

XCubeFAS 3126

Hardware Manual

March 2024

ANNOUNCEMENT

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NOTICES

Information contained in this manual has been reviewed for accuracy. But it could include typographical errors or technical inaccuracies. Changes are made to the document periodically. These changes will be incorporated in new editions of the publication. QSAN may make improvements or changes in the products. All features, functionality, and product specifications are subject to change without prior notice or obligation. All statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

REGULATORY STATEMENTS

FCC Statement

This device has been shown to be in compliance with and was tested in accordance with the measurement procedures specified in the Standards and Specifications listed below.

Technical Standard: FCC Part 15 Class A
IC ICES-003

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。VCC1-A

警告：這是甲類的資訊產品。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的對策。

CE Statement

This device has been shown to be in compliance with and was tested in accordance with the measurement procedures specified in the Standards and Specifications listed below.

Technical Standard: EMC DIRECTIVE 2014/30/EU
(EN55032 / EN55035)

UL Statement

Rack Mount Instructions - The following or similar rack-mount instructions are included with the installation instructions:

1. Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
2. Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
3. Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
4. Circuit Overloading – Careful consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
5. Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).



CAUTION

The main purpose of the system left and right ears are for 19" rack use only. Do NOT use those ears to carry or transport the system.

The ITE is not intended to be installed and used in a home, school or public area accessible to the general population, and the thumbscrews should be tightened with a tool after both initial installation and subsequent access to the panel.

Warning: Always remove all power supply cords before service

This equipment intended for installation in restricted access locations.

- Access should only be allowed by qualified SERVICE PERSONS or by USERS who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken.
- Access is through the use of a TOOL or lock and key, or other means of security, and is controlled by the authority responsible for the location.
- Recommended operation temperature: 0 ~ 35°C (31.99 ~ 95°F); operation rating (100-127 Vac, 50-60Hz, 10.0A; 200-240 Vac, 50-60Hz, 5.0A)



CAUTION

CAUTION: (English)

Risk of explosion if battery is replaced by incorrect type. Please replace the same or equivalent type battery use and dispose of used batteries according to the instructions.

ATTENTION: (French)

IL Y A RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UNE BATTERIE DE TYPE INCORRECT. METTRE AU REBUT LES BATTERIES USAGÉES CONFORMEMENT AUX INSTRUCTIONS.

VORSICHT: (German)

Explosionsgefahr bei unsachgemäßem Austausch der Batterie. Entsorgung gebrauchter Batterien nach Anleitung.

ADVERTENCIA: (Spanish)

Las baterías pueden explotar si no se manipulan de forma apropiada. No desmonte ni tire las baterías al fuego. Siga las normativas locales al desechar las baterías agotadas.

警告: (Simplified Chinese)

電池如果更換不正確會有爆炸的危險，請依製造商說明處理用過之電池。

警告: (Traditional Chinese)

電池如果更換不正確會有爆炸的危險，請依製造商說明處理用過之電池。



CAUTION

Replacing incorrect type of battery will have the risk of explosion. Please replace the same or equivalent type battery use and dispose of used batteries according to the instructions.



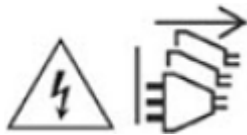
CAUTION RESTRICTED ACCESS LOCATION

This system is intended for installation only in restricted access locations as defined where both these conditions apply:

- Access can only be gained by service persons or by users who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken.
- Access is through the use of a tool or lock and key, or other means of security, and is controlled by the authority responsible for the location.

Warning

- Electric shock hazard



The system may have one or more power supply unit (PSU) cords. To avoid serious injuries, it is recommended that all PSU power cords must be disconnected by trained service technicians before installing or replacing system components.



INFORMATION

QSAN provides limited warranty for QSAN-branded hardware products:

- System hardware and peripheral product (s): 3 years limited warranty from date of original purchase.
- Battery Backup Module or super capacitor module (applies for cache-to-flash module): 1-year limited warranty from date of original purchase.

For more detail warranty policy, please refer to QSAN official web site:

<https://www.qsan.com/warranty>

PREFACE

About This Manual

This manual provides technical guidance for designing and implementing QSAN XCubeFAS series flash-based array system, and it is intended for use by system administrators, storage consultants, or anyone who has purchased these products and is familiar with servers and computer networks, network administration, storage system installation and configuration, storage area network management, and relevant protocols.



CAUTION

Do NOT attempt to service, change, disassemble or upgrade the equipment's components by yourself. Doing so may violate your warranty and expose you to electric shock. Refer all servicing to authorized service personnel. Please always follow the instructions in this owner's manual.

Related Documents

There are related documents which can be downloaded from the website.

- [Quick Installation Guide](#)
- [XEVO Software Manual](#)
- [Compatibility Matrix](#)
- [White Papers](#)
- [Application Notes](#)

Technical Support

Do you have any questions or need help trouble-shooting a problem? Please contact QSAN Support, we will reply to you as soon as possible.

- Via the Web: https://www.qsan.com/technical_support
- Via Telephone: +886-2-77206355
- (Service hours: 09:30 - 18:00, Monday - Friday, UTC+8)
- Via Skype Chat, Skype ID: qsan.support
- (Service hours: 09:30 - 02:00, Monday - Friday, UTC+8, Summer time: 09:30 - 01:00)
- Via Email: support@qsan.com

Information, Tip, and Caution

This manual uses the following symbols to draw attention to important safety and operational information.



INFORMATION

INFORMATION provides useful knowledge, definition, or terminology for reference.



TIP

TIP provides helpful suggestions for performing tasks more effectively.



CAUTION

CAUTION indicates that failure to take a specified action could result in damage to the system.

Conventions

The following table describes the typographic conventions used in this manual.

