

SNR-JB212D User Manual



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PREFACE

Thank you for choosing SNR-JB212D. This manual is written for system technicians who are responsible for installation, troubleshooting, managing and repairing this server chassis. This document provides the overview of all the features of the chassis, a list of accessories or other components you may need to finish the installation, troubleshooting methods and instructions on adding and removing components on the SNR-JB424D. For the latest version of this manual, you may visit server website to download the latest updated version.

SAFETY INFORMATION

To ensure a safe and smooth operation of your SNR-JB212D, it is essential that you choose an appropriate location for the system, provide an appropriate operating environment and supply an adequate amount power for all components of the system. As you plan for installation, follow the guidelines below to ensure that the system and its environment are safely and appropriately positioned for efficient operation and service. Your system should be installed and serviced only by a qualified technician.

Environment selection: The system is designed to operate in a typical office environment:

- The location should be clean, dry and free of airborne particles.
- It should be a well-ventilated room, and away from sources of heat including direct sunlight and radiators.
- It should be kept away from sources of vibration or physical shock.
- The space should be accommodated with a properly grounded wall outlet, and with sufficient space to access the power supply cords.
- The operating environment temperature should be around 0°C to 40°C (32°F to 104°F).

Heed safety instructions: Before working with IPC/Storage server products, we strongly recommend you use this guide as a reference and follow the safety instructions. The instructions in this manual will help you ensure and maintain compliance with existing product certifications and approvals. Follow the described, regulated components mentioned in this manual. Use of non-UL listing products or other regulators may not comply with product regulations in the region(s) in which the product is sold.

System power on/off: The power button DOES NOT totally turn off the system AC power. To remove the power of the system, you must unplug the AC power cord from the outlet or the system's power supply units. Make sure the power cord is unplugged before you open the chassis, add or remove any components.

Hazardous conditions, devices and cables: Hazardous electrical conditions can be present on/in power supply units and their cables. Disconnect the power cord and any other device attached to the server before opening the case. Failing to follow safety procedures will increase the risk of personal injury or equipment damage.

Electrostatic discharge (ESD) and ESD protection: In most cases, ESD may damage disk drives,



electronic boards and other parts. We recommend that you conduct installation only at an ESD free space. If not possible, perform ESD protection protocol by wearing an anti-static wrist straps attached to the ground on any unpainted metal surface on your server during operation.

Installing or removing jumpers: A jumper is a short length conductor used to close, open or bypass

part of an electronic circuit. Jumpers on backplanes have a small tab on top that you can pick up with your fingertips. Grip the jumper carefully, and plug the jumper to cover the jumper pins on the backplane. Once you need to remove the jumper, grip the jumper and carefully pull without squeezing.

CAUTION

- 1. To avoid damage and maintain your safety, please read the following terms listed below:
- 2. No to populate hard drives and turn on the power before the system is settles down. Make sure hard drives and other components are properly connected before turning on the system.
- 3. Tighten or loosen all the screws with a screwdriver.
- 4. Apply the correct screws packed in the accessory box.
- 5. For your safety, please have at least two people lift and place the unit.
- 6. Before mounting the unit to the cabinet, make sure the rail is installed correctly.
- 7. When installing and removing any module or part, please use the handles.

Restricted Access Location

This server 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.



SPECIFICATIONS

Industry Standard	EIA-RS310D
Storage	External: Hot-swap 3.5" x 12 (SAS 12Gbps)
Maulanum Canadhu	Up to 96 TB
Maximum Capacity	(Cascades to 3 enclosures with 36 HDDs, including 1 host server)
	Supports
Power Supply	 Form Factor: 80 Plus Platinum CRPS redundant
	• Watt: 550W
12G Expander Module	1 or 2
Cooling Fan	80 x 38 mm x 4
Host/Expansion Port	3 x Mini SAS HD (SFF-8644) for each 12G expander module
Managament	Smart fan, thermal monitor, HDD monitor, voltage monitor, alarm
Management	warning
SES	Supports SES-2 (SCSI Enclosure Service)
Maintenance	Supports management by Ethernet and RS-232
HDD Power Management	HDD sequential power on
Temperature	0°C to 35°C
Material	Material: SGCC
wateria	Thickness: 1.0 mm
Rail Kit	Fixed rail included
	20" tool-less & ball-bearing slide rail (optional)
Product Dimensions (D x	520.7 x 482.6 x 87mm
W x H, Chassis Only)	(20.5" x 19" x 3.5")
Package Dimensions (D x W x H)	760 x 610 x 242mm
Weight	Net weight:15.69kg
Weight	Gross weight: 19.23kg
Cubic Feet	3.96
	Single packing with pallets:
Container Information	• 20': 154pcs
Container Information	• 40': 322pcs
	• 40' HQ: 414pcs

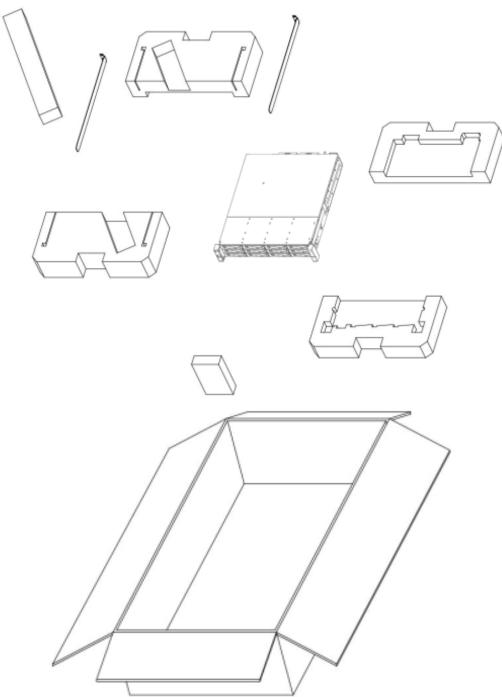
* The actual product is subject to change without prior notice. Development Inc. reserves the right to make any final modifications.





1 Product Introduction

1.1 Box Contents

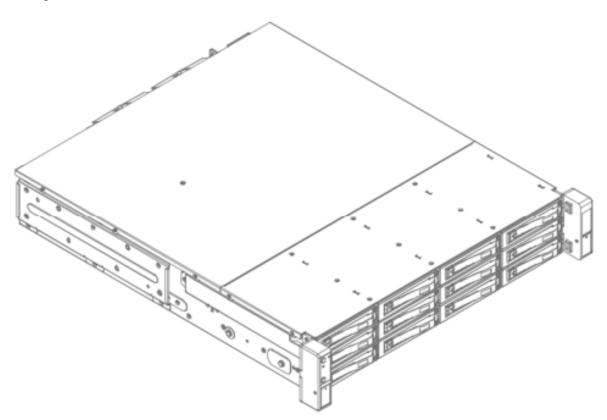






1.2 General Information

SNR-JB212D JBOD enclosure is a 2U rackmount storage chassis with 12 tool-less bays, dual expander module, dual fan module, and redundant 550W power supply. SNR-JB212D is capable of providing ample storage, while allowing users to cascade 3 enclosures with 36 HDDs, including 1 host server.

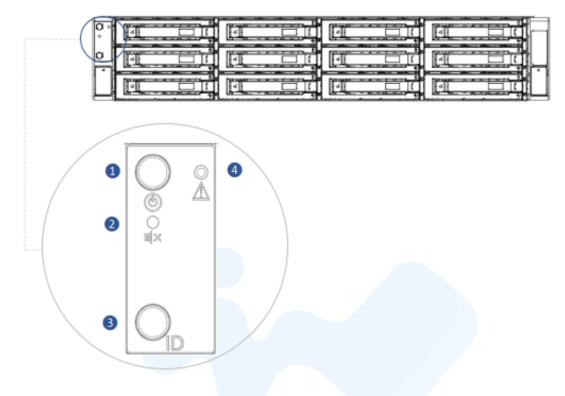






1.2.1 Front Panel Controls and Indicators

The front panel control buttons and LED indicators are located on the top left handle.



No.	Name	Color	Status	Description
1	Power On/Off Button	Blue	Solid on	System is powered on
1	with LED	N/A	Off	System is not powered on
2	Mute Button	N/A		Press the button to turn off the beeper
2	Chassis ID Button with	Blue	Solid on	Press the button to activate system
3	LED			identification
4	System Fail LED	Red	Solid on	System Fault (Beeper) *

* System Fault red LED indicator on the front panel illuminates and Buzzer sounds while there is system fault. Buzzer sounds differently according to the system fault. Please see the below the definition:

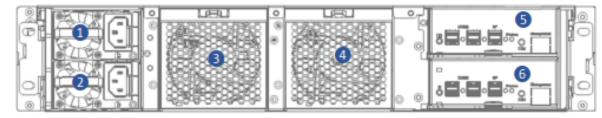
- High Temperature : 1 short beep
- PSU failure : 2 short beep
- Fan failure : 3 short beep

The beeps can be muted by pressing the mute button on the front panel.



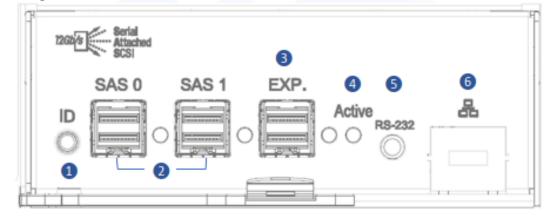


1.2.2 Rear Panel Configuration



No.	Item	No.	Item
1	Power Module 1	4	Fan Module 2
2	Power Module 2	5	Secondary Expander Module
3	Fan Module 1	6	Primary Expander Module

1.2.2.1 Expander Configuration



No.	Name	Color Status		Description
1	Chassis ID button with	Blue Solid on		Press the button to activate
1	LED			system identification
2	Uplink SAS Port	N/A		Host HBA/RAID card connection
3	Downlink Expander Port	N/A		External cascading
4	Expander Module Status	Blue Blink		Normal
4	LED	Blue	No Blinking	Abnormal
5	RS-232 Port	N/A		Debug console connection
6	LAN	N/A		Ethernet remote monitoring





2 Hardware Installation

2.1 Removing and Installing a Hard Drive

SNR-JB series JBOD features tool-less trays. Users no longer need to use screws to mount disks, and can swap drives faster.

2.1.1 Installing a Hard Drive

Step 1: Press the release button then pull outward on the handle.

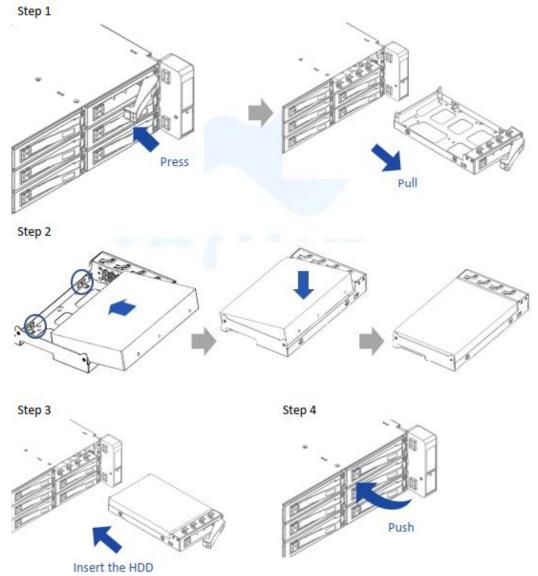
Step 2: Place the 3.5" HDD into the tray.

Align the HDD screw with the two pins on the side of the tray.

Press the other side of HDD downward to the tray.

Step 3: Insert the HDD tray to the slot.

Step 4: Push back the lever until it clicks.

