

### **HUAWEI Live Webinar**

## Troubleshooting Centralized Storage Common Faults

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### **Objectives**

- Centralized Storage Maintenance Introduction.
- Log Collection
- Troubleshooting for common issue.

### **Highlights**

- Daily Maintenance Introduction
- How to collect logs for storage
- Troubleshooting and case sharing

### More

If you have more information, please feel free to contact us at <u>ChannelService@Huawei.com</u>.



#### **Before training start:**

In order to response your questions after the training and support training plan, please change your screen name to one of the following methods.

- 1. Your Huawei Uniportal ID
- 2. Your email address that has been associated with your Huawei Uniportal ID

Warm

reminder

3. Add your company full name after your screen name



Your contact information will only be used to improve your training experience.

age 2





### **During the training:**

Warm

reminder

- If you have any questions about the course, please leave a message in the message area. The moderator will remind the trainer to reply in the Q&A session.
- 2. If you encounter equipment or IT problems, please describe your difficulties in the message area and @Training Organizer
- 3. Welcome to discuss this course in the message area.
- 4. During the Q&A session, if you need to speak, please raise your hand in the meeting.



age 3



### 1. Centralized Storage Maintenance Introduction

#### 2. Log Collection

3. Troubleshooting for common issue



#### **System Management** – Device Manager

#### Address: https://ManagementIP:8088

The DeviceManager home page displays the current operating status, alarm information, system capacity trend, and system performance of a storage system. This information helps you prepare for device management and maintenance.





You can clear a listed alarm by referring to the detailed description and troubleshooting suggestions on the alarm.

×
08:00
08:00
08:00
08:00



The following slides present the alarming mechanism, alarm notification methods, and alarm dump for you to better manage and clear alarms.

Alarm Severity	Icon	Definition	Way of Handling
Critical	0	Interrupts services or causes the system to break down.	Must be cleared immediately. Otherwise, the system may break down.
Major	0	Affects part of the device in a limited range or impacts the system performance.	Must be cleared as soon as possible. Otherwise, important functions will be affected.
Warning	•	Has no impact on the device. The system detects a potential or imminent fault that may affect services.	A warning is reported to instruct maintenance personnel to promptly find the alarm cause and rectify the potential fault.
Info	0	Information about operations without any effect on the device.	Lets maintenance personnel know the running status of the network and devices. They are handled based on the actual condition.



This section describes how to check the running status of a storage device and the functional status of the device on DeviceManager. This allows you to detect device faults in a timely manner.

	DeviceManager	Home	Services	Data Protection	Insight	System	Settings				<b>\$</b>	● 0 ◆ 中文 名 admin
₽	Hardware ③									Controller Enc	losure: CTE0 💿	Operation •
	Devices									Health Status:	Normal	
	Controller Enclosure C	TEO						<b>(</b>	C	Running Status:	Online	
60	Controller A									Model:	2U dual-controller 25-slot 2.5-i	nch SAS controller enclosure
	Controller B									Temperature (°C):	25	
	Devier Medule									ESN:	54642hjklh9874563210	
	Power Module									MAC Address:	00:02:ef:e4:3d:ed	
										Electronic Label:		

Parameter	Description
Health Status	<ul> <li>•Normal: The functionality and operating performance of the enclosure are normal.</li> <li>•Faulty: The enclosure is working improperly.</li> </ul>
Running Status	Online or Offline





Parameter	Description
Health Status	<ul> <li>•Normal: The controller is functioning and running normally.</li> <li>•Faulty: The controller is working improperly.</li> </ul>
Running Status	Online or Offline





### Checking Device Running Status – Power Module



Parameter	Description
Health Status	<ul> <li>•Normal: The power module is functioning and running normally.</li> <li>•Faulty: The power module is working improperly.</li> <li>•No input: The power module is in position but is not providing power.</li> </ul>
Running Status	Online or Offline



### **Checking Device Running Status** – Controller Enclosure BBU



Parameter	Description
Health Status	<ul> <li>Normal: The BBU is functioning and running normally.</li> <li>Faulty: The BBU is working improperly.</li> <li>Insufficient power: The BBU has insufficient power but other parameters are normal.</li> </ul>
Running Status	Online, Charging, or Discharging



ceManager	Home	Services	Data Protection	Insight	System	Settings				<b>\$</b> 8 <b>\$</b> (	) 🏚 中文	离 admin
Hardware 💿									Interface Mod	ule: CTE0.B.IOM2 (2)	Oper	ation 🔹
Devices	CTEO						( <b></b>	C	Health Status: Running Status:	Normal Running		
									Model:	4-Port FE 8 Gbit/s FC I/O Module		
4-Port FE 8 Ck BBU Fan Module Serial Port SAS Port	oit/s FC I/C						0		Electronic Label:	[Board Properties] BoardType=STL6IF324A BarCode=025XME10K2000123 Item=03025XME Description=Manufactured Board,P, SmartIO2.0 I/O module(optical SFP- Manufactured=2019-02-27 VendorName=Huawei IssueNumber=00	ANGEA,STL61F32- /Hii1822-PC1E3.0 ;	4A,4 ports x16/V6),1*1
Ethernet Port										CLEICode= BOM=		
Management	Port									Model=		
Maintenance I	Port											
Controller B												
4-Port FE 8 G	oit/s EC I/(	Properties	Bit Error Statistics									

Parameter	Description
Health Status	<ul> <li>•Normal: The interface module is functioning and running normally.</li> <li>•Faulty: The interface module is abnormal.</li> </ul>
Running Status	Running or Powered off



### Checking Device Running Status – Port

rice№	lanager Home	e Services	Data Protection	Insight	System	Settings			<b>≜</b> 8 <b>0</b> 4	🕨 中文 🔗 admin
Ha	rdware 🕐							Ethernet Port: CTE0.A	P6 ⑦	Modify
	Controller Enclosure CTE0						( <b>4</b> )	Summary Initiators	Front-end port	
	⊡Controller A 4-Port FE 8 Gbit/s FC I/( BBU							Health Status: Running Status: Working Rate (Gbit/s):	Normal Link down	
	Fan Module Serial Port	0						Max. Working Rate (Gbit/s): Working Mode:	1	
	SAS Port Ethernet Port Management Port	•						MAC Address: Port State: MTU (Bytes):	Enabled 1500	
	Maintenance Port €Controller B							Bond Name: iSCSI Target Name: Initiators:	 	
	Power Module	Properties	Bit Error Statistics	Manage Rout	Bond	Port Cancel Bonding	Manage Lo	Logical Ports		

Parameter	Description
Health Status	<ul> <li>•Normal: The host port is functioning and running normally.</li> <li>•Faulty: The host port is abnormal.</li> </ul>
Running Status	Link up or Link down



eviceM	anager	Home	Services	Data Protection	Insight	System	Settings			🐥8 🜖 0 🎄 中文	离 admir
Hard	dware 💿								Disk: CTE0.7 💿		
i	Controller Enclosure CT Controller A 4-Port FE 8 Gbit/	'EO /s FC I/(						Turn 🔶 C	Health Status: Running Status: Type: Role: Capacity:	Normal Online SSD Free disk 6.984 TB	
	BBU Fan Module Serial Port SAS Port Ethernet Port Management Por	ort							Disk Domain: Model: Bandwidth (Mbit/s): Rotational Speed (RPM): Running Duration (Days): Degree of Wear: Estimated Lifespan (Months):	 HSSD-D6D23AL7T6N 12000  237 0% > 60	
	Maintenance Por ● Controller B Power Module	rt	Locate Disk	Cancel Locating (	Erase Data				Temperature (°C): Multipath: Encryption Type:	33 OA:Normal,0B:Normal Common disk	

