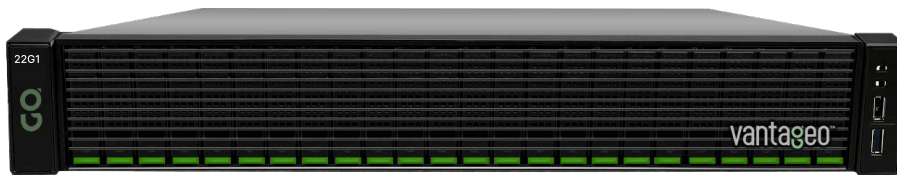# vantageo™

Vantageo 22G1-RE Server

Flexible, Scalable, and Secure

The 22G1-RE rack server is an enterprise-class general rack server developed by Vantageo based on the latest fourth-generation EPYC 9004 series high-performance processors of AMD. It uses a secure and reliable software and hardware system, and features multiple cores, high throughput, strong single-thread capability, high integer computing performance, and high access and I/O channel bandwidth. It is a high-performance server oriented to enterprise applications and data centers. The 22G1-RE server, which can be regarded as a high-performance, secure and reliable storage platform, delivers exceptional Total Cost of Ownership (TCO) for cloud computing, big data analysis, software-defined data centers for low-latency, data-intensive workloads.

High performance, high density

- The server uses high-performance processors of AMD EPYC 9004 series

- In the dual-channel mode, up to 256 cores / 512 threads are supported to meet the requirement for deploying cloud computing.

- The server has the high memory bandwidth design capability. It supports twenty-four DDR5-4800 memory bars to accelerate memory-intensive application performance.

- It supports a maximum of thirty-two NVMe U.2 hard disks, provides high-speed I/O interfaces, and solves the bottleneck of slow access to traditional hard disks.

High scalability

- Supports diversified storage configurations and large storage configurations, and supports a maximum of 33 hot-swappable hard disks.

- Supports the expansion of twelve PCIe Gen5 slots to meet the flexible expansion requirements such as network and storage control.

- Supports up to four double-wide GPU cards to provide powerful heterogeneous computing capabilities.

Convenient management, easy maintenance

- System health can be fully monitored, and core components can be monitored and diagnosed.

- Supports automatic deployment, firmware upgrade, and remote operations to improve deployment and O&M efficiency

- Vantageo Server Suite Provides enterprise-level management functions and reliability, automatic equipment on- duty observation, real-time monitoring of core components, and classification and reporting of faulty streamlines, providing comprehensive guarantee for data center O&M.

Vantageo 22G1-RE Details

Green, energy saving, environment protection

• 80PLUS high-efficiency power modules are used to support high-voltage DC and low-voltage DC technologies and provide energy utilization.

• High-efficiency fans are used. Under the same heat dissipation capability, the power consumption is lower.

• Fans support intelligent speed adjustment and quiet design

• Lead-free design, green, and environment protection

Technical details   Vantageo 22G1-RE Details

Form Factor	2U Rack
Adaptable cabinet	19 inches ≥1,000mm deep cabinet
Chipset	System on chip
Processor	CISC -- X86_64 Architecture Supports 1/2 AMD EPYC 9004 series high performance processors. Each processor supports a maximum of 128 cores and hyper-threading with heat sink.
Memory slot	Twenty four DDR5-4800 RDIMM ECC memory slots, with a maximum memory capacity of 12TB
Memory Protection	Advanced ECC
Memory DIMMS Supports	16GB DDR5-4800 96GB DDR5-4800 512GB DDR5-4800 32GB DDR5-4800 128GB DDR5-4800 64GB DDR5-4800 256GB DDR5-4800
Hard disk controller	Supports standard and self developed HBAs, Raid cards, and SAS4.0/SAS3.0/SATA3.0/PCIe5.0/PCIe4.0.
Raid Controller	PCIe SAS Raid Card 12Gbps 2Gb caches, support Raid, 0, 1, 5, 6, 10, 50 ,60 with battery backup PCIe SAS Raid Card 12Gbps 4Gb caches, support Raid, 0, 1, 5, 6, 10, 50 ,60 with battery backup PCIe SAS Raid Card 12Gbps 8Gb caches, support Raid, 0, 1, 5, 6, 10, 50 ,60 with battery backup(Supports NVMe) Raid controller cooling with heat sink
Raid Manager	RAID Manager (command-line interface) BIOS Configuration Utility
Key RAID Data Protection Feature	Online Capacity Expansion Online RAID level Migration Fast initialization for quick array setup Check consistency for background data integrity S.M.A.R.T support Global and dedicated Hot Spare with Revertible Hot Spare support Automatic rebuild Health Monitoring tool, Error indication alerts Multi Raid array Support
Hard disk	Provides multiple front storage bays, hot swapping, HDDs, and SSDs. 8x2.5 slots, supporting SAS/SATA/U.2 16x2.5 slots, supporting SAS/SATA/U.2 24x2.5 slots, supporting SAS/SATA/U.2 25x2.5 slots, SAS/SATA supported, eight of which support U.2 12x3.5 slots, supporting SAS/SATA/U.2 Multiple flexible storage module configurations are provided. Multiple options are available. Hot swapping, HDDs, and SSDs are supported. Supports NVMe SSDs. 2x2.5 slot, SAS/SATA/U.2 supported, up to four hard disks 2x3.5 slot, SAS/SATA/U.2 supported, up to four hard disks
Display	Integrated display controller,supporting the optional configuration of PCIe standard display cards
System management	Web Management interface Monitoring of critical components like Fan, Power ,CPU , HDD, Raid Telemetary details Support sending alarm notification securely to OEM / Personal for troubleshooting **Vantageo Server Suite Provides Comprehensive**
PCIe slot	Expandable up to twelve PCIe slots (including two OCP 3.0 slots)

