



DS-A81 and DS-A83 Series ICVS

Quick Start Guide

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Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.


FCC compliance: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.


FCC Conditions


This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

 This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, the LVD Directive 2014/35/EU, the RoHS Directive 2011/65/EU.

 2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info

 2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.




Applicable Models

This manual is applicable to the models listed in the following table.

Series	Model
81 Series	DS-A81024S-ICVS
	DS-A81048S-ICVS
	DS-A81024S-ICVS/Micro
	DS-A81048S-ICVS/Micro
83 Series	DS-A83024S-ICVS
	DS-A83048S-ICVS
	DS-A83024S-ICVS/Micro
	DS-A83048S-ICVS/Micro

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
 NOTE	Provides additional information to emphasize or supplement important points of the main text.
 WARNING	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
 DANGER	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.

Safety Instructions

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.
- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region. Please refer to technical specifications for detailed information.
- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 100~240 VAC or 12 VDC according to the IEC60950-1 standard. Please refer to technical specifications for detailed information.
- Do not connect several devices to one power adapter as adapter overload may cause over-heating or a fire hazard.
- Please make sure that the plug is firmly connected to the power socket.
- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.

Preventive and Cautionary Tips

Before connecting and operating your device, please be advised of the following tips:

- Ensure unit is installed in a well-ventilated, dust-free environment.
- Unit is designed for indoor use only.
- Keep all liquids away from the device.
- Ensure environmental conditions meet factory specifications.
- Ensure unit is properly secured to a rack or shelf. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.
- Use the device in conjunction with an UPS if possible.
- Power down the unit before connecting and disconnecting accessories and peripherals.
- A factory recommended HDD should be used for this device.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Chapter 1 Environment and Installation

Devices described in this manual should be installed in the standard equipment room.

1.1 Environment of Equipment Room

● Power Supply System

The storage system is sensitive to the change of a voltage, and an excessively high or low voltage, or a sudden change of the voltage may delete the data in the memory or even cause the damage of the components. To avoid of such damage, you must ensure the power supply is stable and grounded. You are recommended to use the UPS, or the multiple power supply if permitted.

Requirements:

- The voltage should be in the range of 110 V to 220 V (allowed range is between -4% to +4%), and the change must be in the range of 110 V to 220 V (allowed range is between -15% to +15%); Frequency: 50 Hz to 60 Hz +/- 0.5 Hz;
- Make correct neutral line and GND line connections, and the voltage between them must be less than 1 V.
- Grounding for AC power supply system: ensure the GND line is properly connected. The grounding for the chassis is recommended.
- Grounding for DC power supply system: the chassis must be properly grounded.
- Connect all power cords before applying power to the redundant power supply module.
- The storage system supports management for some UPS models.

● Control of Working Environment

The over-high or over-low temperature and other unsatisfying installation and running environment factors may cause failures of the chip and mechanical components of the device, and thus they affect the stable and reliable running of the device as well as the data safety on the disks. Please follow the measurements shown below to take proper measurements:

- Use an air conditioner to control the temperature and the humidity at least 2 or 3 days before installing the device.
- The floor in the equipment room must be capable of loading more than 600 kg/m², and the height between the floor and the ceiling must be more than 2.7 m. The loading capability of the rack can be computed in 10 kg/U, e.g., for a 4U chassis, the required loading capability of the rack is 40 kg.
- Ensure adequate air ventilation of the rack.
- Close all the doors and windows to prevent the dust or use a dust-filtering ventilation device. The dust particulate ($\geq 5 \mu\text{m}$) must be less than 18,000 particulate / (dm)³.

- In a conditions of non-working status of the device, the horizontal and vertical vibration acceleration value of the floor surface of equipment room must be lower than 0.5 m/S^2 .
- The rack or surface on which the device is installed must be properly grounded, and ensure that each device is grounded as well. The resistance between the device casing and the ground must be less than 4Ω .
- According to the requirements of ANSI/ISA-71.04-1985 gas corrosion grade G1, the corrosion rate of copper test piece must be less than 300 \AA c/month .

NOTE

- \AA is the length unit. 1 \AA equals to $1/1$ billion meter.
- ANSI refers to American National Standards Institute, and ISA refers to Instrument Society of America.
 - The temperature and humidity requirements:
 - Working temperature: $5 \text{ }^\circ\text{C}$ to $40 \text{ }^\circ\text{C}$ ($41 \text{ }^\circ\text{F}$ to $104 \text{ }^\circ\text{F}$);
 - Equipment room temperature: $23 \text{ }^\circ\text{C} \pm 2 \text{ }^\circ\text{C}$ ($73.4 \text{ }^\circ\text{F} \pm 35.6 \text{ }^\circ\text{F}$);
 - Storage temperature: $-40 \text{ }^\circ\text{C}$ to $55 \text{ }^\circ\text{C}$ ($-40 \text{ }^\circ\text{F}$ to $131 \text{ }^\circ\text{F}$);
 - Transportation temperature: $-40 \text{ }^\circ\text{C}$ to $70 \text{ }^\circ\text{C}$ ($-40 \text{ }^\circ\text{F}$ to $158 \text{ }^\circ\text{F}$);
 - Temperature change rate: $< 5 \text{ }^\circ\text{C}$ (41°F)/h (noncondensing);
 - Working humidity: 20% RH to 80% RH;
 - Storage humidity: 5% RH to 95% RH;
 - Transportation humidity: 5% RH to 95% RH

1.2 Installation and Initial Power-on

- The device shall be placed on the fixed flat surface. Tilting surface is not allowed.
- You can use the standard plate in the industrial cabinet or use the guide rail (not provided) to install the device to the rack. It is recommended to use the bolts to fix the device to the rack through the mounting screw holes on the rack.
- Connect all the power cords of the device to the power socket and wait for 12 hours before starting up. The temperature of the device and the equipment room must be consistent to prevent the damage caused by a huge temperature difference.
- If the device has been transported and stored for more than 10 days; perform the previous operation and then start up and run the device for 30 minutes without the hard disks. And then you shut down the device, insert the hard disks and start the device again.