Parameter	Description
Health Status	<ul> <li>•Normal: The disk is functioning and running normally.</li> <li>•Faulty: The disk is working improperly.</li> <li>•Failing. The disk is failing and needs to be replaced soon.</li> </ul>
Running Status	Online or Offline





### Checking Device Running Status – Storage Pool Status

Devi	ceMar	nager	Home	Services	Data Protectior	n Insight	System	Settings				<b>≜</b> 8 <b>0</b> 0 🌣	中文 🔗 admin
	Storaç	ge Pools 🕜						StoragePool002 (	D				Operation •
		Create						Summary Disks					
	N	ame 🛊	Health Status	\$	Running Status 💲		Total :	Health Status:	Normal	Running Status:	Online		
	St	oragePool002	Normal		Online		31.569 TE	Data Encryption: Available Capacity:	No	RAID Policy:	RAID 6	0.00%	
								Subscribed Canacity:	0.000 MB of 31.569 TB			0.00%	
								Subscribed capacity.	0.000 MB of 0.000 MB			0.00%	
								Subscribed Usable:	0.00%				
								Description:					
								Efficiency					
								Thin LUN Space Saving	g Rate @: 0%				

Parameter	Description
Health Status	<ul> <li>Normal: The storage pool is functioning and running normally.</li> <li>Degraded: The storage pool is functioning normally, but cannot provide the optimal performance.</li> <li>Faulty: The storage pool is abnormal.</li> </ul>
Running Status	Online, reconstruction, precopy, deleting, or offline



HUAWEI DeviceManage	r	Home	Services	Data Protection	Insight	System	Settings			<b>4</b> 8 <b>0</b> 0	🔷 🗘	离 admin
Services	*	LUNs 💿					LUN001 💿					Operation 🔹
Block Service	^	Create	Мар	Delete Protect	•		Summary Topolo	ogy Protection				
LUN Groups		Vame Q	÷	Capacity 🛊 He	ealth Status 🏹		Health Status:	Normal	Running Status:	Online		
LUNS				0.00% N	ormal		Local WWN:	60002ef100e43ded002abf5300000000	Owning LUN Group:			
Hosts				100.000 GB	onna		Owning Storage Pool:	StoragePool002				
Port Groups							Application Type:	Default Application Request Size: 8 KB				
😂 Resource Tuning	~						Description:					
							Capacity					
							Capacity: 0.000 MB (	of 100.000 GB	C	0.00%		

Parameter	Description
Health Status	<ul> <li>•Normal: The LUN is functioning and running normally.</li> <li>•Faulty: The LUN is working improperly.</li> </ul>
Running Status	Online, Deleting, or Offline



HUAWEI DeviceManager	Home Services Data Protection Insight System	Settings	🐥8 👌 0 🎄 中文 🔗 admin
G Services	Hosts 💿	Host001 <sup>(2)</sup>	Operation •
Block Service	Hosts Host Groups	Summary Topology Initiators	
LUN Groups	Create   Map  Scan for Host Delete	Health Status: Normal IP Address:	
LUNs	✓ Name Q  C OS	Owning Host Group: OS: Linux	
Hosts		LUN Capacity Usage: 0.00% Location:	
Port Groups	Host001 Normal Linux	Host Access Mode: Load balancing Description:	

Parameter	Description
Status	<ul> <li>•Normal: The host is functioning and running normally.</li> <li>•Faulty: The host is abnormal.</li> </ul>



Controller enclosure or disk enclosure indicators show the running status of a controller enclosure or disk enclosure. By checking these indicators, you can promptly know the status of each component.



**Checking Indicators --** Front Panel of the Controller Enclosure for Dorado 3000 V6

# The following figure shows the indicators on the front panel of a controller enclosure.





### **Checking Indicators --** Front Panel of the Controller Enclosure for Dorado 3000 V6

Module	Indicator Type	Status and Description
Disk module	Running indicator of the disk module	<ul> <li>Steady green: The disk module is working correctly.</li> <li>Blinking green (4 Hz or higher): Data is being written to and read from the disk module.</li> <li>Off: The disk module is powered off or powered on incorrectly.</li> </ul>
	Disk module Location/Alarm indicator	<ul> <li>Steady yellow: The disk module is faulty.</li> <li>Blinking yellow (2 Hz): The disk module is being located.</li> <li>Off: The disk module is running properly or is pluggable.</li> </ul>
System subrack	Controller enclosure Power indicator/Power button	<ul> <li>Steady green: The controller enclosure is powered on.</li> <li>Blinking green (0.5 Hz): The controller enclosure has just been powered on.</li> <li>Blinking green (1 Hz): The controller enclosure is in the burn-in state.</li> <li>Blinking green (2 Hz): The controller enclosure is in the operating system boot process, or is being powered off.</li> <li>Off: The controller enclosure is powered off or powered by the BBUs.</li> </ul>
	Controller enclosure Location indicator	<ul><li>Blinking blue (2 Hz): The controller enclosure is being located.</li><li>Off: The controller enclosure is not located.</li></ul>
	Controller enclosure Alarm indicator	<ul> <li>Steady yellow: The system has an alarm whose severity level is critical or higher.</li> <li>Off: The storage system runs properly.</li> </ul>



# The following figure shows the indicators on the rear panel of a controller enclosure.







### Checking Indicators -- Rear Panel of the Controller Enclosure for Dorado 3000 V6

Module	Indicator	Status and Description
	BBU Running/Alarm indicator	<ul> <li>Steady green: The BBU is fully charged.</li> <li>Blinking green (1 Hz): The BBU is being charged.</li> <li>Blinking green (4 Hz): The BBU is being discharged.</li> <li>Steady yellow: The BBU is faulty.</li> <li>Off: The two planes are shut down or powered off successfully.</li> </ul>
Controller	Power indicator of the controller	<ul> <li>Steady green: The controller is powered on.</li> <li>Blinking green (0.5 Hz): The controller is powered on and in the BIOS boot process.</li> <li>Blinking green (2 Hz): The controller is in the operating system boot process, or is being powered off.</li> <li>Off: The controller is absent or powered off.</li> </ul>
	Controller Alarm indicator	•Steady yellow: An alarm is generated on the controller. •Off: The controller is working correctly.
	Built-in FRU Alarm indicator	•Steady yellow: A built-in FRU (fan module) of the controller is faulty. •Off: The built-in FRUs of the controller are normal.
	Mini SAS HD expansion port indicator	<ul> <li>Steady blue: Data is transmitted upward to the disk enclosure at the rate of 4 x 12 Gbit/s.</li> <li>Steady green: Data is transmitted downward to the disk enclosure at the rate of 4 x 6 Gbit/s.</li> <li>Steady yellow: The port is faulty.</li> <li>Off: The link to the port is down.</li> </ul>
	10GE/25GE port indicator	<ul> <li>Steady blue: The speed is the highest.</li> <li>Blinking blue (2 Hz): The port is transmitting data at the highest speed.</li> <li>Steady green: The speed is not the highest.</li> <li>Blinking green (2 Hz): The port is transmitting data, but not at the highest speed.</li> <li>Steady yellow: The optical module or cable is faulty or not supported by the port.</li> <li>Blinking yellow (2 Hz): The problem is being located.</li> <li>Off: The link to the port is down.</li> </ul>
	Speed indicator of a 10GE electrical port	•Steady yellow: Data is transmitted between the storage system and the application server at a rate of 1 Gbit/s. •Off: Data is transmitted between the storage system and the application server at a rate lower than 1 Gbit/s.
	Link/Active indicator of a GE electrical port	<ul> <li>Steady green: The link to the application server is normal.</li> <li>Blinking green (2 Hz): Data is being transmitted.</li> <li>Off: The link to the application server is down.</li> </ul>
	Management network port Speed indicator	•Steady yellow: Data is being transmitted at the highest rate. •Off: The speed is not the highest.
	Management network port Link/Active indicator	•Steady green: The port is properly connected. •Blinking green (2 Hz): Data is being transmitted. •Off: The port is incorrectly connected.
Interface module	Power indicator on an interface module Port indicator	The controller supports various interface modules. For details about the indicator status of an interface module, see Indicator Description of an Interface Module.
Power module	Running/Alarm indicator of a power module	<ul> <li>Steady green: The power supply is working properly.</li> <li>Blinking green (1 Hz): The power input is normal but the device is powered off.</li> <li>Blinking green (4 Hz): The power module is being upgraded online.</li> <li>Steady yellow: The power module is faulty.</li> <li>Off: No external power is input.</li> </ul>