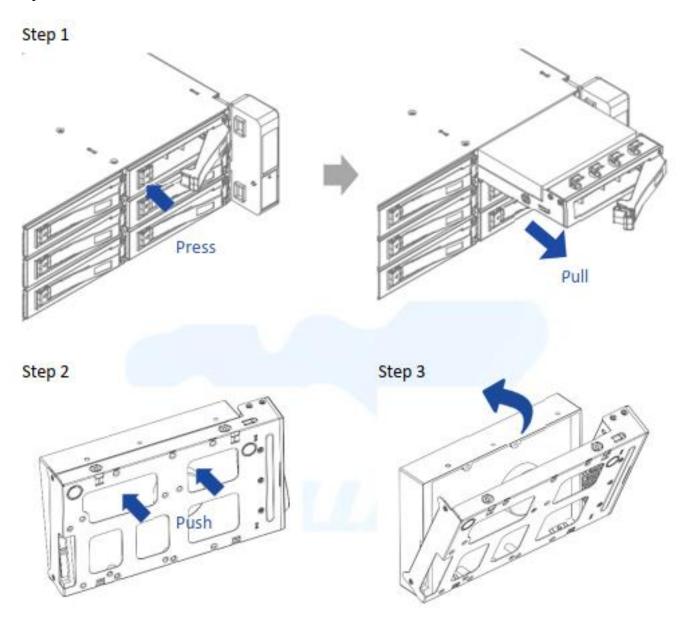






2.1.2 Removing a Hard Drive

- Step 1: Press the release button then pull outward on the handle.
- Step 2: Press the HDD out of the bottom of the tray with your fingers.
- Step 3: Pull out the hard drive.



2.2 Removing and Installing the Fan Module

SNR-JB series JBOD has built-in dual fan modules that support hot-swappable and redundant features. With a tool-less design, SNR-JB series JBOD is easy to maintain.

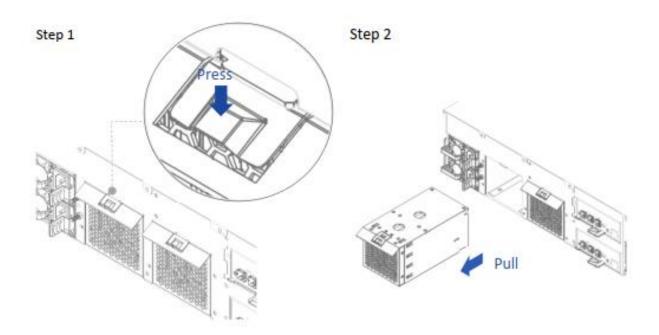
2.2.1 Removing the Fan Module

Step 1: Press the clip to release the fan slot.

Step 2: Pull out the fan module from the fan slot.

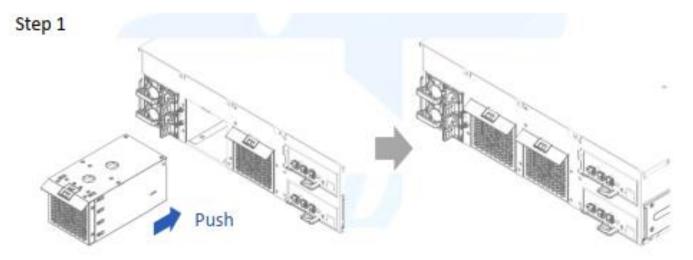






2.2.2 Installing the Fan Module

Step 1: Push the fan module back into the slot until it clicks. Step 2: Connect the fan to the backplane.



2.3 Removing and Installing the PSU Module

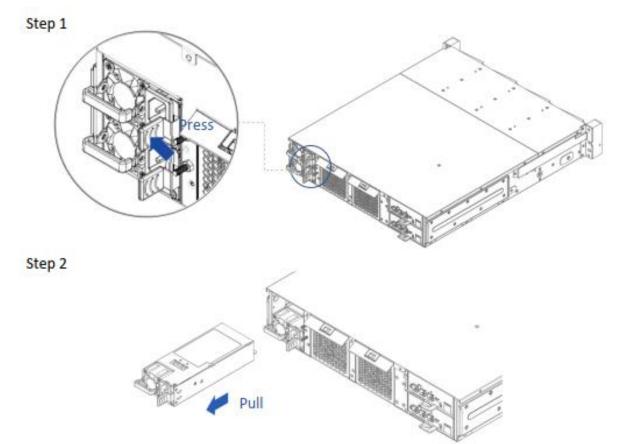
The SNR-JB212D hosts a built-in redundant power supply module. With this function, the system is capable of still functioning if one of the modules fail. To replace it, the user only needs to release the failed module, then insert a functional module.

2.3.1 Removing the PSU Module

Step 1: Press the release tab of the power supply unit's module at the back. Step 2: Pull the module out using the handle.

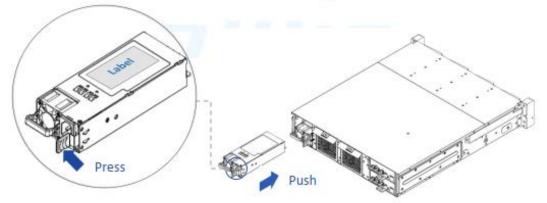






2.3.2 Installing the PSU Module

Step 1: Make sure the label is facing upward, and push the power supply module into the cage until it clicks.



NOTE: 1. The unit supports **PSU** modules only, please do not attempt to insert any other brands of modules.

2. The two PSU modules' output wattage must be the same.

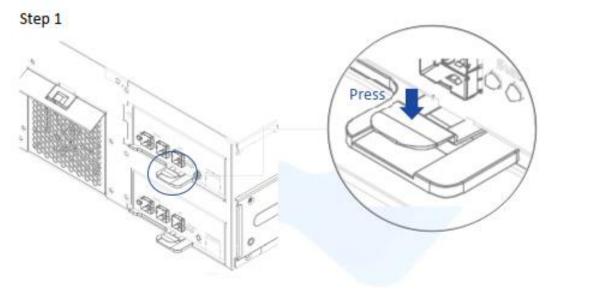


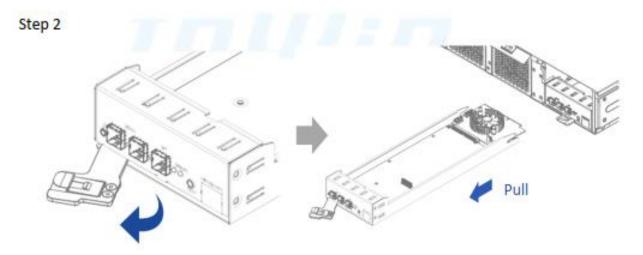
2.4 Removing and Installing the Expander Module

SNR-JB series JBOD contains a set of redundant expander modules. The bottom module is the primary expander, while the upper is the secondary. The primary expander module includes an Ethernet management module, which allow users to monitor and manage the system through Ethernet. Also, the redundant module can minimize downtime should any on the expanders fail.

2.4.1 Removing the Expander Module

Step 1: Press the clip of the expander module and swivel the handle outward. Step 2: Pull out the expander module.





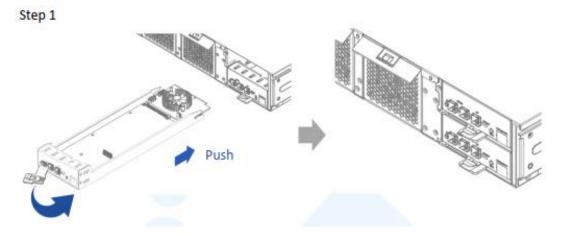




2.4.2 Installing the Expander Module

Step 1: Push the expander module into the cage until it clicks back the original location.

Step 2: Swivel the handle back to lock into position.



2.5 Rail Installation

SNR-JB series JBOD is a rackmount model, which support EIA-RS310D standard cabinets and chassis racks. Provides standard fixed rails or optional slide rails for mounting the JBOD chassis to cabinets.

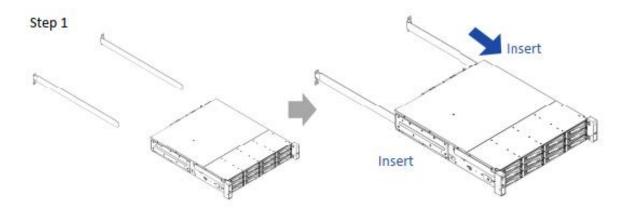
2.5.1 The Type of Rail Kit

Please follow the instructions to install the rails on the cabinet or chassis rack according to the rail type you ordered.

2.5.2 Fixed Rails

Step 1: Insert the fixed rail into the rail bracket from the end of the chassis.

- Step 2: Tighten the screws to secure the rail and the chassis on the cabinet.
- Step 3: Repeat the same action on the other side.





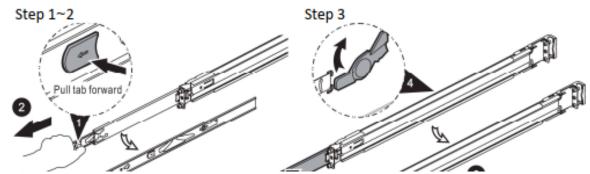
2.5.3 Slide Rail

2.5.3.1 Take out the Inner Rail and Slide the Intermediate Rail Back

Step 1: Pull out the inner rail until it reaches the stop. Release the blue slide tab to unlock.

Step 2: Continue pulling the inner rail until the second stops. Release the white slide tab to remove the inner rail.

Step 3: Pull the latch on the middle rail upward and retract the middle rail back.



2.5.3.2 Attach the Inner Rail to the Chassis

Step 1: Remove the fixed rail brackets on both sides to reveal the standoffs.

Step 2: Align the chassis sidewall standoffs to the inner rail keyholes. Slide the inner rail toward the front until the standoff snaps into place,

securing the rail to the chassis.

Step 3: Repeat the same action on the other side.

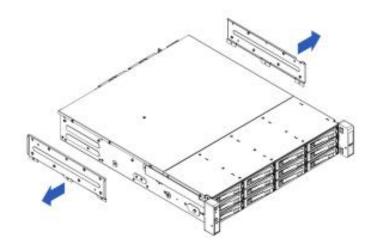
Step 4: When removing the inner rail:

Pull up the latch and slide the inner rail forward. Remove the

keyhole from the standoff to detach the inner rail. (Action X and

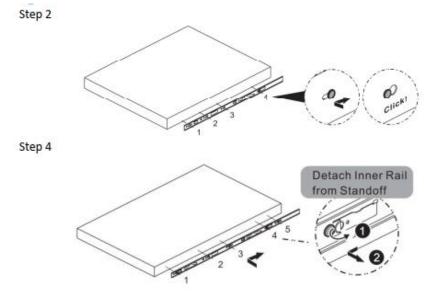
Y in the figure)

Step 1









2.5.3.3 Mount the Rail Bracket to the Cabinet

Step 1: Extend the rail bracket over the rear rack of the cabinet.

Step 2: Pull out the rear hook on the end of the outer rail, align and push the rail bracket pins into the post holes on the rack. Then, pull

back the hook on the end of the outer rail.

Step 3: Extend the opposite side of the rail bracket to the front rack of the cabinet.

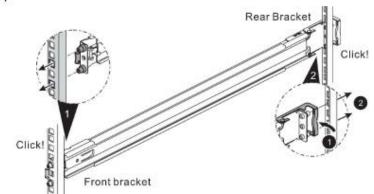
Step 4: Hang the front hooks of the outer rail at the front of the rack post holes. Pull the rail bracket pins that go into the front post holes on the rack until they click.

Step 5: The other side of the rail is symmetrical, repeat the installation steps 1-4.

Step 6: Once you would like to detach the bracket, pull outward on the front and rear hooks of the outer rail to release the bracket.

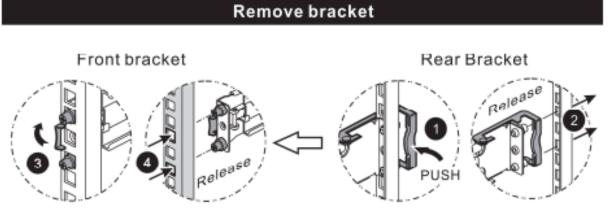
Repeat the same action to the other side.







Step 6



2.5.4 Insert the Chassis to the Cabinet

Step 1: Pull out the middle rail to the stop position.

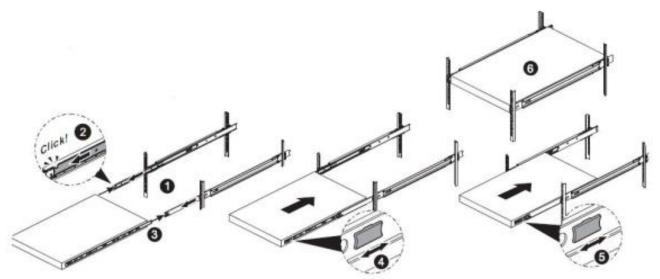
Step 2: Move the ball bearing retainer to the front end of the middle rail, it should click into the locked position.