1.3 Notes for Installation

- The device is a high-precision equipment. Please keep stable and gentle when moving it.
- Installation and running environment must meet standards. Take regular investigations and records for the equipment room, or apply a remote monitoring for the working status of the device.

- Do not unplug the power cord when the device is running.
- In case of alarm beeper produced during the system running, please take immediate check and solution.

1.4 Device Reliability

To enhance the reliability of the operating of the device, you can connect to the NTP server to adjust time for the storage server to avoid the inaccuracy of record time or record loss.

Chapter 2 Panel Description

2.1 Overall View

The device adopts rack chassis. There are status indicators on the front panel. You can view the system status via the indicators directly.

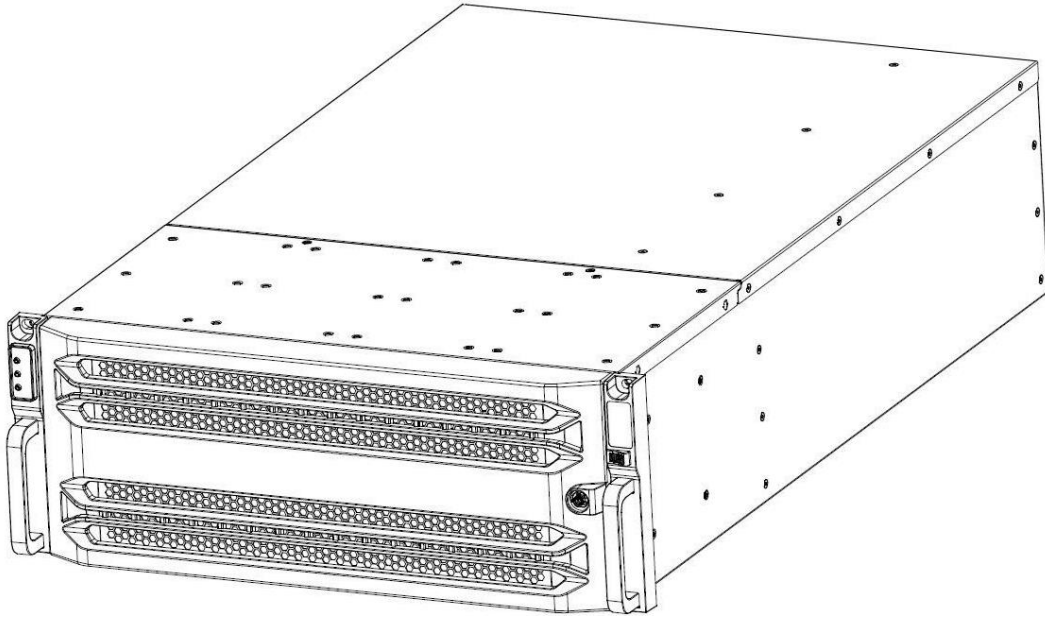


Figure 2-1 DS-A81024S-ICVS, DS-A83024S-ICVS, DS-A81024S-ICVS/Micro, DS-A83024S-ICVS/Micro
Overall View

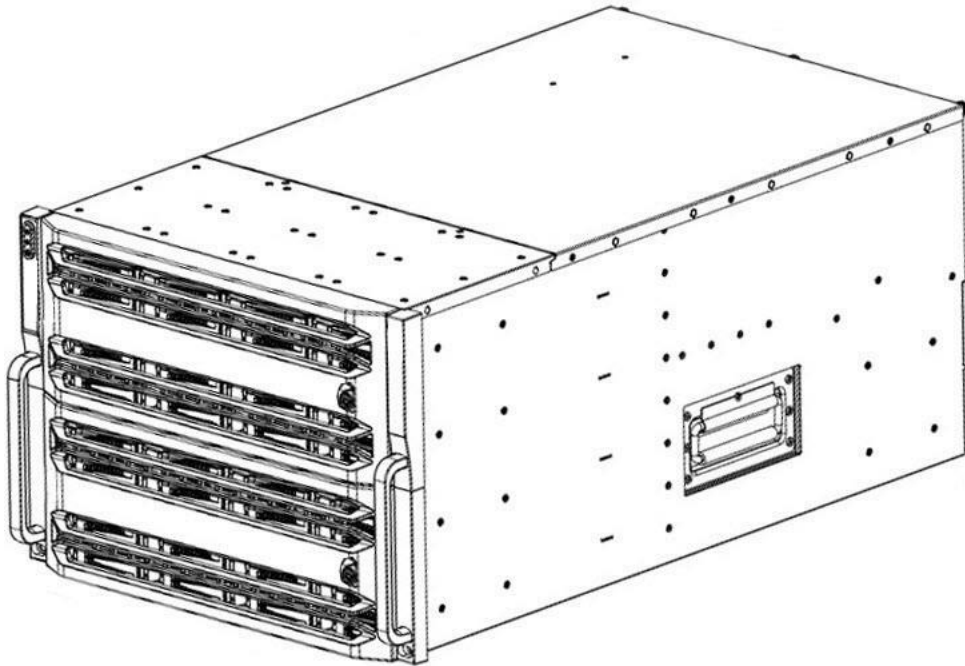


Figure 2-2 DS-A81048S-ICVS, DS-A83048S-ICVS, DS-A81048S-ICVS/Micro, DS-A83048S-ICVS/Micro
Overall View

2.2 Front Panel

2.2.1 DS-A83024S-ICVS

There are 24 HDD slots on the front panel for DS-A83024S-ICVS, DS-A81024S-ICVS, DS-A81024S-ICVS/Micro, DS-A83024S-ICVS/Micro. Digits in figure show the HDD sequence.

