# User Manual

**Version 1.0.0 October 2017**

# iDaSer-9000

(Data Management Server)

Written by Eric Du
Edited by Julia Wang

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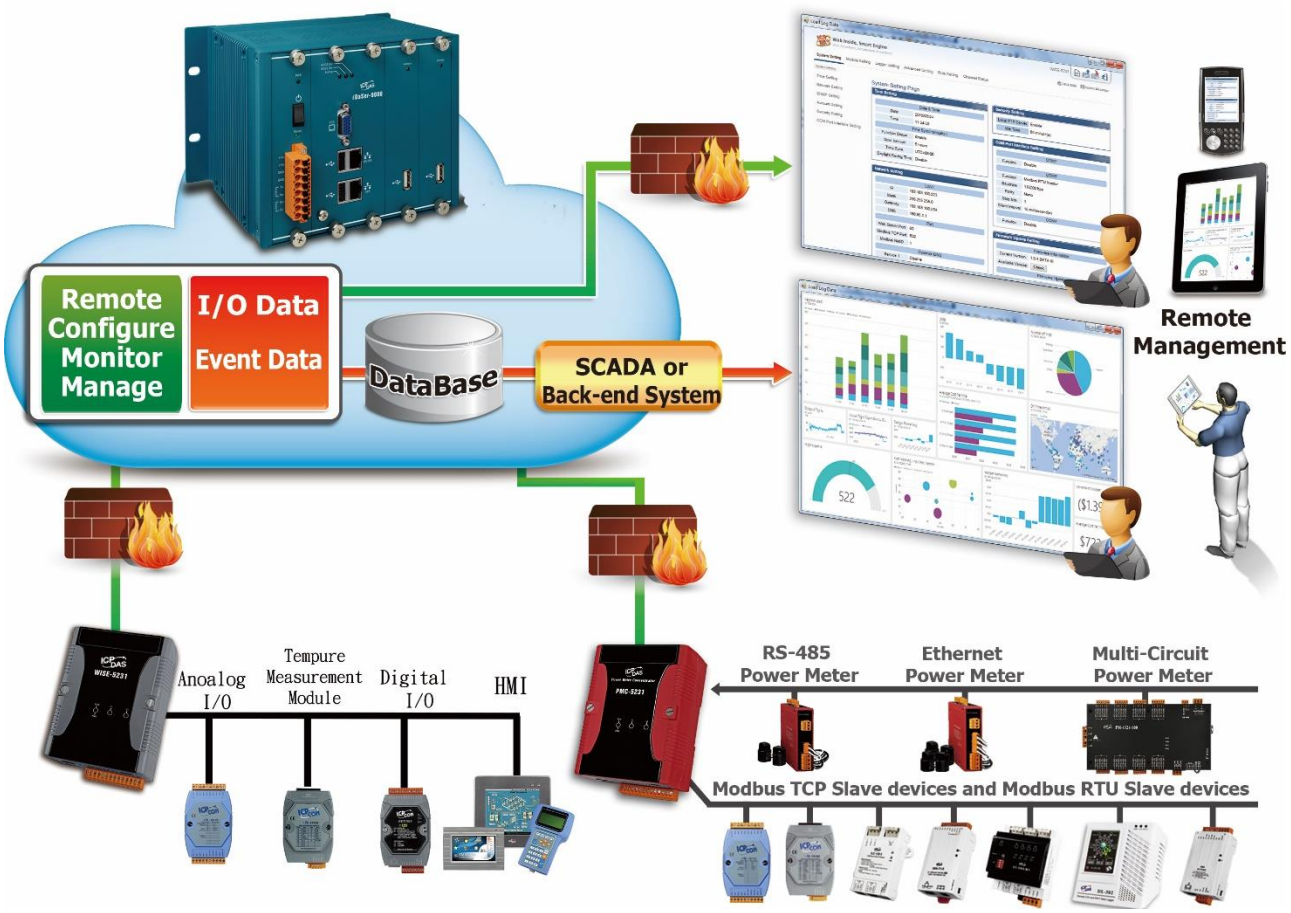
# 1. Introduction




The iDaSer-9000 provides Remote Data Management Services and Data Synchronous Storage Services. By the intuitive web management interface, admin can authorize users to configure server, to monitor hardware status, to control authority groups, to maintain and store data. The FTP Service with SSL and RAID1 Service of iDaSer-9000 ensure the data safety and stable.



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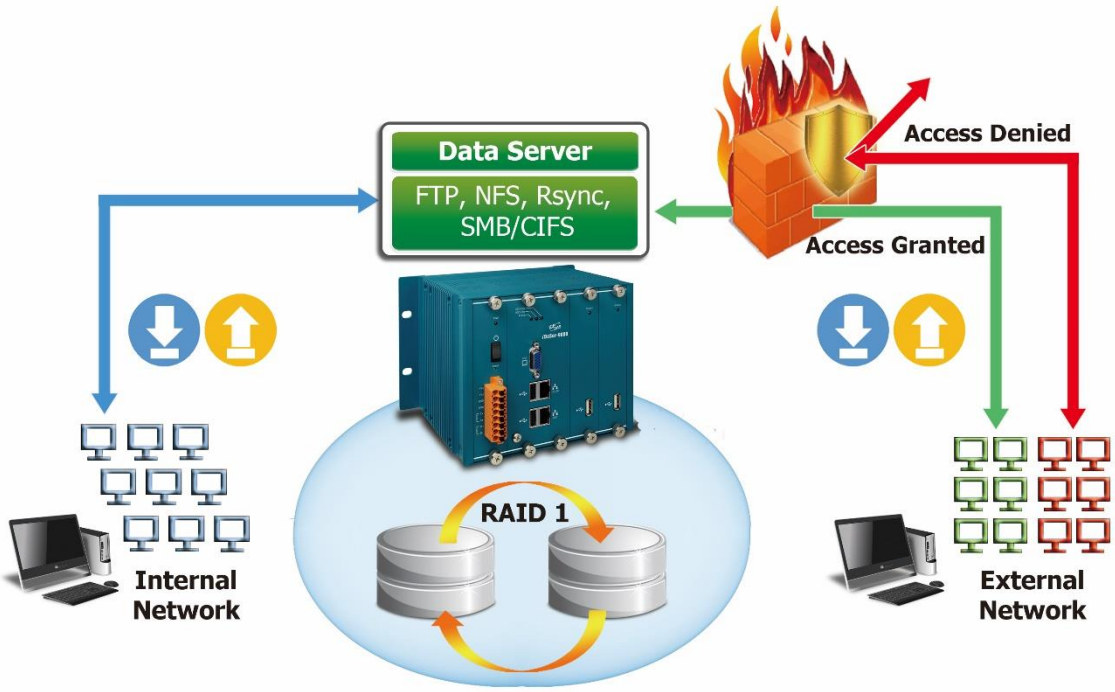


The iDaSer-9000 provides two network cards to monitor and control the internal and external network. This feature ensures the data can be transmitted safely. In the trend of Industry 4.0, the applications of accessing data in filed are more important. With the iDaSer-9000, users can build a reliable industry data management server.

The iDaSer-9000 module is a data manager server which includes six LED indicators. One of the LED is used to show the status of the PWR, the other one shows the status of system and the others display the status of disk .The iDaSer-9000 also has two RJ-45 standard communication interfaces to perform Ethernet transmission. Owing to its features, more various applications can be supported. The iDaSer-9000 module is constructed with a metal-housing that provides a fully ventilated design, meaning that there is no problem with heat radiation.

More details related to applications that can be implemented using the iDaSer-9000 module will be illustrated in sections 3.



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## 1.1 Features

- **Hardware**
  - Supports input voltage 12~48V$_{DC}$.
  - Supports connecting with two network cards.
  - Includes four USB Hosts.
  - Contains six LED indicators, one as a power indicator ,an activity indicator and the others for monitoring hard disk drivers activity.
  - Contains LED indicator on RJ-45 for Ethernet status.
  - With a metal-housing that provides a fully ventilated design, meaning that there are no problems with heat radiation

- **Software**
  - Provides support for the SSH, FTP, NFS, SMB/CIFS.
  - Provides support for the SNMP(Read-only) and SYSlog.
  - Provides support for the RAID 1 .
  - Provides support EXT4 files system
  - Provides support for the Schedule Jobs function.
  - Provides support for Multi-language.
  - Provides support for Rsync.
  - Provides support for MySQL.
  - Provides support for manager to configure users, authority and group.
  - Provides support for Access Control List (ACL)
  - Provides support for web configuration functions.


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## 1.2 Specification

| Module | iDaser-9000 |
|---|---|
| **System** | |
| OS | Debian |
| Version | 4.7.2-5 |
| **CPU Module** | |
| CPU | RDC3600(1.0GHz) |
| RAM | DDR III 1600/2GB |
| RTC(Real Time Clock) | Provide date, day of week , second ,minute ,hour ,year |
| EEPROM | 16KB |
| Switch | Power x1, Reset x1 |
| System Buzzer | Buzzer x 1 |
| **VGA & Communication Ports** | |
| VGA | VGA 1920 x 1449 @ 60hz |
| Ethernet Port | RJ-45x 1 1000 Base-TX x1 , RJ-45 x1 10/100 Base-TX x 1 |
| USB2.0 | USB 2.0 HS/500 mA x4 |
| **SATA HDD Slot** | |
| Slot | USB to SATA HDD x2 |
| **LED Indicators** | |
| Round LED | PWR、Active、HDD1 Err、HDD2 Err 、 Access x2 |
| **Storage** | |
| HDD | 2.5" SATA 500G x 2 |
| **Power** | |
| Input Range | 12V ~ 48VDC |
| Consumption | 12W |
| **Mechanical** | |
| Dimensions | 133.0 mm x 208.0 mm x 164.0 mm ( W x L x H ) |
| **Environment** | |
| Operating Temperature | -20℃ ~ +50℃ |
| Ambient Relative Humidity | 10% ~ 90% RH(non-condensing) |



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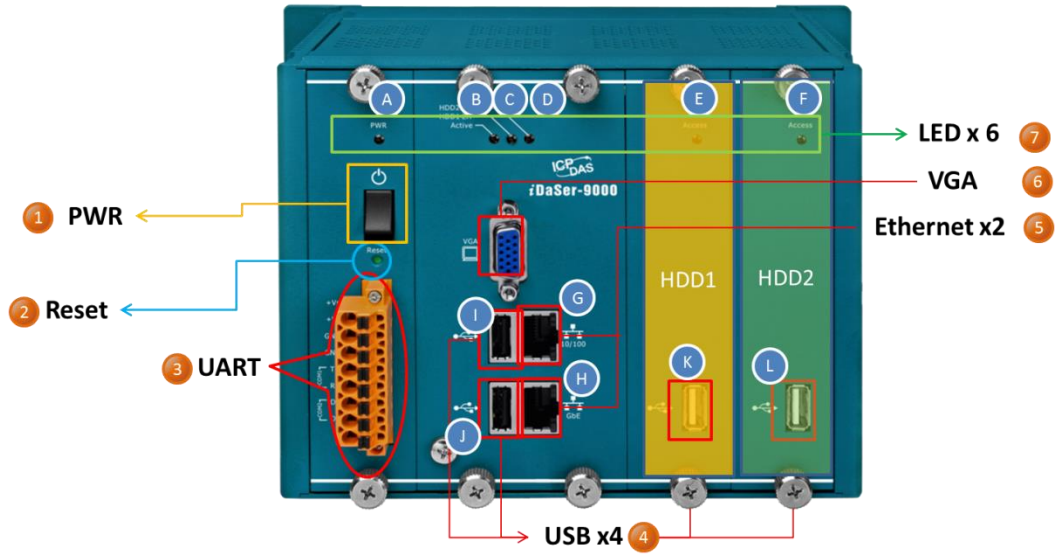
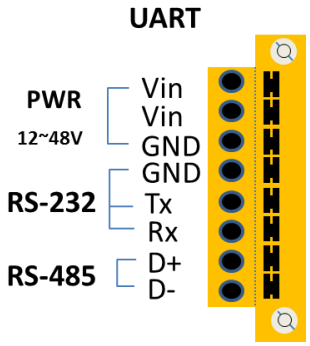
# 2. Getting Started

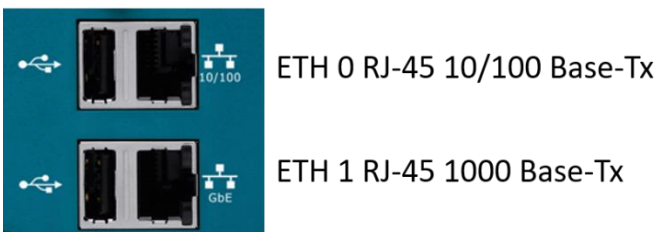
## ■ Appearance




| NO. | Name | Description |
|---|---|---|
| 1 | PWR | Turn ON /OFF |
| 2 | Reset | Keep pressing for 3 seconds, and the network setting will be reset as default.(Reboot after this action) |
| 3 | UART | The interfaces of RS-232and RS-485.(Reserved) |
| 4 | USB | On purpose to connect USB or keyboard. |
| 5 | Ethernet | Two network cards for internal and external network. |
| 6 | VGA | Connection to monitor. |
| 7 | LED | Display the status of devices. |

## ■ Wire connections and pin assignments



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## 2.1 LED Indicator

The iDaSer-9000 module provides six LED indicators. The Following is an overview of the purpose and function of each LED indicator together with a description.

| NO. | LED name. | LED state | LED Description |
|---|---|---|---|
| **A** | **PWR (G)** | ON | The power of the module is ON. |
| **B** | **Active (G)** | Flashing | The system is working. |
| | | OFF | The system is OFF. |
| **C** | **HDD1 Err (R)** | ON | HDD1 error. |
| | | OFF | HDD1 is normal. |
| **D** | **HDD2 Err (R)** | ON | HDD2 error. |
| | | OFF | HDD2 is normal. |
| **E** | **Access (G)** | ON | HDD1 is active. |
| | | OFF | HDD1 disconnected. |
| **F** | **Access (G)** | ON | HDD2 is active. |
| | | OFF | HDD2 disconnected. |


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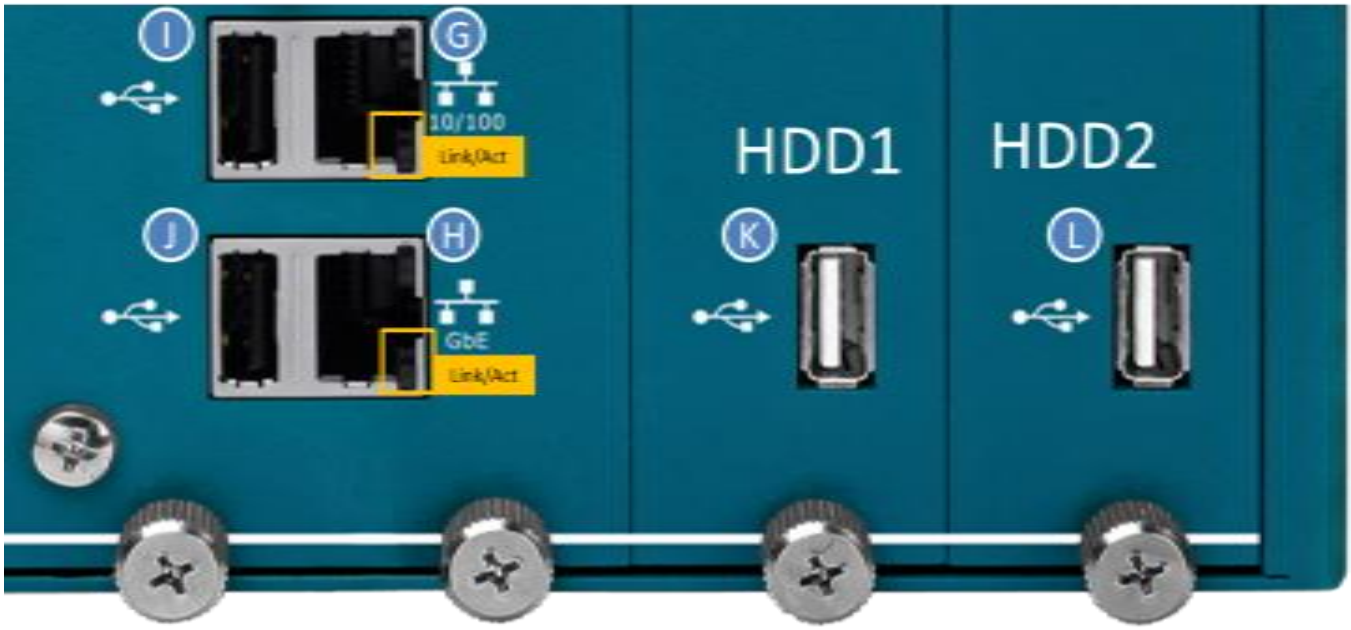
## 2.2 Ethernet and USB Host

### Ethernet

The iDaSer-9000 module provides LED indicator to show the status of Ethernet.




| 編號 | LED name | LED status | LED Description |
|---|---|---|---|
| G | 10/100M | ON | Normal operation. |
| | | OFF | Ethernet lost connection. |
| | Link/Act | Flashing | System is handling data. |
| H | GbE | ON | Normal operation. |
| | | OFF | Ethernet lost connection. |
| | Link/Act | Flashing | System is handling data. |

### USB HOST

The iDaSer-9000 module provides four USB Host ,

| No. | USB HOST | Description |
|---|---|---|
| I~L | USB port | Providing for keyboard or flash drives**(*PS)** ◦ |

***PS.** The flash drive will be used for backup of network setting.(**Appendix B**)



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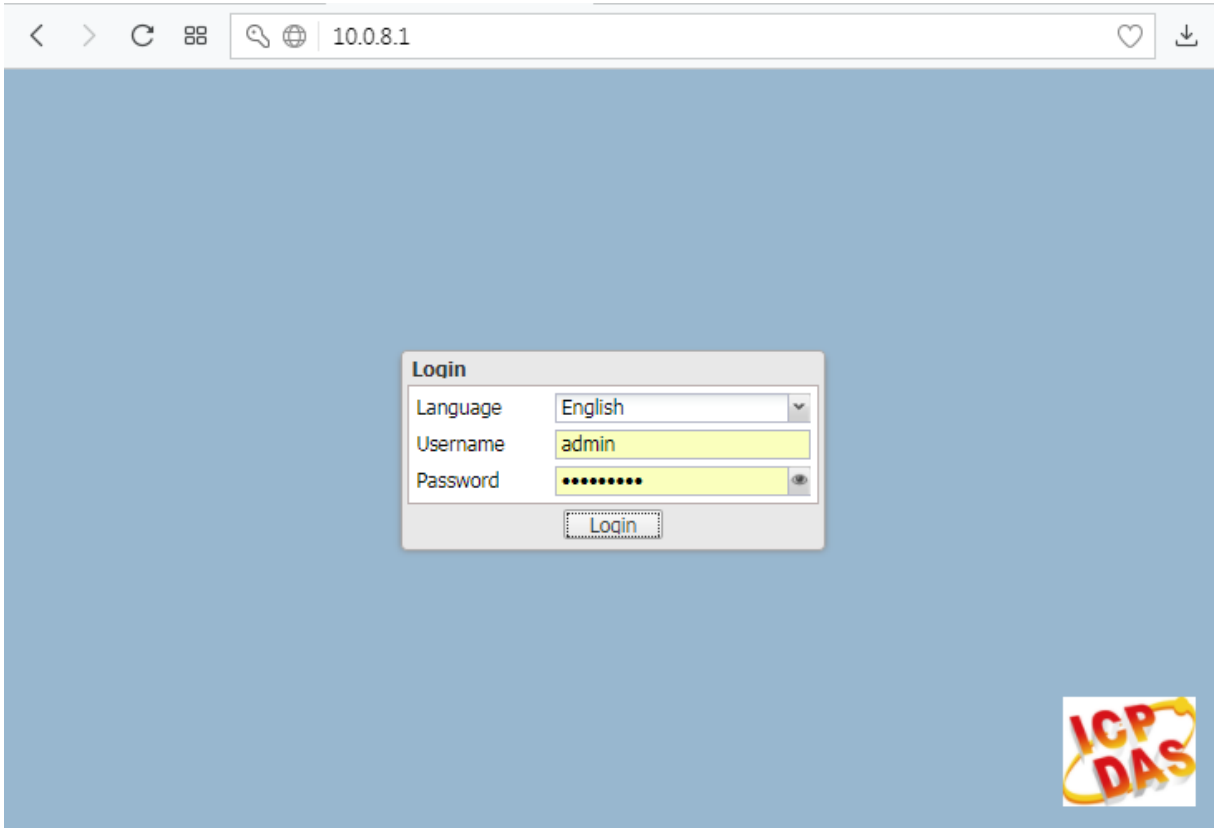
# 3. Web Configuration

The configuration for the module parameters on the iDaSer-9000 module can be performed via a standard web browser using the embedded web configuration function.