Step 3: Insert the inner rails of the chassis into the middle rails on the both sides of the rack.

Step 4: Push the chassis to the stop position, then release the blue slide tab (by either pulling the tab forward or pushing the tab back) to continue.

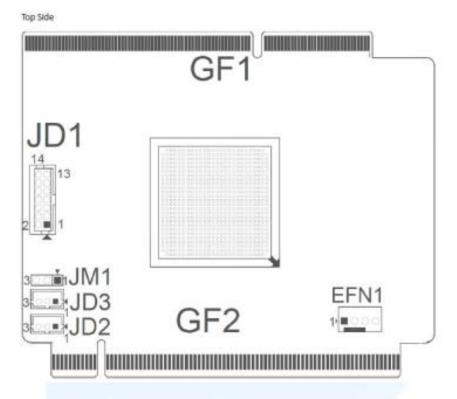
Step 5: Until reaching the second stop position, release the blue slide tab again to continue.

Step 6: Push the chassis into position on the rack completely. Make sure that the front end of the chassis is aligned with the edge of the rack to complete the installation.





3 Expander Board Introduction

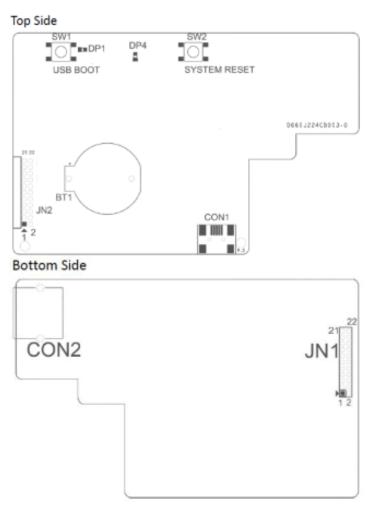


Location	Description
GF1	BP Golden Finger Connector
GF2	IO Board Golden Finger Connector
EFN1	Expander FAN Connector
JM1	Single/Dual Power Module Select: Single: Jumper 1-2; Dual: Jumper 2-3
JD1	ICE Debug Port
JD2	Smart Console
JD3	Debug Port





4 Ethernet Management Card Introduction



Location	Description
SW1	USB Reboot
SW2	System Reset
DP1	Power LED
DP4	MCU Status LED
JN2	UART Port
CON1	USB Port
JN1	UART Port
CON2	Ethernet Port





5 User Interface Introduction

5.1 Overview

JBOD System is a high performance, reliable storage system with sensors to monitor system health. We provide state-of-the-art management functionality for users to monitor and manage JBOD systems efficiently and flexibly. Users can manage JBOD systems through serial port and/or Ethernet according to the system configuration on the system. We support varieties of network protocols for network management including Telnet, SSH, Web-GUI, SNMP and SMTP. We also support active system alert function by sending information to the email addresses specified in the system, so the users can be informed any changes of the systems in a timely manner.

This users' manual is for all JBOD systems including SNR-JB212D, SNR-JB316D and SNR-JB424D.

provides the information and instruction of frequent use function. Please refer to the table of contents to find the topics.

5.2 Key Features

• Reliable High Data Rate support (up to 12Gbps)

SAS 12Gbps support and SATA3 6Gbps support to provide a reliable high-performance data rate.

• Dual Expanders Support

System can accommodate dual expanders to support data redundancy capability.

- Power Redundancy
- System can accommodate 2 PSUs with PMBus as redundancy. Either PSU can work independently while the other is failed.
 - Hot-swappable PSU

The hot-swappable PSU doesn't require a system shutdown for PSU replacement in case of a PSU failure.

• Hot-swappable Fan Modules

The hot-swappable fan module doesn't require a system shutdown when swapping modules.

• System Fault Alarm

System Fault red LED indicator on the front panel illuminates and Buzzer sounds while there is system fault.

Buzzer sounds differently according to the system fault. Please see the below the definition:

- High Temperature: 1 short beep
- PSU failure: 2 short beeps
- Fan failure: 3 short beeps

The beeps can be muted by pressing the mute button on the front panel.

• Hot-swappable HDDs





The HDD is hot-swappable. No need to shutdown system for HDD installation and/or replacement while there is HDD failure happens or intend to add new HDD to the system.

• Smart Fan Control

The fan modules are smartly controlled by the firmware to provide 7 levels speeds according to the system temperature detected by the temperature sensors on expander chips and Backplane.

• Zoning

System support the feature to divide disk drives into 2 different groups. Each group can own users-configurable number of HDDs independently. This feature enables single JBOD serving 2 hosts.

• Cascading

There is a cascading port on Expander for cascading another JBOD system to expand disk space whenever the system is running out of space.

5.3 Software Management

5.3.1 System Management Structure

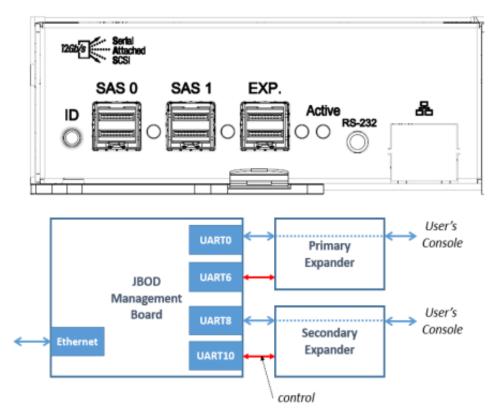
JBOD Systems support out-of-band Network Management feature enabling rich set of protocols and a flexible way for SAS Expander management anytime from anywhere.

5.3.1.1 With Ethernet Management

In this configuration, when there is an Ethernet board on top of the Primary SAS Expander module, users can manage Primary and Secondary SAS expanders through RS-232 port no matter the serial console is connected to Primary or Secondary SAS Expander module.

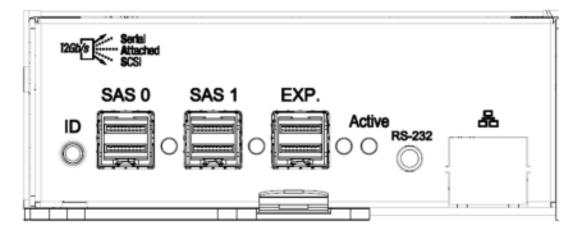
With proper IP address setting, Users can manage system through Telnet, SSH, Web-GUI and SNMP remotely.





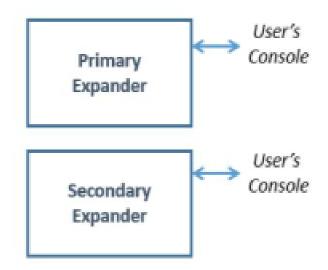
5.3.1.2 Without Ethernet Management

In this configuration, when there is no Ethernet board, Users can only manage Primary or Secondary SAS Expanders by connecting serial console cable to Primary or Secondary SAS Expander module separately. And, in such configuration, Users won't benefit from the rich set of network protocols management.









5.3.1.3 Network Protocols Support

As an Ethernet Management board exists, rich set of network protocols are leveraged for flexible remote management. The supported protocols are Telnet, SSH, Web-GUI, SNMP and SMTP.

Please be sure the IP address of the system is correctly configured to enable network management. Our systems support Static IP address or DHCP dynamic IP address as per users' configuration.

5.3.1.4 Operation Modes

JBOD systems Ethernet Management provide a flexibility of modes for different scenarios by simply applying CLI commands to change.

Ethernet management support 2 modes – Normal Mode and Alone Mode.

Normal Mode:

One Ethernet board in a JBOD enclosure. It can be either only one SAS Expander or 2.

In this mode, users can manage both SAS Expander by only one Ethernet board. This is the default operation mode of the Ethernet mgmt. board. To check the operation mode, applying hidden command "save alone" to view. "save alone 0" for Normal mode.



/mgmt.s# /mgmt.s# Expander /mgmt.s#	save alone mode: Ø
/mgmt.s# /mgmt.s#	save alone 0
Expander /mgmt.s# /mgmt.s#	mode: alone off

Whenever the Ethernet mgmt. board run in Normal mode. There are 2 sub-directories "Primary" and "Secondary" being seen and users can change directory to then for SAS Expander management.

∕mgmt.s# ∕mgmt.s# list						
? dns date gatewa	ipaddr w mail	ntp passwd	primary reboot	secondary service	timezone upgrade	userdel userlist
dhcp help	netmask	ping	save	SNAD	useradd	version
/mgmt.s#						
∕mgmt.s# cd prima	ary/					
/mgmt.s/primary#						
/mgmt.s/primary#						
F	iicw	reset		sys		
adcread	iicwr	rev		t-QA		
buffsize c.pddl	is r stat led	rpera		t_SDP t_ala ra .cou	-	
c.syscfg	log	rreg		t.dslot	un c	
c.zone	nenstat	sasado	le.	t_fan		
cableinfo	mirror	scedel		t.fan.force	speed	
cfg	mr16	serdes		t.fan.simu		
clearlogs	mr32	sesdel	pug	t.temp.simu	L Contraction of the second	
cleartrace	mr8	sgpioi	info	t.thermal		
coredump	mv16	sgicini		thread		
counters	mw32	showle		trace		
date	mv8	shown		tracecap		
debuginfo	nvlogs	showpo		tracenask		
edfbinfo encinfo	phyinfo	showt		tracesev		
encinto evescope	phyop phytest	smpire sspii		tracetimest wppminfo	amp	
flashtblinfo	rdcfg	sspin	nd .	when a b barren o		
help	reg	sspir				
licr	regerase	ssptde	bug			
/mgmt.s/primary#						

Discrete Mode:

Ethernet Board to manage the SAS Expander it resides. There should be Ethernet board on any SAS Expander so it provides Network Management capability.





In this mode, users can manage the SAS Expander the Ethernet board resides on. Users will need 2 Ethernet board to manage both SAS Expander through network.

To check the operation mode, apply hidden command "save alone" in /mgmt.s# layer to view.

∕mgmt.s# ∕mgmt.s#		
/mgmt.s#	save alone	
Expander		
∕mgmt.s#		

To enable the Alone mode, simply apply a hidden command "save alone 1" in /mgmt.s# layer to enable.

/mgmt.s# /mgmt.s# /mgmt.s# Expander /mgmt.s#	
/mgmt.s#	save alone 1
Expander	mode: alone on
/mgmt.s#	

To disable the Alone mode (set to Normal mode), simply apply a hidden command "save alone 0" in /mgmt.s# layer to disable.

/mgmt.s# save alone 0 Expander mode: alone off /mgmt.s# /mgmt.s#

Please be sure to enable Alone mode on both Ethernet mgmt. boards and do a system reboot so the Alone mode can work properly.

Whenever the Ethernet mgmt. board run in Alone mode. There is only one subdirectory "Expander" can be seen and jump to it for SAS Expander management.

/mgmt.s#						
/mgmt.s# /mgmt.s# list						
? dns	help	netnask	ping	service	upgrade	userlist
date expande		ntp	reboot	snap	useradd	version
dhcp gateway	mail	passwd	save	timezone	userdel	
/mgmt.s#						
∕mgmt.s# cd expan						
/mgmt.s/expander#						
f adcread	iicw iicwr	res		sys		
buffsize	isrstat	reu		t.QA t.SDP		
c.pddl	led	rpe			ra.count	
c.syscfg	log	rti		t.dsl		
c_zone	nenstat		addr	t.fan		
cableinfo	mirror		debug	t.fan	.forcespee	ed.
cfg	mr16	ser	desinfo	t.fan	.simu	
clearlogs	nr32		debug		p.simu	
cleartrace	mr8		pioinfo	t.the		
coredump	mw16		cinfo	threa		
counters	mu32		wlogs	trace		
date	8		wafg	trace		
debuginfo edfbinfo	nvlogs phyinfo		wpost wtrace	trace trace		
encinfo	phyop		pireq		timestamp	
evescope	phytest		Diing	wppmi		
flashtblinfo	rdcfg	SSI		xnen		
help	reg	SS				
licr	regerase		tdebug			
/mgmt.s/expander#						





5.3.2 Serial Port Management

RS-232 port on Expander module provides a serial connection for users to manage JBOD system with terminal application such as Tera Term, Hyper Term...etc. To manage JBOD system through serial port, the settings below have to be properly configured to make it work.

