

# EonStor GSe Pro 100 Series Hardware Manual

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## Safety precaution

Read these instructions carefully before you install, operate, or transport Infortrend storage systems and expansion systems.

### Installation and operation

- Set up the EonStor GSe Pro system at a site where the ambient temperature stays lower than 40°C.
- Install the power source socket outlet near the enclosure where it is easily accessible.
- Secure airflow clearance inside and around the enclosure:
  - Secure an 18 to 20 cm clearance around the enclosure.
  - Do not cover the enclosure openings.
  - Do not leave drive bays empty as it will affect airflow efficiency.
- DO NOT remove more than one hard drive tray out of the enclosure at the same time.
- Secure each hard drive using its retention screws.
- Place power cords and other cables away from foot traffic. Do not place items on top of power cords and ensure they do not rest against the data cables.
- Install all modules to the enclosure before turning on the systems.
- Ensure that the correct power range is tested before turning on the system.
- If the system is not used for a long period, disconnect it from the power outlet to avoid transient over-voltage.

### Service and maintenance

- Keep the faulty hard drive in place until you have a replacement in hand. Removing a drive tray from the enclosure affects the airflow.
- When transporting the enclosure, repackage all disk drives separately in the original package foam blocks.
- Disconnect the power cords before servicing or cleaning the enclosure.
- Use a slightly moistened paper sheet or cloth to clean the system. Avoid using liquid agents or detergent sprays.
- When replacing hard drives, gently insert the hard drive tray while the system is operating. Vibration or shock can easily damage the hard drives.
- Contact your service/support personnel if any of the following occurs:
  - Power cord or plug is damaged
  - Enclosure has been exposed to moisture
  - The system is not working properly
  - Dropped the system against a hard surface
  - The enclosure shows obvious breaks and leaks
- Remove the hard drives first before moving the enclosure to another location. Remember the installation steps of the hard drives and their corresponding slots.



## **Important notice**

The use of Infortrend-certified components is strongly recommended to ensure compatibility, quality, and normal operation of your Infortrend products. Contact your distributor for a list of Infortrend-certified components (e.g. SFP, SFP+, HBA card, iSCSI cable, FC cable, memory module, etc.).

## **ESD precautions**

- Avoid touching the PCBs (printed circuit board) or connector pins of the hard drives.
- Avoid dust, debris, carpets, plastic, vinyl, and Styrofoam in your work area.
- DO NOT remove the hard drives from their anti-static bags before the installation.
- DO NOT stack the drives on top of each other without their protective drive trays. Even if the drives are fixed to the drive trays, contact with the exposed PCB or the rear side interface may damage the drives.

## **About this manual**

The manual introduces hardware components of EonStor GSe Pro 100 Series storage system and expansion enclosures. It also describes how to install the components, monitor, and maintain.

- For non-serviceable components, please contact our support sites.
- Firmware operation: Consult the Firmware User Manual on the CD-ROM.
- EonOne software: Consult the EonOne User Manual on the CD-ROM.



## Revision history

Version	Date	Description
1.0	February 2019	Initial release



## Hardware specifications

### Specification summary

<b>Form factor</b>	5-bay desktop EonStor GSe Pro 105 8-bay desktop EonStor GSe Pro 108
<b>Controller</b>	Single controller
<b>Cache memory</b>	<b>Default memory:</b> DDR3 4 GB (non-EEC) <b>Upgradeable:</b> DDR3 8 GB (2 x 4 GB) DDR3 16 GB (2 x 8 GB) <b>Note: The installed default memory varies by model, region, and other factors. Contact your local sales representative for details.</b>
<b>Host ports</b>	<b>Onboard Gb/s port:</b> - 4 x 1 Gb/s iSCSI ports (RJ-45) <b>More host options:</b> - 2 x 10 Gb/s iSCSI ports (RJ-45) - 2 x 16 Gb/s FC ports (Fiber channel) - 4 x 1 Gb/s iSCSI ports - 4 x 8 Gb/s FC ports (Fiber channel) - 4 x 10 Gb/s iSCSI ports (SFP+) <b>NOTE: Fibre channel supports point-to-point and switch mode.</b>
<b>USB connectivity</b>	2 x USB 2.0 ports 2 x USB 3.0 ports
<b>Drive connectivity</b>	6 Gb/s SATA connectivity
<b>Supported drives</b>	2.5-inch SATA SSD 3.5-inch SATA HDD <b>Note: Refer to the <a href="#">Compatibility Matrix</a> for the latest compatibility details.</b>
<b>Maximum number of drives</b>	<b>GSe Pro 105</b> - System: 5 - Expansion: 32 <b>GSe Pro 108</b> - System: 8 - Expansion: 32
<b>Drive advanced features</b>	S.M.A.R.T. support, automatic bad sector reassignment, dedicated bandwidth to each connected drive
<b>Supported protocols</b>	<b>File level protocol</b> - CIFS/SMB - AFP - NFS - FTP - FXP - WebDAV <b>Block level protocol</b> - FC - iSCSI <b>Object protocol</b> - RESTful API

(See next page)



## Specification summary

<b>EonCloud Gateway</b>	Amazon S3 Microsoft Azure Alibaba AliCloud OpenStack
<b>Expansion enclosure supported models</b>	JB Pro 208
<b>RAID functionality</b>	Global, dedicated, or enclosure hot spare RAID level supported: 0, 1, (1 + 0), 3, 5, 6, 10, 30, 50, 60 Online expansion: - Adding new drives - Copying and replacing drives of larger capacity RAID migration: - Configurable stripe size and write policy per system - Intelligent drive handling <ul style="list-style-type: none"><li>• In degraded mode: skips irreparable blocks to continue rebuild</li><li>• In normal operation: data-block verification and repair</li></ul>
<b>Data protection and service</b>	<b>Default software features:</b> <ul style="list-style-type: none"><li>- SSD cache</li><li>- SED (self-encrypting drives)</li><li>- Thin provisioning</li><li>- File-level remote replication (Rsync)</li><li>- Snapshot: 64 per volume; 128 per system</li><li>- Block-level local replication: Replication pairs per source volume: 4; Replication pairs per system: 16</li></ul> <b>Optional software features*:</b> <ul style="list-style-type: none"><li>- Automated tiering (2 tiers)</li><li>- Advanced snapshot: 256 per volume; 4096 per system</li><li>- Advanced block-level local replication: Replication pairs per source volume: 8; Replication pairs per system: 256</li><li>- Advanced block-level remote replication: Replication pairs per source volume: 8; Replication pairs per system: 64</li></ul> <p>*Only available in standard license and optional advanced license.</p>
<b>Availability and reliability</b>	<ul style="list-style-type: none"><li>- Device mapper support</li><li>- Trunk group support</li><li>- Multi-pathing support</li><li>- UPS</li><li>- Anti-virus</li><li>- WORM (for file level only)</li></ul>
<b>Management</b>	<ul style="list-style-type: none"><li>- Web-based EonOne management software</li><li>- Automated cache flush and caching mode operation per enclosure status</li><li>- Module status LED indicators: component presence detection and thermal sensors via I2C bus</li></ul>

(See next page)



## Specification summary

<b>Management</b>	<ul style="list-style-type: none"> <li>- Storage Resource Management to analyze history records of resource usage</li> <li>- Automated repeatable management tasks by flexible workflow</li> </ul>
<b>Network configuration</b>	<ul style="list-style-type: none"> <li>- IPv6 support</li> <li>- Fixed or dynamic IP address</li> <li>- Dual Gigabit Ethernet with Jumbo Frame</li> <li>- Port trunking, NIC teaming, Link aggregation (IEEE 802.3ad)</li> <li>- DHCP client</li> <li>- MPIO, MC/S support</li> </ul>
<b>OS support</b>	<ul style="list-style-type: none"> <li>- Windows® Server 2008/R2*</li> <li>- Windows® Server 2012/R2*</li> <li>- Windows® 7 SP1</li> <li>- Windows® 8.1</li> <li>- Red Hat® Enterprise Linux®</li> <li>- SUSE® Linux® Enterprise</li> <li>- Sun® Solaris™</li> <li>- MacOS® X</li> <li>- VMware®**</li> <li>- Citrix® XenServer®</li> </ul> <p>* Includes Hyper-V</p> <p>** NFS protocol running on VMware environment is not supported currently</p> <p><b>Note:</b> Download <a href="#">GSe Pro Compatibility Matrix</a> for the latest OS support details.</p>
<b>Service and support</b>	<p>Standard services:</p> <ul style="list-style-type: none"> <li>- 3-year limited hardware/software warranty</li> <li>- 8 x 5 phone, web, and email support</li> </ul> <p>Upgraded/extended services:</p> <ul style="list-style-type: none"> <li>- Replacement of part dispatch on the next business day (up to 5 years)</li> </ul>
<b>Power</b>	<ul style="list-style-type: none"> <li>- Power supply: 250 W</li> <li>- AC voltage: 100 VAC/3.5A - 240 VAC/3.5A with PFC (auto-switching)</li> <li>- Frequency: 47 - 63 Hz</li> </ul>
<b>Environment</b>	<p><b>Temperature:</b></p> <ul style="list-style-type: none"> <li>- Operating: 5°C to 40°C</li> <li>- Non-operating: -40°C to 60°C</li> </ul> <p><b>Humidity:</b></p> <ul style="list-style-type: none"> <li>- Operating: 5% to 90% (non-condensing)</li> <li>- Non-operating: uncontrolled to 95% (non-condensing)</li> </ul> <p><b>Altitude:</b></p> <ul style="list-style-type: none"> <li>- Sea level to 3660 m (12,000 ft.) operating/sea level to 12,192 m (40,000 ft.) non-operating</li> </ul>
<b>Regulations</b>	<p>Safety: UL, BSMI, CB</p> <p>Electromagnetic compatibility: CE, BSMI, FCC</p>

(see next page)



## Specification summary

<b>Weight (without HDD)</b>	<b>GSe Pro 105</b> - 5.15 kg/11.35 lbs <b>GSe Pro 108</b> - 6.51 kg/14.35 lbs
<b>Dimension</b>	<b>GSe Pro 105</b> - 255 mm x 168 mm x 254 mm <b>GSe Pro 108</b> - 345 mm x 168 mm x 254 mm <b>Note: The dimension order is W x H x D.</b>
<b>Package dimension</b>	<b>GSe Pro 105</b> - 363 mm x 269 mm x 366 mm <b>GSe Pro 108</b> - 456 mm x 269 mm x 366 mm <b>Note: The dimension order is W x H x D.</b>
<b>Access right management</b>	User account management Group management Folder management - Folder and sub-folder access control Folder quota Comprehensive access control action items - All controls, Read, Read and Run, Modify, List Support Windows Active Directory Authentication - Domain Users Login via CIFS/SMB, AFP, FTP, and file explorer LDAP on Linux
<b>Notification</b>	Various event notification methods including email and SNMP trap.
<b>Green design</b>	80 PLUS-certified power supplies delivering more than 80% energy efficiency Intelligent multi-level drive spin-down

**NOTE:** For the expansion enclosures, please refer to the data sheet or download it from our [official website](#).

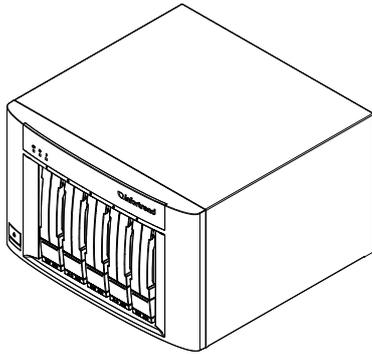


## Package contents

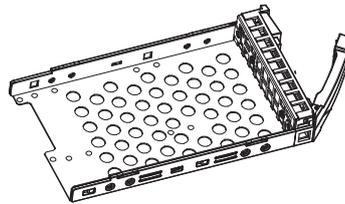
Check the unpacking list for the complete list of contents and exact quantity of the components of your system.

