



OceanStor 18000 V5 Mission Critical Storage System Quotation Guide

Contents

- 1 Product introduction
- 2 Key points of product configuration
- 3 Product quotation guide
- 4 Product configuration example

OceanStor V5, Huawei's Next-Gen Hybrid Flash Storage



OceanStor
5000/6000/18000 V5 storage



Multi-level Convergence

Convergence of flash storage, SAN&NAS, and heterogeneous storage systems

Gateway-free converged active-active solution, 99.9999% HA



Excellent Performance

Scalable to support 6 million IOPS@1 ms

Proprietary SSDs and excellent performance reduce latency to 1 ms.



Intelligent Services

Supporting intelligent cloud services throughout the entire lifecycle (plan, design, and O&M)

Future-oriented, supporting cloud transformation

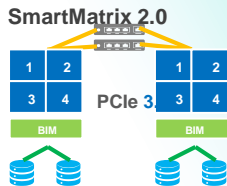
With strengthened differentiators, OceanStor 18000 V5 has surpassed competitors such as EMC

Advanced software architecture, with data recovery speed over 20 times faster than products from EMC, HDS, and IBM

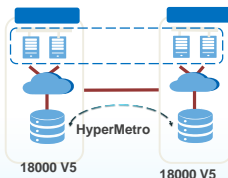


RAID 2.0+ reduces 95% of data loss risks caused by disk failures.

Architecture tolerable of dual points of failure, outperforming products from EMC, IBM, and HP



The fully redundant hardware architecture ensures service continuity.



The use of active-active data centers ensures service continuity.

Gateway-free active-active storage arrays support load balancing. More types of solutions are offered than EMC.



The performance of primary storage can also be close to that of an all-flash array.

Optimal performance in the industry, with 3 million SPC-1 IOPS™ surpassing the performance of products from EMC and HDS



More types of fined-grained software (smallest data migration granularity and stronger heterogeneous capability)

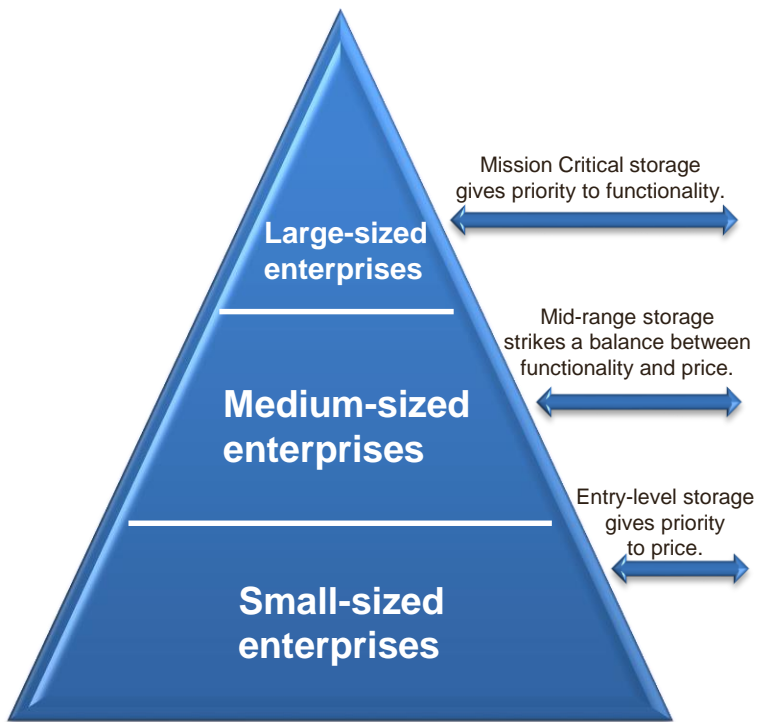
16 controllers/
9600 disks/
384 host ports
PCIe 3.0/SAS 3.0

Industry's highest specifications, with some indicators 1.5 times higher

For example, remote replication supports 64:1, which is 4 to 8 times that of competing products.

Positioning of OceanStor 18000 V5 Mission Critical storage

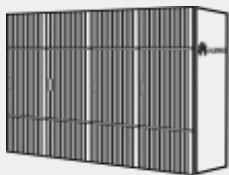
— Target market dimensions



Category	Model	Feature	Application Scenario
Mission Critical storage	18000 V5 6800 V5	<ul style="list-style-type: none"> • High performance • High scalability • High efficiency • Flash memory optimization 	<ul style="list-style-type: none"> • Large-scale integration • 1st-layer application program of virtualization • Mixed workload • Multiple application programs • High-performance application programs
Mid-range storage	5800 V5 5600 V5 5500 V5 5300 V5	<ul style="list-style-type: none"> • Unified storage • Stable performance • High scalability • Efficient service • Flash memory optimization 	<ul style="list-style-type: none"> • Enterprise application programs (Oracle/email/SAP) • Storage integration • Server virtualization • Advanced storage tiering • Data protection • File sharing
Entry-level storage	2200 V3 2600 V3	<ul style="list-style-type: none"> • Good performance and large capacity • Ease of use • High cost-effectiveness 	<ul style="list-style-type: none"> • Basic integration • Microsoft application programs • Entry-level server virtualization • iSCSI SAN • Video surveillance

OceanStor 18000 V5 Mission Critical storage GTM pace

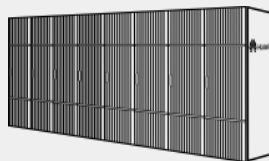
18500/18800 V5



- PCIe 3.0 interconnection, 16-controller scalability
- 3 million SPC-1 IOPS™
- End of marketing (EOM) on Dec 31, 2018



18500/18800 V5



- Continuous improvement of performance and reliability
- 6 million SPC-1 IOPS™
- 4-controller symmetric engine, with back-end SAS full interconnection, and continuous cache mirroring
- Gateway-free A-A mode

18000 V5 go-to-market (GTM) pace



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Specifications of OceanStor 18000 V5 Mission Critical storage systems

		18500 V5	18800 V5
Basic specifications	Number of controllers	2 to 16	2 to 16
	Max. cache	16 TB	16 TB
	Max. number of host ports	384*	384*
	Supported storage protocols	FC, FCoE, iSCSI, InfiniBand, NFS, CIFS, HTTP, FTP	
	Types of front-end ports	1/10 Gbit/s Ethernet, 10 Gbit/s FCoE, 10 Gbit/s TOE, 8/16 Gbit/s FC, 56 Gbit/s InfiniBand	
	Max. number of disks	6400 (2.5-inch)/3072 (3.5-inch)	9600 (2.5-inch)/4608 (3.5-inch)
Software features	Smart series efficiency improvement suite	SmartThin, SmartQoS, SmartMotion, SmartPartition, SmartCache, SmartCompression, SmartDedupe, SmartTier, SmartMulti-Tenant, SmartVirtualization, SmartMigration, SmartErase SmartQuota	
	Hyper series data protection suite	HyperSnap, HyperReplication, HyperClone, HyperCopy, HyperMetro, HyperLock, HyperVault	
	Host software	UltraPath	
	Storage management software	DeviceManager, BCManager, eSight	

Note:

- In Smart and Hyper series suites, software in bold supports SAN and NAS, software in blue only supports SAN, and software in red only supports NAS.
- 384, the maximum number of host ports, is calculated based on 8-port 8/16 Gbit/s Fibre Channel high-density modules.

