card is in place and the power supply is normal.</p>
	<p>Power button/indicator light</p>	<p>Yellow flashing: The IBMC management system is starting, and the power button is locked and cannot be operated at this time. The IBMC management system completes startup in about 1 minute, and the power indicator light turns yellow and stays on.</p> <p>Yellow constant light: The device is in standby mode</p> <p>Power button description:</p> <p>Short press the power button while powered on, and the OS will shut down normally.</p> <p>Instructions:</p> <p>Different operating systems may need to shut down the operating system based on the prompts on the operating system interface.</p> <p>Press and hold the power button for 6 seconds while powered on to force the device to power off.</p> <p>Short press the power button in standby mode to power on.</p>

### 3.2.3 Rear panel interface description



Figure 4 Schematic diagram of rear panel interface

1	Management network port data transmission status indicator light	2	Management network port connection status indicator light
3	The serial port indicator light indicates that it is reserved and temporarily unavailable.	4	UID indicator light
5	Power module indicator light		

## 4. Compatibility List

### 4.1 Memory

Description	Brand
DDR5 4800 16GB	Samsung, Hynix
DDR5 4800 32GB	Samsung, Hynix
DDR5 4800 64GB	Samsung, Hynix
DDR5 5600 32GB	Samsung, Hynix
DDR5 5600 64GB	Samsung, Hynix

Note: For component models not listed in this table, please consult pre-sales personnel.

### 4.2 Hard Disk

Category	Description	Brand
3.5-inch SATA HDD	4T/8T/12T/16T/18T/20T	Seagate, Western Digital
3.5-inch SAS HDD	4T/6T/8T/10T/12T	Seagate, Western Digital
2.5-inch SAS HDD	600G/1.2T/1.8T/2.4T	Seagate, Toshiba
2.5 -inch SATA SSD	480G/960G/1.92T/3.84T	Samsung, Intel
U.2 SSD	1.92T/3.84T/7.68T/1.6T/3.2T/6.4T	Samsung

Note: For component models not listed in this table, please consult pre-sales personnel.

### 4.3 Network Card

Model	Brand
MCX631102AN-ADAT dual port 25G SFP28	Mellanox
MLX MCX623105AN-CDAT single port 100G QSFP56	
MLX MCX623106AN-CDAT dual port 100G QSFP56	

Note: For component models not listed in this table, please consult pre-sales personnel.

#### 4.4 RAID

型号	Brand
BCM 9560-16i 8G -E4x8 SE Tri-M RAID CARD-SA	Broadcom
BCM 9540-8i -E4x8 SE Tri-Mode RAID CARD	
BCM 9500 -E4x8 8i SE Tri-Mode HBA CARD	
BCM 9500 -E4x8 16i SE Tri-Mode HBA CARD	

Note: For component models not listed in this table, please consult pre-sales personnel.