RS-F1SG2042

RISC-V Server

V1.0 2026-3-25

FIREFLY TECHNOLOGY

Product features

High-performance RISC-V processors

The server is equipped with a single high-performance RISC-V processor SG2042 featuring 64 64-bit cores, delivering powerful performance. It supports mixed-precision computing including INT8/FP16/BF16/FP32, enabling efficient adaptation to scenarios such as scientific computing and AI inference.

Open source instruction set

Based on the international open-source RISC-V instruction set, there is no authorization restriction, and it supports mainstream operating systems, creating a truly open computing platform and making innovation ubiquitous.

Huge storage space

It has 12 3.5-inch/2.5-inch SAS/SATA hard drive bays, supports SATA 3.0 HDD/SSD hard disk expansion, allows the device to easily expand to TB-level ultra-large capacity, and supports hot-swap quick replacement.

Secure and high-speed network communication

Equipped with dual-channel 5Gbps Ethernet, high-speed and stable network communication mode, to meet the needs of different application scenarios. The independent MGMT management network interface separates the management network from the service network to ensure the security and reliability of network communication.

Product features

Standard 2U rack server

The standard 2U rack server chassis design is flexible for deployment and fully matches most types of cabinets in the data center. It is equipped with four high-efficiency cooling fans and two 550W pluggable power supplies for easy maintenance.

Privacy computing technology

Supports mainstream privacy computing technologies such as homomorphic encryption, differential privacy, and secure multi-party computation. It realizes "data available but invisible" during the utilization and analysis of the entire data lifecycle, comprehensively safeguarding data security and user privacy.

Supports multiple operating systems

Supports Fedora, Ubuntu, openKylin, openEuler, deepin and other operating systems to meet the needs of different scenarios.

A wide range of applications

It is widely used in large models, deep learning, cloud storage, scientific computing, ecological development, intelligent computing centers, operators, privacy computing, cryptography and other types of products and fields.

Specifications

Specifications		
Technical Specifications	Server form factor	2U rackmount computing server
	Architecture	RISC-V architecture
	Processor	1 × SG2042 64-core RISC-V processor @2.0GHz
	Computing precision	INT8/FP16/BF16/FP32
	Memory	4 × DDR4 DIMM slots, supporting a maximum frequency of 3200MHz, maximum single module capacity of 64GB, and a maximum total memory capacity of 64×4=256GB
	Expanded storage	12 × 3.5"/2.5" SATA3.0 SSD drive bays (Hot-swappable; BMC enables direct hard drive operation, and computing nodes can access hard drives indirectly via the network sharing provided by BMC)
	PCIe expansion slots	4 × GEN4 X16 PCIe Slots, 4 × GEN4 X8 PCIe Slots
	Power supply	2 × 550W Hot-swappable power supplies, supporting 1+1 redundancy (Input: 100V AC ~ 240V AC)
	Fan module	4 × Hot-swappable fans, supporting N+1 redundancy
Physical Specifications	Size	481mm(L) × 677mm(W) × 88mm(H)
	Weight	Net server weight: 15kg, Gross weight with packaging: 17.2kg
	Environment	Operating Temperature: 0°C ~ 35°C, Storage Temperature: -40°C ~ 60°C, Operating Humidity: 5% ~ 80%RH (Non-condensing)
Software Specifications	BMC	Integrated BMC management system with web-based UI, supporting redfish, VNC, NTP, advanced monitoring and virtual media; the BMC management system supports secondary development
	Large language models	Supports on-premises deployment of ultra-large parameter models based on Transformer architecture, such as Deepseek-R1 Series, Gemma Series, Llama Series, ChatGLM Series, Qwen Series and other LLMs.
	Vision large models	Supports on-premises deployment of vision large models such as ViT, Grounding DINO, SAM.
	AI Painting	Supports on-premises deployment of image generation models including Flux, Stable Diffusion, Stable Diffusion XL.
	Deep learning	Supports traditional network architectures such as CNN, RNN, LSTM; compatible with multiple deep learning frameworks including TensorFlow, PyTorch, PaddlePaddle, ONNX, Caffe; supports custom operator development and Docker containerization management technology.
Interface Specifications	Ethernet	2 × 5Gbps Ethernet (RJ45), 1 × Gigabit Ethernet (RJ45, MGMT for BMC management network)
	Display	2 × VGA (Maximum resolution 1080P, for BMC management display)
	USB	4 × USB3.0, 1 × Type-C (BMC debug serial port, built-in UART chip, baud rate 115200)
	Button	1 × Reset, 1 × UID, 1 × Power