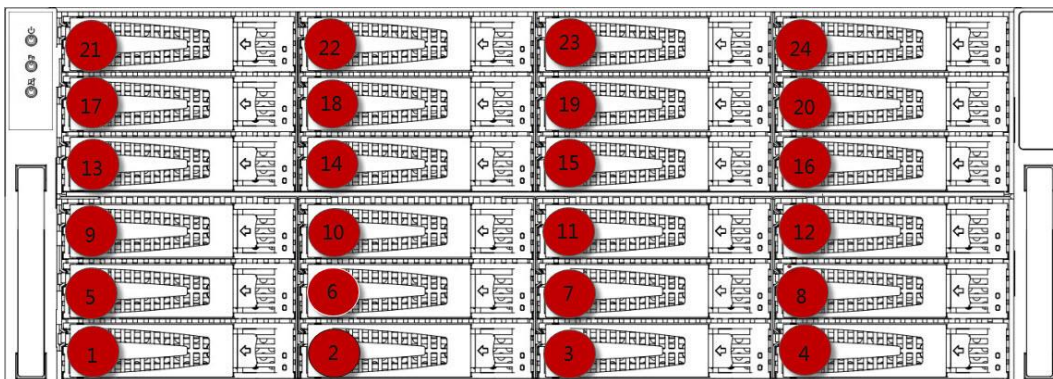


Figure 2-3 Front Panel

2.2.2 DS-A83048S-ICVS

There are 48 HDD slots on the front panel for DS-A81048S-ICVS, DS-A83048S-ICVS, DS-A81048S-ICVS/Micro, DS-A83048S-ICVS/Micro. Digits in figure show the HDD sequence.

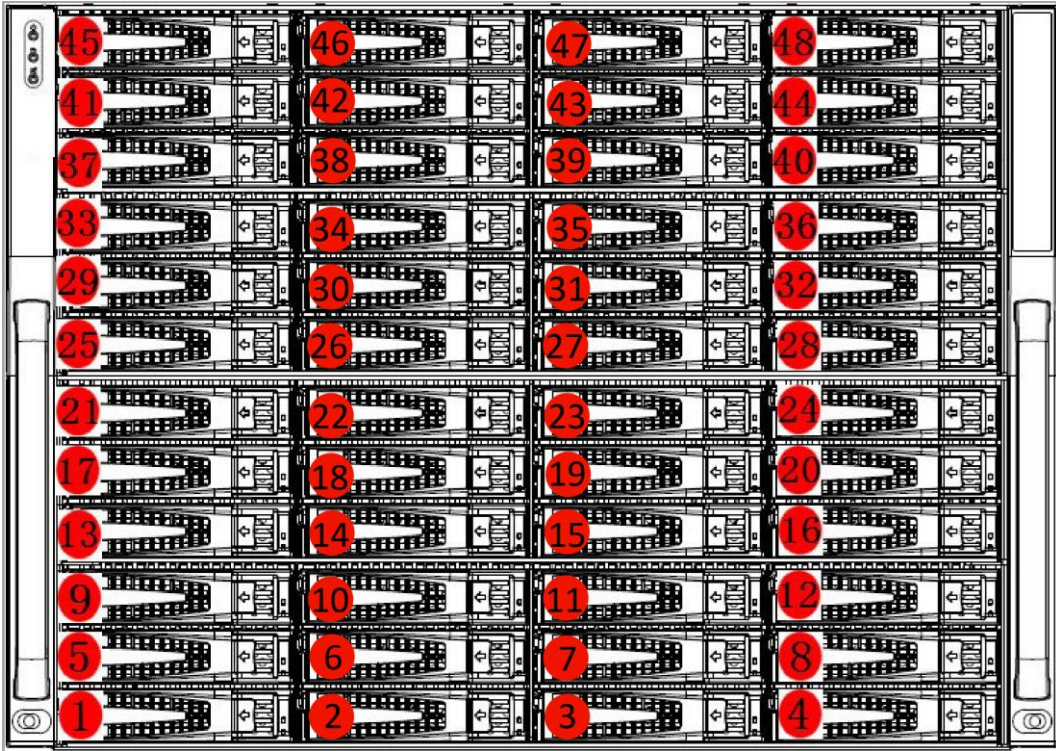


Figure 2-4 Front Panel

2.2.3 Buttons and Indicators on Front Panel

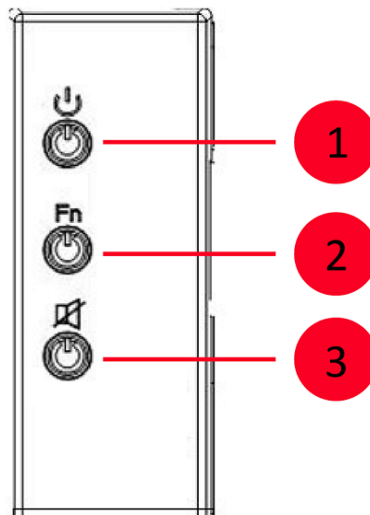


Figure 2-5 Buttons and Indicators

Table 2-1 Buttons and Indicators Description

No.	Name	Description
1	Power button	<ul style="list-style-type: none"> • When device is off, press it to start device. • When device is running, hold it for 4 to 15 seconds to shut down device.

		<ul style="list-style-type: none"> ● The button is solid green when device is running.
2	FN button	<ul style="list-style-type: none"> ● Used to position device. ● The button starts/stops flashing in blue after you press it or click the positioning button on configuration interface. Then you press it again and it will be unlit.
3	Mute/Alarm button	When an alarm occurs in device, the button flashes in red and buzzer sends out sound. Press it to mute buzzer.