CONVENTIONS	DESCRIPTION
Bold	Indicates text on a window, other than the window title, including menus, menu options, buttons, fields, and labels. Example: Click the OK button.
<i><Italic></i>	Indicates a variable, which is a placeholder for actual text provided by the user or system. Example: copy <i><source-file></i> <i><target-file></i> .
[] square brackets	Indicates optional values. Example: [a b] indicates that you can choose a, b, or nothing.
{ } braces	Indicates required or expected values. Example: { a b } indicates that you must choose either a or b.
vertical bar	Indicates that you have a choice between two or more options or arguments.
/ Slash	Indicates all options or arguments.
underline	Indicates the default value. Example: [<u>a</u> b]

1. PRODUCT OVERVIEW

Thank you for purchasing QSAN Technology, Inc. products. XCubeFAS is the leading enterprise flash storage array developed to allow all enterprises to easily enter the era of flash storage. It offers native flash architecture with the exclusive optimization for solid state drive storage, and delivers the best flash data experience of the next generation.

1.1. Introduction to XCubeFAS Series

QSAN XCubeFAS series is a flash-based array system, the system is composed of system hardware and the XEVO operating system, the system hardware is a modular design and FRU (Field Replacement Unit) optimized. All the hardware modules are inside the rack mount chassis including: system controllers, front panel, rear panel, redundant power supply units and fan modules, cache-to-flash modules, and expansion slots for optional Fibre Channel or Ethernet high-speed host cards. This manual will direct you step by step to familiarize you with the hardware components, how to install the system, carry out the initial configuration, and provide you with some quick maintenance guidelines.



INFORMATION

For how to use the XEVO operating system, please refer to the [XEVO Software Manual](#).



Figure 1-1 XF3126 Form Factor

1.2. Hardware Specifications

For detailed hardware specifications, please refer to the [XF3126 Datasheet](#) which can be downloaded from the website.

1.3. Package Contents

For detailed package contents, please refer to the [Quick Installation Guide](#) which can be downloaded from the website.

2. SYSTEM COMPONENTS OVERVIEW

This chapter outlines the key hardware components or modules of the system. After reading this chapter, you will have a basic understanding of each part of the hardware and give you the ability to be able to successfully configure and operate your system.

2.1. Front Panel

In this session, we will describe the system controls and indicators, disk drive numbering, and the disk drive LEDs in the front panel.

2.1.1. System Controls and Indicators

The XCubeFAS series features a unique design: the system controls and indicators are located on the right ear. The system control and indicator module integrates functional buttons and system state indicators, which can be easily operated and read by user. The figure below contains detailed information about the button and indicator module. Please refer to the following for the definition of LED behavior.

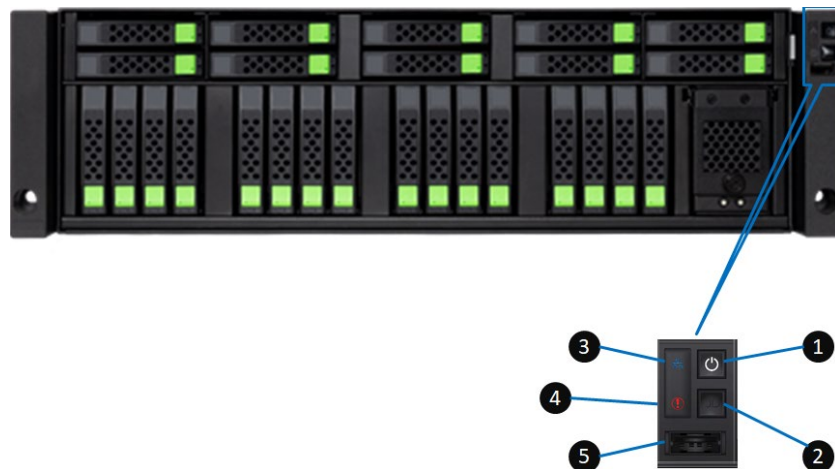


Figure 2-1 System Controls and Indicators

Table 2-1 System Control and Indicator Descriptions

NUMBER	DESCRIPTION	DEFINITION
1	Enclosure Power Button / LED	<p>Power Button</p> <ul style="list-style-type: none">Press the button one time to turn ON the system power and keep pressing for 4 seconds to turn OFF the system power. <p>Power LED</p> <ul style="list-style-type: none">Solid White: Power is ON (at least one power supply unit is supplying power to the system).Blinking White: The system is in the stage of boot or shutdown.Off: The system is shutdown.
2	UID Button / LED	<p>UID (Unique Identifier) button</p> <ul style="list-style-type: none">Press the button one time to turn it ON and press it again to turn it OFF. <p>UID (Unique Identifier) LED</p> <ul style="list-style-type: none">Solid Blue: The system has been identified.Off: The system has not been identified.
3	Enclosure Access LED	<p>Enclosure Access LED indicates the host interface connectivity.</p> <ul style="list-style-type: none">Blinking Blue: The host interface activity is on-going.Off: There is no host interface activity.
4	Enclosure Status LED	<p>Enclosure Status LED indicates current health status of the system.</p> <ul style="list-style-type: none">Solid Amber: System has errors including PSU failure, abnormal voltage, abnormal temperature, any fan module failed or removed, controller degraded, pool

		degraded, pool failure, SSD cache pool degraded, or SSD cache pool failure. <ul style="list-style-type: none">Off: The system is healthy.
5	USB Port	The USB port can be plug in the LCM (LCD Module).

2.1.2. System Disk Drive Numbering

The figure below illustrates the disk drive numbers in multiple rows from top to bottom and left to right. If you want to check the disk drive numbering rule while installing the disk drives into the system, the disk drive numbering is printed on the lower part of the system front.