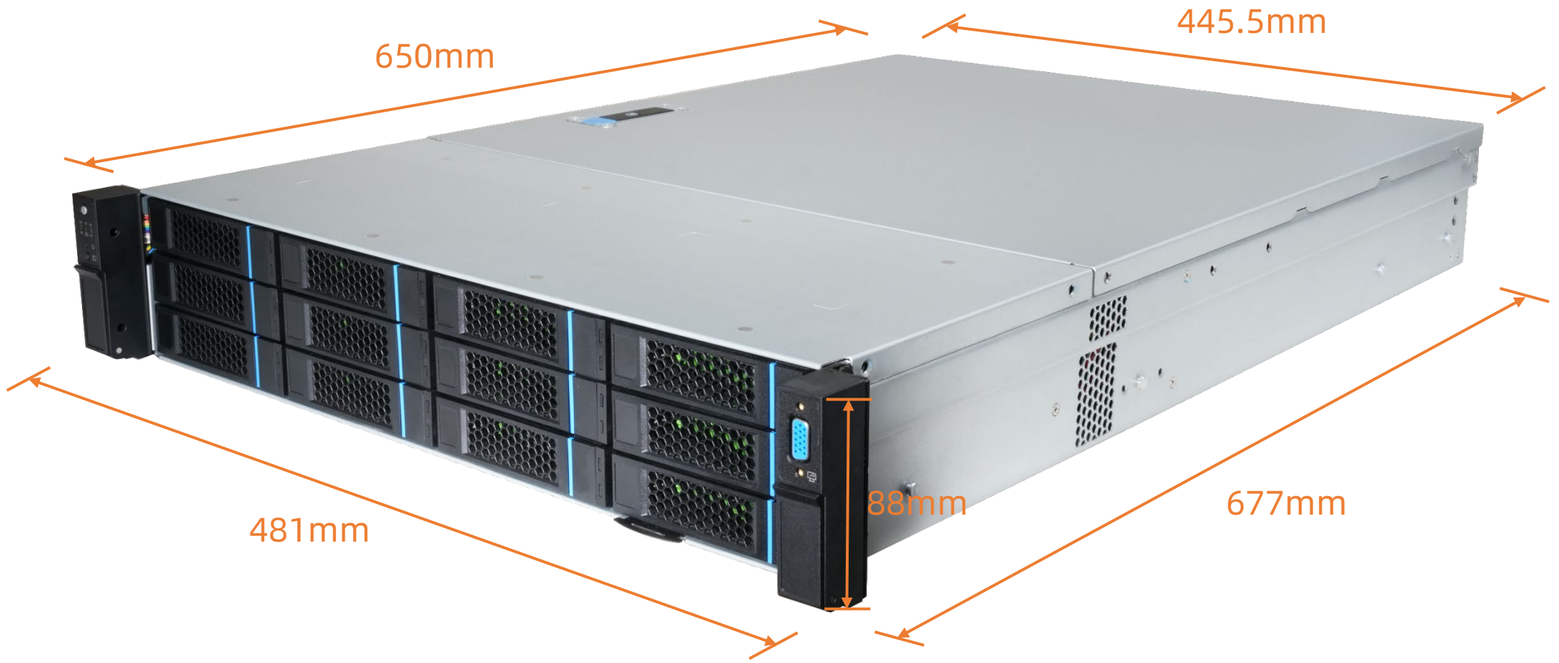
Interface description

From left to right:
HDD LED
Overheat/FAN FAIL LED & UID LED
PWR FAIL LED
Power button
LAN LED
Reset
UID Switch
USB3.0