2.3 Rear Panel

2.3.1 DS-A81024S-ICVS and DS-A81024S-ICVS/Micro

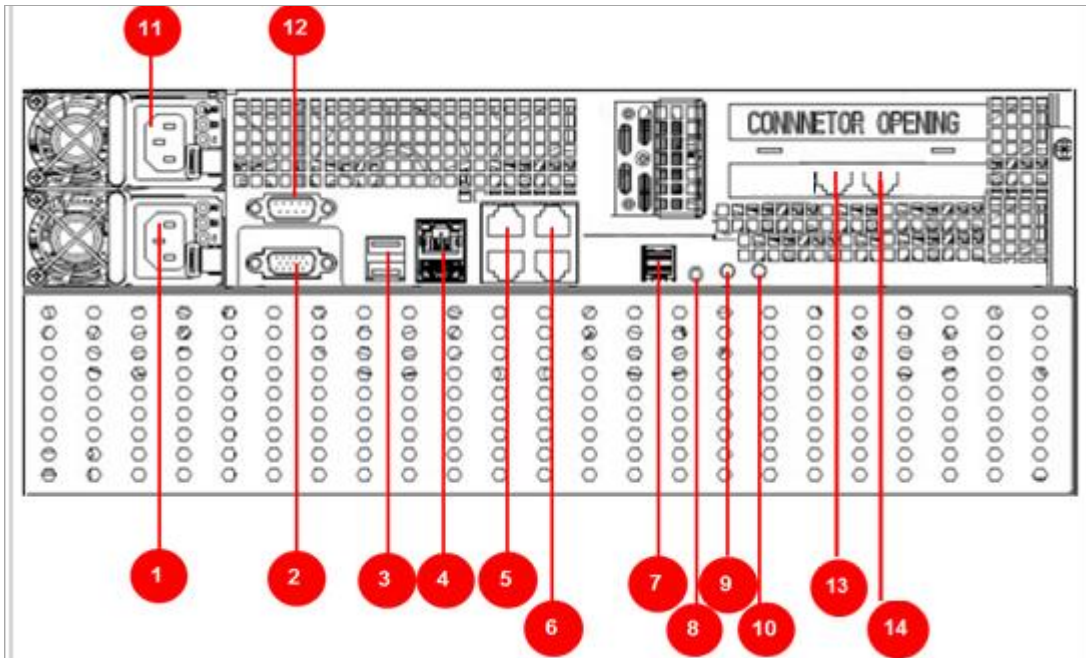


Figure 2-6 Rear Panel

Table 2-2 Rear Panel Description

No.	Name	No.	Name
1	Power module 1	9	FN button
2	VGA	10	Power switch
3	USB*2	11	Power module 2
4	Management LAN & USB	12	RS232
5	LAN 1 & LAN 3	13	LAN 5
6	LAN 2 & LAN 4	14	LAN 6

7	SAS interface		
8	COM		

2.3.2 DS-A81048S-ICVS and DS-A81048S-ICVS/Micro

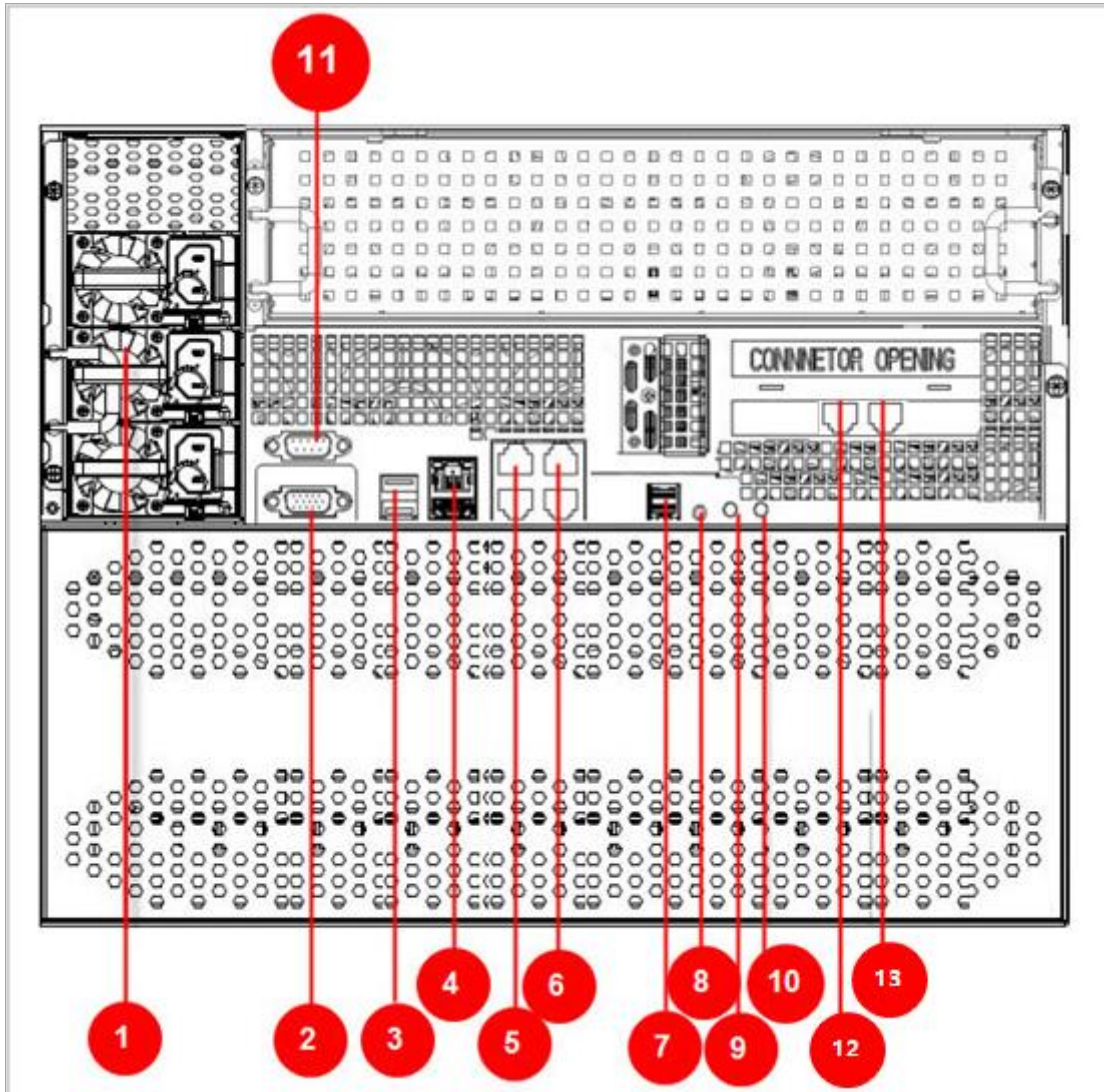


Figure 2-7 Rear Panel

Table 2-3 Rear Panel Description

No.	Name	No.	Name
1	Power module	8	COM
2	VGA	9	Power switch
3	Management LAN & USB	10	FN button
4	USB*2	11	RS232