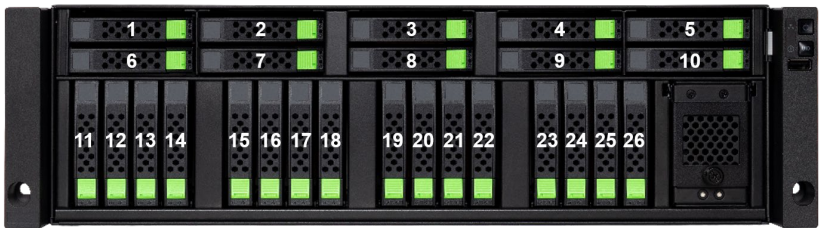


Figure 2-2 Disk Drive Numbering



TIP

Please insert any one of the first four hard drives, the event log can be saved and displayed at the next system startup. Otherwise, the event log cannot be saved.

2.1.3. Disk Drive LEDs

Please refer to the following for the definition of LED behavior.

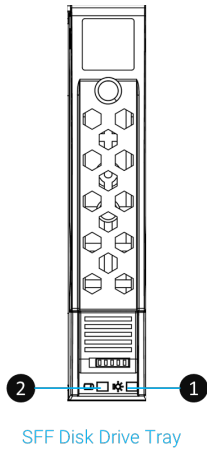


Figure 2-3 Disk Drive Indicators

Table 2-2 Disk Drive Indicator Description

NUMBER	DESCRIPTION	DEFINITION
1	Disk Drive Power LED	<ul style="list-style-type: none">• Solid Blue: The disk drive is inserted and no data access.• Blinking Blue: The disk drive is accessing data.• Off: There is no disk drive inserted.
2	Disk Drive Status LED	<ul style="list-style-type: none">• Solid Amber:<ul style="list-style-type: none">▪ When system is booting (Only for XF3126D)▪ There is disk drive error.• Blinking Amber (interval of 0.5 sec): The disk drive is rebuilding.• Blinking Amber (interval of 0.05 sec): Identify the disk drive.• Off: The disk drive is healthy.

2.2. Rear Panel

In this section, we will describe the name and location of the key components and modules in the rear panel. The following content outlines the detail of the rear panel and components.

2.2.1. Rear Panel Layout

Figures and the table below illustrate the system rear panel layout.

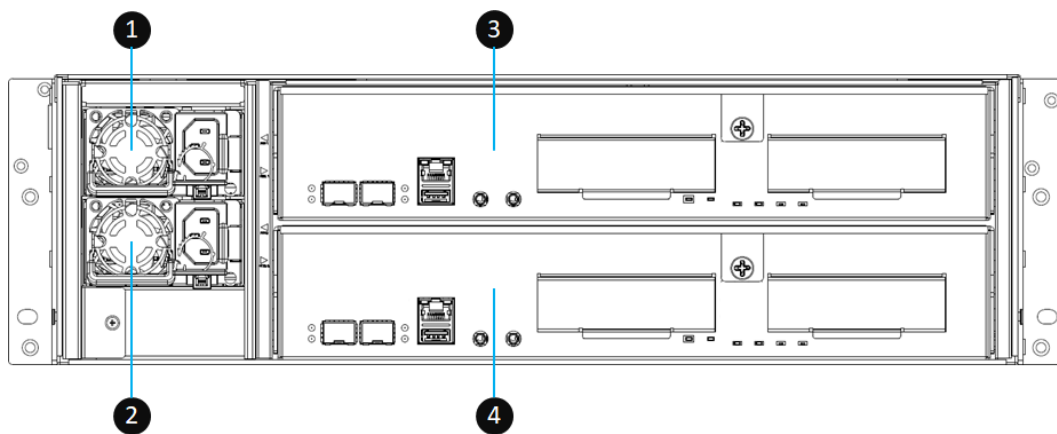


Figure 2-4 Rear Panel Layout

Table 2-3 Rear Panel Layout

ITEM NUMBER	DESCRIPTION
1	Power Supply Unit 1
2	Power Supply Unit 2
3	Controller Module 1
4	Controller Module 2

2.2.2. Controller Module

The following image and table illustrate each component of a controller module.

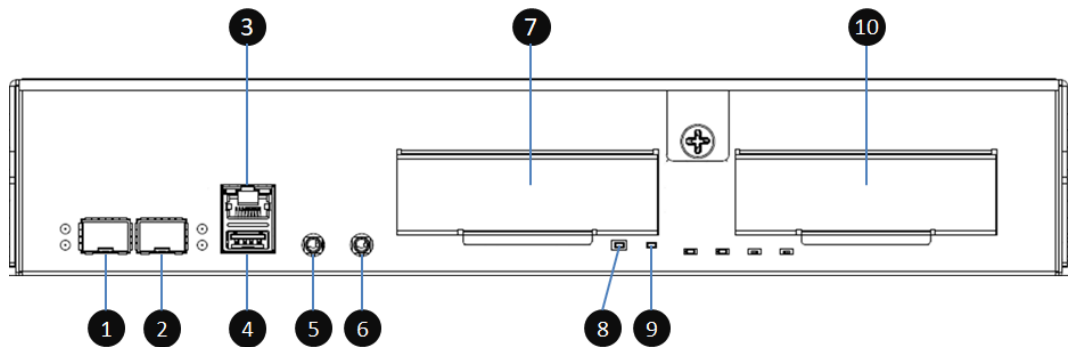


Figure 2-5 Controller Module Components

Table 2-4 Controller Module Component Description

ITEM NUMBER	DESCRIPTION
1	10 GbE iSCSI (SFP+) Port 1
2	10 GbE iSCSI (SFP+) Port 2
3	Management Port
4	USB Port
5	Console Port (3.5mm jack to RS232) ¹
6	Service Port (UPS) ²
7	Host Card Slot 1 (host card is an optional part)
8	Buzzer Mute Button
9	Reset to Factory Default Button ³
10	Host Card Slot 2 (host card is an optional part)

¹ Console cable (NULL modem cable) connects from console port of the storage system to a RS 232 port on the management PC. The console settings are on the following: Baud rate: 115,200, 8 data bit, no parity, 1 stop bit, and no flow control; terminal Type: vt100.

