



KAYTUS Server KE2260V1 Technical White Paper

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1. Overview

Gartner predicts that 50% of large enterprises will include edge computing in their planning in 2020, more than 50% of industrial Internet of Things analysis will be conducted on the edge, and by 2022, more than 50% of enterprise data will be generated or processed outside the data center or cloud. With this regard, we specially design edge computing products to support the needs and challenges of balancing the environment and performance of servers in edge scenarios to the greatest extent.

KAYTUS KE2260V1 server is our first edge server product optimized for edge computing applications. The product follows the ODCC-OTII specification of the domestic open source hardware organization, and implements the design concept of KAYTUS V1 product platform that is open, extreme, intelligent and flexible. It has strong performance, flexible expansion and keep sensitive to edge AI while maintaining a healthy and open ecosystem. It is especially suitable for various enterprises, Internet, communication, transportation, energy, finance and other industries that have special development needs for edge computing or edge intelligence services. The product integrates various characteristics such as computation, storage and AI acceleration in a limited space, and is suitable for smart cities, industrial Internet, smart retail, smart manufacturing, car networking and other scenarios that have high requirements for deployment environment, connection bandwidth and time delay while still retaining server architecture design and computing performance requirements. At the same time, the product can carry more business architectures based on 5G scenarios and realize the ultimate goal of edge computing enabled intelligent applications faster.

2. Features

For edge computing application scenarios, KE2260V1 maintains the consistent high quality, high performance and high reliability of KAYTUS servers, and applies extreme design concepts and exquisite manufacturing techniques to all aspects of KE2260V1 products.



Figure 2-1 KE2260V1 real image

2.1 Strong Performance:

- It uses the new generation of Intel® Xeon® scalable processors, a single of which has up to 28 cores and 56 threads.

It supports TDP 205W CPU at maximum, a maximum main frequency of 3.6 GHz, 38.5 MB L3 cache and three 10.4 GT/s UPI interconnection links, enabling the server to have high processing performance

- It supports 6 channels and 8 DDR4 memories with a single CPU, supporting 2933MHz at maximum. It is the first to support Optane nonvolatile DIMM memory chips, which is faster, securer and more reliable.
- It supports up to 6+2 NVMe SSD hard disks, providing a higher storage rate and capacity.

The hardware system is designed with NUMA Balance, which enables PCIe expansion devices to be evenly deployed under two CPU's to realize the extreme optimization of application performance.

2.2 Extreme Environmental Adaptation:

- The product is only 430mm deep, which is nearly 1/2 shorter than that of common servers and saves space.
- Adaptable: It supports the temperature of 0°C~45°C for a long term. It supports the temperature of -5°C~50°C for a short term and the humidity of 5%~90%.
- With Class A electromagnetic compatibility, its dustproof and corrosion-resistant, and anti-seismic design meets telecommunication standards
- It supports wall-mounted deployment

2.3 Flexible Expansion:

- It supports up to 6 PCIe 3.0 slots, 2 PCIe x16+4 PCIe x8 or 4 PCIe x16
- It supports up to 2 PCIe x16 GPUs with full height and full length, and TDP300W
- It supports up to 4 PCIe x16 GPUs with full height and half length, and TDP75W

2.4 Edge AI deployment:

- It fully adapts to the latest scalable processors of Intel® Xeon® series, supports the new extended instruction set AVX512_VNNI, professional accelerated depth calculation and AI related load
- It supports up to 2 standard PCIe expansion cards with full height and full length to flexibly meet the requirements of high-specification AI acceleration applications

2.5 Simple Operation and Maintenance:

- The modular design and front-end operation and maintenance improve server operation and maintenance convenience and operation and maintenance efficiency
- The front-end IO design and isolation of cold and hot air ducts improve heat dissipation efficiency of machine room

3. Logic Architecture Diagram of Main Board

- KE2260V1 supports 2 Intel® Xeon® scalable processors per node. A single node supports 16 DDR4 memory slots. Each processor supports 8 DDR4 memory slots. It supports 2666Mhz/2933Mhz memory, and a single node supports up to a memory capacity of 1.0TB (64GB in case of a single memory module).
- The hardware between two processors of a single node supports up to 3 UPI interconnections.