**NOTE:** The contents and quantity may vary depending on the system model and order requests.

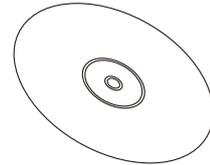
### System package



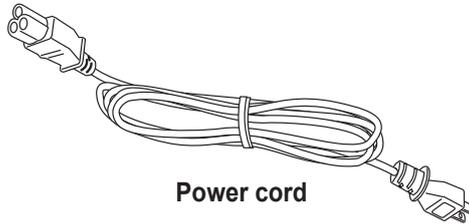
**GSe Pro 100 Series system**



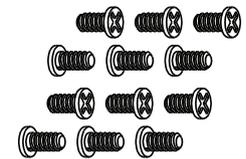
**Hard drive trays**



**EonOne CD**



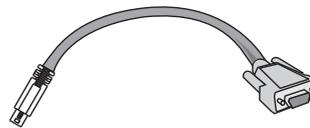
**Power cord**



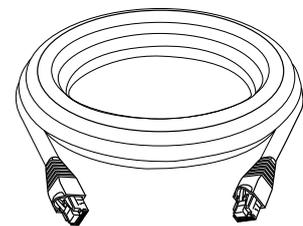
**3.5-inch HDD screws  
2.5-inch HDD screws**



**Quick installation guide**



**RS-232C serial cable  
(mini USB to DB-9)**



**LAN cable**



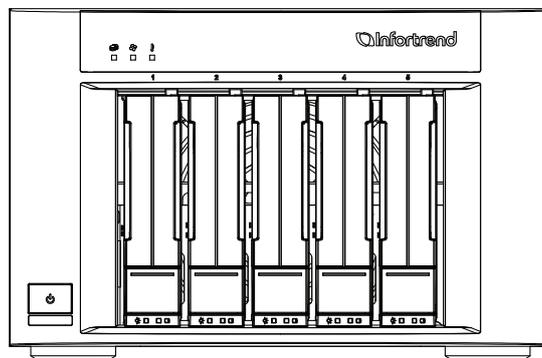
**EonOne  
Quick start guide**

# Product introduction

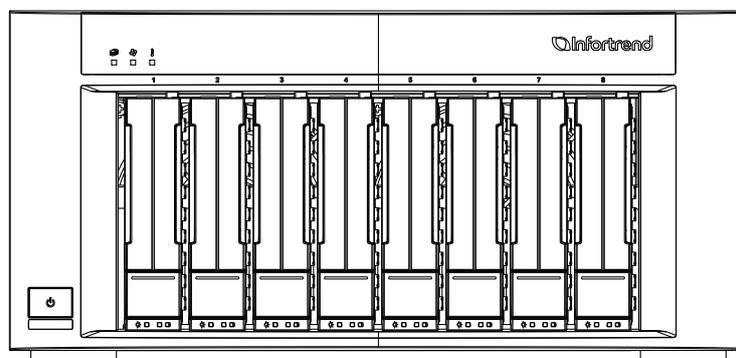
This chapter introduces the look and feel of EonStor GSe Pro 100 Series systems, the features, and the supported components.

## 1.1 Overview

EonStor GSe Pro 100 series is a versatile NAS system comprised of hot-swappable hard drives and constructed in a rugged aesthetic. This series comes in two models: GSe Pro 105 and GSe Pro 108. Both models support RAID 0, 1, 5, and 6 hard drive configurations that offer you a high system performance and a wide range of data backup features. EonStor GSe Pro 100 Series is the perfect NAS solution for SMBs, media companies, and education and medical institutes.



EonStor GSe Pro 105



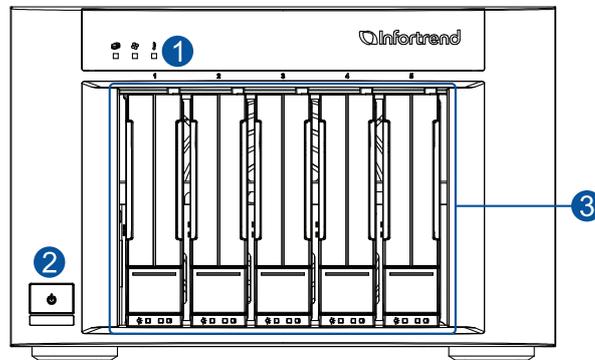
EonStor GSe Pro 108



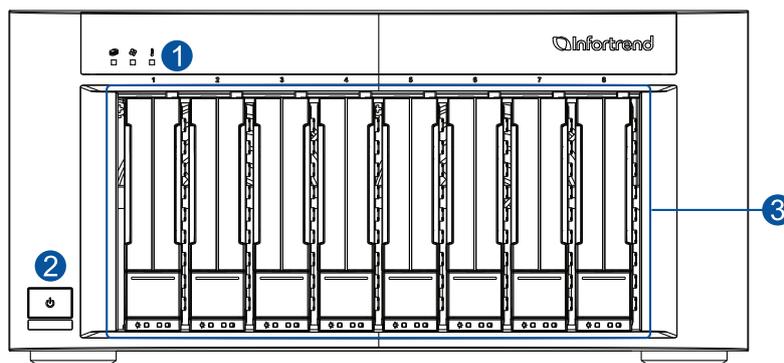
## 1.2 Chassis

This section describes the front and rear panels of EonStor GSe Pro 100 Series's rugged storage chassis.

### 1.2.1 Front panel



EonStor GSe Pro 105

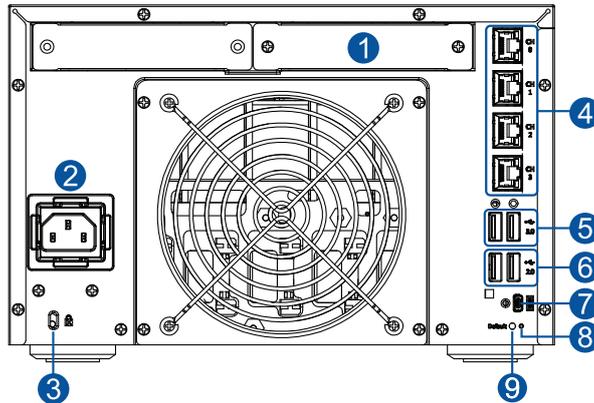


EonStor GSe Pro 108

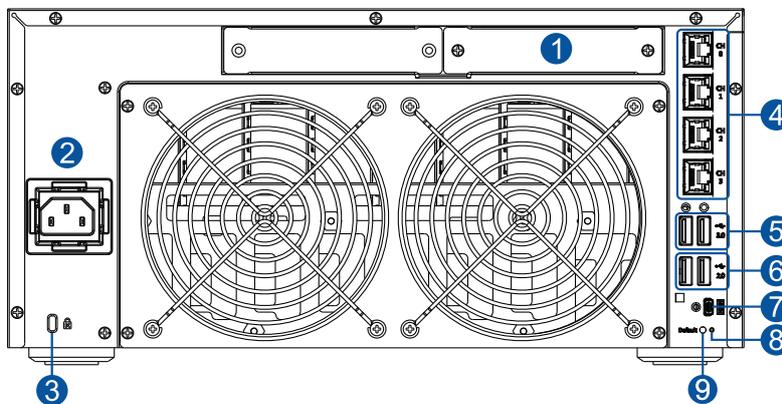
Number	Part	Description
1	LED panel	LED panel has HDD, cooling fan, and thermal LEDs.
2	Power button	This button allows you to turn ON/OFF the system.
3	Drive trays	Each drive tray is hot-swappable and holds a 2.5-inch or 3.5-inch hard drive.



## 1.2.2 Rear panel



GSe Pro 105

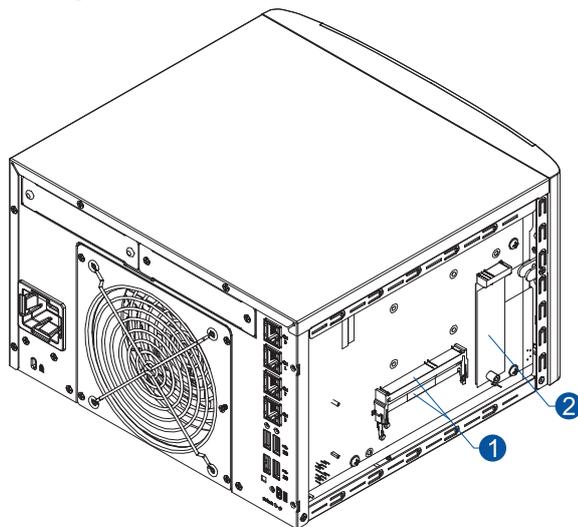


GSe Pro 108

Number	Part	Description
①	Host/expansion board slot	This slot accommodates a host board or expansion board.
②	Power socket	This socket allows the flow of electricity to power the system.
③	Kensington lock slot	This security slot secures your GSe Pro 100 system using Kensington security devices.
④	1 GbE RJ-45 ports	These 8-pin ports support a standard Ethernet cable to connect to a local network.
⑤	USB 3.0 ports	These USB ports provide a transfer rate of up to 5 Gbps.
⑥	USB 2.0 ports	These USB ports provide a transfer rate of up to 480 Mbps.
⑦	Mini USB connector	This connector supports UART serial port interface for debugging purpose.
⑧	Restore default LED	This LED indicates the system's configuration to factory settings.
⑨	Restore default button	This button restores the system to its factory settings.