² System supports traditional UPS via a serial port and network UPS via SNMP. If using the UPS with a serial port, connect the system to the UPS via the included cable for communication. (The cable plugs into the serial cable that comes with the UPS.) Then set up the shutdown values for when the power goes out.

³ Press the button for 3 seconds to progress reset to defaults and force a reboot. The default settings are:

- Reset **Management Port** IP address to DHCP, and then fix IP address: 169.254.1.234/16.
- Reset admin's **Password** to 1234.
- Reset **System Name** to model name plus the last 6 digits of serial number. For example: XF2026-123456.
- Reset IP addresses of all **iSCSI Ports** to 192.168.1.1, 192.168.2.1, ... etc.
- Reset link speed of all **Fibre Channel Ports** to Automatic.
- Clear all access control settings of the host connectivity.

Please refer to the following for the definition of LED behavior.

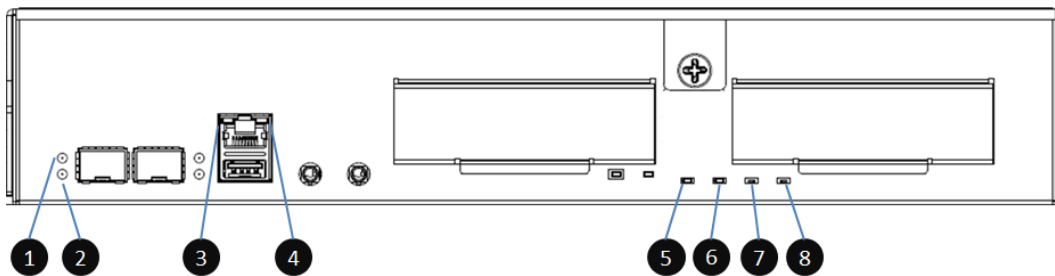


Figure 2-6 Controller LEDs

Table 2-5 Controller LED Description

NUMBER	DESCRIPTION	DEFINITION
1	10 GbE iSCSI Port 1 Access LED	<ul style="list-style-type: none"> • Blinking Green: Link is established and data is being accessed. • Off: No data access.
2	10 GbE iSCSI Port 1 Speed LED	<ul style="list-style-type: none"> • Solid Blue: 10G link is established and maintained. • Solid Amber: 1G / 100M link is established and maintained.

		<ul style="list-style-type: none"> Off: No link detected.
3	Management Port Connection LED	<ul style="list-style-type: none"> Solid Green: The connection is built and normal. Off: No connection is built.
4	Management Port Access LED	<ul style="list-style-type: none"> Blinking Amber: Data is being accessed.
5	Controller Status LED	<ul style="list-style-type: none"> Solid Green: Controller status is normal. Solid Red: System is booting, or the controller is failed.
6	Master / Slave LED (only for dual controllers)	<ul style="list-style-type: none"> Solid Green: This is the Master controller. Off: This is the Slave controller.
7	Dirty Cache LED	<ul style="list-style-type: none"> Solid Amber: Data on the cache is waiting for flush to disks. Off: There is no data on the cache.
8	UID (Unique Identifier) LED	<ul style="list-style-type: none"> Solid Blue: The enclosure has been identified. Off: The enclosure is not being identified.

2.3. Power Supply Units

The system is equipped with two redundant and hot swappable PSUs (Power Supply Units). The images and the table below illustrate the location of PSUs in the system.

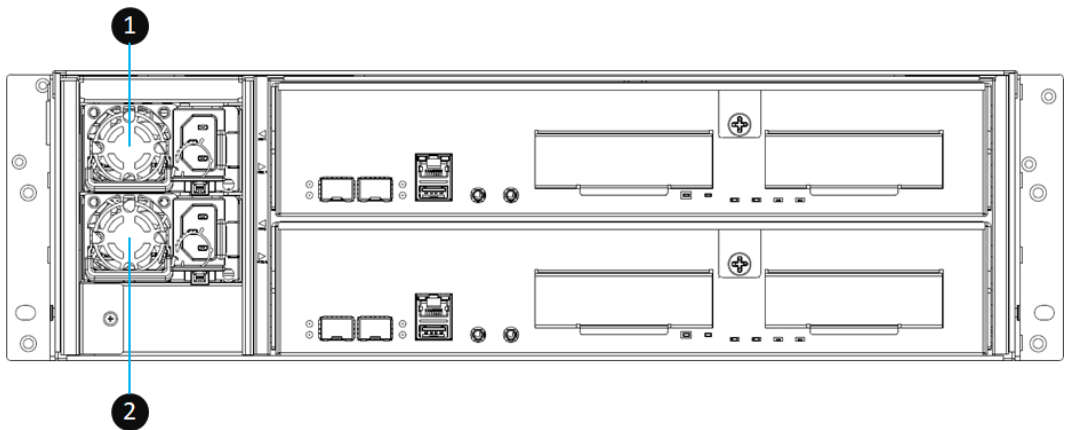


Figure 2-7 Power Supply Unit Location

Table 2-6 Power Supply Unit Location Description

ITEM NUMBER		DESCRIPTION
1		PSU 1
2		PSU 2

Please refer to the following for the definition of component and LED behavior.