Hardware of OceanStor 18500 V5/18800 V5



BBU modules

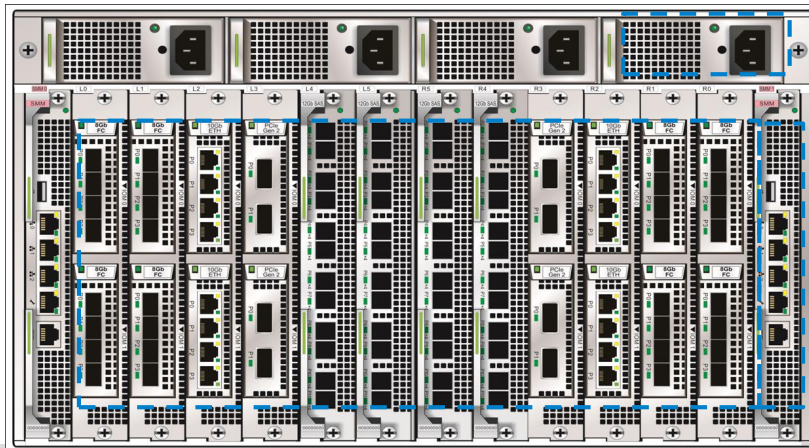
- 3+1 redundancy
- AC power failure protection

Controller modules

- A minimum of two controllers
- Automatic frequency adjustment for reduced power consumption
- Built-in fan modules (11+1 redundancy, with fan modules integrated in control modules but can be maintained independently)

Power modules

- 2+2 redundancy, with support for 220 V single-phase AC, 380 V three-phase AC, 240 V high-voltage DC, and North America 110 V AC
- Up to 94% of power conversion efficiency



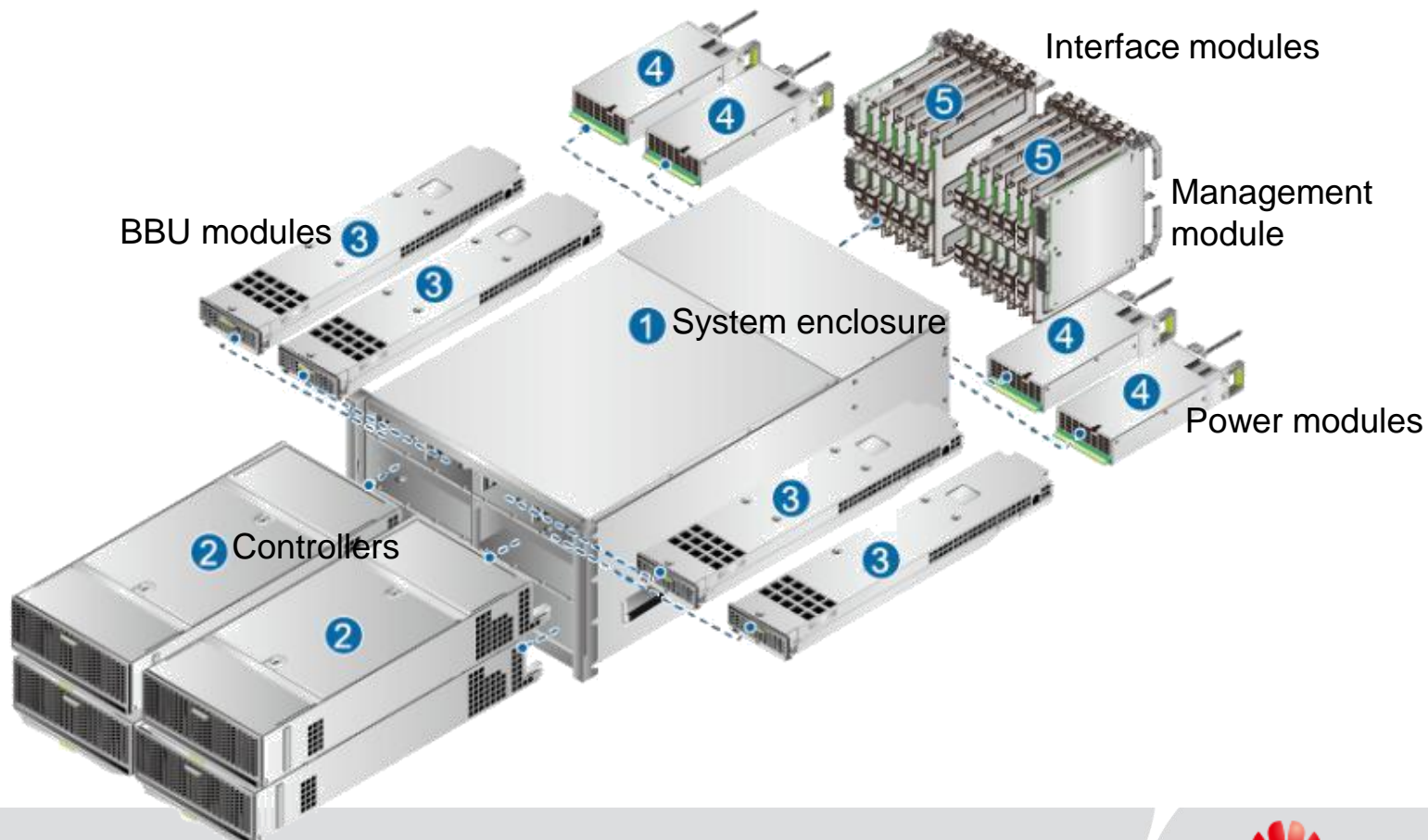
Management modules

- 1+1 redundancy
- Multi-controller scale-out interconnection for heartbeat communication

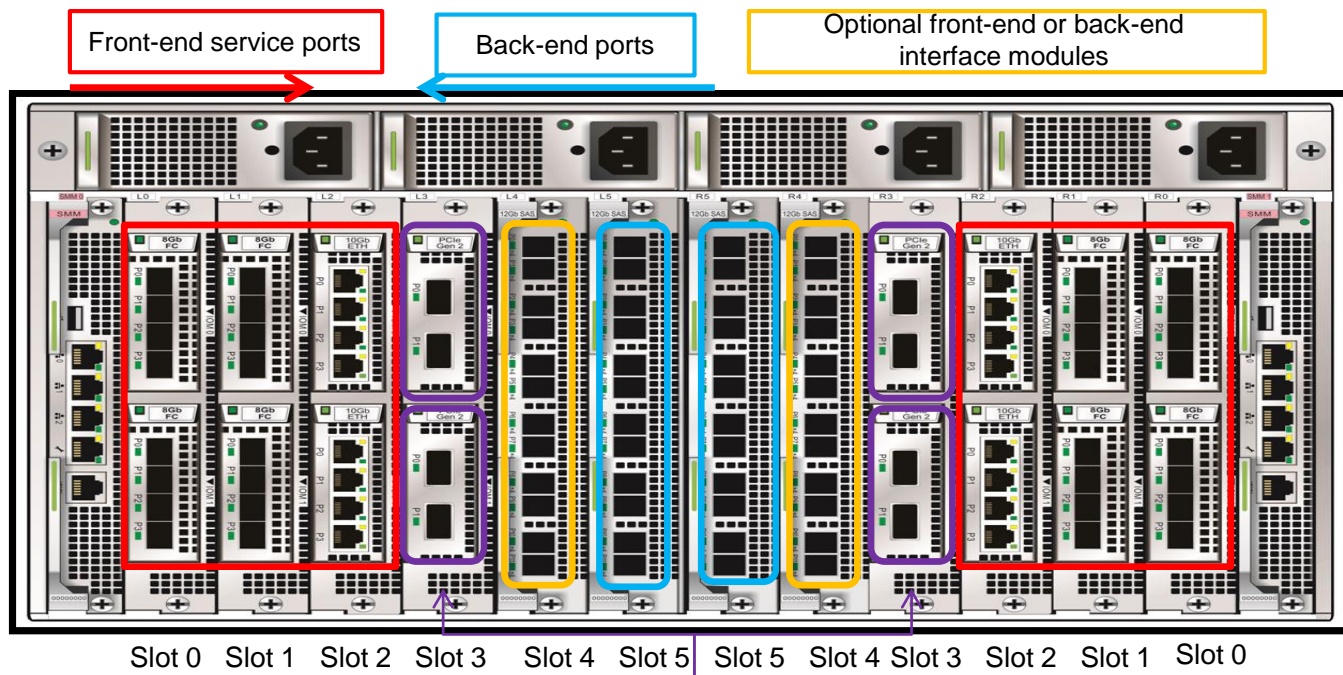
Interface modules

- Dual controllers support a maximum of 8 front-end interface modules and 4 SAS back-end interface modules.
- Four controllers support a maximum of 16 front-end interface modules and 4 SAS back-end interface modules.
- Port types: 8 Gbit/s FC, 16 Gbit/s FC, 1/10GE, 10GE TOE, 10GE FCoE, 56 Gbit/s IB, 12 Gbit/s SAS.

