User Guide

RS9 SVS Server

- 2U 8Bay RS9 SVS Server
- 3U 16Bay RS9 SVS Server

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Safety Precautions

Before installing and using the equipment, please read the following precautions:

Operational Safety

- Place the equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
- Avoid the dusty, humidity and temperature extremes.
- Do not place heavy objects on the equipment.
- If one of the following situations arises, get the equipment checked be service personnel:
    - The power cord or plug is damaged.
    - Liquid has penetrated the equipment.
    - The equipment has been exposed to moisture.
    - The equipment does not work well, or it cannot work according to the user's manual.
    - The equipment has been dropped and damaged.
    - The equipment has obvious signs of breakage.

Electrical Safety

- The power outlet shall be installed near the equipment and shall be easily accessible.
- Turn off the system power and disconnect the power cord from its source before making any installation. Be sure both the system and the external devices are turned OFF. Sudden surge of power could ruin sensitive components. Make sure the equipment is properly grounded.
- When the power is connected, never open the equipment. The equipment should be opened only by qualified service personnel.
- Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
- Disconnect this equipment from the power before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
- If the equipment is not used for long time, disconnect it from the power to avoid being damaged by transient over-voltage.

CAUTION! This server system is heavy. Ask for assistance when moving or carrying the system.

Storage Video Server – RS9 Series

- 2U, 8 Bay HDDs
- 3U, 16 Bay HDDs

Introduction

The Fibrenetix RS9- SVS Series, High Performance, Reliable & Scalable solution for Video Surveillance. Fibrenetix xRAID-6 video optimizedRAID controller is an integral part of all our standard products, offering increased performance and camera count of more than 30% per server, compared to a standard server.

If multiple virtual machines on a multi-processor platform are required, Fibrenetix SVS 3U-16-bay, with dual 12-core processors, 512GB memory and a massive 160TB internal storage, meets the requirements of the 100-500 camera segment.

Ultra-dense Formfactor

Technical Specifications:

Storage Video server	RS9-86x Series	RS9-1662 Series
Product Codes	RS9-862-861-M16-A4 RS9-862-862-M16-A4 RS9-864-861-M16-A4 RS9-864-862-M16-A4	RS9-1662-xxx-M16-Ax RS9-1662-xxx-M16-GPAx
Processor(s)	Intel® Xeon® Scalable CPU	
Number of CPUs	1 (upgradeable to 2)	1 (upgradeable to 2)
Maximum cores per CPU	16	24
Memory: Standard / Maximum	8GB / 2048GB	
OS Storage (internal 2.5")	2x 240GB SSD	
No. of Drive Bays 2.5" or 3.5"	8x Hot-swap	16x Hot-swap
Optional 10GBps Support	Yes (2)	
No. of Onboard LAN Ports	2/4	2
Hot-swap Components	HDDs, PSUs, Fans	
Maximum HDD Capacity	18TB	
Storage Capacity (gross)	144TB	288TB
Max Capacity – Incl. Expansion SAS	4.6PB	
Max Capacity – Per IP San Controller	9.2PB	
Hardware RAID Levels	0, 1, 3, 5, 6, 50, 60	
USB Ports	2x USB 3.0 - 2x USB 2.0	
Video Ports	1x VGA	
Default Operating System	Windows Storage Server 2016	
No. of PSUs	2	
Power Supply	2x 800W Power Supply	
Voltage	110-240v 50/60Hz	
Dimensions – mm (D x W x H)	700mm x 444mm x 88mm (2U)	700mm x 444mm x 132mm (3U)
Net Weight (CPU,DRAM, HDDs, GPUs not included)	20.8kgs	23.4kgs
Environment	Operation temperature: 10°C ~ 35°C Non-operation temperature: -40°C ~ 70°C	
Relative Humidity (%)	Non-operation humidity: 20% ~ 90% (Non-condensing)	
Accessories	2 x Power Cords, Warranty Card, Quick-User Guide	
Certification	BSMI, CE, RCM, FCC(Class A)	
BTU	2,735.36	
Standard Warranty Period	3 Years	

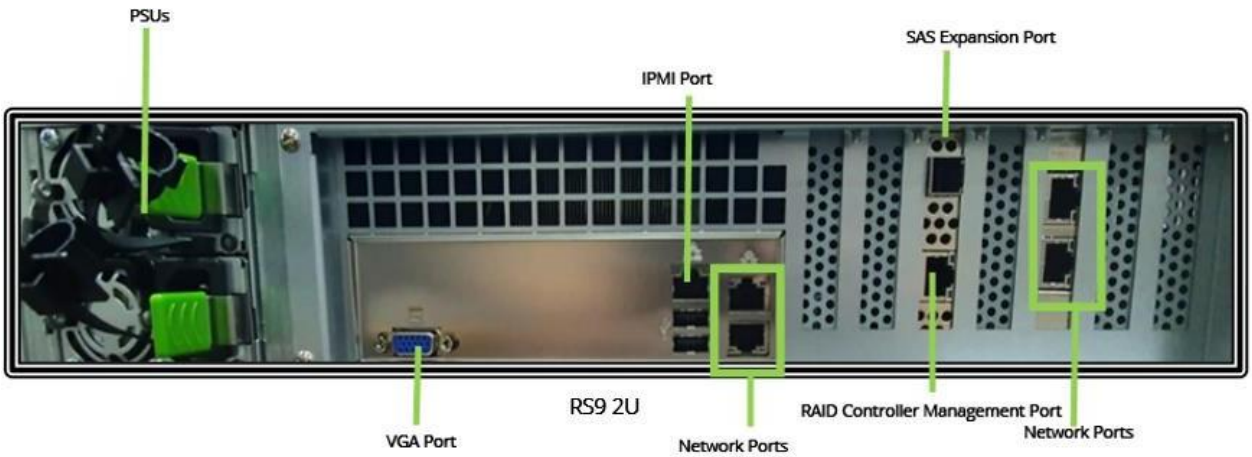
**Specifications are subject to change, without prior notice.*

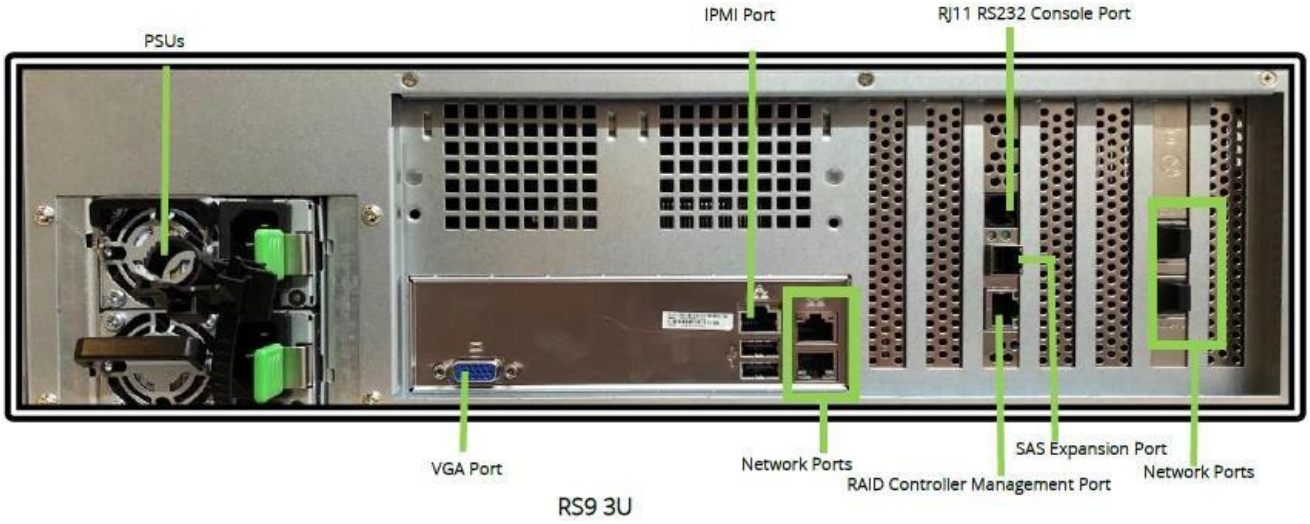
Hardware Information

Front Panel View

Front Chassis features	
Feature	Description
HDD Carriers	hot-swap hard drive carriers
Control Panel	Front control panel with LEDs and Buttons
Rack Ear Brackets	Secures the server chassis to the rack

Rear Panel View



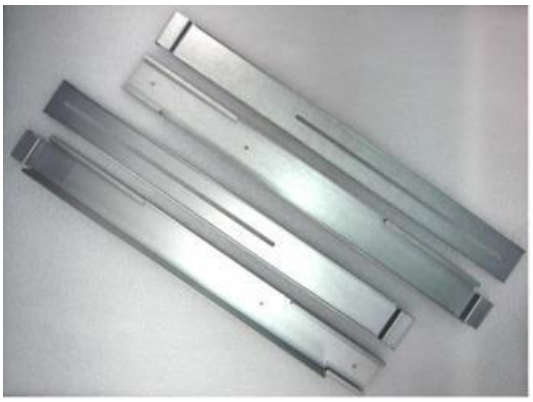


Rear Chassis features	
Feature	Description
Power Supply	Power Supply module (2x for redundancy)
COM Port 1	RS232 Com Port
IPMI Port	IPMI -dedicated LAN Port
USB Port	Port 0, Port 1
Gigabit LAN	LAN1, LAN3, LAN2, LAN4
VGA	Back Panel VGA
RAID Controller Ports	SAS Expansion Port RAID Controller management port RJ11 RS232 Console port

Installation in rack

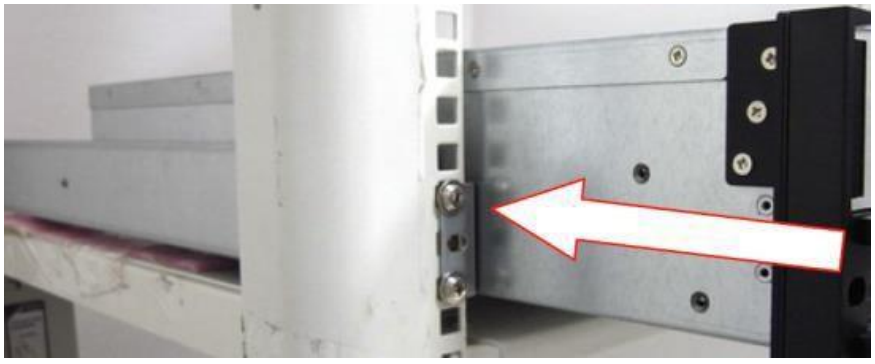
When all items are taken out of the box – prepare for installation in a rack. To install the system in a rack with the kits, please follow the procedure.