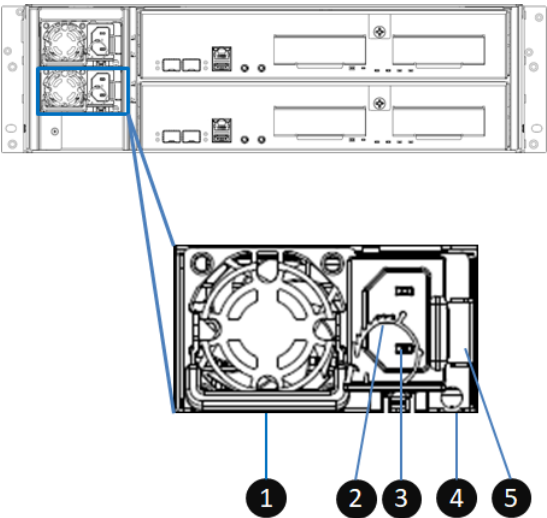


Figure 2-8 Power Supply Unit Components

Table 2-7 Power Supply Unit Component Description

ITEM NUMBER	DESCRIPTION
1	PSU Handle
2	PSU Buckle Belt
3	PSU Power Cord Connect
4	PSU LED Indicator
5	PSU Release Tab

Table 2-8 Power Supply Unit LED Description

NUMBER	DESCRIPTION	DEFINITION
4	PSU LED	<ul style="list-style-type: none"> • Solid Green: The PSU is on and normal. • Blinking Green: The PSU is off, +5VSB (Standby) is on. • Solid Amber: There is critical event caused shutdown. • Blinking Amber: There are PSU warning events including high temperature, high power, high current, slow fan, or under input voltage.

2.4. Cache-to-Flash Memory Protection

In the event of power loss, the I/O cache data stored in the volatile memory will be lost; this can cause data inconsistency especially in database applications. The system can provide an optional Cache-to-Flash memory protection function that will safely transfer the memory cache data to a non-volatile flash device for permanent preservation. The Cache-to-Flash module comes with an M.2 flash module and a BBM (Battery Backup Module). All modules are hot

pluggable with zero system downtime for extra availability and reliability. Images and tables below illustrate the location and mechanical components of the cache-to-flash modules.

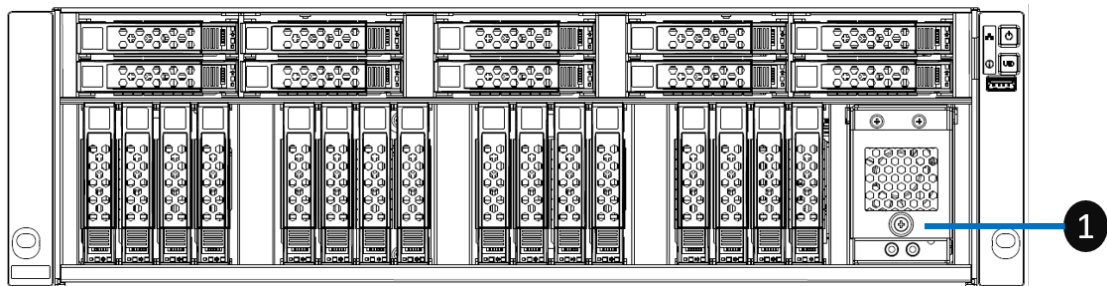


Figure 2-9 Cache-to-Flash Module Location

Table 2-9 Cache-to-Flash Module Location Description

ITEM NUMBER	DESCRIPTION
1	Slot for Cache-to-Flash-Module (Flash Module + Power module)

2.4.1. Mechanism of Cache Data Protection

The following image is the sequence of Cache-to-Flash workflow.

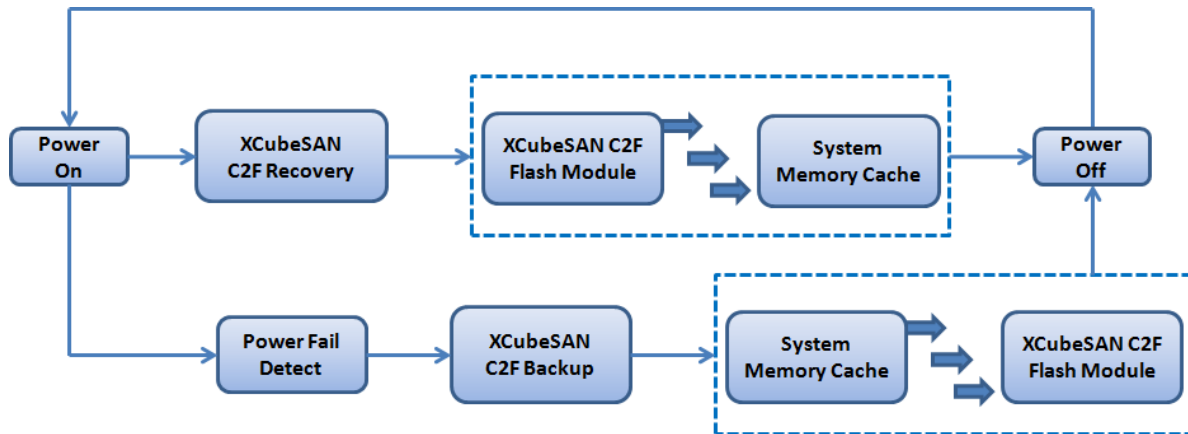


Figure 2-10 Cache-to-Flash Workflow

Cache-to-Flash technology will first flush CPU cache to memory, then flush memory to M.2 flash module to maintain the upmost data consistency. It leverages the strength of both BIOS and CPU to quickly backup memory data to the flash module. In order to quickly move data from memory to flash module, M.2 PCI-Express interface flash module is selected for better performance and less power consumption. In Cache-to-Flash recovery phase, BIOS will check C2F flag status. If C2F flag is ON, I/O cache data will be recovered from the M.2 flash module and then continue normal booting. If C2F flag is OFF, the normal booting process continues.

2.4.2. Cache-to-Flash Module LEDs and Button

Please refer to the following for the definition of LED and button behavior.