Baud Rate : 115200 Data : 8 bit Parity : None Stop Bit : 1 bit Flow Control : None

Tera Term: Serial port setu	ıp		×
<u>P</u> ort: <u>B</u> aud rate:	СОМ7 115200	•	ок
<u>D</u> ata:	8 bit	•	Cancel
P <u>a</u> rity:	none	•	
<u>S</u> top:	1 bit	•	<u>H</u> elp
<u>F</u> low control:	none	•	
		ms	ec/ <u>l</u> ine
	<u>P</u> ort: <u>B</u> aud rate: <u>D</u> ata: P <u>a</u> rity: <u>S</u> top: <u>F</u> low control: Transmit delay	Baud rate: 115200 Data: 8 bit Parity: none Stop: 1 bit Flow control: none Transmit delay	Port:COM7 ▼Baud rate:115200 ▼Data:8 bit ▼Parity:none ▼Stop:1 bit ▼Flow control:none ▼Transmit delay

5.3.2.1 CLI

Depending on the system configuration, there are 2 scenarios of CLI usage will be met. One is Expander with Ethernet management board and the other is Expander w/o Ethernet management board.

5.3.2.1.1 Scenario 1: Expander with Ethernet board

As an Ethernet Management board exists, rich set of network protocols are leveraged for flexible remote management. The supported protocols are Telnet, SSH, Web-GUI, SNMP and SMTP.

• "/mgmt.s#" prompts in Console Terminal means the system is with Ethernet board installed which supports Network management with properly configured IP address.

• When "/mgmt.s#" prompts, Users are on the layer of the Ethernet board configuration. Users can configure IP address, manage users account, control services, reboot system...etc. on this layer.

• "list" command to display all the Ethernet layer commands the system supports.

• "?" for Help.



? late lhcp	dns gateway help	ipaddr mail netmask	ntp pass v d ping	primary reboot save	secondary service snap	timezone upgrade useradd	userdel userlist version
'mgmt.s# 'mgmt.s# ' cd	change o				r expander o	control path	n
late		or set curr		ine			
ihop Ins		or set DHCP or set DNS					
uns tatewav				e: 192.168.1	00 254)		
baddr					le: 192.168.	100.100)	
list		h commands			10, 192, 100.	100.100)	
ail		or set send					
netmask	display	or set Ethe	rnet IP ne	tmask (defau	lt: 255.255.	255.0)	
basswd	change p	assword					
reboot		anagement b					
save		nfig to NVRA					
service				/SSH/WEB/SNM			
upgrade				xpander soft	ware		
seradd		user account					
userdel		user accou	nt				
userlist		er account	1	e			
version /mgmt.s#		management	boaru s in	rormation			
mgmt.s#							

• "version" command to display system hardware, firmware version information.

• Type "<command>" for displaying the current setting of the specific command.

• Type "<command>?" for displaying specific command usage.



🚇 COM7:115200baud - Tera Term VT	
<u>File E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp	
/mgmt.s#	A
/mgmt.s# date	
Tue, 21 Jun 2016 03:51:52 +0800	
/mgmt.s#	
/mgmt.s# date ? Usage: date [YYYY.MM.DD-hh:mm:ss]	
Usage: date [IIII.mm.DD-nn.mm.ss] /mgmt.s#	
/mgmt.s# ipaddr	
Current IP Address: 192.168.100.1	
Configure Static IP Address: 192.168.100.1	
/mgmt.s#	
/mgmt.s# ipaddr ?	
Usage: ipaddr [IPaddress]	
/mgmt.s#	
/mgmt.s# dhcp DHCP: 0	
DHCF: 0	
/mgmt.s# dhcp ?	
Usage: dhcp [0]1]	
/mgnt.s#	
/mgmt.s# service	
Felnet Server: 1	
WEB Server: 1	
SNMP Agent: 1	
SSH Server: 1 Send Mail: 0	
/mgmt.s#	
/mgmt.s# service ?	
Usage: service [telnet web snmp ssh mail] [0 1]	
/mgmt.s#	
/mgmt.s#	
/mgnt.s#	
/mgnt.s#	*

• "cd primary" to change directory for primary expander management.

• "cd.." to change directory back to upper layer. Usually used on changing from expander layer back to Ethernet layer.

• "cd secondary" to change directory for secondary expander management.

SECONDARY>rev		
Harduare Revision Information:-		
Vendor ID Product ID Product Revision Level Component Tupe Component ID Component Revision Level	:946 :1822D1(5) :Ub=7 0x00, Unit = 0x04 :Ub=7 :0x1225 (Bord Option :36) :1 (80)	
Firmware Revision Information:-		
Version Hama: SHSSS/GH-U1. Firmaare Fanji: 0 Denfanji: 0 Denfanji: Revision: 1.0.4 Revision: 1.0.4.1 Platform Hama: DH-UN Cub E Version Hama: SHSSSHFU: Firmaare Fanji: 0 Denfanji Firmaare Gaug 2: Revision: 1.0.4.1 Platform Hama: DH-UN Cub E	spander System 0.03.00 15/50/23 6 8x10000000 00.04.01 11/20/23 1 8x10180000 spander System 00.04.01 11/26/23 2	
SDK Revision:-		
HAL Revision: 0.16.0.0 SES Revision: 0.16.0.0 SDE Revision: 0.16.0.0 Spico Fu Revision: 0x8a69.014 CSHLib Revision: 0.0.17.0	f	
Current Toolchain Revision:-		
ARH RVDS v.410713		



• The changes have been made would take effect immediately as the running-config.

Please be sure to apply "save" command so the changes being made would be saved for use in next reboot as the start-config. Or, the changes would lose.

5.3.2.1.2 Scenario 2: Expander w/o Ethernet board

When there is no Ethernet Board on top of the Primary Expander module users need to connect serial console to Primary or Secondary Expander for managing them separately.

• "bpP>" or "bpS>" prompts in Console Terminal means the system is without Ethernet board installed and no network access support.

• "bpP>" prompts meaning serial console is connecting with Primary Expander.

• "bpS >" prompts meaning serial console is connecting with Secondary Expander.

• "?" or "help" command to display the commands help detailing how to use the console commands. For Example, "rev" to display firmware version, "sys" to display system status, "reset" to reset Expander watch dog.

uog.	
📒 COM7:115200baud - Tera Term VT	
Eile Edit Setup Control Window Help	A
Function	Command
System Information	sys [rev alarm hdd id] default show system information rev : show all system revision alarm : show system alarm hdd : show HDD information id : show id state sys id <on off="">: set id state ******** sys id only support JBOD system ****</on>
QA Test	t.QA
Thermal status	t.thermal
Fan speed reading	t.fan
Zone Configuartion	c.zone <enable disable curr config> c.zone slot <zoneno> <<slotno> <slotno>~<slotno>> ZoneNo : 1 to MaxGroup SlotNo : 1 to MaxGlot c.zone sloth <zoneno> <slotmaphi> <slotmaplow> SlotMapHi : bit map for slot 33 to 64 SlotMapLow: bit map for slot 1 to 32</slotmaplow></slotmaphi></zoneno></slotno></slotno></slotno></zoneno></enable disable curr config>

• "? <command>" to display usage of the specific CLI command.



COM7:115200baud - Tera Term VT File Edit Setup Control Window Help bpP >? sys	
Function	Command
System Information	sys [rev alarm hdd id] default show system information rev : show all system revision alarm : show system alarm hdd : show HDD information id : show id state sys id <on off="">: set id state *###### sys id only support JBOD system *######</on>
Function	Command
Reset the expander	reset [watchdog]

• Please note that the JBOD systems share the same Expander CLI commands no matter it is with or without Ethernet Management board inside unless otherwise specified.

5.3.3 Network Management

An Ethernet Board is required to support Network management. The Ethernet board sits on top of the Primary Expander module to provide Network Management in various protocols such as Telnet, SSH, Web-GUI, SNMP. It also provides email message sending while there is an alarm occurring by properly configuring the SMTP information.

While there is an Ethernet Board on top of the Primary Expander module it provides a flexible way to manage both Expanders through any physical RS-232 port on either Primary Expander or Secondary Expander by changing directory to /primary or /secondary.

The default setting of the Ethernet board is as below. IP Address : 192.168.100.1 Subnet mask : 255.255.255.0 Gateway : 192.168.100.254 Username : admin Password : default

* Please be sure the management host is in the same IP network domain as the system.

* Users can make changes of the settings to meet the network environment.

* For security purposes, we strongly recommend users to change the password immediately after the system is setup online.



5.3.3.1 Telnet

As an Ethernet Management board exists, rich set of network protocols are leveraged for flexible remote management. The supported protocols are Telnet, SSH, Web-GUI, SNMP and SMTP.

• Telnet is default enabled in Ethernet service. It provides the same level of CLI commands as it is through RS-232 console port.

• The difference from serial console is it requires Credential - Username and Password to gain access to Telnet session.

5.3.3.2 SSH

• SSH is default enabled in Ethernet service. It provides the same level of CLI command as it is through serial console or Telnet session.

• SSH provide a secure connection between host and JBOD system. It is default enabled on most Linux OSes. There are some freeware SSH tools for Windows to use such as Putty, Tera Term, ... etc.

● TCP/IP		192.168.10	TCP por	n#: 22	•
		SSH	SSH <u>v</u> ersion:	SSH2	•
		O Other	Proto <u>c</u> ol:	UNSPEC	•
) S <u>e</u> rial	Po <u>r</u> t:	COM8: USE	Serial Port (CO	M8]	Ŧ

• Below is the Tera Term example to establish SSH session.





CURITY WARNIN	G	×
list of known host	for the server "192.168 s. The machine you have nachine pretending to be	e contacted
	add this machine to the k n you will not receive thi	
(P)	key fingerprint is: d5:bcif9:9d:34:b0:74:5	0:96:86:55
+[RSA 1	040]+ o .=+. o +.+. + =E	*
	hine and its key to the k	
Cor		
	ntinue Disconne	
← <u>Cor</u> H Authentication gging in to 192.168	ntinue Disconne	
Authentication gging in to 192.168 uthentication requir	ntinue Disconne 3.100.1 ed.	
Gor → Authentication agging in to 192.168 uthentication requir User name:	atinue Disconne B.100.1 ed. admin	ect
Gor → Authentication agging in to 192.168 uthentication requir User name:	admin	ect
Gor → Authentication agging in to 192.168 uthentication requir User name:	admin Remember password Forward agent	ect
Gor H Authentication agging in to 192.168 uthentication requir User name: Passphrase: ● Use plain passw	admin Remember password Forward agent	ect
Gor H Authentication agging in to 192.168 uthentication requir User name: Passphrase: ● Use plain passw	admin Pisconne admin Admin Remember password Forward agent vord to log in	ect

🕖 Use r <u>h</u> osts to	log in (SSH1) Local yser name:
	Host private key file:
🗇 Use <u>c</u> hallenge	response to log in(keyboard-interactive)



/ngmt.s# 1 ? rdel date	dns gateway	ipaddr mail	ntp passwd	primary reboot	secondary service	timezone upgrade	use use
list hcp ion	help	netmask	ping	save	samp	useradd	ver
dhcp dns gateway ipaddr list mail netmask passwd reboot save service upgrade useradd userdel userlist version //ngmt.s#	display display display list pat display change p reboot m save con display upgrade add new delete a display	or set Ethe ch commands or set send or set Ethe bassword banagement b fig to NURA or set serv	server er (example or control mail param ernet IP ne board M ice(telnet, board or e; tt	path eters tmask (defau /SSH/WEB/SNM xpander soft	le: 192.168. lt: 255.255. P>		

5.3.3.3 Web UI

• Web-GUI is the easiest way to manage JBOD system. It is default enabled on system.

• Users can simply open Web Browser and giving the JBOD management IP address in URL address field to start accessing system.