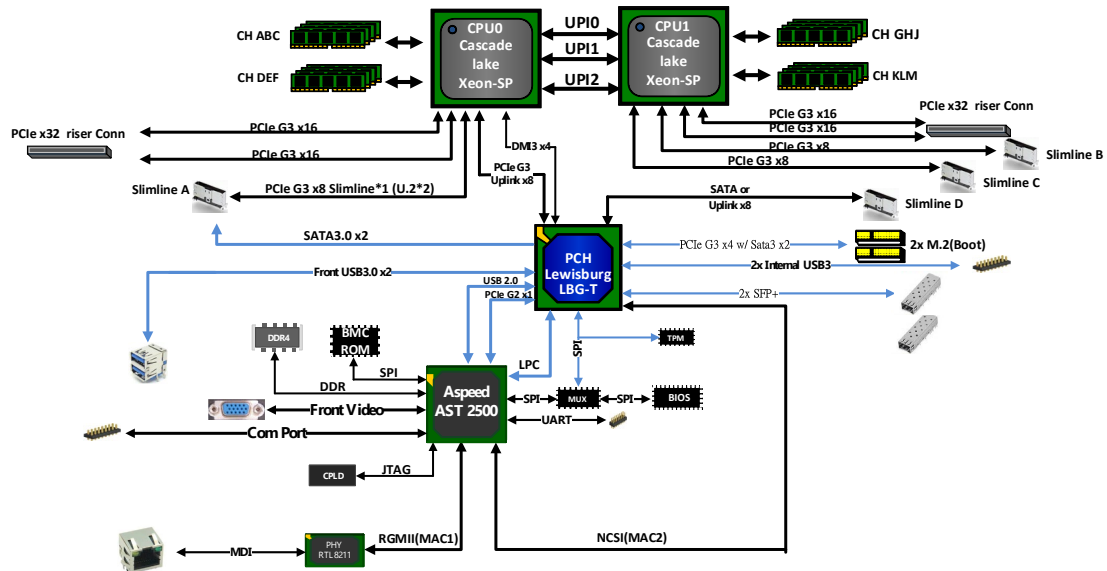


Figure 3-1 Logic block diagram

4. Product Specification

4.1 Front and Rear Window Assemblies

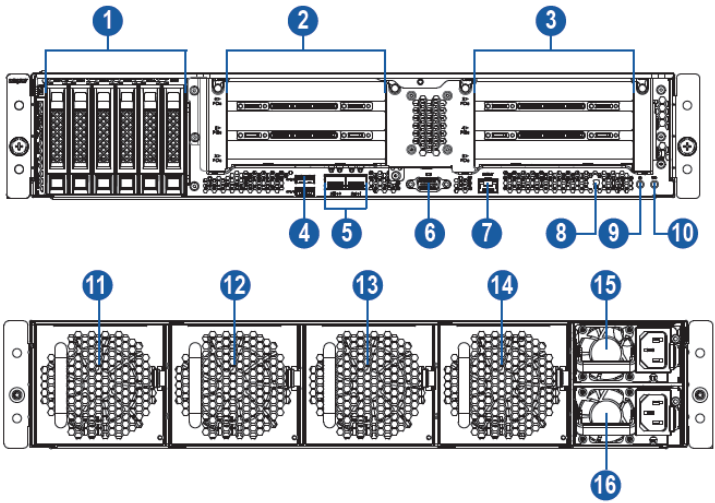


Figure 4-1 KE2260V1 front and rear windows

No.:	Module name	No.:	Module name
1	Hard disk module	9	Power lamp/key
2	PCIE slot (0-2)	10	UID lamp/key
3	PCIE slot (3-5)	11	System fan 3
4	USB3.0/2.0	12	System fan 2
5	On-board 10Gb port	13	System fan 1
6	VGA serial port	14	System fan 0
7	BMC management network port	15	PSU0
8	System status indicator	16	PSU1

Figure 4-2 KE2260V1 front and rear windows description

Note: The system status indicator is normally bright green, and it is always bright red in case of fault.

The power lamp is green when power on. The power lamp is orange when standby. Press 4s long to force shutdown.

UID indicator, when turn on UID, it's bright blue; when turn off, it is not bright

4.2 Indicators on the Hard Disk Carrier



Figure 4-3 Carrier indicator

No.:	Module name	Description
1	Hard drive status indicator	Normally green: normal
		Green flashing: hard disk reading and writing
2	Hard disk fault alarm indicator	Normally red: hard disk fault

		Normally blue: hard disk positioning
		Normally pink: cooperate with RAID Rebuilding