1. Prepare the rails and the screws
2. Assemble the rail kits by sliding them together



3. At the **Front** and **REAR**, put the nuts on the appropriate place and the use the screws to install the mounting brackets.

4. Slide the system to the Rails



CAUTION!!!!
The system is heavy. To avoid personal injury and damage to the system, it should be installed by twopersons.

Installing disk drives in system

Warning: Disconnect the power supply inlets before opening the storage enclosure for maintenance.
Caution: Do not place or drop objects onto the enclosure and do not force any foreign objects into it.

When the system is mounted and secured in a rack then install the disk drives.

To install a Disk Drive caddy in the storage enclosure, follow the procedure below:

- Orient the caddy so that the LED indicator is at the left-hand side.
- With the locking lever fully open, gently slide the caddy into the desired slot on the front of the enclosure.
- When the caddy is in all the way, slowly close the locking lever until it clicks into place.

HDD Replacement

- In case of HDD replacement, Remove the four screws to detach the HDDs from the Caddy
- Never leave the enclosure open (without a caddy)

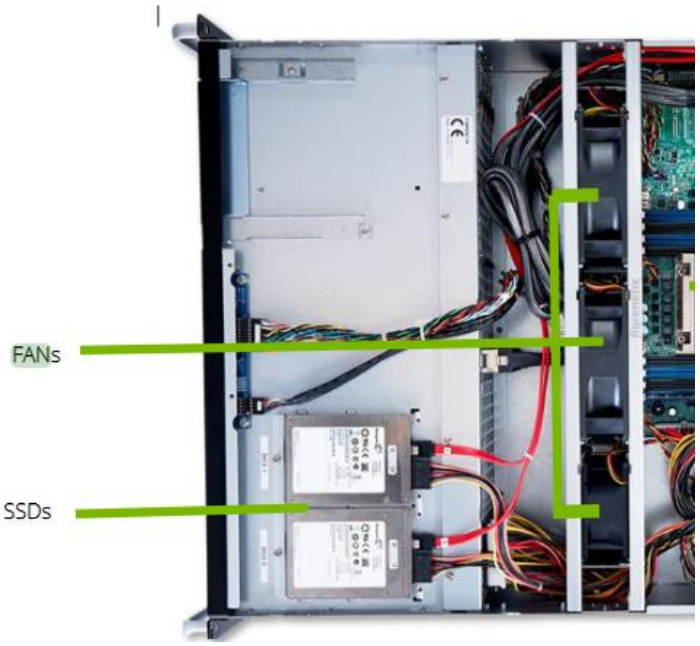
- The RS9 is equipped with two internal SSDs for the Operating System.
- The Operating System Installed on the SSDs disks are in RAID 1 Configuration.

Connecting RAID Controller's Ethernet and RS232 Port

Connect the Ethernet port of the RAID controller using an Ethernet cable to a LAN port or LAN switch

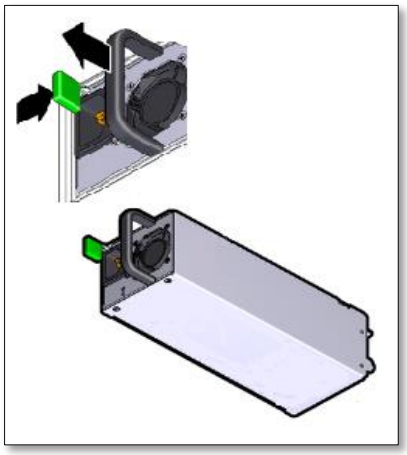
FAN replacement

- **Identify the faulty fan before the replacement.**
- **RS9 Fans are easy to remove and replace.**
- Lift the fan from the FAN cage to remove.
- Remove and replace the FAN connector from the Faulty FAN to the new FAN.
- Align and Insert the replacement fan to the fan cage gently.
- The airflow directional arrow on the fan side should point towards the system rear panel.
- **Do not forget to close the enclosure cover properly before starting the machine.**



Power Suppy Unit PSU replacement

- **Identify the faulty PSU before the replacement.**
- **Disconnect the power cable connected to the faulty PSU.**
- **Push the nob and pull the PSUs carefully.**
- **Insert the replacement PSU to the slot and connect the power cable.**

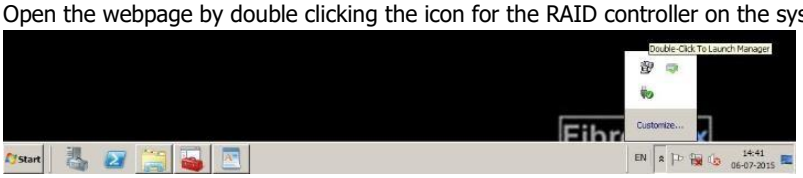


Fibrenetix RS9 Server RAID Controller Storage Management

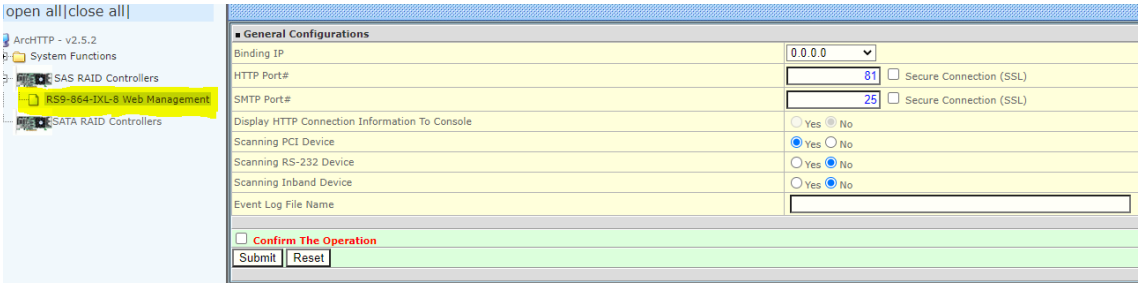
The Fibrenetix RS9 Web Based RAID Management allows a system administrator to Configure as well as monitor system health and manage computer events remotely. User can manage the RAID subsystem via standard web browsers connected to the RJ45 LAN Port.

Two Methods to Access the Web Based GUI on the Server.

- Open the webpage by double clicking the icon for the RAID controller on the system tray



- Click on your Server Web management under the *SAS RAID controllers*

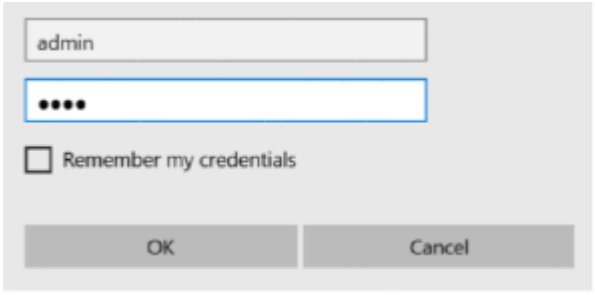


or

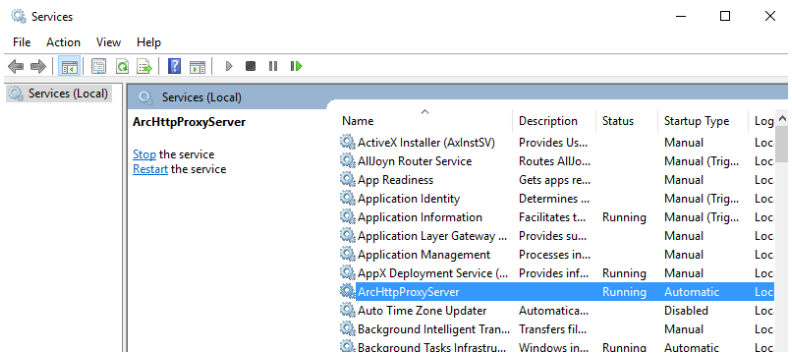
- Enter the IP address in the web browser with the local host as IP address `127.0.0.1:82` or enter `http://[MACHINE_IP_ADDRESS]:82`

