

Huawei TaiShan 200 Server Technical Presentation



Contents

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TaiShan 200 Products

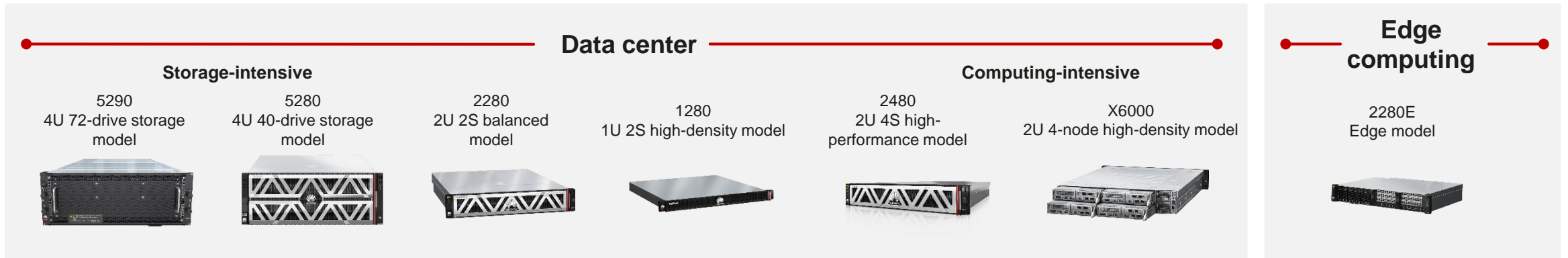
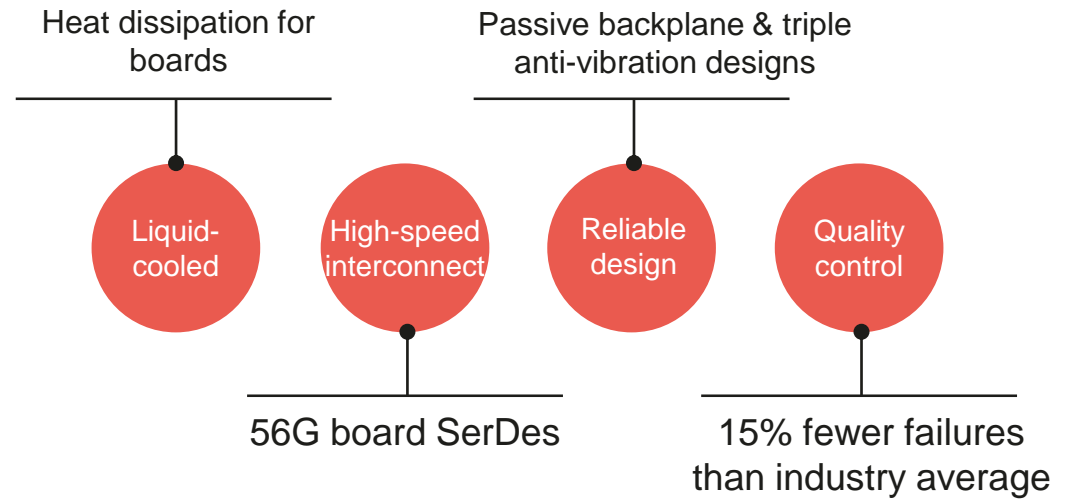
2

TaiShan 200 Valuable Features

TaiShan Servers, a Benchmark for Kunpeng Computing Products



17 years of engineering expertise


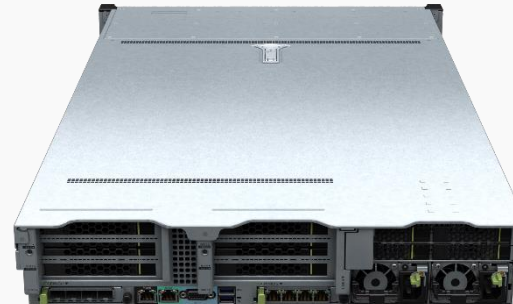


The 5290 model to be launched in Q2 2020

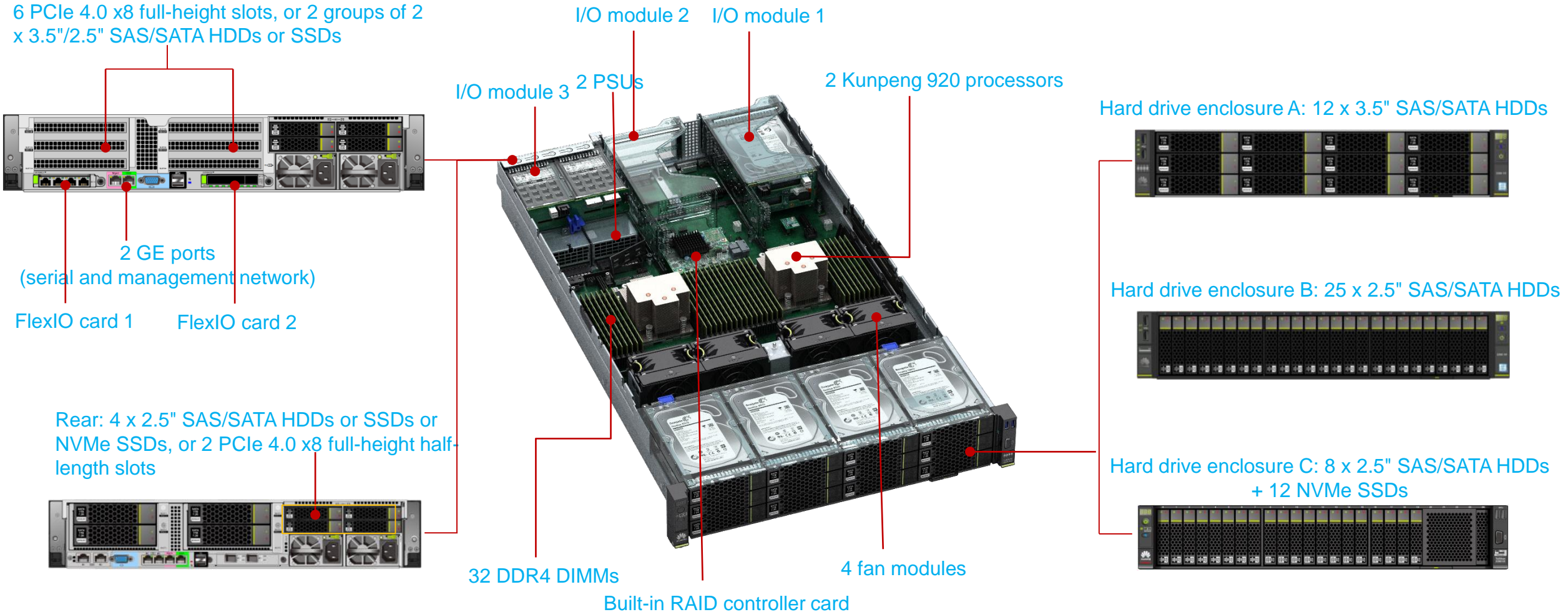
Kunpeng Processor List for Server Class

Generation	Model	Core	Frequency (GHz)	Memory Controller	TDP (Watt)
Kunpeng 920	7260	64	2.6	8	180
	5250	48	2.6	8	150
	5230	32	2.6	8	120
	5220	32	2.6	4	115
	3210	24	2.6	4	95
Kunpeng 916	5130	32	2.4	4	75












2280 Balanced Model: Specifications and Highlights

2280 Balanced Model	Front View	Model	2280	Key Feature	
		Form factor	2U 2S		<ul style="list-style-type: none"> • Supports all Kunpeng 920 processor models, including 5220 and 3210. • Supports 32 DDR4 slots, industry-leading specifications. • The front panel supports various hard drive configurations, including 2.5" and 3.5" form factors, NVMe SSDs and HDDs. • Supports 40°C operating temperature. <p>Remarks</p> <ul style="list-style-type: none"> • The motherboard specifications of the 5220 and 3210 processor models are different from other processor models.
		Processors	2 Kunpeng 920 processors: 32, 48, or 64 cores; 2.6 GHz frequency		
		Memory	Up to 32 DDR4 DIMMs, 2933 MT/s, 4 TB (128 GB per DIMM)		
		Local storage	<ul style="list-style-type: none"> • 16 x 3.5" SAS/SATA HDDs • 27 x 2.5" SAS/SATA HDDs or SSDs • 16 x 3.5" NVMe SSDs 		
	Rear View	RAID	RAID 0, 1, 10, 1E, 5, 50, 6, or 60		
		PCIe expansion	Up to 8 PCIe 4.0 x8, or 3 PCIe 4.0 x16 + 2 PCIe 4.0 x8 slots		
		LOM ports	2 FlexIO cards: 4 x GE, 4 x 10GE, or 4 x 25GE ports		
		Power supply units	2 x 900 W or 2000 W AC or 1200 W or 1500 W DC hot-swappable PSUs, 220 V AC or 240 V DC, supporting 1+1 redundancy		
		Fan modules	4 hot-swappable fan modules, supporting N+1 redundancy		
Operating temperature		5°C to 40°C (41°F to 104°F)			

2280 Balanced Model: Internal Structure

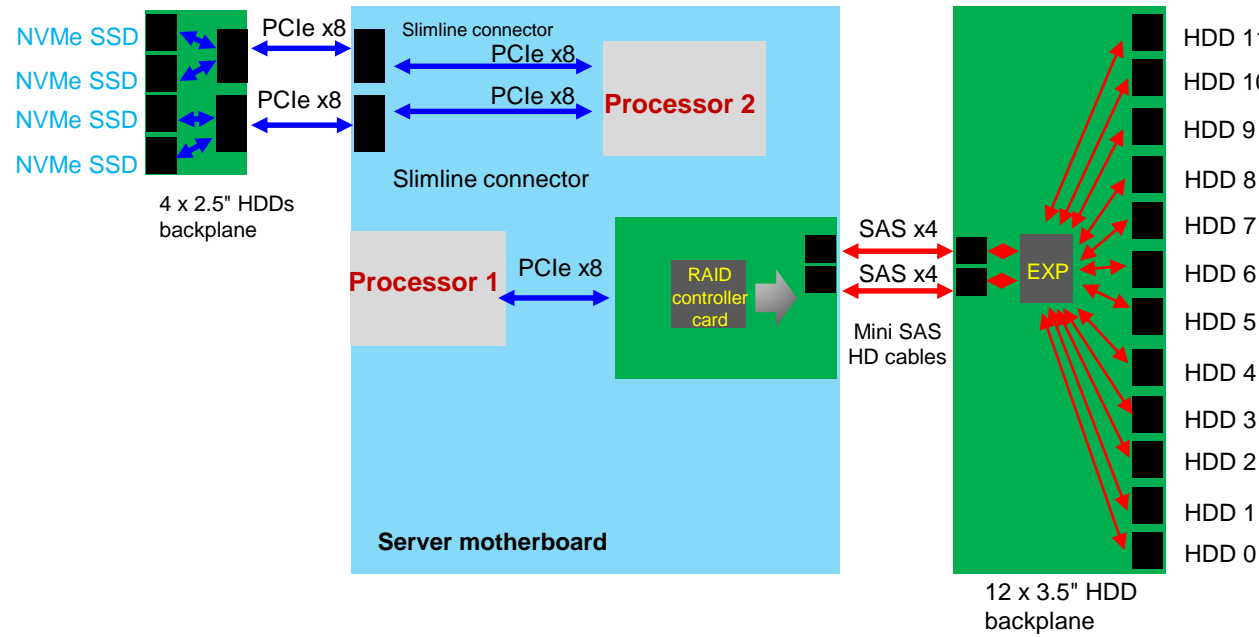


2280 Balanced Model: Configuration Options

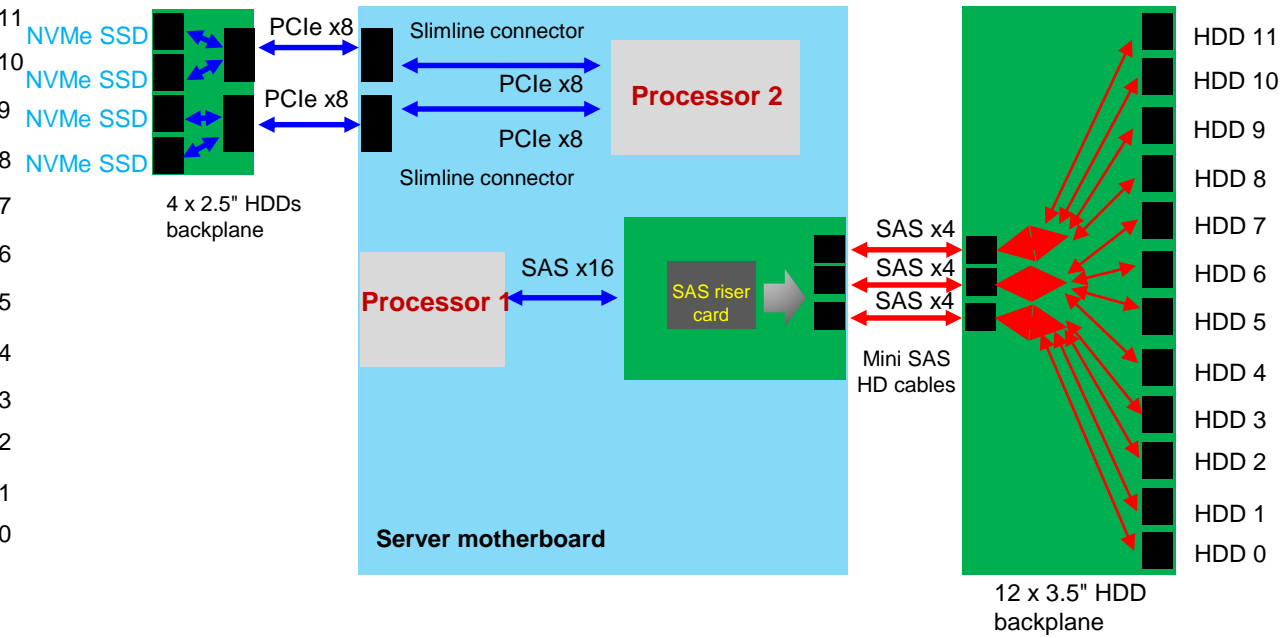
Configuration Option	Front	Rear	RAID Scheme
1 RAID scheme for the 12-drive model	 <p>12 x 3.5" SAS/SATA HDDs</p>	 <p>4 x 3.5" SAS/SATA HDDs 4 x 2.5" NVMe SSDs</p>	 RAID controller card
2 12-slot SAS direct-attached	 <p>12 x 3.5" SAS/SATA HDDs</p>	 <p>2 x 2.5" SAS/SATA HDDs 4 x 2.5" NVMe SSDs</p>	<p>CPU SAS direct-attached/Software RAID</p>
3 25-slot universal drive	 <p>25 x 2.5" SAS/SATA HDDs</p>	 <p>2 x 2.5" SAS/SATA HDDs 4 x 2.5" NVMe SSDs</p>	 RAID controller card
4 25-slot NVMe SSDs	 <p>8 x 2.5" SAS + 12 x 2.5" NVMe SSDs</p>	 <p>4 x 2.5" NVMe SSDs</p>	 RAID controller card