### Checking Performance

#### On DeviceManager, you can view various performance monitoring data.







### Question

- 1. What are the alarm severities of Dorado V6?
- A. CriticalB.MajorC. WarningD. Info

### Answer

• ABCD





#### 1. Centralized Storage Maintenance Introduction

### 2. Log Collection

### 3. Troubleshooting for common issue





- Smartkit(Recommanded)
- DeviceManager-> When can not use Smartkit
- OtherTools(eg: WinSCP)->When can't access DeviceManager (eg: system didn't power on normally)



#### Download the Smartkit software and install it

#### https://support.huawei.com/enterprise/en/distributed-storage/smartkit-pid-8576706/software/260338071?idAbsPath=fixnode01%7C7919749%7C251366268%7C250389224%7C 251366263%7C8576706

Version and Patch Software	By downloading	g a software pack	age, you agree to	o <u>Huawei Enter</u> p	orise Software Lice	ense Agreement.
□ Software Name	Size	Publication Date	Downloads	Download software	Manual Verification Signature File	Automatic Verification Signature File
SmartKit_22.0.2.3.zip     [Tool Box]SmartKit Frame(Storage products have integrated inspection, information collection, archive collection, and patching tools, and are applicable to the SVP of 18000 V3 and later. The server has integrated hardware configuration, IP configuration, IES configuration, power control, firmware upgrae, and E9000/TCE upgrade components).	889.68MB	2023-06-01	278	Ŧ	bâb	cms
SmartKit_22.0.2.3_Convergent_UpgradePreCheck_1.0.     9.94.tar.gz     [DeviceManager upgrade] Pre-upgrade evaluation (Scenario: Update the ct     eck item component package before the upgrade evaluation on DeviceMan     ager.)	67.76KB	2023-06-01	18	Ŧ	pgp	cms
SmartKit_22.0.2.3_Dorado_UpgradePreCheck_1.2.13.0     32.tar.gz     [eService upgrade] Pre-upgrade evaluation (Scenario: Update the check Ite     m component package before the upgrade evaluation on eService.)	219.20KB	2023-06-01	25	Ŧ	bāb	cms
SmartKit_22.0.2.3_Tool_ArrayUpgrade.zip [Tool package]Upgrade tool, help you complete an upgrade of the device, in cluding performing a pre-upgrade check, importing the upgrade package, b acking up critical data, performing the upgrade, and performing a post-upgr ade verification (Scene: Device Upgrade,Disk Firmware Upgrade,UltraPath Software Upgrade)	112.25MB	2023-06-01	188	Ŧ	pgp	cms
SmartKit_22.0.2.3_Tool_CollectDeviceArchives.zip [Tool package]Collect device archives tool,help you collect configuration an d deployment information about storage devices and generates device arch ve files. IBMS archive mode is supported.	102.20MB i	2023-06-01	92	Ŧ	pgp	cms
SmartKit_22.0.2.3_Tool_DiskHealthAnalysis.zip     Tool package Disk health analysis tool, help you analyze the collected disk     SMART information	83.22MB	2023-06-01	79	±	pgp	cms



### Log Collection-Smartkit(Recommanded)-Installation Tool(2)

### Download and automatically install the related tools on the SmartKit page.



#### 1. Go to the **Home** page.

2. Click tool icon to download and install the related tools by one click.

### In a scenario where Internet is unavailable, obtain the tool package and then import it on the GUI.

SmartKit Home	Devices 中 〇 〇 〇
K Back to Home	
<b>⊽</b> Filter Reset	All Upgradate Unit instance
Product Field Storage Ser Intelligent Vis	Site Deployment Quality Inspection     Term State and Distr.     Site Deployment Quality Inspection     It is used in the alle deployment delivery scenario and mot.     Site Deploy.     Version     Uninstat
Product Type Storage	FusionStorage OBS Service Test     Store     Import     X       FusionStorage_OBS_8.0.1.4_SelTest     Dist     View: New Volume (D:)     Import     Import
Centerprise Stor Distributed Sto Scenario	UltraPath Installation (1877) Bit CLOUD Entri Provides one-site witzer6-based UltraPath software installa
Site Deployme Routine Mainte Troubleshooting Upgrade/Patch	Distributed Block Storage Stora Block storage user GUI client.
Capacity Expansion Parts Replace	SNS Switch-Dedicated Site Deployme GSN Scrie It is used in the site deployment delivery scenario of SNS s Name: Smark(# 22.0.2. Tool Array/Ioorade to
	Compatibility Evaluation for Site Dep Construction about storage d Stora Eriter Type: *tar,* 20p VM Cancel
	FusionCOBO Initialization         Strong         Four instance           FusionCube RCBD Initialization         Enterprise and Distr         Site Deploy         Version
	Distributed Deployment Assistant     Storage     Distributed nodes in batches.     Step Deploy     Version     Version
	Health Check (III)     Storage     Storage     Enterprise and Dist Routine Mail Version     Uninstall     Version

Click Import.
 Select the tool package.



### Log Collection-Smartkit(Recommanded)-Add device

age devices 2 Servers 0 Once you add devices, you can use them Storage Server amon functions () Health Check () Storage Informatio	efficiently and conveniently in different scenarios.           Virtualization         Cloud Compute         Intelligent Vision           n Collection         Pre-upgrade Site Survey	a E≡ Function Mana	Basic Information         Please input the IP address or proxy for login. IPv6 is supported.         Device Type:       Storage         Add Policy         Specify IP Address (add a device by the IP address)         IP Address:	Add Device Step 2-2: Configure Information Configure Information Configure Username, Password, and Port. Login Information Username: Password: Data
Site Deployment Delivery ) Site Deployment Quality Inspect ) Scale-Out Storage Deployment ) Initial Deployment Installation & UltraPath Installation & More >	Routine Maintenance  Health Check SNS Switch Inspector FusionStorage Block 6.X Inspec DPA Inspector More >	Event Storage Information Collection     Storage Information Collection     Fault Assist Diagnose     Historical Performance Monitoring     InfoGrab	○ Specify IP Segment (add devices by the IP segment)         Start IP Address:         End IP Address:         ○ Batch Import         Path:       Click here to select a file.	Port:       22         Require Certificate Verification:       Image: Certificate Verification:         Image: Need Debugging Password (View devices that need debugging password)         Debugging Password:         Image: Switch to user root         (Only required for BCManager)
Upgrade/Patch Installation	Capacity Expansion  Expansion Evaluation  ScaleOut Storage Capacity Exp  Add Controllers A	Migration ○ Pre-migration Site Survey A ○ MigrationDirector for NAS A ■ MigrationDirector for SAN A	Select Proxy No Proxy SSH Forward Config	root password:
I Hot Patch Installation More > Parts Replacement Parts Replacement Evaluation &	Add Disks/Disk Enclosures/Dis		<u>N</u> ext	cel <u>Previous</u> <u>Finish</u> <u>Car</u>