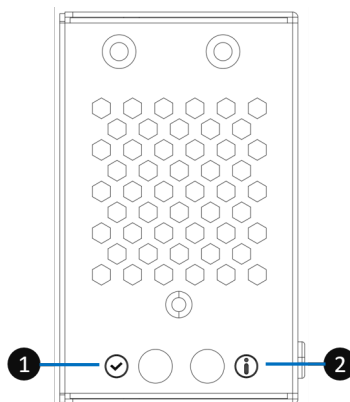


Figure 2-11 Flash Module LED and Button

Table 2-10 Flash Module LED and Button Descriptions

NUMBER	DESCRIPTION	DEFINITION
1	Power LED	<ul style="list-style-type: none"> • Solid Green: Power is good at flash module. • Solid Amber: When the data is flushed to Cache-to-flash module, the amber indicator light will be on until the battery is exhausted or the power is turned on.
2	Status LED	<ul style="list-style-type: none"> • Solid Blue: The status of flash module is good. • Blinking Blue and Amber Interlaced: <ul style="list-style-type: none"> ▪ The system is not initialized and is waiting for detection and initialization. ▪ The data is writing to the C2F module. ▪ Writing back the data from C2F module. • Solid Amber: The flash module is failed or wrong PCIe connection speed.



CAUTION

The flash module of Cache-to-Flash is hot swappable because it is a PCIe device.

2.5. Host Cards (Option)

The system comes with two on-board 10 GbE iSCSI ports on each controller. If you want to expand the number of host ports, purchase QSAN host cards (optional components) will be the fastest and most cost-efficiency choice.

There are several types of host cards that are available for selection. You can configure a fibre channel by using QSAN 32 Gb or 16 Gb fibre channel host card, or choose an iSCSI host card by

using 25 GbE via SFP28 or 10 GbE via SFP+ or RJ45. Following figure is the overview of the host card installation slots.



CAUTION

You must remove the controller module from the system chassis before starting the host card removing / installing procedures.

Host card can NOT hot plug in the controller module. Hot plug in the host card might cause system hang up. You should remove the controller module from the system chassis before removing / installing host card. Please DO NOT attempt to hot plug in the host card.

Please refer to the following for the definition of LED behavior.

2.5.1. 2-port 32Gb Fibre Channel Host Card (SFP28) LEDs

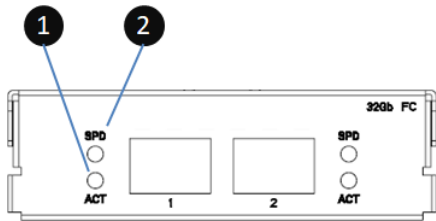


Figure 2-12 2-port 32Gb Fibre Channel Host Card (SFP28) LEDs

Table 2-11 2-port 32Gb Fibre Channel Host Card (SFP28) LED Description

NUMBER	DESCRIPTION	DEFINITION
1	Activity LED	<ul style="list-style-type: none">• Solid Green: Asserted when the link is established (Link OK without I/O).• Blinking Green: Asserted when the link is established, and packets are being transmitted along with any receive activity (Access).• Off: No link is detected, or link fails.
2	Speed LED	<ul style="list-style-type: none">• Solid Blue: Asserted when a 32G link is established and maintained.• Solid Amber: Asserted when a 16G link is established and maintained.• Solid White: Asserted when an 8G and below link is established and maintained• Off: No link is detected, or link fails.

2.5.2. 4-port 16Gb Fibre Channel Host Card (SFP+) LEDs

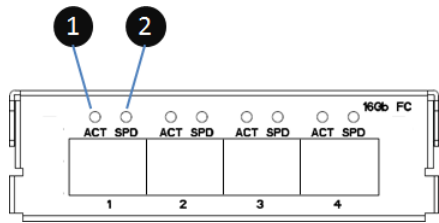


Figure 2-13 4-port 16Gb Fibre Channel Host Card (SFP+) LEDs

Table 2-12 4-port 16Gb Fibre Channel Host Card (SFP+) LED Description

NUMBER	DESCRIPTION	DEFINITION
1	Activity LED	<ul style="list-style-type: none">• Solid Green: Asserted when the link is established (Link OK without I/O).• Blinking Green: Asserted when the link is established, and packets are being transmitted along with any receive activity (Access).• Off: No link is detected, or link fails.
2	Speed LED	<ul style="list-style-type: none">• Solid Blue: Asserted when a 16G link is established and maintained.• Solid Amber: Asserted when an 8G link is established and maintained.• Solid White: Asserted when a 4G and below link is established and maintained• Off: No link is detected, or link fails.

2.5.3. 2-port 16Gb Fibre Channel Host Card (SFP+) LEDs

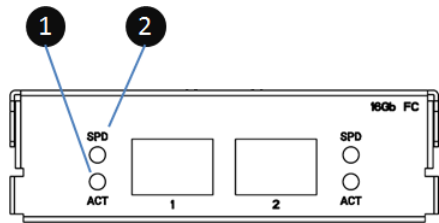


Figure 2-14 2-port 16Gb Fibre Channel Host Card (SFP+) LEDs

Table 2-13 2-port 16Gb Fibre Channel Host Card (SFP+) LED Description

NUMBER	DESCRIPTION	DEFINITION
1	Activity LED	<ul style="list-style-type: none">• Solid Green: Asserted when the link is established (Link OK without I/O).• Blinking Green: Asserted when the link is established, and packets are being transmitted along with any receive activity (Access).• Off: No link is detected, or link fails.
2	Speed LED	<ul style="list-style-type: none">• Solid Blue: Asserted when a 16G link is established and maintained.• Solid Amber: Asserted when an 8G link is established and maintained.• Solid White: Asserted when a 4G and below link is established and maintained• Off: No link is detected, or link fails.