Using the Ethernet 1 (default ip:**10.0.8.1**) Username:**admin**,Password:**icpdas888**

- The browsers are supported, including IE 11, Chrome, Opera, Firefox(recommended).




The web configuration functions are divided into several categories and include System, Storage, Access Right Management, Services, Diagnostics and Information. The following is an overview of the process used to configure the iDaSer-9000 module via the web.



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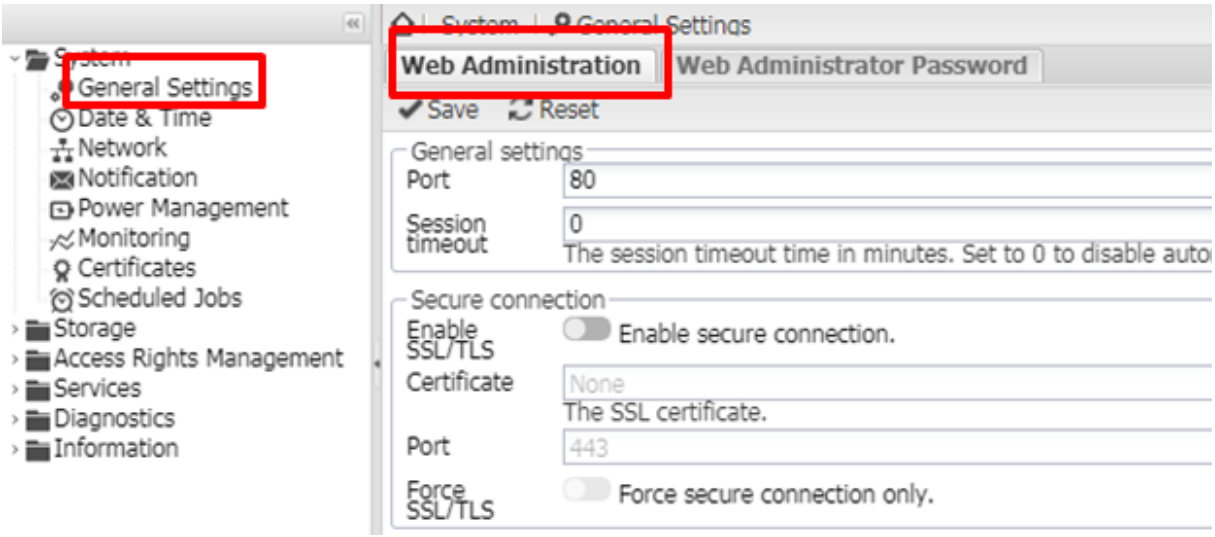
# 3.1 System

## 3.1.1 General Setting

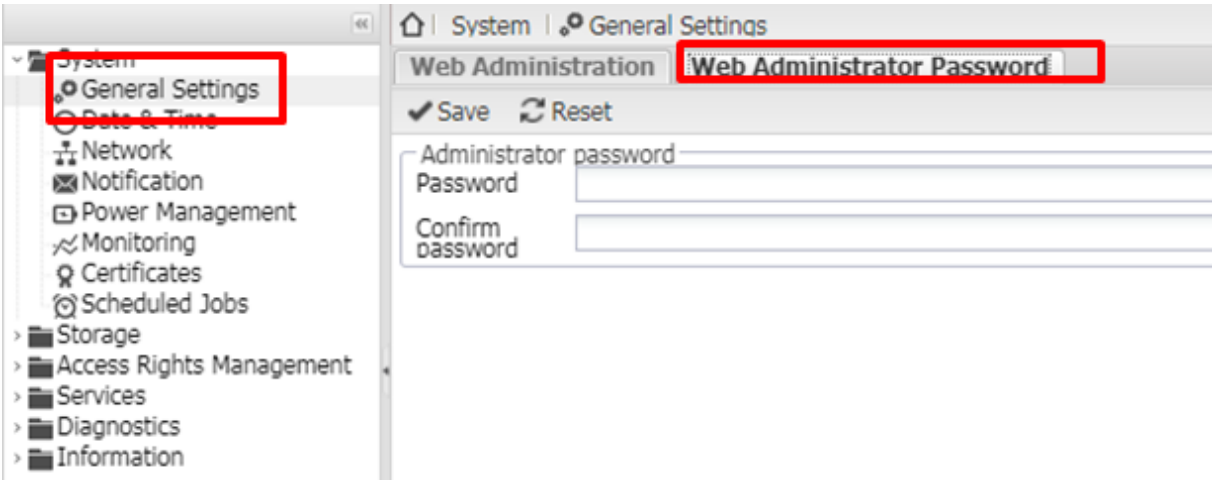
**【Web Administration】**

Set the session timeout and secure connection here.




**【Web Administrator Password】**

Set the password of manager here.(**Default username: admin ; password : icpdas888**)




## 3.1.2 Data & Time

Display time and set the clock by NTP or manual.



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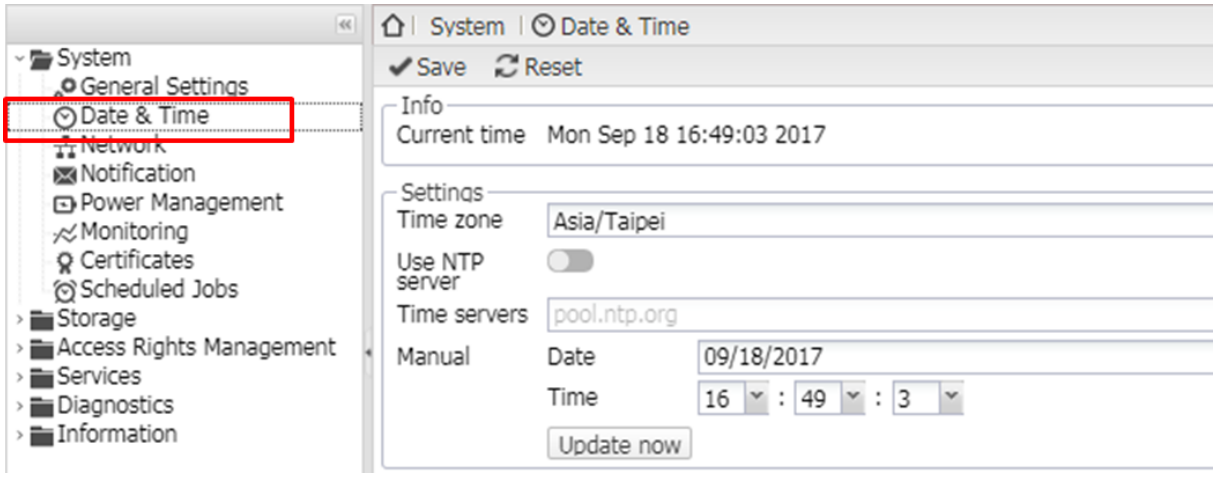
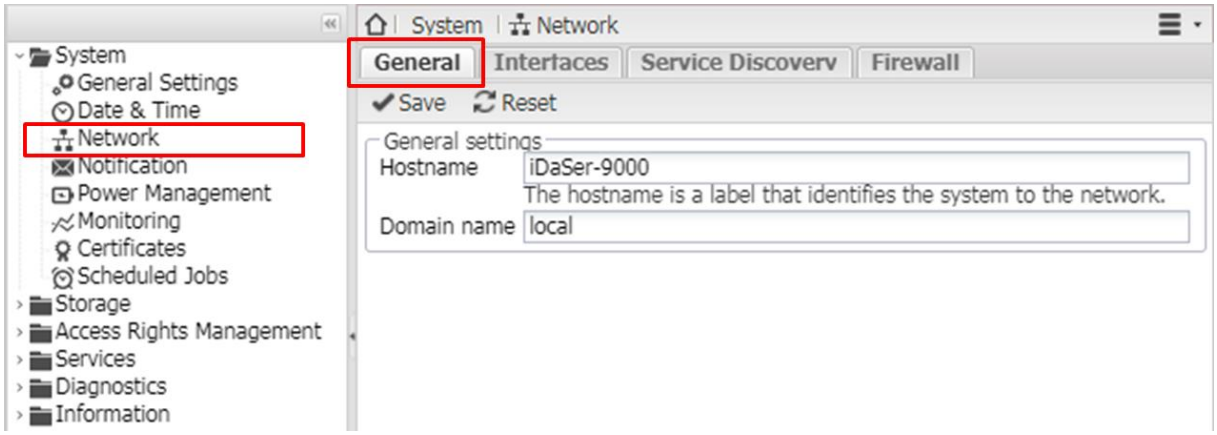



### 3.1.3 Network

**【General】**

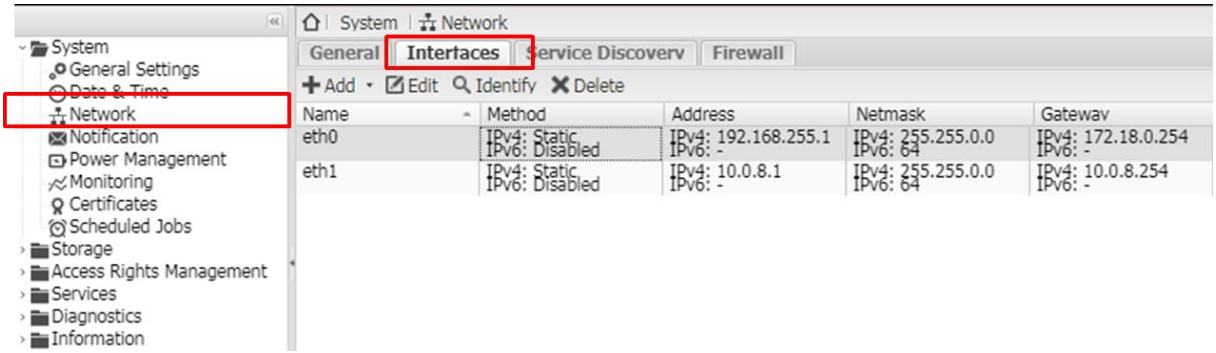
Set the hostname, and domain name.




**【Interfaces】**

Set the interface (e.g. modify eth0)

Double click eth0 or choice etth0 and click 【Edit】




.Modify the netmask as **255.240.0.0** and click 【save】



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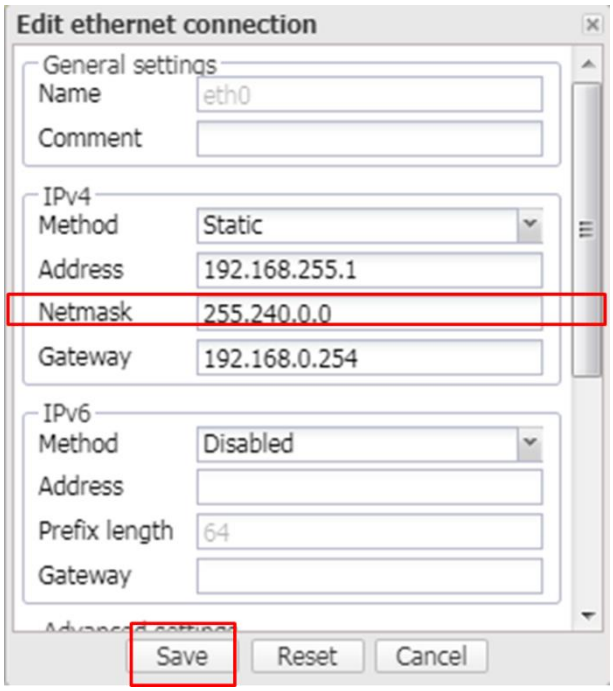
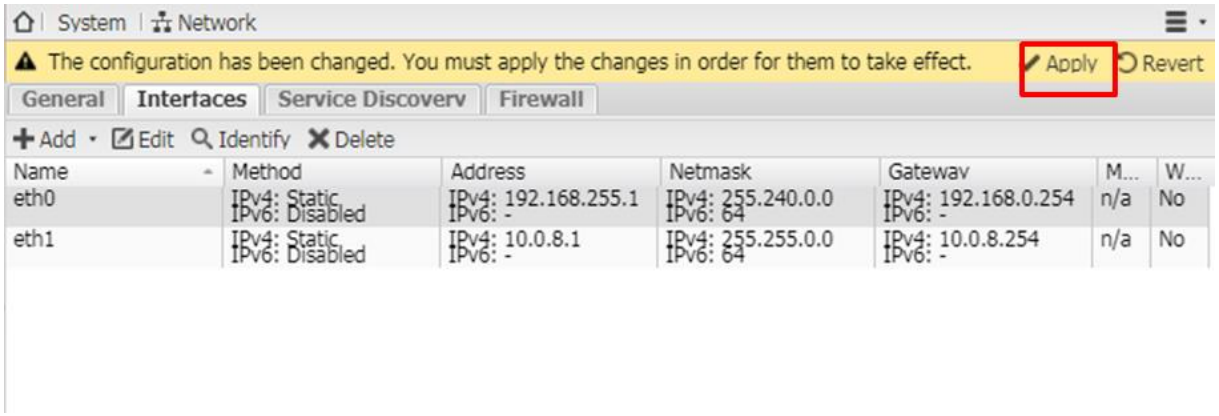
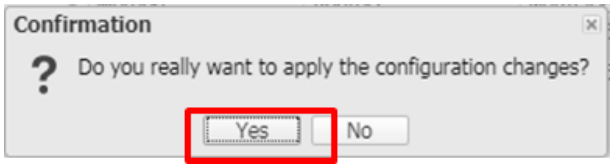



Click【Apply】.




Click【Yes】




**【Service Discovery】**

Enable / Disable the services



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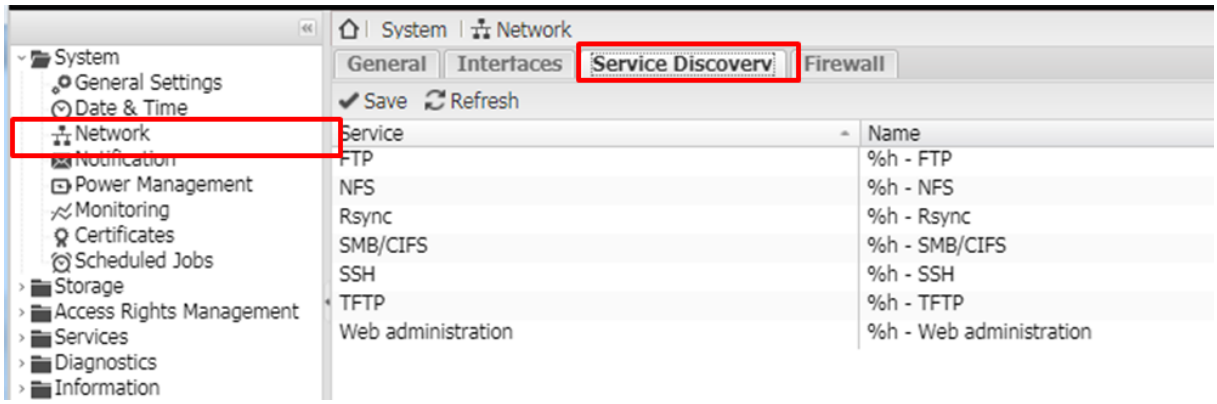
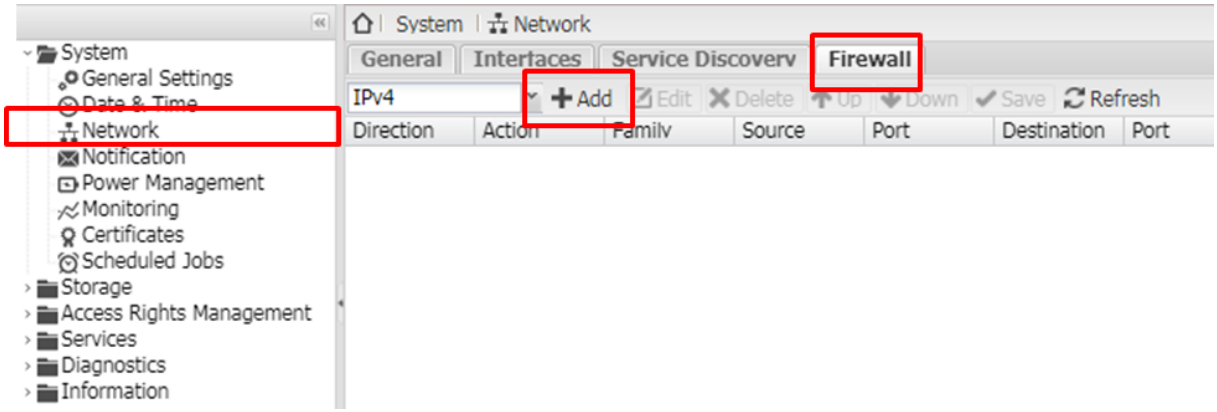
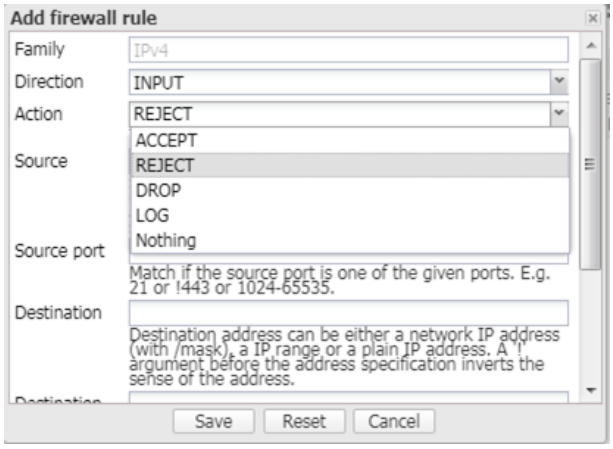



【Firewall】

Add new rule if it's needed.




Add new rule, it needs to set the direction as "INPUT" or "OUTPUT", and set the action (ACCEPT/REJECT/DROP/LOG/Nothing).




### 3.1.4 Notification

**【Settings】**

Configure SMTP setting and Recipient setting.