10	FN button	20	COM
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2.3.4 DS-A83048S-ICVS and DS-A83048S-ICVS/Micro

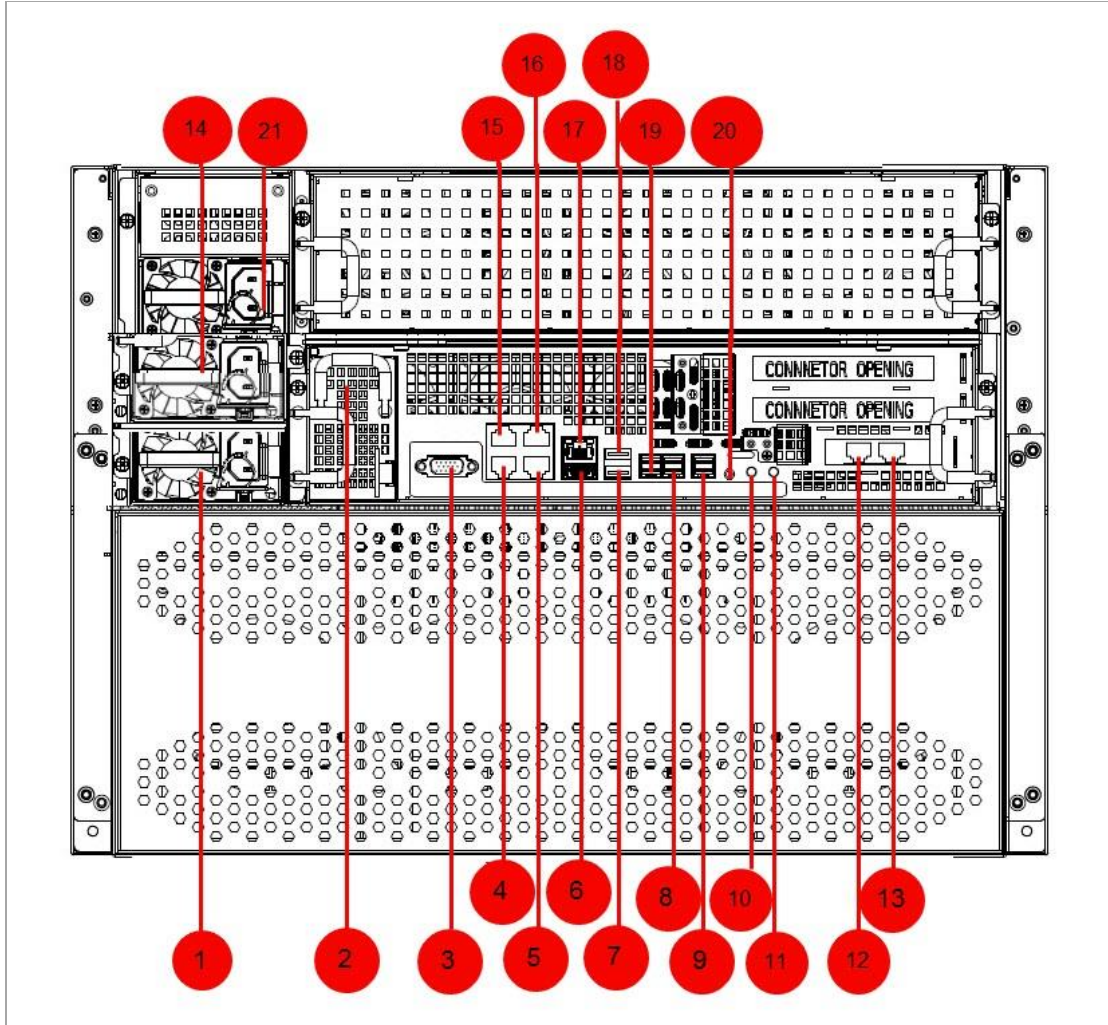


Figure 2-9 Rear Panel

Table 2-5 Rear Panel Description

No.	Name	No.	Name
1	Power module 1	12	LAN 5
2	BBU (optional)	13	LAN 6
3	RS-232 interface	14	Power module 2
4	LAN 1	15	LAN 3
5	LAN 2	16	LAN 4
6	USB interface 1	17	Management LAN

7	USB interface 2	18	USB interface 3
8	SAS interface 2	19	SAS interface 1
9	SAS interface 3	20	COM
10	FN button	21	Power module 3
11	Power switch		

Chapter 3 HDD Installation

Purpose:

It is recommended to install the enterprise HDD to ensure data security. Refer to the list of compatible HDD models of our company for the recommended HDD models.

Before you start:

- Storage device (delivered).
- Power cord (delivered).
- 100/1000 Mbps network cable. CAT 5e cable is recommended (delivered).
- Layer 3 Gigabit switch.
- 10 Gigabit switch.
- Guide rail for rack mounting.



NOTE

Avoid violent installation. HDD can bear up to 250 Gs vibration in installation, up to 0.25 Gs vibration when it is running, and up to 3.0 Gs vibration when it is not running.

Step 1 Place the device in an appropriate position, and connect the peripheral devices.

- 1) Connect the power cord to the socket firmly.
- 2) Connect all the data network interfaces to layer 3 Gigabit switch via CAT 5e cables. You can manage the system on connected terminal via data network interfaces.
- 3) Connect all the private network interfaces to 10 Gigabit switch via 10 Gigabit optical fiber cables for storage internal data transmission.



NOTE

For the device supporting serial ports, the serial ports can be used for debugging. This operation is not done by users.

Step 2 Remove bezel from front panel.

- 1) Unlock bezel by delivered key.
- 2) Slightly pull the bezel out of the device and make it a little above the left handle.
- 3) Pull the front panel out of the device.



NOTE

Handle with care to avoid damage.

Step 3 Press the blue button to pop up the handle and hold the handle and pull the dummy HDD out of the slot.