### 1.2.3 Side panel



**WARNING!** DO NOT remove the flash module. If you want it replaced, call your local dealer or technical support.

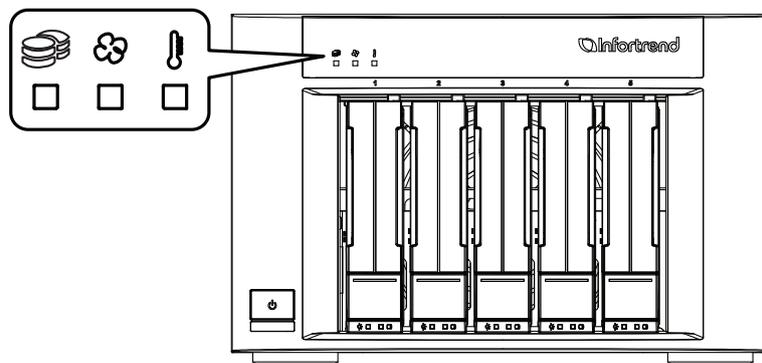
Number	Part	Description
①	DIMM slots	These slots accommodate two DDR3 SO-DIMMs.
②	Flash module	This module serves as a cache backup and also contains NAS OS.

## 1.3 Front panel components

This section describes the components of GSe Pro 100 system's front panel components.

### 1.3.1 LED panel

The LEDs on the panels allow you to know your system's current status when in operation.



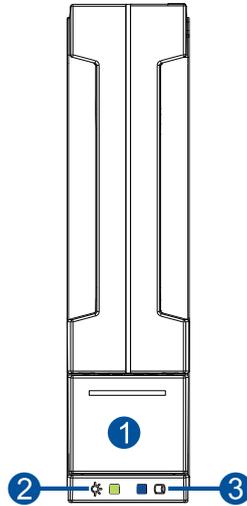
Number	Part	Description
①	System status	This LED provides the status of the system.
②	Fan status	This LED provides the status of the system's fan.
③	Temperature status	This LED provides the system's temperature status.

**NOTE:** For more details regarding the LEDs and their respective status, refer to **3.1.1 LEDs**.



### 1.3.2 Drive tray

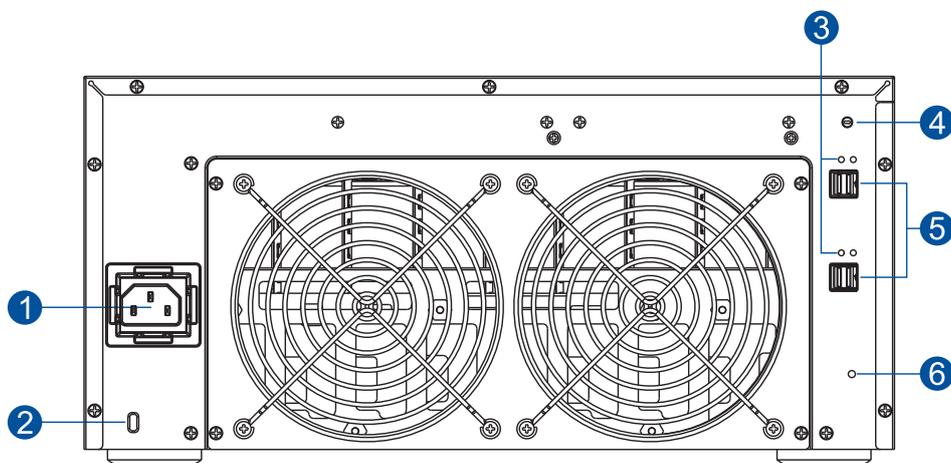
The drive tray is designed to accommodate 2.5-inch SATA SSD (solid state drives) and 3.5-inch HDD (hard disk drives). Get familiarized of the components of the drive tray bezel.



Number	Part	Description
①	Release button	This button unlocks the drive tray from the drive tray slot.
②	Power status LED	This LED provides the power status of the disk drive.
③	Drive busy LED	This LED provides the status of the disk drive.

## 1.4 Supported JBOD interface

The supported expansion system, JB 208, has two SAS wide ports on the rear panel that allows you to connect to GSe Pro 100 system and a series of JB 208 systems.



Number	Part
1	Power socket
2	Kensington lock
3	SAS expansion port status LEDs
4	Rotary ID switch
5	SAS expansion ports
6	Component/Initialization status LED

**WARNING!** JB Pro 208 is built of sensitive components. Unnecessary tampering may damage the system.

# Hardware installation 2

This chapter describes installing the modular components such as hard drives, cards, and other optional installation or connections such as expansions.

## 2.1 Installation prerequisites

Take note of the following installation prerequisites before you start with the installation:

- **Static-free installation environment**  
Install the system in a static-free environment to minimize the possibility of ESD (electrostatic discharge) damage.
- **Component check**  
Before the installation, ensure that you received all required components by verifying the package contents with the **Unpacking List** document. This document is included in the package. If there are items missing and/or damaged, contact your vendor for a replacement.
- **Hard drives**  
The SATA drives are purchased separately and must be available before the system installation.
- **Memory modules**  
If you want to change the pre-installed DIMM modules, ensure that they are compatible and purchased from a qualified vendor. Contact your vendor for the list of compatible DIMMs.
- **Cables**  
All cables that connect the system to the hosts are purchased separately. Contact your vendor for the list of compatible cables.

Ensure that you are familiar with the exact position of each plug-in module and interface connector. Also, ensure to handle the cables with care and with a correct routing path carefully planned. DO NOT bend or twist the cables as this may cause emission interference and accidental cable disconnection.



## 2.2 Installation procedures

This section details the installation procedures of the system, its components, and connections between equipment. The installation procedures in this section are in order, so it is strongly recommended that you follow the said order to reduce the time consumed during installation and prevent installation mistakes, technical mishaps, or physical injuries.

### 2.2.1 Unpacking the system

When your system package has arrived, check and confirm if the contents of your package are complete by referring to the **Unpacking List** document, which is bundled with in your package.

#### Accessory box contents

This box contains the following:

- RS-232C serial cable (mini USB to DB-9 cable)
- Screws (for 2.5 and 3.5 inch drives)
- Quick installation guide
- EonOne Quick Start Guide
- EonOne CD
- LAN cable
- Power cord

#### Pre-installed components

Below are the components that are pre-installed in the system:

- LED front panels
- DIMM modules
- M.2 flash module
- Drive trays

#### Components that need user installation upon unpacking

You must do the following installation:

- Assembling the drives to the drive trays
- Installing the host/expansion board to the system
- Cabling in between systems

### 2.2.2 Preparing for the installation

Before you start the system installation, you must prepare the following:

- 1 Small-sized flat blade screwdriver
- 2.5-inch or 3.5 inch disk drives (supports up to 3 TB each drive)



### 2.2.3 Installing the hard drives

This section gives you an overview of the hard drive requirements, installation, and important notices that you must take note.

---

**IMPORTANT!** You must install at least two (2) drives in bays 1 and 2 to initially set up the system.

---

**NOTES:**

- The drives are purchased separately.
  - Refer to section **Hard drive designation** for the order of the drive trays.
- 

#### Drive trays as hot-swappable components

The drive trays are hot-swappable components. You can replace a drive without shutting off the system. Use a supported RAID system when configuring your hard drives. See the following RAID configuration below:

- RAID 5 allows one hard drive to fail at any given time without losing data.
- RAID 6 allows two hard drives to fail simultaneously in any given time without losing data.

---

**NOTE:** Refer to *EonStor GSe Pro Software Manual* for RAID configuration details.

---

#### Hard drive installation prerequisites

When purchasing hard drives, ensure to consider the following factors:

- **Capacity (Mb/Gb)**

Purchase the hard drives that have the same capacity and rotation speed. RAID arrays use *least common denominator* approach, which means that the maximum capacity used in each drive to comprise a logical configuration is the maximum capacity of the smallest drive. We strongly suggest to use large storage capacity drives.

---

**IMPORTANT!**

- The hard drives may carry different block numbers, which means that the capacity may not be the same even if they are of the same model with the same rate capacity made by the same manufacturer.
  - When configuring the hard drives into a RAID array, you can use a smaller capacity as the *maximum disk capacity* in every hard drive. For configuration options, refer to the interface-specific firmware manual that came with your enclosure.
- 

- **Profile**

The drive trays and bays of the system are designed for 2.5-inch SATA SSDs or 3.5-inch SATA HDDs.

- **Drive type**

The system uses SATA-III 6 Gbps drives with up to 3 TB storage space per drive.

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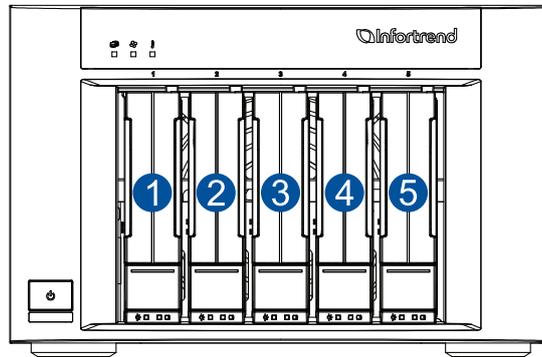
**IMPORTANT!**

- Ensure that you purchase the correct hard drives. Download the [Compatibility Matrix](#) for the list of compatible drives and other components.
  - To prevent accidents and technical mishaps, ensure to place the system first into a cool, dry, and secured place before installing the hard drives into the system.
  - DO NOT shift or tilt the system once it is powered on to avoid damaging the hard drives.
  - DO NOT remove two hard drive trays from the system simultaneously.
-

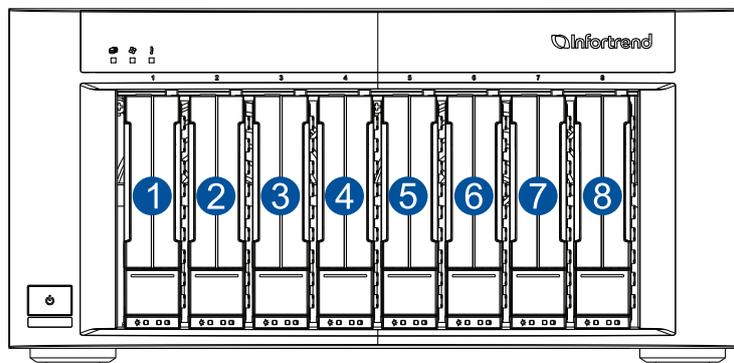


## Hard drive designation

Get to know the exact order of the hard drives to avoid removing the wrong drives out of the enclosure.



GSe Pro 105



GSe Pro 108

The order of the hard drives in the system is important because it helps you identify the faulty drive. Take a look at the table below of the fault tolerance of different RAID levels:

RAID	Minimum disk requirement	Maximum number of failed drives (without data loss)
0	2	No fault tolerance (1 drive failed and data loss occurred)
1	2	1 (mirrored pair)
5	3	1
6	4	2

**IMPORTANT!** Knowing the location of your drives is vital. There is a risk of data loss if you mistakenly remove 2 drives from a RAID 5 logical drive.