Login Page

SNR
JBOD Management
login

Version Page



£

Management Board		
Model	SNR-JB212D	
Board ID	JB212D(S)	
Serial Number	36223301850121	
SAS Address	5FAE1901_200141BF	
Hardware Version	1.0	
Firmware Version	1.0.4.1	
MFG Version	1.0.2.1	
MAC Address	FA.E1.90.01.41.BF	
Enclosure		
Enclosure Height	20	
Bay Number	12	
HDD Type	3.5"	
Backplane		
MCU Version	RJ-07 Series,HW.2.0,SW.1.0.6,1	
	System Page	
	System Page	
Temperature Status _∞	System Page	
Expander Die	36	
Expander Die Backplane Left	36 23	
Expander Die Backplane Left Backplane Right	36 23 24	
Expander Die Backplane Left	36 23	
Expander Die Backplane Left Backplane Right	36 23 24	
Expander Die Backplane Left Backplane Right Another ExpDie Voltage Status w 3.3V	36 23 24 35 35	
Expander Die Backplane Left Backplane Right Another ExpDie Voltage Status m 3.3V 5V	36 23 24 35 35 35 5.1	
Expander Die Backplane Left Backplane Right Another ExpDie Voltage Status M 3.3V	36 23 24 35 35	
Expander Die Backplane Left Backplane Right Another ExpDie Voltage Status m 3.3V 5V	36 23 24 35 35 35 5.1	
Expander Die Backplane Left Backplane Right Another ExpDie Voltage Status m 3.3V 5V 12V	36 23 24 35 35 35 5.1	
Expander Die Backplane Left Backplane Right Another ExpDie Voltage Status on 3.3V 5V 12V Fan Status (orei)	36 23 24 35 35 51 116	
Expander Die Backplane Left Backplane Right Another ExpDie Voltage Status on 3.3V 5V 12V Fan Status.(exp) Fan 1	36 23 24 35 35 51 116 4080	
Expander Die Backplane Left Backplane Right Another ExpDie Voltage Status m 3,3V 5V 12V Fan Status mm Fan1 Fan2	36 23 24 35 35 51 116 4800 4320	
Expander Die Backplane Left Backplane Right Another ExpDie Voltage Status m 3.3V 5V 12V Fan Status mm Fan1 Fan2 Fan3 Fan4	36 23 24 35 35 5.1 11.6 4860 4320 5100	
Expander Die Backplane Left Backplane Right Another ExpDie Voltage Status m 3.3V 5V 12V Fan Status mm Fan1 Fan2 Fan3	36 23 24 35 35 5.1 11.6 4860 4320 5100	
Expander Die Backplane Left Backplane Right Another ExpDie Voltage Status m 3.3V 5V 12V Fan Status mm Fan1 Fan2 Fan3 Fan4	36 23 24 35 35 5.1 11.6 4860 4320 5100	

5.3.3.4 SNMP

• NMP is a popular network device management protocol that is widely used by IT people to manage systems, devices and equipment which are with SNMP support.

• JBOD system has SNMP agent inside the network management board supporting SNMP v1 and v2c.

• Users need to configure the same read and write community string in JBOD system as the SNMP manager so the system can be managed by the SNMP Manager.





• An IN-WIN proprietary MIB which define system information is required to compile to SNMP Manager so the OID is able to be accessed properly.



inwin-jbod.mib

SNMP Manager

Any SNMP Managers can be used to access system information by properly configuring system setting including IP address, Read community string, Write community string to match the setting on system. And compile JBOD MIB file to the manager is necessary. Below an example to browse the system MIB with a free tool.

				. I manage			wnload
b 📥 🗊 🚳 🐚 🕾 📹 🗊 💋 🔨	🖄 🛅 👹	1	🍳 😳 🔚		3	More F	Free Tools
Loaded MibModules ANAirType-MIB RFC1213-MIB INWIN-JBOD-MIB enterprises inwinMib G platform	Host Community Set Value	•••	168.173.127 ●●●●	•	Port Write Comm	161 unity 🔍 🔍	-
e g product	Device Type		Not Available				C Reload
ibodDevBase			None				1
jbodDevTemperatureTable ⊕ III jbodDevTemperatureEntry	Suggested C	JIDS	None				•]
in ibodDevVoltageTable	Object ID	uet.prive	te enterprises in	winMib.p	latform.product	jbodDevLog	Table.jbodDevLogEntry
DodDevFanTable JbodDevFanEntry	status.15			ок			
jbodDevDiskTable	status.16			OK			
ie- III jbodDevDiskEntry ibodDevLogTable	status.17			ОК			
	status.18			OK			
TC TEXTUAL CONVENTIONS	status.19			ОК			
	status.20			OK			
SNMPv2-MIB	status.21			OK			
	status.22			OK			
	status.23			OK			
	status.24			OK			1
	Description M	ultiVar					
	Syntax				Status	current	
	Access	not-accessi	ble		Reference		
	Index	logIndex					
	Object ID		47464.1.1.6.1				

5.3.4 Version Information

Users can check the system hardware and firmware version through various ways.

5.3.4.1 CLI (UART without Ethernet Board)

- "sys rev" display compact Expander hardware, firmware and MFG version.
- "rev" display verbose system version information



SECONDARY>rev	
Hardware Revision Information:-	
Vendor ID	:918
Product ID Product Revision Level	JB2120(S) :Hinor = 0x00, Unit = 0x04
Сонроnent Туре Сонроnent ID	:Cub-R :DxD23b (Bond Option :36)
Component Revision Level	:1 (80)
Firmware Revision Information:-	
Active Firmuare: Firmuare Copy	
Boot Inage: Revision: 1.0.3.0 Platforn Hama: IN-WIN Cub E Version Hama: SR335xFH-D1. Firmuare Fanily: O Unerfanily Fast Boot: Yes Inage Address	ixpander Synten 00.03.00 DS-30/23 € 0 € 0000000
Firmware Copy 1: Revision: 1.0.4.1 Platforn Mane: IN-WIN Cub E Version Mane: SRS35xFH-D1. Firmware Family: O Denfamily Fast Boot: Yes Image Address	xqandar Synten 00.04.01 11/20/23 ⊑ 0 ⊑ schulls0000
Firmware Copy 2: Revision: 1.0.4.1 Platforn Mane: IN-MIN Cub E Version Nane: SR355xFM-D1. Firmware Family: O OenFamily Fast Boot: Yes Image Address	
SDK Revision:-	
HAL Revision: 0.16.0.0 SES Revision: 0.16.0.0 SCE Revision: 0.16.0.0	
Spico Fu Revision: 0x8a69_014 CSHLib Revision: 0x0.17.0	f
Current Toolchain Revision:-	
ARH RVDS v.410713	

5.3.4.2 CLI (UART, Telnet and SSH with Ethernet Board)

• Type "version" command on Ethernet Layer to display all the version information including Ethernet firmware version, Expander HW version, Expander firmware version and MFG CFG file version.

• To check SAS Expander versions only, users can change directory to Expander layer and type "sys rev" command to check Expander version information.

5.3.4.3 Web-GUI

• Type system IP address on Web Browser URL address field to gain access to the system. After logging in, click "Version" button on the left pane to view the system version information on the right pane. Scroll down to view all information if the display is out of page.





	Management Board	1	
rsion	management Board	•	
	Model	SNR-JB212D	
stem	Board ID	JB212D(S)	
	Serial Number	36223301850121	
work	SAS Address	5FAE1901_200141BF	
dDisk	Hardware Version	1.0	
GDISK	Firmware Version	1.0.4.1	
	MFG Version	1.0.2.1	
	MFG Version MAC Address Enclosure	1021 FA E1:0001.41 BF	
	MAC Address		
	MAC Address	FA E1 50 01 41 BF	
	MAC Address Enclosure Enclosure Height	FA E 1 90 01 41 BF 2U	
	MAC Address Enclosure Enclosure Height Bay Number	FA.E1.90.01.41.BF 2U 12	

5.3.5 System Status

System Status is to display the status of the system sensors including temperature, voltage, fan speed and Power Supply.

There are 1 temperature sensor on each Expander, 2 system temperature sensors on Backplane, 5V and 12V voltage sensors on backplane, 4 Fan speed sensors on backplane and 2 Power Supply health sensors on PDB.

5.3.5.1 CLI (UART without Ethernet Board)

• Type "sys alarm" on console to check the system sensor's readings and their status.

• Connect serial cable to Primary and Secondary Expander to check the status respectively. As the design, both Primary and Secondary Expanders would get the same reading and status (except Exp Die Temperature) since they are from the same sensors.





😃 COM7:115200baud - Tera Term VT		
<u>F</u> ile <u>E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp		
		*
ar 12008 12		
bpP >sys alarm		
m , , , , , , , , , , , , , , , , , , ,		
Temperature 3 0x0	ot other a OV	
	status : OK	
	status : OK	
(3) Sense BP2 : 30 dC Voltage 2 OxO	status : OK	
(1) 5V Sensor : 5.06 V	atatua : OK	
(2) 12V Sensor : 12.27 V		
Fan $4 0x0$	status . on	
(1) System Fan01 : 5220 RPM	status : OK	
(2) System FanO2 : 5250 RPM	status : OK	
	status : OK	
(4) System FanO4 : 4500 RPM	status : OK	
Power Supply 2 0x0		
(1) AC Module 1 :	status : OK	
(2) AC Module 2 :	status : OK	
bpP >		
bpP >		*

5.3.5.2 CLI (UART, Telnet and SSH with Ethernet Board)

• Type "sys alarm" command on Expander layer would display the System sensors' reading and their status.

• Please note that the Expander temperature sensor "Exp Die" is located on the Expander chip so need to change directory to Primary and Secondary to read its status respectively.





Telnet 192.168.173.127	
/mgmt.s# cd primary/	
/mgmt.s/primary# sys alarm	
sys alarm	
T	
Temperature 3 0x0 (1) Exp Die : 69 dC	status : OK
(2) Sense BP1 : 30 dC (3) Sense BP2 : 30 dC	status : OK
Voltage 2 0x0	Status . OR
(1) 5V Sensor : 4.98 V	status : OK
(2) 12V Sensor : 12.20 V	status : OK
Fan 4 0x8	
(1) System Fan01 : 4920 RPM	
(2) System Fan02 : 4860 RPM	status : OK
(3) System Fan03 : 5550 RPM	status : OK
(4) System Fan04 : 0 RPM Power Supply 2 0x0	status : Critical
Power Supply 2 0x0	
(1) AC Module 1 : (2) AC Module 2 :	status : OK
(2) AC MODULE 2 :	status : OK
/mgmt.s/primary# cd	
/mgmt.s# cd secondary/	
/mgmt.s/secondary# sys alarm	
sys alarm	
Temperature 3 0x0	the second s
(1) Exp Die : 66 dC (2) Sense BP1 : 30 dC	status : OK
(3) Sense BP1 : 30 dC	status : OK status : OK
Voltage 2 0x0	Status : OK
(1) 5V Sensor : 4.98 V	status · OK
(2) 12V Sensor : 12.20 V	status : OK
Fan 4 0x8	Searcas . on
(1) System Fan01 : 4920 RPM	status : OK
(2) System Ean02 : 4860 RPM	status : OK
(3) System FanO3 : 5550 RPM	status : OK
(4) System FanO4 : 0 RPM	status : Critical
Power Supply 2 0x0 (1) AC Module 1 :	
(1) AC Module 1 :	status : OK
(2) AC Module 2 :	status : OK
/mgmt.s/secondary# _	
۰ III	•

5.3.5.3 Web-GUI

• Type system IP address on Web Browser URL filed to gain access to the system. After logging in, click "System" button on the left pane to view the system status information on the right pane. Scroll down to view all information if the display is out of page.

	Temperature Statu	S (C)	
ersion	Expander Die	36	
ystem	Backplane Left	23	
Jotom	Backplane Right	24	
twork	Another ExpDie	35	
rdDisk			
TUDISK	Valtana Status		
	Voltage Status "		
	3.3V	3.5	
	5V	5.1	
	12V	11.6	
	Fan Status		
	Fan1	4860	
	Fan2	4320	
	Fan3	5100	



5.3.6 Network Settings

Network settings is for displaying and setting the system network information including Current Network Status, DHCP/Static IP Address selection, Network Services, Mail configuration, SNMP configuration.

5.3.6.1 CLI (UART, Telnet and SSH with Ethernet Board)

• There are a couple network setting commands on Ethernet layer such as "ipaddr", "gateway", "netmask", ...etc. to view and configure the setting respectively. Please refer to Management\CLI session for more details in how to use the CLI commands.

• Please be sure to apply "save" command so the setting would be saved for next system reboot.

5.3.6.2 Web-GUI

• Type system IP address on Web Browser URL filed to gain access to the system. After logging in, click "Network" button on the left pane to view the network information on the right pane. Scroll down to view all information if the display is out of page.