12-Slot Model Topology

RAID Controller Scheme

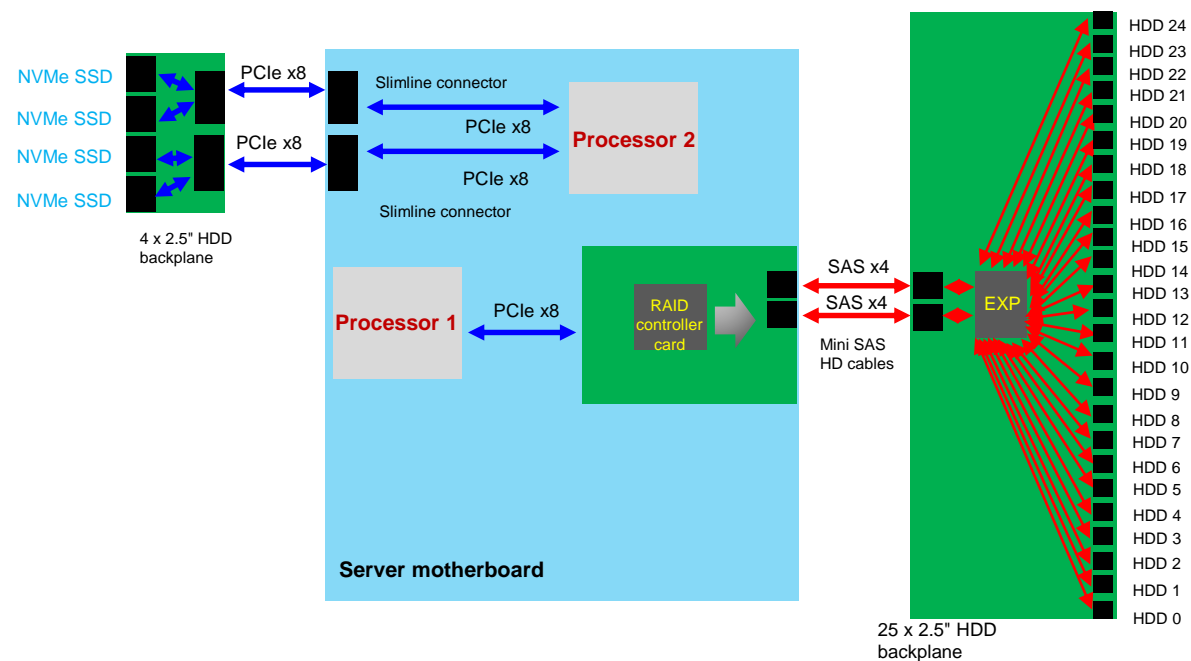


SAS Direct-Attached Scheme

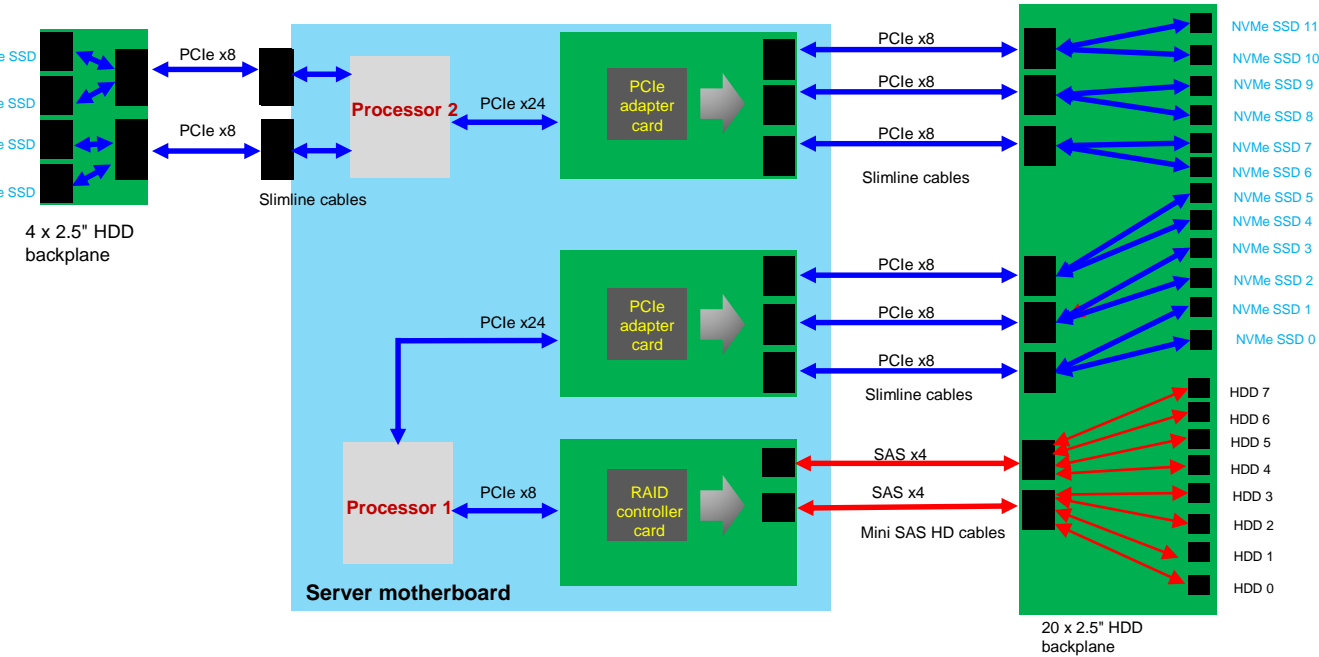


25-Slot Model Topology

Universal Drive Scheme



NVMe SSD Scheme



24-Slot NVMe Model Topology

Configuration Option

Front

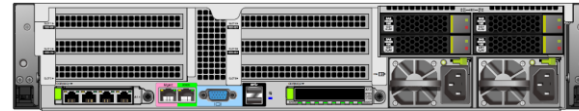
Rear

RAID Scheme

5 24-slot NVMe direct-attached

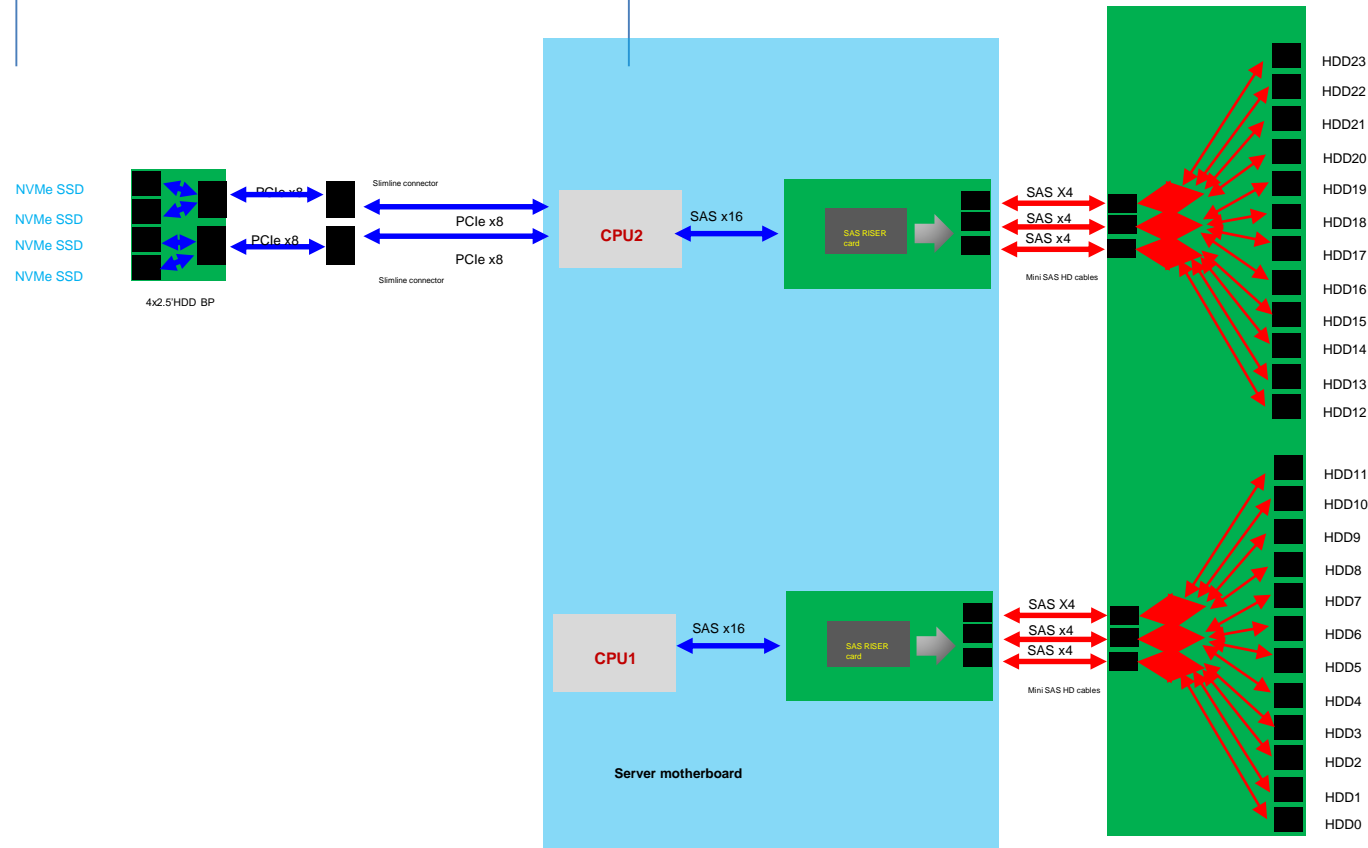


24 x 2.5" SAS/SATA HDDs





4 x 2.5" NVMe SSDs

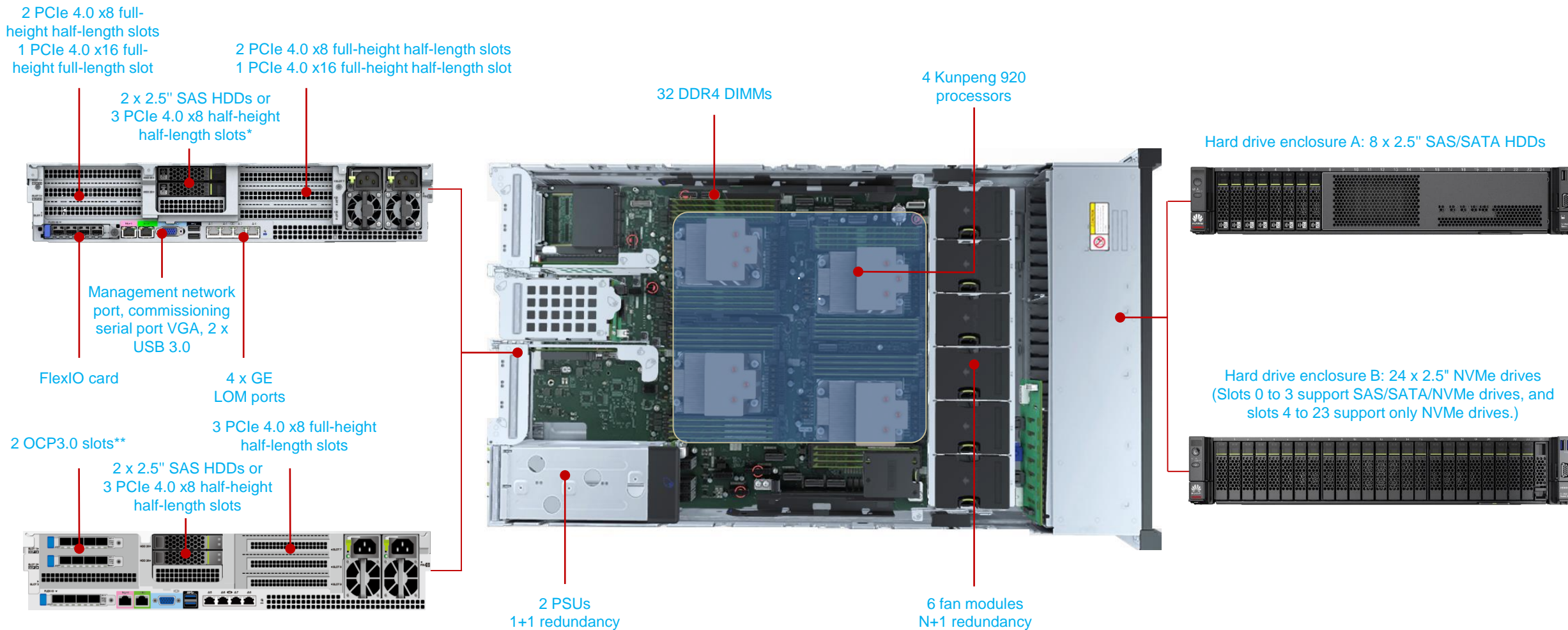
CPU SAS direct-attached/Software RAID



2480 High-Performance Model: Specifications and Highlights






2480 High-Performance Model	Front View	Model	2480	Key Feature	
		Form factor	2U 4S		<ul style="list-style-type: none"> • Supports 4 Kunpeng 920 processors, interconnected using HCCS at a rate of 30 GT/s • Supports 2 OCP 3.0 cards and Socket Direct, improving network interconnect flexibility • Supports 24 PCIe 4.0 NVMe SSDs • Supports up to 9 standard PCIe 4.0 slots
		Processors	4 Kunpeng 920 processors: 48 or 64 cores; 2.6 GHz frequency		
		Memory	32 DDR4 DIMMs, 2933 MT/s, 4 TB (128 GB per DIMM)		
		Local storage	<ul style="list-style-type: none"> • 8 x 2.5" SAS/SATA HDDs or SSDs • 24 x 2.5" NVMe SSDs 		
	Rear View	RAID	RAID 0, 1, 10, 5, 50, 6, or 60		
		PCIe expansion	Up to 7 PCIe 4.0 x8 standard slots + 2 PCIe 4.0 x16 standard slots Or 2 OCP 3.0 cards + 6 PCIe 4.0 x8 standard slots		
		LOM ports	<ul style="list-style-type: none"> • 1 FlexIO card: 4 x 25GE/10GE optical ports • 1 LOM NIC: 4 GE electrical ports 		
		Power supply units	2 x 2000 W AC hot-swappable PSUs, 220 V AC, 1+1 redundancy		
		Fan modules	6 hot-swappable fan modules, supporting N+1 redundancy		
Operating temperature		5°C to 40°C			

2480 High-Performance Model: Internal Structure

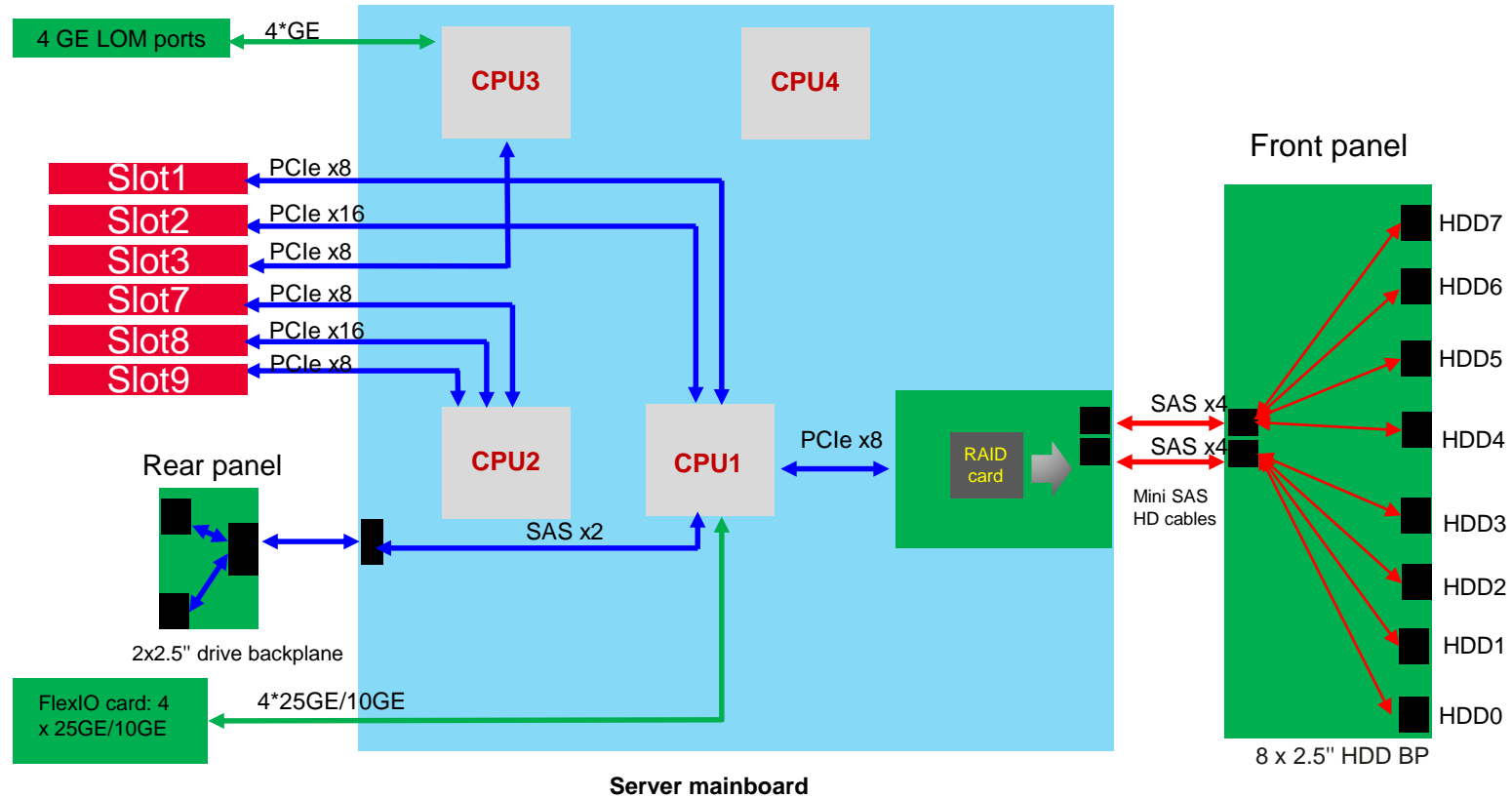


Notes: * expected to support 3 PCIe 4.0 x8 half-height half-length slots by June 2020.
**Currently, only the 24-NVMe model supports the OCP 3.0 network adapter.

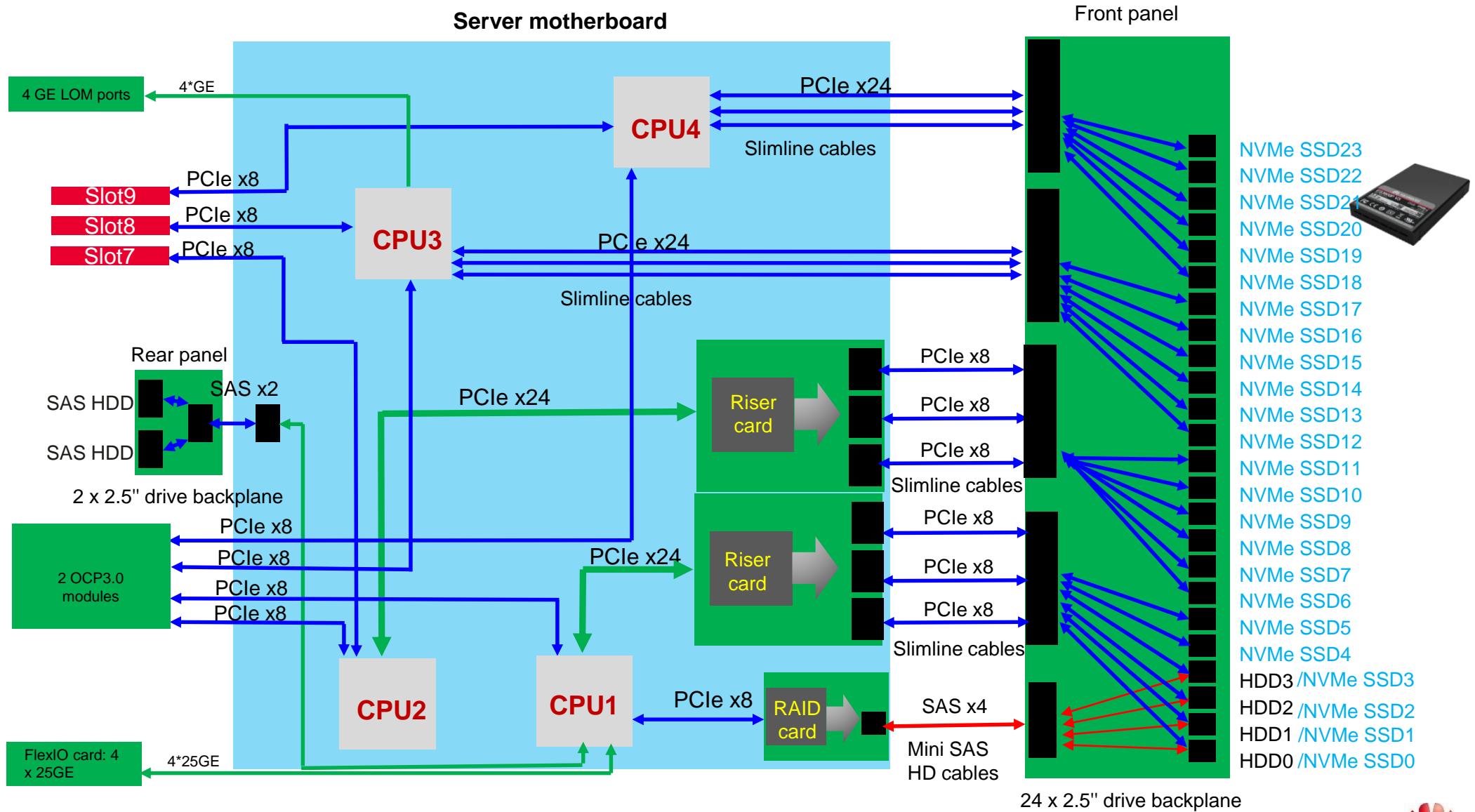
2480 High-Performance Model: Configuration Options