Hardware of OceanStor 18500 V5/18800 V5



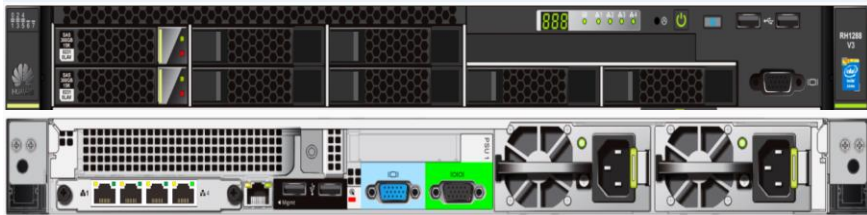
Interfaces on OceanStor 18500 V5/18800 V5



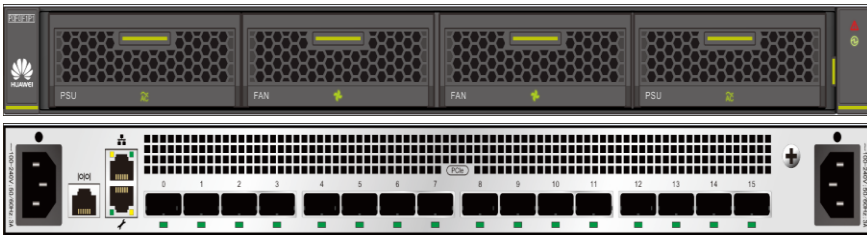
Interface module configuration rules:

Slots are numbered 0 to 5 from both sides to the middle. Slots 0 to 2 are equipped with front-end modules. Slot 3 is fixedly equipped with a PCIe switching module. Slot 5 is fixedly equipped with a back-end module. Slot 4 can be equipped with a front-end or back-end interface module.

Hardware components of OceanStor 18500 V5/18800 V5 — Switch and server



SVP (RH1288 V5)



PCIe switch

- Data switch
 - 1 U, including 16 PCIe ports and 1 iSCSI management port.
 - A key device that enables all engines to interconnect and communicate and enables controllers to exchange control information and service data.
- SVP
 - Core component used to manage, configure, and maintain an OceanStor 18000 V5 storage system.
 - DeviceManager is installed on the SVP.
 - Two codes exist in the SBOM, one of which is dedicated to high altitudes. A code is automatically selected after corresponding parameters are selected in the configurator.
- An SVP and a KVM are automatically configured for system bay 0, and a price must be separately quoted for them.
- Two PCIe switches are automatically configured for system bay 1, and a price must be separately quoted for the PCIe switches.

Disk enclosures of OceanStor 18500 V5/18800 V5 (2 U and 4 U)



2.5-inch disk units

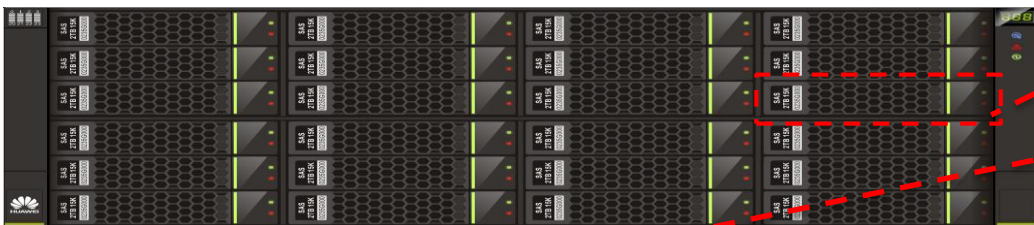
- SAS/NL-SAS/SSD

Expansion modules

- Two 12 Gbit/s SAS expansion modules

Power modules

- 1+1 redundancy
- Support for AC and 240 V high-voltage DC



3.5-inch disk units

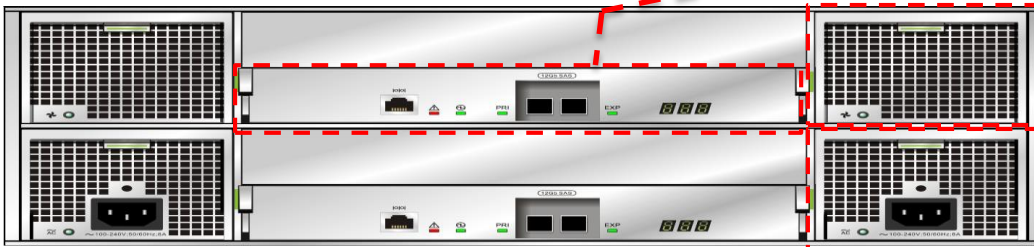
- NL-SAS/SSD

Expansion modules

- Two 12 Gbit/s SAS expansion modules

Fan modules

- 5+1 redundancy per disk enclosure

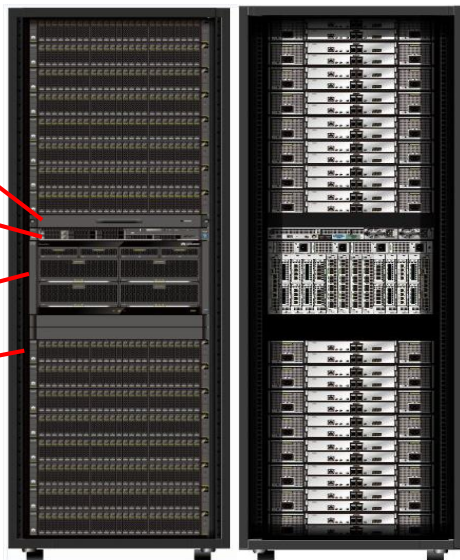


Power modules

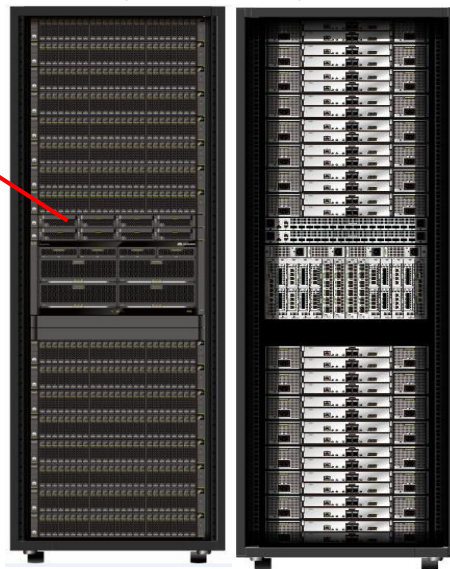
- 1+1 redundancy
- Support for AC and 240 V high-voltage DC

OceanStor 18500 V5/18800 V5 bay architecture (1)