Version	Network Status		
System	Physical Address Ethernet Link Status	FA E1 90.02 94.8F	
System	Ethernet Link Status	Up 100	
Network	Ethernet Link Speed	Full	
	DHCP Enabled	No	
HardDisk	IP Address	192.168.100.1	
	Subnet Mask	255 255 255 0	
	Default Gateway	192.168.100.254	
	Host Name	RJ7_fa:e1:90.2:94:bf	

5.3.7 Disk Information

Disk information is to show the disk drives status on the system including Bay id, Phy id, SAS Address, Link speed and current status.

5.3.7.1 CLI (UART without Ethernet Board)

• Type "sys hdd" command to display the system hard disk drives status

on the system.

on the system.				
😃 COM7:115200baud - Tera Term VT				x
<u>File E</u> dit <u>S</u> etup C <u>o</u> ntrol <u>W</u> indow <u>H</u> elp				_
				^
bpP >				
bpP >sys hdd				
		Device Type		
1 12 5B0BD6D3_D3102E21 2 13 5B0BD6D3_D3102279	6G 6G	END END	OK OK	
3 14 5B0BD6D3_D3102E19	6G	END	OK	
4 15 5B0BD6D3_D3102269 5 16 5B0BD6D3 D310251D	6G 6G	END END	OK OK	
6 17 5B0BD6D3_D3102541	6G	END	OK	
7 18 5B0BD6D3_D3102E3D	6G	END	OK	
8 19 5B0BD6D3_D3102485 9 20 5B0BD6D3_D310225D	6G 6G	END END	OK OK	
10 21 5B0BD6D3_D3102E01	6G	END	OK	
11 22 5BOBD6D3_D310248D 12 23 5BOBD6D3_D3102DD5	6G	END	OK	
12 23 5BOBD6D3_D3102DD5	6G	END	OK	
bpP >				
				-

5.3.7.2 CLI (UART, Telnet and SSH with Ethernet Board)

• Type "sys hdd" command on Expander layer would display the system hard disk drives status on the system.



	Phy	SAS Address	Speed	Device Type	Status	
	12	5B0BD6D3_D3102A31	6G	END	OK	
2	13	5B0BD6D3_D3102A89	6G	END	OK	
3	14	5B0BD6D3_D3102B71	6G	END	OK	
4	15	5B0BD6D3_D31023E9	6G	END	OK	
23456	16	5B0BD6D3_D3102891	6G	END	OK	
6	17	5B0BD6D3_D3102BA5	6G	END	OK	
	18	5B0BD6D3_D310211D	6G	END	OK	
8	19	5B0BD6D3_D31020FD	6G	END	OK	
9	20	5B0BD6D3_D3102ACD	6G	END	OK.	
	21	5B0BD6D3_D310212D	6G	END	OK	
1	22	5B0BD6D3_D3102145	6G	END	OK	
2	23	5B0BD6D3_D3102A85	6G	END	OK	
3	24	5B0BD6D3_D3102ADD	6G	END	OK	
4	25	5B0BD6D3_D3102239	6G	END	OK	
5	26	5B0BD6D3_D31029DD	6G	END	OK	
	27	5B0BD6D3_D3102A19	6G	END	OK	
	32	5B0BD6D3_D3102AE1	6G	END	OK	
	33	5B0BD6D3_D3102B8D	6G	END	OK	
9	34	5B0BD6D3_D310290D	6G	END	OK	
)	35	5B0BD6D3_D31028A1	6G	END	OK	
	28	5B0BD6D3_D3102869	6G	END	OK	
2	29	5B0BD6D3_D31023ED	6G	END	OK	
	30	5B0BD6D3_D31023BD	6G	END	OK	
4	31	5B0BD6D3_D31028C1	6G	END	OK	

5.3.7.3 Web-GUI

• Type system IP address on Web Browser URL filed to gain access to the system. After logging in, click "Disk" button on the left pane to view the disk drives information on the right pane. Scroll down to view all information if the display is out of page.





5.3.8 Zone Setting 5.3.8.1 CLI (UART without Ethernet Board)

5.3.8.1.1 Type "c.zone curr" command to show the current zone running setting.

one g	roup2 :	fffff	ffff	f000000f f00000f(00000f0)	ne : 1						
===== Slot Phy Zone		13		15			====== 7 18 2	8 19 2		====== 10 21 2	11 22 2	===== 12 23 2
bpP >	c.zone	confi	g									
one co ===== one g:	onfigur ====== roupl :	ation ====== fffff	: en ===== ffff	able ====== f000000f f00000f(;)	=====			=====		=====	====
one co ===== one g: one g:	onfigur ====== roup1 : roup2 : tream : =======	ation ====== fffff fffff 00000	: en ===== ffff ffff 0000 =====	====== f000000f)), zo ======	======	======	=====		====== 10		

5.3.8.1.2 Type "c.zone slot 1 1~6" to configure Zone 1 containing Slot 1 to Slot 6 disk drives.



5.3.8.1.3 Type "c.zone config" to show the zone configuration the users have made.

5.3.8.1.4 Type "c.zone down 1" to configure the Exp. Port of the 3 SAS ports belonging to zone group 1.

5.3.8.1.5 Type "c.zone enable" to enable Zoning setting of the system.

5.3.8.1.6 Type "c.zone disable" to disable Zoning setting of the system. 5.3.8.1.7 A system reboot is required to make the Zone configuration take effect.

5.3.8.1.8 Please note that the Zoning setting is only made for the expander the serial port is currently connected. To make both expander, please do it again on other Expander.

5.3.8.2 CLI(UART, Telnet and SSH with Ethernet Board)

5.3.8.2.1 Type "c.zone curr" command on Expander layer would display the current zone running setting.



Fu	nction		Command							
Zo	ne Configuart	tion	Slot c.zone o set	lot <zo No : No : NapHi : MapLow: lown <zo downstr</zo </zo 	neNo> 1 to 1 to oneNo bit bit neNo>	< <slo MaxGr MaxSl > <slo map fo map fo one</slo </slo 	tNo> < oup ot tMapHi r slot r slot	SlotNo > <slo 33 to 1 to</slo 	tMapLo 64 32	
.zone			***** z(one only	' supp	eeeee	=====	=====		
Curren	curr t zone : enal roup1 : ffff roup2 : ffff	ble ffff foo ffff foo	urr 00000f 0000f0		' supp		======	=====		
Curren	curr t zone : enal	ble ffff foo ffff foo	urr 00000f 0000f0		, supp	8 				

5.3.8.2.2 Type "c.zone slot 1 $1\sim$ 6" to configure Zone 1 containing Slot 1 to Slot 6 disk drives.

5.3.8.2.3 Type "c.zone config" to show the current zoning configuration. A system reboot is required to make the configuration take effect.

5.3.8.2.4 Type "c.zone down 1" to configure the Exp. Port of the 3 SAS ports belonging to zone group 1.

5.3.8.2.5 Type "c.zone enable" to enable Zoning setting of the system.

5.3.8.2.6 Type "c.zone disable" to disable Zoning setting of the system.

5.3.8.2.7 A system reboot is required to make the Zone configuration take effect.

5.3.8.2.8 Please note that the Zoning setting is only made for the expander the console is currently on. To make both expander, please do it again on other Expander.



Telnet 192.168.173.112	
/mgmt.s/primary# c.zone disable c.zone disable	*
Disable zone	
/mgmt.s/primary# c.zone enable c.zone enable	
Enable zone	
/mgmt.s/primary# c.zone slot 1 1~6 c.zone slot 1 1~6	
Set slot1 ~ slot6 ZoneNo = 1	
/mgmt.s/primary# c.zone down 1 c.zone down 1 Set downstream ZoneNo = 1	
/mgmt.s/primary#_c.zone config c.zone config Zone configuration : enable	
zone group1 : ffffffff f000000f zone group2 : ffffffff f00000f0 down stream : 00000000 00000f00 , zone : 1	
	12 23 2
/mgmt.s/primary# _	
٠ (m	► _{iii}

5.3.8.3 Web-GUI

5.3.8.3.1 Type system IP address on Web Browser URL filed to gain access to the system. After logging in, click "Zone" button on the left pane to view and configure the Zoning setting of the system.

5.3.8.3.2 "Current Zone Configuration" session shows the current zone setting on the system including the disk bay assignment of zone and the cascading port zone group.

5.3.8.3.3 "New Zone Configuration" session allow users to configure zone setting on the system in an easy way by selecting the disk bays and the zone group the cascading port belonging to. Click "Apply" to make the configuration take effect.

5.3.8.3.4 Whenever there are 2 SAS Expanders on the system, the Zoning setting applies to both while configuring through Web-GUI.



5.3.9 Firmware Upgrade

Firmware upgrade function provides a way to update system firmware when necessary.

There are 3 firmware for JBOD system:

1. Ethernet Management Board Firmware (when there is Ethernet management board)

2. SAS Expander Board Firmware

3. SAS Expander MFG CFG binary

There are a couple ways to upgrade system firmware according to the HW configurations. Please note that the upgraded firmware won't take effect immediately until a system reboot.

5.3.9.1 CLI (UART without Ethernet Board)

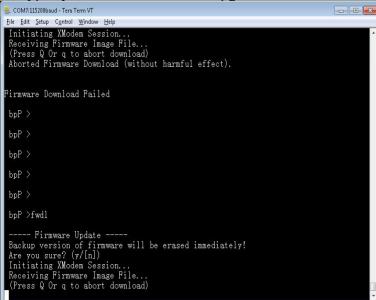
When there is no Ethernet Management board on the system users can upgrade SAS Expander firmware and MFG CFG file through Xmodem protocol. Most of serial console terminal tools such as Tera Term support Xmodem protocol for sending file to system.

The Firmware upgrade has to be done on both the Primary and Secondary SAS Expander separately whenever there is a Secondary SAS Expander on the system.

5.3.9.1.1 SAS Expander Firmware

A. "fwdl" command on serial console.

B. Type "y" to commit firmware upgrade.



C. Select xmodem as the protocol to transfer file.





<u>E</u> dit	t <u>S</u> etup	Control	Window	Help					
Dup	v connecti Ilicate sess win conne	ion	Alt+N Alt+D Alt+G	load (witho ed	ut ł	armful effe	ct).		
View Shor	 nment to l v Log w Log dial d file	2			be e	erased immed	iately!		
Tran	nsfer		•	Kermit	•				
Cha Repl TTY	SCP nge direct lay Log Record	ory		XMODEM YMODEM ZMODEM B-Plus Ouick-VAN	* * * *	Receive Send armful effe	et).		
TTY	Replay				10				
Prin	t		Alt+P						
Disc Exit Exit			Alt+I Alt+Q	nware will	be e	erased immed	iately!		
cei	iving	Firmw	are Im	sion age File t download)					

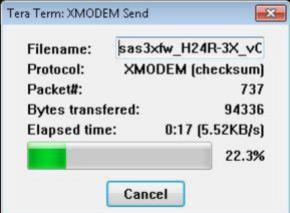
D. Select the correct SAS Expander firmware file.

E. Click on "Open" to start the selected firmware transferring

to SAS Expander.

Look in: 🔒	Firmware 👻	0000	
Name	*	Date modifi	ed 🔷
msas3_H RJ224-1 RJ224-1 RJ224-1 RJ224-1	0.3	2016/5/26 7 2016/5/27 7 2016/6/6 下 2016/6/17 7	下午 12: 午 05:50 _■
Submedun un u	H24R-3X_vC_00xx_2016_0606.fw	2016/6/6下	午 02:12 🗣
< [
File <u>n</u> ame:	sas3xfw_H24R-3X_vC_00xx_2016_0606		<u>O</u> pen
files of type:	(All(*,*)	•]	Cancel
			Help
Option			
() Checksur	n 🔿 CRC 🕥 1K		

F. Serial console would then start firmware transfer.

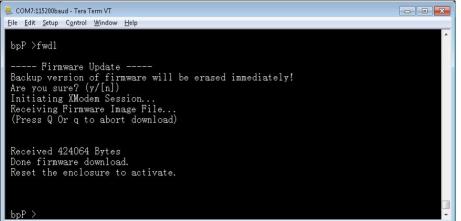




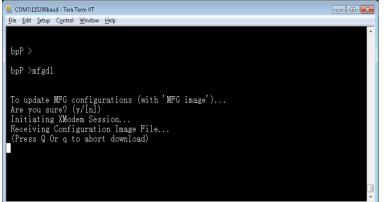


G. After firmware transfer completed, reboot Expander to

activate new firmware.