## Installing the hard drive into the drive tray and enclosure

---

### IMPORTANT!

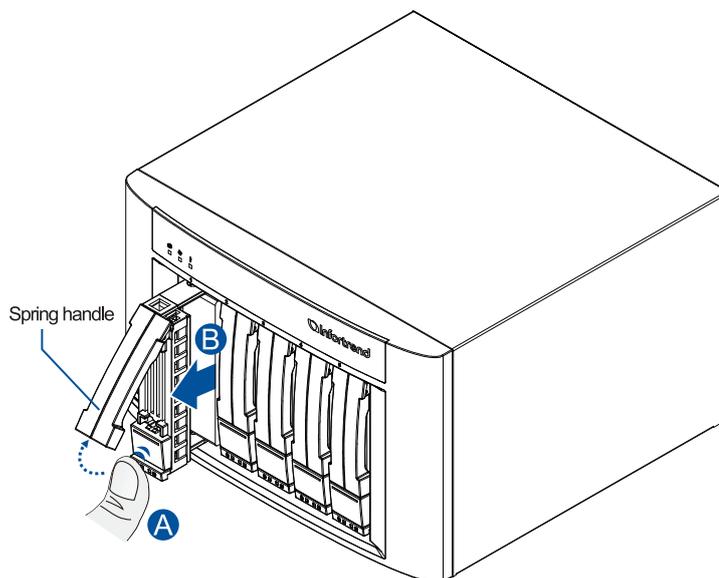
- Handle the disk drives with extreme care and observe all ESD prevention procedures when installing the hard drives.
  - ONLY use the screws that are bundled in the system package. Securing the drives with longer screws may damage them.
- 

**WARNING!** Be careful not to drop or put heavy objects on the drive tray, as these may cause to bend or deform the drive tray's structure. If the drive tray is deformed, it may not fit into the system's drive bay.

---

To install the hard drive into the drive tray and enclosure:

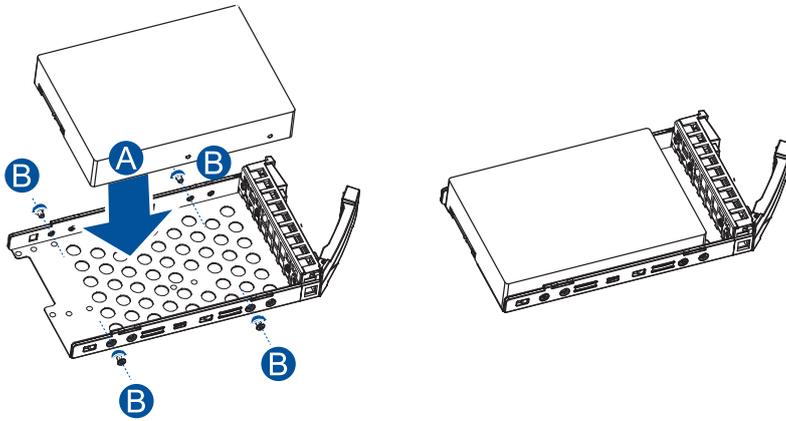
1. Press the release button to open the spring handle (A), then gently pull out the tray (B).



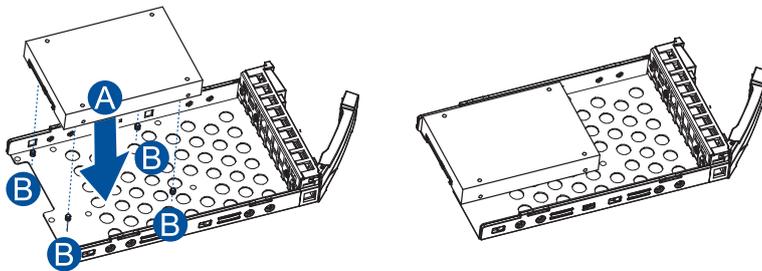


2. Orient and place the hard drive to the tray with the interface connectors facing the open side of the tray and the drive label is facing up (A), then secure the drive with four screws (B).

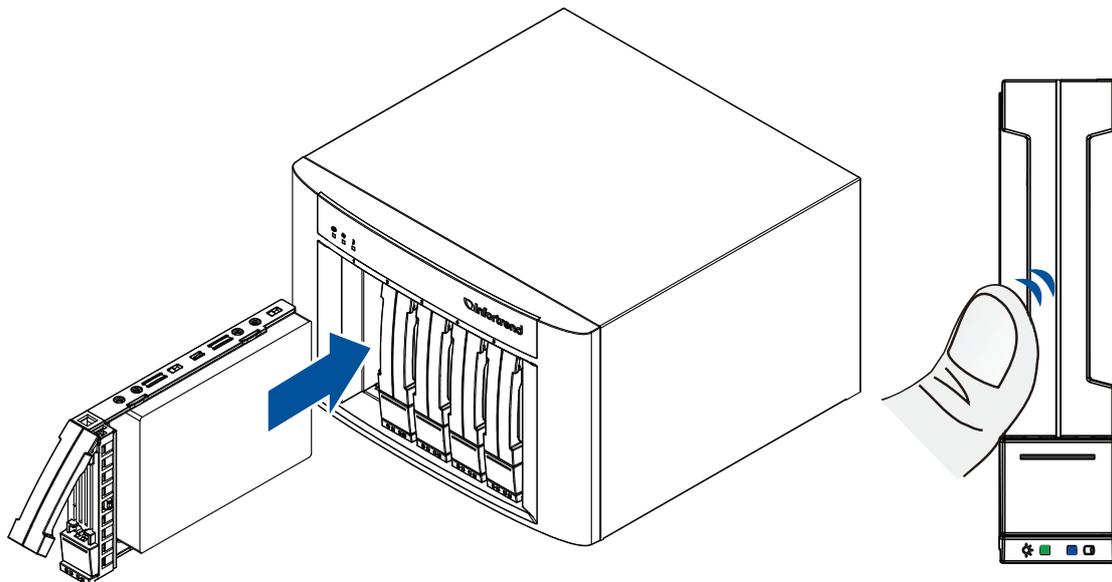
3.5-inch hard drive



2.5-inch hard drive



3. Insert the assembled hard drive and tray to the enclosure with the spring handle open, then close the spring handle after the drive is fully inserted to the bay.



Once all drives are installed, the system recognizes the disk drives and scans them automatically when powered on.

**WARNING!** Ensure that your system has all the drive bays occupied with the drive trays even if there are no hard drives installed. Without the drive trays, the ventilation is compromised and may cause overheating.



## 2.2.4 Installing a host/expansion board

---

**IMPORTANT!** Ensure that you installed at least four (4) 3.5-inch hard drives in bays 1-4 if you want to install a host/expansion board.

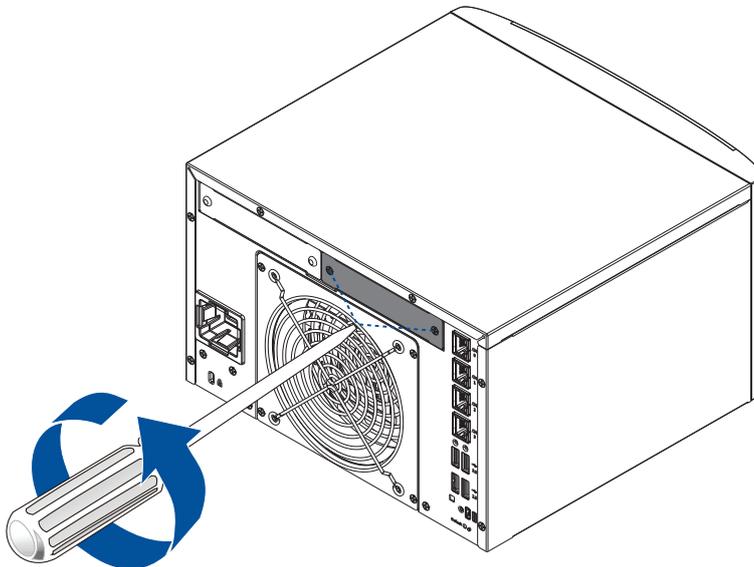
---

**NOTES:**

- A downtime may occur when you install or replace the host/expansion board.
  - To add or replace a host board, the firmware automatically restores the default factory settings of your system.
- 

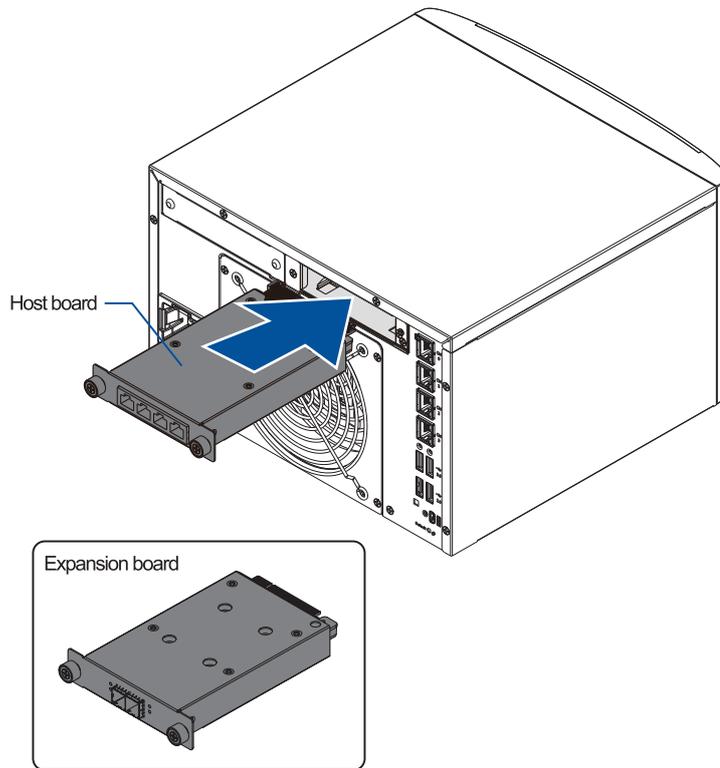
To install a host/expansion board:

1. Shut down your system.
2. Facing the rear panel, remove the two screws that secure the host/expansion board's dummy cover to the system.

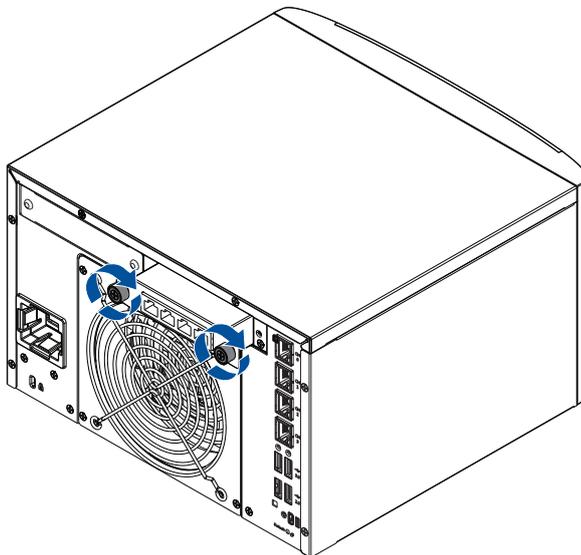




3. Orient and slide the host/expansion board into the host/expansion board slot.



4. Turn the host/expansion board's knobs clockwise to secure the host/expansion board to the system.



---

**NOTE:** Keep the dummy cover in a cool, dry place.

---

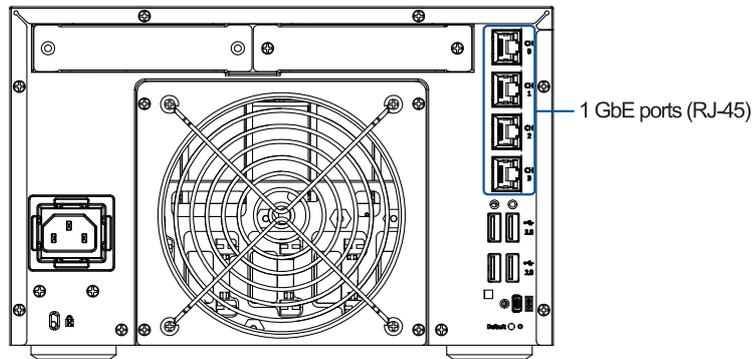


## 2.3 Connections

This section details the connection procedures of GSe Pro 100 system to the expansions, power source, connection status, and other connection configurations.