Figure 3-1 Pull Out Dummy HDD

Step 4 Use the screwdriver to remove the baffle in the bottom of dummy HDD.

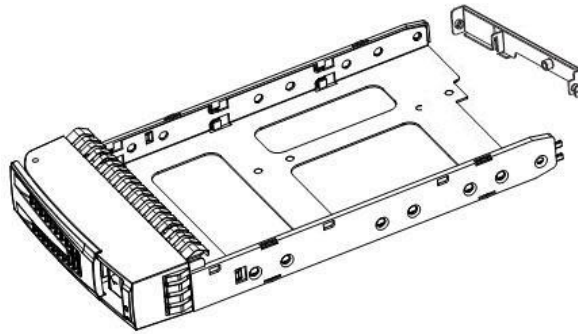


Figure 3-2 Remove Baffle

Step 5 Place the HDD in the dummy HDD. The interface must face the dummy HDD rear.

Step 6 Adjust the HDD position. Ensure the HDD rear aligns with dummy HDD rear and the four screw holes aim at the holes in dummy HDD.

Step 7 Use the screwdriver to fasten the four delivered screws into the screw holes.

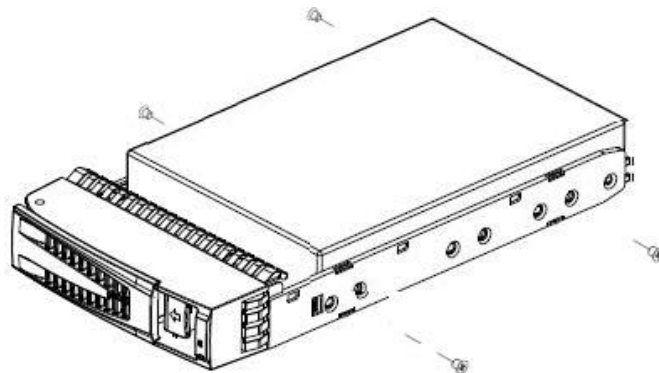


Figure 3-3 Fasten Screws

 **NOTE**

You can judge if HDD is well installed by the dummy HDD indicators as shown in Figure 3-4.

- Solid blue: HDD is normal.
- Solid red: HDD is abnormal.

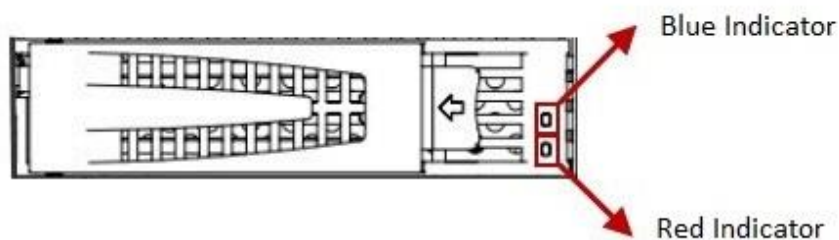


Figure 3-4 Dummy HDD Indicators

Step 8 Push the dummy HDD back into the slot.

Step 9 Install and lock the bezel.

 **NOTE**

To protect HDD and extend HDD lifespan, read the following instructions:

- When fastening HDD on dummy HDD, use the delivered screws to avoid too long screws damage HDD.
- The device supports HDD hot-plug. You can hot plug HDD when device is on, but this may cause data loss.
- Frequent hot plug may reduce HDD lifespan. Try to reduce the possibility of unplugging HDD.
- When plugging HDD, plug it in place stably to avoid poor contact of the HDD plug and the chassis socket.
- Proper steps of HDD hot-plug: Slightly pull the dummy HDD out of device for 3 cm and wait for 30s before totally pulling it out.

Chapter 4 Device Startup

Purpose:

Proper startup and shutdown procedures are crucial to expanding the life of the device.

Before you start:

Connect all the data ports to Gigabit switch with the delivered CAT 5e cables.

Step 1 Check if the power supply is plugged into an electrical outlet. It is HIGHLY recommended that an Uninterruptible Power Supply (UPS) is used in conjunction with the device.

Step 2 Press the power button on the front panel. It will take about 5 to 10 minutes to start up device.

Chapter 5 Login and Activation

5.1 Access Device via Web Browser

Purpose:

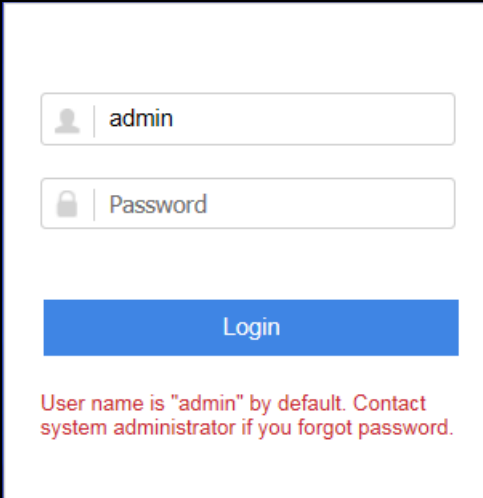
You can get access to the device with a web browser. The recommended web browser includes Internet Explorer 8 to 11.

Before you start:

- Use a network cable to connect Ethernet port of your computer and the Management LAN of the device.
- Configure your computer IP address. Ensure it is in the same network segment with the Management LAN of the device (the default IP address of Management LAN is 10.254.254.254).

Step 1 Enter the device IP address (https://IP Address:2004) in Web browser.

Step 2 Press Enter. Then login interface appears.



The screenshot shows a login interface with two input fields. The first field is labeled 'admin' and has a user icon to its left. The second field is labeled 'Password' and has a lock icon to its left. Below the fields is a blue button labeled 'Login'. At the bottom of the interface, there is a red text note: 'User name is "admin" by default. Contact system administrator if you forgot password.'

Figure 5-1 Login

5.2 Activate Device

Purpose:

For the first-time access, you need to activate the device by setting an admin password. No operation is allowed before activation.

Step 1 Access device via web browser.

Step 2 Enter the same password in **Password** and **Confirm Password**.