System bay 0



System bay 1



Storage bay

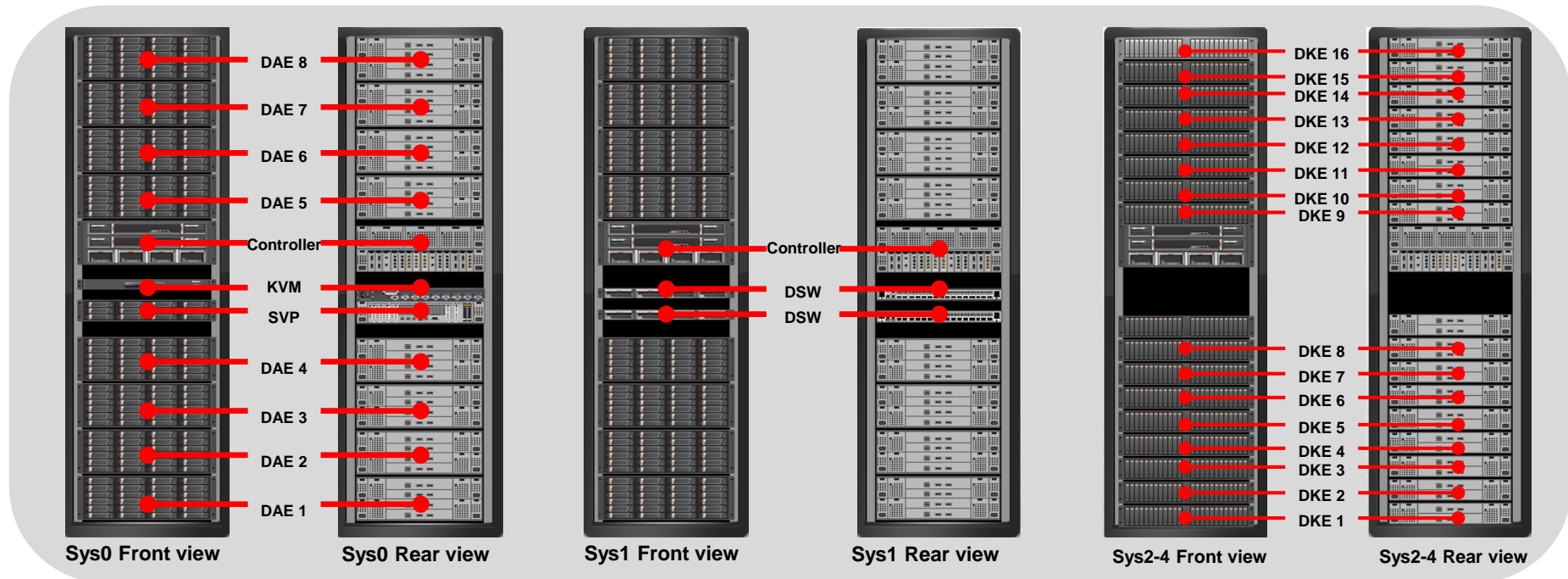


KVM
SVP
ENG
DAE

DSW

- ENG: OceanStor 18000 V5engine
- DSW: Data switch, which is a PCIe switch
- SVP: Service Processor
- DAE: Disk Array Enclosure
- KVM: Keyboard Video, and Mouse

OceanStor 18500 V5/18800 V5 bay architecture (2)

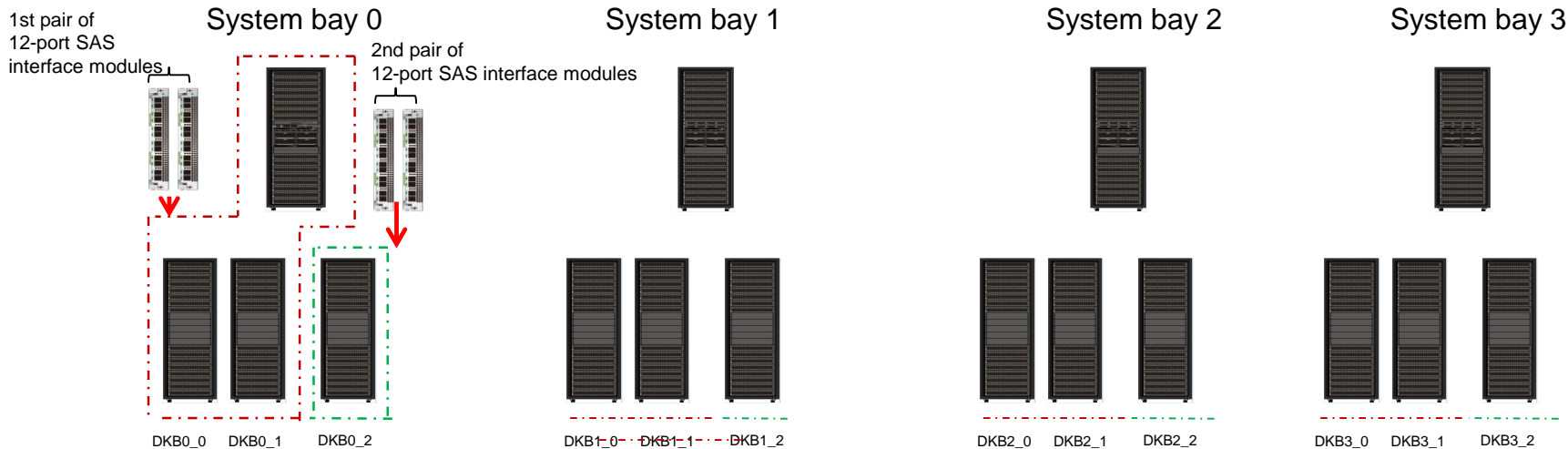


System bay 0 includes one engine, one KVM, one SVP, and a maximum of **8 x 4 U disk enclosures** or **16 x 2 U disk enclosures**.

System bay 1 includes one engine, two DSWs, and a maximum of **8 x 4 U disk enclosures** or **16 x 2 U disk enclosures**.

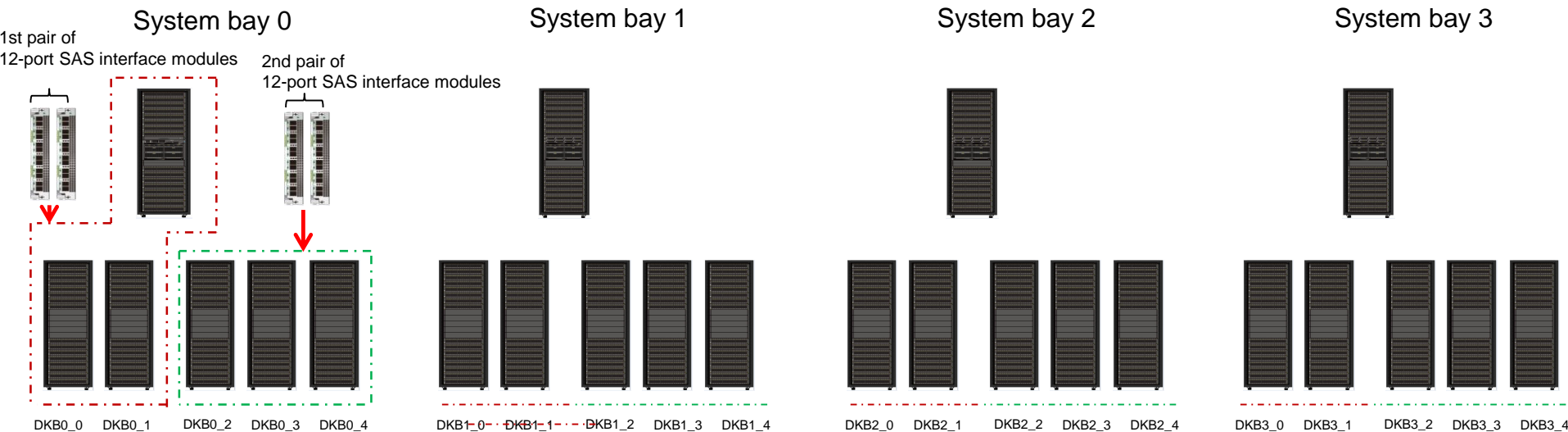
System bays 2 to 4 (expansion system bays) each include one engine and a maximum of **8 x 4 U disk enclosures** or **16 x 2 U disk enclosures**.