### 2.3.1 Connecting the network cables to the storage system

Connect one Ethernet cable to the system's 1 GbE Ethernet port.

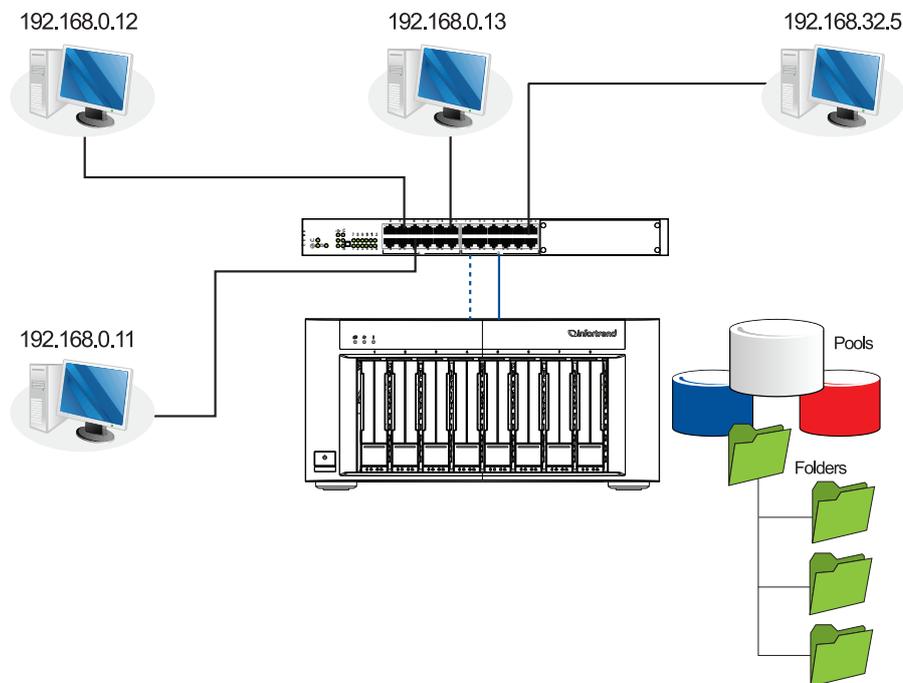


### 2.3.2 Connecting the devices to a network

For initial setup, connect your GSe Pro 100 system to a PC via an Ethernet cable and launch its interface via a browser to configure the settings. You can trunk (see blue lines) the Ethernet ports 0 and 1, or 2 and 3, to boost the bandwidth. You can also create pools and folders to share over the network. To do these, refer to *EonStor GSe Pro Software Manual* for a more detailed configuration.

For physical connection, the number of PCs that you can connect to LAN depends on the number of ports in your switch/router. For wireless connection, it is only limited to 2-254 IPs.

You can also configure the number of allowed remote connections. For more details, refer to your switch/router's user manual or *EonStor GSe Pro Software Manual*.



**NOTE:** Use CAT5e or a high-quality Ethernet cables and router/switch when assembling your LAN.



### 2.3.3 Expansion connections

A SAS host link cable is bundled per expansion package. If you need to purchase other cables, or if you need other cables of different lengths, contact your vendor.

Before configuring the expansions, you must take note of the following important points:

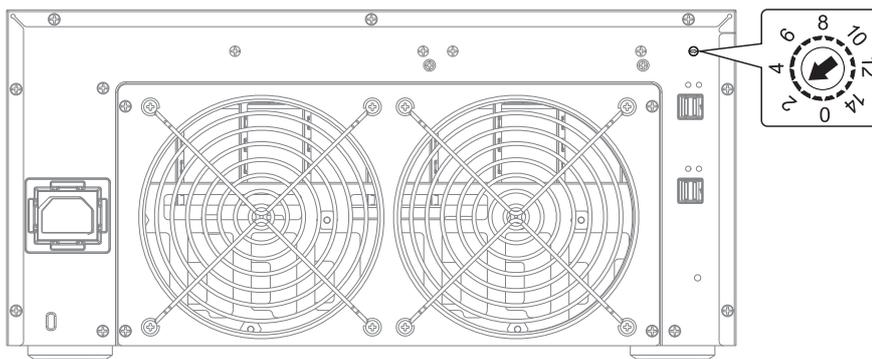
- For a cleaner and clutter-free system assembly, have a carefully planned routing paths when connecting between systems.
- All SAS cables are sensitive and must be handled with care. DO NOT bend or twist the cables when connecting between systems.

#### Setting the expansion IDs

Each expansion system must have a unique ID and you can configure the ID via the rotary ID switch. To set the expansion IDs, use a small flat-blade screwdriver.

You must take note of the following when setting the IDs on the expansion system:

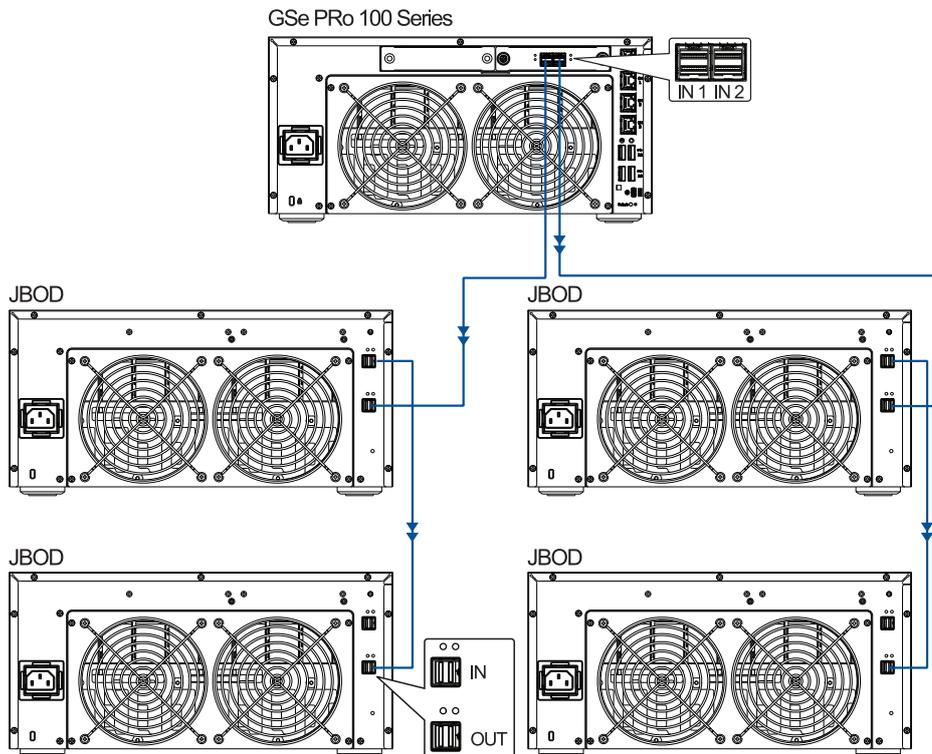
- Set the IDs from 1 to 15. The order starts from the expansion enclosure that is closest to the managing GSe Pro enclosure.
- Ensure to set a unique ID on each expansion enclosure so that the SAS WWN addresses of the disk drives are properly assigned. The system firmware automatically manages these addresses.





## Connecting expansion systems

Connect the expansion systems using the installed 12 Gb/s SAS expansion board.

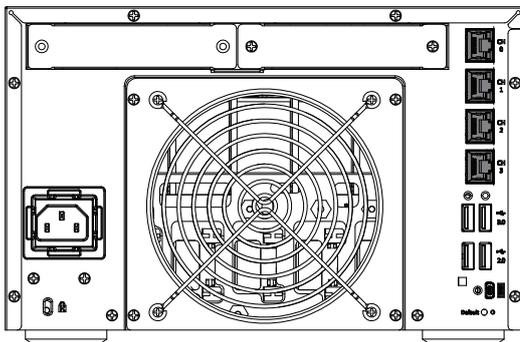


### 2.3.4 Power connection

Before connecting to a power source, ensure that all components are properly installed and the management interfaces are properly connected.

Take a look at the list below and check the following:

1. The drives are correctly installed to the drive trays.
2. All drive trays are installed to the system, whether or not they contain a hard drive.
3. The system is connected to at least one network via one of the 1 GbE Ethernet ports.

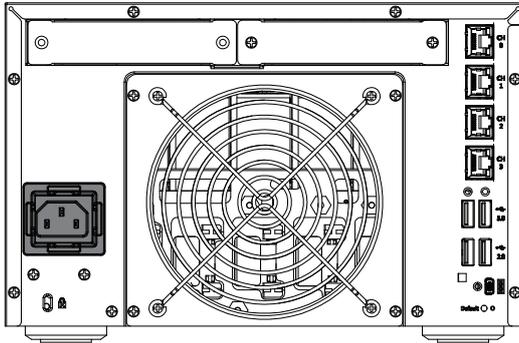


4. Ensure that the ambient temperature is lower than 40°C.



## Connecting to power source

Connect the bundled power cord to the system's power socket.

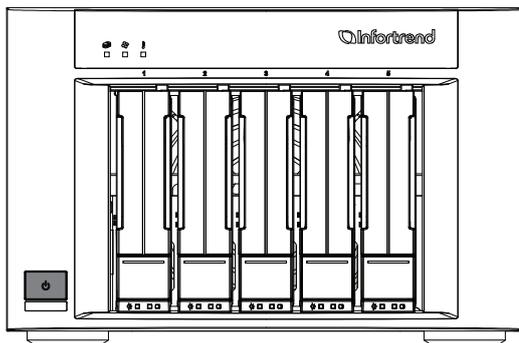


## Turning on the system

Before turning on the GSe Pro system, you must turn on the expansion enclosures first if your network configuration consists of multiple arrays.