2. Input ManagementIP, username and password to add device to smartkit



### Log Collection-Smartkit(Recommanded)-Collect logs



Click "Storage Information Collection" Button

PS: For some cases, we need to collect Performance log by clicking "Historical Performance Monitoring" Button

#### Click "Export Data"->"System Log" 🦸 📿 🚅 🖻 🞯 中文 😡 admin ⑦ Export Data @ Settings Home Services Data Protection Insight System Alarms **Common Operations** () When using Chrome to export data for the first time, allow Chrome to download multiple files **Power Off Device** at the same time. Ð ∘ ||| Data Encryption Enable 7 • 0 • 3 • 4 Create LUN Create Host Create NFS Create File LOG S. 6 Group System Share **Configuration Info Diagnostic File** System Log Disk Log Analyze device running status with configuration information, events, and debugging logs. 🗄 All Logs ⊥ Recent Log 🗄 Key Log



#### 1.Using Tool connect storage Management IP 2.Copy OSM/coffer\_log folder to local folder (OSM/coffer\_data/omm/perf for performance log)

Se WinSCP	— C	X			A		
🛛 Local Mar 🌆 Login	- 🗆 X		permitdir • 🚰 • 🝸 • 🖛 • 🗣 • 💽 🔽				
🕀 🖾 🖣	Session		📲 Download 🔹 📝 Edit 🔹 💥 🛃 Doperties	🚰 New 🕶	+ - 🗸		
🚅 New Se	Eile protocol:		/home/permitdir/				
D: New	SFTP V	» = ¬ »	Name	Size	Changed	Rights	Owner
	Host name: Port number:			JIZE	changed	rights	Owner
Name	172.31.03.41	Size (					
	User name: Password:	Size C	🔊 update_disk		3/16/2023 2:22:19 PM	rwxrwxrwx	root
APICom			update		3/16/2023 2:22:19 PM	rwxrwxrwx	root
APIGatev	Save ▼ Advanced ▼		a log		3/16/2023 2:22:19 PM	<b>FWXFWXFWX</b>	root
APIGatev			₹ ftds		3/16/2023 2:22:19 PM	rwxrwxrwx	root
CCS-6.5.			a fault_disklog		3/16/2023 2:22:19 PM	rwxrwxrwx	root
			R export import		3/16/2023 2:22:19 PM	<b>DWX DWX DWX</b>	root
DMK-6.5			a dha		3/16/2023 2:22:19 PM		root
DNS-Inte			E coffer perf		2/16/2022 2:22:10 PM	DANDANDAN	root
ECS_UI-6 <u>T</u> ools ▼ <u>M</u> anage ▼	Login Close Help		Conter_pen		5/10/2025 2:22:19 PIVI	TWXTWXTWX	TOOL
Show Login dialog on startup and when the last	session is closed	>	Coffer_log		3/10/2023 2:22:19 PM	rwxrwxrwx	root
Not connected.							





### Question

- 1. What are the methods to collect storage logs? ()
- A. Using Smartkit Tool
- B. DeviceManager
- C. WinSCP.

### Answer

• *A*,*B*,*C* 





#### 1. Centralized Storage Maintenance Introduction

### 2. Log Collection

3. Troubleshooting for common issue





#### [Problem Description]

Hardware fault, device manager reports alarm regarding the fault issue.

👩 Major	The system failed to monitor the disk (disk enclosure DAE020, slot ID 21).
👩 Major	The hard disk (Disk Enclosure DAE020, controller 0A, slot 21) is isolated.
📀 Major	The hard disk (Disk Enclosure DAE020, controller 0B, slot 21) is isolated.
👩 Major	Disk (Disk Enclosure DAE020, slot 21) responds slowly.
📀 Major	The system failed to monitor the disk (disk enclosure DAE021, slot ID 12).
👩 Major	The hard disk (Disk Enclosure DAE021, controller 0A, slot 12) is isolated.
📀 Major	The hard disk (Disk Enclosure DAE021, controller 0B, slot 12) is isolated.
🜔 Critical	The disk domain (name SAS1) is faulty.
🚺 Critical	The disk (Disk Enclosure DAE021, slot 12) is faulty.
👩 Major	The disk (Disk Enclosure DAE021, slot 12) is failing.
O Maior	The system failed to monitor the disk (disk enclosure DAE020, slot ID 20).





#### [Problem Analysis And Solution]

Collect logs, and check event log and config.txt, double confirm the issue then find the BOM of fault part. Do the replacement for it.

Event.txt path: "DataCollect\Alarm\_log \Event\local\_alm\_file.txt" .

#### config.txt patch: "\DataCollect\Running\_Data\config.txt"

Disk Domain ID: 1 Disk Frame and Slot ID: DAE020.21 Disk Type: SAS Disk Health Status: Fault Disk Running Status: Offline Raw capacity: 555(GB) Device Block Number: 1146125998 Disk Multipathing: A,B Disk Sector Size: 520 Disk Impending Fault Flag: FALSE Disk Slowing Flag: FALSE Disk SN: WWWWWWWWWWWWWWW Disk Temperature: 36 Disk Power-On Time: 6(Day) Disk Speed: 15000 (RPM) Disk Physical Size: 3 Disk Port Address: 5FCE33CB1B526015 Disk Vendor: Seagate Disk Model: ST600MP0006 Disk Firmware: N004 Disk Elabel: [Board Properties] BoardType=STLZB1SA600 BarCode= Item=02351CER Description=OceanStor 5600/5800/6800 V3, STLZB1S. Manufactured=2020-03-23 VendorName=Huawei IssueNumber=00 CLEICode= BOM=

Disk ID: 577 Disk Domain ID: 1 Disk Frame and Slot ID: DAE021.12 Disk Type: SAS Disk Health Status: Fault Disk Running Status: Offline Raw capacity: 555(GB) Device Block Number: 1146125998 Disk Multipathing: A,B Disk Sector Size: 520 Disk Impending Fault Flag: FALSE Disk Slowing Flag: FALSE Disk SN: Disk Temperature: 38 Disk Power-On Time: 5(Day) Disk Speed: 15000 (RPM) Disk Physical Size: 3 Disk Port Address: 5FCE33CB1B51800C Disk Vendor: Seagate Disk Model: ST600MP0006 Disk Firmware: N004 Disk Elabel: [Board Properties] BoardType=STLZB1SA600 Ba<u>rCode=</u> Item=02351CER Description=OceanStor 5600/5800/6800 V3,STLZB1SA600,600GB 15K Manufactured=2020-03-23 VendorName=Huawei IssueNumber=00 CLEICode=