Activate

User Name admin

Password ✘

8 to 16 characters allowed. Use combination of two or more kinds of the following: digits, lower-case letters, upper-case letters, special characters. The combinations of digits+lower/upper-case letters only are not allowed.

Confirm Password

OK

Figure 5-2 Activation

Step 3 Click **OK**.

 **WARNING**

STRONG PASSWORD RECOMMENDED—We highly recommend you create a strong password of your own choosing (Using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters.) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

Chapter 6 Network Configuration

Purpose:

Configure network after login.

Step 1 Go to **Device**.

Step 2 Click **Information Overview**.

Step 3 Click **Modify Network**.

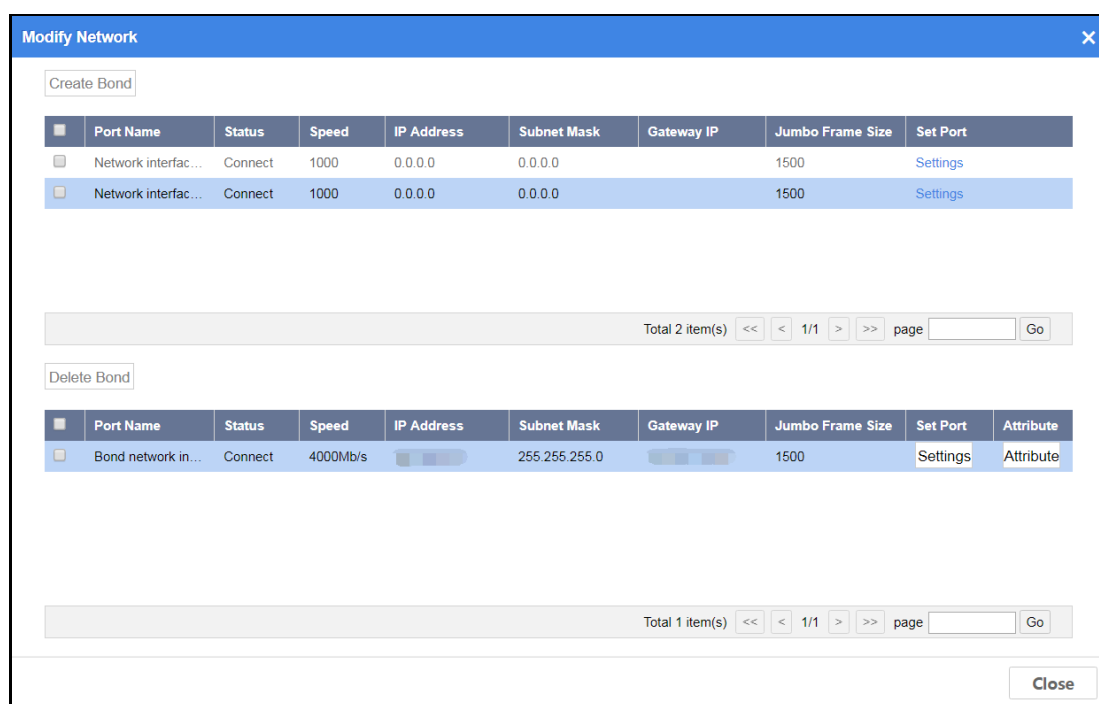


Figure 6-1 Modify Network

Step 4 Click **Settings** of a bound port.

- **Port Name:** Not editable.
- **Jumbo Frame Size:** Default value is 1500. Default value is recommended.
- **Select Mode:** Seven bound mode is selectable. Default mode is balance-alb.

Set Bound Port

Port Name: Bond network interface 1

*IP Address: [Dotted Placeholder]

*Subnet Mask: 255.255.255.0

*Jumbo Frame Size: 1500 Byte

Gateway IP: [Dotted Placeholder]

Select Mode: balance-alb

Virtualized mode: combines TLB mode and RLB (Receiving Load Balance) mode targeting at IPV4 flow. RLB

Balanced Option: N/A

OK Cancel

Figure 6-2 Set Bound Port

 NOTE

- Management port does not support port binding.
- Connect all bound ports to network.

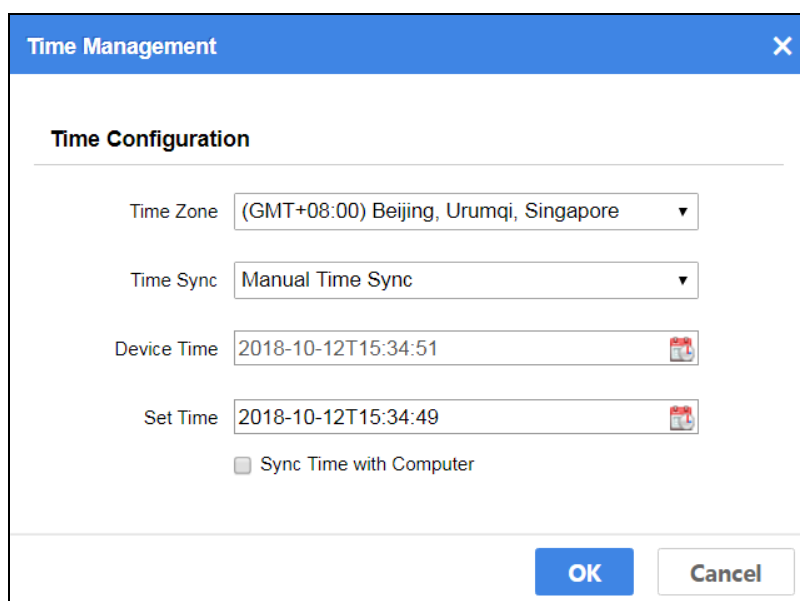
Chapter 7 Time Configuration

Purpose:

You can select time zone and synchronize time manually or by NTP.

7.1 Synchronize Time Manually

Step 1 Go to **Maintenance > Time Management**.