To turn on the system:

1. Turn on the networking devices.
2. Turn on the JBOD/expansion systems.
3. Press the power button on the front panel.



4. Turn on the application servers.

---

### NOTES:

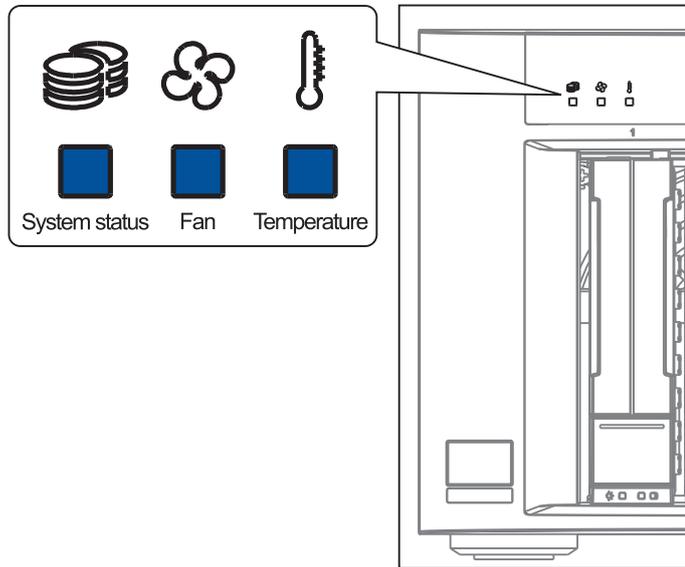
- The NAS server operates using DHCP (Dynamic Host Configuration Protocol) when all Ethernet ports are connected. When DHCP fails to obtain a valid IP address which resulted from the NAS server's inability to access the network, you can still log into the NAS server using its default address 10.10.1.1 of Ethernet port 3.
  - For gateway access with static IP address, contact your network administrator.
-



## Checking the power status

Once the system is on, no LEDs should light up in red or amber. Start verifying the system status via the following interfaces:

- Front panel LEDs



---

**NOTE:** Refer to chapter **System maintenance** for more information regarding the LED description.

---

### 2.3.5 Turning off the system

Press and hold the power button for five (5) seconds until the system LED  blinks or flashes.

---

**NOTE:** Pressing the power button for ten (10) seconds forces the system to shut down.

---

# 3

# System monitoring

This chapter details the monitoring features and the status of EonStor GSe Pro 100 Series systems.

## 3.1 Monitoring features

The EonStor GSe Pro 100 system is equipped with self-monitoring features that help you keep track of the system's operating status.

You can monitor your system's status with the following features:

- **Firmware**  
The firmware manages the controllers of the system, which is accessible in a terminal program via the serial port. For more details, see the firmware manual in the bundled CD.
- **EonOne**  
EonOne is a browser-based GUI (graphic user interface) software that you can install into a local or remote computer and access via the network. You can refer to EonOne manual in your bundled CD for more information.
- **LEDs**  
The LEDs are indicators that notify you of the system status, events, and errors or failed operations. The LEDs are located on both front and rear panels of the chassis.

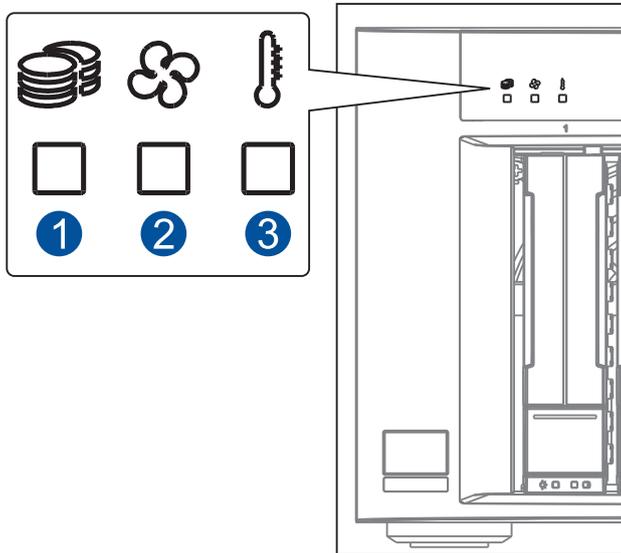


### 3.1.1 LEDs

This section details the system LEDs and their descriptions.

#### Front panel LEDs

- LEDs panel

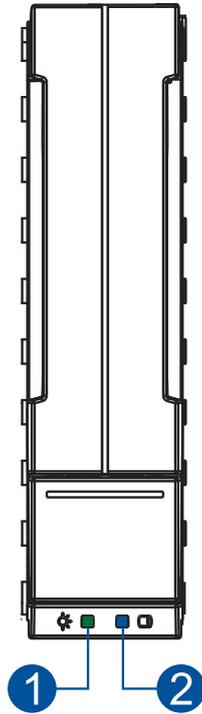


Number	LED name	Color/ Status	Description
①	System	■	The system is ready.
		⚡	The system is booting up or shutting down.
		■	The device encounters critical error/s.
		OFF	The system is off.
②	Fan	■	The system fan/s is/are running normally.
		■	A fan failure occurred.
③	Temperature	■	The internal temperature is normal and within the safety threshold.
		■	The internal temperature exceeds the safety threshold.

**WARNING!** If critical faults are indicated on the LED panel, verify the cause of the problem as soon as possible and contact your system vendor for component replacement.



- Drive tray bezel LEDs



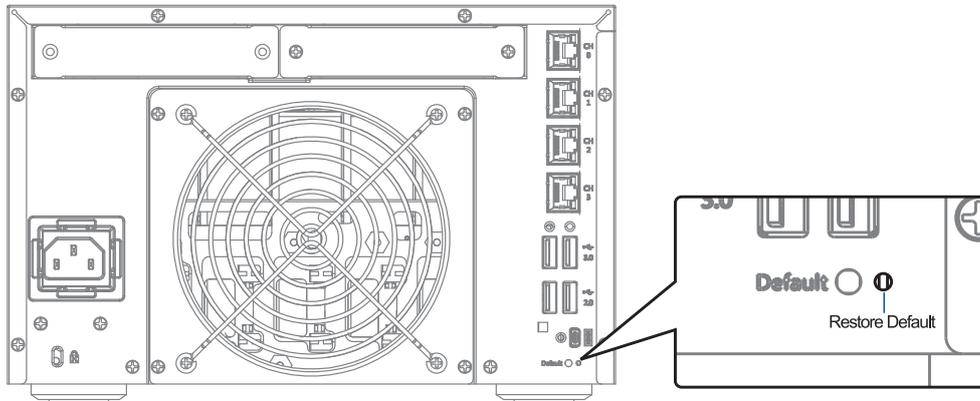
There are two LEDs on the tray that indicate the status of your drives. When you get notified by a drive failure message, you must check the drive tray LEDs to find the correct location of the failed drive.

Number	LED name	Color	Description
①	Power status		The drive bay is occupied and working normally.
			Disk drive failed or connection problem occurred.
②	Drive Busy		Data is being written or read from the drive. The drive is busy.
			The hard drive is plugged in but there is no activity going on.



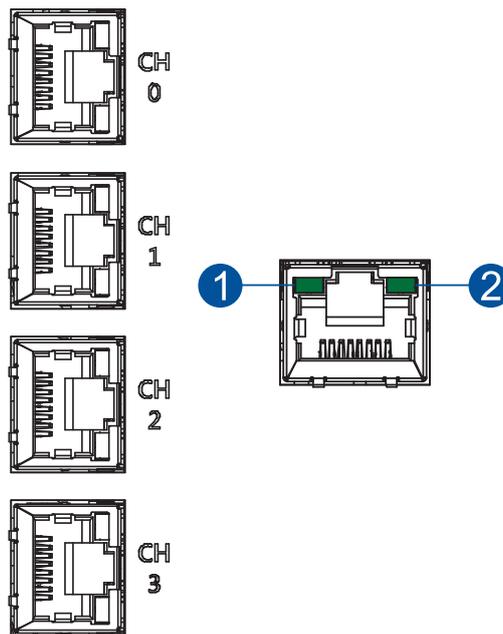
## Rear panel LEDs

- Default status LED



When you restore the system to its default setting, this LED rights up in ● for about a second, then proceed to system restoration after a press and hold of the Restore Default button.

- 1 GbE RJ-45 port LEDs



Number	LED name	Color/Status	Description
①	Link	<span style="color: green;">●</span>	A connection is established.
		<span style="color: green;">⚡</span>	Data I/O is ongoing.
		OFF	No connection is established.
②	Speed	<span style="color: green;">●</span>	1 Gb connection is established.
		OFF	10/100 Mb or no connection is established.

# System maintenance

# 4

This chapter provides maintenance and replacement procedures of replaceable components of your EonStor GSe Pro 100 Series systems.

## 4.1 Replaceable components

Your EonStor GSe Pro 100 is comprised of these replaceable components:

- Memory modules
- Host/expansion board
- Hard disk drives

---

**WARNING!**

- DO NOT remove a defective component from the system until you have the replacement on hand. Doing so may disrupt the internal airflow.
  - Consult with the qualified engineers who are familiar with the system to recommend you of the component replacements.
  - DO NOT use excessive force when installing a replaceable component. Forced installation of the component can damage the connector pins of the system or the component.
-



### 4.1.1 Replacing the memory module

The system comes with a pre-installed SO-DIMM module(s). You can upgrade them or replace when the bundled modules malfunction.

---

**IMPORTANT!** Contact your system vendor to help you purchase the compatible modules.

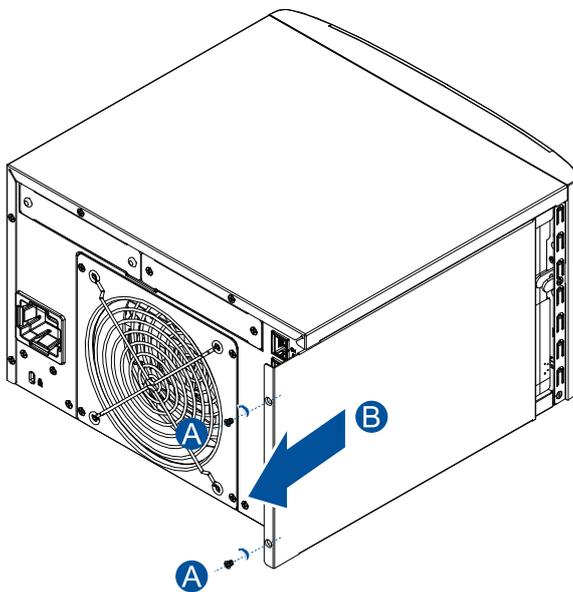
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**NOTE:** Refer to section **ESD precautions** for safety information.

