RAID Function Limitations

Feature	Options		Default Value	
	< 1GD DIMM	>= 1GD DIMM	< 1GD DIMM	>= 1GD DIMM
64-bit LBA Support (>2TB)	Yes		---	
Number of LDs	16(Max.)	128(Max.)	---	
Number of LVs	8(Max.)	32(Max.)	---	
Number of Partitions per LD	16(Max.)	64(Max.)	---	
Number of LUNs per Channel ID	32(Max.)	32(Max.)	8	
Number of LUNs	128(Max.)	1024(Max.)	---	
Optimization Mode	Seq. I/O or Random I/O		Seq. I/O	
Caching Mode (Default)	Write-Thru or Write-Back		Write-Back	
Striping size (Optimization for Sequential I/Os- RAID 5)	4/8/16/32/64/128/256KB/ 512KB/1024KB		128KB	
Auto-assign Global Spare	Enable/Disable		Disable	
Optimization for Sequential Mode of LD Capacity	64TB(Max).		64TB	
Number of Media Scan Task Schedules	16(Max).		16	
Member Drives / DIMM (RAID5) of LD	128 drives (Max). / 512MB or 112 drives (Max). / 256MB		---	

For more details on the Firmware, please refer to the **User Operation Manual** that came with your "**Product Utility CD**".

Infortrend®

EonStor® A24F-R2224-1 Subsystem
Quick Installation Guide
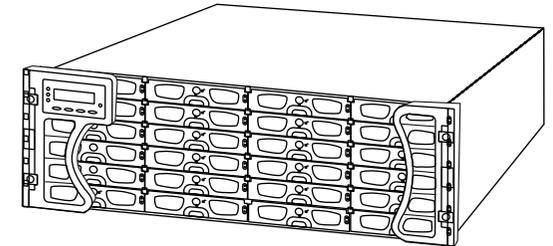
Precautions

1. The system is heavy even without drives installed. At least three (3) people will be required to install the subsystem.

2. The rack cabinet into which this subsystem will be installed must support overcurrent protection and must not be overloaded by the modules installed. Other requirements, such as ventilation airflow, rack stabilizing features, electrical earth, and electrical distribution, must comply with the technical specifications listed in the documentation that came with this product.

3. System Integrators should ensure that any integrated storage solution that includes this product has been tested and proved to meet government regulations and codes for subjects including safety, fire, and electrical.

4. The subsystems come with pre-installed DIMM modules in its RAID controller units.

5. Make sure you have a soft, clean surface on which to place your subsystem before working on it. Placing the system on a rough surface during servicing may damage the chassis finish.

6. Do not remove any module or component item from its anti-static bag until you are ready to install it. Pick up and hold modules by their edges or canister. Avoid touching PCBs and connector pins.

7. Observe all standard ESD prevention methods, e.g., wear an anti-static wristband to prevent static electricity from damaging the electric components.

8. The subsystem models can be rackmounted in the industry standard 19-inch racks. The 32" or 36" Slide rail mounting kits are sold separately.

Installation Procedures

1.Unpacking the Subsystem

2.Hard Drive Installation

3.Drive Tray Installation

4.Subsystem Cable Connections

5.DIP Switch Settings

6.Power On

Pre-installed Modules

1.LCD panel

2.Front handles

3.Controller modules

4.DDR RAM DIMM module

5.Battery backup units (BBUs)

6.Host I/O modules

7.Cooling modules

8.Power supply units (PSUs)

9.Backplane board

Modules to be Installed

1.Hard drives

2.Drive trays (MUX kit preinstalled)

3.Power cords (and cable clamps)

4.COM1 and COM2 (RS-232C and UPS) serial cables

5.Ethernet cable(s)

6.SFP transceiver and FC cables

Power On

To power on the subsystem, follow these steps:

Step 1.Install all the hardware components.

Step 2.Make all the connections described above.

Step 3.Power on any external connection devices (e.g., a network hub, router, or FC switch).

Step 4.If you have daisy chained subsystems, power on the subsystems that are not connected directly to the host computer(s). Otherwise, skip this step.

Step 5.Power on the A24F-R2224-1 subsystem by turning on the power switch on the subsystem's rear panel. For the location of the power switch, please see **Figure 5**. The subsystem may take more than one minute for self test and system initialization.

Step 6.Power on the host computer(s). Please refer to the documentation that came with your application hosts for the power on procedure.

DIP Switch Settings

The location of enclosure DIP switch is shown in **Figure 10** and its configuration options explained below.

Hub Enabled (Default)

When the internal hub (bypass circuits) is enabled, the same channels on the controller pair are looped together; i.e., channel 1 on controller A with channel 1 on controller B. (See **Figure 11**) Signal paths are connected through a passive backplane between the dual-redundant RAID controllers. In the event of single controller failure, host access is directed to the surviving controller regardless of which port an application server is connected to.