OceanStor 18500 V5 bay configuration and layout



- Each engine supports a maximum of one system bay and three storage bays.
- Each engine supports a maximum of two pairs of 12-port SAS interface modules. The first pair supports 1200 x 2.5-inch disks (3 bays x 16 enclosures x 25 disks) or 576 x 3.5-inch disks (3 bays x 8 enclosures x 24 disks). The second pair supports 400 x 2.5-inch disks (1 bay x 16 enclosures x 25 disks) or 192 x 3.5-inch disks (1 bay x 8 enclosures x 24 disks).
- Bays are classified into bays that house only 2 U enclosures, bays that house only 4 U enclosures, and bays that house both 2 U and 4 U enclosures. The configurator automatically matches bays.
- A disk enclosure loop cannot cross bays.

OceanStor 18800 V5 bay configuration and layout



- Each engine supports a maximum of one system bay and five storage bays.
- Each engine supports a maximum of two pairs of 12-port SAS interface modules. Each pair supports 1200 x 2.5-inch disks (3 bays x 16 enclosures x 25 disks) or 576 x 3.5-inch disks (3 bays x 8 enclosures x 24 disks).
- Bays are classified into bays that house only 2 U enclosures, bays that house only 4 U enclosures, and bays that house both 2 U and 4 U enclosures. The configurator automatically matches bays.

Overview of OceanStor 18000 V5 software

OceanStor OS software



Data acceleration

Data protection

O&M

- **The Smart series suite provides intelligent user experience.** Mission Critical features such as SmartQoS and SmartPartition accelerate response to mission-critical services. SAN and NAS features are converged. Storage resources are offered on demand.
- **The Hyper series security features provide comprehensive data protection.** Local, remote, and multi-region data protection solutions ensure high reliability and security.
- **Management software is easy to use.** After simple configuration, you can use management software to easily implement converged O&M of multiple brands and fields, graphical E2E management, and enhanced BYOD management.

Smart series suite

A full range of mission critical features provide high performance experience. SAN and NAS are converged, and resources are provisioned on demand.

Hyper series data protection suite

Multi-level data protection ensures high reliability and security. A variety of 3DC disaster recovery solutions are offered.

Easy-to-use management software

One device or devices from multiple brands and fields are easily managed, thereby adapting to the BYOD environment.

OceanStor 18000 V5 software classification — SAN-related features



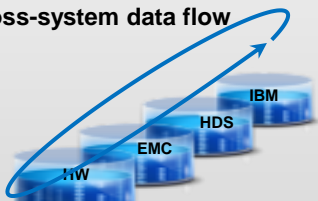
Efficiency improvement suite



Data protection suite

SmartVirtualization

Cross-system data flow



SmartTier

Vertical data flow



SmartMotion

Horizontal data flow



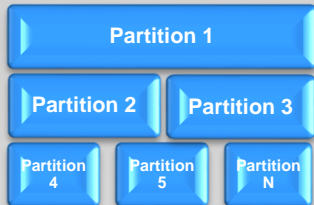
SmartThin

Thin provisioning



SmartPartition

Intelligent partitioning



SmartQoS

Intelligent service quality control



SmartDedupe & SmartCompression

Intelligent deduplication & compression



SmartCache

Intelligent SSD caching

SmartErase

Data destruction

SmartMigration

LUN migration

SmartMulti-Tenant

Multi-tenancy

HyperSnap: increment-based local data protection
 HyperClone: complete copy-based local data protection
 HyperCopy: inter-device data protection
 HyperReplication: inter-DC disaster recovery protection
 HyperMetro: active-active DC protection
 HyperMirror: LUN-level continuous redundant backup protection



Easy-to-use management software

Device Manager: one-device management
 eSight: cross-field multi-device management within a data center
 BCManager: disaster recovery between data centers
 SystemReporter: performance analysis and report export

OceanStor 18000 V5 software classification — NAS-related features

NAS-related features



CIFS

Common Internet File System



NFS

Network File System



NDMP

Network Data Management Protocol

SmartThin

Thin provisioning

SmartQoS

Intelligent service quality control

SmartPartition

Intelligent cache partitioning

SmartCache

Intelligent SSD caching

SmartDedupe

Intelligent data deduplication

SmartCompression

Online compression

SmartQuota

Quota management

SmartMulti-tenant

Tenant management

HyperSnap

Snapshot

HyperReplication

Remote replication

HyperLock

WORM

HyperVault

Integrated backup

HyperMetro

A-A solution

HyperClone

Clone

OceanStor 18000 V5 software list

Software	Configuration Strategy	Charge Strategy
Basic Software Suite License (OceanStor OS, DeviceManager, SmartThin, SmartMotion, SmartQos, SmartPartition, SmartCache, SmartMigration, SmartErase, SmartMulti-Tenant, SystemReporter)	Mandatory	By capacity
HyperSnap Software License	Optional	By capacity
HyperClone Software License	Optional	By capacity
HyperCopy Software License	Optional	By capacity
Local Data Protection Suite Basic License (Including HyperSnap, HyperClone, HyperCopy)	Optional	By capacity
HyperReplication Software Basic License	Optional	By capacity
SmartTier Software Basic License	Optional	By capacity
SmartVirtualization Software Basic License	Optional	By capacity
SmartDedupe & SmartCompression	Optional	By function
OceanStor UltraPath Software License	Mandatory	By the number of hosts (The default value is 1.)
BCManager Software License	Optional	The price is 0.01 dollar.
HyperMirror Software Basic License	Optional	By capacity
Heterogeneous Data Protection Suite Basic License (Including SmartVirtualization, HyperMirror)	Optional	By capacity
HyperMetro License	Optional	By capacity
NAS Software License (Including CIFS, NFS, NDMP, WORM, SmartQuota, HyperVault)	Optional	By capacity

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Quotation structure for OceanStor 18000 V5 Mission Critical storage products