Disk ID: 556 Disk Domain ID: 1 Disk Frame and Slot ID: DAE020.20 Disk Type: SAS Disk Health Status: Fault Disk Running Status: Offline Raw capacity: 555(GB) Device Block Number: 1146125998 Disk Multipathing: A,B Disk Sector Size: 520 Disk Impending Fault Flag: FALSE Disk Slowing Flag: FALSE Disk SN: Disk Temperature: 36 Disk Power-On Time: 5(Day) Disk Speed: 15000(RPM) Disk Physical Size: 3 Disk Port Address: 5FCE33CB1B526014 Disk Vendor: Seagate Disk Model: ST600MP0006 Disk Firmware: N004 Disk Elabel: [Board Properties] BoardType=STLZB1SA600 BarCode= Item=02351CER Description=OceanStor 5600/5800/6800 V3,STLZB1SA600,600GB Manufactured=2020-03-23 VendorName=Huawei IssueNumber=00 CLEICode= BOM=





#### [Problem Description]

# Connection issue may caused by Storage, Link and Server. We need to check it one by one to find out the root cause. Use "Bit error" issue for example. Customer reported that they found a lot of alarms regarding bit error in storage, need Huawei check the reason

2022-11-0518:02:30FC front-end port (controller enclosure CTE0, SmartIO interface module R2.IOMO, port ID P3) has<br/>too many bit errors. The system performance may be affected.2022-11-0515:50:392022-11-0515:35:392022-11-0515:18:232022-11-0515:18:232022-11-0515:50:59FC front-end port (controller enclosure CTE0, SmartIO interface module L2.IOMO, port ID P3) has<br/>too many bit errors. The system performance may be affected.2022-11-0515:18:232022-11-0515:50:59FC front-end port (controller enclosure CTE0, SmartIO interface module L2.IOMO, port ID P3) has<br/>too many bit errors. The system performance may be affected.2022-11-0515:50:59FC front-end port (controller enclosure CTE0, SmartIO interface module R2.IOMO, port ID P3) has<br/>too many bit errors. The system performance may be affected.2022-11-0515:50:59FC front-end port (controller enclosure CTE0, SmartIO interface module R2.IOMO, port ID P3) has<br/>too many bit errors. The system performance may be affected.2022-11-0515:50:59FC front-end port (controller enclosure CTE0, SmartIO interface module R2.IOMO, port ID P3) has<br/>too many bit errors. The system performance may be affected.

#### [Problem Analysis]

1.Collect logs.	check if ports	in storages working	a normally.
J, J,			J J

1	11	ID: CTE0.R2.IOM0.P3
5		Health Status: Normal
5		Running Status: Link Up

ID: CTE0.L2.IOM0.P3 Health Status: Normal Running Status: Link Up

#### SFP Info:

Vendor: FINISAR CORP. Model: FTLF8532P4BCV-HU SN: P1BBKN4 Health Status: Normal Running Status: Link Up Type: Multi Mode Working Rate (Mbps): 32000 Temperature(C): 52 RxPowerReal(uW): 634.8 RXPowerMax(uW): 3162.2 RXPowerMin(uW): 47.8 TxPowerReal(uW): 673.0 TXPowerMax(uW): 1584.9 TXPowerMin(uW): 213.7 Item: --ExternalModel: --Rev: --

#### SFP Info:

Vendor: FINISAR CORP. Model: FTLF8532P4BCV-HU SN: P1BBL26 Health Status: Normal Running Status: Link Up Type: Multi Mode Working Rate (Mbps): 32000 Temperature(C): 52 RxPowerReal(uW): 628.9 RXPowerMax(uW): 3162.2 RXPowerMin(uW): 47.8 TxPowerReal(uW): 651.9 TXPowerMax(uW): 1584.9 TXPowerMin(uW): 213.7 Item: --ExternalModel: --Rev: --





#### 2.Check FC switch logs. If the attached ports in FC switch is working normally.

#### CTE0.R2.IOM0.P3->port 77 in switch ; CTE0.L2.IOM0.P3 ->port 78 in switch

10 10 011000 14 MID XMAANA IO I 1010 2010010144,04101100100	
// 77 77 014d00 id N16 Online FC F-Port 22:03:04:fe:8d:81:83:b0	78 78 014e00 id N16 <u>Online</u> FC F-Port 22:13:04:fe:8d:81:83:b0
// 77: 512.1m 2.0g 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	// 78: 3.0g 2.4g 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Warn $Flags[0,1] = 0x0, 0x0$	
Alarm       Warn         10w       high       10w       high         Temperature: 41       Centigrade       -5       85       0       75         Current:       7.338       mAmps       2.500       12.000       2.000       11.500         Voltage:       3280.7       mVolts       3000.0       3600.0       3130.0       3460.0         RX Power:       -2.3       dBm (587.9uW)       31.6       uW       1258.9       uW       794.0       uW         TX Power:       -2.7       dBm (537.6 uW)       126.0       uW       1258.9       uW       794.0       uW         State transitions: 3       Last poll time: 11-09-2022 HKT Wed 16:40:18       Last poll time: 11-09-2022 HKT Wed 16:40:18	Warn Flags[0,1] = 0x0, 0x0       Alarm       Warn         Iow       high       low       high         Temperature: 41       Centigrade       -5       85       0       75         Current:       7.396       mAmps       2.500       12.000       2.000       11.500         Voltage:       3286.8       mVolts       3000.0       3600.0       3130.0       3460.0         RX Power:       -2.1       dBm (616.2uW)       31.6       uW       1258.9       uW       794.0       uW         TX Power:       -2.5       dBm (568.0       uW)       126.0       uW       251.0       uW       794.0       uW
Port 78:	2 State transitions: 3 3 Last poll time: 11-09-2022 HKT Wed 16:39:46 4 5 ===================================





#### 3. Check the error code, it is BadCrc, this kind of error message usually comes from other devices.

[2022-11-05 15:48:03][98753193.513907] [][15000000c2696][INFO][LPort(0x110203)'s BadCrc(190), BadRx(0), DisFrame(157), LinkFail(0), LossOfSig(0), LossOfSync(0), ProtoErr(0), RxEof(2).][FC\_UNF][UNF\_PollPortErrCode,18852][kworker/3:1]

## 4.Check the error message in switch, port 20 has a lot of error message. Double check the SFP power module, the Rx is low

5		fra	mes	enc	crc	crc	too	too	bad	enc	disc	link	loss	loss	frjt	fbsy	c3tim	eout	pcs	
5		tx	rx	in	err	g_eof	shrt	long	eof	out	c3	fail	sync	sig			tx	rx	err	
7	0:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Alarm Warn
З	1:	778.9m	3.5g	0	0	0	0	0	0	0	133	0	0	0	0	0	0	133	0	Tomorphuro: 41 Contigrado 5 95 0 75
Э	2:	2.8g	256.8m	0	0	0	0	0	0	0	203	0	0	0	0	0	0	203	0	Current 7 428 mamos 2 500 12 000 2 000 11 500
C	3:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Voltage: 3290.1 mVolts 3000.0 3600.0 3130.0 3460.0
L	4:	401.9m	280.7m	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	RX Power: -9.3 (dBm (116.2uW) 31.6 uW 1258.9 uW 31.6 uW 794.0 uW
2	5:	3.7g	1.2g	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	TX Power: -2.5 dBm (558.6 uW) 126.0 uW 1258.9 uW 251.0 uW 794.0 uW
3	6:	3.2g	661.8m	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	7:	3.5g	1.2g	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	State transitions: 1
5	8:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Last poll time: 11-09-2022 HKT Wed 16:42:30
5	9:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	10:	4.2g	870.3m	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Dente 21.
3	11:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Port 21:
Э	12:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
С	13:	1.1g	4.1g	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
L	14:	670.3m	3.3g	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	15:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	16:	3.7g	2.8g	0	0	0	0	0	0	0	321	0	0	0	0	0	0	321	0	
1	17:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	18:	867.9m	3.5g	0	0	0	0	0	0	0	333	0	0	0	0	0	0	333	0	
5	19:	2.3g	2.8g	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7	20:	2.2g	574.7m	2.0k	2.0k	2.0k	0	0	9	712.1k	3.0k	: 0	0	0	0	0	3.0	k 0	0	
3	21:	1.9g	3.0g	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	22:	4.1g	2.3g	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
C	23:	3.5g	674.6m	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	24:	3.90	1.1a	0	0	0	0	0	0	0	0	0	0	0	Ο	0	0	0	0	