Default Credentials

- Username: "admin"
- Password: "0000

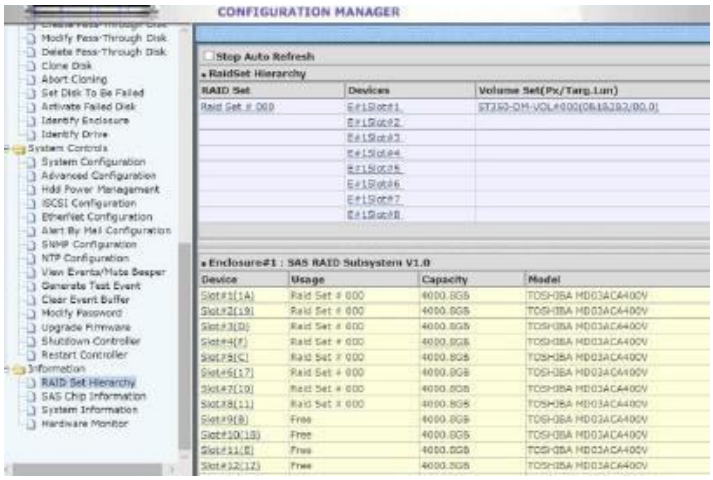


Note: Make sure that the *ArcHttproxyServer* Service is running in Services



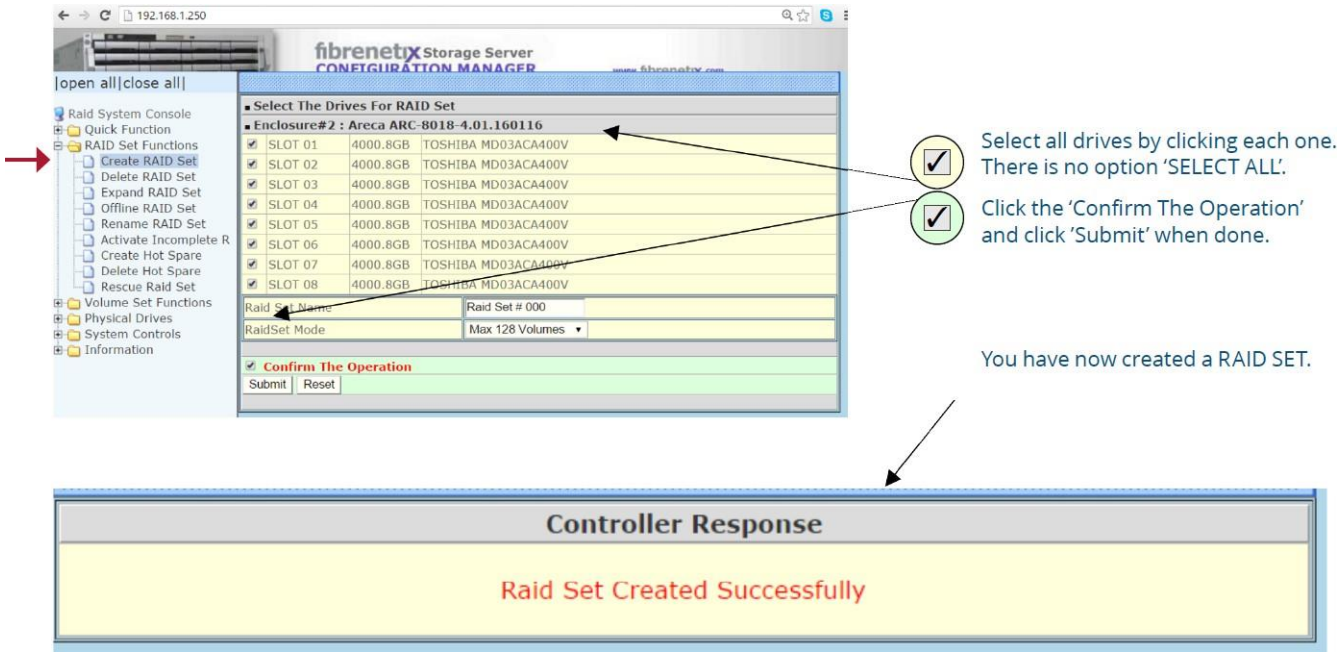
Web Browser Management

The startup screen displays the current configuration of the RAID subsystem. It Displays the RAID set list, volume set list and Physical Disk list.



Creating a RAID set

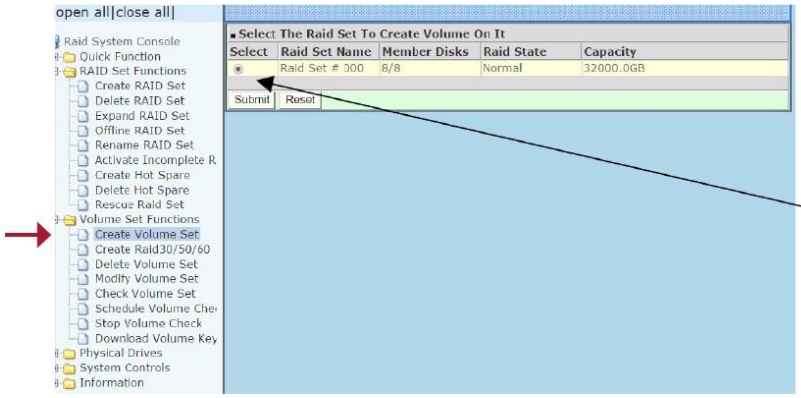
Go to RAID functions in the left menu: Select 'Create RAID set'.



Next step is to create a Volume of the RAID Set.

Creating a volume set

To create a Volume based upon the newly created RAIDSET – go to the Volume menu on the left.

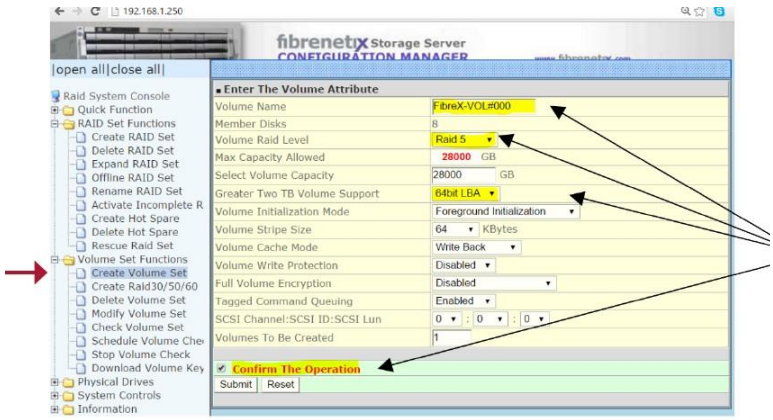


To create a Volume set click on the RAID set available in the window on the right. If more RAID sets were created, they would appear in this window.

Press 'Submit' to continue the operation.

Configuring the Volume set

The volume set can be configured as follows as Fibrenetix standard:

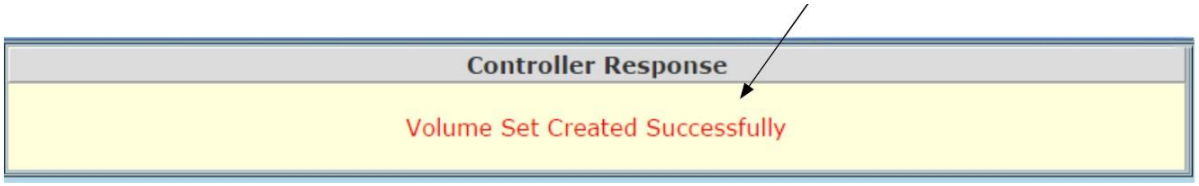


Volume Name:
Desired Volume Name can be given; example: FibreX-Vol-#001

RAID Level:
Supported RAID levels are Listed in the drop-down menu; example: RAID 5

Greater than 2TB Volume Support: 64Bit LBA
Default Value is 64Bit LBA, drop down list shows all the options.
If this value is not set then it will not be able to use all the disk space.

Select the 'Confirm the Operation' and click 'Submit' when done

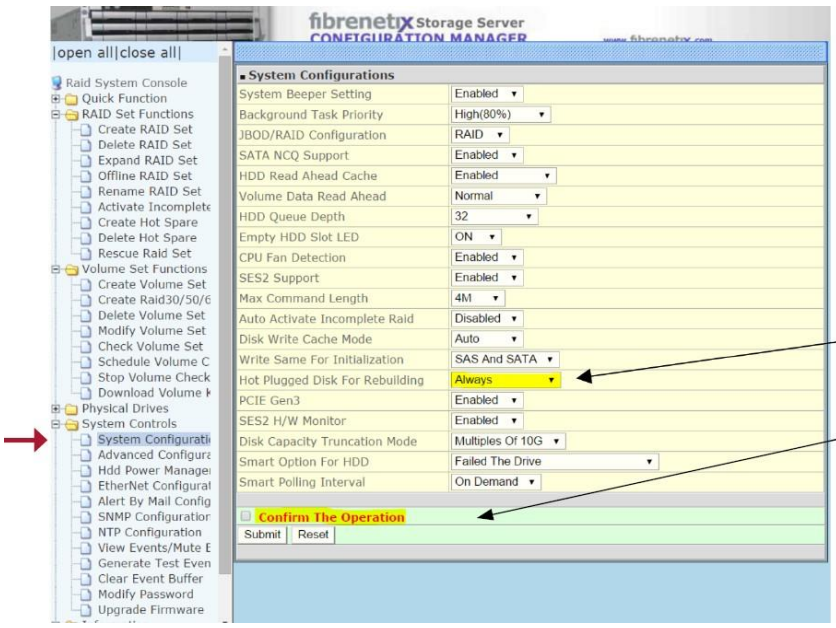


Additional settings

Go to the System Controls menu on the left and select System configuration.