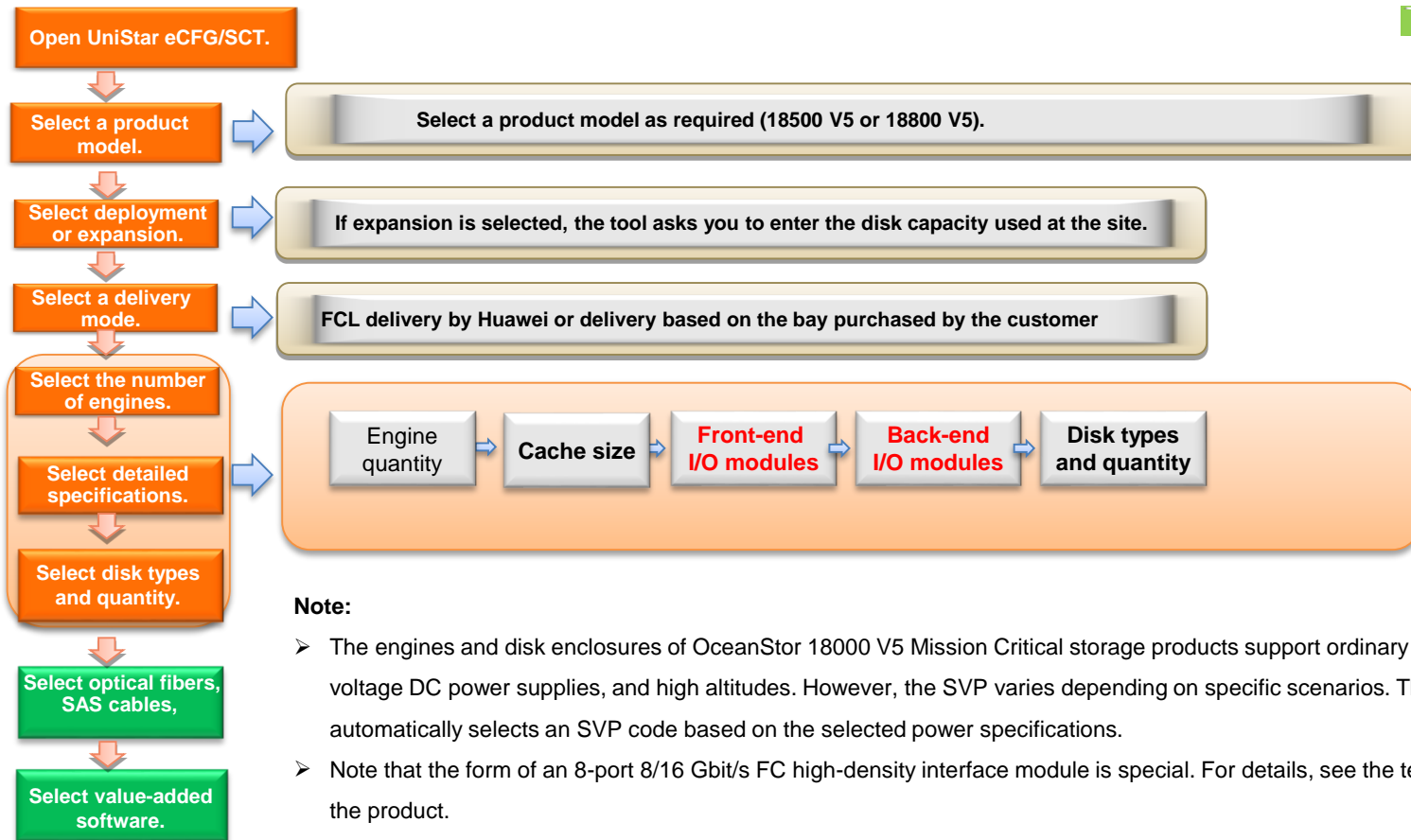
Non-Quotation

Quotation

		OceanStor 18500/18800 V5
Hardware	Engines	
	Controller modules (used when two controllers are expanded to four)	
	System bays	
	Storage bays	
	Disk units	
	Disk enclosures	
	Front-end interface modules	
	Back-end SAS interface modules	
	Installation materials (optical fibers, SAS cables, modems)	
Software	SAN basic software suite	
	NAS basic software suite	
	BCManager	
	OceanStor UltraPath	
	Other value-added software (such as SmartVirtualization and HyperMetro)	
Service	Installation service	
	Warranty service	

Process for configuring an OceanStor 18000 V5

 : optional



Note:

- The engines and disk enclosures of OceanStor 18000 V5 Mission Critical storage products support ordinary power supplies, high-voltage DC power supplies, and high altitudes. However, the SVP varies depending on specific scenarios. The configurator automatically selects an SVP code based on the selected power specifications.
- Note that the form of an 8-port 8/16 Gbit/s FC high-density interface module is special. For details, see the technical white paper of the product.

OceanStor 18000 V5 engines and bays

Configuration Item	Configuration Description
OceanStor 18500 V5 engine (dual controllers, AC\240 V high-voltage DC, 512 GB cache, SPE72C0600)	OceanStor 18500 V5 engines involve three cache sizes. One storage system supports a maximum of four engines (16 controllers). When multiple engines are configured, they must have the same configuration.
OceanStor 18500 V5 engine (four controllers, AC\240 V high-voltage DC, 1 TB cache, SPE72C0600)	Use this item if four controllers are purchased for the first time. The code of this item is automatically selected.
OceanStor 18000 V5series system bay	<ul style="list-style-type: none">● System bay 0 must be configured. System bay 0 contains one KVM, one SVP, and two PDUs. System bay 0 only supports 1 engine and 8 x 4 U disk enclosures or 16 x 2 U disk enclosures.● If a second engine is configured, system bay 1 must be configured. System bay 1 contains two DSWs and two PDUs. System bay 1 only supports 1 engine and 8 x 4 U disk enclosures or 16 x 2 U disk enclosures.
OceanStor 18000 V5series storage bay	A storage bay cannot be equipped with engines. A storage bay supports 8 x 4 U disk enclosures or 16 x 2 U disk enclosures.

- **The first engine can be installed only in system bay 0, and the second engine only in system bay 1. That is, each system bay houses only one engine.**
- **A storage bay can house both 4 U and 2 U disk enclosures. In addition, the upper part of a storage bay can house enclosures of one model and the lower part houses enclosures of another model. (It is recommended that the lower part houses 2 U disk enclosures.)**

OceanStor 18000 V5 interface modules

Configuration Item	Configuration Description
4*1 Gbit/s Ethernet I/O module (4 ports)	Optional, configured in pairs.
2*10 Gbit/s FCoE I/O module (2 ports)	Optional, configured in pairs, with support for VN2VN.
4*8 Gbit/s Fibre Channel I/O module (4 ports)	In the active-active scenario, if two sites are 25 km away from each other and interconnected based on Fibre Channel, it is recommended that ordinary 4*8 Gbit/s Fibre Channel modules (not SmartIO modules) be used for connection. (The Fibre Channel protocol optimization is supported, providing higher performance in long-distance transmission between storage arrays.) When the ports are connected to servers, the effect is similar to that provided by ports on SmartIO modules.
2*56 Gbit/s IB I/O module (QSFP+)	Optional, configured in pairs.
8*8 Gbit/s FC I/O module (QSFP+)	Optional. It is a high-density module that uses QSFP+ ports. Each controller supports a maximum of two such modules. Pay attention to the module form. For details, see the technical white paper.
4 *SmartIO I/O module (SFP+, 10 Gbit/s ETH)	Optional, configured in pairs, with support for 10GE and VN2VF FCoE.
4 *SmartIO I/O module (SFP+, 8 Gbit/s FC)	Optional, configured in pairs.
4*SmartIO I/O module (SFP+, 16 Gbit/s FC)	Optional, configured in pairs.
2*5 Gbit/s PCIe I/O module	Connected to a PCIe switch. The PCIe I/O module is automatically selected when the number of controllers is larger than 4.
12*12 Gbit/s SAS I/O module (Mini-SAS HD)	Optional. It is a large module that occupies two slots vertically.