Configuration Option	Front	Rear	RAID Scheme
<p>1 RAID scheme for the 8-drive model</p>	 <p>8 x 2.5" SAS/SATA HDDs (RAID controller card)</p>	 <p>2 x 2.5" SAS HDDs (SAS direct-attached to CPU)</p>	 <p>RAID controller card</p>
<p>2 24-slot NVMe SSDs</p>	 <p>24 x 2.5" NVMe SSDs (Slots 0 to 3 support 2.5" SAS/SATA drives and RAID controller cards)</p>	 <p>2 x 2.5" SAS HDDs (SAS direct-attached to CPU)</p>	<p>CPU SAS direct-attached/Software RAID</p>

2480 Topology: 8-Drive Model



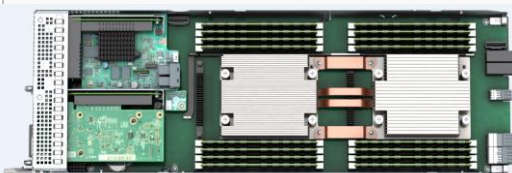
2480 Topology: 24-Drive Model



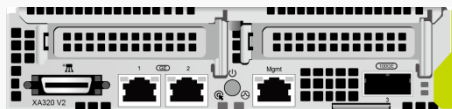
X6000 High-Density Model: Specifications and Highlights

X6000 High-Density Model

Top View



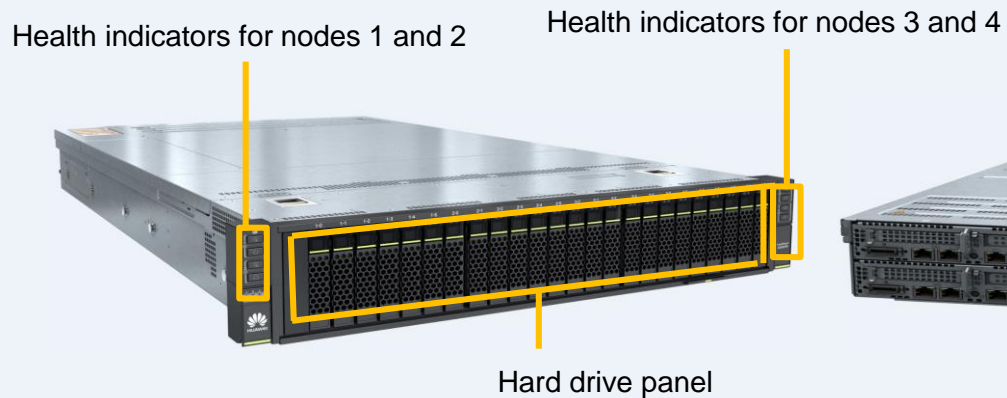
Rear View



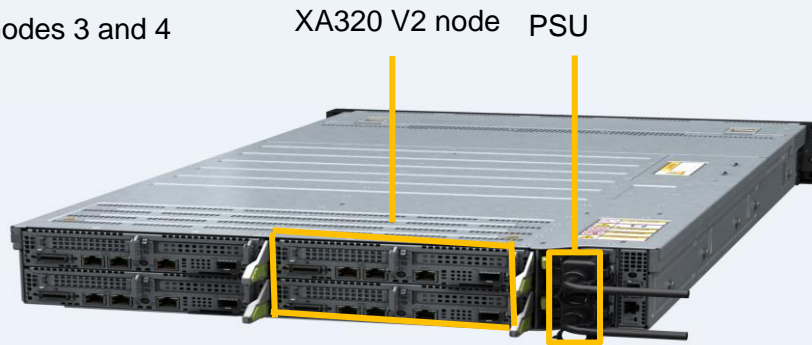
Model	Chassis: X6000; node: XA320	Key Feature
Form factor	2U 4-node; 1U half-width node	<ul style="list-style-type: none"> • LOM NICs support 100GE and 25GE • Supports all-flash storage and provides up to 24 NVMe SSDs • Supports multi-node aggregated management and cable tray deployment
Processors	2 Kunpeng 920 processor: 48 or 64 cores; 2.6 GHz frequency	
Memory	16 DDR4 DIMMs, 2933 MT/s, 2 TB (128 GB per DIMM)	
Local storage	Up to 6 x 2.5" SAS/SATA HDDs or SSDs or NVMe SSDs	
RAID	RAID 0, 1, 10, 1E, 5, 50, 6, or 60	
PCIe expansion	Up to 1 PCIe 4.0 x16 slot and 1 PCIe 4.0 x8 slot	
LOM ports	1 x 100GE + 2 x GE or 2 x 25GE + 2 x GE	
Power supply units	2 x 3000 W AC hot-swappable PSUs, 220 V AC, 1+1 redundancy	
Fan modules	4 hot-swappable fan modules, supporting N+1 redundancy	
Operating temperature	5°C to 35°C	

X6000 and XA320: Internal Structure

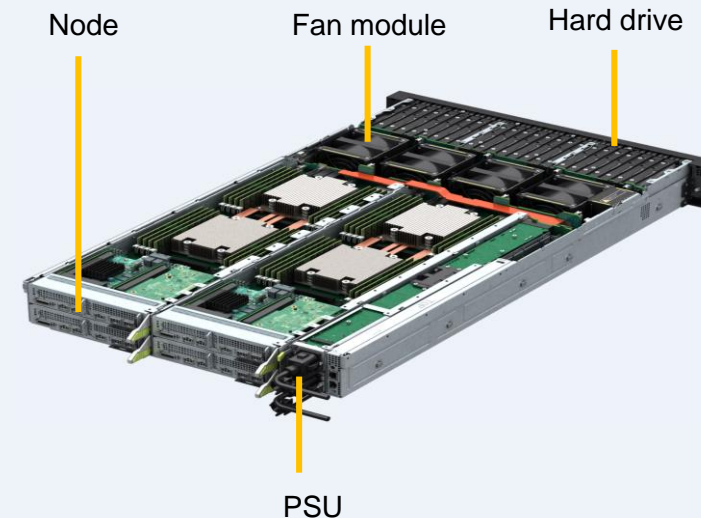
Chassis front view



Chassis rear view

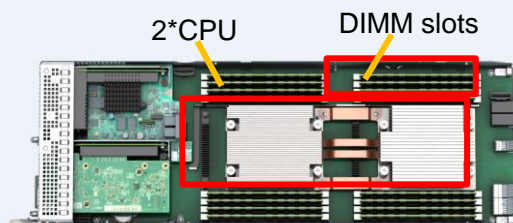


Internal view

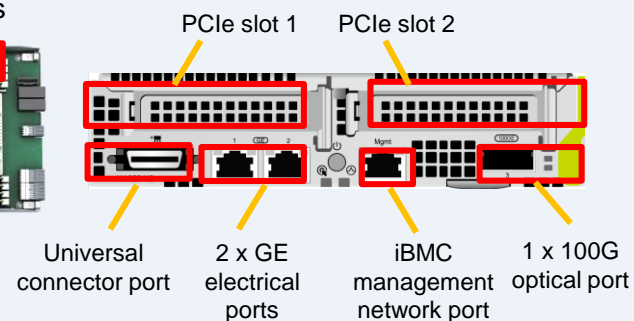


XA320 node



Internal view



Rear view



5290 Storage Model: Specifications and Highlights

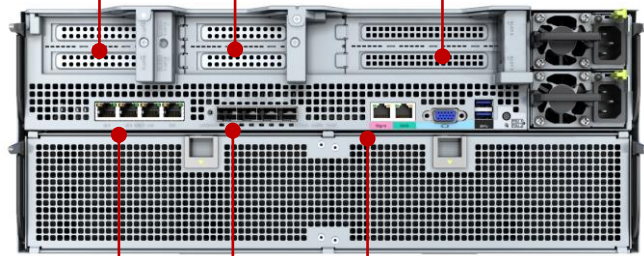
5290 Storage Model	Front View	Model	5290	Key Feature	
		Form factor	4U 2S		<ul style="list-style-type: none"> 72 x 3.5" HDDs, providing more than 1 PB local storage capacity Supports power-on and power-off of a single drive, reducing the peak power consumption of the system and saving more energy in long-term running.
		Processors	2 Kunpeng 920 processors: 48 or 32 cores; 2.6 GHz frequency		
	Memory	16 DDR4 DIMMs, 2933 MT/s, 2 TB (128 GB per DIMM)			
	Local storage	<ul style="list-style-type: none"> 72 x 3.5" SATA/SAS HDDs 4 x 2.5" NVMe SSDs 2 x 2.5" SATA/SAS HDDs or SSDs 1 PB (14TB per drive)			
	Rear View	RAID	2 x OS disks, RAID 0/1		
		PCIe expansion	Up to 6 PCIe 4.0 x8 slots or 1 PCIe 4.0 x16 + 4 PCIe 4.0 x8 standard slots		
		LOM ports	1 LOM NIC: 4 x GE electrical ports + 4 x 10GE/25GE optical ports		
		Power supply units	2 x 2000 W AC hot-swappable PSUs, 220 V AC and 380 V HVDC, 1+1 redundancy		
		Fan modules	4 hot-swappable fan modules, supporting N+1 redundancy		
Operating temperature		5°C to 35°C			

5290 Storage Model: Internal Structure

2 PCIe 4.0 x8 half-height half-length slots or 1 PCIe 4.0 x16 half-height full-length slot

2 PCIe 4.0 x8 full-height half-length slots

2 PCIe 4.0 x8 half-height half-length slots



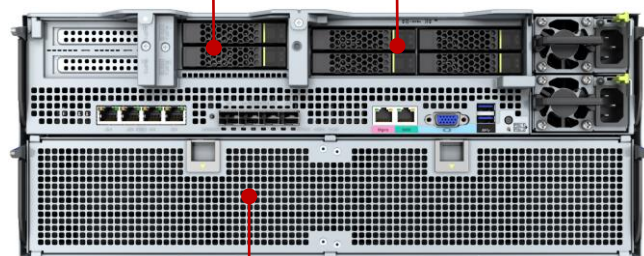
4 x GE optical ports

4 x GE electrical ports

Management GE network port

2 x 2.5" SATA/SAS HDDs or SSDs

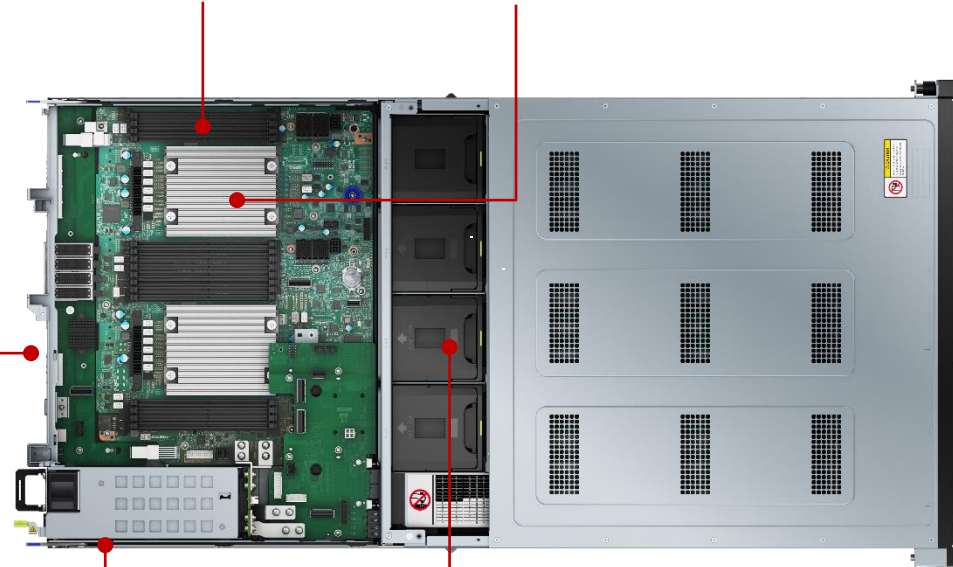
4 x 2.5" NVMe SSDs



12 x 3.5" SATA/SAS HDDs

16 DDR4 DIMMs

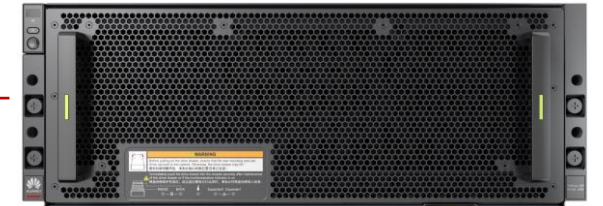
2 Kunpeng 920 processors



2 PSUs 1+1 redundancy

4 fan modules N+1 redundancy

Hard drive enclosure with 60 x 3.5" SATA



5290 Storage Model: Configuration Options

Configuration Option

Front

Rear

RAID Scheme

72-drive direct-attached scheme



60 x 3.5" SATA/SAS direct-attached hard drives



6 PCIe slots + 12 x 3.5" SATA/SAS direct-attached hard drives



2 x standard PCIe cards + 2 x 2.5" SATA/SAS HDDs or SSDs + 4 NVMe SSDs + 12 x 3.5" SATA/SAS direct-attached hard drives