Configure Hot plugged disk for rebuilding

Go to 'System Configuration' and configure 'Hot plugged Disk For Rebulding'

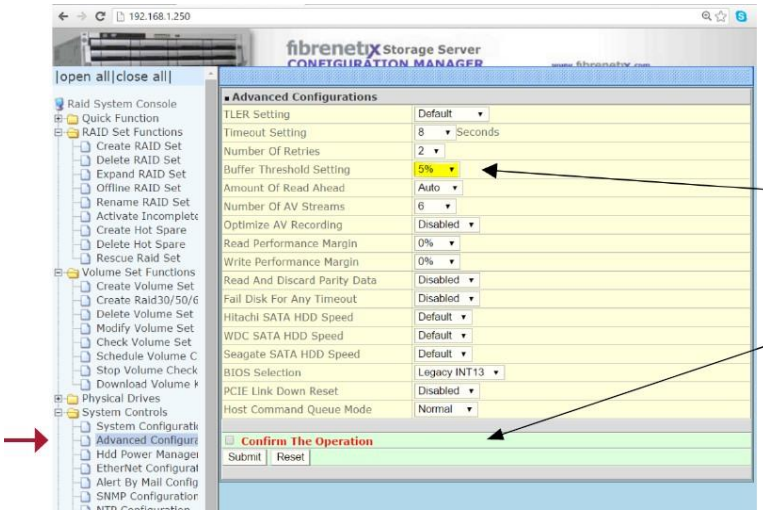


Hot plugged disks must be configured for rebuilding 'ALWAYS'
This options will ensure that the RAID set will rebuild automatically when a new disk is inserted as replacement for a faulty disk.

'Confirm the Operation' and 'Submit'.

Buffer Threshold Setting

Go to 'Advanced Configuration' and configure the 'Buffer threshold Settings'.

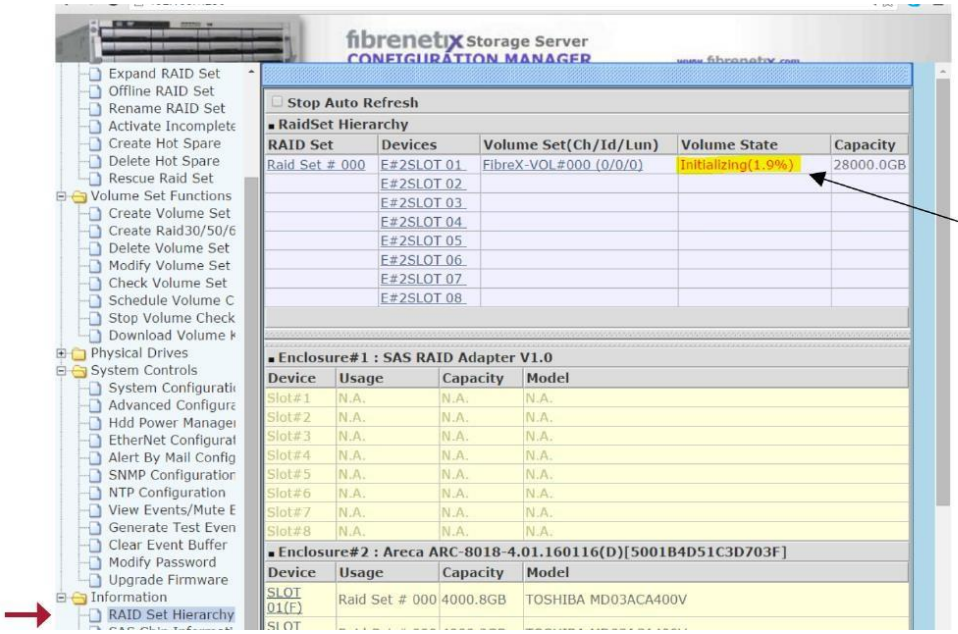


'Buffer Threshold Setting' must be set to 5%.

'Confirm the Operatio'n and 'Submit'

Progress of Volume initialization

To view the progress of the initialization of the Volume set – go to the information menu and select RAID set Hierachy.



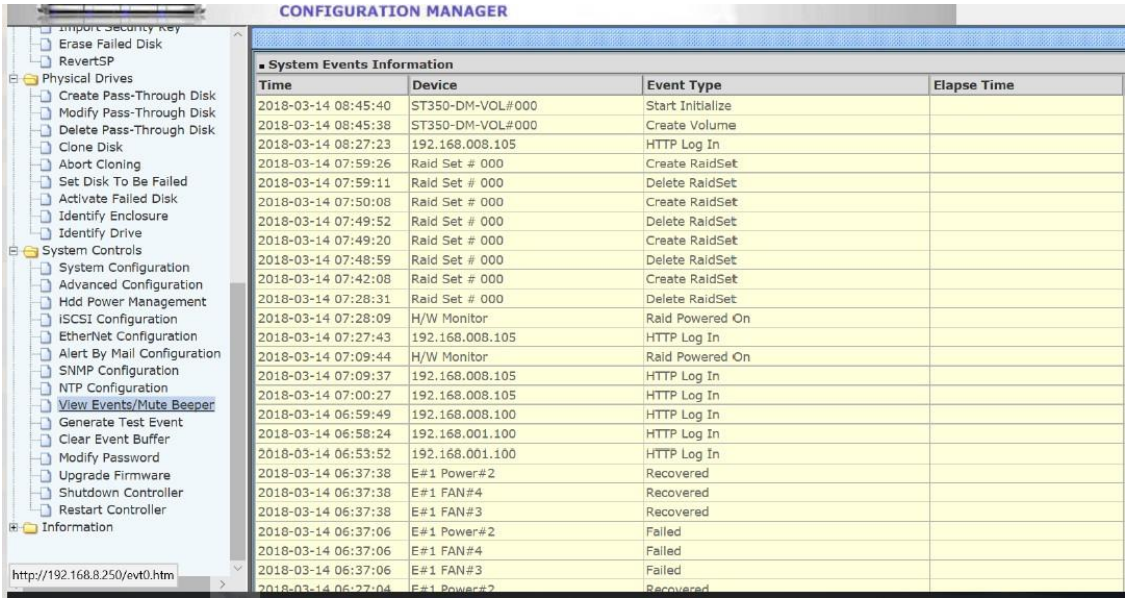
The progression of the buildup of the volume will be shown in % in this window.

When done the Volume state will be 'Good'.

Event Log

To view the RAID subsytem's event information go to *system Controls->view Events/ mute Beeper*

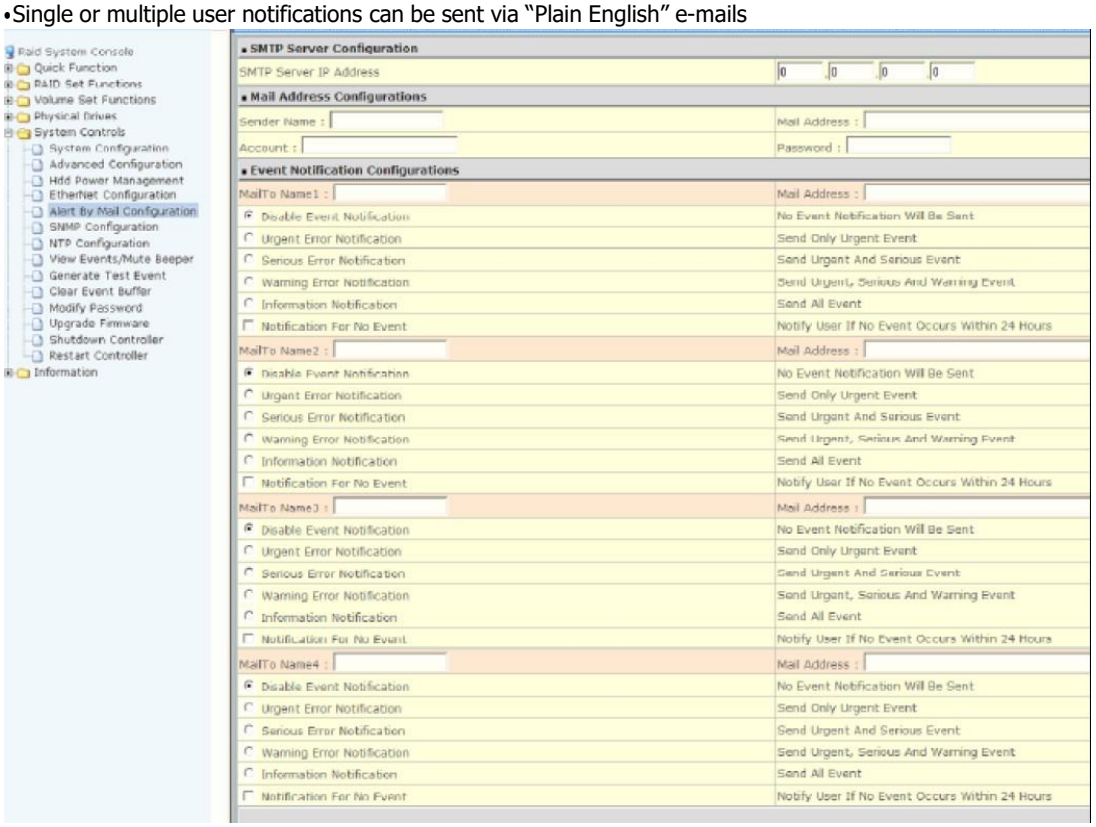
- This function automatically enable by clicking on the "*view Events / Mute Beeper*"