The onboard hub on the independent I/O modules also facilitates the configuration with cascaded RAID subsystems. The onboard hub helps ensure path integrity when a single controller fails or a link is broken between enclosures.

Hub Disabled

The onboard hub can be disabled in configurations involving an externally implemented bypass mechanism, e.g., a FC switch. When disabled, host channels on the controller pair are not looped together, and the host channels on each RAID controller are separately connected to specific host ports on I/O modules. (See **Figure 12**)
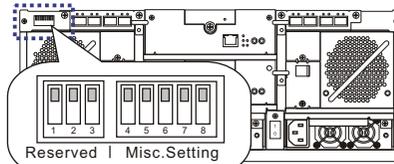

Figure 10: Enclosure DIP Switch

DIP	Definition	Default
1-3	Reserved	- - -
4	CH0 & CH1 Hub Enable/Disable	Enable
5	CH0 & CH1 Link Speed	Auto
6-8	Reserved	- - -

Table 1: DIP Switch Pin Definition

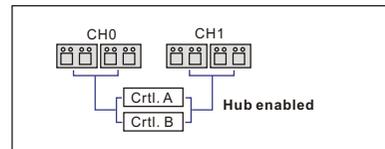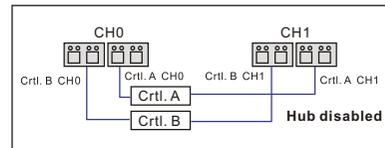**Figure 11**: Onboard Hub Enabled

Figure 12: Onboard Hub Disabled

Unpacking the Subsystem

Check the included **Unpacking Checklist** and verify the model name and shipping contents against the checklist.

Installing Hard Drives into Drive Trays

Step 1. Place the SATA hard drive into the drive tray. Make sure that the hard drive connector lines up with the rear of the tray and the label side is facing up. (See **Figure 1**)

Step 2. Secure the hard drive using four (4) of the supplied 6/32 flat-head screws through the pre-drilled holes on the sides of the drive tray.
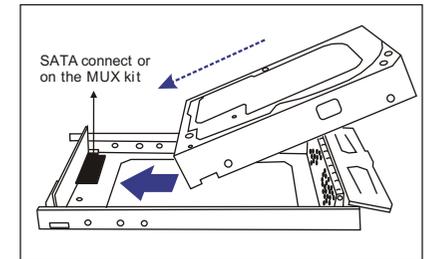

Figure 1: Installing a SATA Hard Drive

Once the hard drives are installed into drive trays, install all twenty four (24) drive trays into the subsystem. Please refer to the drive tray installation procedures below or in the Hardware Manual located in the product utility CD.

Drive Tray Installation

Step 1. Use a flathead screwdriver to turn the drive tray key-lock to the unlocked position, i.e., the groove on its face is in a horizontal orientation. (See **Figure 2**)

Step 2. Open the front flap on the drive tray by pushing the release button on the front of the drive tray in a downward direction. (See **Figure 3**)

Step 3. Line the drive tray up with the slot in which you wish to insert it. Make sure that it is resting on the rails inside the enclosure, and then gently slide it in. This should be done smoothly and gently. (See **Figure 4**) Do not force or slam the module into place, doing so will damage the back-end connectors.

Step 4. Close the front flap on the drive tray. Make sure the front flap is closed properly to ensure that the connector at the back of the drive tray is firmly connected to the corresponding connector on the backplane board. If the front flap is not closed properly, then the connection between the hard drive and the subsystem will not be secure. Lock the flap in place by turning the key-lock until the groove on its face is in a vertical orientation.
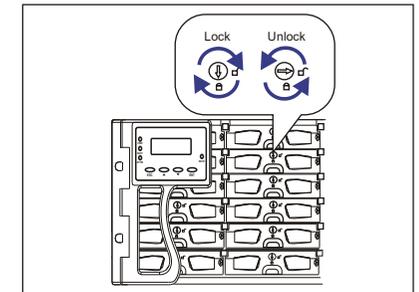

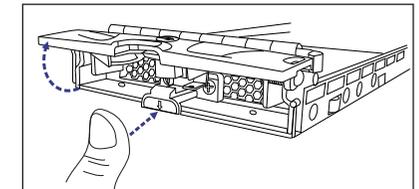**Figure 2: Drive Tray Key-Lock Rotation**
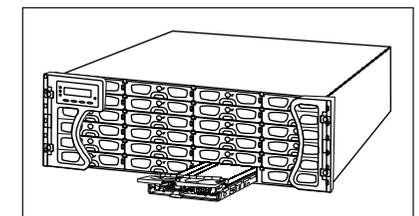

Figure 3: Opening Drive Tray Front Flap

Figure 4: Installing a Drive Tray

Subsystem Cable Connections

Power Cords

Step 1.Connect the three (3) provided power cords to the power sockets on the back of the system. (See **Figure 5**)

Step 2.Make sure the power source is within the correct power range (90 to 264VAC) prior to powering on. Auto-ranging is supported by the power supply modules.