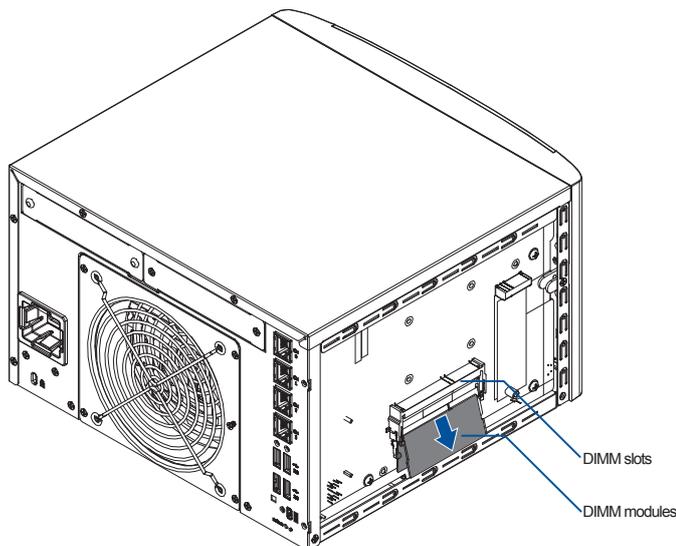
---

To replace the memory module:

1. Shut down your system. Wait for a minute for the remaining electric current to dissipate.
2. From the left side panel, loosen the screws (A), then pull to remove the left side cover (B).

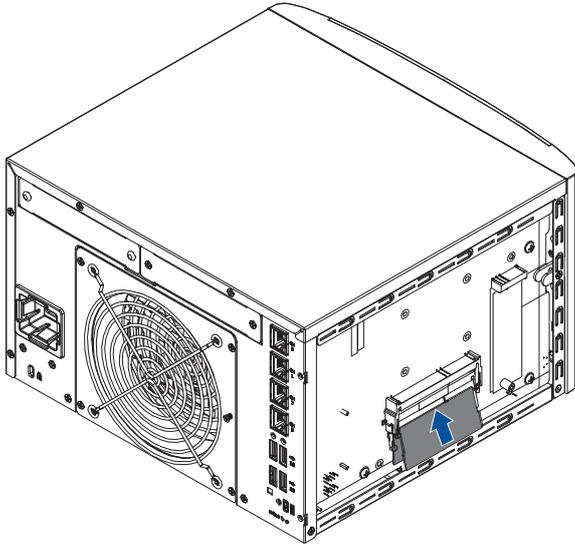


3. Remove the memory modules from the DIMM slots.

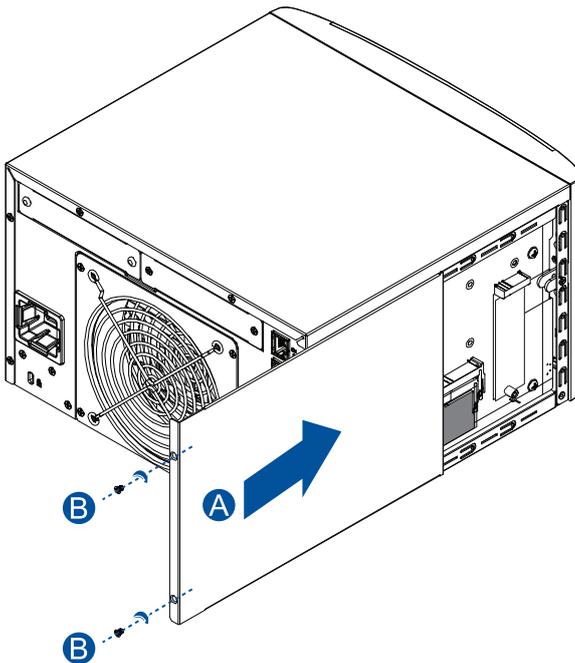




4. Insert the new or replacement memory modules to the DIMM slots.



5. Slide the cover back to the system (A), then secure it with the two screws you removed in step 1 (B).





## 4.1.2 Replacing the host/expansion board

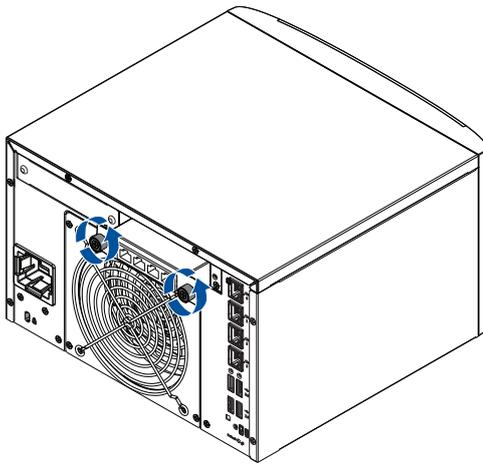
---

### IMPORTANT!

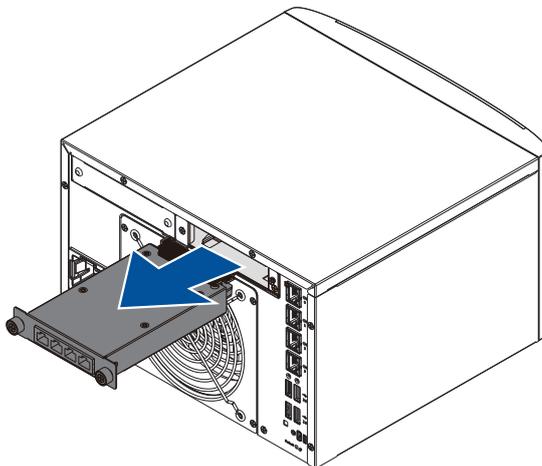
- The firmware automatically restores the system to its factory settings when you add or replace a host/expansion board.
  - Contact your system vendor to help you purchase the compatible host/expansion boards.
- 

To replace the host/expansion board:

1. From the left side panel, loosen the thumb screws of the host/expansion board.

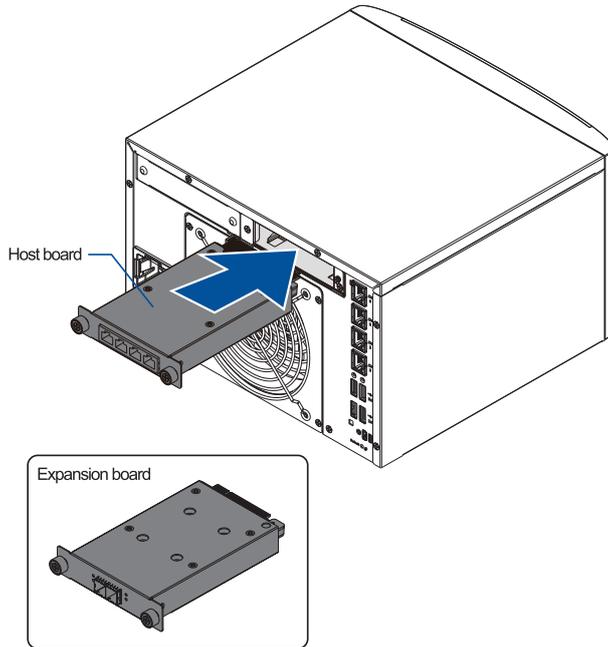


2. Remove the board from the system.

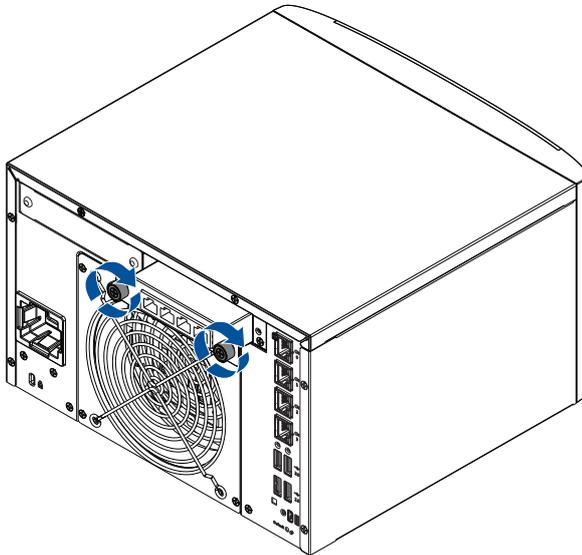




3. Orient and slide the replacement host/expansion board into the host/expansion board slot.



4. Turn the host/expansion board's knobs clockwise to secure the host/expansion board to the system.





### 4.1.3 Replacing the hard drives

---

**WARNING!**

- Ensure to have the replacement ready before replacing the hard drive. **DO NOT** leave the drive tray open for long periods to prevent disruption of internal airflow.
  - Handle the hard drives with extreme care. Hold them by the edges and avoid touching the circuits and interface connectors.
- 

To replace the hard drives:

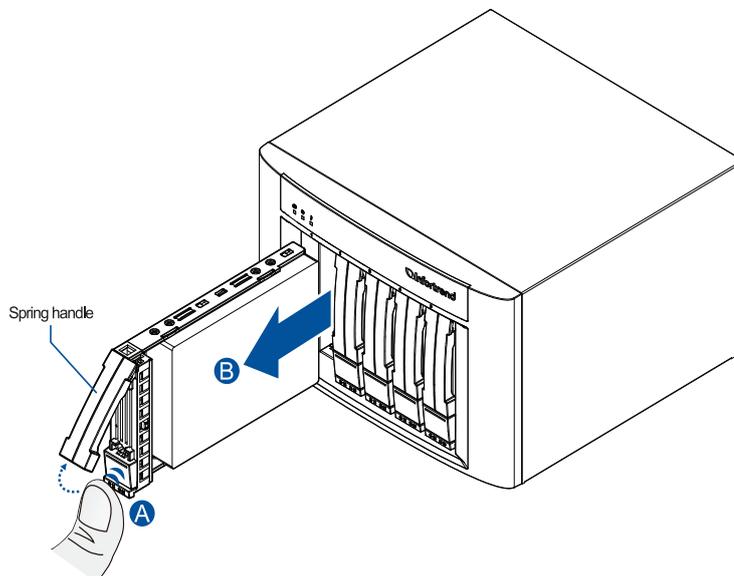
1. Identify the faulty hard drive using the EonOne software.

---

**NOTE:** See section **Hard drive designation** for the order of the drive bays.

---

2. When the faulty hard drive is located, push the release button to eject the drive tray (A), wait for 30 seconds for the drive to spin down, then pull out the tray using the spring handle (B).