#### 5. Check port 20. We can find it is Zoning with storage port CTE0.R2. IOM0.P3 and CTE0.L2. IOM0.P3.

6.In storage configuration, we can know Port 20 is connect to a Server and HBA information can be find in storage configuration

70 71 72 73	zone:	ASIHKDVIR37_HBA1; ASIHKDSAN85_R2_P3 VIR38_HBA1_SAN85_L2_P3	
71 72 73	zone:	VIR38_HBA1_SAN85_L2_P3	
72			
73		_ASIHKDVIR38_HBA1; ASIHKDSAN85_L2_P3	
	zone:	VIR38_HBA1_SAN85_R2_P3	
74		ASIHKDVIR38_HBA1; ASIHKDSAN85_R2_P3	
75	zone:	VIR39_HBA1_SAN85_L2_P3	
76		ASIHKDVIR39 HBA1; ASIHKDSAN85 L2 P3 _	





#### [Root Cause]

1. Ports on OceanStor 18000 V5: The CTE0.L2.IOM0.P3 CTE0.R2.IOM0.P3 status are normal, the receive and transmit optical power are normal.

2. Ports 77 and 78 connected to the storage on the FC switch are normal, the receive and transmit power are normal.

3. The Rx of port 20 in switch is low, Bit errors on the storage device come from the bad CRC of port 20 on the FC switch.

[Solution]

1.Suggest to replace the optical module and corresponding optical fibers on Server HBA and port 20 of FC switch.

2.If CRC bit errors persist after the optical module and optical fiber are replaced, ask the server vendor to check whether the HBA is normal.





[Problem Description]

Customer reports OceanStor 18500 v5 CPU usage high warning occurred recently. .

[Problem Analysis]

1. Analyzed storage logs. It was found that four alarms indicating that the CPU usage was higher than 90% were generated in August, and the alarm time was about 12AM.

2022-08-30 00:19:43	0xF03360001	Fault	Warning	Recovered	2022-08-30 00:21:17	The controller (CTE0.D) average CPU utilization (97.0%) at 2022-08-30 00:19:37 UTC+05:00 exceeds the threshold of	(90.0%).
2022-08-25 00:02:21	0xF03360001	Fault	Warning	Recovered	2022-08-25 00:03:52	The controller (CTE0.C) average CPU utilization (96.0%) at 2022-08-25 00:02:10 UTC+05:00 exceeds the threshold of	(90.0%).
2022-08-23 00:20:03	0xF03360001	Fault	Warning	Recovered	2022-08-23 00:20:55	The controller (CTE0.D) average CPU utilization (92.0%) at 2022-08-23 00:19:54 UTC+05:00 exceeds the threshold of	(90.0%).
2022-08-23 00:02:33	0xF03360001	Fault	Warning	Recovered	2022-08-23 00:03:29	The controller (CTE0.C) average CPU utilization (97.0%) at 2022-08-23 00:02:23 UTC+05:00 exceeds the threshold of	(90.0%).





2. Analyzed the performance data. It was found that the read and write IOPS significantly increased at the time when the CPU usage was high. The service volume delivered to the storage device increases.







3. Analyzed the performance data of LUNs. It was found that the service volume of LUNs with IDs 3313, 4387, 3283, 3605, 3298, 3598, 4645, 0, 628, 284, 21, 936, 4117, and 579 increased.







4. The corresponding hosts IO press increased. mapping Host IDs are 80, 9, 3, 7, 78, 8, 77, 56, 40, 55, 75, 52, 79, 19, 6, 10, 76, and 26.







[Root Cause]

At about 12AM, the service volume of some hosts and LUNs increased, causing high CPU usage of the controller.

The ID of the LUN whose service volume increases are: 3313、4387、3283、3605、3298、3598、4645、 0、628、284、21、936、4117、579 The ID of the host whose service volume increases are: 80、9、3、7、78、8、77、56、40、55、75、52、

79、19、6、10、76、26

[Solution]

1.Suggest to investigate the cause of the increase in the service volume of the corresponding host and LUN at 12AM at night and check if the task can be balanced in different time. 2.Switch the Working Controller of some LUNs to A/B

3.Enable SmartQos for some LUN



#### [Problem Description]

Customer report that the service on OceanStor 5300 V3 is down, a lot of applications were impacted.

[Problem Analysis]

1.Check event log of storage. path "DataCollect\Alarm\_log \Event\local\_alm\_file.txt"

We found a lot of alarms in the system, and there is a critical alarm regarding disk domain(SAS1).

2.Near the alarm, there is another alarm regarding "disk fault"

Double check with customer, the LUNs on this diskdomain disappeared on the hosts.

//2023-02-02 06:53:55 0xF000A0015 The system failed to monitor the disk (disk enclosure DAE020, slot ID 21). The error code is 1077936787. Major None The hard disk (Disk Enclosure DAE020, controller 0A, slot 21, serial number --) is isolated. //2023-02-02 06:53:55 None 0x200F000A005B Major //2023-02-02 06:53:47 The hard disk (Disk Enclosure DAE020, controller 0B, slot 21, serial number --) is isolated. 0x200F000A005B Major None Disk (Disk Enclosure DAE020, slot 21, SN 65L9Z3EZ0000N5329WZ6) responds slowly. Error code:1077936785. This is the state of the state o //2023-02-02 06:06:25 Major 0xF000A005F None //2023-02-02 04:33:00 0x200F000A005B Major None The hard disk (Disk Enclosure DAE021, controller 0A, slot 12, serial number --) is isolated. The hard disk (Disk Enclosure DAE021, controller 0B, slot 12, serial number --) is isolated. //2023-02-02 04:32:57 0x200F000A005B Major None //2023-02-02 04:32:52 0x10A0002 Critical None The disk domain (name SAS1, ID 1) is faulty. The storage pools based on it are faulty and luns and snapshots //2023-02-02 04:32:51 The disk (Disk Enclosure DAE021, slot 12, sn 6SLA6HRB0000N5381679) is faulty. The bad sector is 0x0. The e 0xF00A0001 Critical None //2023-02-02 04:32:36 0xF00A0003 Major None The disk (Disk Enclosure DAE021, slot 12, serial number 6SLA6HRB0000N5381679) is failing. //2023-02-02 04:25:19 0x200F000A005B Major The hard disk (Disk Enclosure DAE020, controller 0A, slot 20, serial number --) is isolated. None //2023-02-02 04:25:18 The hard disk (Disk Enclosure DAE020, controller OB, slot 20, serial number --) is isolated. 0x200F000A005B Major None //2023-02-02 04:25:14 0x10A0001 Major None The disk domain (name SAS1, ID 1) is degraded. : //2023-02-02 04:25:14 0xF00A0001 Critical None The disk (Disk Enclosure DAE020, slot 20, sn 6SLA6HSQ0000N5381MPT) is faulty. The bad sector is 0x0. The : //2023-02-02 04:22:54 0xF00A0003 Major None The disk (Disk Enclosure DAE020, slot 20, serial number 6SLA6HSQ0000N5381MPT) is failing. : //2023-02-01 12:40:15 0xF00A0001 Critical None The disk (Disk Enclosure DAE020, slot 23, sn 6SL9Z39M0000N531CSM0) is faulty. The bad sector is 0x0. The : //2023-02-01 01:36:17 0xF00A0003 The disk (Disk Enclosure DAE021, slot 6, serial number 6SL9Y98Z0000N5300YYN) is failing. Major None : //2023-02-01 00:00:13 0xF00C90015 Major None The write cache of the controller (Controller Enclosure CTEO, controller B) was disabled. : //2023-02-01 00:00:13 0xF00C90015 None The write cache of the controller (Controller Enclosure CTEO, controller A) was disabled. Major 3: //2023-02-01 02:20:24 0x200F000A005B Major None The hard disk (Disk Enclosure DAE021, controller 0A, slot 6, serial number --) is isolated. 9: //2023-02-01 02:20:18 0x200F000A005B Major The hard disk (Disk Enclosure DAE021, controller OB, slot 6, serial number --) is isolated. None 4: //2023-02-01 00:00:13 0xF00C90015 The write cache of the controller (Controller Enclosure CTEO, controller B) was disabled. Major None 5: //2023-02-01 00:00:13 The write cache of the controller (Controller Enclosure CTEO, controller A) was disabled. 0xF00C90015 Major None