CPU SAS direct-attached/Software RAID

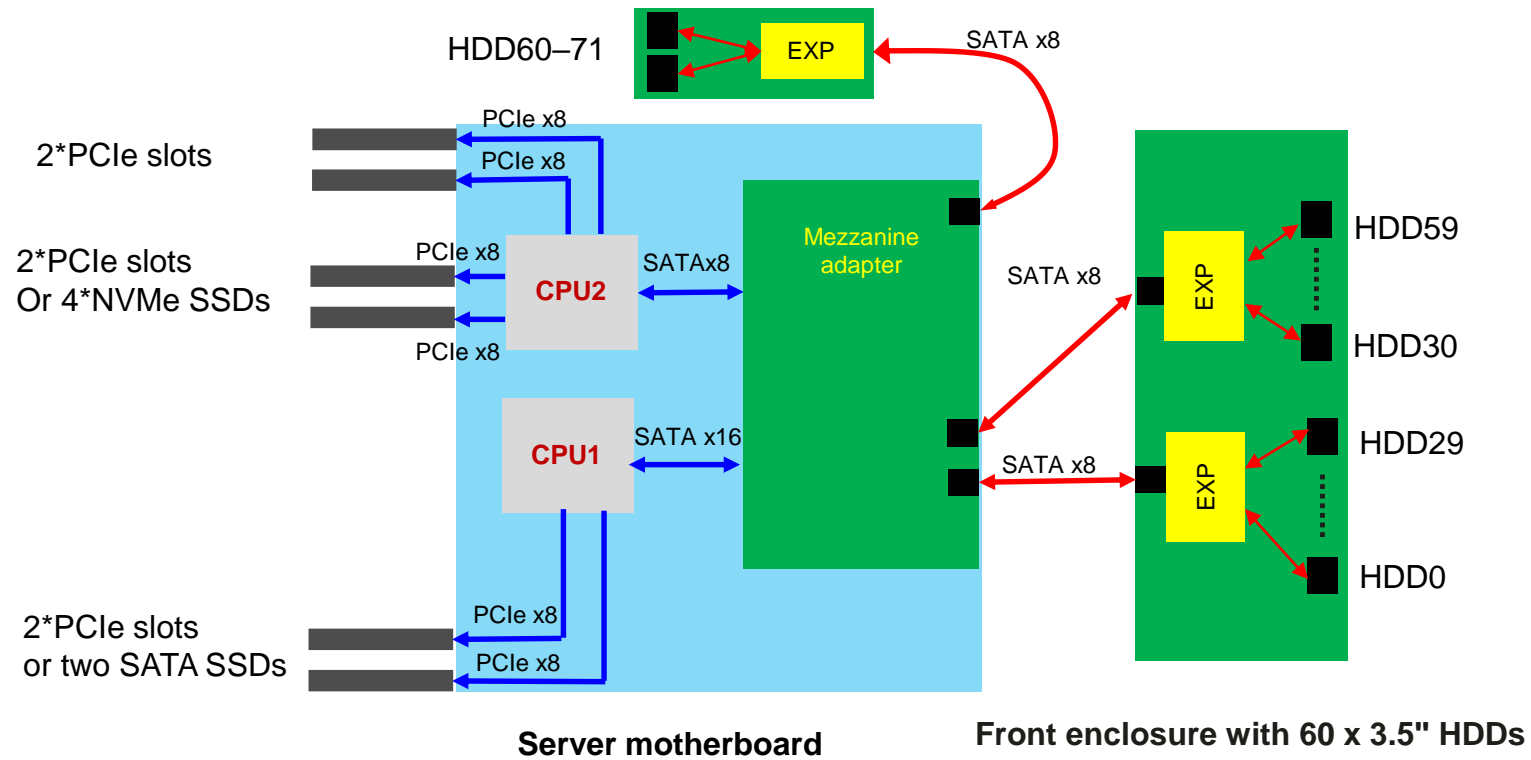
or





RAID controller card

+ CPU SAS direct-attached

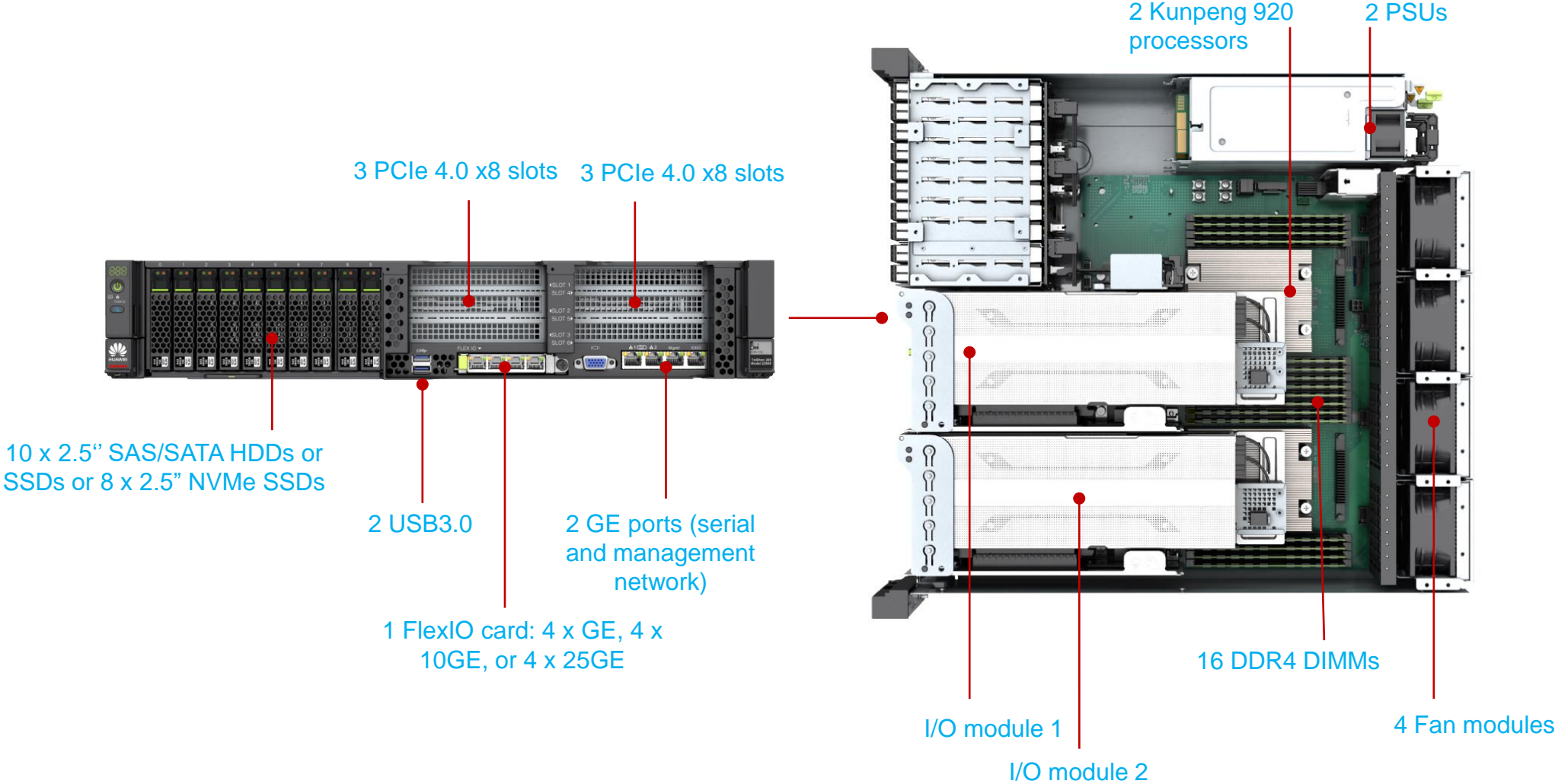
5290 Topology: 72-Drive Model






2280E Edge Model: Specifications and Highlights

2280E Edge Model	Front View	Model	2280E	Key Feature	
		Form factor	2U 2-socket		<ul style="list-style-type: none"> • Short chassis design, depth ≤ 490 mm, applicable to edge equipment rooms. • Powerful network forwarding, supporting expansion with 6 PCIe 4.0 x8 cards. • Supports short-term operating at 55°C(not supported with NVMe SSDs or AI accelerator card)
		Processors	2 Kunpeng 920 processors: 32 or 48 cores, 2.6 GHz frequency		
		Memory	16 DDR4 DIMMs, 2933 MT/s, 1 TB (64 GB per DIMM)		
		Local storage	<ul style="list-style-type: none"> • 10 x 2.5" SAS/SATA HDDs or SSDs • 8 x 2.5" NVMe SSDs 		
	Rear View	RAID	RAID 0, 1, 10, 5, 50, 6, or 60		
		PCIe expansion	Up to 6 PCIe 4.0 x8 slots		
		LOM ports	1 FlexIO card: 4 x GE, 4 x 10GE, or 4 x 25GE		
		Power supply units	4 x 900 W or 2000 W AC hot-swappable PSUs, 220 V AC; 4 x 1200 W hot-swappable PSUs, -48 V DC, supporting 1+1 redundancy		
		Fan modules	4 hot-swappable fan modules, supporting N+1 redundancy		
Operating temperature		0°C to 45°C (long-term), -5°C to +55°C (for 96 continuous hours)			

2280E Edge Model: Internal Structure

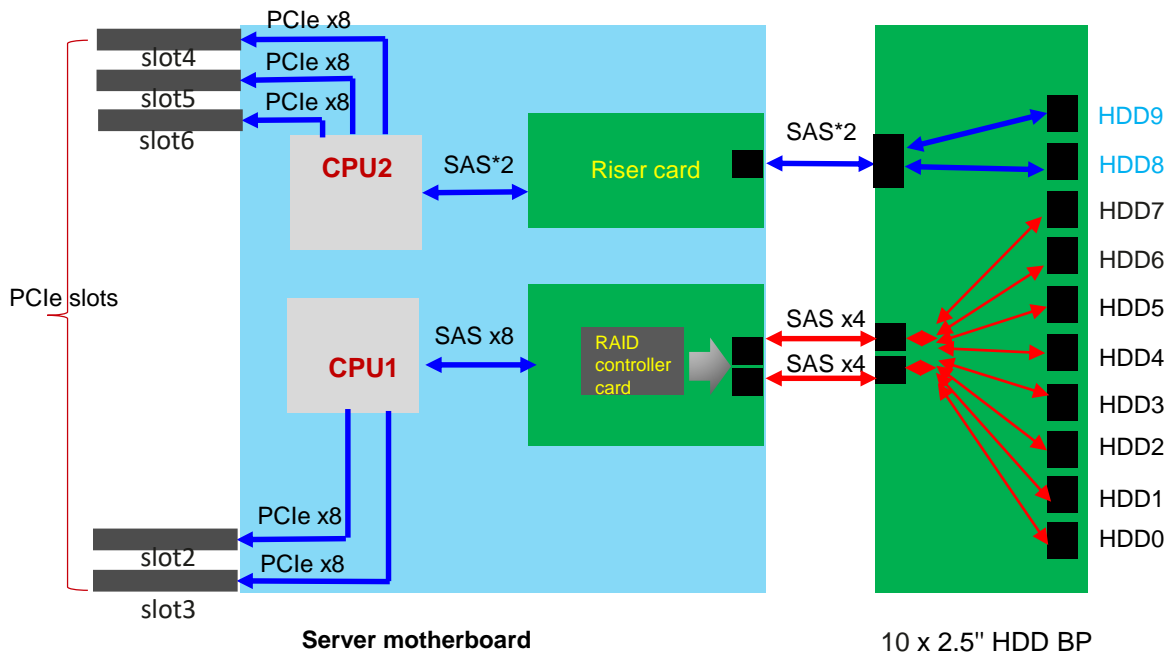


2280E Edge Model: Configuration Options

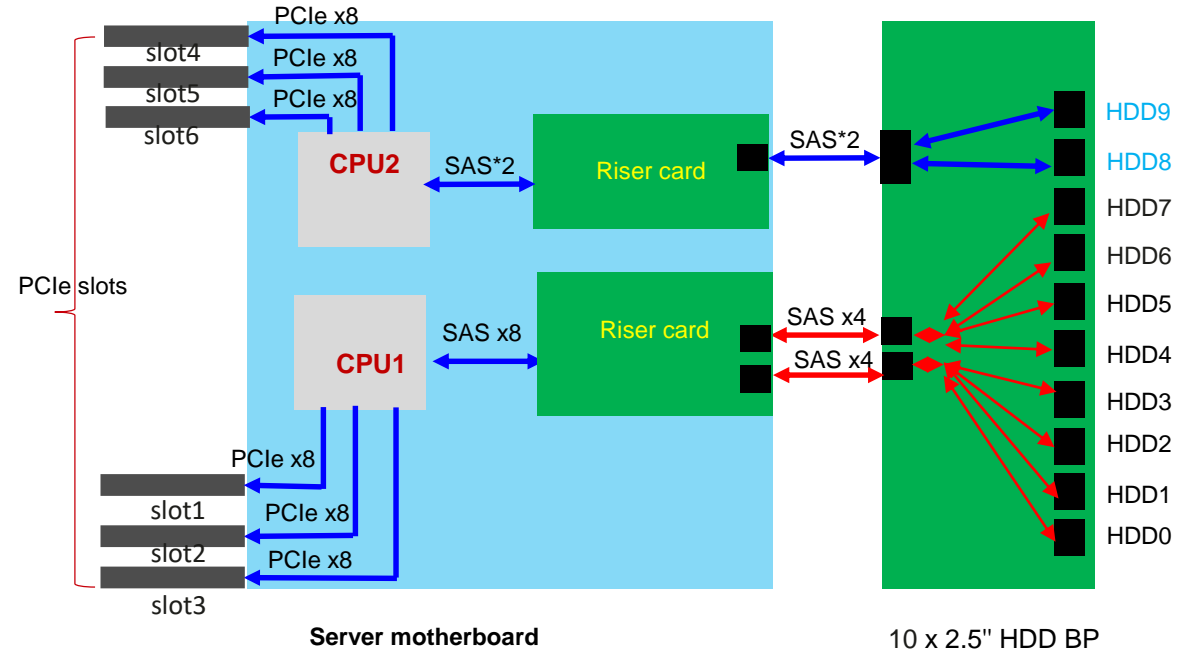
Configuration Option	Front	RAID Scheme
<p>1 Hardware RAID scheme</p>	 <p>10 x 2.5" (8 SAS (RAID) + 2 SAS (direct-attached)) 8 FHHL PCIe 4.0 x8 slots</p>	RAID controller card
<p>2 Direct-attached + 10 SAS HDDs</p>	 <p>10 x 2.5" (8 SAS (RAID) + 2 SAS (direct-attached)) 8 FHHL PCIe 4.0 x8 slots</p>	None
<p>3 Direct-attached + 8 NVMe SSDs</p>	 <p>10 x 2.5" (8 SAS (RAID) + 2 SAS (direct-attached)) 8 FHHL PCIe 4.0 x8 slots</p>	None

2280E Topology with 10 SAS HDDs

Hardware RAID Scheme

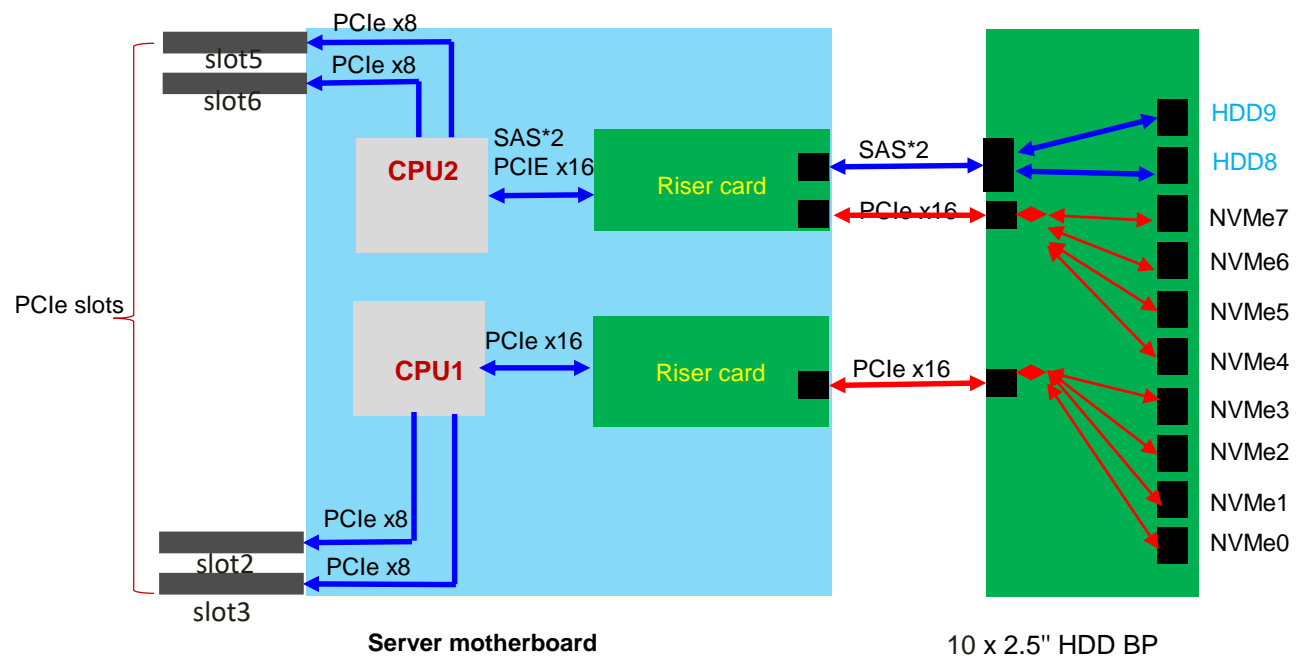


Direct-attached + 10 SAS HDDs





2280E Topology with 8 NVMe SSDs

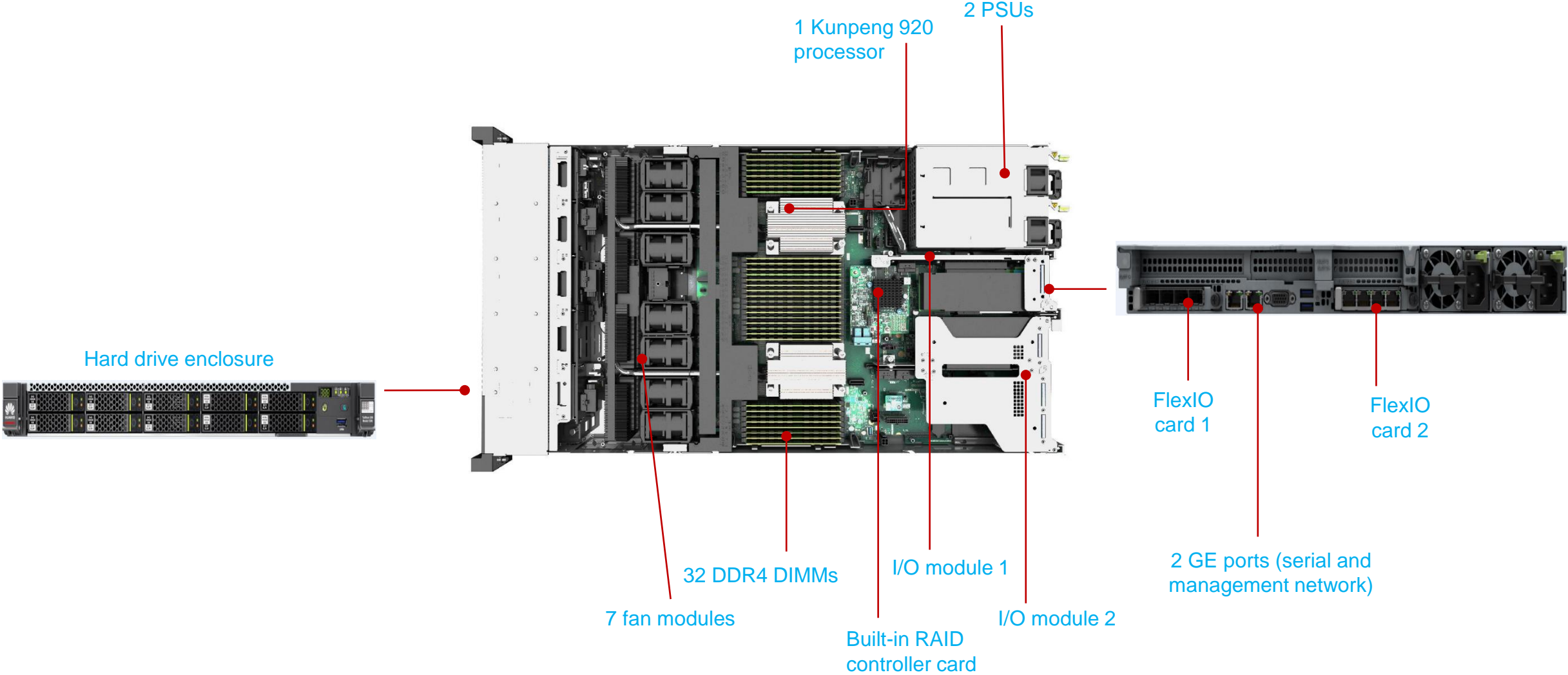
Direct-attached + 8 NVMe SSDs



1280 High-Density Model

1280 High-Density Model	Front View	Model	1280	Key Feature
		Form factor	1U 2S	<ul style="list-style-type: none"> • Supports 32 DDR4 slots and 8 NVMe SSDs in a 1U space, industry-leading density. • Provides 2–4 slots compatible with NVMe and SAS. • Supports GE, 10GE, and 25GE LOM ports. <p>Remarks</p> <ul style="list-style-type: none"> • Currently does not support the 32-core model of the Kunpeng 920 processor. • Currently the front panel supports only 2.5" drives for local storage.
		Processors	2 Kunpeng 920 processors: 48 or 64 cores; 2.6 GHz frequency	
		Memory	32 DDR4 DIMMs, 2933 MT/s, 4 TB (128 GB per DIMM)	
		Local storage	<ul style="list-style-type: none"> • 10 x 2.5" SAS/SATA HDDs or SSDs • 8 x 2.5" NVMe SSDs 	
	Rear View	RAID	RAID 0, 1, 10, 1E, 5, 50, 6, or 60	
		PCIe expansion	Up to 2 PCIe 4.0 x16 slots + 1 PCIe 4.0 x8 slot	
		LOM ports	2 FlexIO cards: 4 x GE, 4 x 10GE, or 4 x 25GE ports	
		Power supply units	2 x 900 W AC, 2000 W AC, or 1200 W DC hot-swappable PSUs, 220 V AC or 240 V DC, supporting 1+1 redundancy	
		Fan modules	7 hot-swappable fan modules, supporting N+1 redundancy	
Operating temperature		5°C to 35°C (41°F to 95°F)		