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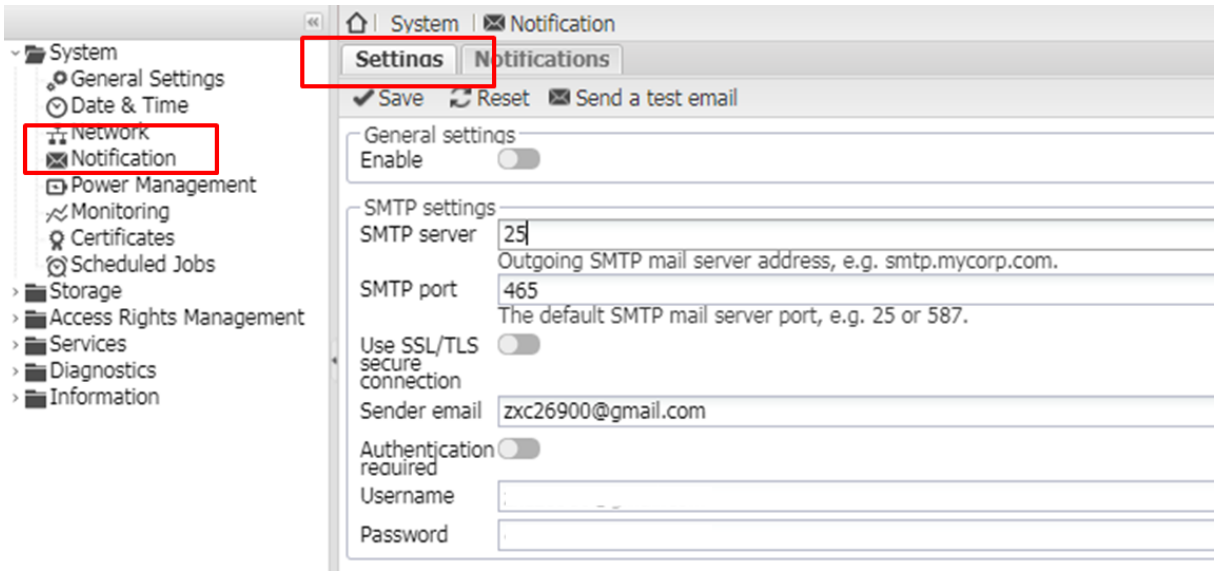
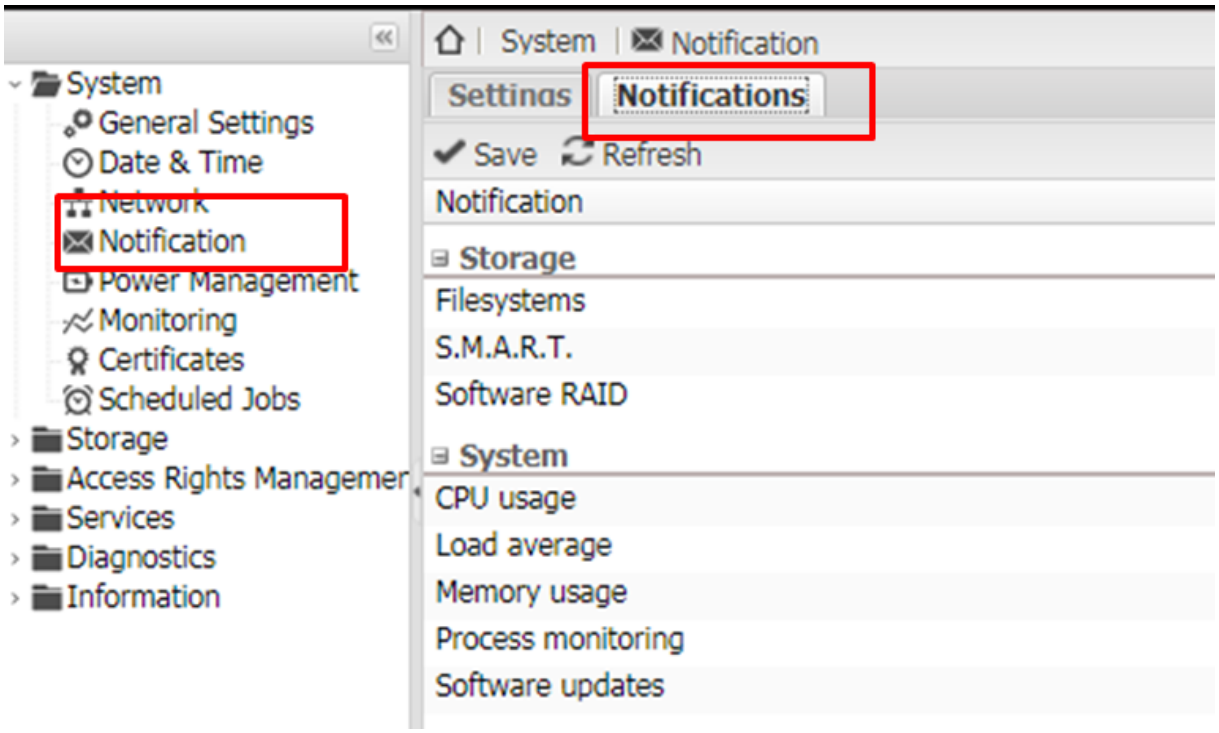



**【Notification】**

Enable the items needed.




### 3.1.5 Power Management

**【Setting】**

Set the action of PWR : Nothing / Shutdown / Standby.



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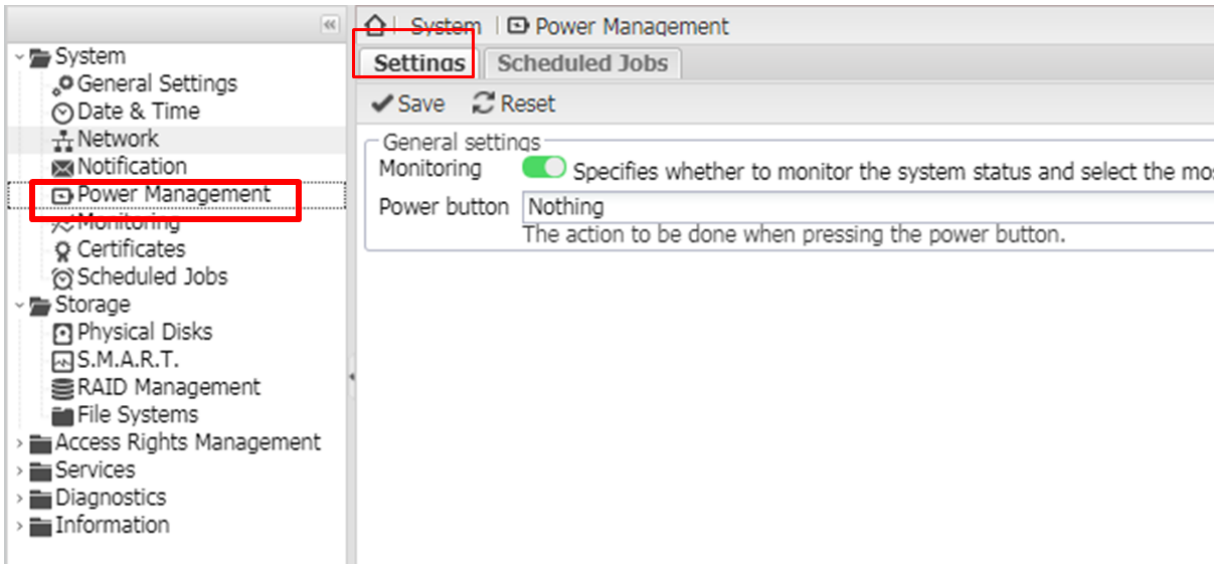
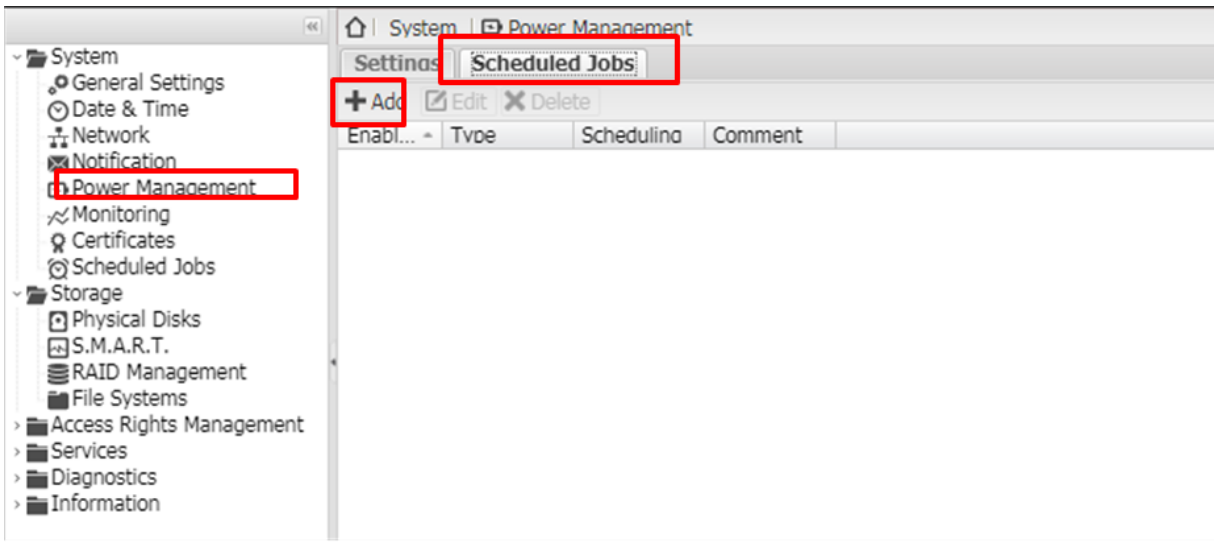



**【Scheduled Jobs】**

Click【+Add】




Set the power action in regular cycle.



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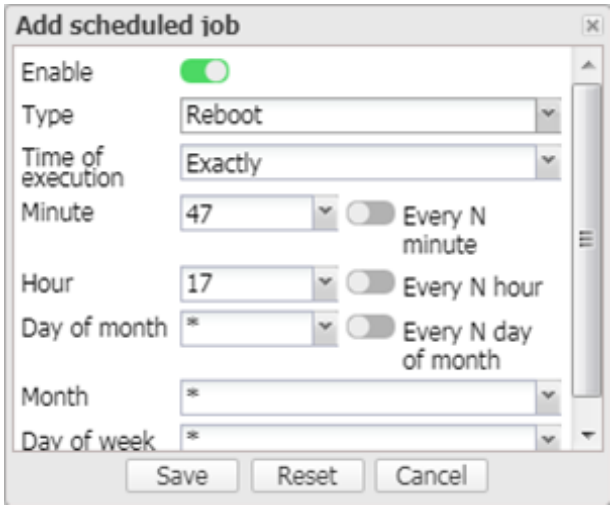
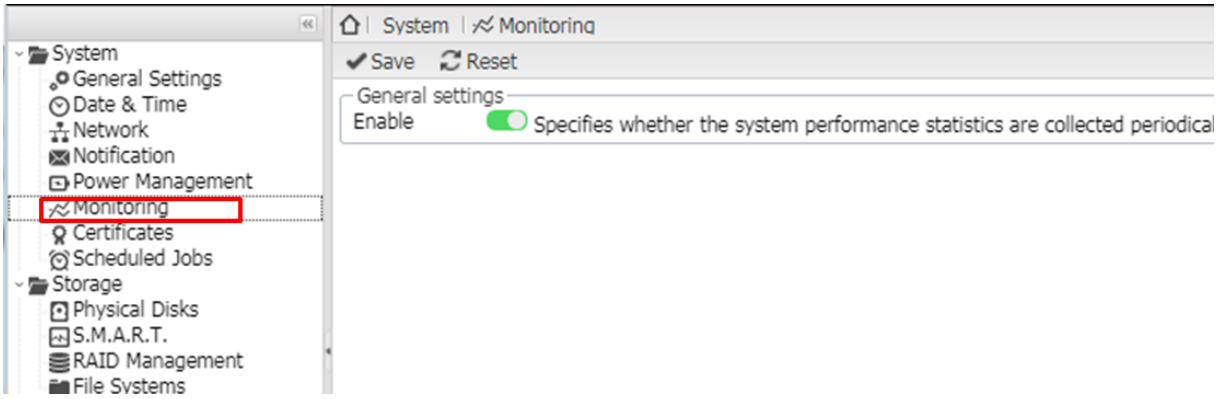



### 3.1.6 Monitoring

Enable/ Disable,system performance statistics are collected periodically.




### 3.1.7 Certificates

**【SSH】**

Add SSH certificates if it's necessary.

Eg. 【+Add】->【Creat】



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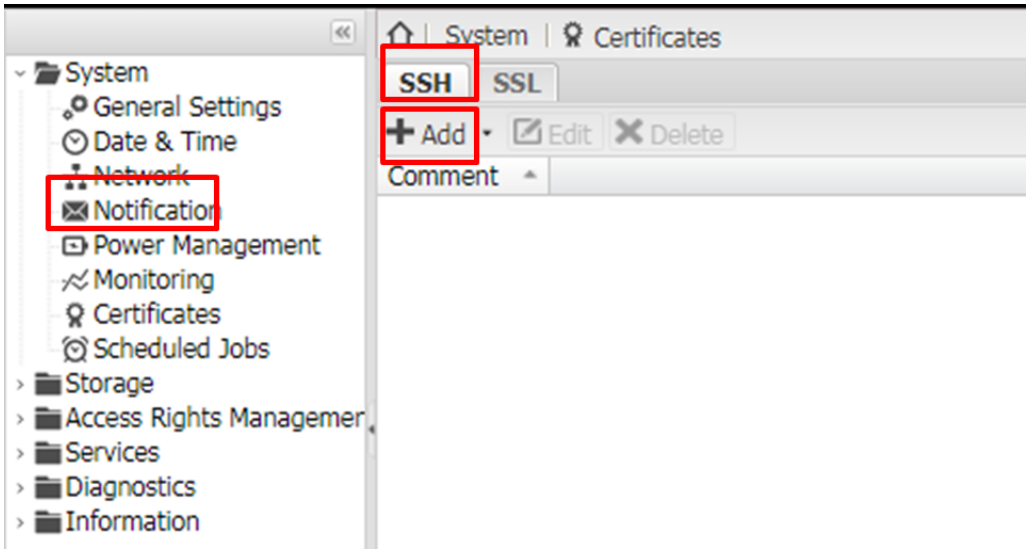
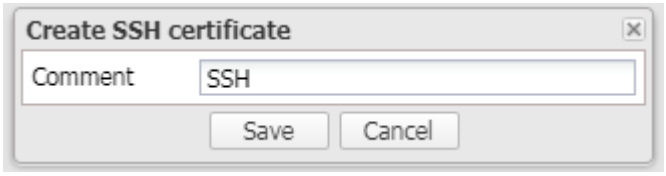
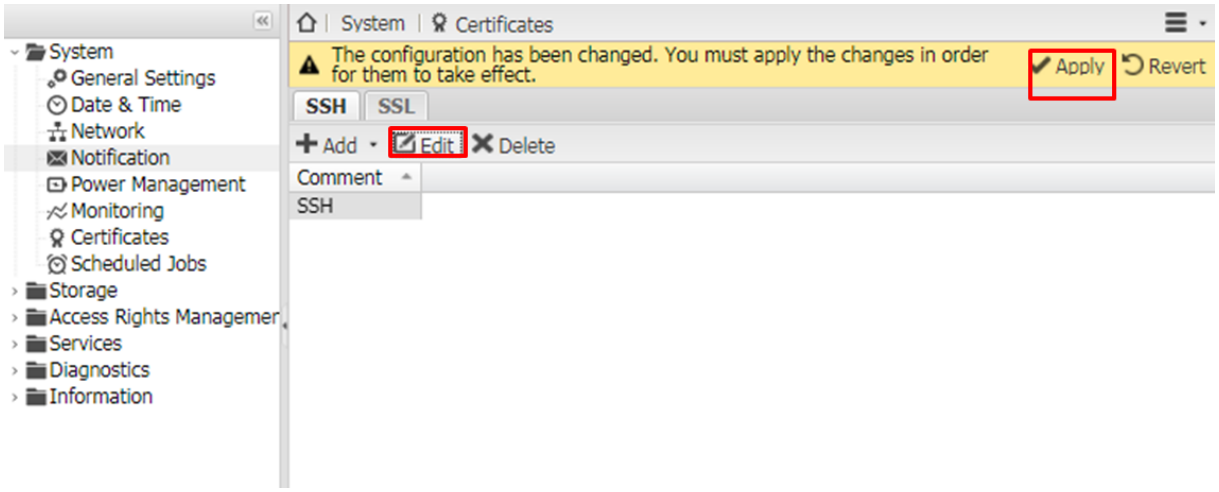



Configure the name , and click 【save】




Edit SSH




View the content of SSH.



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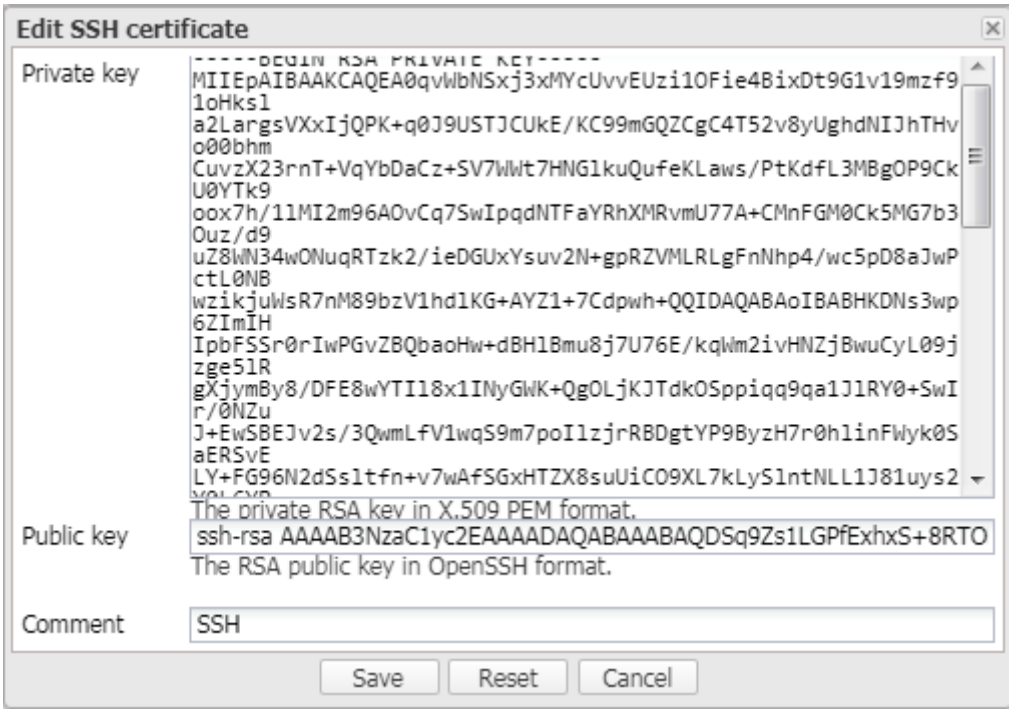
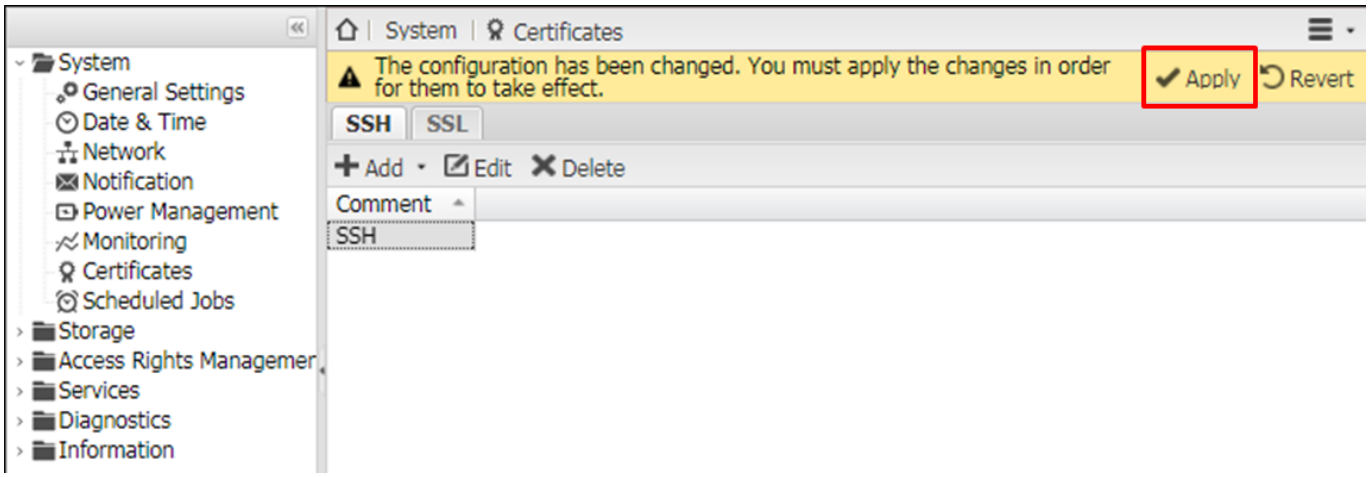
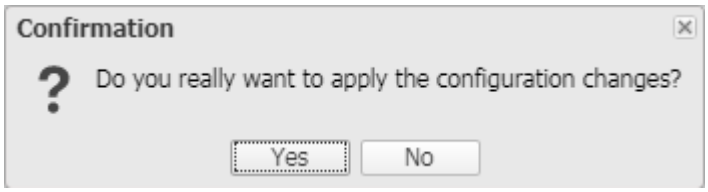



Click 【Apply】




Click【Yes】




**【SSL】**

Add SSL certificates if it's necessary.