Precautions on OceanStor 18000 V5 software configuration and quotation

	Software and Value-added Function	Description
Base software	Basic software license for block (including Device Management, SmartThin, SmartMulti-tenant, SmartMigration, SmartErase,)	Required for SAN
	Upgrade license from block to unified storage (including SmartQuota, NFS, CIFS, NDMP)	Configured during SAN storage upgrade to unified storage or SAN+NAS integrated storage
File	CIFS NFS NDMP license SmartQuota (intelligent quota) , HyperVault HyperLock (intelligent WORM), HyperVault(intelligent backup) , HyperMetro	Quotation of the file engine software is described as follows: 1. Select file functions. The four items in red are included in the base software package. 2. Other NAS value-added functions are optional.
Block	HyperCopy (LUN copy) HyperClone (cloning) HyperMirror (volume mirroring) HyperSnap (snapshot) HyperReplication (remote replication) HyperMetro(Active-Active)	Value-added functions (optional)
	SmartCache (intelligent SSD caching), SmartQoS (intelligent service quality control), SmartPartition (intelligent cache partitioning), SmartDedupe & SmartCompression (intelligent data deduplication and compression) SmartTier (intelligent data tiering), SystemReporter (system report software), SmartVirtualization (intelligent heterogeneous virtualization), SmartMotion (intelligent data migration)	Value-added functions (optional)
Other	OceanStor UltraPath license	must
	eService (remote maintenance and management)	Non-configuration items, provided after Hi-Care services are provided

Software license quotation of OceanStor 18000 V5

Item	18000 V5
Whether capacity licenses vary with media types	Media types are not distinguished. Only the total capacity is calculated.
Maximum price	Media types are not distinguished. When the capacity exceeds 200 TB, only 200 TB is charged.
Capacity license steps	5 steps, including 0–50 TB, 51–100 TB, and more than 200 TB. Less steps are involved.
Rules for calculating the number of capacity licenses	All the numbers only exist in one range.

Example:

OceanStor 18000 V5

▼ HyperMirror...

88032XUF	85V3-LHMIB	HyperMirror Software Basic License	1	1
88032XUG	85V3-LHMI50	HyperMirror Software Capacity License(1-50TB)	0	0
88032XUH	85V3-LHMI100	HyperMirror Software Capacity License(51-100TB)	72	72
88032XUJ	85V3-LHMI200	HyperMirror Software Capacity License(101-200TB)	0	0
88032XUL	85V3-LHMIU	HyperMirror Software Unlimited Capacity License	0	0

Configuration Quote Description of Encryption

Encryption scheme:

- 1, Encrypted disk/encryption machine is a controlled sales component. SCT is not visible and it is a non-saleable country.
- 2, Support built-in dense pipe (no quote, no license control, optional encryption disk can support) and external encryption machine.
- 3, First configure the encryption disk, and then determine the encryption scheme.

Configuration steps:

- 1, Select the encrypted disk --- "2, Select the encryption.

▼ ===Disk===			
Show Disk by recommended level	Highly Recommended	All	▼
600GB SSD SAS Disk Unit(2.5")	0	0	
960GB SSD SAS Disk Unit(2.5")(Recommended)	0	0	
1.92TB SSD SAS Disk Unit(2.5")(Recommended)	0	0	
3.84TB SSD SAS Disk Unit(2.5")(Highly Recommended)	0	0	
7.68TB SSD SAS Disk Unit(2.5")	0	0	
960GB SSD SAS Disk Unit(2.5",Encryption Disk Unit)	0	25	
1.92TB SSD SAS Disk Unit(2.5",Encryption Disk Unit)	0	0	
▼ ===Auxiliary Equipment===			
KMIP KeyAuthority Server Type	Entry-level	Entry-level	▼
The standard delivery period is 90 days, please pay attention! By suppl...			
Number of KMIP KeyAuthority Server	2	None	
Number of Endpoint License	1	1	
Duration (years) of Each KMIP KeyAuthority's Premium Support	3	3	
Duration (years) of Each Endpoint License's Premium Support	3	3	
Whether the customer is aware of and has accepted the server vendor'...	No	No	▼
Please choose the Cabinet type	None	None	▼

1, Enter the number of encrypted hard disks.

2. Select the built-in None or Entry-level.

Quotation Description of SafeNet HSMs

Configuration methods:

1. First configure the encryption disk, then increase the encryption model and maintenance services. The configuration rules of the encryption machine are as follows:

Function	Quotation Description	Configuration Rules
Key management server	K250 KeySecure, V8.5, Perpetual	It is advised to configure two key management servers for each site by considering the active-standby mode. One server is acceptable.
Warranty service of key management servers	Plus Maintenance Support - K250 KeySecure-1 Year-7*24	Configure warranty quantity based on the server quantities. Warranty quantity = Required warranty period x Number of key management servers
Client license	GEMALTO KMIP Connector, Perpetual License	Number of clients = Number of storage arrays
Client license warranty service	Plus Maintenance Support - KMIP Connector- 1 Year-7*24	Warranty period of client licenses = Number of clients x Required warranty period. For example, when three storage arrays need a 3-year warranty, enter "9" in the SCT.

Vender/Model	Security Level	Max. Number of Keys(Number of encrypted hard disks)	Ma. Number of Clients(Management array number)	Cost
Thales: KA	FIPS 140-2 Level 3	25,000,000	1024	High
SafeNet: K250	FIPS 140-2 Level 1	25,000	100	Low

Installation materials and related devices

Installation Material	Configuration Description
3m/10m Patch Cord-OM1	Automatically configured based on the number of optical ports on hosts. The default length is 3 meters. To increase the number, select them separately.
3m/10m/30m/50m Patch Cord-OM3	
High Speed Cable,Mini SAS HD Cable,3m,(SFF 8644 Plug),(28AWG*4P*2B(S)),(SFF 8644 Plug),Indoor use	Automatically configured based on the number of disk enclosures. To increase the number, select them separately.
High Speed Cable,Mini SAS HD Cable,5m,(SFF 8644 Plug),(26AWG*4P*2B(S)),(SFF 8644 Plug),Indoor use	
Optical transceiver-MiniSAS HD AOC-850nm-2.5G~12G-0.015km	

Bay	Configuration Description
System bay (42 U)	Optional. Selected based on site requirements. System bay 0 is mandatory.
Storage bay (42 U)	Optional. Selected based on site requirements.

Optical modules

- 8 Gbit/s Fibre Channel, FCoE, 10GE, and 16 Gbit/s Fibre Channel interface modules have already been equipped with optical modules. These interface modules do not need to be configured with extra optical modules.

Optical fibers

- For 8 Gbit/s Fibre Channel, TOE, FCoE, and 10GE interface modules, select OM1 optical fibers if the required length is shorter than 10 meters; select OM3 optical fibers if the required length is 10 meters or longer.
- For 16 Gbit/s Fibre Channel interface modules, select OM3 optical fibers.

Service quotation strategy: installation + hardware warranty + software warranty (mandatory)

Item	Configuration and Quotation Description
Installation service-18000 V5System-set	Quote a price based on the system
Engine warranty upgraded to Hi-Care gold medal+7x24x4 service (3 years)/(enclosure)	Upgrade the engine service level.
Engine warranty upgraded to Hi-Care gold medal+7x24x4 service (3 years)/(enclosure)	
Engine Hi-Care standards+Service 5x8xNBD (/enclosure/year)	Quote a price for warranty extension quotation of the fourth and fifth years. (An engine has a 3-year warranty.)
Engine Hi-Care silver medal+service 7x24xND (/enclosure/year)	
Engine Hi-Care gold medal+service 7x24x4 (/enclosure/year)	
Media retention service (/disk/year)	If HDDs or SSDs fail and need to be replaced during the warranty period, the customer can retain the failed disks. Quote a price based on disk types, quantity, and service life. The period of media retention service is the same as that of hardware service (3, 4, or 5 years).
Software support service – basic software (/license/year)	<ol style="list-style-type: none"> In the same project, the software service and hardware service must maintain the same period (3, 4, or 5 years). Therefore, the software service period must be 3 years by default. The software service and software license have the same authorization.
Software support service – value-added software (/license/year)	

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Configuration example

Customer requirements

- The equipment room provides AC power. The device cache is at least 512 GB.
- Use a SAN storage system.
- Configure 9 TB of SSDs, 60 TB of SAS disks, and 100 TB of NL-SAS disks (raw capacity) for database and mail applications.
- Front-end ports are 16x8 Gbit/s Fibre Channel and 4x56 Gbit/s IB.
- Use Huawei bays to deliver the product.
- Configure local data protection software.
- Configure remote disaster recovery (Only 30 TB data on SAS disks need remote disaster recovery).
- Configure automatic storage tiering.
- Configure thin provisioning.
- Configure heterogeneous virtualization to manage 100 TB data from EMC products.
- Configure installation service and 3-year standard warranty.