E-mail Alert

User can send alert via email by configuring the SMTP

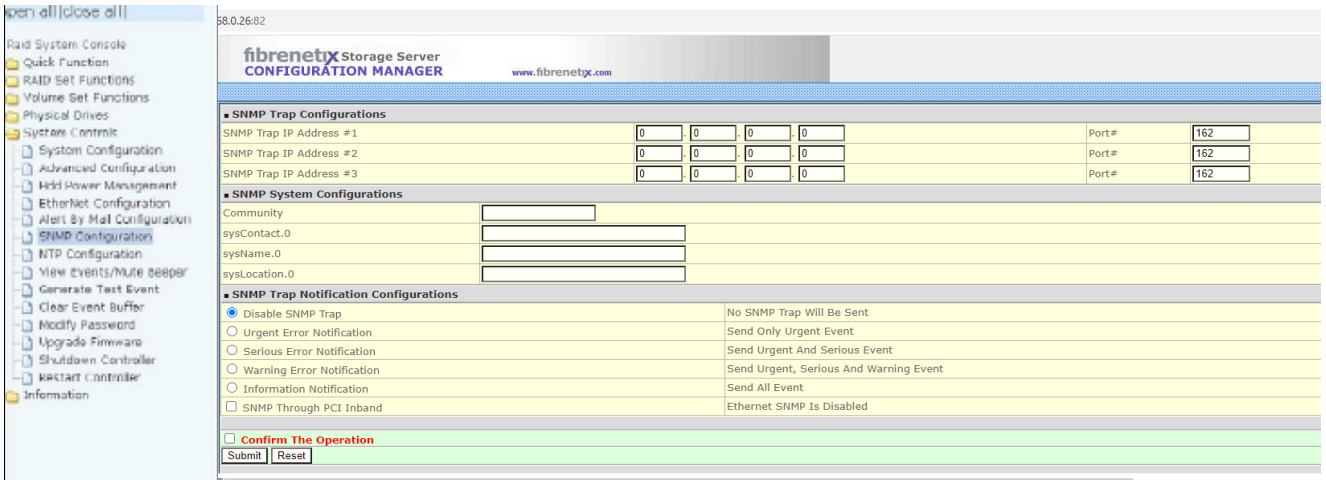
•click on the "System Controls" link
•Move the cursor bar to the "Alert By Mail Configuration" item
•then select the desired function
•The firmware contains a SMTP manager monitoring all system events
•Single or multiple user notifications can be sent via "Plain English" e-mails



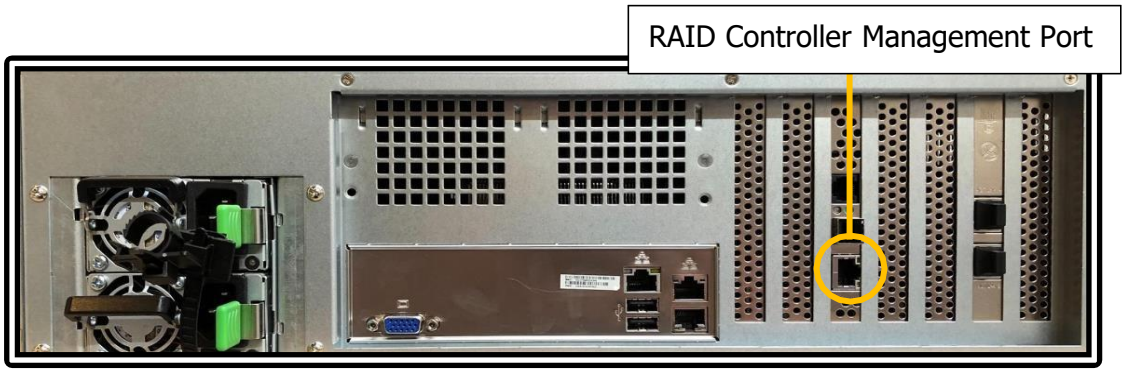
SNMP Configuration

To configure the RAID subsystem's SNMP function, select System Controls > SNMP configuration.
The firmware contains SNMP agent manager monitors all system events and user can use the SNMP function from the web settings. This function can only set by the web-based configuration

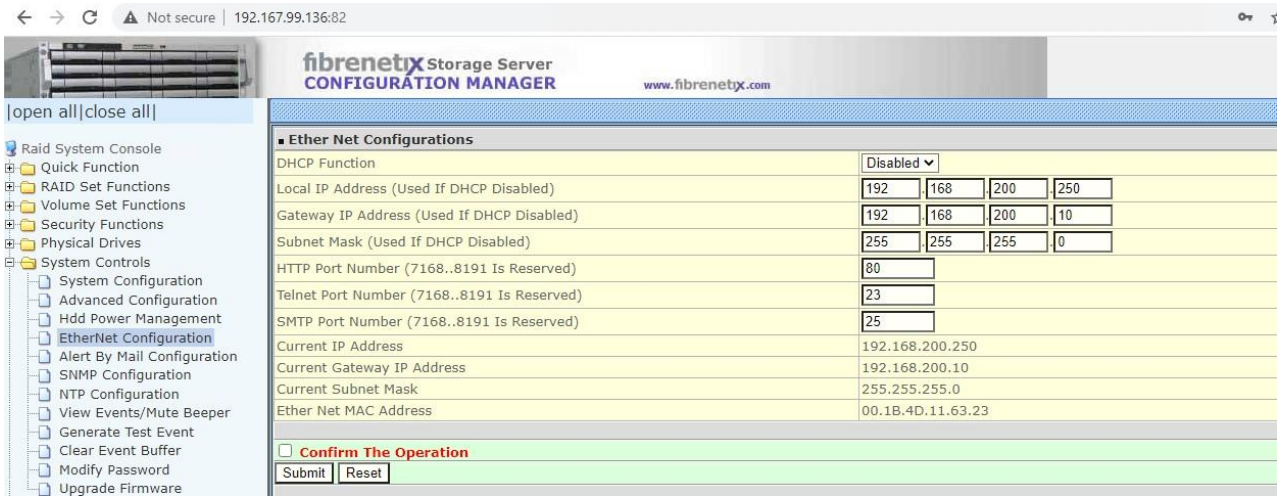
- Enter the SNMP Trap Address
- Community name acts as a password to screen accesses to the SNMP agent. Enter community names of the SNMP agent. Before access is granted, this station must incorporate a valid community name into its request; otherwise, the SNMP agent will deny access to the system. Most network use "public" as default community names.



Raid Controller management Access via **LAN**



To remotely access the raid control management via LAN network, we need to setup the Ethernet configuration IP addresses. This webpage will be accessible on the remote servers on the LAN within the same IP subnet.



Fibrenetix RS9 Server Administration

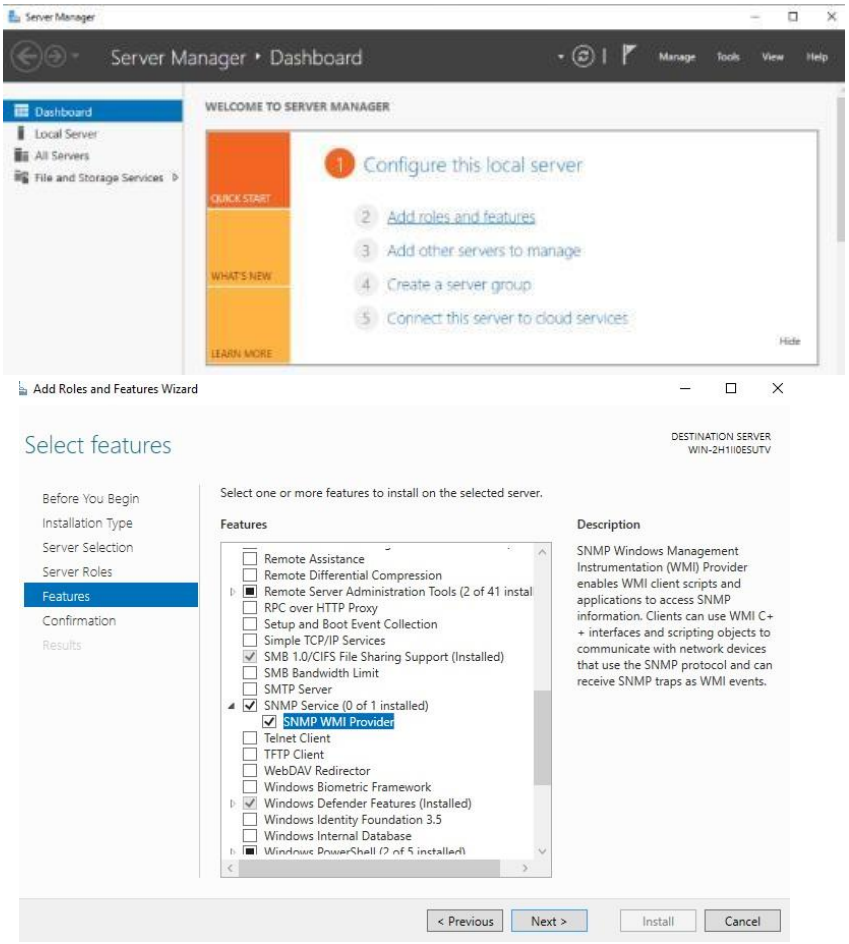
The Fibrenetix RS9 Server management administration using Super Doctor (SD5) helps the user the monitoring, control, and management functions. It helps the Hardware Monitoring: fan speed, temperature, voltage, chassis intrusion, redundant power failure, power consumption, disk health, raid health, and memory health also Provides SNMP extensions for network management system.

SD5 contains an SNMP extension module that should be plugged in into the Microsoft Windows SNMP service. Users can therefore query the readings of monitored items via SNMP.

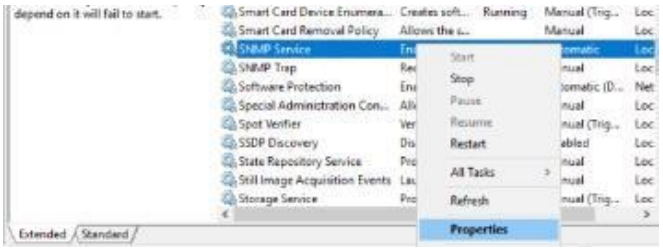
Note: To install the SNMP extension, the Microsoft Windows SNMP service must be installed first.

Configuring SNMP Services on Windows Server

1. Open Server Manager, *Add roles and features* and proceed installation until you reach the Features page. Check the SNMP Service in the list of features.