The screenshot shows a dialog box titled "Time Management" with a close button (X) in the top right corner. Below the title bar is a section labeled "Time Configuration". It contains four rows of settings:

- Time Zone:** A dropdown menu showing "(GMT+08:00) Beijing, Urumqi, Singapore".
- Time Sync:** A dropdown menu showing "Manual Time Sync".
- Device Time:** A text input field showing "2018-10-12T15:34:51" with a calendar icon to its right.
- Set Time:** A text input field showing "2018-10-12T15:34:49" with a calendar icon to its right.

Below these fields is a checkbox labeled "Sync Time with Computer" which is currently unchecked. At the bottom right of the dialog are two buttons: "OK" (blue) and "Cancel" (white).

Figure 7-1 Time Management

Step 2 Select **Time Zone**.

Step 3 Select **Time Sync** as **Manual Time Sync**.

Step 4 Click **OK**.

7.2 Synchronize Time by NTP

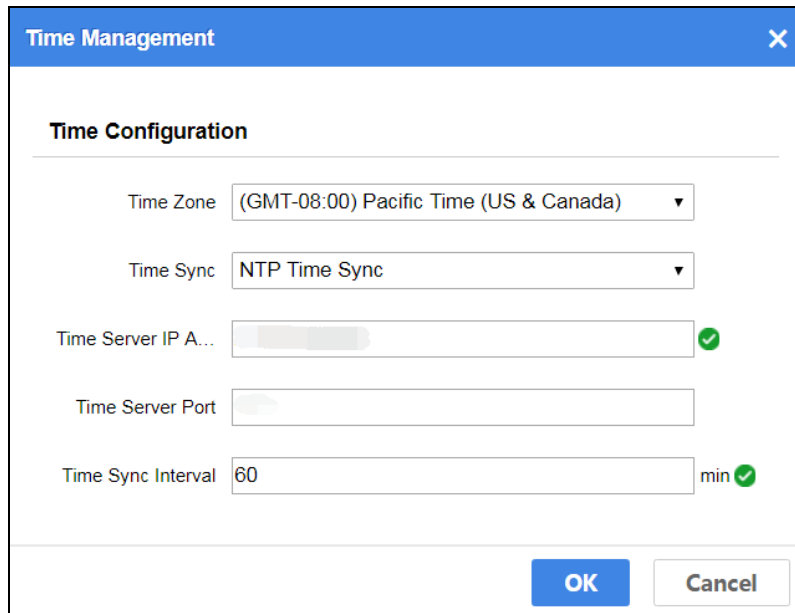
Step 1 Go to **Maintenance > Time Management**.

Step 2 Select **Time Zone**.

Step 3 Select **Time Sync** as **NTP Time Sync**.

Step 4 Input **Time Server IP Address**, **Time Server Port**, and **Time Sync Interval**.

Step 5 Click **OK**.



The image shows a 'Time Management' dialog box with a blue header and a close button (X) in the top right corner. Below the header is the 'Time Configuration' section. It contains five fields: 'Time Zone' is a dropdown menu set to '(GMT-08:00) Pacific Time (US & Canada)'; 'Time Sync' is a dropdown menu set to 'NTP Time Sync'; 'Time Server IP A...' is a text input field with a green checkmark to its right; 'Time Server Port' is a text input field; and 'Time Sync Interval' is a text input field containing '60' with 'min' and a green checkmark to its right. At the bottom right of the dialog are two buttons: 'OK' (blue) and 'Cancel' (white).

Figure 7-2 NTP Time Sync.

Chapter 8 HDD Management

Purpose:

You can search the information of all the HDD in storage device.

Step 1 Go to **Maintenance > Disk Management** or **Device > Information Overview > Disk Management**.

The screenshot shows the 'Disk Management' interface with the following elements:

- Usage filters:** Unused, RAID Domain, Data Domain, Single Disk Mode
- Status filters:** Normal, Warning, Unavailable, Processing
- Search:** Keyword input field, Search button, Reset Parameters button
- Search Result:** Locate button, Quick Detection button
- Table:**

Serial No.	Slot	Type	Status	Usage	Free Space/Total Capacity (GB)
ST6000NM0115-1YZ110.ZA...	127.0.0.1:ab000633e:1	SATA	Normal	Unused	5589/5589
ST6000NM0115-1YZ110.ZA...	127.0.0.1:ab000633e:2	SATA	Normal	Unused	5589/5589
ST6000NM0115-1YZ110.ZA...	127.0.0.1:ab000633e:3	SATA	Normal	Unused	5589/5589
ST6000NM0115-1YZ110.ZA...	127.0.0.1:ab000633e:28	SATA	Normal	Unused	5589/5589
ST6000NM0115-1YZ110.ZA...	127.0.0.1:ab000633e:32	SATA	Normal	Unused	5589/5589
ST6000NM0115-1YZ110.ZA...	127.0.0.1:ab000633e:36	SATA	Normal	Unused	5589/5589
- Footer:** Total 6 item(s), pagination controls (1/1), Go button, Close button

Figure 8-1 Disk Management

Step 2 Specify search conditions.

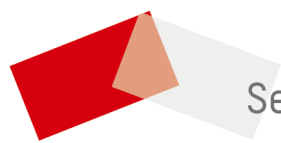
- **Usage:**
 - **Unused:** Disk that not used by any RAID domain.
 - **Single Disk Mode:** Reserved.
- When disk **Usage** is set as **Unused**, **Status** description is shown as follows:
 - **Normal:** Disk is normal in all online nodes.
 - **Alarm:** Disk is normal in some online nodes. Or bad sector exists in the disk.
 - **Unavailable:** Disk is abnormal in all the online nodes. Disk will be removed from resource pool.
 - **Processing:** Disk is being detected, located, repaired, moved, or maintained.

Step 3 Click **Search**.

When disk status is alarm, unavailable, or processing, click the status in status column to show help. You can follow the help to recover disk.

Step 4 (Optional) To locate a disk, check the disk and click **Locate** to turn on FN indicator of the disk. FN indicator will keep flashing (default flashing time is 600 seconds).

Step 5 (Optional) To detect a disk, check the disk and click **Quick Detection**. Detection progress will be shown in **Status** column.



See Far, Go Further