Figure 4-4 Carrier indicator description

4.3 Mainboard Layout

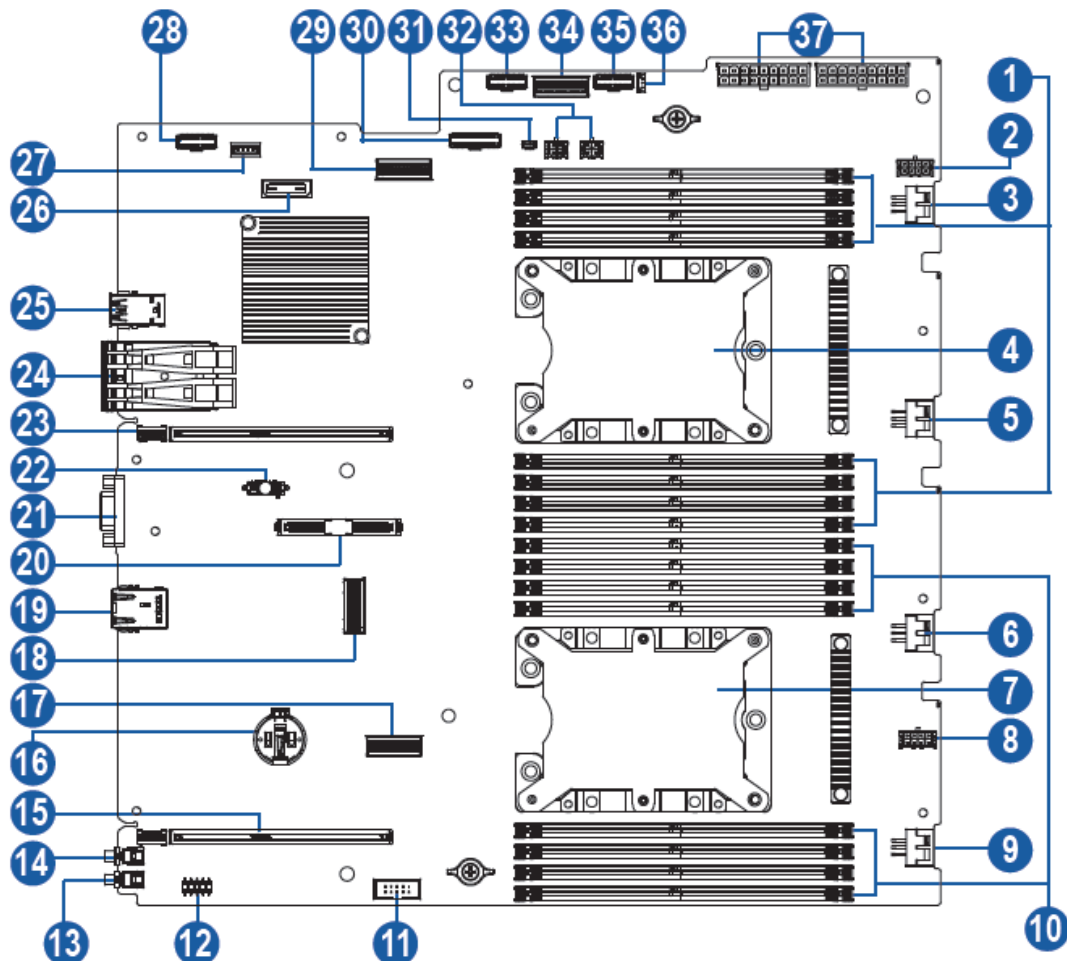


Figure 4-5 Mainboard diagram

No.:	Module name	No.:	Module name
1	Memory slot (CPU0)	20	M.2 Riser card slot
2	GPU power port 0	21	VGA interface
3	System fan interface 0	22	TPM card slot
4	CPU0 slot	23	PCIE0_CPU0 card slot
5	System fan interface 1	24	On-board 10Gb port
6	System fan interface 2	25	TPM slot
7	CPU1 slot	26	XDP DEBUG slot
8	GPU power port 1	27	RAID KEY slot
9	System fan interface 3	28	Internal USB slot
10	Memory slot (CPU1)	29	PCIex8/SATAx8/uplinkx8 cable interface
11	Internal DB9 serial port	30	6 hard disk backplane sideband cable

			interface
12	CPLD JTAG cable interface	31	6 hard disk backplane CPP cable interface
13	UID lamp/key	32	Hard disk backplane power cable interface
14	Power lamp/key	33	2 hard disk backplane sideband cable interface
15	PCIE1_CPU1 card slot	34	PClex4/SATAx2 cable interface(CPU0)
16	Battery slot	35	Power panel sideband cable interface
17	PClex8 cable interface(CPU1)	36	Open cover to detect cable interface
18	PClex8 cable interface(CPU1)	37	Power panel power cable interface
19	BMC management network port		

Figure 4-6Mainboard description

5. System Specifications

Processor	
Processor type	Support the new generation of Skylake&Cascadelake Intel® Xeon® scalable processors and maximum TDP: 205W
Memory	
Memory type	Support up to 16 DIMMs, 2400/2666/2933 RDIMM, LRDIMM memory, up to 4 AEP memories
Number of memory slots	16
Total memory capacity	Support up to 1024GB (64GB in case of a single memory module)
I/O interface	
USB interface	2 front USB 3.0 interfaces and 2 built-in USB reserved
Display interface	1 front VGA interface
Management interface	1 front RJ45 management interface
UID indicator interface	1 front UID indicator and its key
Display controller	
Controller type	it is integrated with Aspeed2500 chip and supports a maximum resolution of 1920*1200
HDD backplane	
Hard disk backplane	Support hot-pluggable SAS/SATA/NVME hard drives
Network card	
Network card controller	Mainboard supports PCIE designation card
Management chip	
Management chip	Integrate an independent 1000Mbps network interface dedicated to IPMI remote management.
PCIE expansion slot	<ul style="list-style-type: none"> Two PCI Express 3.0 x32 slots on the mainboard support PCI-E Riser cards Riser card supports horizontal insertion and full height. Full configuration 1: support 4 16x PCIE cards and 2 8xPCIE cards Full configuration 2: support 4 16x PCIE cards
Hard disk	
Hard disk type	Support only front hard drives Support up to 6 2.5" SASs/SATAs/NVMEs at the same time Or 4 2.5"NVMEs +2 2.5" SATAs Or 2 2.5"NVMEs +4 2.5" SATAs Or 4 2.5" NVME (NUMA Balancing is supported if QAT is configured)