2.5.4. 4-port 25 GbE iSCSI Host Card (SFP28) LEDs

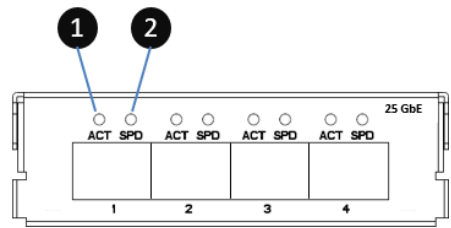


Figure 2-15 4-port 25 GbE iSCSI Host Card (SFP28) LEDs

Table 2-14 4-port 25 GbE iSCSI Host Card (SFP28) LED Description

NUMBER	DESCRIPTION	DEFINITION
1	Activity LED	<ul style="list-style-type: none">Blinking Green: Asserted when the link is established, and packets are being transmitted along with any receive activity (Access).Off: No link is detected, or link fails.
2	Speed LED	<ul style="list-style-type: none">Solid Blue: Asserted when a 25 Gb link is established and maintained.Solid Amber: Asserted when not a 25 Gb link is established and maintained.Off: No link is detected, or link fails.

2.5.5. 2-port 25GbE iSCSI Host Card (SFP28) LEDs

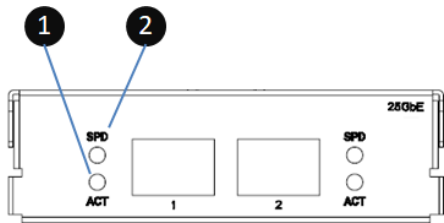


Figure 2-16 2-port 25GbE iSCSI Host Card (SFP28) LEDs

Table 2-15 2-port 25GbE iSCSI Host Card (SFP28) LED Description

NUMBER	DESCRIPTION	DEFINITION
1	Activity LED	<ul style="list-style-type: none">Blinking Green: Asserted when the link is established, and packets are being transmitted along with any receive activity (Access).Off: No link is detected, or link fails.
2	Speed LED	<ul style="list-style-type: none">Solid Blue: Asserted when a 25G link is established and maintained.Solid Amber: Asserted when not a 25G link is established and maintained.Off: No link is detected, or link fails.

2.5.6. 4-port 10GbE iSCSI Host Card (SFP+) LEDs

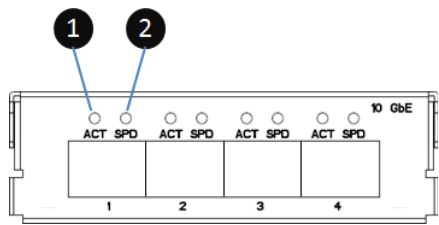


Figure 2-17 4-port 10GbE iSCSI Host Card (SFP+) LEDs

Table 2-16 4-port 10GbE iSCSI Host Card (SFP+) LED Description

NUMBER	DESCRIPTION	DEFINITION
1	Activity LED	<ul style="list-style-type: none">Blinking Green: Asserted when the link is established, and packets are being transmitted along with any receive activity (Access).Off: No link is detected, or link fails.
2	Speed LED	<ul style="list-style-type: none">Solid Blue: Asserted when a 10G link is established and maintained.Solid Amber: Asserted when a 1G link is established and maintained.Off: No link is detected, or link fails.

2.5.7. 2-port 10GBASE-T iSCSI Host Card (RJ45) LEDs

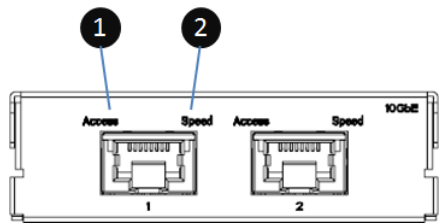


Figure 2-18 2-port 10GBASE-T iSCSI Host Card (RJ45) LEDs

Table 2-17 2-port 10GBASE-T iSCSI Host Card (RJ45) LED Description

NUMBER	DESCRIPTION	DEFINITION
1	Access LED	<ul style="list-style-type: none">Blinking Green: Asserted when the link is established, and packets are being transmitted along with any receive activity (Access).Off: No link is detected, or link fails.
2	Speed LED	<ul style="list-style-type: none">Solid Green: Asserted when a 10G link is established and maintained.Solid Amber: Asserted when a 1G link is established and maintained.Off: No link is detected, or link fails.

3. INSTALLING SYSTEM HARDWARE

This chapter will guide you through the installation process.

3.1. Basic System Installation

For basic system installation, please refer to the [Quick Installation Guide](#) which can be downloaded from the website. You can learn to install the disk drives, optional host cards, rail kits, and power on the storage system to discover and setup the system.

For more information about discovering your system and the initial configuration, please refer to the [XEVO Software Manual](#).

3.2. Connecting a UPS (Option)

If you want to install a UPS (uninterruptible power supply) to provide clean power and offer protection against mains power failures, please follow the following instructions.

1. Before you purchase a UPS system, please check the supported UPS interfaces and communication types.
2. Supported types include network UPS via SNMP, serial UPS with COM port, and USB UPS.
3. Connect the UPS to the system via Service Port (UPS).

3.3. Connecting the USB LCM (Option)

If you purchased the USB LCM, please use the enclosed USB extension cable (A-male to A-female) to connect to the system. The Following procedures are for the USB LCM connection:

1. Connect the USB LCM to the female side of the USB extension cable.
2. Connect the male side of the USB extension cable to the USB port on the system front pillar.

3.4. Wake-on-LAN (Option)

You can power on the system remotely using the Wake-on-LAN feature. It can work with any available Wake-on-LAN freeware and shareware.

3.5. Installing Memory Modules (Option)

If you purchase additional optional memory module for your storage system, please refer to the following image and table for the suggested sequence of memory module installation. It is requested that the installation slot and capacity of the memory module **MUST** be the same for both controllers.