Onboard Ports	OCP NIC 1G RJ45x2
External device interface	Four USBs (two USBs at the rear and one USB3.0 + one USB2.0 at the front) Two VGA interfaces (one front end and one back end) One 3.5 MM serial port One IPMI GE management interface
Power	Two CRPS standard power supply devices, hot swappable, and 1+1 redundancy (Optional)550W/800W/1200W/1600W/2000W/2700W/3200W high efficiency platinum/titanium power supply Supports multiple power systems: 110/220VAC,-48VDC, 240VDC, and 336VDC

Electrical values

Power supply configuration	1x hot plug power supply or 2x hot plug power supply for redundancy
Active power (max. configuration)	2,608.6 W
Apparent power (max. configuration)	2635 VA
Heat emission (max. configuration)	9391.0 kJ/h (8900.9 BTU/h)

Security	TPM 2.0(Trusted Platform Module), Authenticated BIOS, secure Boot, Silicon Root of Trust, Disk Encryption, Hardware Root of Trust Sign firmware updates and bios core / Scan for malicious firmware Malicious core free design
BIOS	UEFI compliant BIOS Flash EPROM update by software BIOS settings save and restore Local BIOS update from USB device Secure boot support
Remote Management	Remote management supports hardware components, Power on/off and boot process. Supports Management log , Audit Logs and dedicated Management roles bases on users Ports can be integrate with industry wide KVM solution. Monitoring fan, power supply, memory, CPU, RAID, NIC for failures. Remote management supports telemetry streaming and Idle Server Detection. Supports Role Based Security through LDAP or Local and able to provide pre failure alarms for CPU, Memory and HDD by SMTP.
Operating buttons	On/off switch ID button Reset button
Status LEDs	Power ON Customer self service Global error LED Light path diagnostic led Hard disks access
Environment conditions	Operating temperature: +5 C to +40 C (depending on the configuration, refer to the technical document for details) Storage temperature: -40°C 65°C Operating humidity: 8% 90% RH, no condensation Transportation and storage humidity: 5% 95% RH, no condensation Altitude: ≤3,000m，When the altitude is 900m higher, the operating temperatureis reduced by 1 C for every 300m higher. If the altitude is more than 3,000m, you cannot configure mechanical hard disks
System size	19-inch rack type, chassis size: 432mm x 87.6mm x 780mm (W x H x D), excluding flanges and guide rails

Fan	Four hot swappable and redundant middle fans, supporting dynamic and intelligent fan speed adjustment.
Weight	40 kg in full configuration (excluding guide rails)