	(subject to your machine)
	Support dual M.2 system SSD
Power supply	
Specification	It supports platinum AC power supply which has dual electrical ports and supports an output power of 550W/800W/1300W/1600W/2000W; it supports -48V DC PSU, 1+1 redundancy; 2 power modules; it supports PMBus power supply and realizes Node Manager 4.0 function;
Power input	Please refer to the power input value on the host nameplate label.。

Figure 5-1 System specification

6. Compatibility List of Parts

6.1 Processor

Model	Number of cores	Thread	Basic dominant frequency	Maximum turbo	Cache	Maximum memory supported	UPI connections	Power consumption
8280	28	56	2.70 GHz	4.00 GHz	38.5 MB L3	1 TB	3	205 W
8280L	28	56	2.70 GHz	4.00 GHz	38.5 MB L3	4.5TB	3	205 W
8280 M	28	56	2.70 GHz	4.00 GHz	38.5 MB L3	2TB	3	205 W
8276	28	56	2.20 GHz	4.00 GHz	38.5 MB L3	1 TB	3	165 W
8276L	28	56	2.20 GHz	4.00 GHz	38.5 MB L3	4.5 TB	3	165 W
8276 M	28	56	2.20 GHz	4.00 GHz	38.5 MB L3	2TB	3	165 W
8270	26	32	2.70 GHz	4.00 GHz	35.75 MB L3	1 TB	3	205 W
8268	24	48	2.90 GHz	3.90 GHz	35.75 MB L3	1 TB	3	205 W
8256	4	8	3.80 GHz	3.90 GHz	16.5 MB L3	1TB	3	105 W
8253	16	32	2.20 GHz	3.00 GHz	22 MB L3	1TB	3	125 W
8260	24	48	2.40 GHz	3.90 GHz	35.75 MB L3	1TB	3	165 W
8260L	24	48	2.40 GHz	3.90 GHz	35.75 MB L3	4.5 TB	3	165 W
8260 M	24	48	2.40 GHz	3.90 GHz	35.75 MB L3	2 TB	3	165 W
6258 R	28	56	2.70 GHz	4.00 GHz	38.5 MB L3	1 TB	2	205 W
6254	18	36	3.10 GHz	4.00 GHz	24.75 MB L3	1 TB	3	200 W
6252	24	48	2.10 GHz	3.70 GHz	35.75 MB L3	1 TB	3	150 W
6252 N	24	48	2.30 GHz	3.60 GHz	35.75 MB L3	1 TB	3	150 W
6150	18	36	2.70 GHz	3.70 GHz	24.75 MB L3	768 GB	3	165W
6248	20	40	2.50 GHz	3.90 GHz	27.5 MB L3	1 TB	3	150 W

6248 R	24	48	3.00 GHz	4.00 GHz	35.75 MB L3	1 TB	2	205 W
6246	12	24	3.30 GHz	4.20 GHz	24.75 MB L3	1 TB	3	165 W
6246 R	16	32	3.40 GHz	4.10 GHz	35.75 MB L3	1 TB	2	205 W
6244	8	16	3.60 GHz	4.40 GHz	24.75 MB L3	1TB	3	150 W
6242	16	32	2.80 GHz	3.90 GHz	22 MB L3	1TB	3	150 W
6242 R	20	40	3.10 GHz	4.10 GHz	35.75 MB L3	1 TB	2	205 W
6240	18	36	2.60 GHz	3.90 GHz	24.75 MB L3	1TB	3	150 W
6240 R	24	48	2.40 GHz	4.00 GHz	35.75 MB L3	1TB	2	165W
6240 M	18	36	2.60 GHz	3.90 GHz	24.75 MB L3	2TB	3	150 W
6240L	18	36	2.60 GHz	3.90 GHz	24.75 MB L3	4.5 TB	3	150 W
6238	22	44	2.10 GHz	3.70 GHz	30.25 MB L3	1TB	3	140 W
6238T	22	44	1.90 GHz	3.70 GHz	30.25 MB L3	1TB	3	125 W
6238L	22	44	2.10 GHz	3.70 GHz	30.25 MB L3	4.5 TB	3	140W
6238 M	22	44	2.10 GHz	3.70 GHz	30.25 MB L3	2TB	3	140W
6238 R	28	56	2.20 GHz	4.00 GHz	38.5 MB L3	1TB	2	165W
6234	8	16	3.30 GHz	4.00 GHz	24.75 MB L3	1TB	3	130 W
6230	20	40	2.10 GHz	3.90 GHz	27.5 MB L3	1TB	3	125 W
6230T	20	40	2.10 GHz	3.90 GHz	27.5 MB L3	1TB	3	125 W
6230 N	20	40	2.30 GHz	3.50 GHz	27.5 MB L3	1TB	3	125 W
6230 R	26	52	2.10 GHz	4.00GHz	35.75 MB L3	1TB	2	150 W
6226	12	24	2.70 GHz	3.70 GHz	19.25 MB L3	1TB	3	125 W
6226 R	16	32	2.90 GHz	3.90 GHz	22 MB L3	1TB	2	150W
6137	8	16	3.90 GHz	4.10GHz	25 MB L3	768 GB	3	205 W