1280 High-Density Model: Internal Structure

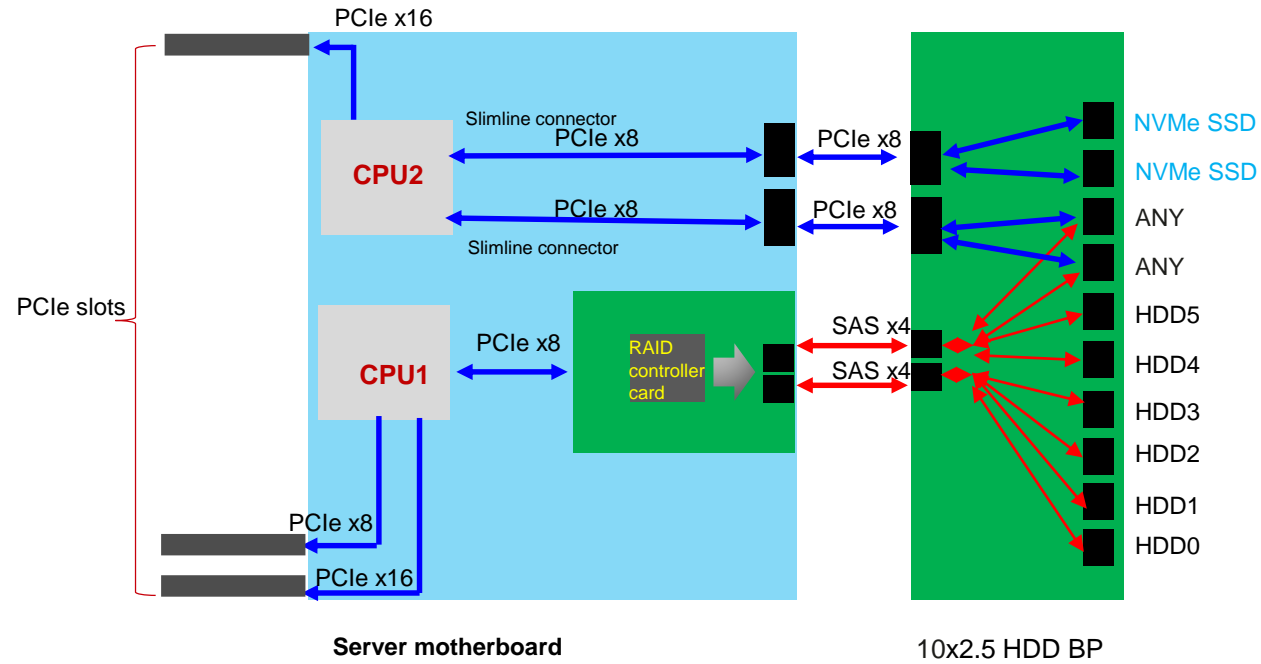


1280 High-Density Model: Configuration Options

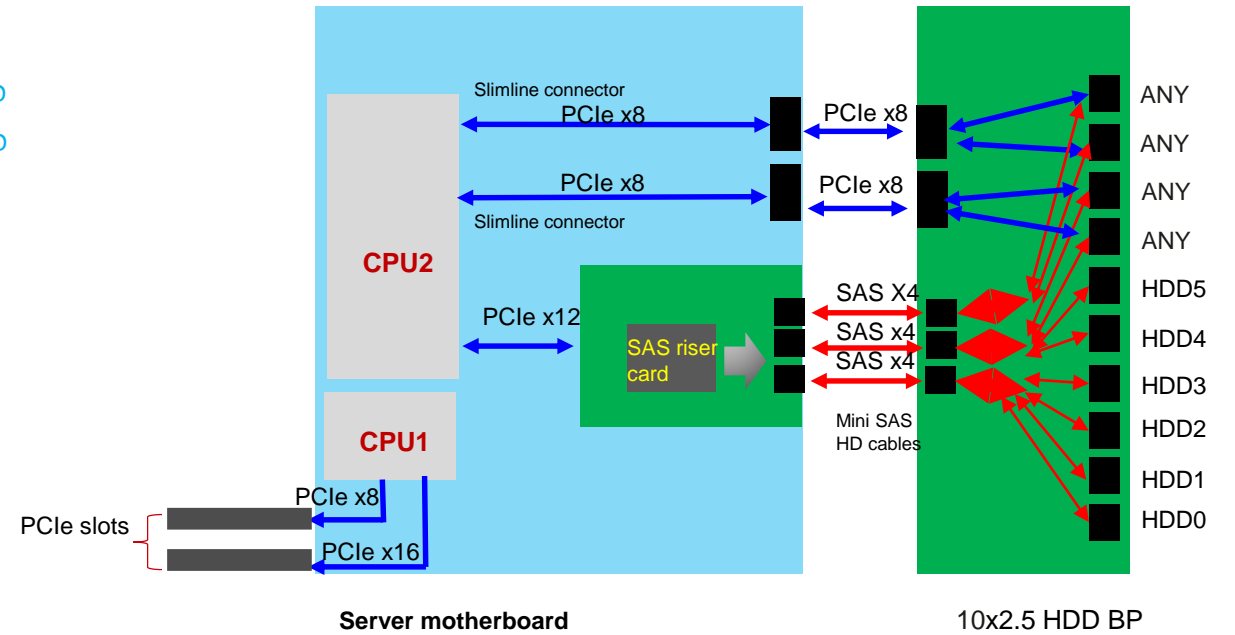
Configuration Option	Front	Rear	RAID Scheme
1 Hardware RAID + 8 SAS HDDs			 <p>RAID controller card</p>
2 Direct-attached + 10 SAS HDDs			<p>CPU SAS direct-attached/Software RAID</p>
3 Hardware RAID + 8 NVMe SSDs			 <p>RAID controller card</p>
4 Direct-attached + 8 NVMe SSDs			<p>CPU SAS direct-attached/Software RAID</p>

1280 Topology with SAS HDDs

Hardware RAID + 8 SAS HDDs

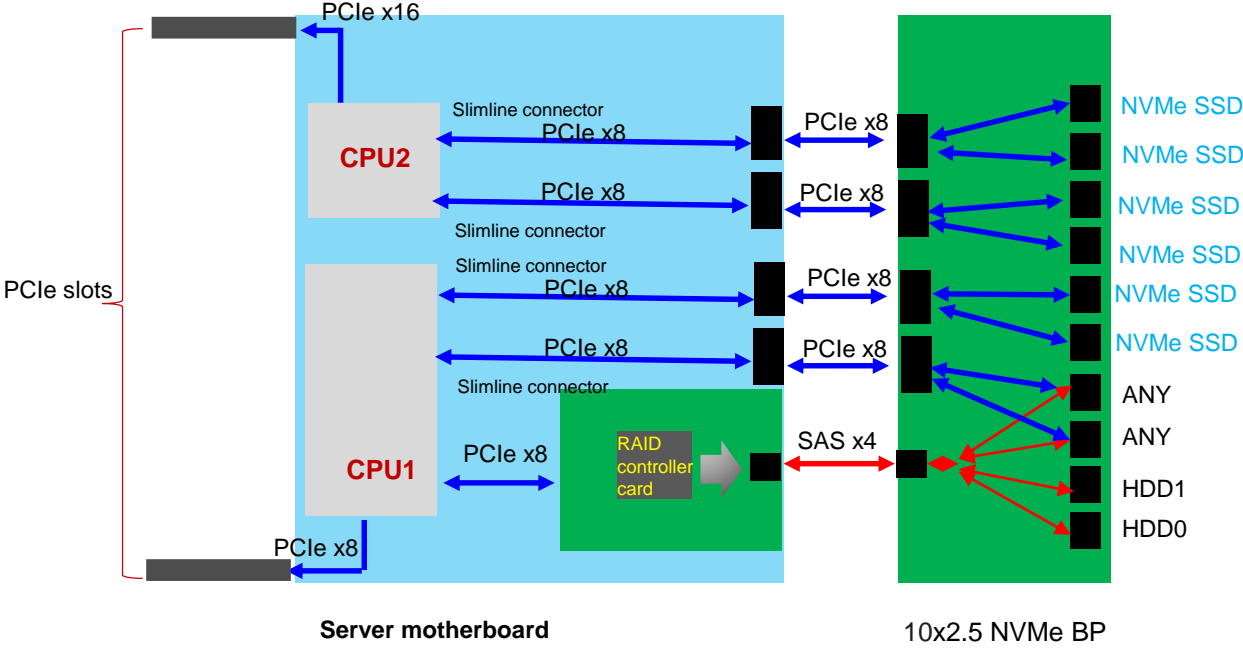


Direct-attached + 10 SAS HDDs

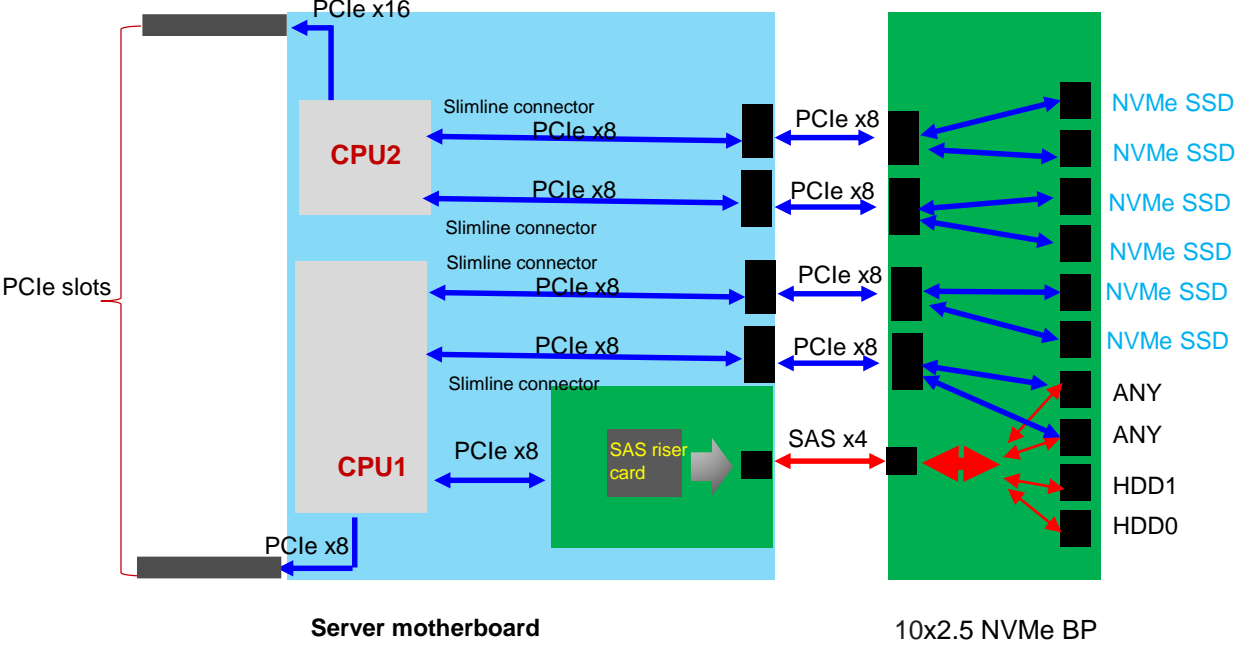


1280 Topology with NVMe SSDs


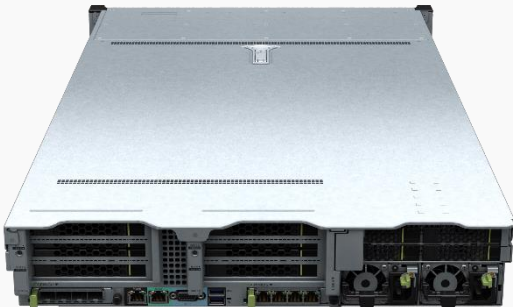
Hardware RAID + 8 NVMe SSDs



Direct-attached + 8 NVMe SSDs



2180 Balanced Model: Specifications and Highlights

2180 Balanced Model	Front View	Model	2180	Key Feature	
		Form factor	2U 1S		<ul style="list-style-type: none"> • Supports 1 Kunpeng 920 processor and 16 DDR4 slots, applicable to scenarios requiring low computing power and light load. • Supports 40°C operating temperature.
		Processors	1 Kunpeng 920 processor: 32, 48, or 64 cores; 2.6 GHz frequency		
		Memory	Up to 16 DDR4 DIMMs, 2933 MT/s, 2 TB (128 GB per DIMM)		
		Local storage	14 x 3.5" + 2 x 2.5" SAS/SATA HDDs or SSDs		
	Rear View	RAID	RAID 0, 1, 10, 1E, 5, 50, 6, or 60		
		PCIe expansion	Up to 3 PCIe 4.0 x8, or 1 PCIe 4.0 x16 + 1 PCIe 4.0 x8 slot		
		LOM ports	4 x GE		
		Power supply units	2 x 900 W or 2000 W hot-swappable PSUs, 220 V AC or 240 V DC, supporting 1+1 redundancy		
		Fan modules	4 hot-swappable fan modules, supporting N+1 redundancy		
Operating temperature		5°C to 40°C (41°F to 104°F)			
Remarks				<ul style="list-style-type: none"> • Currently the front panel supports only 3.5" drives for local storage. • Currently the server model supports only the RAID scheme and does not support the direct-attached scheme. 	

2180 Balanced Model: Internal Structure

3 PCIe 4.0 x8 full-height slots, or
2 x 2.5" SAS/SATA/SSD drives

2 x 2.5" or 2 x 3.5"
SAS/SATA/SSD drives

I/O module 2 I/O module 1

2 PSUs

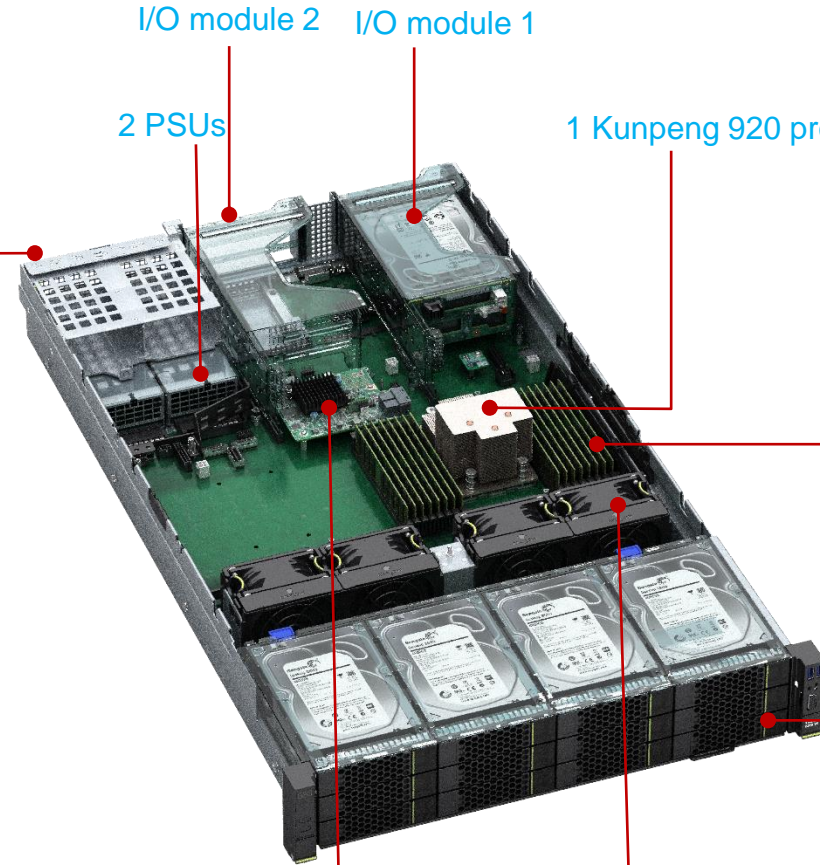
1 Kunpeng 920 processor

2 GE ports (serial and
management network)

16 DDR4 DIMM slots

FlexIO card

Hard drive enclosure A: 12 x 3.5" SAS/SATA HDDs



Built-in RAID
controller card

4 fan modules

2180 Balanced Model: Configuration Option

Configuration Option

Front

Rear

RAID Scheme

1

RAID scheme for the 12-drive model



12 x 3.5" SAS/SATA HDDs



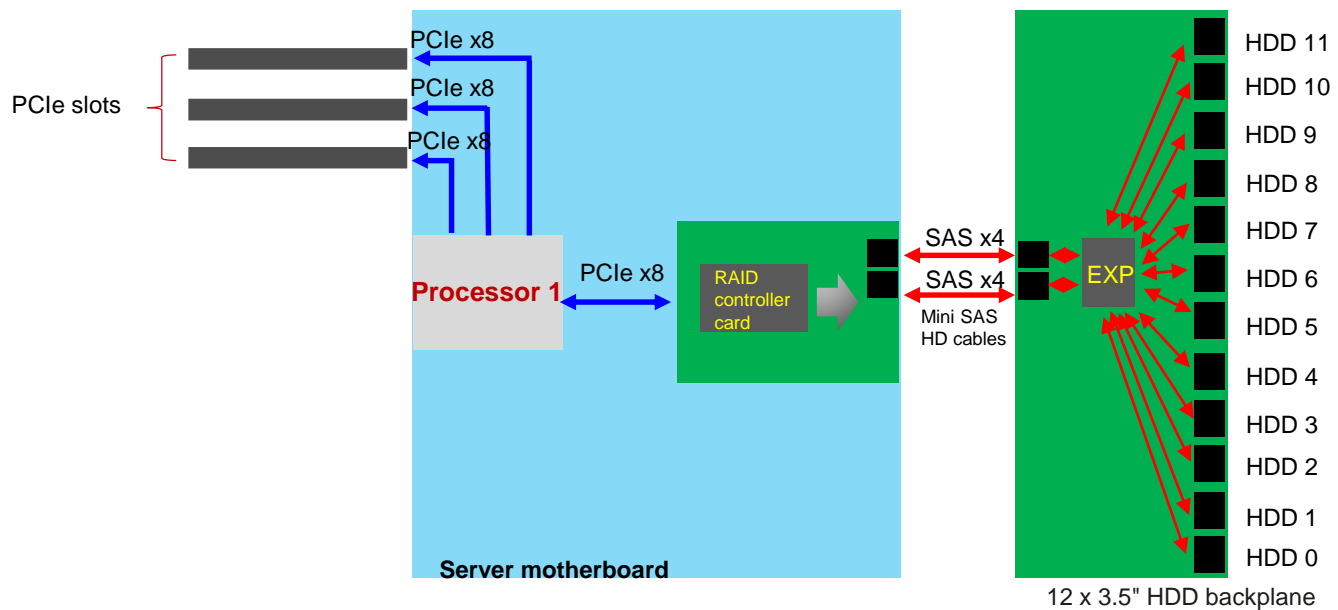
2 x 3.5" SAS/SATA HDDs
+ 2 x 2.5" SAS/SATA HDDs or SSDs