Step 3.Plug the other end of the power cords into the power source.

Cable Clamp Installation

Step 1.Connect a power cord to a subsystem power socket so that you can determine the correct position of the cable clamp along the cable strap. The diagram below shows the relative positions of a power cord, cable clamp, and cable strap.

Step 2.**Connect the cable clamp to the cable strap.** Insert the flat angled end of the cable strap through the small opening (the tie head) underneath the cable clamp with the smooth side of the strap facing up and the ribbed side facing down and the release tab at the end. See the diagram below.
Press down the release tab to adjust the position of the cable clamp along the strap.

Step 3.**Mount the cable strap to the chassis by** inserting the push-in barb anchor into the pre-drilled hole underneath the power supply.

Step 4.**Secure the power cord with the cable clamp.** Flip open the cable clamp and wrap it around the power plug. If necessary, use the release tab to adjust the location of the clamp so it aligns with the base of the power cord as shown below. Press the clip lock on the side of the clamp until it snaps into position. Now the power cord connection is secured.

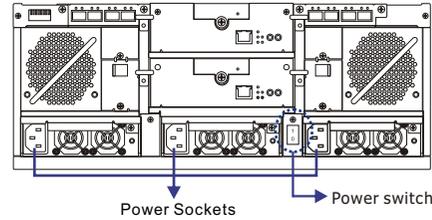**Step 5**.Repeat the process to secure every power cords to the subsystem.

Power Sockets → Power switch

Figure 5: Locations of Power Switch and Power Sockets

Cable clamp fits here
Align with chassis
Adjust the relative position
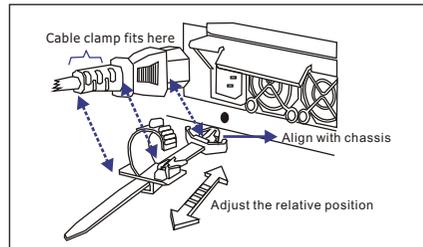
Figure 6: Power Cord, Cable Clamp, and Cable Strap Positions
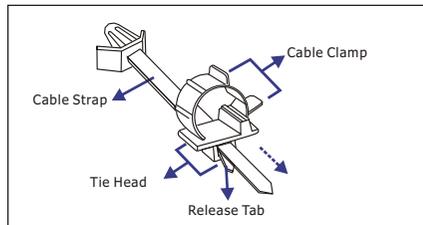

Cable Clamp
Cable Strap
Tie Head
Release Tab

Figure 7: Inserting Cable Strap into Cable Clamp

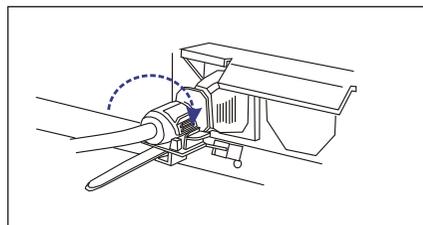**Figure 8:** Power Cord Locked into Position

RJ-45 Ethernet Port
After the subsystem has been assigned a permanent IP, a Cat5 Ethernet cable can be used to connect the RJ-45 Ethernet port to a network hub, enabling you to manage your subsystem via standard TCP/IP. (See **Figure 9**)

COM Ports
Each controller module comes with two (2) COM ports. The port on the left (COM1) is reserved for terminal emulation management for access to the firmware-embedded configuration utility, and can be used to assign an IP address to the Ethernet port. Use the included Y-cable to connect the COM1 on both controllers for path redundancy. The port on the right (COM2) is used for UPS connection. Two (2) audio-jack to DB9 cables are provided to facilitate the connection of these ports.

Host Channels
The A24F-R2224-1 comes with eight (8) SFP ports on two (2) separate host I/O modules for host connectivity and daisy chaining (see **Figure 9**.) SFP transceiver modules and Fibre Channel optical cables are user-supplied items and should be purchased separately. By default, the onboard hub is enabled in both I/O modules. For more information on host connection and sample topologies, please refer to **Chapter 4** of the included **Hardware Manual**.
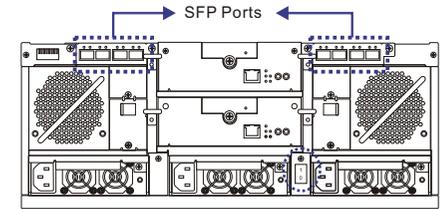

SFP Ports

Figure 9: Locations of SFP Ports