6130	16	32	2.10 GHz	3.70 GHz	22 MB L3	768 GB	3	125 W
5222	4	XX'	3.80 GHz	3.90 GHz	16.5 MB L3	1 TB	2	105 W
5220	18	36	2.20 GHz	3.90 GHz	24.75 MB L3	1 TB	2	125 W
5220 R	24	48	2.20 GHz	4.00 GHz	35.75 MB L3	1 TB	2	150W
5220T	18	36	1.9 GHz	3.90 GHz	24.75 MB L3	1 TB	2	125 W
5218	16	32	2.30 GHz	3.90 GHz	22 MB L3	1 TB	2	125 W
5218 R	20	40	2.10 GHz	4.10GHz	27.5 MB L3	1 TB	2	125 W
5217	8	16	3.00 GHz	3.70 GHz	11 MB L3	1 TB	2	115 W
5215	10	20	2.50 GHz	3.40 GHz	13.75 MB L3	1 TB	2	85 W
5215 M	10	20	2.50 GHz	3.40 GHz	13.75 MB L3	2TB	2	85 W
5215L	10	20	2.50 GHz	3.40 GHz	13.75 MB L3	4.5TB	2	85 W
5118	12	24	2.30 GHz	3.20 GHz	16.5 MB L3	768 GB	2	105W
5218 N	16	32	2.30 GHz	3.7 GHz	22 MB L3	1 TB	2	110W
5218T	16	32	2.10 GHz	3.80 GHz	22 MB L3	1 TB	2	105W
4216	16	32	2.10 GHz	3.20 GHz	22 MB L3	1 TB	2	100W
4215	8	16	2.50 GHz	3.50 GHz	11 MB L3	1 TB	2	85W
4215 R	8	16	3.20 GHz	4.00 GHz	11 MB L3	1 TB	2	130W
4214	12	24	2.20 GHz	3.20 GHz	16.5 MB L3	1 TB	2	85W
4210	10	20	2.20 GHz	3.20 GHz	13.75 MB L3	1 TB	2	85W
4210 M	2	4	2.60 GHz	3.20 GHz	3 MB L3	32GB	2	37W
4209T	8	16	2.20 GHz	3.20 GHz	11 MB L3	1 TB	2	70W
4208	8	16	2.10 GHz	3.20 GHz	11 MB L3	1 TB	2	85W
4116	12	24	2.10 GHz	3.00 GHz	16.5 MB L3	768 GB	2	85W

4114	10	20	2.20 GHz	3.00 GHz	13.75 MB L3	768 GB	2	85W
4214 R	12	24	2.40 GHz	3.50 GHz	16.5 MB L3	1 TB	2	100W
4110	8	16	2.10 GHz	3.00 GHz	11 MB L3	768 GB	2	85W
4108	8	16	1.80 GHz	3.00 GHz	11 MB L3	768 GB	2	85W
3204	6	12	1.90 GHz	1.90 GHz	8.25 MB L3	768 GB	2	85W
3106	8	8	1.70 GHz		11 MB L3	768 GB	2	85W
3206 R	8	8	1.90 GHz	1.90 GHz	11 MB L3	1 TB	2	85W

Table 6-1 CPU performance list

6.2 Memory

Category	Capacity	Rate	Data width	Organization
RDIMM	16G	2666	X72	1R4/2R8
RDIMM	16G	2933	X72	2R8
RDIMM	32G	2666	X72	2R4
RDIMM	32G	2933	X72	2R4
RDIMM	16G	3200	X72	2R8
RDIMM	32G	3200	X72	2R4/2R8
RDIMM	64G	3200	X72	2R4
LRDIMM	64G	2666	X72	4R4
LRDIMM	64G	2933	X72	4R4

Table 6-2 Memory list

Note 1: For parts not shown in this table, please consult our technicians.

Note 2: Memories of different types (RDIMM, RDIMM) and different specifications (capacity, bit width, rank, height, etc.). shall not be mixed in the same server.

Note 3: The maximum memory capacity can be achieved when two processors are installed. When using a processor, the maximum memory capacity is half of the display capacity.