3.Check the config.txt path "\DataCollect\Running\_Data\config.txt"

We found disk DAE021.12 is the member disk of disk domain(SAS1). That means, disk DAE021.12 fault caused the disk domain (SAS1) fault.

4. When disk domain fault will cause LUNs on the disk domain fault. Then disappeared on the hosts

Disk Domain ID: 1 Disk Domain Name: SAS1 Disk Domain Description: Disk Domain Tier0 Hot Spare Level: 0 Disk Domain Tier1 Hot Spare Level: 1 Disk Domain Tier2 Hot Spare Level: 0 Disk Domain Pair(0) Tier0 Disk Number: 0 Disk Domain Pair(0) Tier1 Disk Number: 74 Disk Domain Pair(0) Tier2 Disk Number: 0 Disk Domain Pair(1) Tier0 Disk Number: 0 Disk Domain Pair(1) Tier1 Disk Number: 0 Disk Domain Pair(2) Tier0 Disk Number: 0 Disk Domain Pair(2) Tier1 Disk Number: 0 Disk Domain Pair(2) Tier1 Disk Number: 0

```
Disk Domain Pair(7) Tiero Disk Number: 0
Disk Domain Health Status: Fault
Disk Domain Total Capacity: 39757947862(KB)
Disk Domain Free Capacity: 0(KB)
Disk Domain Used Capacity: 38128844800(KB)
Disk Domain Spare Capacity: 1629103062(KB)
Disk Domain Used SpareCapacity: 1086128128(KB)
```

Disk ID: 577 Disk Frame and Slot: DAE021.12 Disk Domain ID: 1 Disk WWN: Disk Serial Number: Disk Type: SAS Disk Capacity: 573062999(KB) Disk Sector Size: 520(B)

5.After check event logs, we found other disks also fault and need to be replaced. In the meantime, there are BBU fault in the system.

6. It caused "System write cache disabled". System performance decreased to a very low level. So need to replace BBU as well.

In 2022-11-01 BBU Module reported "BBU Module is expiring"

In 2023-02-01 BBU Module reached its expiration date and system switched from write back to write through

#### In 2023-02-02 Lots of disks were fault, cause disk domain fault and service down.

The system failed to monitor the disk (disk enclosure DAEU20, slot 1D 21). The error code is 10//936/8/. //2023-02-02 06:53:55 UxFU00A0015 Major None //2023-02-02 06:53:55 The hard disk (Disk Enclosure DAE020, controller 0A, slot 21, serial number --) is isolated. 0x200F000A005B Major None //2023-02-02 06:53:47 0x200F000A005B Major None The hard disk (Disk Enclosure DAE020, controller 0B, slot 21, serial number --) is isolated. //2023-02-02 06:06:25 0xF000A005F Major None Disk (Disk Enclosure DAE020, slot 21, SN 6SL9Z3EZ0000N5329WZ6) responds slowly. Error code:1077936785. This may cause the owning RAID group to //2023-02-02 04:33:00 0x200F000A005B Major None The hard disk (Disk Enclosure DAE021, controller 0A, slot 12, serial number --) is isolated. //2023-02-02 04:32:57 0x200F000A005B Major None The hard disk (Disk Enclosure DAE021, controller OB, slot 12, serial number --) is isolated. //2023-02-02 04:32:52 0x10A0002 Critical None The disk domain (name SAS1, ID 1) is faulty. The storage pools based on it are faulty and luns and snapshots in these storage pools are fault //2023-02-02 04:32:51 0xF00A0001 Critical The disk (Disk Enclosure DAE021, slot 12, sn 6SLA6HRB0000N5381679) is faulty. The bad sector is 0x0. The error code is 0x0. None //2023-02-02 04:32:36 0xF00A0003 Major None The disk (Disk Enclosure DAE021, slot 12, serial number 6SLA6HRB0000N5381679) is failing. //2023-02-02 04:25:19 0x200F000A005B Major None The hard disk (Disk Enclosure DAE020, controller 0A, slot 20, serial number --) is isolated. //2023-02-02 04:25:18 0x200F000A005B Major None The hard disk (Disk Enclosure DAE020, controller 0B, slot 20, serial number --) is isolated. //2023-02-02 04:25:14 0x10A0001 The disk domain (name SAS1, ID 1) is degraded. Major None : //2023-02-02 04:25:14 0xF00A0001 Critical None The disk (Disk Enclosure DAE020, slot 20, sn 6SLA6HSQ0000N5381MPT) is faulty. The bad sector is 0x0. The error code is 0x0. : //2023-02-02 04:22:54 0xF00A0003 Major The disk (Disk Enclosure DAE020, slot 20, serial number 6SLA6HSQ0000N5381MPT) is failing. None : //2023-02-01 12:40:15 0xF00A0001 Critical The disk (Disk Enclosure DAE020, slot 23, sn 6SL9Z39M0000N531CSM0) is faulty. The bad sector is 0x0. The error code is 0x0. None : //2023-02-01 01:36:17 0xF00A0003 The disk (Disk Enclosure DAE021, slot 6, serial number 6SL9Y98Z0000N5300YYN) is failing Major None : //2023-02-01 00:00:13 0xF00C90015 Major None The write cache of the controller (Controller Enclosure CTE0, controller B) was disabled. : //2023-02-01 00:00:13 0xF00C90015 Major None The write cache of the controller (Controller Enclosure CTEO, controller A) was disabled. The hard disk (Disk Enclosure DAE021, controller OA, slot 6, serial number --) is isolated. 3: //2023-02-01 02:20:24 0x200F000A005B Major None 9: //2023-02-01 02:20:18 0x200F000A005B Major None The hard disk (Disk Enclosure DAE021, controller OB, slot 6, serial number --) is isolated. The write cache of the controller (Controller Enclosure CTEO, controller B) was disabled. 4: //2023-02-01 00:00:13 0xF00C90015 Major None 5: //2023-02-01 00:00:13 0xF00C90015 The write cache of the controller (Controller Enclosure CTEO, controller A) was disabled. Major None 6: //2023-02-01 00:00:05 0xF0D20003 The BBU module (Controller Enclosure CTEO, BBU module PSU 1) reaches its expiration date or is aging. When a power failure occurs, the BBU m Major None 0: //2023-02-01 00:00:05 0xF0D20002 Major The BBU module (Controller Enclosure CTEO, BBU module PSU 1) is faulty with error code (0x0), therefore, when a power failure occurs, the BE None The BBU module (Controller Enclosure CTE0, BBU module PSU 1) is expiring. 627: //2022-11-01 00:00:05 0xF0D20007 Warning None 628: //Step1 Replace the BBU module in three months. If the alarm persists=>[Step2]. 629: //Step2 Collect related information and contact technical support engineers. 631: /2022-11-01 00:00:05 0xF0D20007 Warning None The BBU module (Controller Enclosure CTEO, BBU module PSU 0) is expiring. 632: //Stepi Replace 633: //Step2 Collect related information and contact technical support engineers.