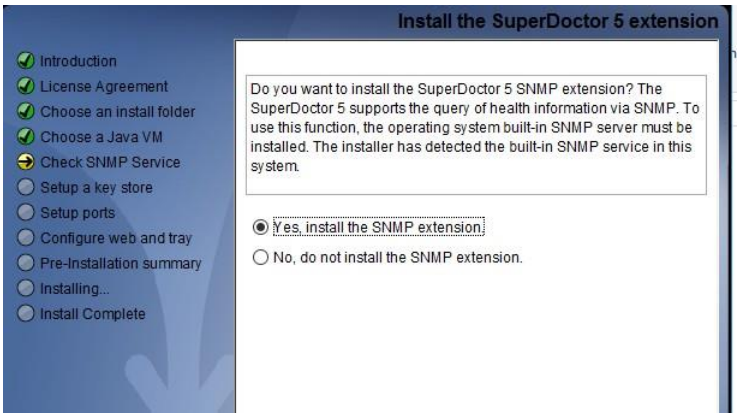
2. Select the SNMP Service then Install the installation process will start.
3. Open the Services window, find the SNMP Service, and open Properties. On the General tab, be sure to select Automatic in the Startup Type section so that it is always available even after a restart of the Server



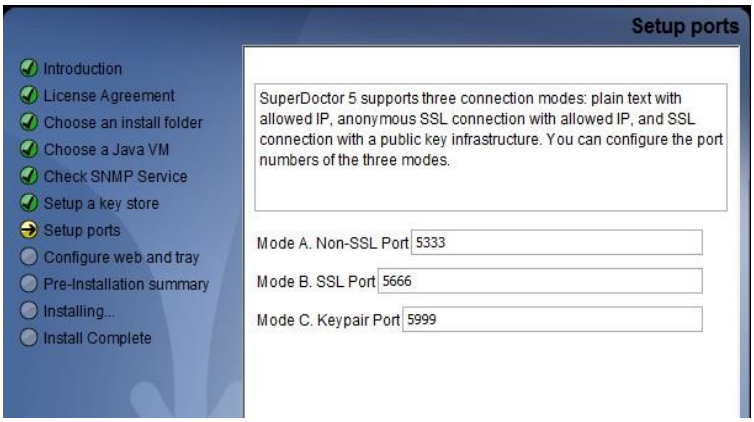
Installing and Configuring SuperDoctor5

By Default RS9 Servers are installed with superDoctor5 software, with SD5 shortcut on the desktop.
If required to Install contact Fibrenetix for the download link. Below are the installation steps.

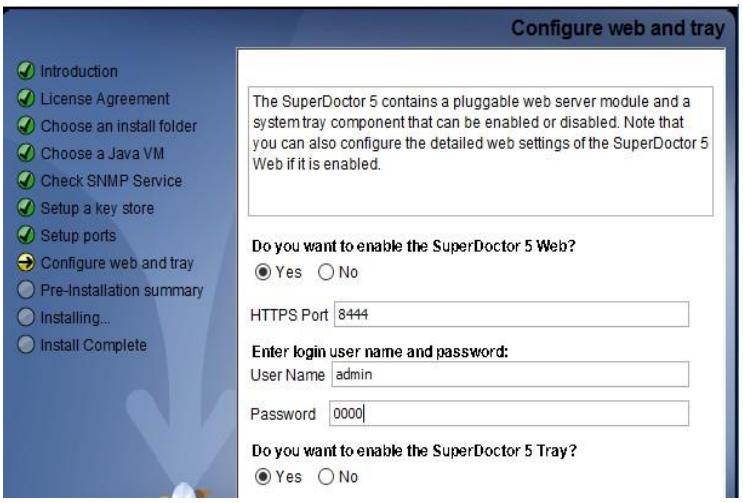
1. Execute the SD5 installer. Note that you must have Administrator privileges to install and run SD5.
2. During Installation, If the Microsoft Windows SNMP service is installed, you can either:
    - install the SD5 and the SNMP extension,



3. Select Yes to use the default key stores and click the Next button to continue
4. Three communication modes are supported in and by default, Mode B (SSL) and Mode C (Keypair) are enabled when SD5 is installed. You can configure the port numbers. Click next to continue.



5. SD5 provides the Web console "SD5 Web", Select Yes to enable the SD5 Web. You can also configure the default HTTP port number and the default HTTPS port number to access the SD5 Web. When completed, click the Next button to continue.

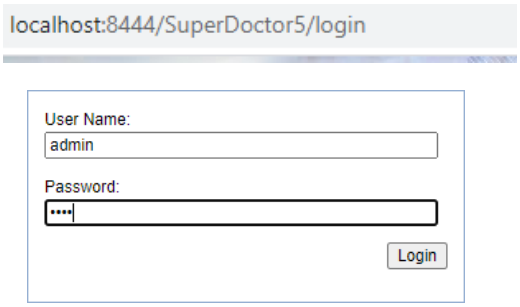


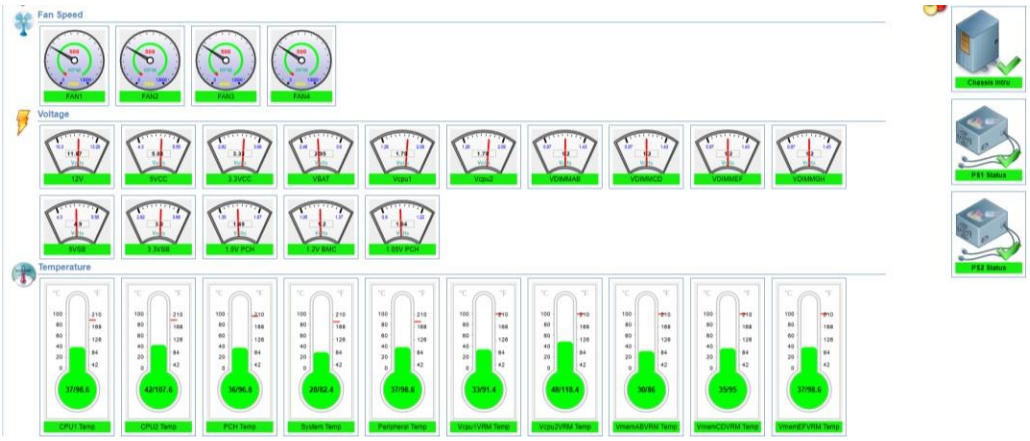
6. Once Installation complete, Click the Done button to exit.

Web Based Server Monitoring

SD5 Web graphically displays the status of the monitored devices, including fan speed, voltage, temperature, chassis intrusion, power failure, hard disk drives, and memory. An item in green color indicates a healthy state while a red one denotes a critical state. Notifications can be sent when a monitored item reaches critical status

1. Login to the local web browser as shown below and enter the login Username and Password





The health information page also shows power supply information if supported power supplies are connected to the motherboard via I2C. Depending on their design, power supplies might have Field Replaceable Unit (FRU) Data and/or PMBus functions.

Different colors are used to indicate the battery state. Green color means the battery is healthy, and red color means the battery is dead. If the current reading of the battery is negative, the color turns yellow to warn that the battery is discharged. In addition, the energy reading tells the percentage of the charge status of the battery.

The health of a RAID controller is a combined status that depends on the states of its components such as battery backup unit (BBU), virtual drives, and hard disks. If all components belonging to the adapter are OK, the status of the adapter shows OK. Otherwise, it could be Warning or Critical depending on the states of the components.

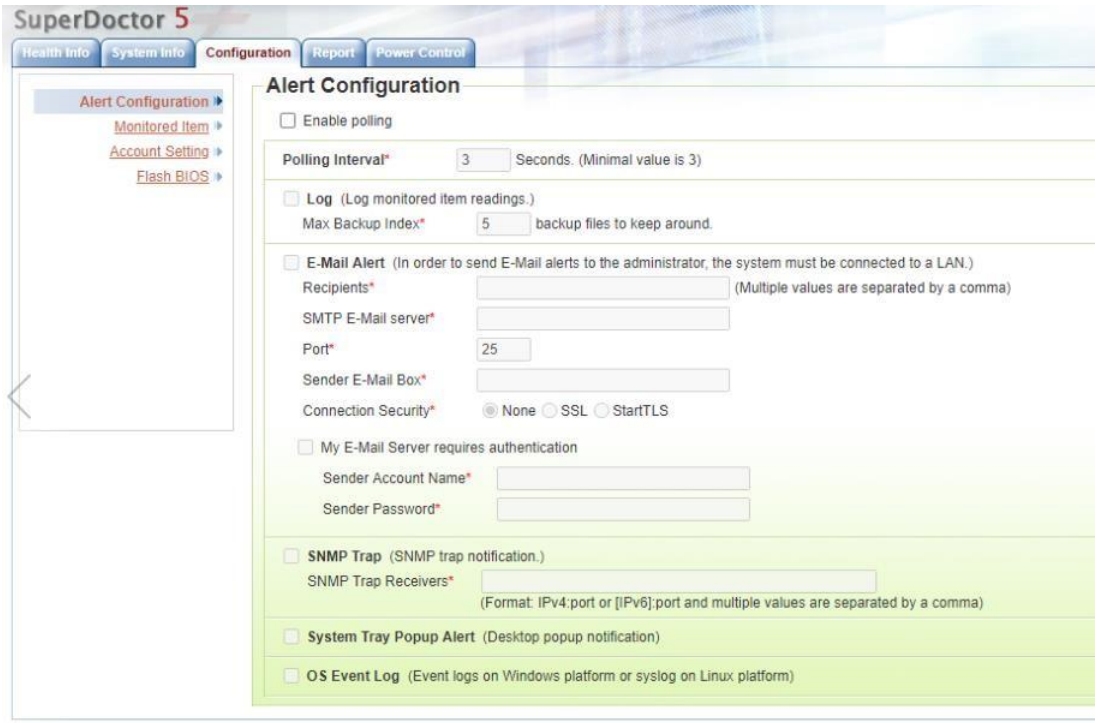
Alert Configuration

Note: A problem alert will be sent while the status of the monitored item is non-OK (i.e., WARNING, UNKNOWN or CRITICAL) from the initial or is from an OK state to a non- OK state or is from a non-OK state to another non-OK state. A recovery alert will be sent while the status of the monitored item is from a non-OK state to an OK state

Four methods are supported: Log, Email, SNMP Trap and System Tray

Note: Enabled Pooling: periodically checks the health status of monitored items if pooling is enabled. No alert is sent if pooling is disabled.