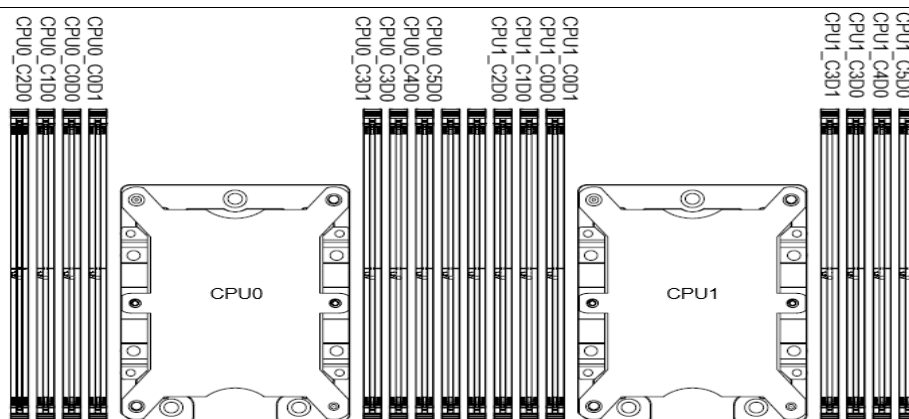


Figure 6-3 Memory schematics

DIMM QTY	CPU0							
	CH2	CH1	CH0		CH3		CH4	CH5
	D0	D0	D0	D1	D1	D0	D0	D0
1			V					
2			V			V		
3		V	V			V		
4		V	V			V	V	
5	V	V	V			V	V	
6	V	V	V			V	V	V
7	V	V	V	V		V	V	V
8	V	V	V	V	V	V	V	V

Table 6-4Interpolation in case of a single CPU

DIMM QTY	CPU0								CPU1							
	CH2	CH1	CH0		CH3		CH4	CH5	CH2	CH1	CH0		CH3		CH4	CH5
	D0	D0	D0	D1	D1	D0	D0	D0	D0	D0	D0	D1	D1	D0	D0	D0
1			V													
2			V								V					
3			V			V					V					
4			V			V					V			V		
5		V	V			V					V			V		
6		V	V			V					V			V	V	
7		V	V			V	V				V			V	V	
8		V	V			V	V			V	V			V	V	
9	V	V	V			V	V			V	V			V	V	
10	V	V	V			V	V			V	V			V	V	V
11	V	V	V			V	V	V		V	V			V	V	V
12	V	V	V			V	V	V	V	V	V			V	V	V

13	V	V	V	V		V	V	V	V	V	V			V	V	V
14	V	V	V	V		V	V	V	V	V	V	V		V	V	V
15	V	V	V	V	V	V	V	V	V	V	V	V		V	V	V
16	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

Table 6-5 Interpolation in case of dual CPUs

Note: The same machine can only use the same type of memory.

The interpolation of AEP memory is as follows:

DIMM QTY	CPU0							
	CH2	CH1	CH0		CH3		CH4	CH5
	D0	D0	D0	D1	D1	D0	D0	D0
6	A	V	V			V	V	A
8	V	V	V	A	A	V	V	V

Table 6-6 Interpolation of AEP in case of a single CPU

DIMM QTY	CPU0								CPU1							
	CH2	CH1	CH0		CH3		CH4	CH5	CH2	CH1	CH0		CH3		CH4	CH5
	D0	D0	D0	D1	D1	D0	D0	D0	D0	D0	D0	D1	D1	D0	D0	D0
12	A	V	V			V	V	A	A	V	V			V	V	A
16	V	V	V	A	A	V	V	V	V	V	V	A	A	V	V	V

Table 6-7 Interpolation of AEP

6.3 Storage

6.3.1 SATA/SAS Hard Disk Model

Model	Speed/min	Capacity
2.5 SATA	7.2K	1T/2T
2.5 SAS	10K/15K	600G/900G/1.2T/1.8T/2.4T

Table 6-8 Hard drive options

Note: For parts not shown in this table, please consult our technicians.

6.3.2 SSD Hard Disk Model

Model	Capacity
PCIE SSD	960G/1000G/1600G/1.92T/2000G/3200G/3.84T/4000G/6400G
SATA SSD	240G/480G/960G/1.92T/3.84T

Table 6-9 SSD hard disk options

Note: For parts not shown in this table, please consult our technicians.