VGA
1080P
USB3.0
12 × 3.5"/2.5" SAS/SATA drive bays
Support hot-plugging

MGMT
2×5G Ethernet
2×USB3.0
Debug
Built-in UART chip
VGA
1080P

Dimension



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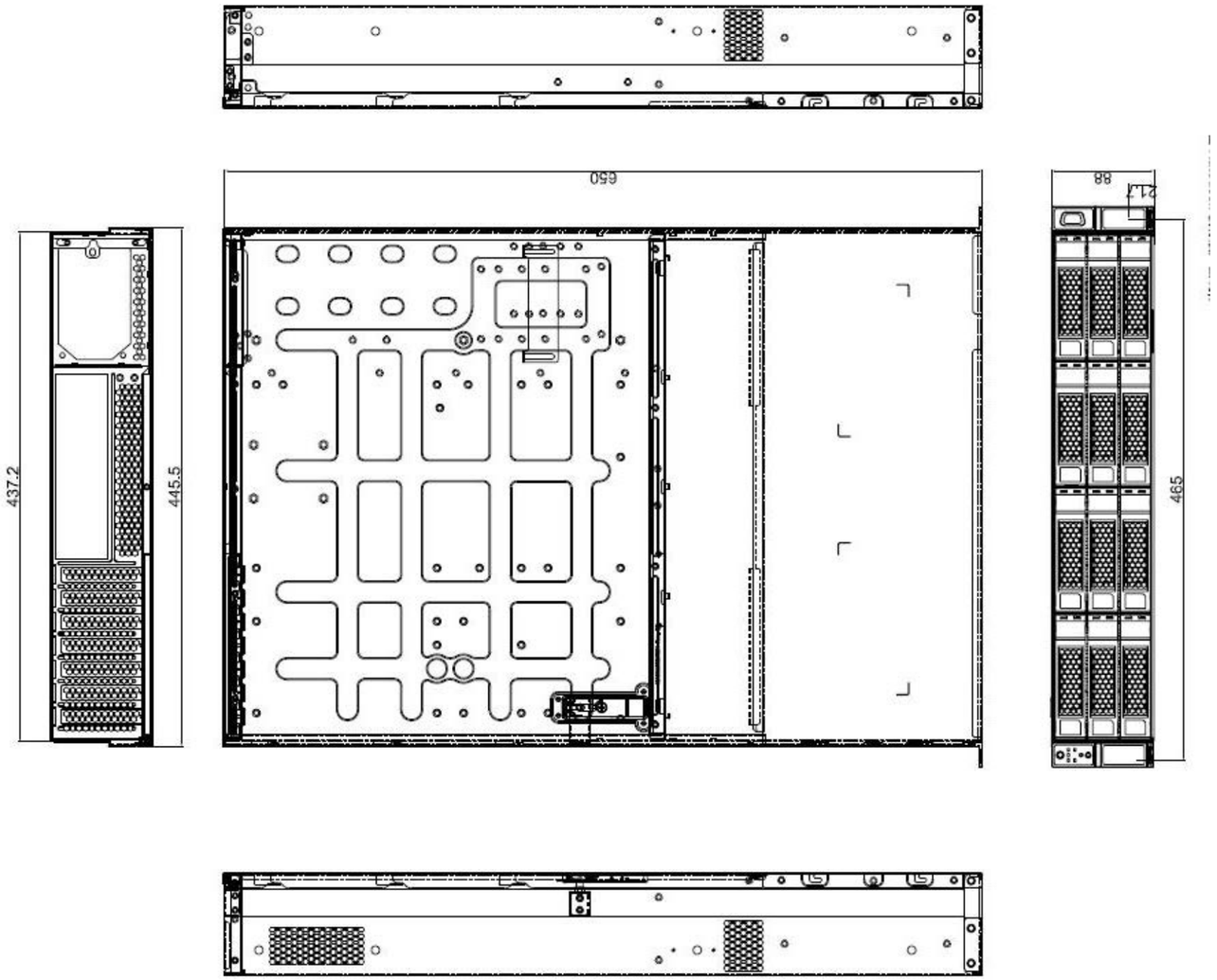

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