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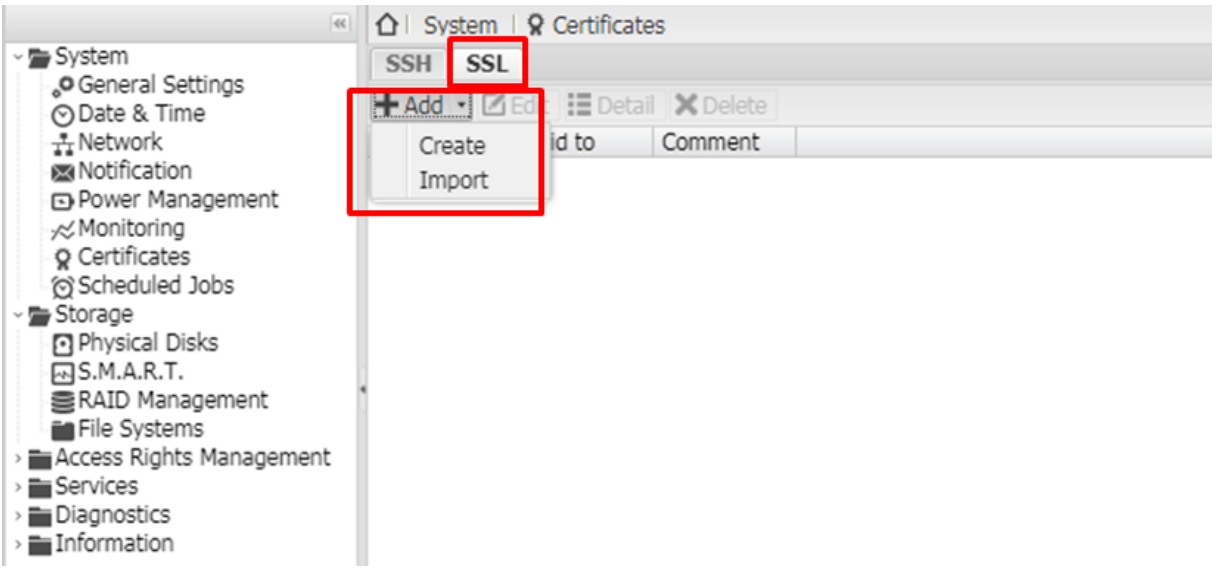
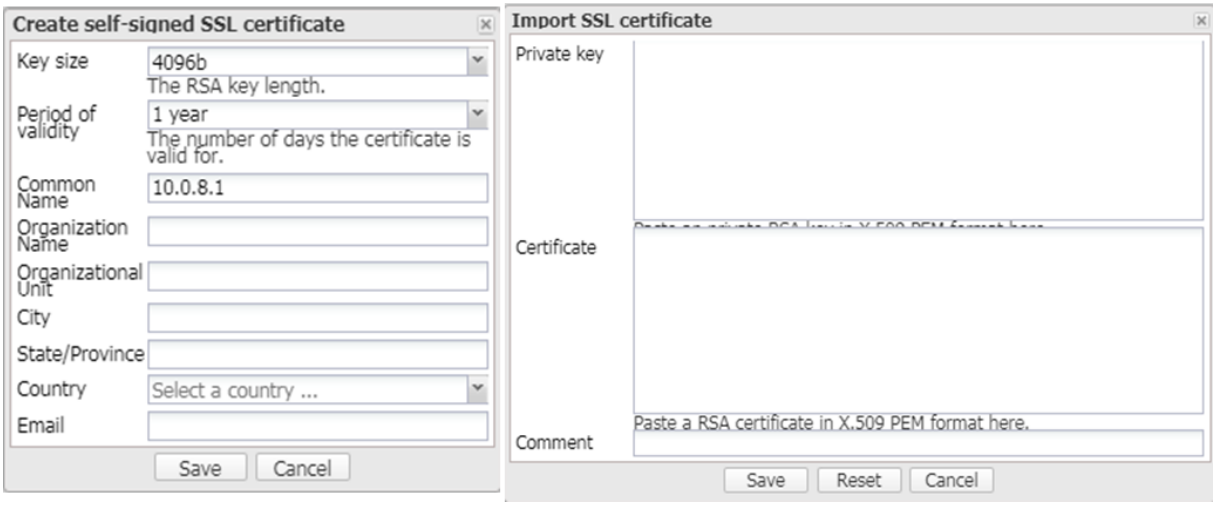



Create or import SSL certificates.

Key size:512b / 1024b / 2048b /4096b

Period of validity: 1 day ~ 25 years




### 3.1.8 Scheduled Jobs

**【Scheduled Job】**

User can modify regular command in scheduled job ( Manager only).

Click【+Add】



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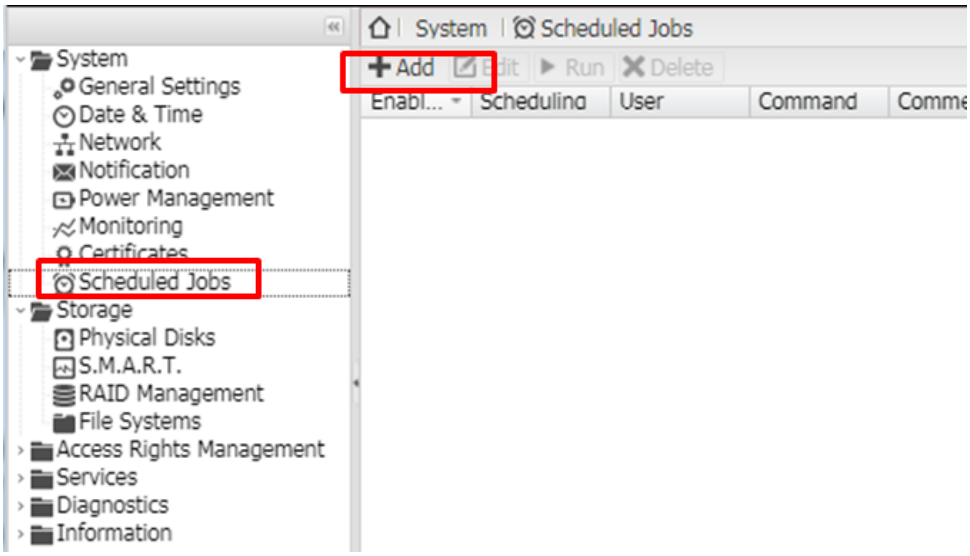
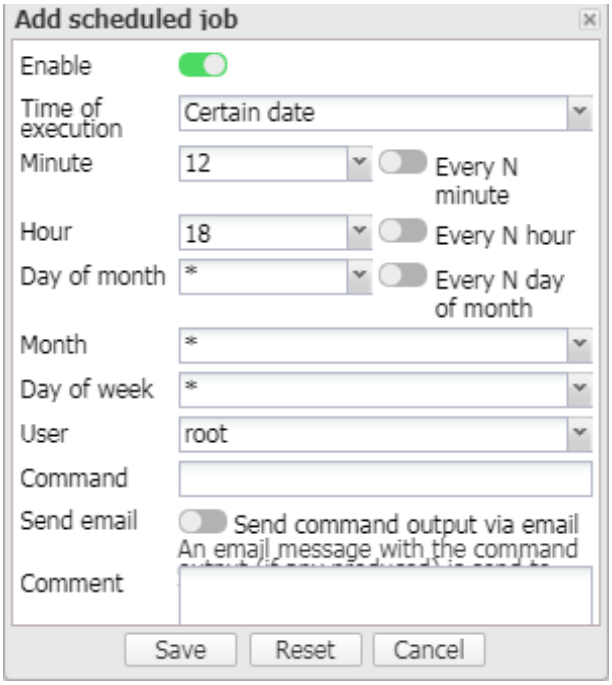



Setting

Time of execution :Certain data/ Hourly / Daily /Weekly /Monthly / Yearly / At reboot

User Authority: root , admin and bin …etc.

Command setting.



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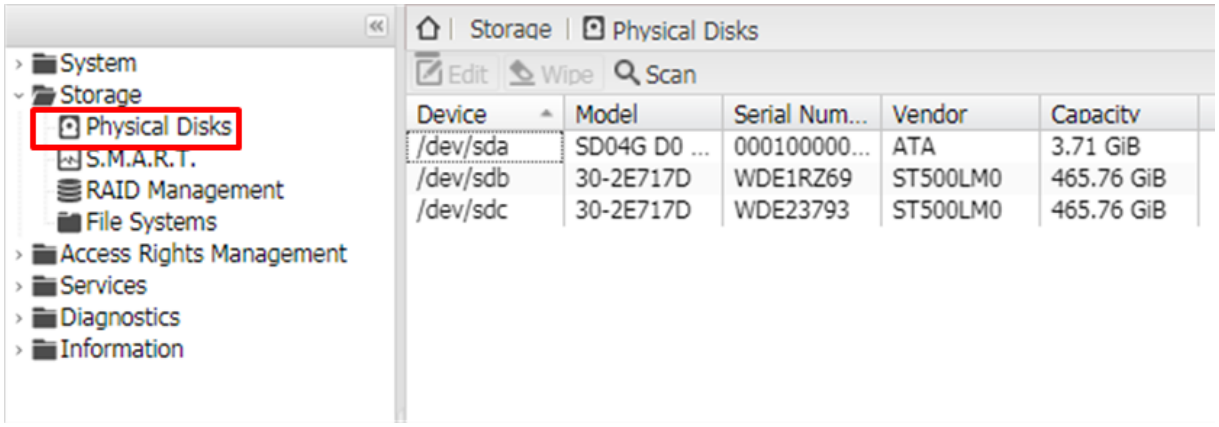
# 3.2 Storage

## 3.2.1 Physical Disks

Overview the status of physical disks.

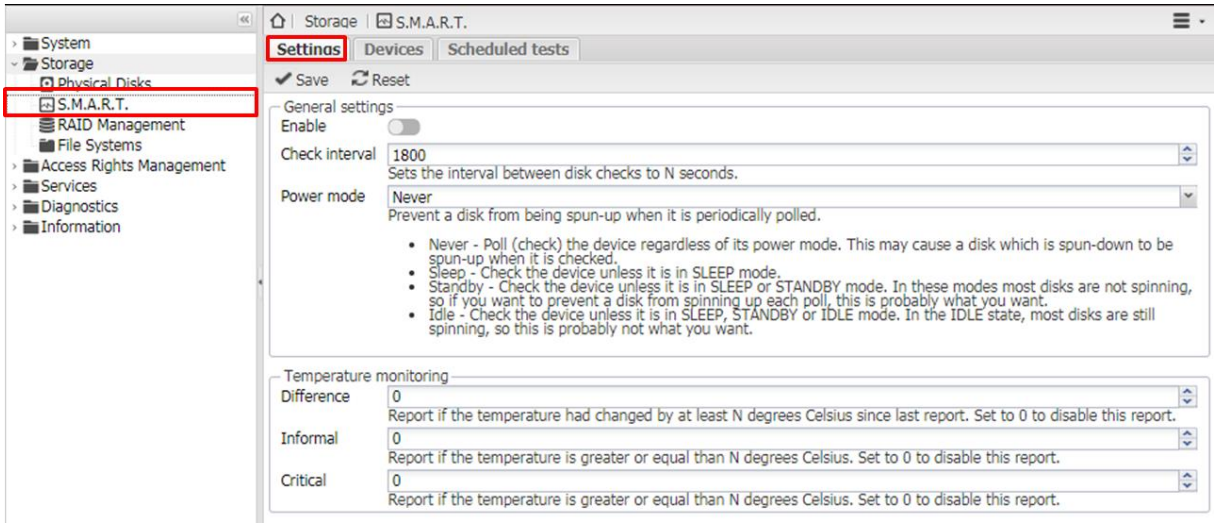



## 3.2.2 S.M.A.R.T.

**【Settings】**

General setting for S.M.A.R.T. setting , such as enable the service , setting the check interval and power mode.

Temperature monitoring for setting the value that will be recorded in report at special conditions.




**【Devices】**

Enable to monitor the disks ; check the status of them.



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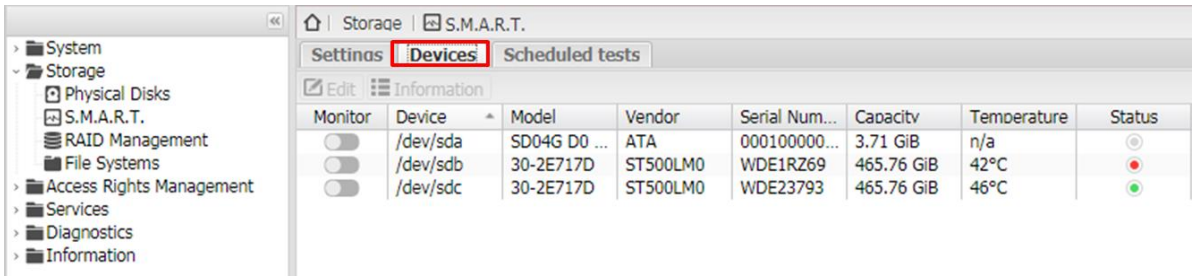
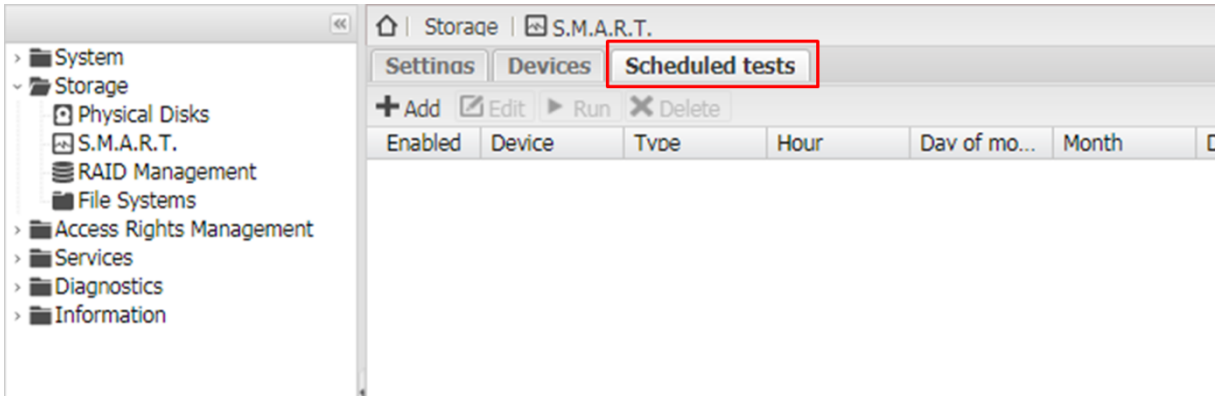


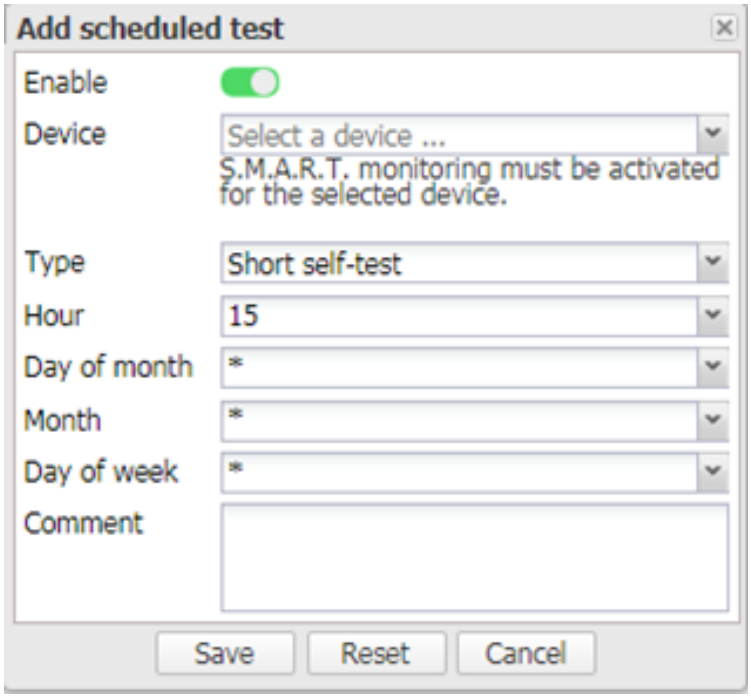

**【Scheduled tests】**

Scheduled tests for disks . (S.M.A.R.T. needs to be enabled)




【Add scheduled test】

Configure Device, Type and timing.




### 3.2.3 RAID Management

The device md0 is combined with two physical disks.



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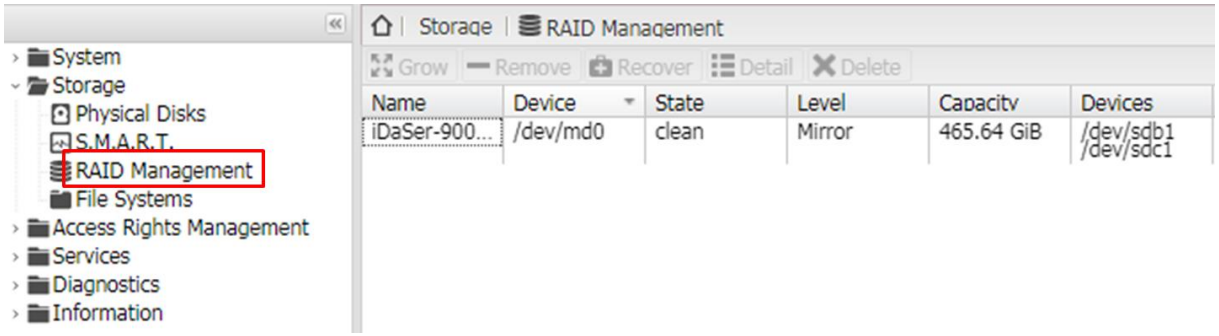
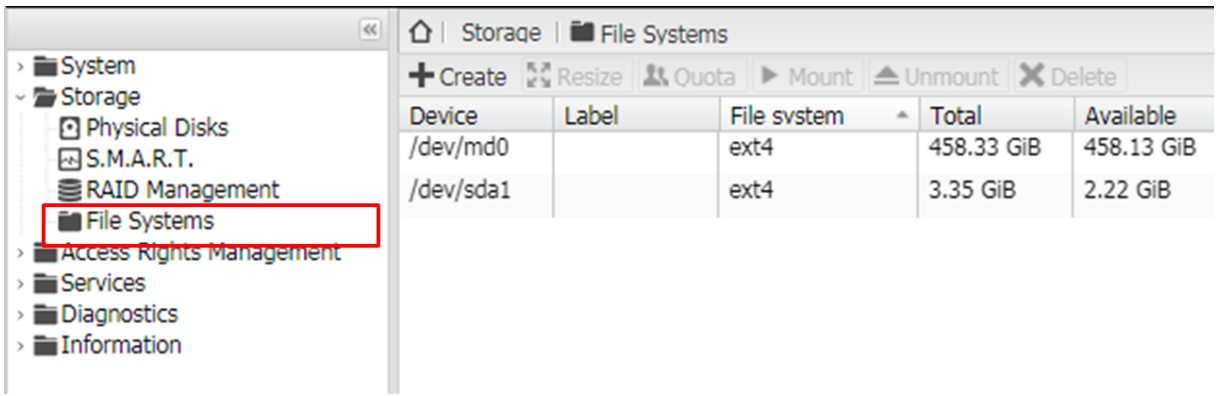



### 3.2.4 File Systems

View the file systems immediately.