6.4 Raid/SAS Card

Type	Description	Description
SAS card /Raid card	SAS card_SAS3008+IT+PCIE3.0	2.5 configuration

	RAID card_PM8060_2GB_SAS12G_PCIE3.0	2.5 configuration
	RAID card_L_8R0_9361-8i_1G_HDM12G_PCIE3	2.5 configuration
	RAID card_L_8R0_9361-8i_1GB_HDM12G_PCIE3.0	2.5 configuration

Table 6-10 Compatibility list of Raid/SAS card**6.5 Network Card**

1G network card	Network card_SND_W_I350-AM2_RJ_PCI-E4X_1KM_dual
	Network card_W_I350AM4_1G_RJ45_PCIEX8_Four
10G network card	Network card_82599ES_10G_LC_PCIEX8_dual_XR_slave card
	Network card_Intel_W_82599ES_LC_PCI-E8X_10G_dual
	Network card_M_10G_MCX4121A-XCAT_LC_PCIEx8_2_XR
	Network card_I_10G_X710DA2_LC_PCIEx8_2_XR
	Network card_Intel_W_X540-T2_RJ45_PCI-E8X_10G_dual
25G network card	Network card_M_25G_MCX512A-ACAT_LC_PCIEx8_2_XR
100G network card	Network card_M_100G_MCX515A-CCAT_LC_PCIEx16_XR
	Network card_M_100G_MCX516A-CCAT_LC_PCIEx16_2_XR
Network card chip accessories	Dummy wafer_RETOP_I350 card_full height
	Dummy wafer_RETOP_10G network card_RT2013032110gwkdq
	Dummy wafer_RETOP_10G_RT2013032110gwkdqpgg_full height
	Light guide_RETOP_10G_network card_RTLCBJ201305090
Light module	SFP_Secom Telecom_LC_AFBR-709SMZ_10G_SFP+
	SFP_FNS_LC_FTLX8574D3BCL_10G_SW_MM
	SFP_FNS_LC_FTLF8536P4BCL_25G_SW_MM
	SFP_AG_LC_AFBR-725SMZ_25G_SW_MM

Table 6-11 Compatibility list of network card**6.6 HBA and HCA Card**

Type	Vendor	Description
HBA card	Qlogic	HBA card_QL_4R2_QLE2692-ISR-BK_FC16G_PCIE
HCA card	Mellanox	HCA card_M_2- QSFP_MCX556A-ECAT_PCIE

Table 6-12 Compatibility list of HBA&HCA**6.7 Power Supply**

Power	Brand	Model	Input voltage	Support redundancy	Maximum quantity
550w	Great Wall	Power module_G_M_GW-CRPS550N_550W_1U_P	100-240 V	Yes	2
800w		Power	100-240	Yes	2

		module_G_M_GW-CRPS800B_800W_1U_P	V		
800w		Power module_G_M_GW-CRPS800B_800W_1U_P-IC	100-240 V	Yes	2
800w		Power module_G_M_GW-CRPS800N2_800W_1U	100-240 V	Yes	2
1300 w		Power module_G_M_GW-CRPS1300D_1300W_1U_P	100-240 V	Yes	2
1600 w		Power module_G_M_GW-CRPS1600D_1600W_1U_P	100-240 V	Yes	2
2000 w		Power module_G_M_GW-CRPS2000D_2000W_1U_P	100-240 V	Yes	2
800w	Lite on	Power module_LO_M_PS-2801-12L1_800W_1U_P	100-240 V	Yes	2
1300 w		Power module_LO_M_PS-2132-1L1_1300W_1U_P	100-240 V	Yes	2
1600 w		Power module_LO_M_PS-2162-5L_1600W_1U_P	100-240 V	Yes	2
800w	AS power	Power module_AS_M_CRPS_800W_1U_-48V	-36—72 V	Yes	2

Table 6-13 Compatibility list of power supply

6.8 Operating System

Vendor	OS version
Microsoft	Windows Server 2019
RHEL	RHEL7.6
RHEL	RHEL7.7
RHEL	RHEL8.0
CentOS	CentOS7.7
CentOS	CentOS8.0
We are only responsible for the initial shipment configuration, and the customer changes the configuration by themselves. If there is any problem, we will not be responsible for it.	SLES 15 SP1
VMware	VMWare ESXI 6.7 U3
Ubuntu	Ubuntu_Server_16.04_64bit

Table 6-14 System list

7. Configuration Restrictions

- We are only responsible for the initial shipment configuration, and the customer changes the configuration by themselves. If there is any problem, we will not be responsible for it.
- 2000W power supply, 1+1 redundancy, V100=2, CPU≤165W (with V100 configuration, CPU is limited to 165W and below, ambient temperature ranges from 5℃ to 30℃)
- AEP memory matches only Cascade Lake, and cannot match Sky Lake (when CPU=1, it's 1-2; when CPU=2, it's 1-4), it must be matched with normal memory (111/211 has been tested)
- The maximum number of hard disks is only 6.
- SAS needs to use RAID/SAS card, while RAID/SAS card is optional for SATA, NVME must not have RAID/SAS card.