Find the BOM code of disks and BBU. Check the config.txt path "\DataCollect\Running\_Data\config.txt"

Disk ID: 536 Disk Domain ID: 1 Disk Frame and Slot ID: DAE021.12 Disk Type: SAS Disk Health Status: Fault Disk Running Status: Offline Raw capacity: 555(GB) Device Block Number: 1146125998 Disk Multipathing: A.B Disk Sector Size: 520 Disk Impending Fault Flag: FALSE Disk Slowing Flag: FALSE Disk SN: 6SLA6HRB0000N5381679 Disk Temperature: 36 Disk Power-On Time: 2784(Day) Disk Speed: 15000(RPM) Disk Physical Size: 2 Disk Port Address: 5FCE33CB1B51800C Disk Vendor: Seagate Disk Model: ST3600057SS Disk Firmware: 0008 Disk Elabel: [Board Properties] BoardType=STLZA2SAS600 BarCode= Item=02350BWH Description=OceanStor 5300/5500 V3, STLZA2SAS600, 600GB 15K RPM SAS Disk Unit(3.5"), sectorsize-520

Manufactured=2015-05-13 VendorName=Huawei IssueNumber=00 CLEICode=

BOM=

BBU Info------Enclosure ID: CTE0 BBU ID: CTE0.PSU0 Owning Controller: 0A Health Status: Abnormal Running Status: Online Voltage(0.1V): 11.0 Discharge Times: 22 Firmware Version: 20.05T7 Delivered On: 2015-2-10 Charge State: Charge Full Discharge State: No Discharge RemainLife(days): 331 Electronic Label: [Board Properties] BoardType=STL2BATTA01 BarCode= Item=03031MPJ Description=Finished Board, PANGEA, STL2BATTA01, Battery Backup Unit, V2R1C00 Manufactured=2015-04-14 VendorName=Huawei IssueNumber=0



### Case 4:OceanStor 5300 V3 Service down

#### [Root Cause]

BBU expired -> Write Through -> Disk Fault -> Disk Domain Fault -> LUN Fault -> Service Down [Solution]

### Revive the disk in reverse order of fault, then replace Fault Disks and BBU Scenarios Where the LUN Write Mode Becomes Write Through

The write mode of LUNs in a storage system is write back by default. However, the write mode will become write through in the event of a fault.

Table 1 Scenarios where the write mode of LUNs changes from write back to write through and recommended actions

Symptom	Scenario	Impact and Recommended Action
The temperature of a controller exceeds the upper limit.	<ul> <li>If the Controller Enclosure Temperature Exceeds The Upper Limit alarm is generated due to an exception in the equipment room temperature or the internal components of a storage system, LUNs remain in write back mode for a specified period of time (192 hours by default). If the alarm persists after the specified period of time, the mode changes to write through.</li> <li>If the Controller Enclosure Temperature Exceeds The Upper Limit alarm is generated due to a fault on a single controller of a controller enclosure, LUNs remain in write back mode for a specified period of time, the specified period of time, the specified period of time, the mode changes to write through.</li> <li>NOTE:         If the Controller Enclosure Temperature Is Far Beyond The Upper Limit alarm is generated in a storage system, the storage system will automatically power off.     </li> </ul>	<ul> <li>Impact The write mode of all LUNs belonging to the controller enclosure changes to write through after the specified period of time. </li> <li>Recommended action Check the external refrigerating system, fan modules, and air channels to locate the cause of the over-temperature alarm and rectify faults.</li></ul>
Backup battery units (BBUs) on a controller enclosure malfunction.	<ul> <li>Dual-controller storage system: If two BBUs malfunction and an alarm is generated, the write mode changes from write back to write through.</li> <li>Four-controller storage system: If two or more BBUs malfunction and an alarm is generated, the write mode changes from write back to write through.</li> </ul>	<ul> <li>Impact The write mode of all LUNs belonging to the controller enclosure changes to write through.</li> <li>Recommended action <ul> <li>Check whether the BBUs are properly installed.</li> <li>Check whether the BBUs are faulty and replace them if necessary.</li> <li>Check whether the charge of the BBUs is insufficient. If the power of the BBUs is insufficient, wait until the BBUs are fully charged.</li> </ul> </li> </ul>





#### Scenarios Where the LUN Write Mode Becomes Write Through

The coffer disks of a controller enclosure malfunction.	<ul> <li>Dual-controller storage system: If two coffer disks break down, the write mode changes from write back to write through.</li> <li>Four-controller storage system: If all coffer disks of controllers A and B or controllers C and D break down (the controllers in the first row are controllers A and B and the controllers in the second row are controllers C and D), the write mode changes from write back to write through.</li> </ul>	<ul> <li>Impact The write mode of all LUNs belonging to the controller enclosure changes to write through.</li> <li>Recommended action Check whether the coffer disks are faulty and replace them if necessary.</li> </ul>
Controllers malfunction.	LUNs stay in write back mode for the write back hold time (192 hours by default) if only one controller on a storage system is properly working. If faults are not rectified within this period, the write mode of the LUNs changes from write back to write through.	<ul> <li>Impact <ul> <li>Impact</li> <li>The write mode of all LUNs belonging to the controller enclosure changes to write through if the fault persists for more than the write back hold time.</li> <li>Recommended action <ul> <li>Replace the faulty controller during off-peak hours and within the 192 hour period after the malfunction.</li> </ul> </li> <li>If a spare part is unavailable during the write back protection period, extend the time after assessing risks to prevent write through from adversely affecting service performance.</li> </ul> </li> </ul>
The remaining capacity of a storage pool is smaller than the reserved capacity.	An alarm is generated, indicating that the capacity usage of a storage pool exceeds the threshold and reminding you to expand the storage pool.	<ul> <li>Impact <ul> <li>Impact</li> <li>The write mode of thin LUNs and thick LUNs with value-added features changes from write back to write through.</li> </ul> </li> <li>Recommended action <ul> <li>Expand the storage pool.</li> </ul> </li> </ul>



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# **Training Summary**

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#### 1. Centralized Storage Maintenance Introduction

--Routine Maintenance, Device Manager, Alarm, Indicator, Performance check

- 2. Log Collection --Log Collection Method.
- 3. Troubleshooting for common issue --Centralized Storage Common Fault Case



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## **Demo Playback**

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Simulate a FC port link issue in the lab and diagnose the issue.







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## Thank You.