Supported Components

SAS SSD	SSD SAS, 22.5Gb/s, 800 GB, Write Intensive, hot plug, 2.5-inch, enterprise, 10 DWPD
	SSD SAS, 22.5Gb/s, 15.36 TB, Read Intensive, hot plug, 2.5-inch, enterprise, 1 DWPD
	SSD SAS, 22.5Gb/s, 7.68 TB, Read Intensive, hot plug, 2.5-inch, enterprise, 1 DWPD
	SSD SAS, 22.5Gb/s, 6.4 TB, Mixed-use, hot-plug, 2.5-inch, enterprise, 3 DWPD
	SSD SAS, 22.5Gb/s, 3.84 TB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1 DWPD
	SSD SAS, 22.5Gb/s, 3.2 TB, Mixed-use, hot-plug, 2.5-inch, enterprise, 3 DWPD
	SSD SAS, 22.5Gb/s, 1.92 TB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1 DWPD
	SSD SAS, 22.5Gb/s, 1.6 TB, Write-Intensive, hot-plug, 2.5-inch, enterprise, 10 DWPD
	SSD SAS, 22.5Gb/s, 1.6 TB, Mixed-use, hot-plug, 2.5-inch, enterprise, 3 DWPD
	SSD SAS, 12 Gb/s, 960 GB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1 DWPD
	SSD SAS, 12 Gb/s, 800 GB, Write-Intensive, hot-plug, 2.5-inch, enterprise, 10 DWPD
	SSD SAS, 12 Gb/s, 800 GB, Mixed-use, hot-plug, 2.5-inch, enterprise, 3 DWPD
	SSD SAS, 12 Gb/s, 400 GB, Write-Intensive, hot-plug, 2.5-inch, enterprise, 10 DWPD
	SSD SAS, 12 Gb/s, 15.36 TB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1 DWPD
	SSD SAS, 12 Gb/s, 7.68 TB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1 DWPD
	SSD SAS, 12 Gb/s, 6.4 TB, Mixed-use, hot-plug, 2.5-inch, enterprise, 3 DWPD
	SSD SAS, 12 Gb/s, 3.84 TB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1 DWPD
	SSD SAS, 12 Gb/s, 3.2 TB, Mixed-use, hot-plug, 2.5-inch, enterprise, 3 DWPD
	SSD SAS, 12 Gb/s, 1.92 TB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1 DWPD
	SSD SAS, 12 Gb/s, 1.6 TB, Write-Intensive, hot-plug, 2.5-inch, enterprise, 10 DWPD
	SSD SAS, 12 Gb/s, 1.6 TB, Mixed-use, hot-plug, 2.5-inch, enterprise, 3 DWPD
SSD SATA	SSD SATA, 6 Gb/s, 960 GB, Mixed-use, hot-plug, 2.5-inch, enterprise, 5.0 DWPD
	SSD SATA, 6 Gb/s, 480 GB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1.5 DWPD
	SSD SATA, 6 Gb/s, 480 GB, Mixed-use, hot-plug, 2.5-inch, enterprise, 5.0 DWPD
	SSD SATA, 6 Gb/s, 480 GB, Mixed-use, hot-plug, 2.5-inch, enterprise, 3.0 DWPD
	SSD SATA, 6 Gb/s, 240 GB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1.5 DWPD
	SSD SATA, 6 Gb/s, 240 GB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1.0 DWPD
	SSD SATA, 6 Gb/s, 7.68 TB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1.0 DWPD
	SSD SATA, 6 Gb/s, 7.68 TB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 0.6 DWPD
	SSD SATA, 6 Gb/s, 3.84 TB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1.2 DWPD
	SSD SATA, 6 Gb/s, 3.84 TB, Mixed-use, hot-plug, 2.5-inch, enterprise, 3.5 DWPD
	SSD SATA, 6 Gb/s, 3.84 TB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1.0 DWPD
	SSD SATA, 6 Gb/s, 1.92 TB, Read-Intensive, hot-plug, 2.5-inch, enterprise, 1.5 DWPD
	SSD SATA, 6 Gb/s, 1.92 TB, Mixed-use, hot-plug, 2.5-inch, enterprise, 5.0 DWPD
NVME SSD	PCIE SSD D7-P5510 7.68TB 2.5' 15MM
	PCIE SSD D7-P5510 3.84TB 2.5' 15MM
	PCIE SSD P5620 6.4TB 2.5' 15MM WOCN
	PCIE SSD P5620 3.2TB 2.5' 15MM WOCN
	PCIE SSD 7.68T 2.5' 7MM WOCN/PM9A3
	PCIE SSD 3.84T 2.5' 7MM WOCN/PM9A3
	PCIE SSD 1.92T 2.5' 7MM WOCN/PM9A3
	PCIE SSD 960G 2.5' 7MM WOCN/PM9A3
	PCIE SSD 15.36TB 2.5' 15MM/PM1743
	PCIE SSD 7.68TB 2.5' 15MM/PM1743