3. Take out the defective hard drive from the tray, then assemble the hard drive replacement to the tray.

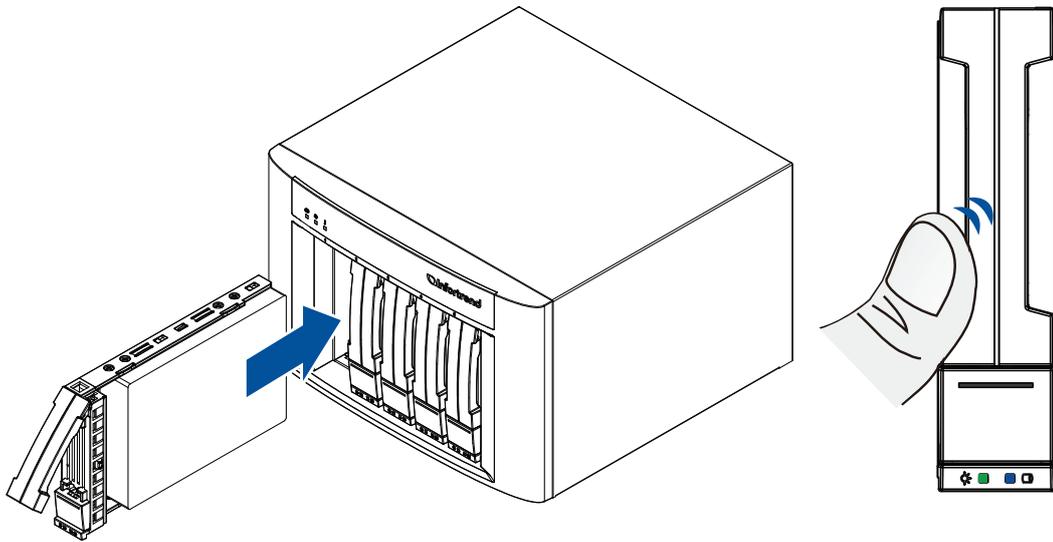
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**NOTE:** See section **2.2.3 Installing the hard drives** for more information.

---



4. Insert the assembled hard drive and tray to the enclosure with the spring handle open, then close the spring handle after the drive is fully inserted to the bay.



## 4.2 Restoring default settings

Before restoring the default settings, you must create a list of existing ID/LUN mapping information. Restoring your system erases the ID/LUN mapping associations (e.g. logical drive associated with host ID/LUN).

To restore the default settings:

1. Stop all input/output activities.
2. Save the current configuration using **Export NVRAM**.
3. Turn off the system.
4. Insert a straightened paper clip to the Restore Default button, then press and hold until the Restore Default LED lights up.

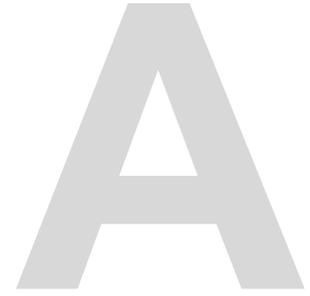
---

**NOTE:** During restoration, the Restore Default LED lights up in . It lights up in  after the restoration process is complete.

---

5. In the firmware, use **Import NVRAM** from reserve space or **Restore NVRAM from files** to restore your previous settings. ID/LUN mapping configuration is restored after applying your previous settings.

# Appendices



## Certifications

### Summary

<b>Safety</b>	UL 60950-1 second edition BSMI CNS 14336-1: 99 年版 CB IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013 EAC TP TC 004/2011, TP TC 020/2011
<b>EMC</b>	CE EN 55032:2012 +AC:2013 / EN61000-3-2:2014 EN 61000-3-3: 2013 / EN 55024:2010+A1:2015 BSMI (CNS 13438) FCC (FCC Part 15, subpart B)
<b>Environment</b>	IEC 60068-2 MIL-STD-810E/883E ISTA ASTM-D3332 IPC-TM-650
<b>Others</b>	ISO7779/3744 RoHS Microsoft WHQL-Windows Server 2003



## Safety and warning clauses

### User warning

This is Class A Information Technology product which may cause radio frequency interference when used in a residential area, in which case the user will be required to take certain appropriate measures/ troubleshooting.

#### 警告使用者

這是甲類資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當對策

#### 사용자안내문

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

### UL caution, safety, and warning markings

<b>SAFETY STOP - DO NOT ALTER</b>	<b>DISPOSITIF DE SÛRETÉ – NE PAS MODIFIER</b>
<b>CAUTION:</b> This product is combustible. A protective barrier or thermal barrier is required as specified in the appropriate building code	<b>ATTENTION:</b> Ce produit est combustible. Une barrière de protection ou une barrière thermique est exigée par le code du bâtiment en vigueur.
<b>WARNING</b> – Interconnection of more than one power supply source to a section of grid rail bus may present a fire hazard.	<b>AVERTISSEMENT</b> – Interconnexion de plus d'une source d'alimentation à une section de bus sur rail grille peut présenter un risque d'incendie.
<b>DANGER – RADIATION</b>	<b>DANGER – RAYONNEMENT</b>



## Declaration of the presence condition of the restricted substance marking

設備名稱：RAID 磁碟控制器 Equipment name		型號（型式）：GSe Pro 105/108 Type designation (Type) GSe Pro 105/108				
限用物質及其化學符號 Restricted substances and its chemical symbols						
單元 Unit	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr+6)	多溴聯苯 brominated biphenyls (PBB)	多溴二苯醚 brominated diphenyl ethers (PBDE)
外殼 Case	○	○	○	○	○	○
電路板 PCB assembly	—	○	○	○	○	○
電源供應器 Power supply	—	○	○	○	○	○
硬碟 Hard disk	—	○	○	○	○	○
電源線 Power cable	○	○	○	○	○	○
風扇 Fan	○	○	○	○	○	○
<p>備考1. “超出0.1 wt %” 及 “超出0.01 wt %” 係指限用物質之百分比含量超出百分比含量基準值。            Note 1: “Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.</p> <p>備考2. “○” 係指該項限用物質之百分比含量未超出百分比含量基準值。            Note 2: “○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.</p> <p>備考3. “—” 係指該項限用物質為排除項目。            Note 3: The “—” indicates that the restricted substance corresponds to the exemption.</p>						



## Contact information

### **Infortrend Technology, Inc. (HQ Taiwan)**

Address: 8F, No. 102, Section 3, Jhongshan Road, Jhonghe District, New Taipei City  
23544, Taiwan  
Telephone: +886-2-2226-0126  
Fax: +886-2-2226-0020  
Email: [sales.tw@infortrend.com](mailto:sales.tw@infortrend.com)  
Website: <https://www.infortrend.com/tw/Home>  
Support: <http://support.infortrend.com/Account/Logon>

### **Infortrend Japan, Inc.**

Address: 6F Okayasu Bldg., 1-7-14 Shibaura, Minato-Ku, Tokyo, 105-0023 Japan  
Telephone: +81-3-5730-6551  
Fax: +81-3-5730-6552  
Email: [sales.jp@infortrend.com](mailto:sales.jp@infortrend.com)  
Website: <https://www.infortrend.com/jp/Home>  
Support: <http://support.infortrend.com/Account/Logon>

### **Infortrend Corporation (Americas)**

Address: 435 Lakeside Dr. Sunnyvale, CA. 94085, USA  
Telephone: +1-408-988-5088  
Fax: +1-408-988-6288  
Email: [sales.us@infortrend.com](mailto:sales.us@infortrend.com)  
Website: <https://www.infortrend.com/us/Home>  
Support: <http://support.infortrend.com/Account/Logon>

### **Infortrend Technology, Ltd. (Beijing)**

Address: Room 1804, Block C, Ocean International Center, Dis. Chaoyang, Beijing, China  
北京市朝阳区东四环中路远洋国际中心C座1804室  
Telephone: +86-10-6310-6168  
Fax: +86-10-59648252  
Email: [sales.cn@infortrend.com](mailto:sales.cn@infortrend.com)  
Website: <https://www.infortrend.com/cn/Home>  
Support: <http://support.infortrend.com/Account/Logon>

### **Infortrend Technology Office (Shanghai)**

Address: Room 2306, 23/F, No. 88, Caoxi North Road, Xuhui District, Shanghai, China  
上海市徐汇区漕溪北路88号23层2306室  
Telephone: +86-10-63106168, +86-10-85866916, +86-10-85861801  
Fax: +86-10-59648252  
Email: [sales.cn@infortrend.com](mailto:sales.cn@infortrend.com)  
Website: <https://www.infortrend.com/cn/Home>  
Support: <http://support.infortrend.com/Account/Logon>



### **Infortrend Technology Office (Southwest China)**

Address: Room 1006, Building 2, Shangding International Building, No. 27 Renmin South Road, Wuhou District, ChengduChina  
成都市武侯区人民南路27号商鼎国际大厦2号楼1006室  
Telephone: +86-10-63106168, +86-10-85866916, +86-10-85861801  
Fax: +86-10-59648252  
Email: sales.cn@infortrend.com  
Website: <https://www.infortrend.com/cn/Home>  
Support: <http://support.infortrend.com/Account/Logon>

### **Infortrend Europe, Ltd. (EMEA)**

Address: 57 Tempus Business Centre, Kingsclere Road, Basingstoke RG21 6XG UK  
Telephone: +44-1256-305-220  
Fax: +44-1256-305-221  
Email: sales.es@infortrend.com, cs.eu@infortrend.com  
Website: <https://www.infortrend.com/uk/Home>  
Support: <http://support.infortrend.com/Account/Logon>

#### ***Infortrend worldwide sales offices***

##### ***Spain and Portugal sales offices***

Email: sales.es@infortrend.com, cs.eu@infortrend.com  
Website: <https://www.infortrend.com/es/Home>  
Support: <http://support.infortrend.com/Account/Logon>

##### ***Czech Republic sales office***

Email: sales.cz@infortrend.com, cs.eu@infortrend.com  
Website: <https://www.infortrend.com/cz/Home>  
Support: <http://support.infortrend.com/Account/Logon>

##### ***France sales office***

Email: sales.fr@infortrend.com, cs.eu@infortrend.com  
Website: <https://www.infortrend.com/fr/Home>  
Support: <http://support.infortrend.com/Account/Logon>

##### ***Italy sales office***

Email: sales.it@infortrend.com, cs.eu@infortrend.com  
Website: <https://www.infortrend.com/it/Home>  
Support: <http://support.infortrend.com/Account/Logon>



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*Germany/Deutschland GmbH sales office*

Email: [sales.de@infortrend.com](mailto:sales.de@infortrend.com), [cs.eu@infortrend.com](mailto:cs.eu@infortrend.com)  
Website: <https://www.infortrend.com/de/Home>  
Support: <http://support.infortrend.com/Account/Logon>

*Poland sales office*

Email: [sales.pl@infortrend.com](mailto:sales.pl@infortrend.com), [cs.eu@infortrend.com](mailto:cs.eu@infortrend.com)  
Website: <https://www.infortrend.com/pl/Home>  
Support: <http://support.infortrend.com/Account/Logon>

*Middle East sales offices*

Email: [sales.meat@infortrend.com](mailto:sales.meat@infortrend.com)  
Website: <https://www.infortrend.com/ae/Home>  
Support: <http://support.infortrend.com/Account/Logon>

*India sales office*

Email: [sales.in@infortrend.com](mailto:sales.in@infortrend.com)  
Website: <https://www.infortrend.com/in/Home>  
Support: <http://support.infortrend.com/Account/Logon>

*Oceania sales office*

Email: [sales.aunz@infortrend.com](mailto:sales.aunz@infortrend.com)  
Website: <https://www.infortrend.com/au/Home>  
Support: <http://support.infortrend.com/Account/Logon>