There are six DIMM slots for expansion of memory capacity. The installation sequence for the memory module with the same capacity should be: #3 -> #4 -> #2 -> #5 -> #1 -> #6. Balance the memory size of two banks will keep the optimized system performance.

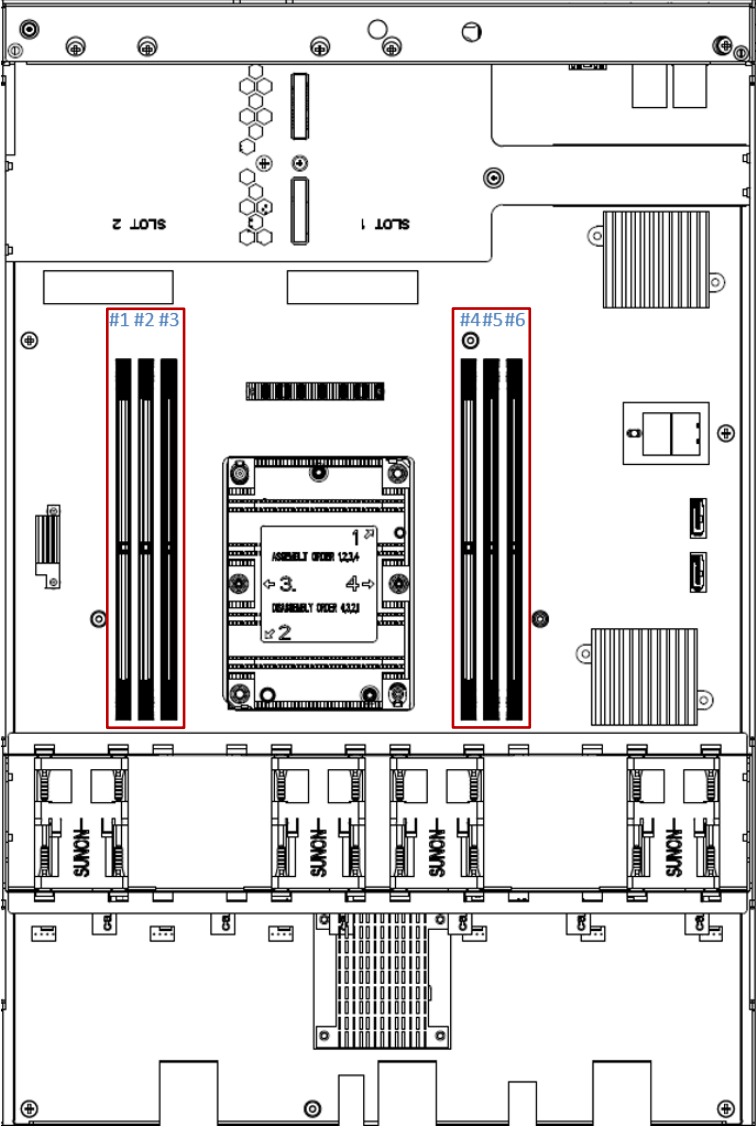


Figure 3-1 Memory Module Slot Number

The following table is the suggested installation sequence for optional memory module.

Table 3-1 Optional Memory Module Installation Sequence

BANK 1			BANK 2			TOTAL MEMORY
SLOT #1	SLOT #2	SLOT #3	SLOT #4	SLOT #5	SLOT #6	
-	-	8GB	8GB	-	-	16GB
-	8GB	8GB	8GB	8GB	-	32GB
8GB	8GB	8GB	8GB	8GB	8GB	48GB
-	-	16GB	16GB	-	-	32GB
-	16GB	16GB	16GB	16GB	-	64GB
16GB	16GB	16GB	16GB	16GB	16GB	96GB
-	-	32GB	32GB	-	-	64GB
-	32GB	32GB	32GB	32GB	-	128GB
32GB	32GB	32GB	32GB	32GB	32GB	192GB
-	-	64GB	64GB	-	-	128GB
-	64GB	64GB	64GB	64GB	-	256GB
64GB	64GB	64GB	64GB	64GB	64GB	384GB



CAUTION

To ensure system stability, you MUST install genuine QSAN memory modules to expand the system memory size. The platform does not support mixed installation of DIMMs, so mixed installation of memory combinations is not allowed.



TIP

Insert two DIMMs or more will boost performance.

4. SUPPORT AND OTHER RESOURCES

4.1. Getting Technical Support

After installing your device, locate the serial number on the sticker located on the side of the chassis or from the **XEVO -> System -> Maintenance > System Information** and use it to register your product at https://www.qsan.com/business_partnership. We recommend registering your product in QSAN partner website for firmware updates, document download, and latest news in eDM. To contact QSAN Support, please use the following information.

- Via the Web: https://www.qsan.com/technical_support
- Via Telephone: +886-2-77206355
- (Service hours: 09:30 - 18:00, Monday - Friday, UTC+8)
- Via Skype Chat, Skype ID: qsan.support
- (Service hours: 09:30 - 02:00, Monday - Friday, UTC+8, Summer time: 09:30 - 01:00)
- Via Email: support@qsan.com

Information to Collect

- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages or capture screenshots
- Product-specific reports and logs
- Add-on products or components installed
- Third-party products or components installed

Information for Technical Support

If the technical support requests you to download the Service Package, please navigate in the **XEVO -> System -> Maintenance > System Information**, and then click the **Download Service**

Package button to download. Then the system will automatically generate a zip file the default download location of your web browser.

4.2. Documentation Feedback

QSAN is committed to providing documentation that meets and exceeds your expectations. To help us improve the documentation, email any errors, suggestions, or comments to docsfeedback@qsan.com.

When submitting your feedback, include the document title, part number, revision, and publication date located on the front cover of the document.

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