If you want to add a new shared folder, it's necessary to mount " /dev/md0 " :

1. Click Device block of " **/dev/md0** ".
2. Click **Mount.**
3. It is ready to add a new shared folder.



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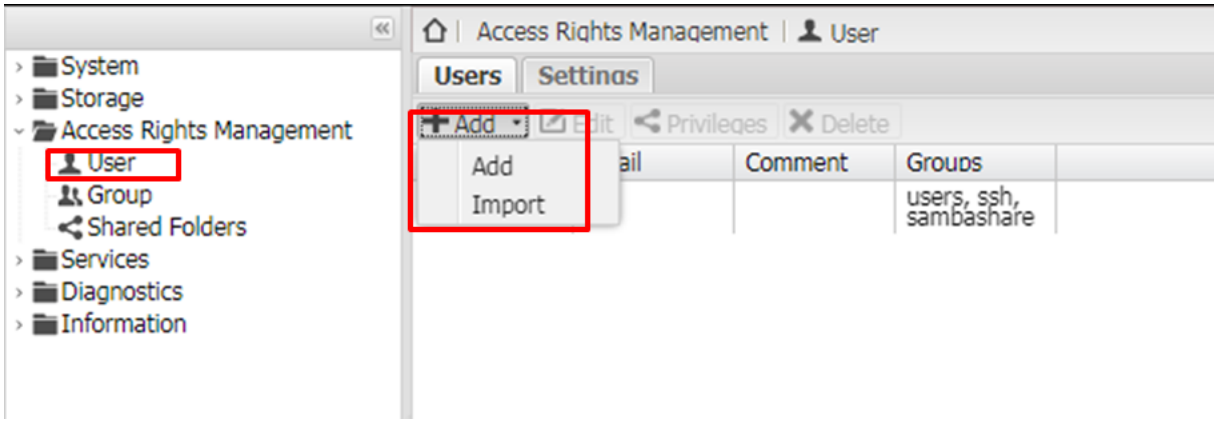
# 3.3 Access Rights Management

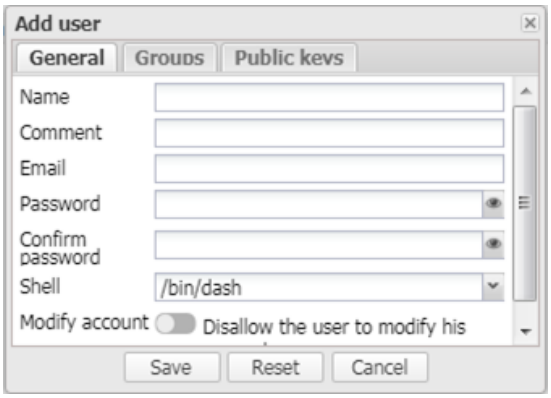
## 3.3.1 User

【**User**】-> 【+Add】-> 【Add】/ 【Import】

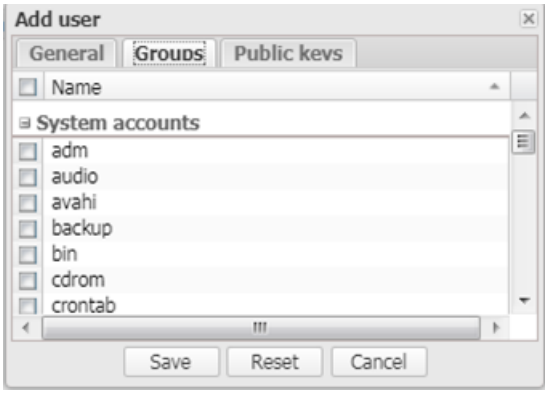



-> 【Add user】

-> 【General】: Configure user's name , email, confirm password…etc.




-> 【Group】: Set the group of the new user.




-> 【Public keys】: Add public key (RFC 4716 SSH Public Key Format ) if it's necessary.



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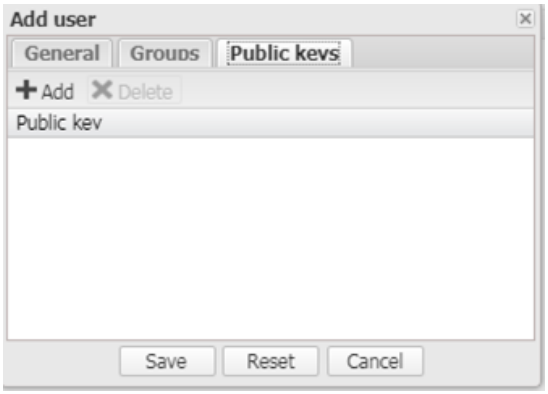
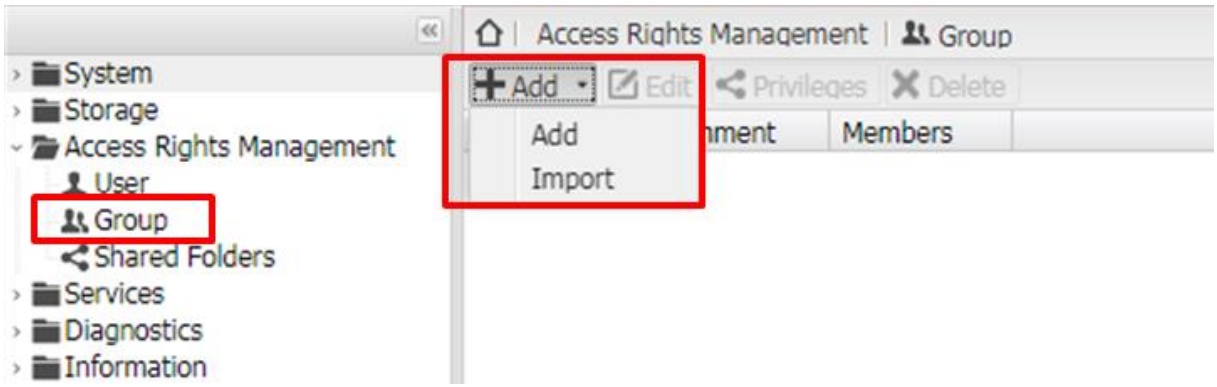
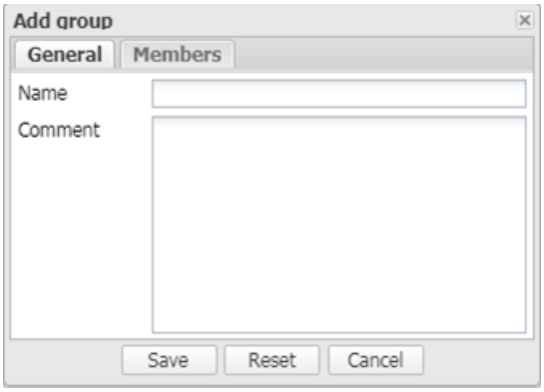



### 3.3.2 Group

【+Add】->【Add】/【Import】




【Add group】->【General】Configure the name of the new group.




->【Member】Configure the authority of the new group.



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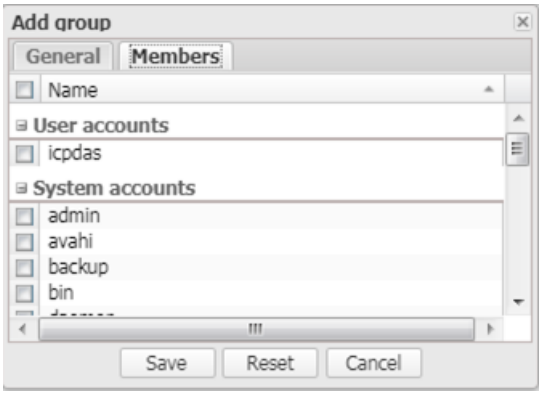
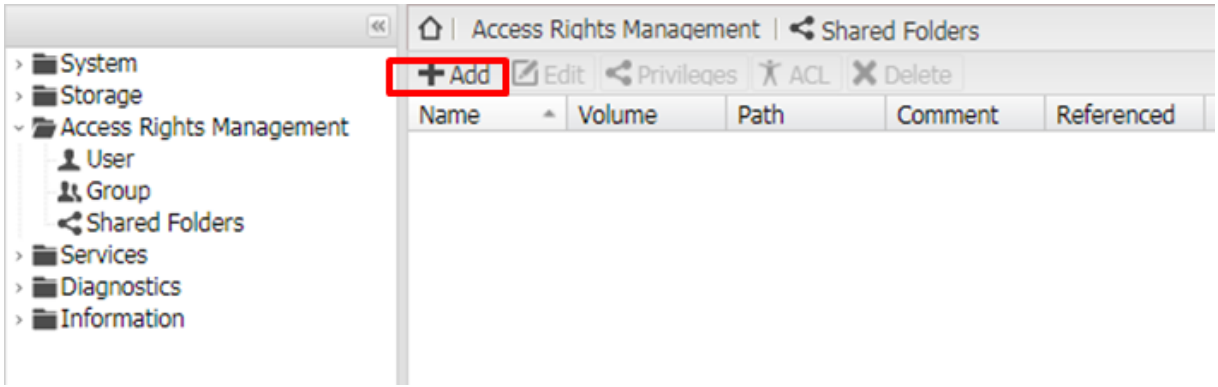


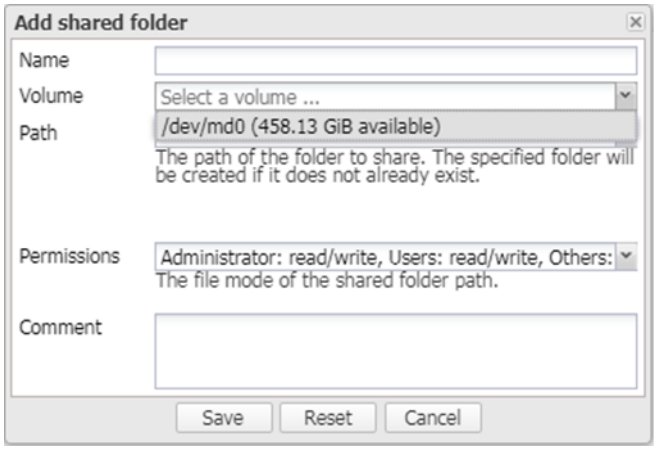

### 3.3.3 Share Folders

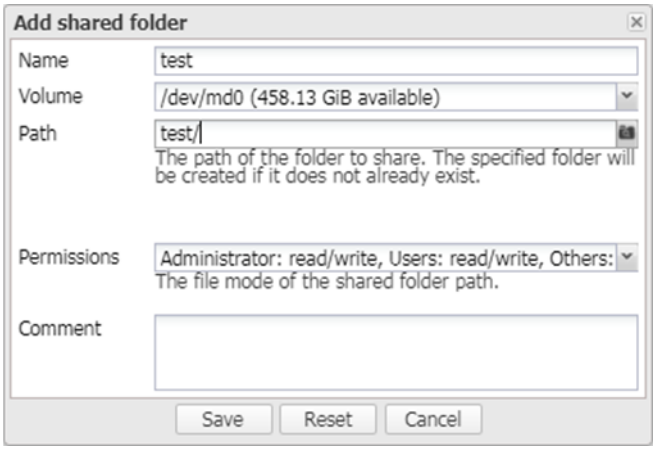
【+Add】->【Add shared folder】

Need to mount "/dev/md0". (Ref 3.2.4)




【Add shared folder】Setting the name of the new shared folder, volume, path and permissions.




【ACL】Configure the permissions of the shared folder.



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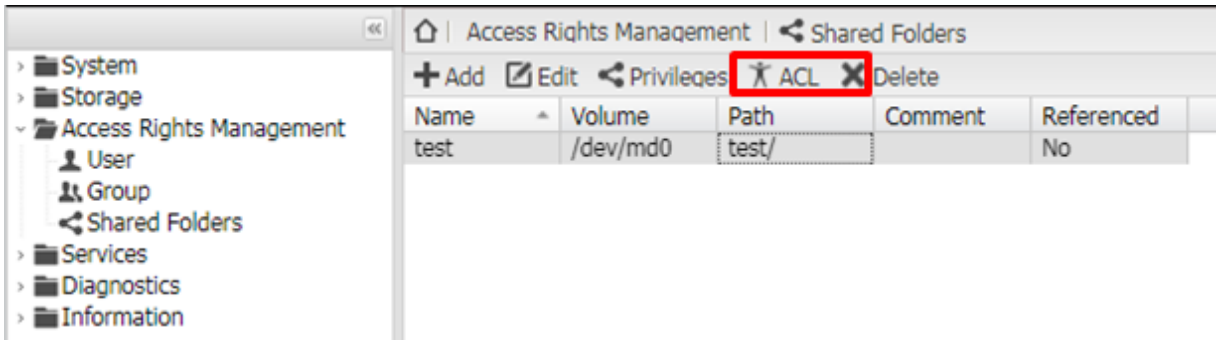
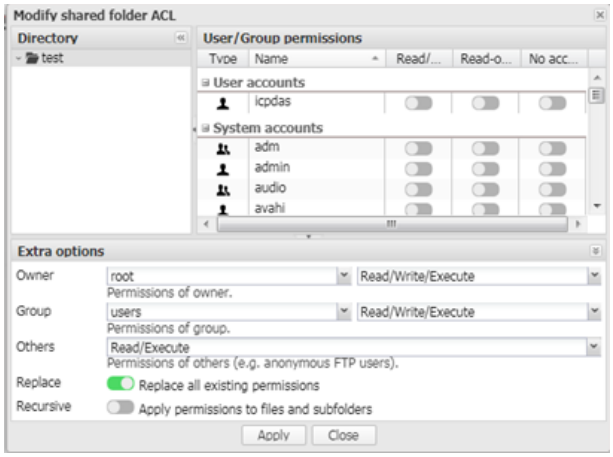
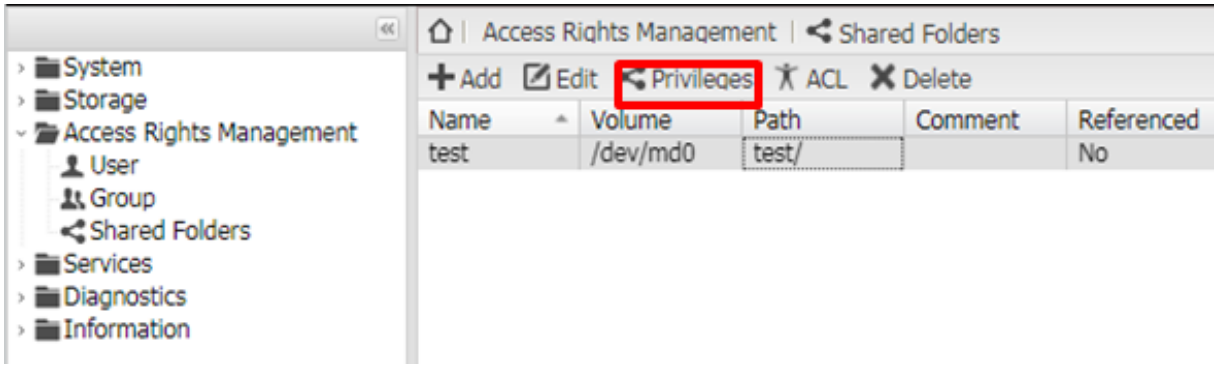


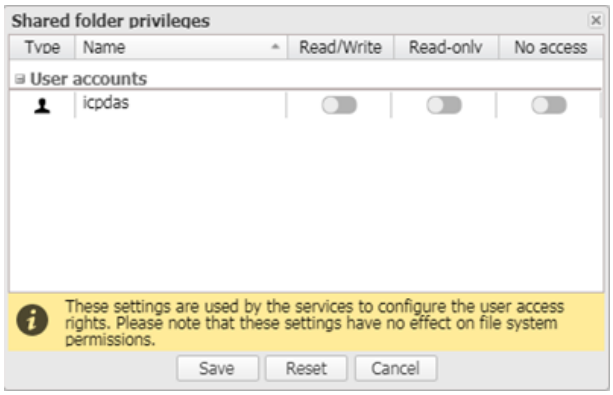

Modify the ACL




【Privileges】Configure the permissions of the shared folder.




Choice the account of shared folder.



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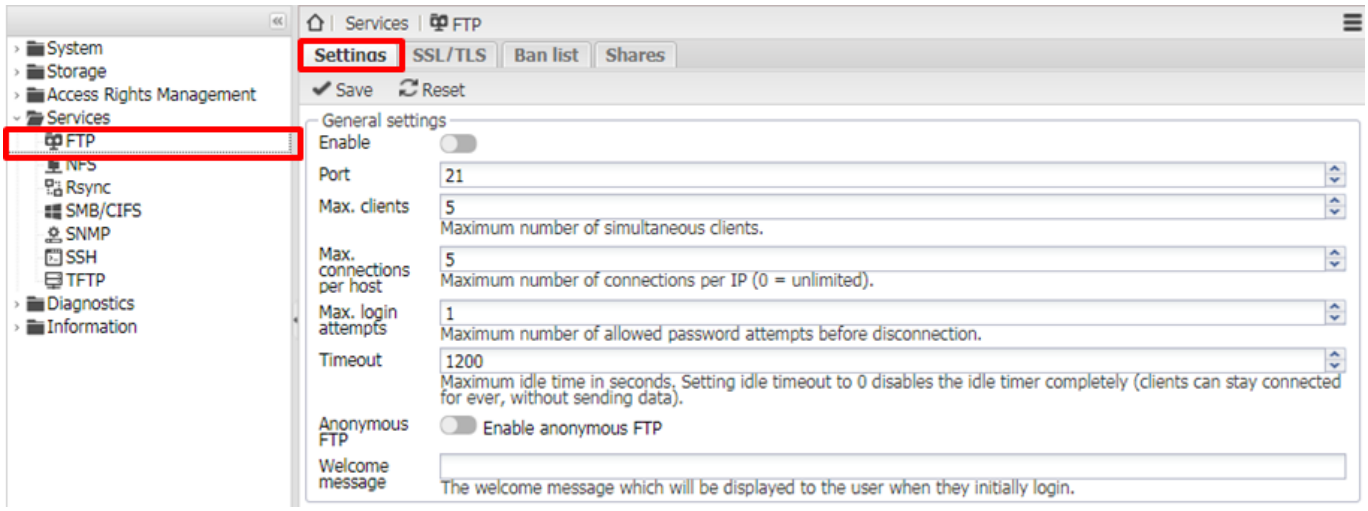
# 3.4 Services

## 3.4.1 FTP

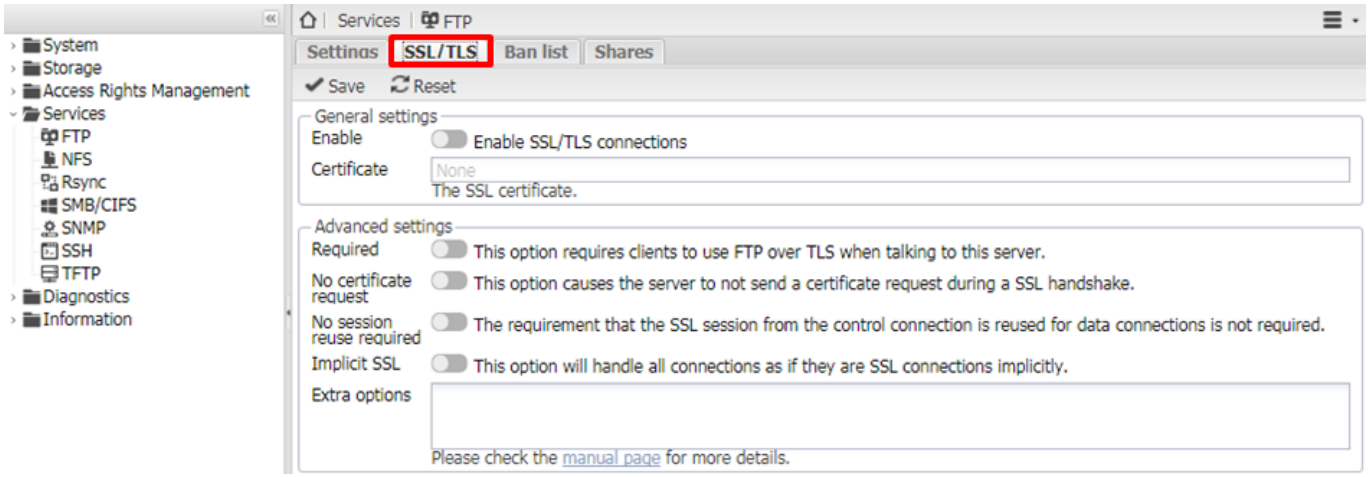
【Setting】

Set FTP connection. (Default port : 21)




**【SSL/TLS】**

Enable SSL/TLS connection and certificate.




【Ban list】

Configure the rule for event.