- Polling Interval: Determines how frequently in seconds the SD5 Web should check the health status of monitored items. The minimum value is 3 seconds.
- Log: Keeps alerts in a log file named "log.txt[yyyy-mm-dd-sequence]" located in the [install folder] folder. The file is split into two files once its size becomes greater than 10 MB. The total number of log files to be kept can be configured by setting the "backup files to keep around" argument.
- E-mail Alert: Sends alerts via e-mail. To use this function, you need to set recipients, an e-mail server address and a port number as well as a sender's e-mail address. Check SSL or TLS if the e-mail server uses secure connections. If the e-mail server requires authentication, you will need to set up an account and password to log in to the e-mail server. Multiple recipients must be separated by a comma.
- SNMP Trap: Sends alerts with SNMP traps. Multiple recipients are separated by a comma.
- System Tray Popup Alert: Sends alerts to local desktop. Note that the function is only available on Windows platform.



The E-mail message Configuration

The E-mail message format is defined by the following attributes:
Mail title:
Item 1: the type of an alert ("Problem ", "Recovery ")
Item 2: the name of the monitored item
Item 3: the status of the monitored item ("OK", "Warning", "Critical", or "Unknown")
Item 4: the time of an alert in date time format
Item 5: the host name and host address which sent out an alert
Mail body:
Item 6: the output message about the status of the monitored item

The SNMP Trap description

The SNMP Trap description if defined by the following attributes:
Item 1: the type of an alert ("Problem", "Recovery")

Item 2: the name of the monitored item

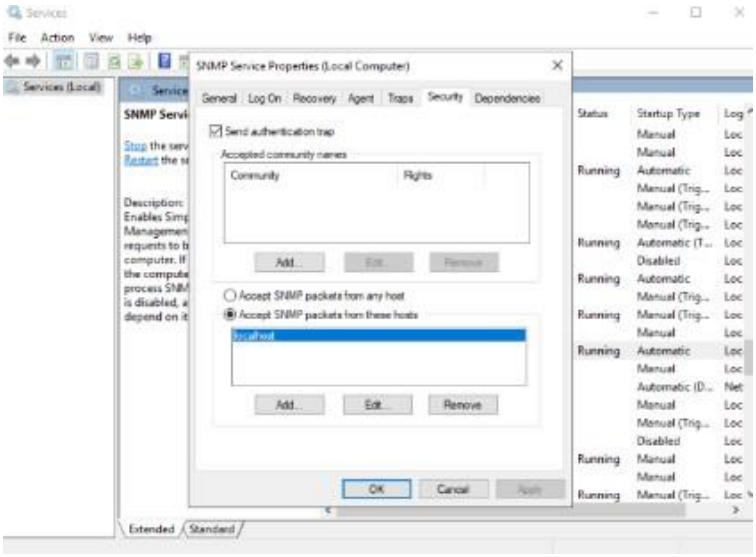
Item 3: the status of the monitored item ("OK", "Warning", "Critical", or "Unknown")

Item 4: the time of an alert in date time format

Item 5: the output message about the status of the monitored item

Configuring the SNMP Service

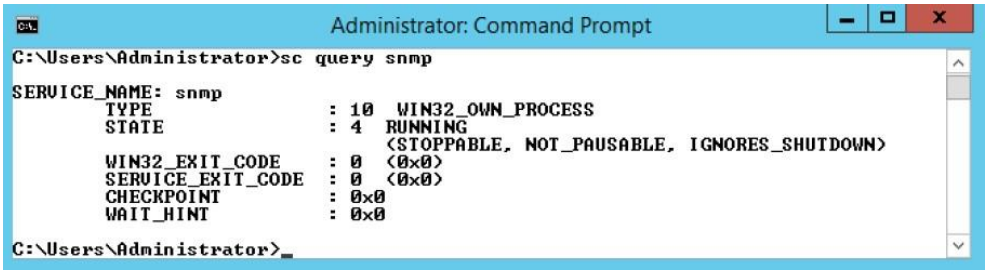
- Open the Control Panel. Click Administrative Tools. Click Services. Select the SNMP Service.
- Double-click the SNMP Service, and the SNMP Service Properties dialog box appears.
- Click the Security tab. In the Accepted community names setting, click the Add… button to add a public community with READ ONLY rights. Select Accept SNMP packets from any host.
- Click the OK button to complete the settings.



- Just click OK and then restart SNMP Service.

Verifying the SNMP Service

- You can use sc query snmp to check the SNMP service in console mode.



Report

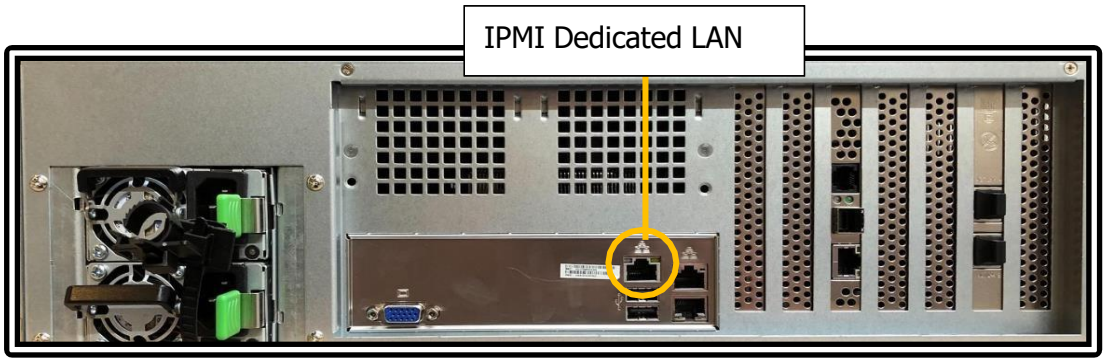
It Provides three CSV (Comma Separated Values) format reports. These reports can be downloaded and viewed with CSV supported tools like Microsoft Excel.

- System Information Report: This report contains information shown in the System Info function.
- Health Information Log Report: This report includes the historical data of monitored item readings. Readings of selected (i.e. enabled) monitored items will be written to a file only if the Polling Interval value is set and the Log option is enabled in the Alert Configuration function.
- Event Log Report: This report contains events that represent problems and recoveries with monitored items. When the status of a monitored item is changed, an event log is written to the Event Log Report. Note that to write events to the log file, the Polling Interval on the Configuration page must be set.

IPMI LAN Management

A Dedicated IPMI LAN Port is located on the back panel of the RS9 Server, that accepts RJ45 Cable.

It allows a system administrator to monitor system health and manage computer events remotely.



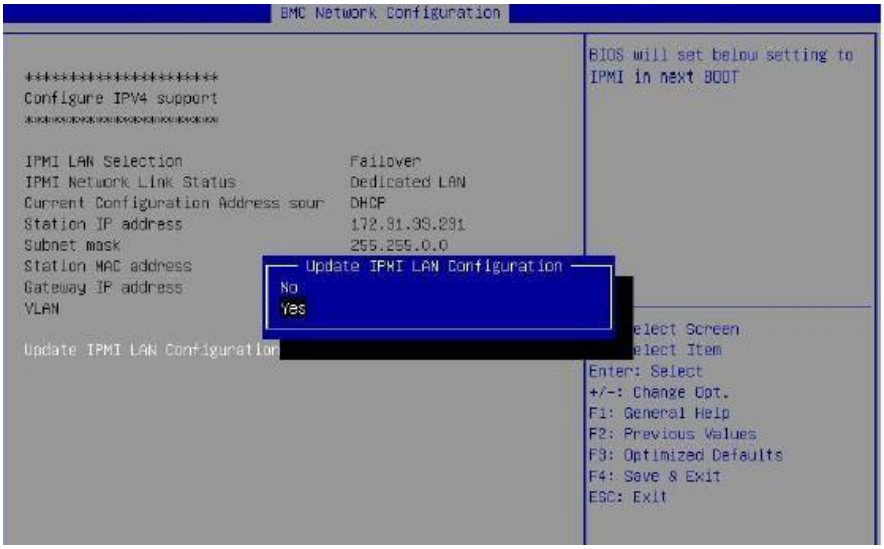
Configuring BIOS

For the IPMI to work properly, please enable all onboard USB ports and the COM port designated for SOL (IPMI) on the motherboard. All USB ports and the COM port for IPMI (marked with "*") are enabled in the system UEFI BIOS by default. It is usually listed as COM2 or COM3 in the UEFI BIOS.