8. System Management

ISBMC intelligent management system is a server remote management system independently developed by us. It is compatible with the server industry management standard, IPMI specification and has highly reliable and more intelligent hardware monitoring and management functions. The main features of ISBMC intelligent management system include:

- Support intelligent platform management interface (IPMI)
- Support redirection of keyboard, mouse, video and text console
- Support remote virtual media
- Support Redfish protocol
- Support simple network management protocol (SNMP)
- Support login to BMC via Web browser
- The main specifications of the intelligent management system are shown in the following table.
- Specifications of BMC intelligent management system:

Specification	Description
Management interface	It supports various management interfaces to meet system integration of various methods, and can be integrated with any standard management system, and supports the following interfaces: IPMI CLI SNMP HTTPS Redfish
Fault detection	Provide rich fault detection functions to accurately locate hardware faults.
Alarm management	Support alarm management and SNMP Trap(v1/v2c/v3), Email Alert and syslog services to report alarms in various formats to ensure high-reliability operation of the equipment for 7*24 hours.
Virtual media	Support to virtualize the local media device or mirror image, USB device and folder to media device of remote server, simplify the complexity of operating system installation.
Web-based user interface	Support visual image interface, and the setup and query tasks can be completed quickly through a simple click on the interface.
Screen shot	View the screen shot without log-in, making regular patrol inspection convenient.
Software double mirror backup	When the software completely running currently crashes, it can be started from the backup image.
Support intelligent power management	Power capping technology helps you easily increase deployment density, while dynamic energy saving technology helps you effectively reduce operating costs.
IPv6	Support IPv6 functions to facilitate the construction of a full IPv6 environment and provide you with abundant IP address resources.
NC-SI function	Support NC-SI (Network Controller Side Band Interface) function to allow you to easily access BMC system through business network port.
Hardware watchdog	When the BMC has no response for a period longer than the safety setting

timer	time, the control fan enters the full speed protection mode.
Power supply control	on/off/cycle/status
UID remote control	The UID lamp of a single machine is manually lit, which is convenient to find equipment in the machine room.
Firmware upgrade	BMC/BIOS can be upgraded
Serial port redirection	Serial port I/O in IPMI session redirection system based on IP
Storage information viewing	Display Raid logical array information and information of corresponding physical disks under logical array

Figure 8-1 System management specifications

9. Physical Specifications

Physical Specifications	
Outer dimensions of packaging box	W (width) 673mm; H (height) 348mm; D (depth) 601mm
Host size	W (width) 448mm; H (height) 87.5mm; D (depth) 430mm
Product weight	Full gross weight: 28kg (gross weight includes: main engine + packaging box + guide rail + accessory box)
Environmental parameters	
Operating ambient temperature	It supports the temperature of 0℃~45℃ for a long term. It supports the temperature of -5℃~50℃ for a short term(subject to your machine)
Storage and transportation temperature	-40℃-70℃
Operating humidity	5%-90% (relative humidity)
Storage and transportation humidity	10%-93% (relative humidity)

Table 9-1 Physical specifications

10. Certification

※The certification information will be updated from time to time. For the latest certification information, please consult the technical personnel of our Solutions Department.

region of certification	Certification
China	CCC
	Environment
International mutual recognition	CB
EU	CE
U.S.A	FCC
	UL
Israel	SII
Korea	KC
	E-Standby
Australia	RCM

Table 10-1 Certification

11. Support and Service

Global service hotline:

- 1-844-860-0011 (toll free)
- Service E-mail: servicesupport@kaytus.com

Information required from customers:

- Name
- Tel
- E-mail
- Product model

12. Description of New Technologies

12.1 Intel Scalable Architecture

Intel's next-generation Xeon processor based on Skylake architecture will begin to adopt a new Mesh interconnect architecture design on the chip design architecture to replace the traditional Ring interconnect design to improve CPU access latency and support higher memory bandwidth requirements. At the same time, featured by low power consumption, it allows the processor to operate at a low processor clock speed and at a relatively lower voltage environment, so as to provide better performance improvement and improve energy efficiency. Compared with products of previous generations, the overall performance of Intel Xeon scalable processors has increased by 1.65 times and OLTP warehouse load has increased by 5 times compared with current system.

12.2 QAT

Intel® Quick Assistant Technology (Intel® QAT) speeds up computationally intensive operations and application operations. It provides a software-based foundation for security, authentication and compression, and can significantly improve the performance and efficiency of standard platform solutions. It is embodied in the following aspects.

In the cloud domain, it increases the throughput of applications, adds hardware acceleration for network security, routing, storage and big data, and maximizes CPU utilization.

In terms of network side, Intel® Quick Assistant technology is utilized to accelerate SSL/TLS, thus allowing higher performance encrypted communication and higher platform application efficiency in a secure network.

With regard to big data, the compressed file system data blocks support faster analysis, enable faster Hadoop* runtime for big data and reduce processor requirements, and can complete various operations with low latency, thus improving overall performance.

12.3 Intel VROC Technology

Intel VROC technology represents Virtual RAID on CPU and is specially designed for enterprise RAID solutions based on NVME SSD. The biggest advantage is that it can directly manage connections to Intel's scalable PCIe channels without using a dedicated RAID HBA.

13. Relevant Documents

For more information, please refer to the following link:

<http://www.kaytus.com>

The website provides some resources to help customers solve problems and learn our products, including product manual, drivers and firmware.