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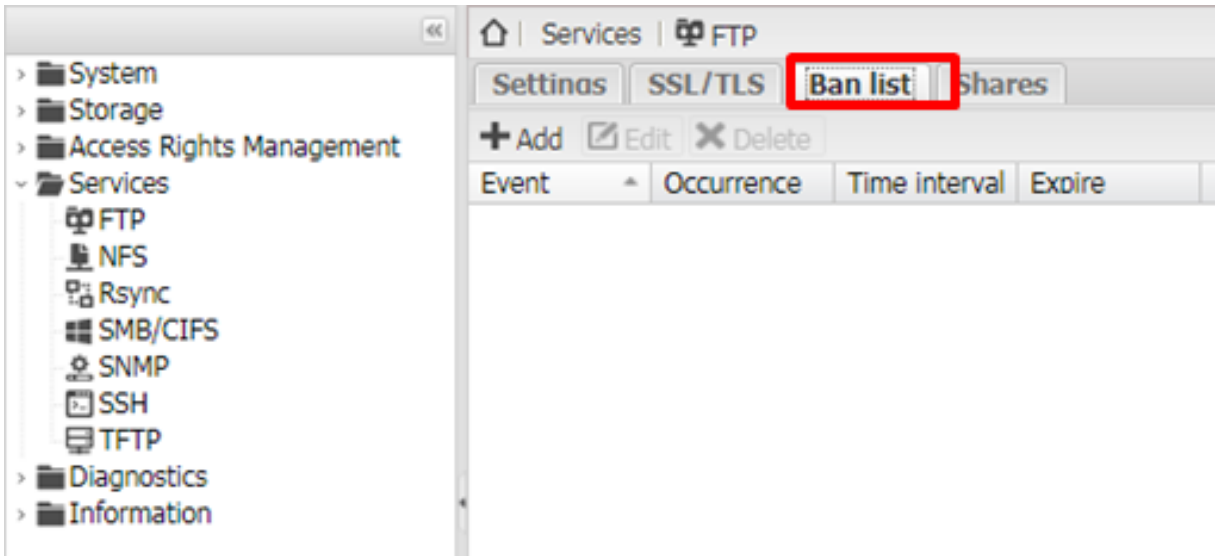
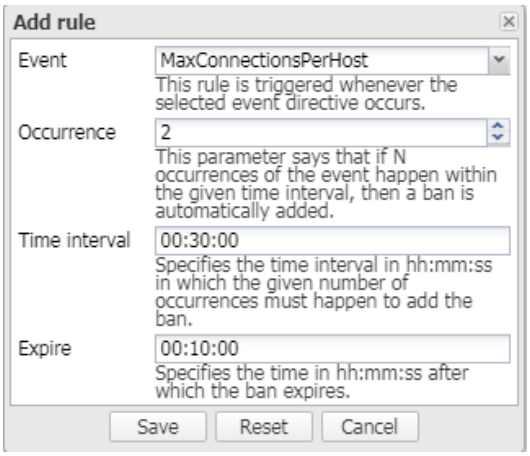
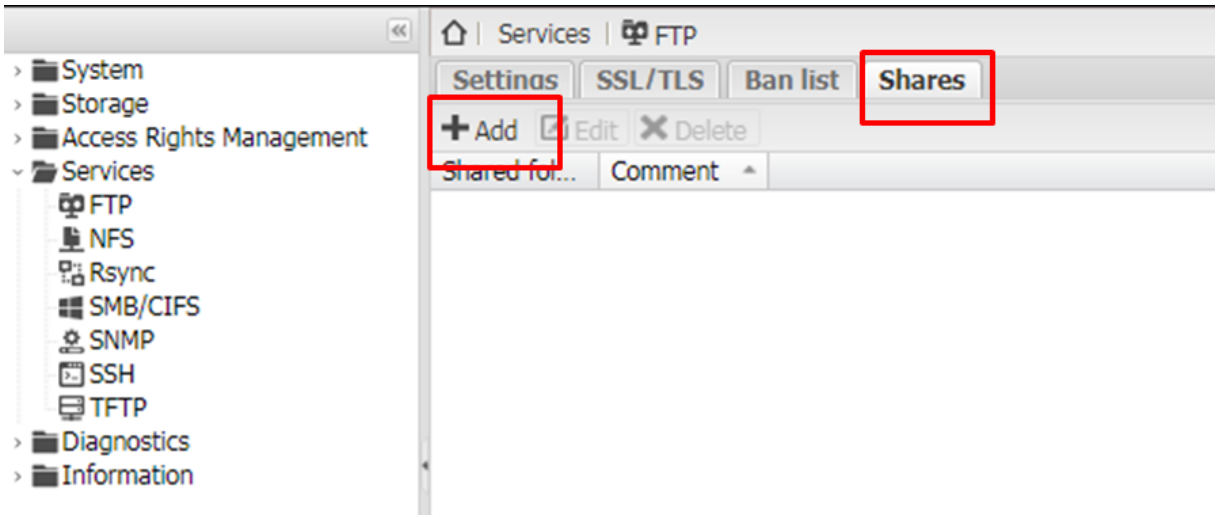



【Add rule】Configure Event ,Occurrence,Time interval and Expire




【Shares】

Click【+Add】




Set the shared folder for FTP service . (It's necessary to add a new shared folder)



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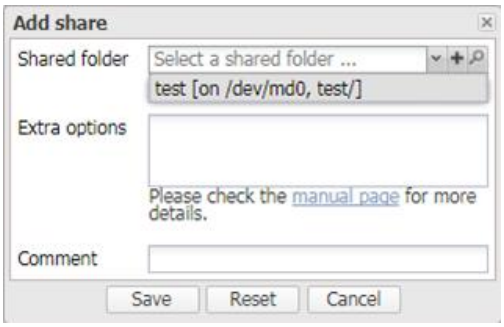
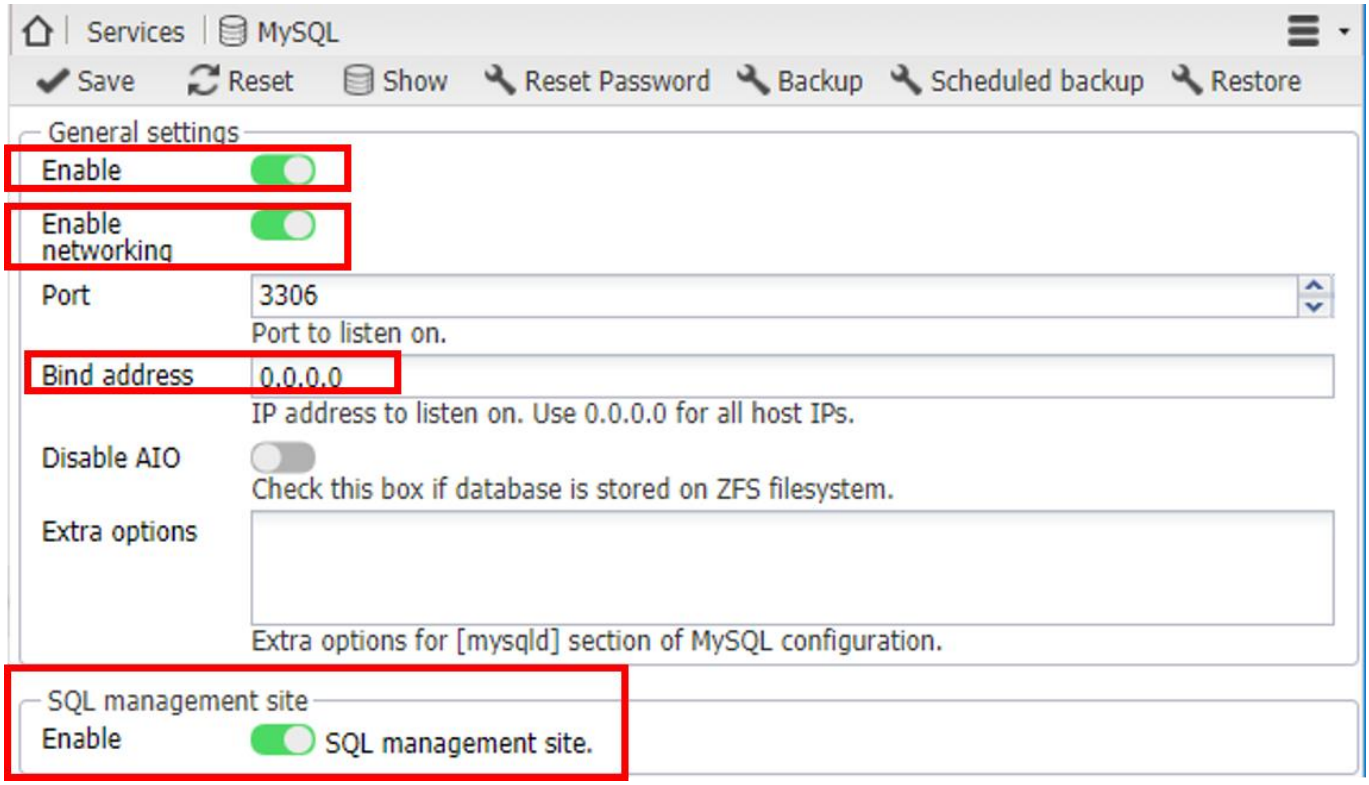



### 3.4.2 MySQL

**【Setting】**

1. Enable General settings : 【Enable】 and 【Enable networking】
2. Set the Bind address as 0.0.0.0 ( default 127.0.0.1 as local)
3. Enable SQL management site




**【Apply】**Click【Save】,【Apply】and【Yes】



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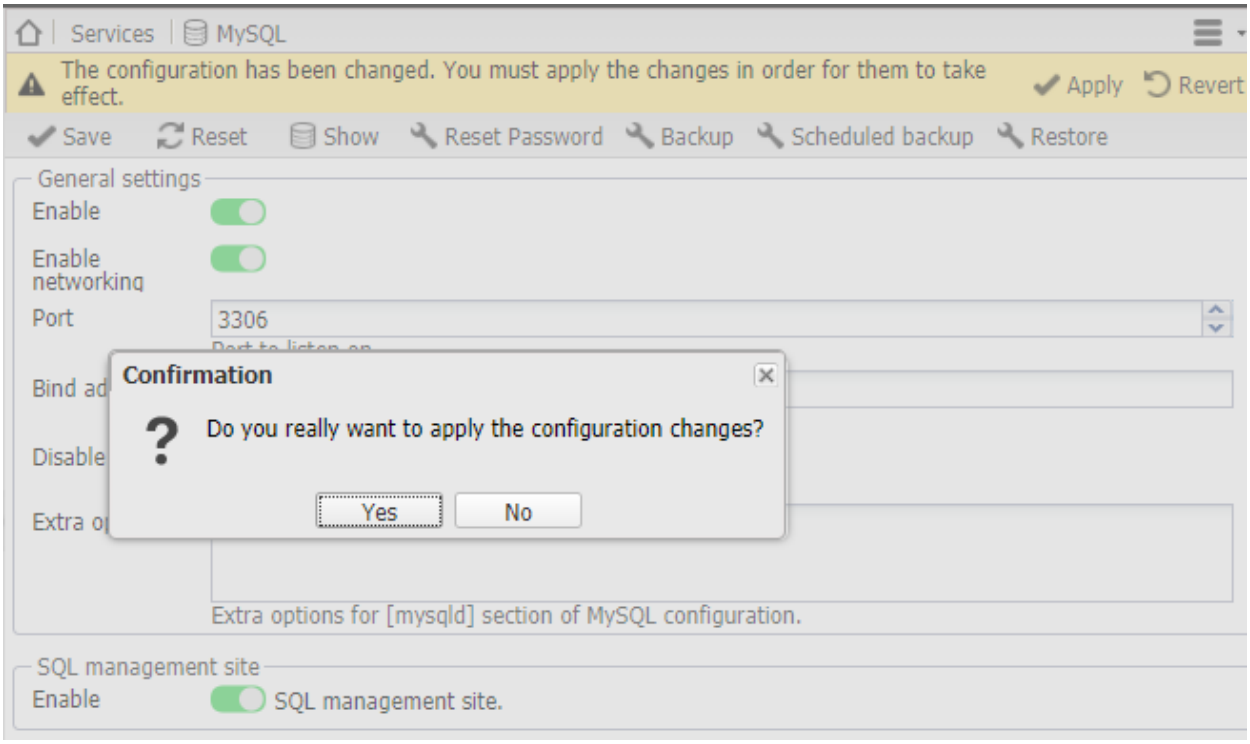
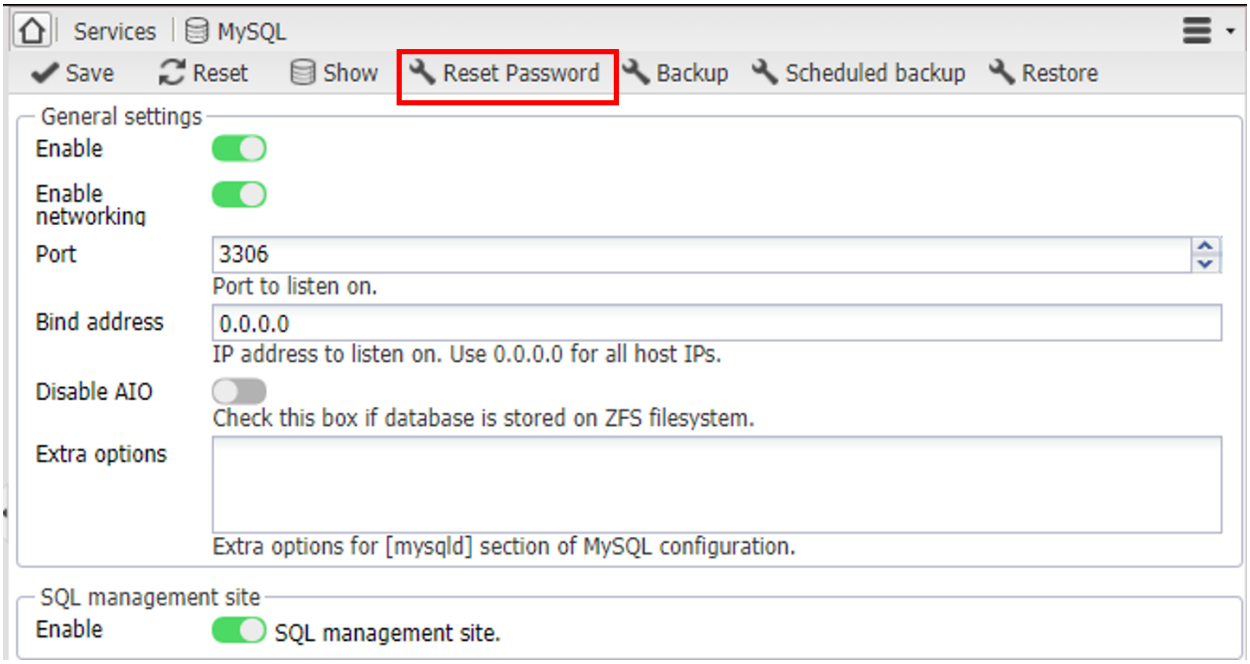
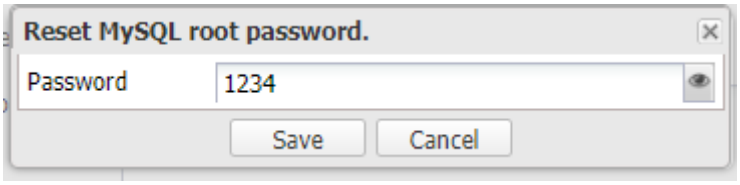



【**Reset Password**】Click【Reset Password】to configure the password of root on the MySQL




Enter the password of the root on the MySQL that you want (ex. 1234 ) ,then click 【Save】




Click【Show】to enter the site of the MyWebSQL



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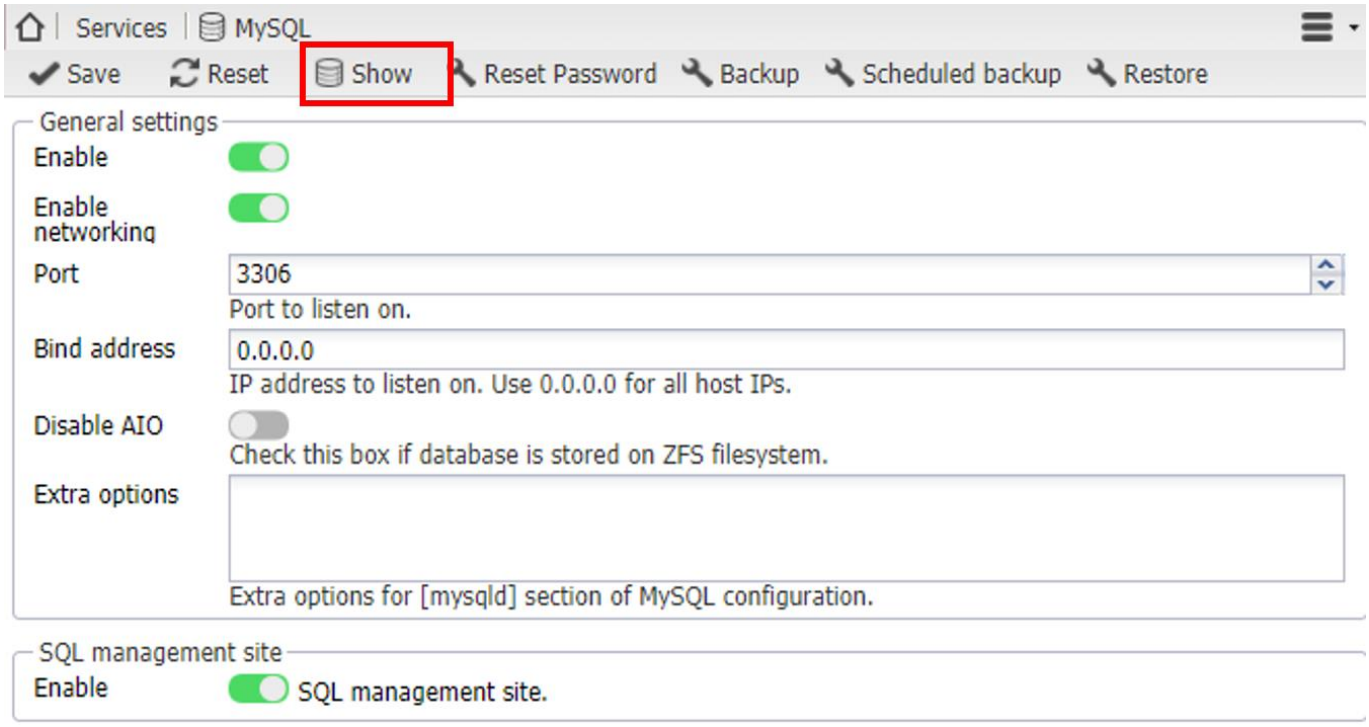


On the site of the MyWebSQL , type the account and the password ( root, 1234) and login

The managers can add/remove/configure the privileges to the users by 【Tools】->【User Manager】