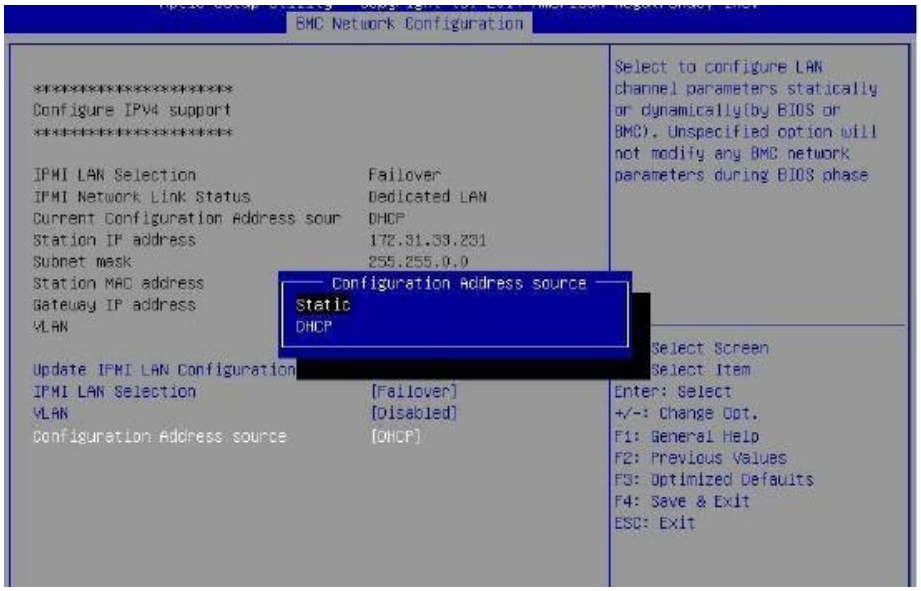
The default network setting is "Failover", which will allow the IPMI to connect to the network through a shared LAN port (onboard LAN Port 1 or 0) or through the IPMI Dedicated LAN Port. If the IPMI must be connected through a specific port, please change the LAN configuration setting under the Network Settings.

To verify and Configure follow the below steps

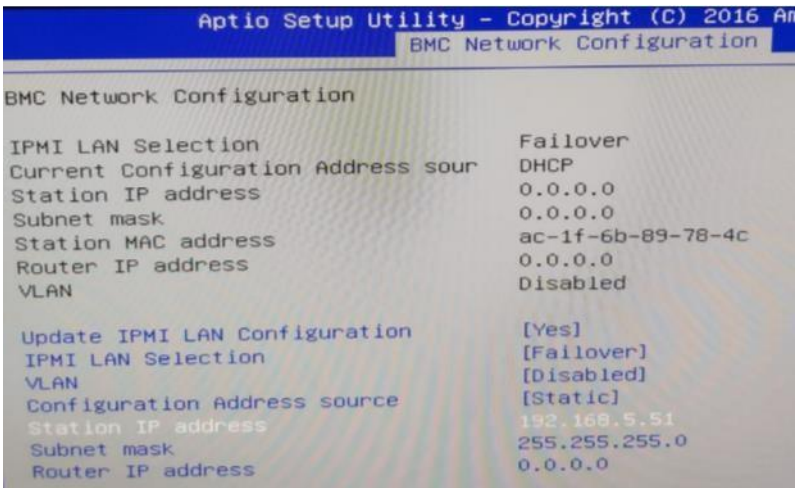
1. During the system bootup, press the <Del> Key to Enter the UEFI BIOS
2. During the system bootup, press the <Del> key to enter the UEFI BIOS.
3. Select the *IPMI* tab.
4. Select *BMC Network Configuration and* press <Enter>.
5. Highlight *Update IPMI LAN Configuration,* press *<Enter>* and select [Yes].



6. Highlight *Configuration Address Source* and select [Static].



7. Once the *Configuration Address Source* is set to [Static], the *Station IP Address*, *Subnet Mask* and *Gateway IP Address* fields will display *0.0.0.0*, which indicates that these fields are ready for you to change to new values. Select each of the three items and enter the values. Press <Enter> when finished.

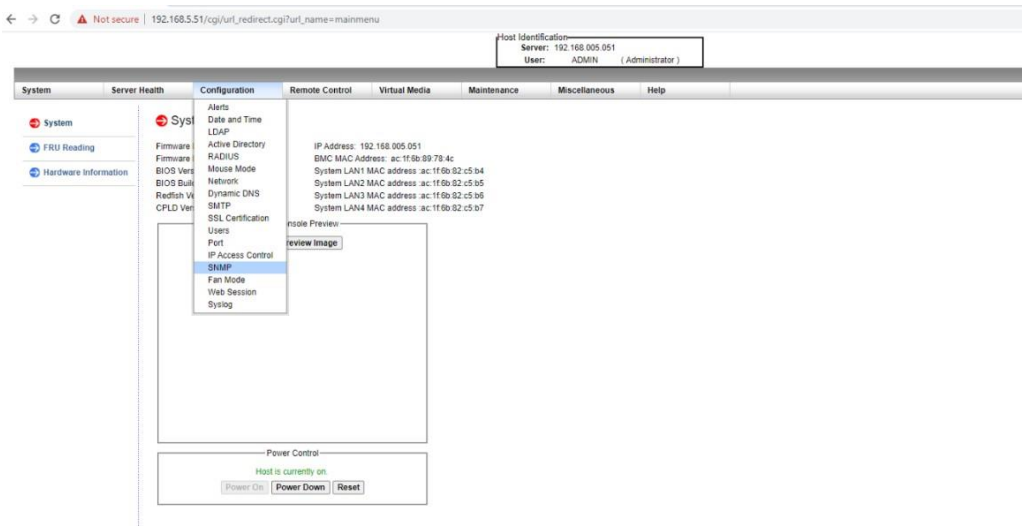


Accessing the Server Using the Browser

1. open a web browser. Enter the IP in URL bar and you will see a login screen.

Enter the username, **ADMIN**, and the password, **ADMIN**.

- Main screen displays The Menu bar: The menu bar on the top displays the System Information, Server Health Configuration, Hardware Information, Remote Control, Virtual Media, Maintenance, Miscellaneous, Help.

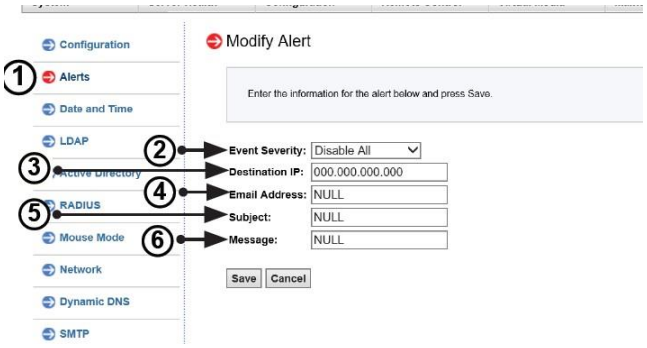


Alert Configuration

This feature allows the user to configure *Alert* settings. When you click on *Alerts* in the menu bar.

To setup an alert or to modify an alert setting, do the following.

1. Click on <Alerts> to activate the alert submenu.
2. Click on <Modify> to configure or modify the settings of an alert.
3. *Send Test Alert* is used to check if the alerts have been set and sent out correctly.
4. Click on <Delete> to delete an alert.
5. Click on the <Help> tab to display the Help menu. This menu shows you how to set up or modify an alert.

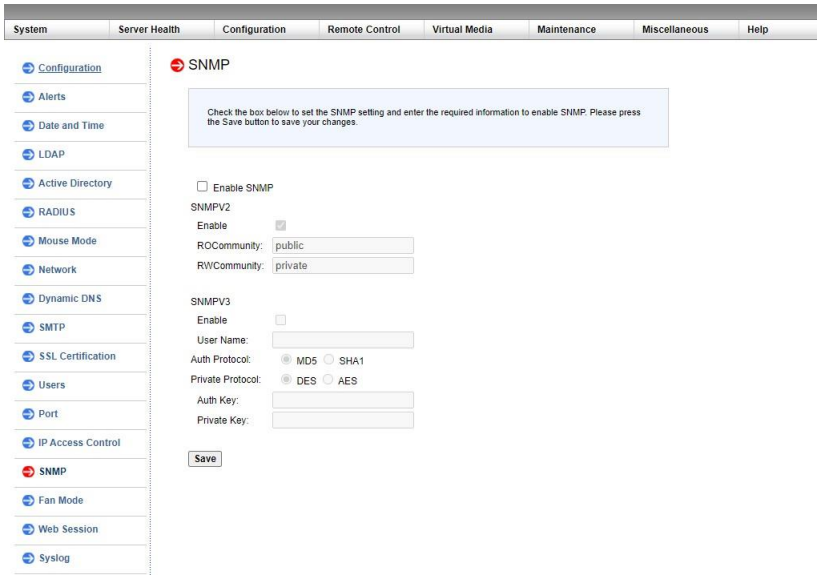


Follow the steps below to setup an alert.

1. Select *Alerts* from the window on the left. Highlight the alert and select *Modify*.
2. Select *Event Severity*.
3. Enter the destination IP address to use SNMP.
4. Enter the email address you wish the send the alert to, then configure the SMTP settings
5. Enter the subject line of the alert.
6. Enter a message for the alert.

After completing the steps above, Click on <Save> to save the settings

SNMP Configuration



1. Check the box to enable the SNMP. Once it is enabled, enter information in the fields below.
2. SNMP Version: Select SNMPV2 or SNMPV3.
3. SNMPV2: If this options is selected, enter a password for ROCommunity and RWCommunity.

4. SNMPV3: If this option is selected, enter information in the fields below: Enter a username

- Select the Authentication Protocol
- Select the Private Protocol
- Enter the Authentication Key
- Enter the Private key

5. Click <Save> to save the settings.
6. Click the <Help> tab to display the Help menu. The menu includes an explanation of all the options on this page.

Point of Contact

For further assistance, contact technical support

Please be prepared to provide the following information: Serial Number (S/N), product name, model number, and a brief description of the issue.

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