RAID controller card

12-Slot Model Topology

RAID Controller Scheme



5280 Storage Model: Specifications and Highlights

5280 Storage Model

Front View

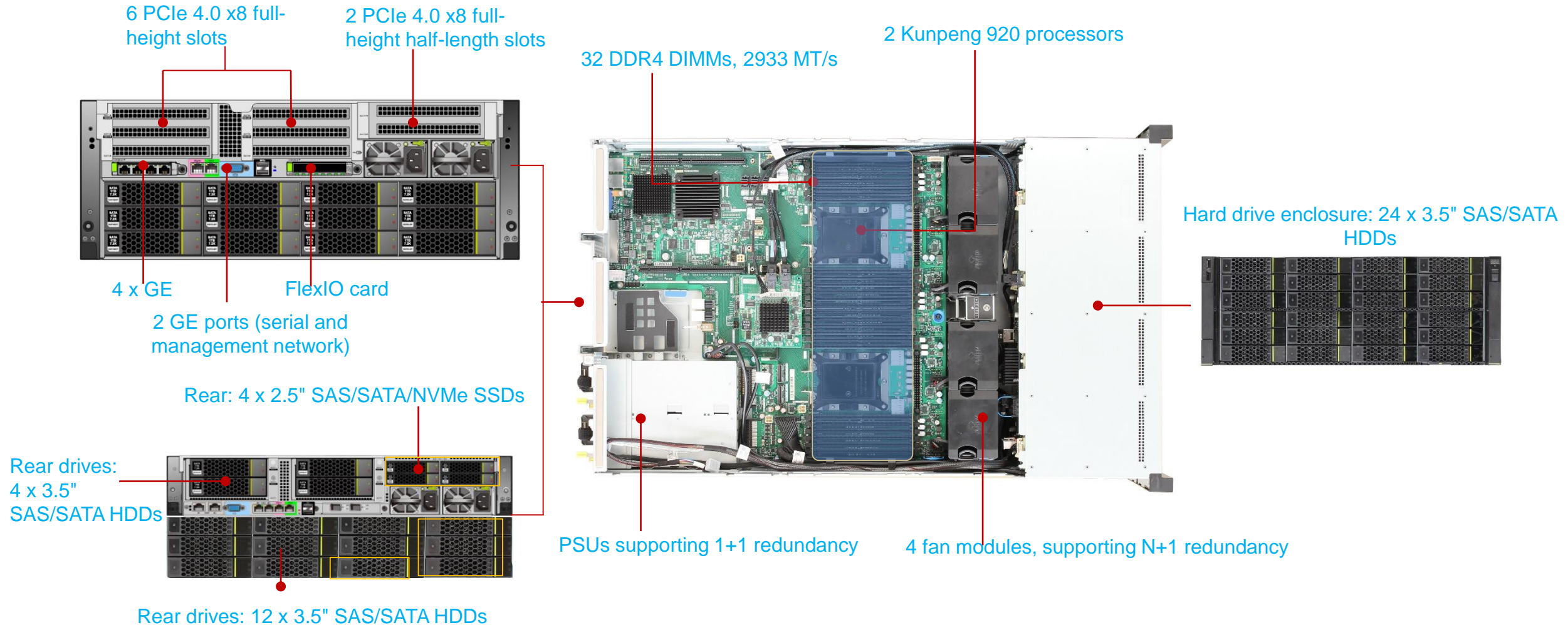


Rear View



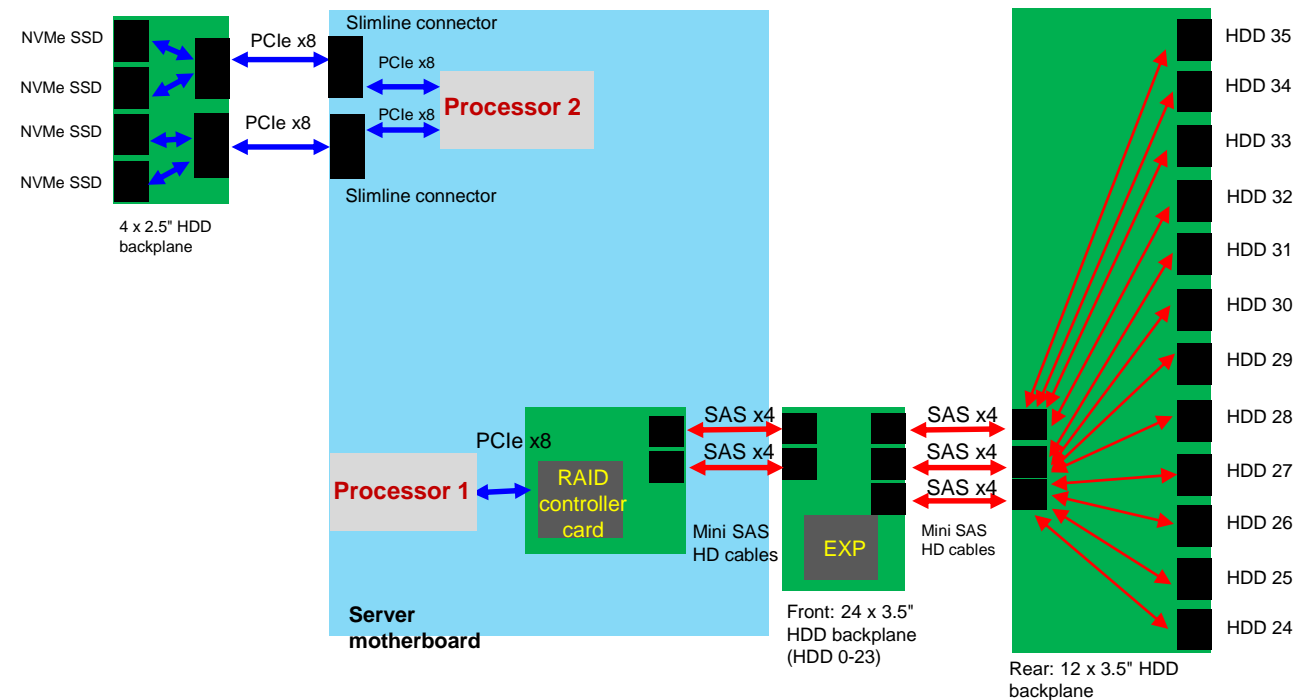
Model	5280	Key Feature
Form factor	4U 2S	<ul style="list-style-type: none"> Supports all Kunpeng 920 processor models, including 5220 and 3210. Supports 40 drives for local storage, up to 560 TB in a 4U space. <p>Remarks</p> <ul style="list-style-type: none"> The motherboard specifications of the 5220 and 3210 processor models are different from other processor models.
Processors	2 Kunpeng 920 processors: 32, 48, or 64 cores; 2.6 GHz frequency	
Memory	Up to 32 DDR4 DIMMs, 2933 MT/s	
Local storage	<ul style="list-style-type: none"> 36/40 x 3.5" SAS/SATA HDDs 4 x 2.5" NVMe SSDs 560 TB (14TB per drive)	
RAID	RAID 0, 1, 10, 1E, 5, 50, 6, or 60	
PCIe expansion	Up to 8 PCIe 4.0 x8, or 3 PCIe 4.0 x16 + 2 PCIe 4.0 x8 slots	
LOM ports	2 FlexIO cards: 4 x GE, 4 x 10GE, or 4 x 25GE ports	
Power supply units	2 x 2000 W AC or 1200 W or 1500 W DC hot-swappable PSUs, supporting 1+1 redundancy	
Fan modules	4 hot-swappable fan modules, supporting N+1 redundancy	
Operating temperature	5°C to 35°C (41°F to 95°F)	

5280 Storage Model: Internal Structure

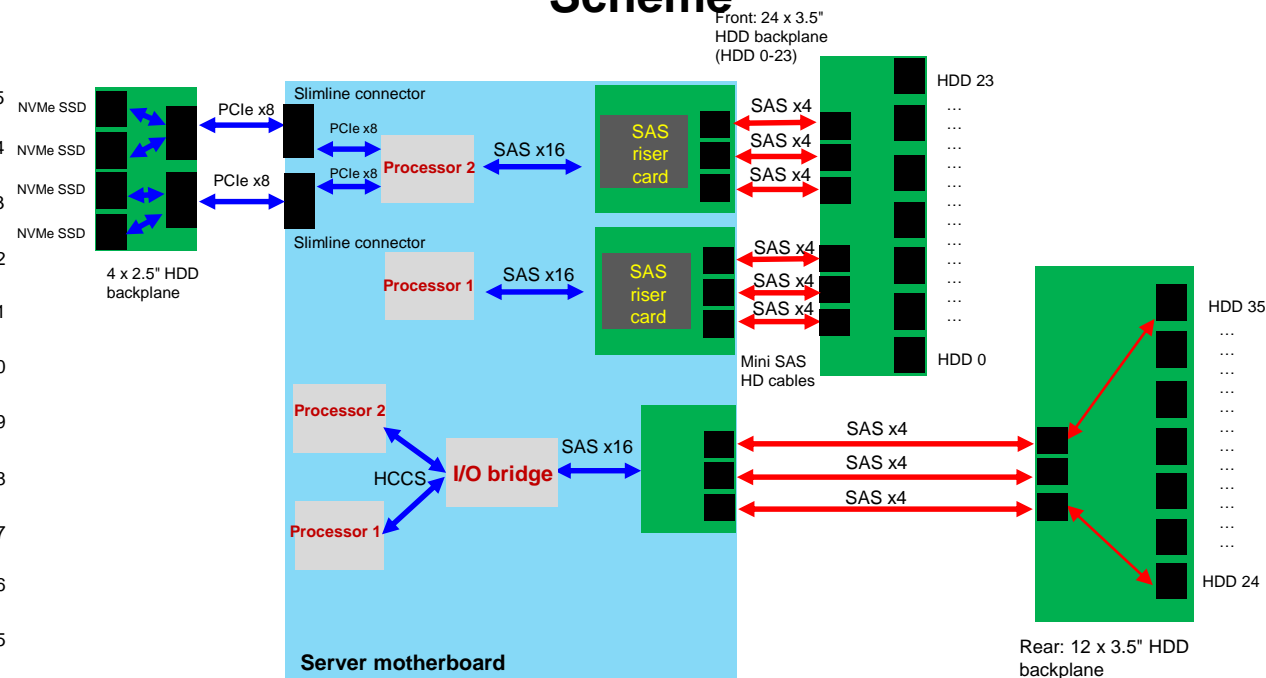


36-Slot Model Topology

RAID Controller Scheme



Drive Direct-Attached Scheme



Contents

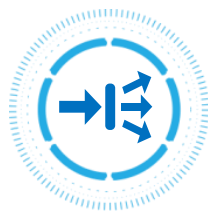
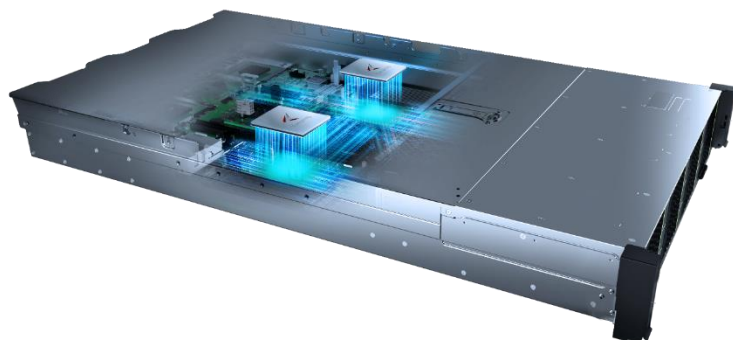
1

TaiShan 200 Products

2

TaiShan 200 Valuable Features

TaiShan 200 Server



Superb performance

Superior computing: Kunpeng 920 processor with up to 64 cores and multiple built-in hardware acceleration engines

Large memory capacity: supports up to 32 DDR4 DIMM slots and provides a maximum memory capacity of 8 TB

Powerful AI acceleration: supports Huawei Atlas 300 AI accelerator cards to meet AI computing requirements for training and inference



Flexible adaptation

Full series of products: supports high-density, storage, and high-performance models to meet data center requirements

Flexible I/O expansion: supports LAN on motherboard (LOM) NICs and standard intelligent NICs to implement various network configurations

Hierarchical storage: supports large-capacity storage HDDs and ES3000 V5 NVMe SSDs



Security and reliability

Secure and guaranteed supply: Huawei in-house computing chips, and secure and reliable components

Reliability and quality assurance: vibration absorption and heat dissipation to ensure high reliability; quality process and testing



High Performance

Huawei Kunpeng 920 Processor: High Performance with 64-Core Architecture

High performance **930+** **25%↑**
SPECint®_rate_base2006 test score

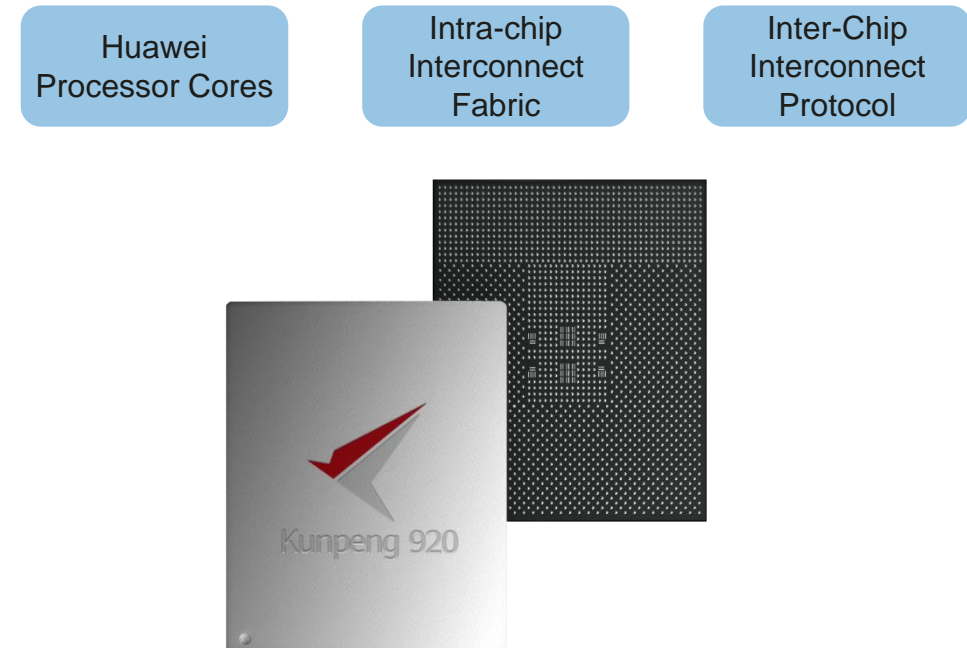
High throughput

- Memory bandwidth: **46%↑**
- Total I/O bandwidth: **66%↑**
- Network bandwidth: **4x↑**

High integration **4 chips in 1**
(CPU, southbridge, NIC, and SAS controller chips)

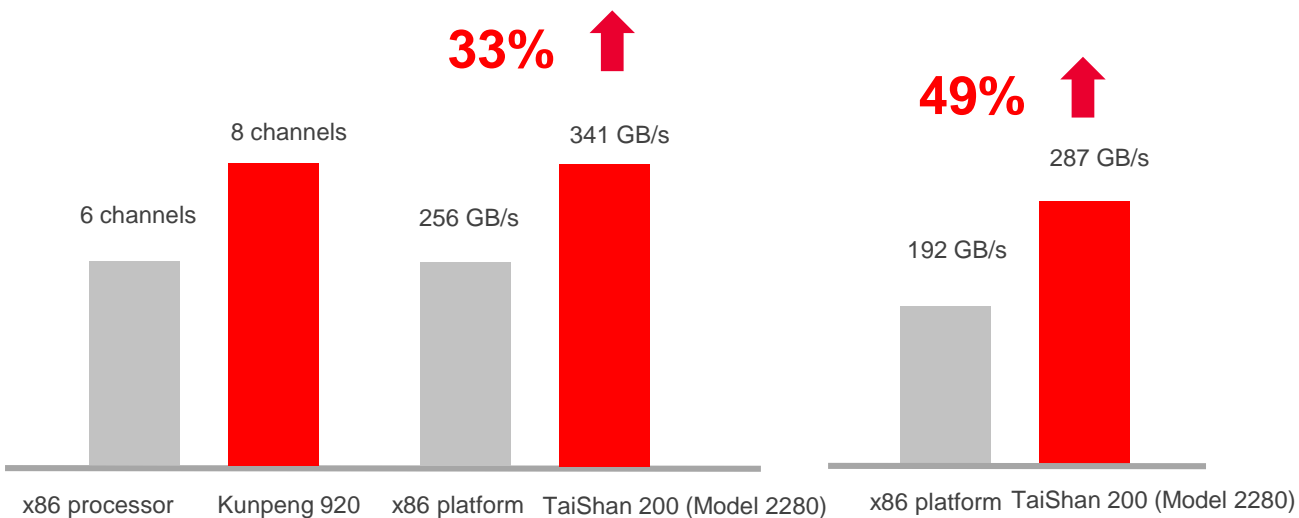
High efficiency **30%↑**

* Kunpeng 920 7260 vs industry's top high-end processor
* Huawei lab test data. Results may vary in different environments.