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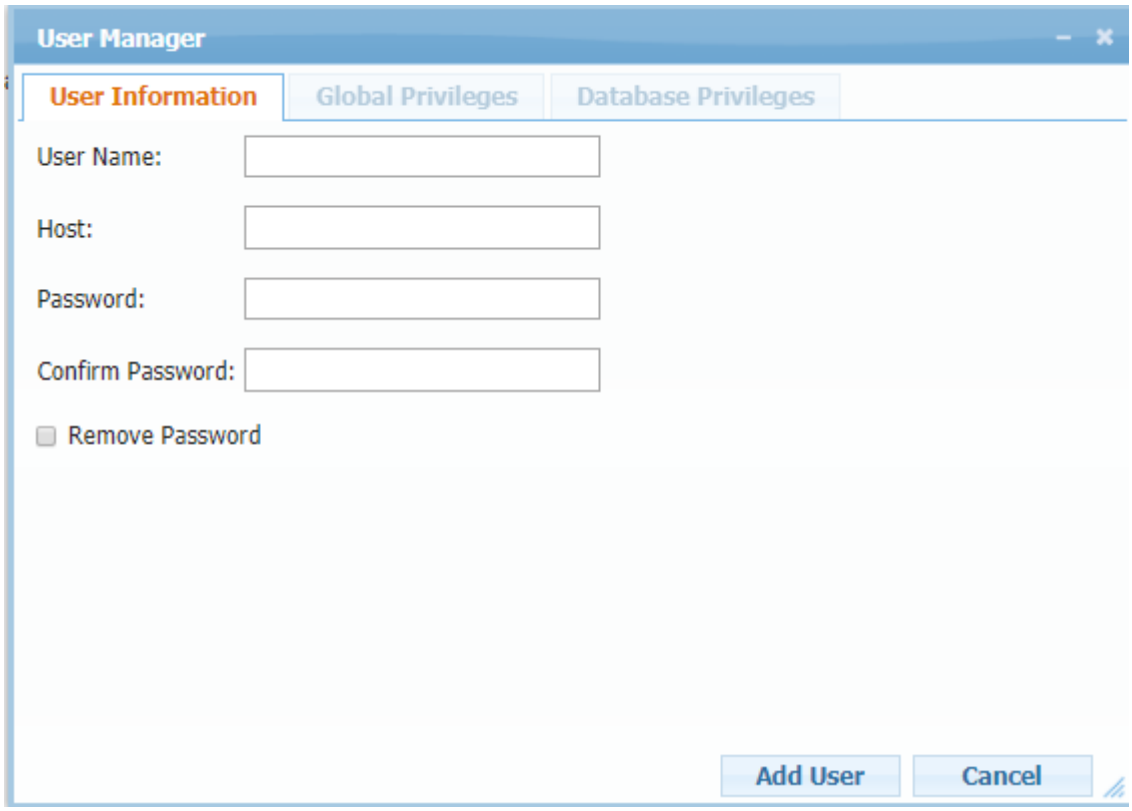
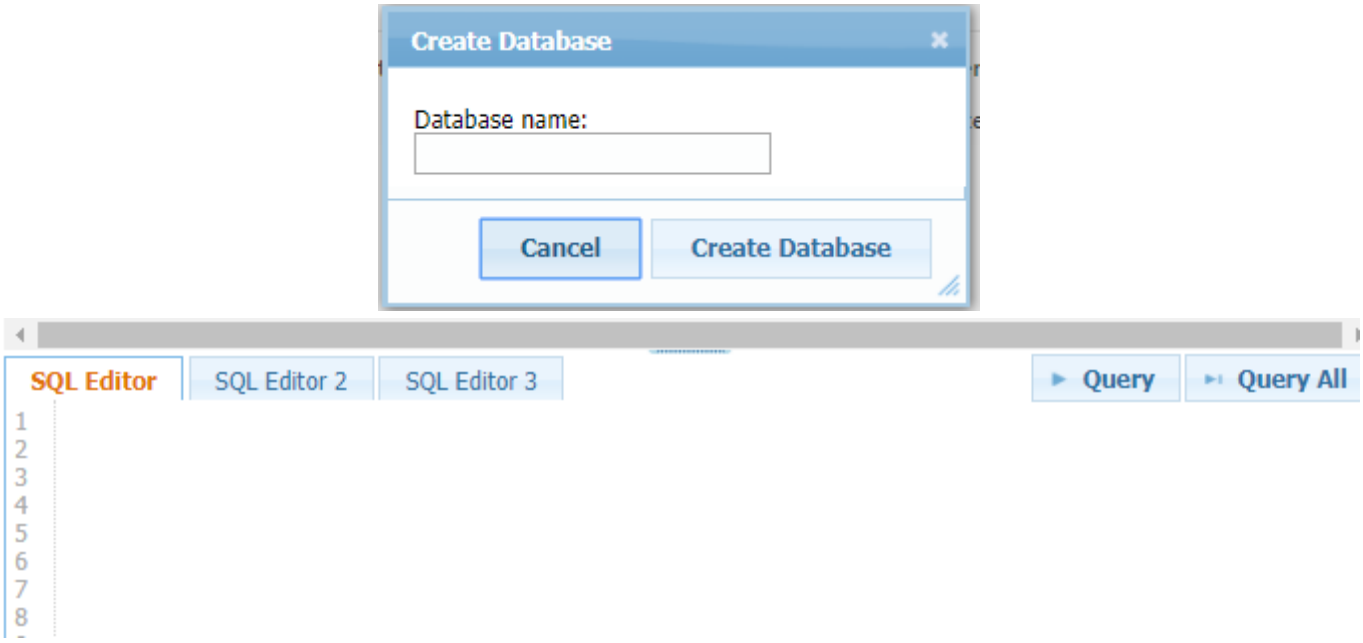



The Managers can create database by 【Database】and execute SQL scripts on the website




### 3.4.3 NFS

【Settings】

Enable the NFS service and set the numbers of servers.



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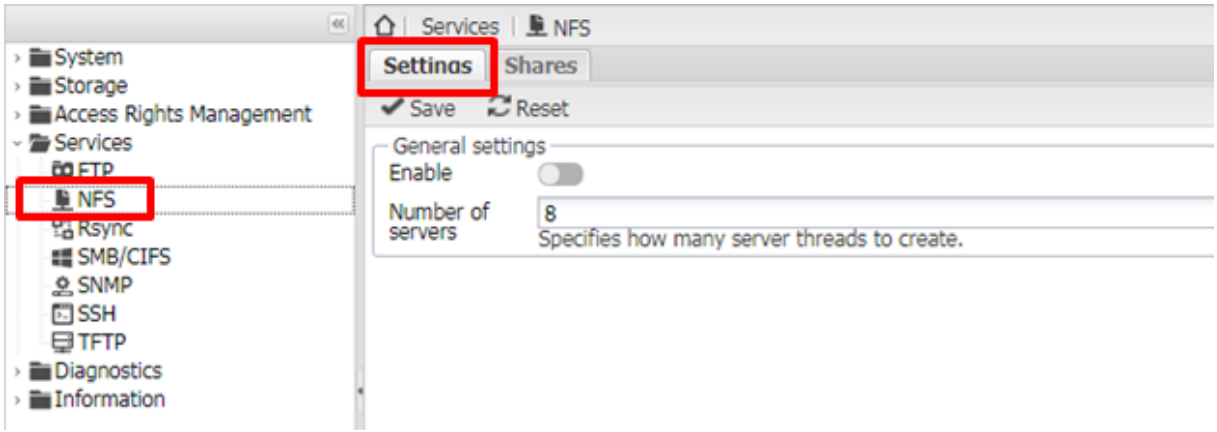
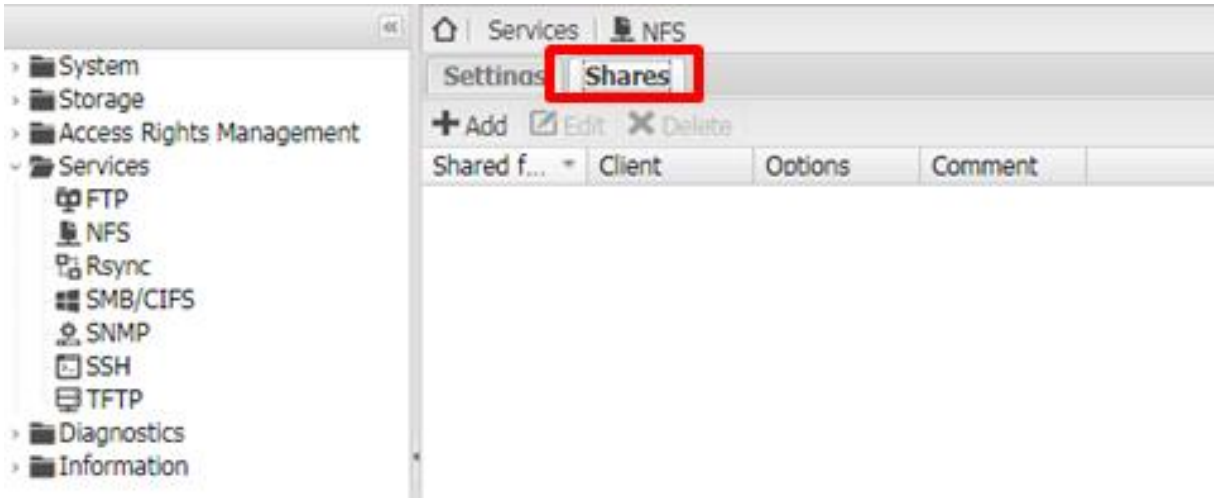
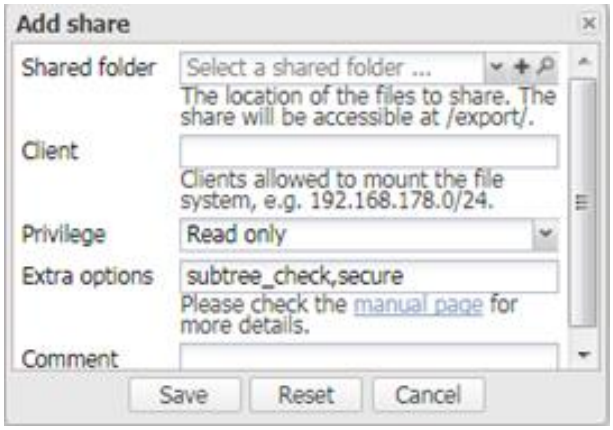



**【Shares】**

Click【+Add】




Set the shared folder for NFS service. (It's necessary to add a new shared folder)




### 3.4.4 Rsync

**【Jobs】->【+Add】**

【Add rsync job】.



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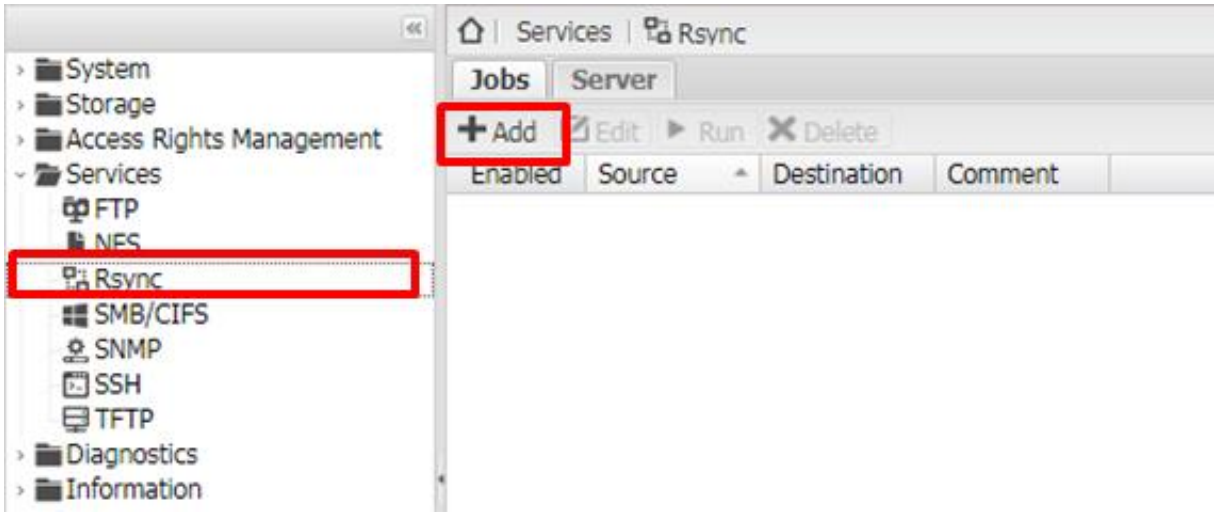
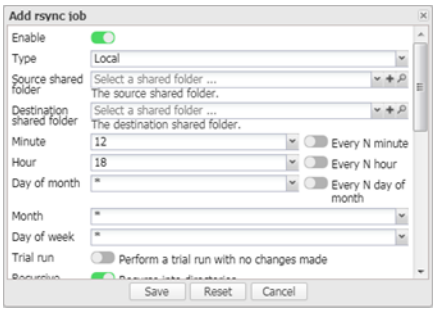
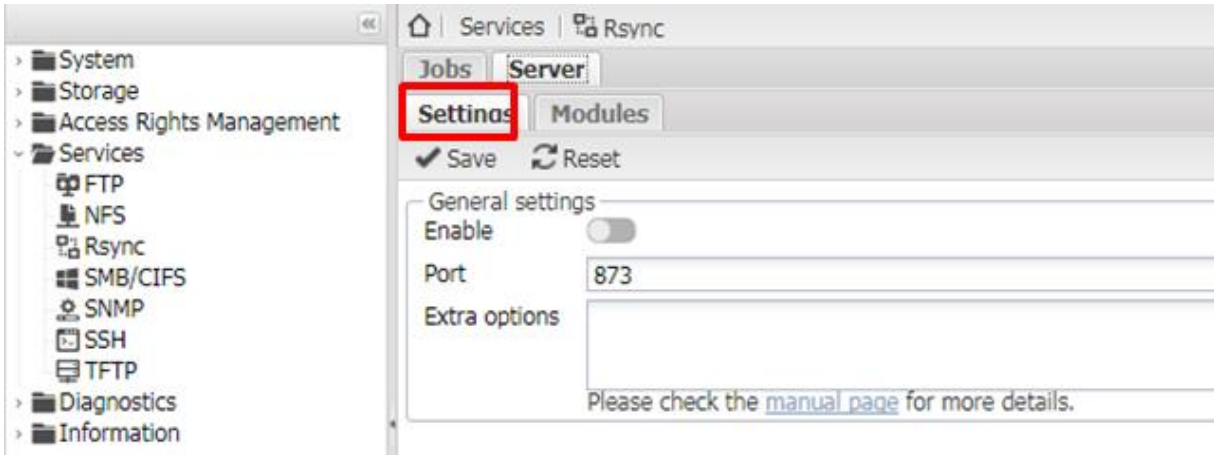



Configure the rsync job. Including Type(local or remote), Source shared folder, Destination shared folder, and the cycle




**【Sever】->【Settings】**

Enable the Rsync and configure the port number. (Default:873)




**【Server】->【Modules】**

Click【+Add】



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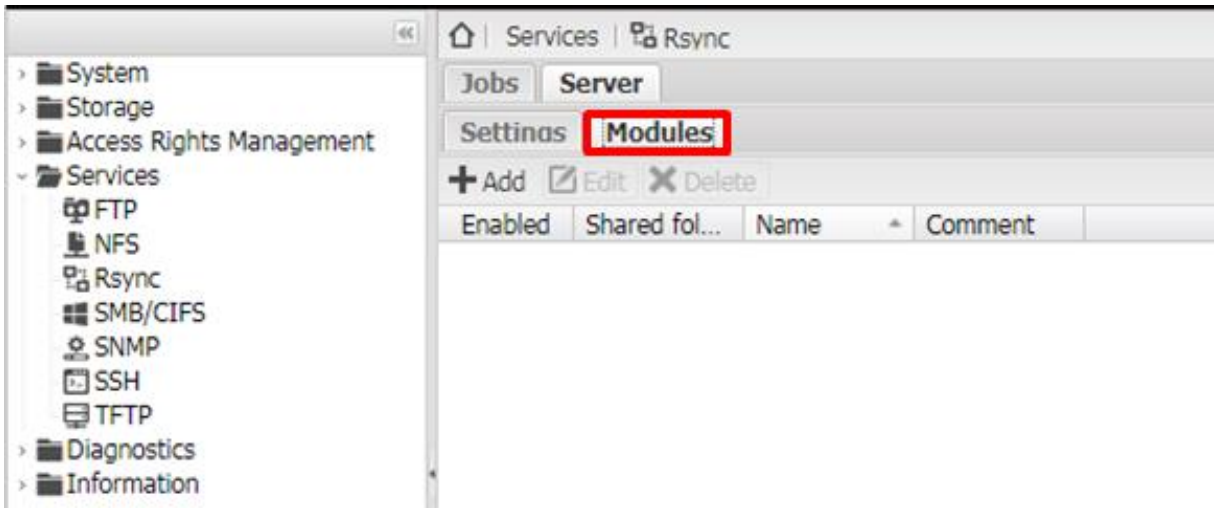
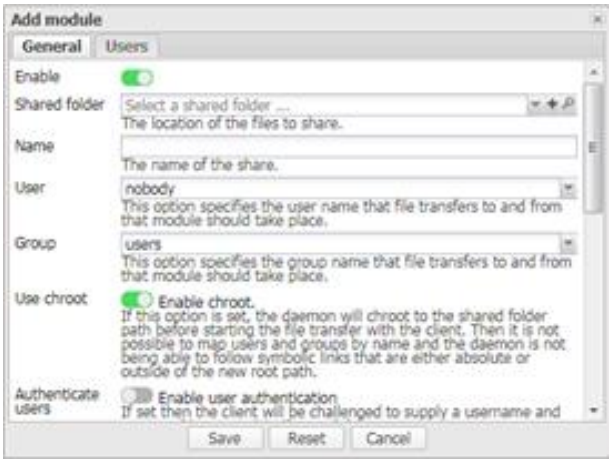



Set the shared folder, users, groups and permission …etc.




### 3.4.5 SMB/CIFS

**【Settings】**

Enable SMB/CIFS service and configure the workgroups, local master browser, home directories and WINS.



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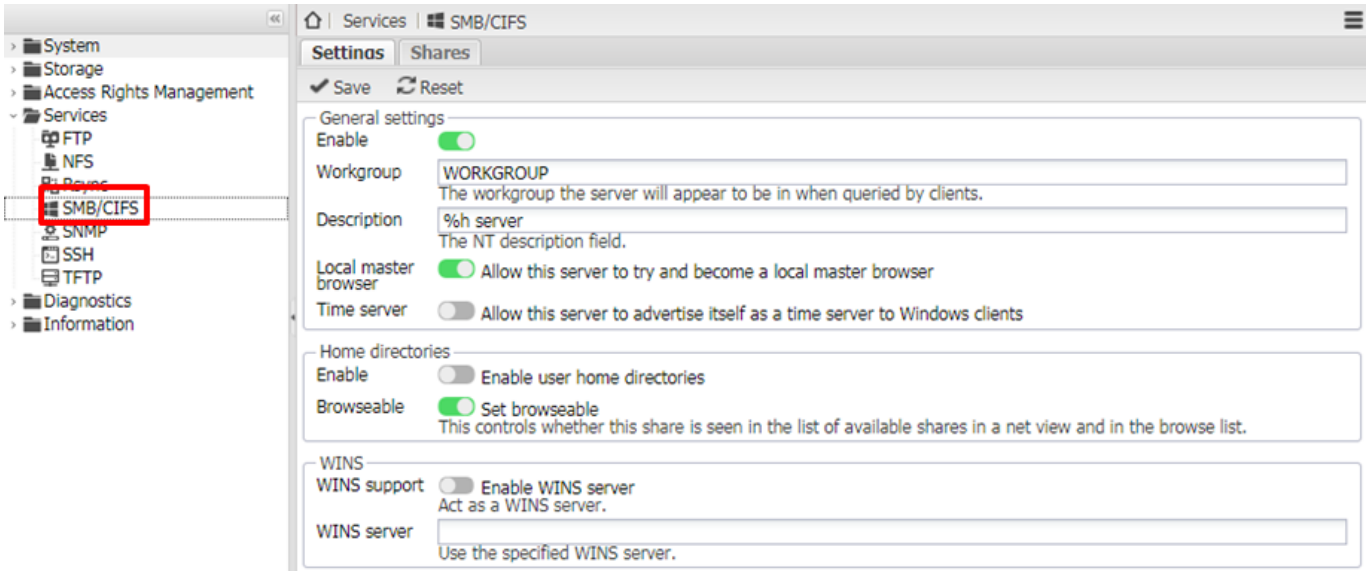
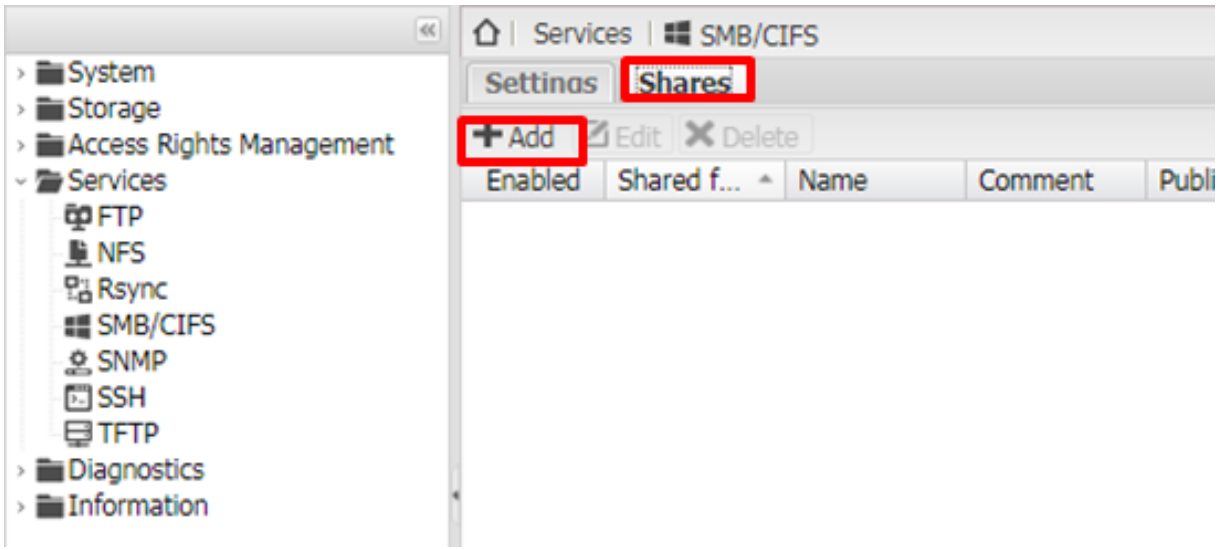
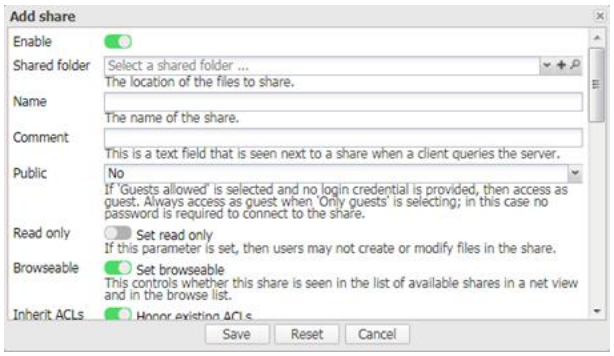



**【Shares】**

Click【+Add】




Set a shared folder for SMB/CIFS service. (It's necessary to add a new shared folder)




### 3.4.6 SNMP

Enable SNMP, location and version …etc.