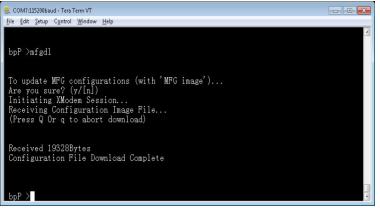
5.3.9.1.2 SAS Expander MFG CFG binary A. Similar to firmware upgrade, typing "mfgdl" on console.



B. Type "y" to commit MFG file upgrade.

- C. Select xmodem as the file transfer protocol.
- D. Select the correct MFG CFG file from file browser.
- E. Click "Open" to start file transfer.

F. Serial console would then start file transfer.





G. Reset Expander to activate MFG CFG file by applying "reset" command or power recycle the system.

5.3.9.2 CLI (Telnet or SSH with Ethernet board)

When there is an Ethernet Management board on the system users should upgrade Ethernet Board firmware, SAS Expander firmware and MFG CFG file through network instead of xmodem when using CLI commands.

All sort of firmware upgrade goes through TFTP and the system would intelligently upgrade firmware to the right hardware. More conveniently, both the Primary and Secondary SAS Expanders would be upgraded at the same time when upgrade command is applied.

Run a TFTP server on your computer and assign the "Current Directory" with the path to where the firmware is stored. Assign "Server interface" with the IP address in the same domain as JBOD system. (Please be sure to configure TFTP server accordingly if you are using different TFTP server from the one in the example).

Current Directory	C:\cygwin\home\eric	Brow	/se	
Gerver interfaces	192.168.173.99	Atheros AF 👻	Show	Di
Tftp Server Log	viewer			
peer	file	start time	progress	
		, addr unio j	progress	
		a dar uno	progress	

Do not turn off the system while the firmware is upgrading, it might crash the system.

New firmware does not take effect until a system reboot.

5.3.9.2.1 Ethernet Management Board Firmware

"upgrade <tftp_server_ip> <filename> command to start Ethernet Firmware upgrade.



Current Directory	C.\cygwin\home\eric	c\FWUpg\Fimw	Browse
Server interfaces	192.168.173.99	Atheros AF 👻	Show Dir
Titp Server Log	viewer		
	7854 [28/06 10:50:16. (_IJ224_vC_00xx_201		i blks, 19524 byl
			blks, 19524 byl
			blks, 19524 byl
	(_JJ224_vC_00xx_201)		blks, 19524 byl

5.3.9.3 Web-GUI (with Ethernet board)

When there is an Ethernet Management board on the system users can upgrade system firmware through Web-GUI other than CLI in console or Telnet session.

Upgrade system firmware through Web-GUI is much easier than other ways. Just simply select the firmware by file browser and click 'Apply' to start.

All the firmware including Ethernet board firmware, SAS Expander firmware and MFG CFG file apply the same way to upgrade.

After system upgrade, be sure to reboot system to take effect the new firmware which has been upgraded to the hardware.

5.3.9.3.1 Open Web browser and give the URL filed with system IP address. 5.3.9.3.2 Given username and password on the Welcome page.

V SNR
JBOD Management
login



5.3.9.3.3 Click "Tool" button on the left pane and scroll down to "Software Upgrade" session on the right pane.

5.3.9.3.4 Click "Choose File" button to select the firmware being upgraded from file browser and click "Open" to commit.

The firmware can be an Ethernet board firmware, SAS Expander firmware or SAS Expander MFG CFG file. System intelligence would detect the firmware type and upgrade to the right hardware.

No winom	ne ≯ei	ic > FWUpg > Firmware • 4 Search Firmware	
Organize 🔻 New	folder	8#	• 🔟 🤅
🔆 Favorites	^	Name	Date modifi
🧮 Desktop		msas3_H24R-3X_U212_vC_00xx_2016_0526.bin	2016/5/26 下
📕 Downloads		msas3_H24R-3X_U224_vC_00xx_2016_0526.bin	2016/5/26 下
🔛 Recent Places		msas3_H24R-3X_JJ316_vC_00xx_2016_0526.bin	2016/5/26 🏹
🝊 OneDrive	E	msas3_H24R-3X_IJ424_vC_00xx_2016_0526.bin	2016/5/26 下
		FJ RJ224-1.0.2	2016/5/27 下
🧊 Libraries		🛃 RJ224-1.0.3	2016/6/6下4
Documents		FJ RJ224-1.0.4	2016/6/17 下
J Music		sas3xfw_H24R-3X_vC_00xx_2016_0606.fw	2016/6/6下4
Fictures			
🛃 Videos			
🜉 Computer			
🚢 Local Disk (C:)			
👝 Data (D:)	+ 4	ш	
I	File <u>n</u> am	e: sas3xfw_H24R-3X_vC_00xx_2016_0606.fw 👻 All Files	•
		Open 🔽	Cancel



5.3.9.3.5 Click "Upgrade" button to start firmware upgrade.

5.3.9.3.6 Web would direct to a page telling firmware is upgrading. After upgrade is done, Web will direct to the Login page.

(192.168.173.113/goform/U X	in – D X
← → X 🗋 192.168.173.113/goform/uploadForm	☆ =
Upgrade Filename = sas3xfw_H24R-3X_vC_00xx_2016_0606.fw	
Size = 423976 bytes	

File size written = 423976 bytes Please wait some minutes for upgrading!

5.3.9.3.7 A system reboot is require to make new firmware take effect.

			(and) = 1 at 1 at
8.173.113/tool	asp		☆]≡
	PING		1
0			
۵,	Account Management		
3	Account	admin	
9	Password		
	Change		
	Software Upgrade		
	Last Upgrade OK		
	Please specify a upgrade f	Io Choose File No file chosen	
	Upgrade		
	System Reboot		
	Reboot		
	0 ¢° © 🖬 🗙	 Account Management Account Account Password Confirm PWD Change Software Upgrade Let: Upgrade OK Pieses specify a upgrade fill Upgrade System Reboot	PIND PIND Account Management Account admin Password Confirm PWD Change Change Software Upgrade Let Upgrade CK Please specify a upgrade file Chasse File No file chasse System Reboot



5.3.10 System Logs

JBOD systems support the capability to record system information to NVRAM for the purpose of activities history monitoring. The recorded information will retain until users issue clear command to erase from NVRAM or the NVRAM is full. Two categories of system information - Info and Fail would be recorded when happens.

5.3.10.1 CLI (UART without Ethernet Board)

Users can check the system logs by connecting serial cable to Expander RS-232 port directly. Users will need to physically connect serial cable to Primary or Secondary SAS Expander to check the logs on it.

Users can check the system logs by connecting serial cable to Expander RS-232 port directly. Users will need to physically connect serial cable to Primary or Secondary SAS Expander to check the logs on it.

5.3.10.1.1 "nvlogs" command to display all logs

🚇 COM7:115200baud - Tera Term VT	
<u>File Edit Setup Control Window H</u> elp	
	~
bpS >nvlogs	
<pre><0:00:00:01.898> Info: Firmware initialization started</pre>	
<pre><0:00:00:03.308> Fail: Temp 2 alarm set <0:00:00:03.320> Fail: Temp 3 alarm set</pre>	
<pre><0:00:00:03.32> Fail: Vol 1 alarm set</pre>	
<0:00:00:03.344> Fail: Vol 2 alarm set	
(0:00:00:03.356) Fail: Fan 1 alarm set	
<0:00:00:03.368> Fail: Fan 2 alarm set	
<0:00:00:03.380> Fail: Fan 3 alarm set	
<0:00:00:03.392> Fail: Fan 4 alarm set	
<0:00:00:03.404> Fail: PS 1 alarm set	
<0:00:00:03.416> Fail: PS 2 alarm set	
<0:00:00:00.313> Info: Firmware initialization started	
<pre><0:00:00:03.987> Fail: Temp 2 alarm set</pre>	
<pre><0:00:00:03.999> Fail: Temp 3 alarm set</pre>	
<pre><0:00:00:04.011> Fail: Vol 1 alarm set</pre>	
<pre><0:00:00:04.023> Fail: Vol 2 alarm set <0:00:00:04.035> Fail: Fan 1 alarm set</pre>	
<0:00:00:04.047> Fail: Fan 2 alarm set	
<0:00:00:04.059> Fail: Fan 3 alarm set	
(0:00:00:04.071) Fail: Fan 4 alarm set	
<pre><0:00:00:04.083> Fail: PS 1 alarm set</pre>	
<0:00:00:04.095> Fail: PS 2 alarm set	
<0:00:00:00.262> Info: Firmware initialization started	
<0:00:00:02.360> Info: HDD 1 insert	
<pre><0:00:02.360> Info: HDD 2 insert</pre>	
<0:00:02.360> Info: HDD 3 insert	
<pre><0:00:00:02.361> Info: HDD 4 insert</pre>	
<pre><0:00:00:02.361> Info: HDD 5 insert</pre>	
<pre><0:00:00:02.361> Info: HDD 6 insert <0:00:00:02.362> Info: HDD 7 insert</pre>	
<0:00:00:02.362> Info: HDD 7 insert	



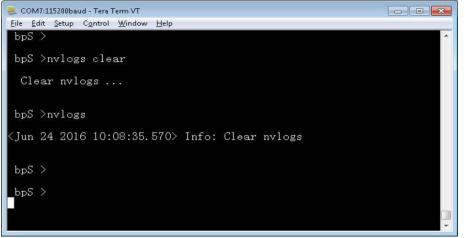


COM7:115200baud - Tera Term VT	- - X
Eile Edit Setup Control Window Help	
	1
bpS >nvlogs info	
0:00:00:01.898> Info: Firmware initialization started	
(0:00:00:00.313> Info: Firmware initialization started (0:00:00:00.262> Info: Firmware initialization started	
(0:00:00:00.262> Info: Firmware initialization started (0:00:00:00:02.360> Info: HDD 1 insert	
0:00:00:02.360> Info: HDD 2 insert	
(0:00:00:02.360> Info: HDD 3 insert	
(0:00:00:02.361> Info: HDD 4 insert	
(0:00:00:02.361) Info: HDD 5 insert	
(0:00:00:02.361> Info: HDD 6 insert	
0:00:02.362> Info: HDD 7 insert	
0:00:00:02.362> Info: HDD 8 insert	
0:00:02.362> Info: HDD 9 insert	
(0:00:02.363> Info: HDD 10 insert	
(0:00:02.363> Info: HDD 11 insert	
(0:00:00:02.363> Info: HDD 12 insert	
0:00:00:02.364> Info: HDD 13 insert	
0:00:02.364> Info: HDD 14 insert	
0:00:02.364> Info: HDD 15 insert	
(0:00:02.365> Info: HDD 16 insert	
0:00:07:20.207> Info: HDD 15 remove	
0:00:07:21.223> Info: HDD 15 insert 0:00:00:00.262> Info: Firmware initialization started	
0:00:00:00.2622 Info: Firmware Initialization started	
(0:00:00:02.360> Info: HDD 2 insert	
(0:00:00:02.360> Info: HDD 3 insert	
0:00:00:02.361> Info: HDD 4 insert	
(0:00:00:02.361> Info: HDD 5 insert	
(0:00:00:02.361> Info: HDD 6 insert	
(0:00:00:02.362> Info: HDD 7 insert	
(0:00:00:02.362> Info: HDD 8 insert	

5.3.10.1.3 "nvlogs fail" to display only the Fail category logs.