Kunpeng 8-Channel Memory Technology Provides High Memory Bandwidth and Storage

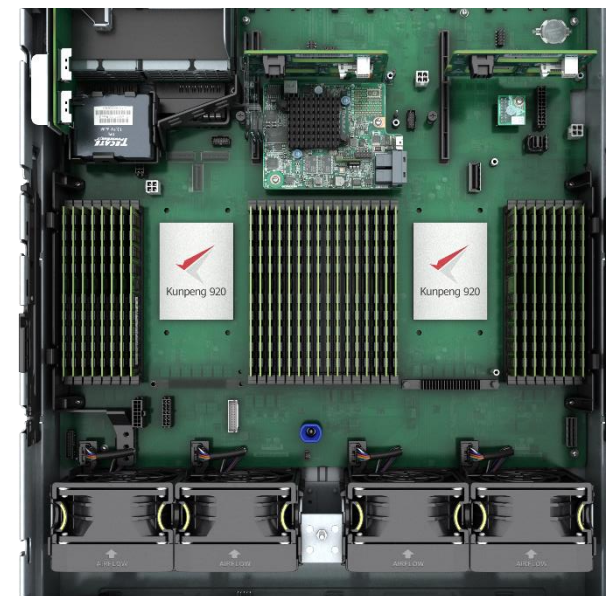
Higher System Memory Bandwidth



32 DDR4 DIMM slots

4 TB ultra-large memory per server

(128 GB per DIMM)



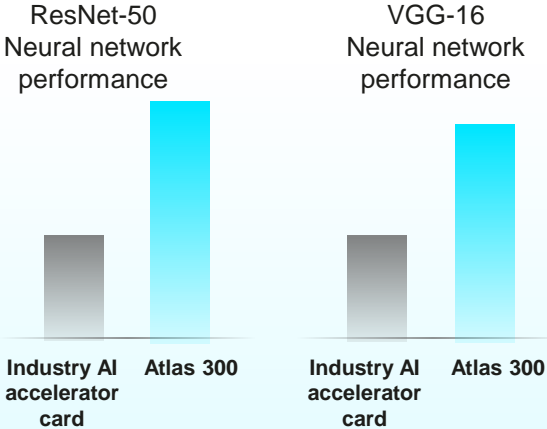
* Huawei lab test data. Results may vary in different environments.

Superb Ascend AI Computing Power

Atlas 300 AI accelerator card
powered by Ascend

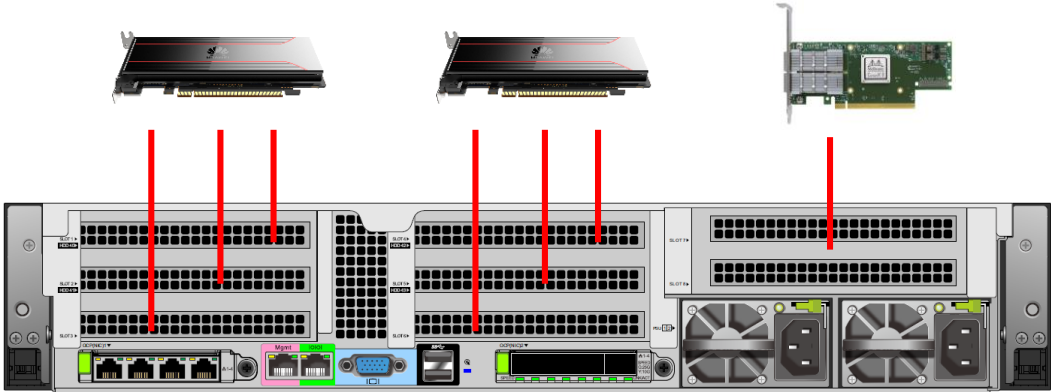
Supports up to
6 Atlas 300 AI accelerator cards + 2 high-speed NICs

Industry-leading Performance

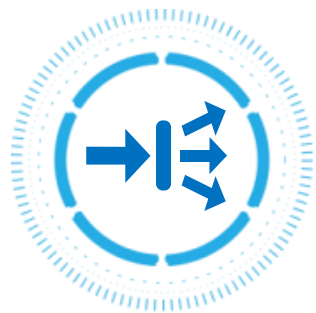


Atlas 300 AI accelerator card

High-speed NIC











Video Analytics | OCR | Speech Recognition |
Precision Marketing | Medical Image Analysis



Flexible Adaptation

TaiShan 200 Servers Meet All-Scenario Data Center Requirements

High-density		Entry-level	Balanced
1280 1U 2S	X6000 2U 4-node	2180 2U 1S	2280 2U 2S
			
Large-scale data center <ul style="list-style-type: none">• Doubled space utilization	HPC <ul style="list-style-type: none">• Large memory bandwidth, liquid-cooled	Lightweight applications, such as office applications <ul style="list-style-type: none">• Entry-level computing power and ultimate cost-effectiveness	Big data, distributed storage, web, etc. <ul style="list-style-type: none">• Balanced computing and network expandability
Storage		High-performance	Edge
5280 4U 2S, 40-drive	5290 4U 2S, 72-drive, to be launched in Q2 2020	2480 2U 4S, to be launched in Q1 2020	2280E 2U 2S, to be launched in Q1 2020
			
Distributed storage <ul style="list-style-type: none">• 560 TB local storage	Distributed warm and cold storage (video storage and computing) <ul style="list-style-type: none">• Over 1 PB local storage	HPC and high-performance database <ul style="list-style-type: none">• 256 cores, all-NVMe SSD acceleration	MEC, CDN, cloud gaming, etc. <ul style="list-style-type: none">• Powerful network forwarding, short chassis, and operating at 55°C high temperature

Support Huawei-Developed FlexIO Cards and iNICs for Diverse Network Configurations

LOM Pass-Through, FlexIO Cards

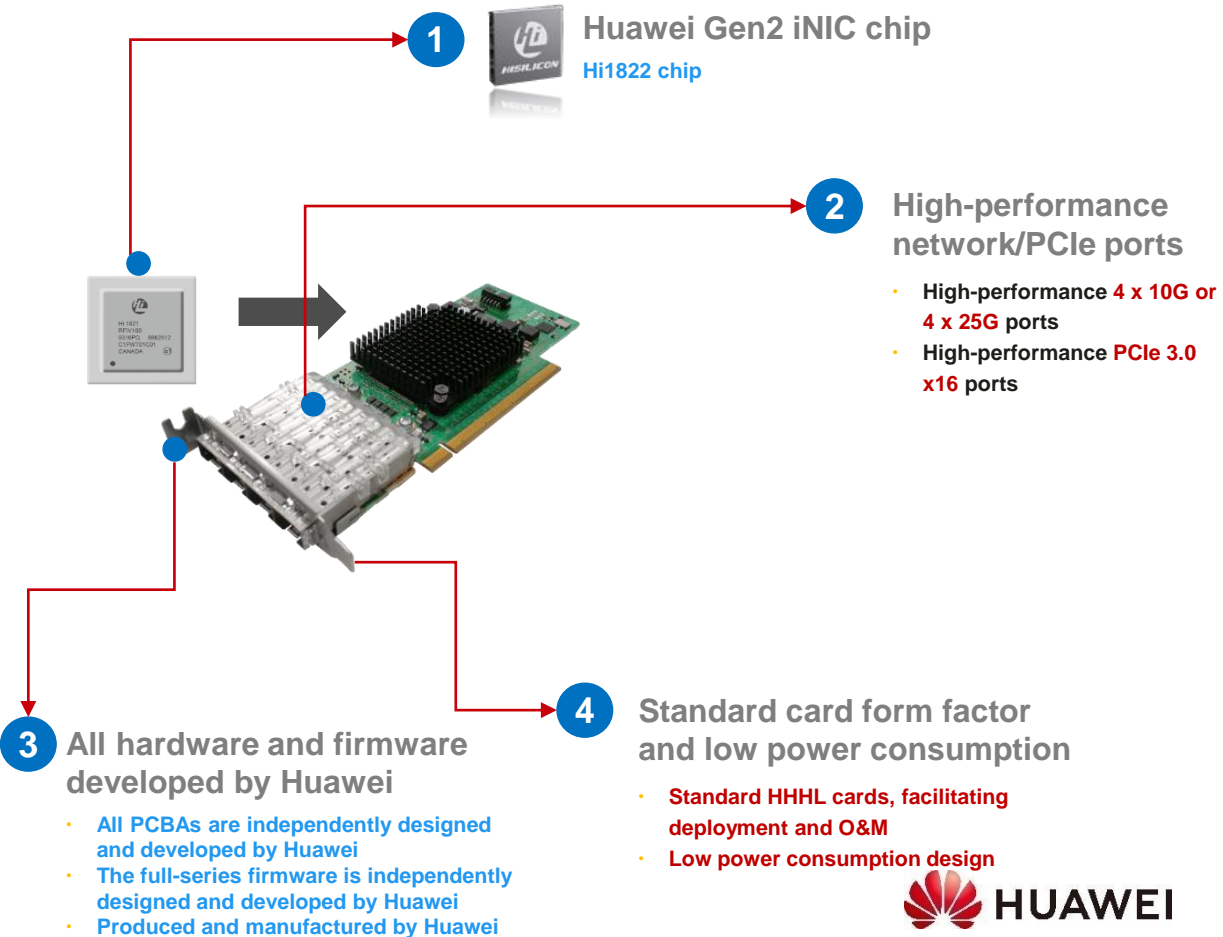


- 4 x GE FlexIO cards

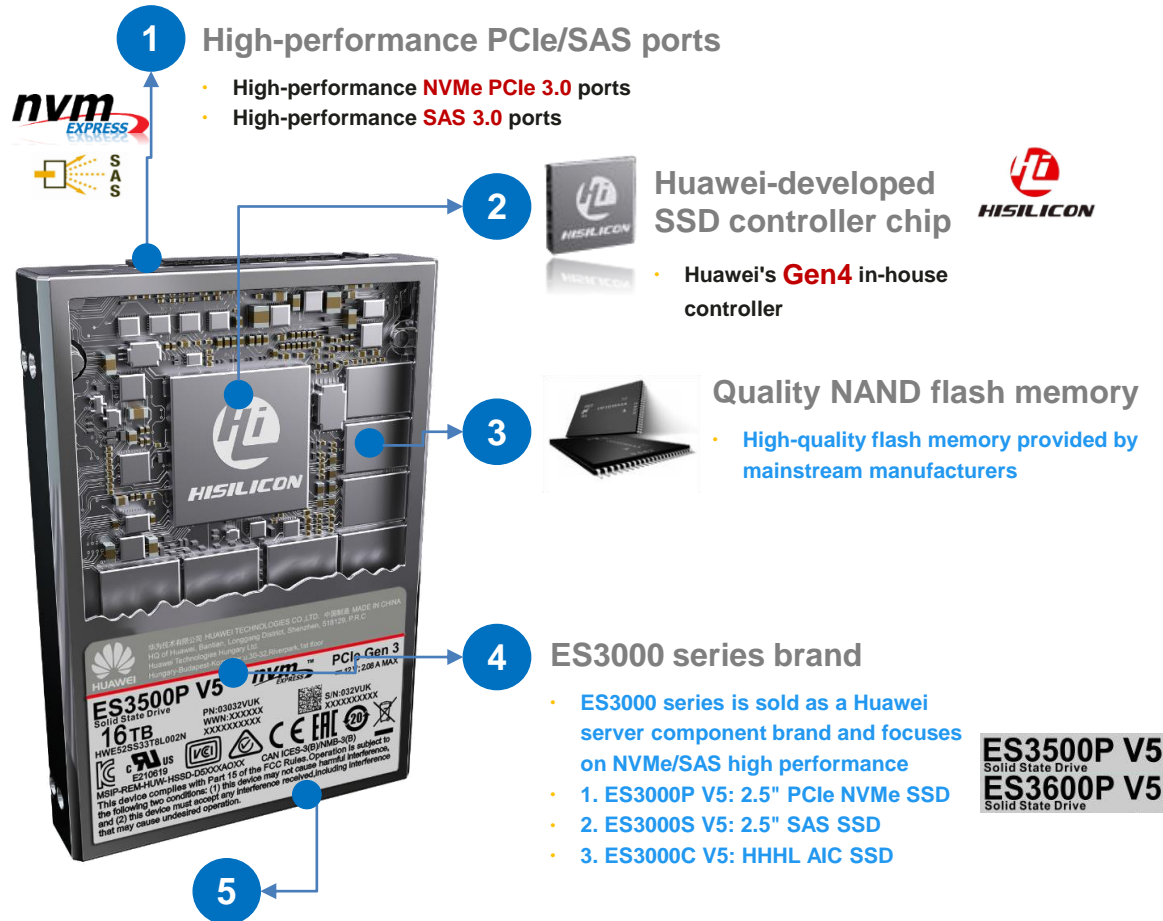


- 4 x 10GE or 4 x 25GE FlexIO cards

IN200 Intelligent Ethernet NIC, Standard NIC



Support Huawei ES3000 V5 NVMe SSDs



All hardware and firmware developed by Huawei

- All PCBAs are independently designed and developed by Huawei
- The full-series firmware is independently designed and developed by Huawei
- Produced and manufactured by Huawei

Faster

- Uses Huawei's next-generation intelligent SSD controller chip Hi1812E
- Significantly improved read/write bandwidth and IOPS
- Supports NVMe and SAS SSDs

Smarter

- Intelligent multi-stream technology, optimizing service I/O and improving performance by 15%
- Intelligent monitoring, management, and maintenance, improving O&M efficiency

Simpler

- Tailored for customer applications; reference architectures available
- Optimized configurations for diverse scenarios





Secure & Trusted

TaiShan Server: Huawei-Developed Computing Chips, Secure and Trusted

Ascend AI Processor



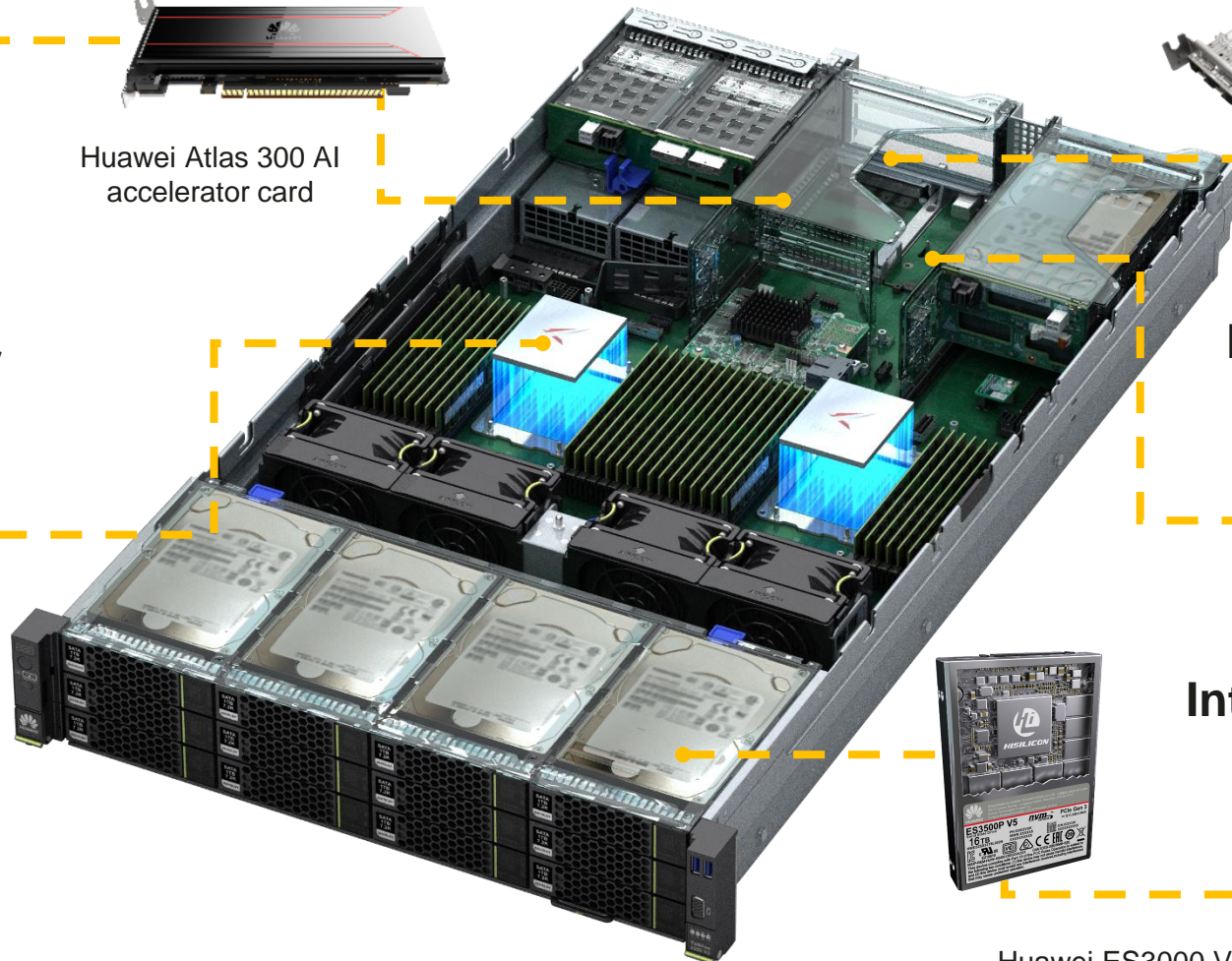
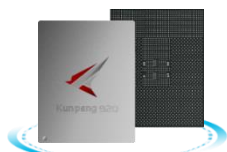
Huawei Atlas 300 AI accelerator card

iNIC Chip



Huawei-developed iNIC

Kunpeng Processor



Intelligent Management Chip



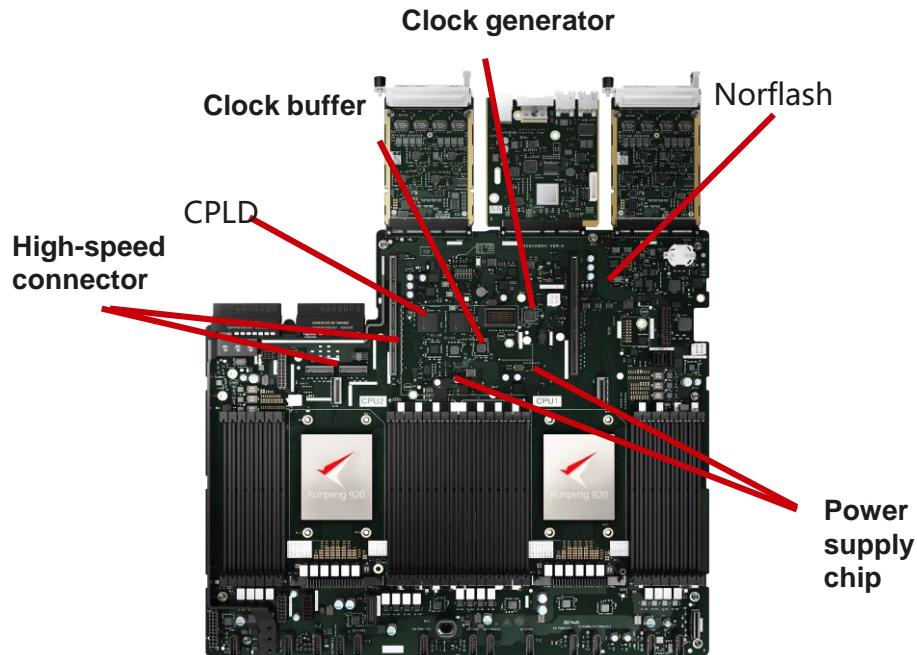
Intelligent SSD Controller Chip



Huawei ES3000 V5 SSD

Diversified Supply Strategies Guarantee Continuity of Supply

Domestic Supply of Key Components



E2E Process with Diversified Strategies

R&D Multiple technologies to use

- Pin-to-pin compatibility between components
- Board-level alternatives
- Product-/Solution-level evolution