	PCIE SSD 3.84TB 2.5' 15MM/PM1743
	PCIE SSD 1.92TB 2.5' 15MM/PM1743
Fibre Channel controller	Fibre Channel Host Bus Adapter 1 x Qlogic QLE2770
	Fibre Channel Host Bus Adapter 2 x Qlogic QLE2772
	Fibre Channel Host Bus Adapter 1 x 32 Gbit/s Emulex LPE35000-M2-F MMF
	Fibre Channel Host Bus Adapter 2 x 32 Gbit/s Emulex LPE35002-M2-F MMF
	Fibre Channel Host Bus Adapter 1 x Qlogic QLE2870-FJ-BK MMF
	Fibre Channel Host Bus Adapter 2 x Qlogic QLE2872-FJ-BK MMF
	Fibre Channel Host Bus Adapter 1 x 16 Gbit/s Qlogic QLE2690
	Fibre Channel Host Bus Adapter 2 x 16 Gbit/s Qlogic QLE2692
	Fibre Channel Host Bus Adapter 1 x 16 Gbit/s Emulex LPe31000-M6-F
	Fibre Channel Host Bus Adapter 2 x 16 Gbit/s Emulex LPe31002-M6
NIC card	OCP NIC-E810-Intel-2x25G SFP28-PCIe4.0x8
	OCP NIC-MCX631432AN-ADAB-Mellanox CX6-2x25G SFP28-PCIe4.0x8
	OCP NIC-X710T2LOCPV3G1P-Intel X710-2x10G RJ45-PCIe3.0x8
	OCP NIC-VT NO127D-WX1860A2-2x1G-RJ45-PCIe2.0x4
	PCIE InfiniBand-MCX653105A-ECAT-Mellanox-1x100G HDR IB-PCIe4.0x16-HHHL
	PCIE NIC-I350-Intel-2x1G-RJ45-PCIe3.0x8
	PCIE NIC-Intel E810XXVDA2G1P5-2x25G SFP28-PCIe4.0x8
	PCIE NIC-MCX512A-ACAT-Mellanox CX5-2x25G SFP28-PCIe3.0x8
	PCIE NIC-MCX512A-ACUT-Mellanox CX5-2x25G SFP28-PCIe3.0x8
	PCIE NIC-MCX623106AN-CDAT-Mellanox CX6-2x100G QSFP56-PCIe4.0x16
	PCIE NIC-X710-Intel-2x10G-RJ45-PCIe3.0x8
	PCIe NIC-EX710-Intel-2x10G SFP+-PCIe3.0x8
	PCIe NIC-VT NS214-Intel X710-2x10G SFP+ -PCIe3.0x8
	PCIe NIC-VT NS312-Mellanox CX4-2x10G SFP28-PCIe3.0x8
	PCIe NIC-VT NS312-Mellanox CX4-2x25G SFP28-PCIe3.0x8
	PCIe NIC-VT NS313-Mellanox CX6-2x25G SFP28-PCIe4.0x8
Riad Card	PCIE RAID card-LSI9460-16i-SAS3516-4GB Cache-RAID0,1,10,5,6,50,60-12Gb/s
	PCIE RAID card-SAS9560-8i-4GB Cache-RAID0,1,10,5,6,50,60-12Gb/s
	PCIE SAS HBA-VT RS243-18i-PM8238-no Cache-RAID0,1,10,5-12Gb/s
	PCIE SAS RAID Card-VT RS241_V2-18i-PM8236-2G Cache-RAID0,1,10,5,6,50,60-12Gb/s
	PCIE SAS RAID Card-VT RS242_V2-18i-PM8236-4G Cache-RAID0,1,10,5,6,50,60-12Gb/s
Certified or supported operating system & virtualization Software	Compatible with mainstream server operating systems:
	Microsoft Windows Sever - 2022 Datacenter
	Microsoft Windows Sever - 2019 Datacenter
	Microsoft Windows Sever - 2022 Standard
	Microsoft Windows Sever - 2019 Standard
	Microsoft-Hyper V
	Red Hat Enterprise Linux 9.0 - 9.x
	Red Hat Enterprise Linux 8.6 - 8.x
	Redhat Open Shift Container Platform 4.11
	Redhat Virtualization 4.x
	Red Hat Openshift Virtualization
	Red Hat Openshift Kubernetes
	Open Source Linux KVM
	SUSE Linux Enterprise Server 15 for AMD64 & Intel64 (with XEN / KVM)
	Ubantu Server 24.04 & 22.04 LTS
	VMWare vSphere 8.0
	VMWare vSphere 7.0

Recommended support

24x7 – 4 hours Response, Next Business Day Call to Resolution CTR

24x7 – 4 hours Response, 24 Hours Call to Resolution CTR

24x7 – 4 Hours Response, 6 Hours Call to Resolution CTR

Default support Next Business Day Consulting and deployment offerings are also available. Contact Vantageo representative for the more information.