4.1 Selecting the engine delivery mode and specifications

Parameter	Suggestion	Setting
Note: The OceanStor 18500 V3/18800 V3 series stor...		
Project Configuration Scene	New Project	New Project
Select the type of C13 AC power cable	North America	North America
Is third-party cabinet or not ?	NO	NO
Please choose PDU power type	220V	220V
Single Controller Type(Multi device management plea...	256GB Cache	256GB Cache
Engine Number	1 PCS	1 PCS
Cabinet Configuration(Configure the quantity of th...	The Primary System Ca...	The Primary System Cabinet
▼ ===The Primary System Cabinet===		
Please choose Dual-Controller or Quad-Controller	Dual-Controller	Dual-Controller

Reset Verify&Save Export

Select deployment or expansion to determine the configuration type. If expansion is selected, enter the field capacity so that the software license steps are automatically calculated.

Huawei OceanStor 18000 V5 can be delivered based on Huawei bays or third-party bays.

It indicates the cache size of a single controller. Three cache sizes are available.

It indicates the number of engine enclosures.

To facilitate cabling and installation confirmation, the configuration is selected by bay.

4.2 Selecting interface modules for an engine

▼ ===Front-End Interface Card Module(1 PCS/...		
4 ports 1Gb ETH I/O Modules(Base-T)	0	0
4 ports 8Gb FC I/O Modules	0	2
8 ports 8Gb FC I/O Modules(QSFP+)	0	0
2 ports 10Gb FCoE I/O Modules(Optical SFP+)	0	0
Smart ACC Modules(De-dup,Compression)	0	0
2 ports 4*14Gb IB I/O Modules(QSFP+)	0	1
4 ports SmartIO I/O Modules(SFP+,10Gb ETH)	0	0
4 ports SmartIO I/O Modules(SFP+,8Gb FC)	0	0
4 ports SmartIO I/O Modules(SFP+,16Gb FC)	0	0
▼ ===Back-End Interface Card Module(1 pair)=...		
12ports 12Gb SAS I/O Modules	0	1

Select two pairs of 4-port 8 Gbit/s Fibre Channel interface modules. The delivery form of 8-port 8 Gbit/s Fibre Channel interface modules is special; therefore, use them as bidding items and do not promote them.

Select 56 Gbit/s IB modules. Each one has two ports. So, a pair meets requirements.

Back-end 12-port SAS interface modules. At least one pair is required.

4.3 Selecting disk units, disk enclosures, and storage bays

Parameter	Preference	Suggestion	Setting
Show Disks by Recommended Level		Highly Recommended	All
600GB 10K RPM SAS Disk Unit (2.5")	0	0	0
1.2TB 10K RPM SAS Disk Unit (2.5") (Highly Recommend)	0	50	0
1.8TB 10K RPM SAS Disk Unit (2.5") (Recommend)	0	0	0
600GB SSD SAS Disk Unit (2.5")	0	15	0
960GB SSD SAS Disk Unit (2.5") (Recommend)	0	0	0
1.92TB SSD SAS Disk Unit (2.5") (Recommend)	0	0	0
3.84TB SSD SAS Disk Unit (2.5") (Highly Recommend)	0	0	0
7.68TB SSD SAS Disk Unit (2.5")	0	0	0
2TB 7.2K RPM NL SAS Disk Unit (3.5")	0	50	0
4TB 7.2K RPM NL SAS Disk Unit (3.5")	0	0	0
6TB 7.2K RPM NL SAS Disk Unit (3.5") (Recommend)	0	0	0
8TB 7.2K RPM NL SAS Disk Unit (3.5") (Highly Recommend)	0	0	0
10TB 7.2K RPM NL SAS Disk Unit (3.5") (Recommend)	0	0	0
600GB 10K RPM SAS Disk Unit (2.5",Encryption Disk Unit)	0	0	0

Types of 2.5-inch disks include SAS, SSD, and NL-SAS. Select disks as required.

Types of 3.5-inch disks include SSD and NL-SAS. Select disks as required.

Disk Enclosure		
2.5" SAS Disk Enclosure	0	3
3.5" SAS Disk Enclosure	0	3
Loops Numbers(The Primary System Cabinet)	0	4
Cabinet		
Storage Cabinet Numbers	0	0

The number of disk enclosures and that of storage bays are automatically calculated based on the selected disk types and quantity. You can change the numbers.

4.4 Selecting related devices

▼ ===Accessories===		
Please choose the modem	None	Modem & Wireless Modem
Please choose the fiber length(Required)	3m	10m
Need additional fiber or not?(Optional)	NO	NO
The Length of Power Cable of System Cabinet(m/Cabinet)	40	40
The Length of Power Cable of Storage Cabinet(m/Cabinet)	20	20
The Length of Grounding Cable of Cabinet(m/Cabinet)	5	5
Need cabinet mount kit (for antistatic floor) or not?	NO	NO

Select the Modem type as required.

The number of optical fibers is automatically calculated based on the number of optical ports. You only need to select the length.

These items are installation materials related to bays. If site survey or special requirements are not involved, use the default values.

4.5 Selecting software

▼ ===Software===		
Need Basic Software Suite or not?(Include OceanStor OS,DeviceManager,SmartThin,SmartMoti...	YES	YES
Please input the Volume of Basic Software Suite,TB	0	169
Need Local Data Protection Software Suite or not?(Include HyperSnap,HyperClone,HyperCopy)	NO	YES
Please input the Volume of Local Data Protection Software Suite,TB	0	169
Need HyperReplication Software or not?	NO	YES
Please input the Volume of HyperReplication Software,TB	0	30
Need SmartTier Software or not?	NO	YES
Please input the Volume of SmartTier Software,TB	0	169
Need Heterogeneous Data Protection Software Suite or not?(Include SmartVirtualization,Hype...	NO	NO
Need SmartVirtualization Software or not?	NO	YES
Please input the Volume of SmartVirtualization Software,TB	0	100
Need HyperMirror Software or not?	NO	NO
Need HyperMetro Software or not?	NO	NO
Need NAS Software Suite or not?(Include CIFS,NFS,NDMP,WORM, ...)	NO	NO
Please input the number of UltraPath Software License(Must be configurated based on host q...	1	1
Need ReplicationDirector Base Edition or not?	NO	YES

The mandatory basic software suite contains software such as SmartThin. The capacity comes from the raw capacity of the system. Based on the raw capacity of all connected disks, the OS restricts the use of licenses. Therefore, do not change this value.

After value-added features are configured, the capacity is the raw capacity of the system by default. You can change the value as required.

It indicates the capacity of the heterogeneous object.

4.6 Selecting services

Parameter	Setting
Need technical support service (maintenance service) ?	Yes
Need installation service?	Yes
Storage 18000 Series Hardware Technical Support Service (Oversea)	
IT Service Post Warranty	
Type	Hi-Care
Level	Hi-Care Onsite Premier 24x7x4H Engineer Onsite Service
Duration(Year(s))	0
Storage 18000 Series Software Technical Support Service	
Product Support Service	
Type	Hi-Care
Level	Hi-Care Application Software Upgrade Support Service
Duration(Year(s))	3
Unified Storage Installation Service	
Installation Type	Installation Service - Engineering

Save Export

Software support service is mandatory.

After value-added features are configured, the corresponding software support service is selected. By default, the service period is 3 years.



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