Procurement Multiple suppliers to choose from

- Suppliers in multiple regions
- Factories in different locations
- Strategic partnerships
- Key tier-2 materials
- BCM systems of suppliers

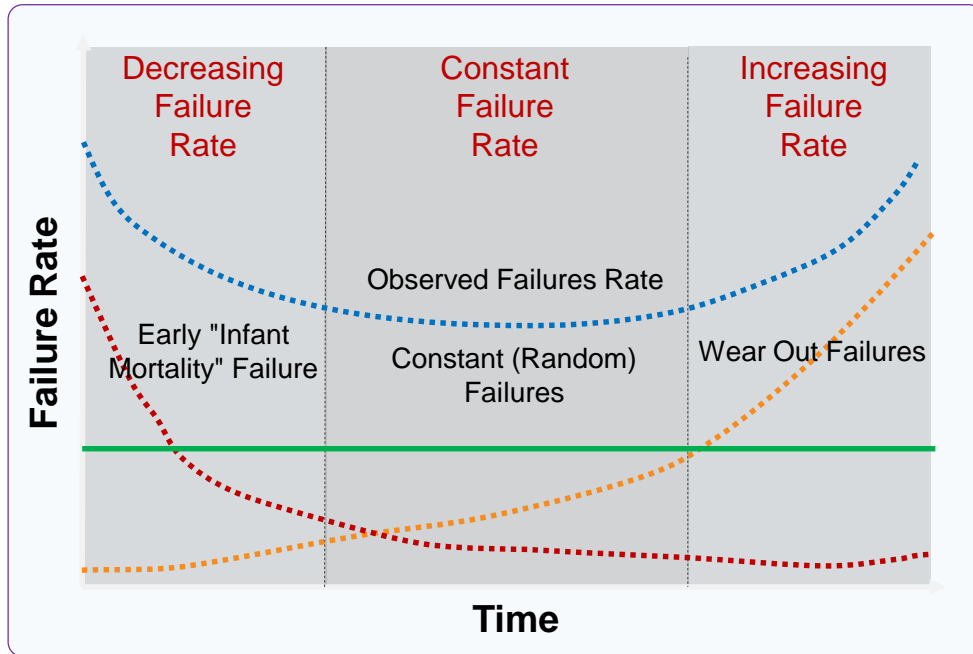
Production Production facilities in multiple countries

- Multiple equipment manufacturing suppliers (EMS)
- Four integrated equipment manufacturing centers outside China (Hungary, Mexico, Brazil, India)
- 3 levels of inventory (raw materials, semi-finished goods, finished products)

Supply Supply chains across multiple regions

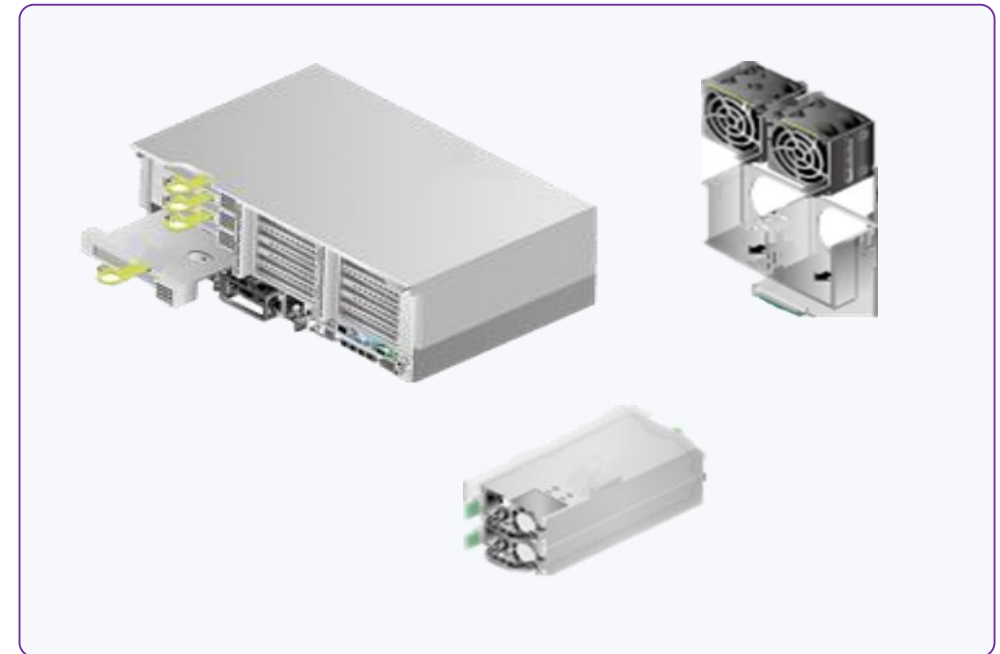
- Multiple supply centers/hubs around the world (China, Hungary, Mexico, Dubai)
- Multiple logistics routes globally
- Stable inventory of product spare parts during the entire lifecycle

Premium Quality: Component Derating Selection and Redundancy Design



Component Derating Selection

- Carrier-class component vendor certification process
- Derating design, ensuring that the rated value of components is much higher than the durable stress

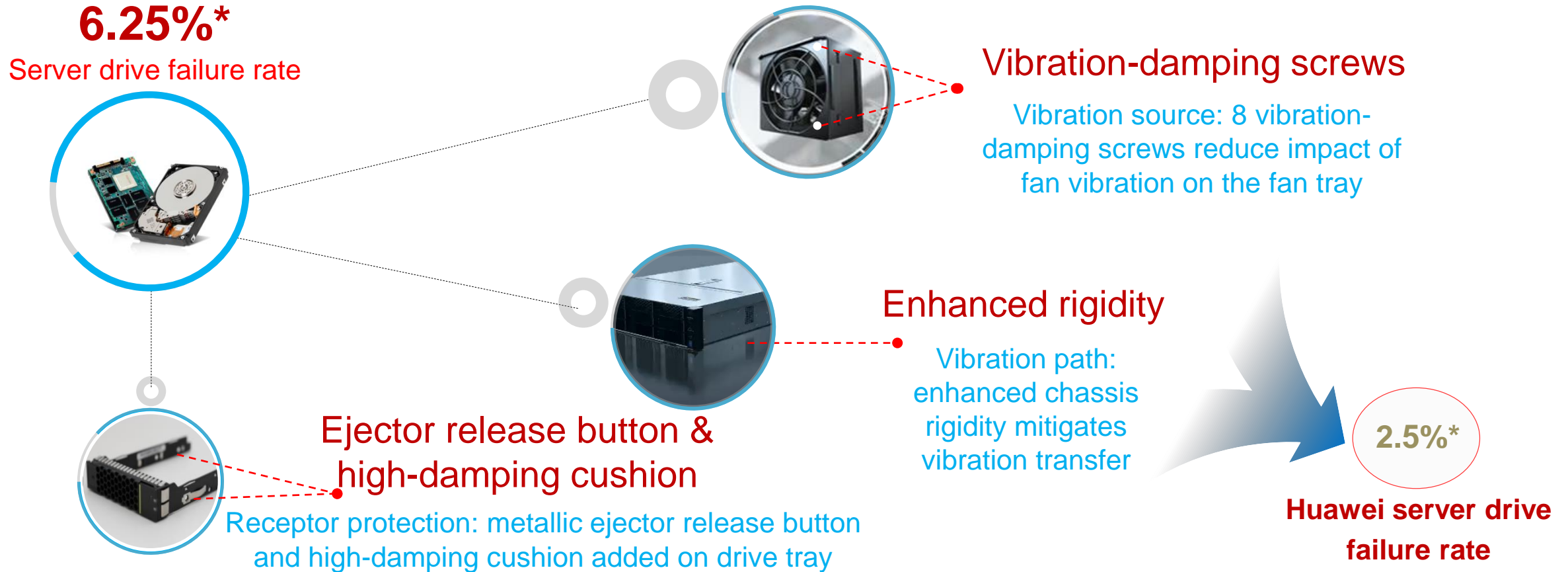


Redundancy and Hot Swap

- Redundancy design of vulnerable components such as PSUs and fan modules
- Hot-swappable PCIe components (supported by some models)

High Reliability Design: Triple Anti-Vibration Designs to Ensure Server Quality

- HDD failures account for a high proportion of all drive failures in servers.
- Triple anti-vibration designs improve stability and reduce the drive failure rate.

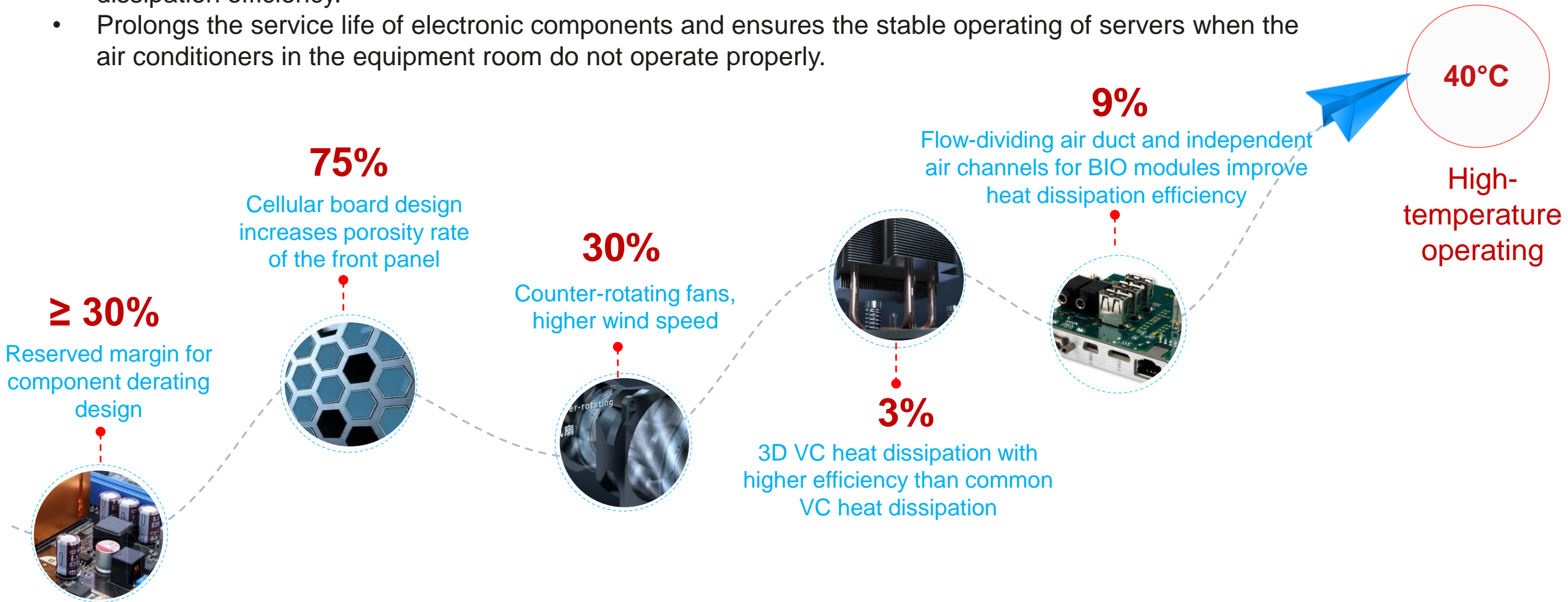


* Data source: drive failure rate statistics in data centers of finance customers

For more details about the anti-vibration design, watch the [Huawei Server High Reliability Design Video](#).

High Reliability Design: Efficient Heat Dissipation to Support Higher Ambient Temperatures

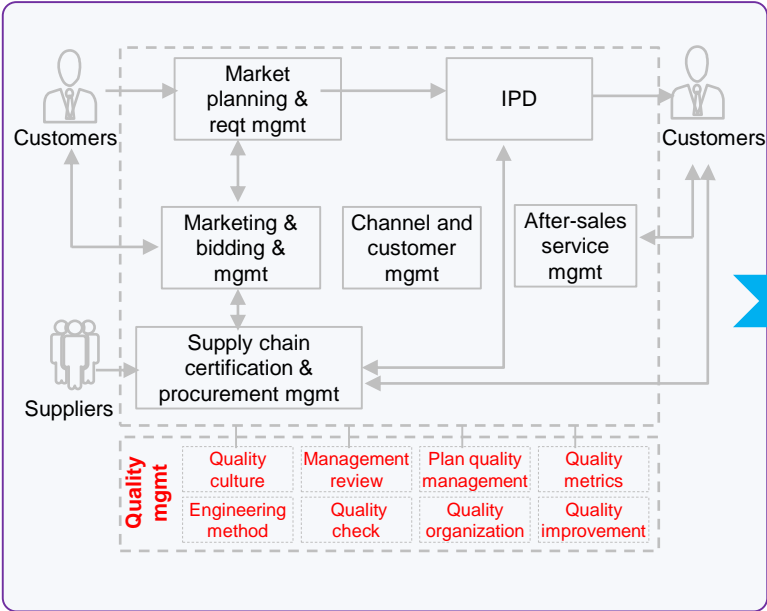
- E2E heat dissipation design, from component selection to air flow direction design, improves heat dissipation efficiency.
- Prolongs the service life of electronic components and ensures the stable operating of servers when the air conditioners in the equipment room do not operate properly.



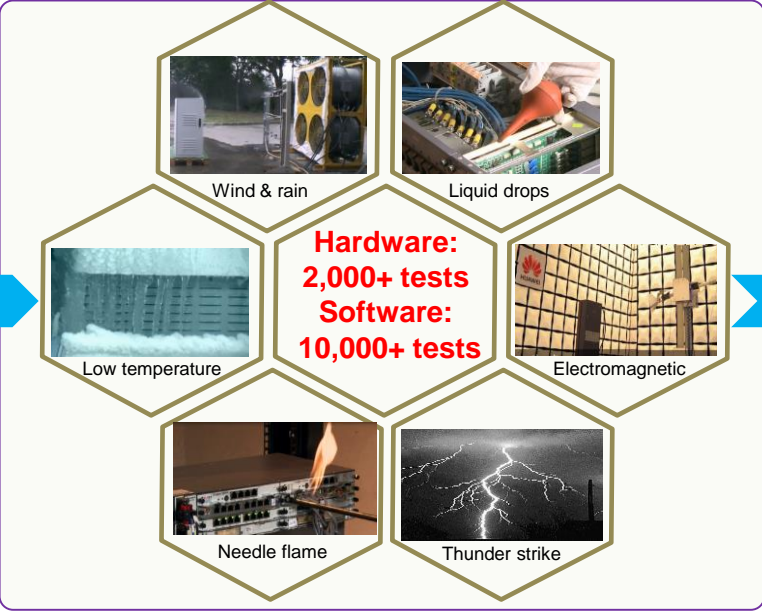
* Not all models support this function.

E2E Quality Assurance: Quality Process, Testing, and Cyclical Improvement

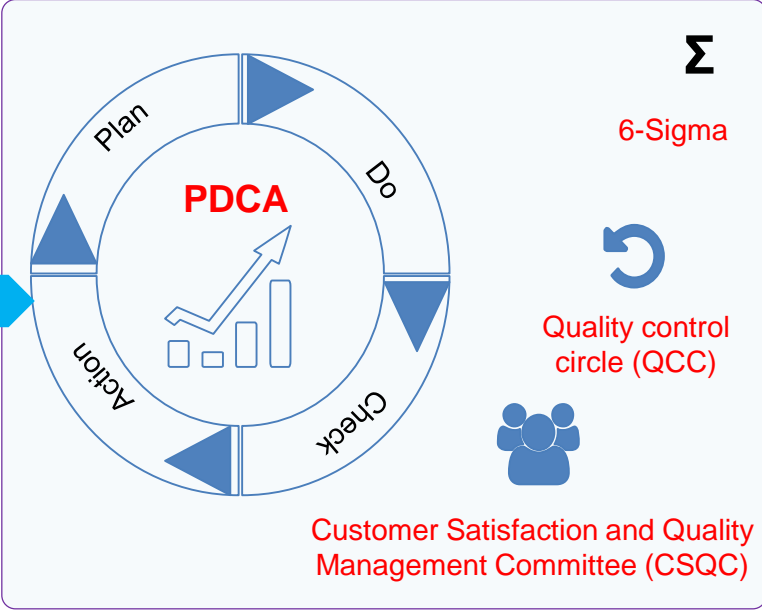
Complete and mature quality process



Stringent certification & testing



Quality culture of continuous improvement



Association and iterative loop of three major links

For details about the process, watch the [Huawei Server Craftmanship Video Series-Test Process](#).

Thank you.

Bring digital to every person, home, and organization for a fully connected, intelligent world.

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