SCOM7:115200baud - Tera Term VT	
<u>File Edit Setup Control Window Help</u>	
	*
bpS >nvlogs fail	
<0:00:00:03.308> Fail: Temp 2 alarm set	
<0:00:00:03.320> Fail: Temp 3 alarm set	
<0:00:00:03.332> Fail: Vol 1 alarm set	
<0:00:00:03.344> Fail: Vol 2 alarm set	
<0:00:00:03.356> Fail: Fan 1 alarm set	
<0:00:00:03.368> Fail: Fan 2 alarm set	
<0:00:00:03.380> Fail: Fan 3 alarm set	
<pre><0:00:00:03.392> Fail: Fan 4 alarm set <0:00:00:03.404> Fail: PS 1 alarm set</pre>	
<0:00:00:03.406/ Fail: FS 2 alarm set	
<0:00:00:00:410 Fail: F3 2 alarm set	
<pre><0:00:00:03.999> Fail: Temp 2 alarm set</pre>	
<0:00:00:04.011 Fail: Vol 1 alarm set	
<0:00:00:04.023> Fail: Vol 2 alarm set	
<0:00:00:04.035> Fail: Fan 1 alarm set	
<0:00:00:04.047> Fail: Fan 2 alarm set	
<0:00:00:04.059> Fail: Fan 3 alarm set	
<0:00:00:04.071> Fail: Fan 4 alarm set	
<0:00:00:04.083> Fail: PS 1 alarm set	
<0:00:00:04.095> Fail: PS 2 alarm set	
<0:00:00:03.383> Fail: Fan 1 alarm set	
<0:00:00:03.384> Fail: Fan 2 alarm set <0:00:00:03.384> Fail: Fan 3 alarm set	
<0:00:00:00:03.385> Fail: Fan 4 alarm set	
<0:00:00:03.391> Fail: Fai 4 alarm set	
<0:00:00:03.397> Fail: PS 2 alarm set	
<0:00:00:03,383> Fail: Fan 1 alarm set	
<0:00:00:03.384> Fail: Fan 2 alarm set	
<0:00:00:03.384> Fail: Fan 3 alarm set	
<0:00:00:03.385> Fail: Fan 4 alarm set	*

5.3.10.1.4 "nvlogs clear" to erase all the logs from NVRAM.





5.3.10.2 CLI (UART, Telnet, SSH with Ethernet Board)

Users can check the system logs by connecting UART cable to Expander RS-232 port directly, Telnet or SSH to the system and change directory to Primary or Secondary (if existed) SAS Expander layer.

- 5.3.10.2.1 "nvlogs" command to display all logs
- 5.3.10.2.2 "nvlogs info" to display information category logs.
- 5.3.10.2.3 "nvlogs fail" to display Fail category logs.

5.3.10.2.4 "nvlogs clear" to erase all the logs from NVRAM.

Telnet 192 168 173 112		
RJ-212-03 login: admin Password: /mgmt.s# /mgmt.s# /mgmt.s# cd primary /mgmt.s/primary# nvlogs nvlogs		* =
<pre><jun 00:37:32.000="" 00:37:35.000="" 00:37:35.0005="" 00:38:23.000="" 00:41:04.1005="" 00:41:04.2015="" 00:41:04.2025="" 00:41:04.2035="" 00:41:04.2045="" 00:59:59:429="" 00:59:59:50.0005="" 05:03:45.1433="" 05:07:42.0615="" 08:38:06.4915="" 16:38:52.0005="" 2016="" 22:37:00.0005="" 23="" 24="" <="" <jun="" pre=""></jun></pre>	 Info: Set time Info: Firmware initialization : Info: HDD 1 insert Info: HDD 2 insert Info: HDD 3 insert Info: HDD 4 insert Info: HDD 5 insert Info: HDD 6 insert Info: HDD 7 insert Info: HDD 8 insert Info: HDD 8 insert Info: HDD 9 insert Info: HDD 10 insert Info: HDD 11 insert Info: HDD 11 insert Info: HDD 11 insert 	started
Telnet 192.168.173.112		
		10 M
/mgmt.s# /mgmt.s# cd secondary/ /mgmt.s/secondary# nvlogs nvlogs		*
/mgmt.s# cd secondary/ /mgmt.s/secondary# nvlogs nvlogs <jun 10:08:35.570;<br="" 2016="" 24=""><jun 10:10:03.000;<br="" 2016="" 24=""><jun 10:11:13.712;<br="" 2016="" 24=""><jun 10:11:13.712;<br="" 2016="" 24=""><jun 10:11:15.723;<br="" 2016="" 24=""><jun 10:13:40.373;<br="" 2016="" 24=""><jun 01:38:40.371;<br="" 2016="" 27=""><jun 01:38:40.372;<br="" 2016="" 27=""><jun 01:38:40.372;<br="" 2016="" 27=""><jun 01:38:40.372;<br="" 2016="" 27=""><jun 01:38:40.372;<br="" 2016="" 27=""><jun 01:38:40.373;<br="" 2016="" 27=""><jun 01:38:<="" 2016="" 27="" td=""><td> Info: HDD 1 insert Info: HDD 2 insert Info: HDD 3 insert Info: HDD 4 insert Info: HDD 5 insert Info: HDD 6 insert Info: HDD 6 insert Info: HDD 7 insert Info: HDD 8 insert </td><td>started</td></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun>	 Info: HDD 1 insert Info: HDD 2 insert Info: HDD 3 insert Info: HDD 4 insert Info: HDD 5 insert Info: HDD 6 insert Info: HDD 6 insert Info: HDD 7 insert Info: HDD 8 insert 	started
/mgmt.s# cd secondary/ /mgmt.s/secondary# nvlogs nvlogs <jun 10:08:35.570;<br="" 2016="" 24=""><jun 10:10:03.000;<br="" 2016="" 24=""><jun 10:11:13.712;<br="" 2016="" 24=""><jun 10:11:13.712;<br="" 2016="" 24=""><jun 10:11:15.723;<br="" 2016="" 24=""><jun 10:13:40.373;<br="" 2016="" 24=""><jun 01:38:40.371;<br="" 2016="" 27=""><jun 01:38:40.372;<br="" 2016="" 27=""><jun 01:38:40.372;<br="" 2016="" 27=""><jun 01:38:40.372;<br="" 2016="" 27=""><jun 01:38:40.372;<br="" 2016="" 27=""><jun 01:38:40.373;<br="" 2016="" 27=""><jun 01:38:<="" 2016="" 27="" td=""><td> Info: HDD 1 insert Info: HDD 2 insert Info: HDD 3 insert Info: HDD 4 insert Info: HDD 5 insert Info: HDD 5 insert Info: HDD 7 insert Info: HDD 7 insert Info: HDD 8 insert Info: HDD 9 insert Info: HDD 9 insert </td><td>20</td></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun></jun>	 Info: HDD 1 insert Info: HDD 2 insert Info: HDD 3 insert Info: HDD 4 insert Info: HDD 5 insert Info: HDD 5 insert Info: HDD 7 insert Info: HDD 7 insert Info: HDD 8 insert Info: HDD 9 insert Info: HDD 9 insert 	20



5.3.10.3 Web-GUI (With Ethernet Board)

5.3.10.3.1 Type system IP address on Web Browser URL filed to gain access to the system. After logging in, click "Log" button on the left pane to view and manage the Logs of the system.
5.3.10.3.2 The Log web page provides an easier way for managing the system logs including displaying different category of system logs and clearing the logs by clicking on the corresponding buttons.
5.3.10.3.3 Click "Refresh" and then "Process" button to display most

5.3.10.3.3 Click "Refresh" and then "Process" button to display most current system logs.

5.3.10.3.4 Click "Waning Only" and then "Process" button to display the Warning category system logs.

5.3.10.3.5 Click "Info Only" and then "Process" button to display the Information category system logs.

5.3.10.3.6 Click "Clear" and then "Process" button to erase all the system logs.

6 Compatibility Lists

To reach the best performance and avoid system failure, strongly recommends users to choose the components from compatibility list. All the components are tested in In Win's lab, and assured the components are complementary with chassis. You can download the latest updated device compatibility list from website: https://www.in-win.com/en/ipc-server

7 Q&A

Section 1: Expander

1. What is the expander's function?

A: Expanded capacity, the expander can manage more SAS drives through a SAS cable in JBOD.

2. Why is the SNR-JB series storage server chassis built-in expander boards, and the SNR-JB series JBOD enclosures using expander modules?

A: SNR-JB chassis needs a motherboard to compose a system, the expander board can work seamlessly with the motherboard to manage the drives. Different from the chassis, the SNR-JB JBOD enclosure uses hot-swappable expander modules to satisfy the requirements of both capacity expansion and JBOD redundancy.

3. Why does the SNR-JB JBOD enclosure need 2 expander modules? A: It is for redundancy. If the user does not need this function, a single expander module also works.



4. What are the functions of the three connector ports on the expander module? A: SAS 0 is the connecting port to Server 0/RAID or HBA 0, SAS 1/RAID or HBA 1 is to Server 1, and EXP port is cascaded with another JBOD to expand the capacity.

5. Can I add more ports to the expander module?

A: First, please understand that these ports are used for cable connections. Second, only the Phy quantity of the expander chipset is allowed. Technically, this configuration can be worked out, yet technical alignment must be considered.

For example, an expander with a 3x36R chipset has totally 36 Phys, and each port consumes 4 Phys; thus, we can design a 9-port expander (36/4 = 9) to connect 9 cables. However, once we have used all the Phys for connecting, resulting in no remaining Phys to connect HDDs, and this design cannot achieve the original function.

6. Once I find that the expander is failing, what can I do? A: SNR-JB series: Power off the system, and make sure the system is completely shut down. Unplug the SAS cable to replace the expander board. series: Remove the faulty expander module, and replace a new expander module.

Section 2: Hard Disk

7. What is the difference between SAS and SATA disk, and how to choose? A: SATA has only one throughput channel for data transmission, SAS has two. Once the system is designed with redundant functionality, SAS disk provides performance and reliability. SATA provides a cost selective option.

8. Are SAS and SATA disks compatible with SNR-JB series? A: Yes, SNR-JB series support both SAS and SATA disks.

9. Can I mount 2.5" disks to 3.5" tool-less slots? A: 3.5" tool-less slot does not support 2.5" disks at this moment. If this requirement is mandatory, please contact sales for OEM service.

10. Does the storage server or JBOD have to be fully populated to work? A: No, you can mount partial bays and start the system. Once you need more storage space in the future, then add more disks.

11. Can I mount both SAS and SATA disks in an enclosure? A: Yes, it works. However, you may need to consider about potential alignment issues.

12. If my system drive fails, can I replace the drive without shutting down the system? A: By default, SNR-JB series' two internal disks don't support hot-swap feature. You can order an optional 2-bay hot-swap system disk module to reach your purpose.



Section 3: RAID/ Cascade

13. Is RAID card a required component for running a RAID system? A: If your motherboard featured an onboard RAID function, or your OS supports software RAID, you do not need a RAID card. For technical details, please contact your motherboard or software vendor.

14. How many units can be cascaded to the SNR-JB series JBOD? A: In maximum, a daisy chain can stripe 48 disks. (RJ212 max. 24 disks, RJ316 max. 32 disks, RJ424 max. 48 disks)

15. If I would like to cascade the JBOD, what components do I need? A: You will need an SFF-8644 to SFF-8644 SAS cable, which meets the T10 standard. And the length we suggest is less than 3M to reach the best performance.

16. If I only have an internal RAID controller card, and I would like to expand the capacity, how to add more disks?

A: SNR-JB series JBOD is designed for this purpose. If your RAID controller card does not have the external connecting port, you can use an SFF-8643 to SFF-8644 adaptor cable to connect the JBOD enclosure.

Section 4: Others

17. Why does the PSU have two modules? What are these two modules for? A: Two PSU modules are used for redundancy. If you need this function, a PSU with two modules are required.

18. Can I add or reduce the quantity of fans? A: The quantity of fans is related to the radiating efficiency. Usually, the quantity of fans depends on the system loading and the heat generation. Unless you have already tested, we strongly recommend not to change the default fans quantity.

19. Which parts support the hot-swap feature? A: SNR-JB storage server: Fan, PSU and HDD. SNR-JB JBOD enclosure: Fan, PSU, expander module and HDD.

20. Are 12Gb SAS ports compatible with 6Gb SAS or 6Gb SATA ports? What adapter can be converted?

A: 12Gb SAS does not align with 6Gb SAS, does not have an adapter to convert.

21. If the arm or handle is broken, how can I repair or replace it? A: Please contact your local partner, or contact support for replacement and repair services.



22. If I would like to modify the GUI, how can I access it? A: The copyright of the GUI is owned by. If you want to amend anything of the GUI, please contact sales for ODM services.

8 Technical Support

If you need help with installation or troubleshooting, you can contact your local partner, or send an e-mail to local contacts for technical assistance.