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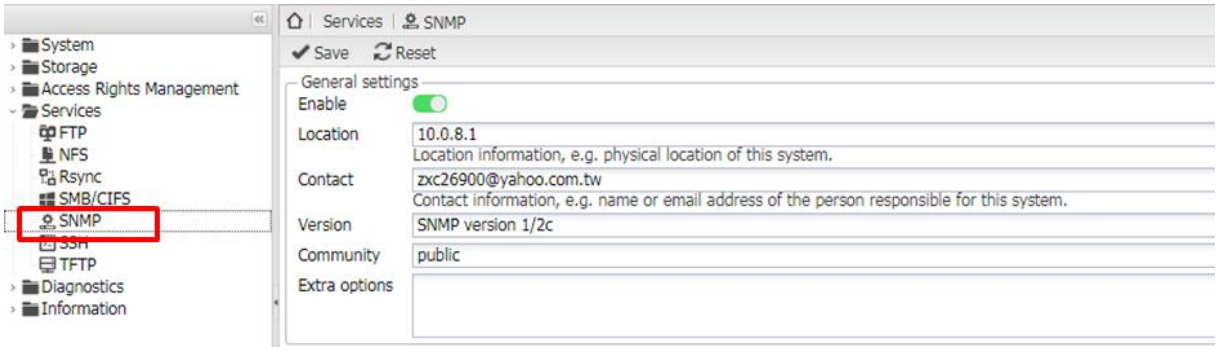
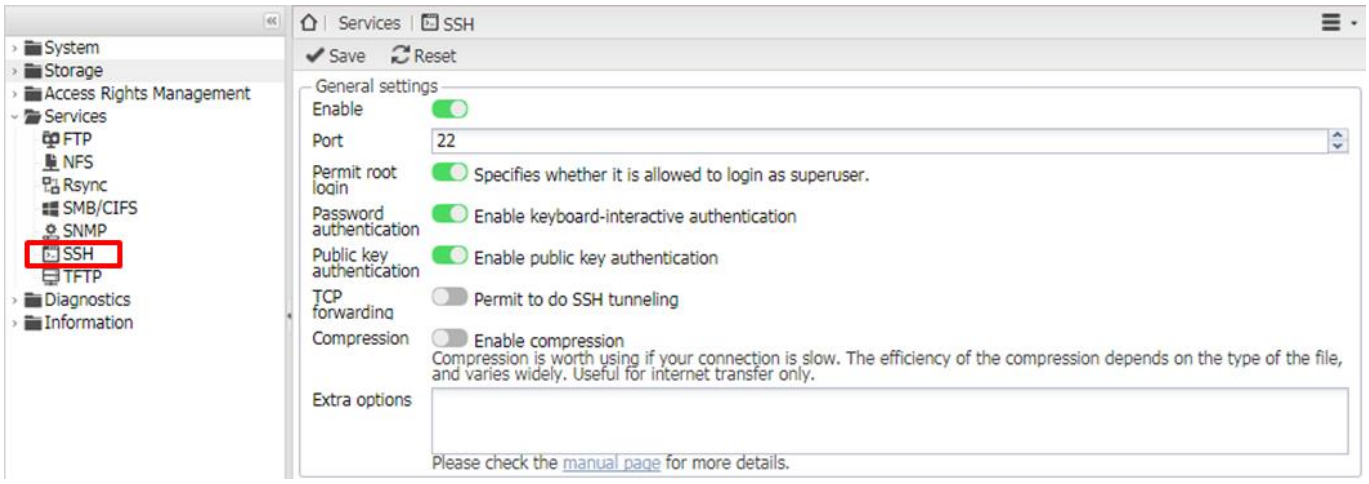



### 3.4.7 SSH

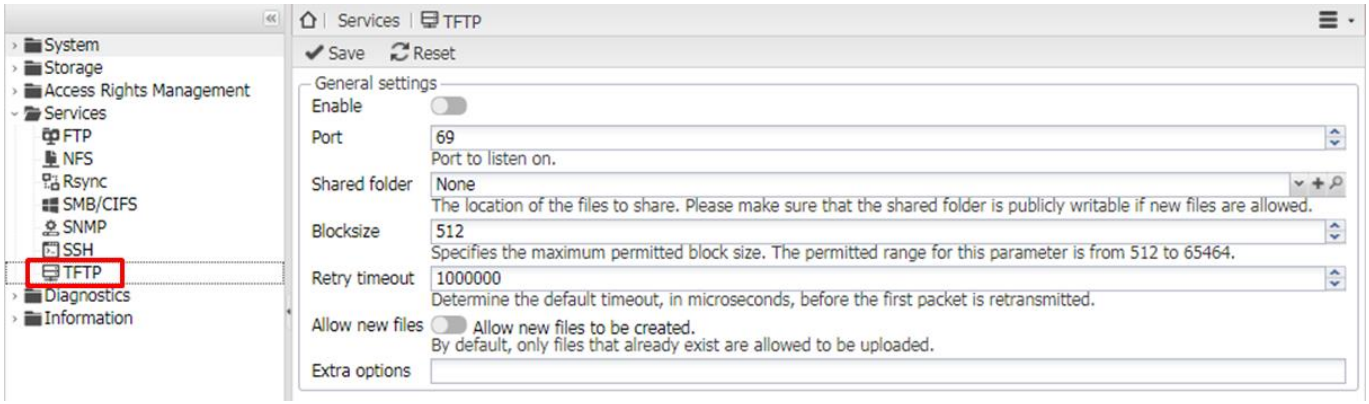
Enable SSH service.

Configure the port number (default: 22 ), permit root login and password authentication …etc.




### 3.4.8 TFTP

Enable TFTP service and configure the port number (default : 69 ), shared folder, blocksize and retry timeout ..etc.



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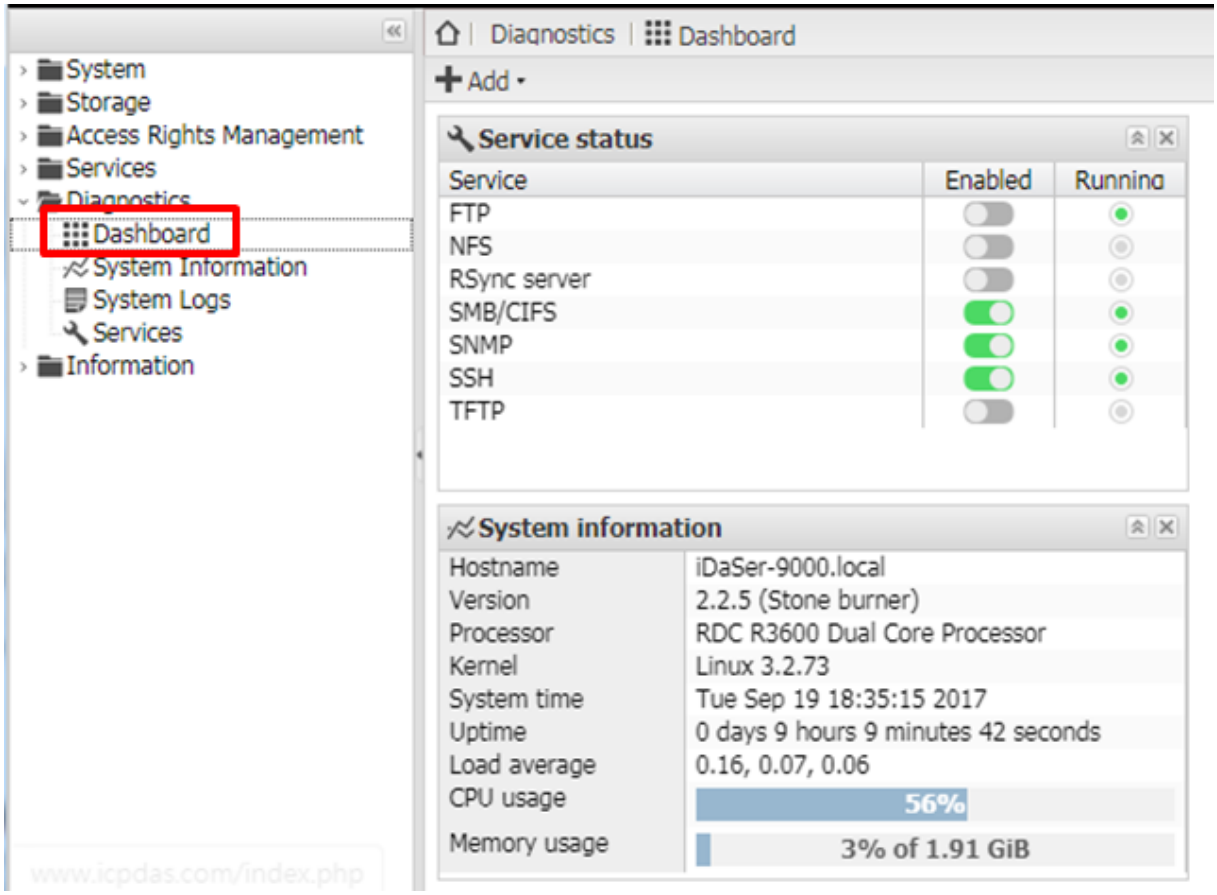
# 3.5 Diagnostics

## 3.5.1 Dashboard

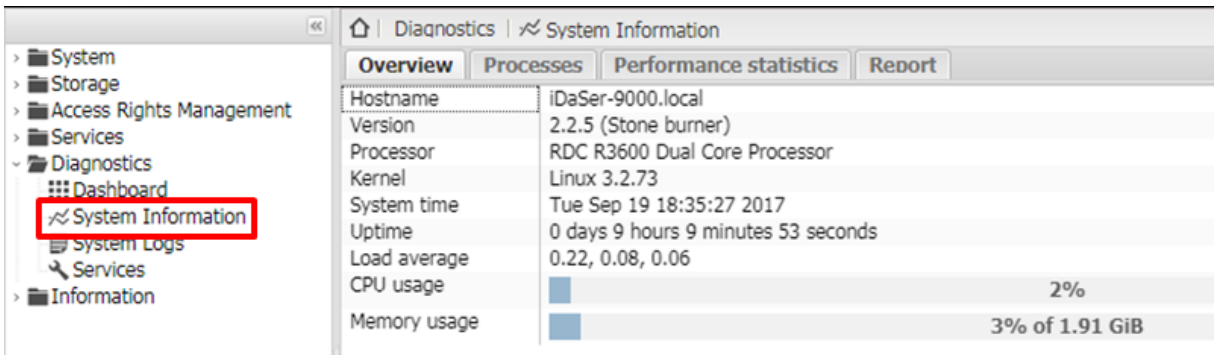
Display the real – time informations of the system and the services.




## 3.5.2 System logs

**【Overview】**

View the status of system..




**【Processes】**

View the processes used.



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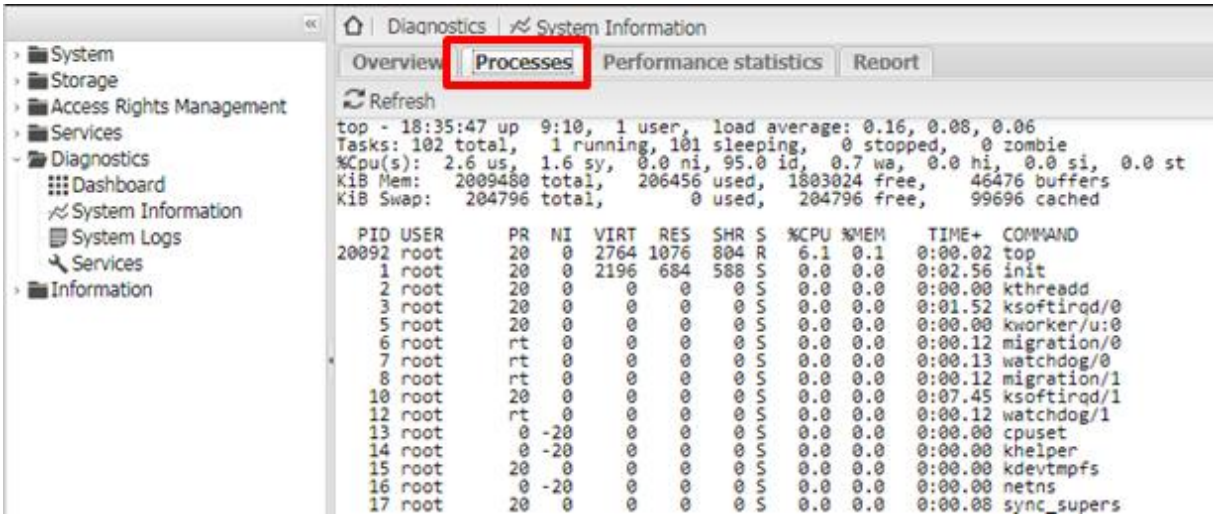
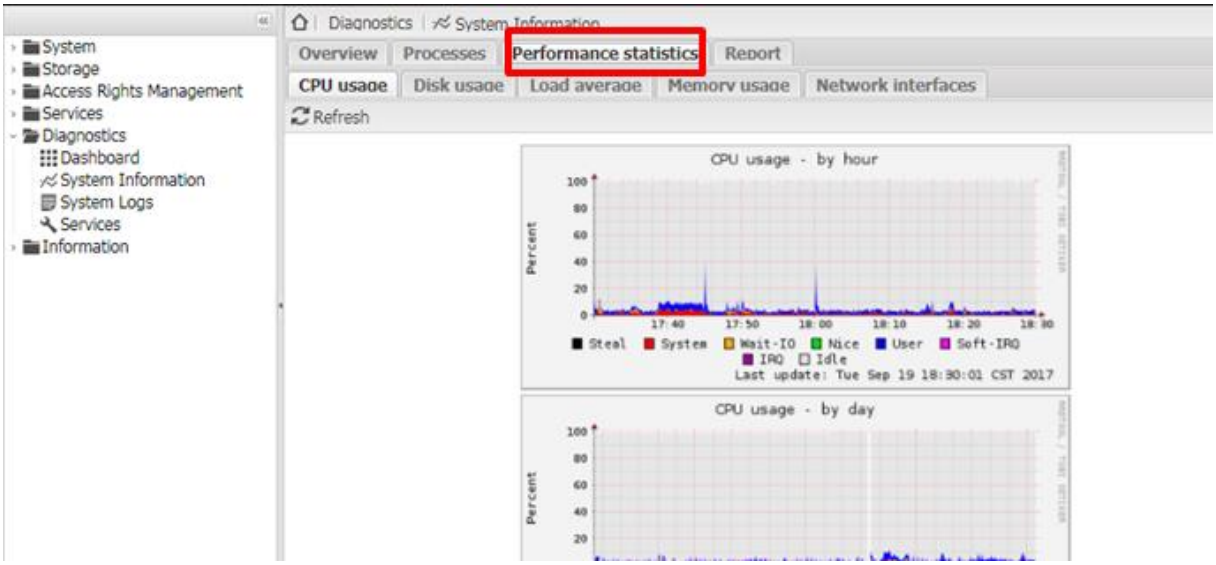


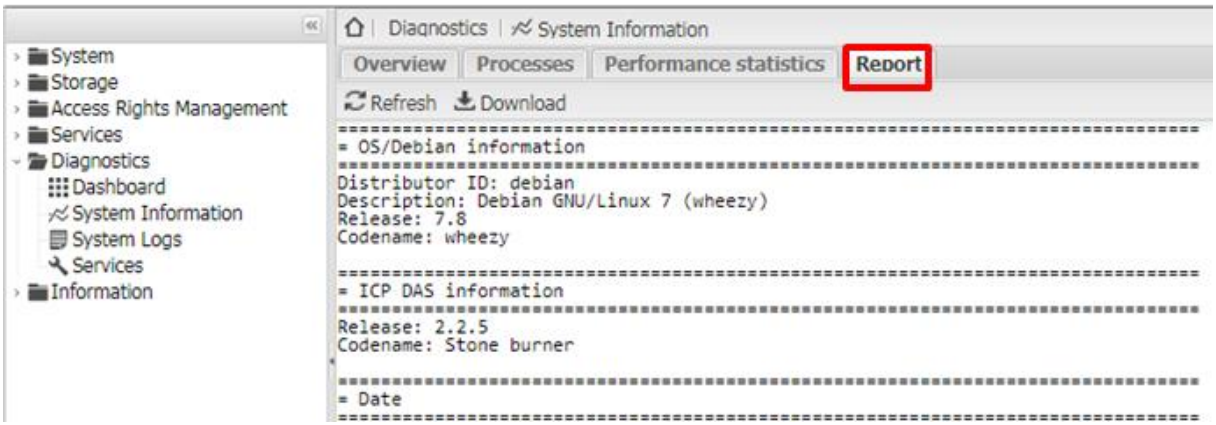

**【Performance statistics】**

View the performances for CPU usage, disk usage and load average..etc.




**【Report】**

System report about iDaSer-9000.



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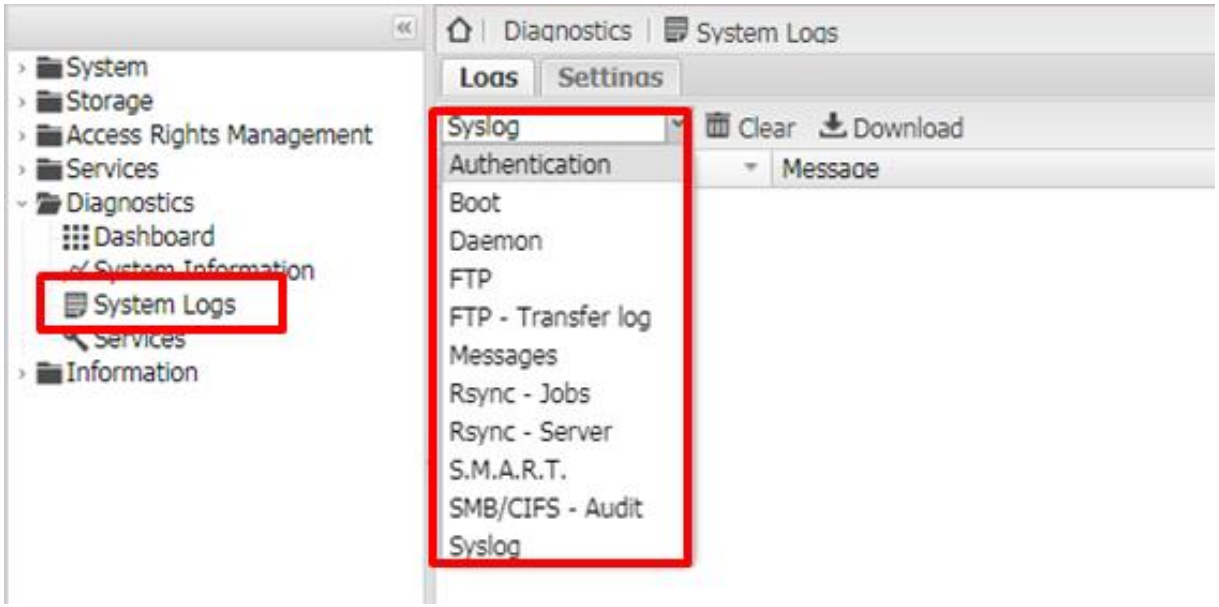
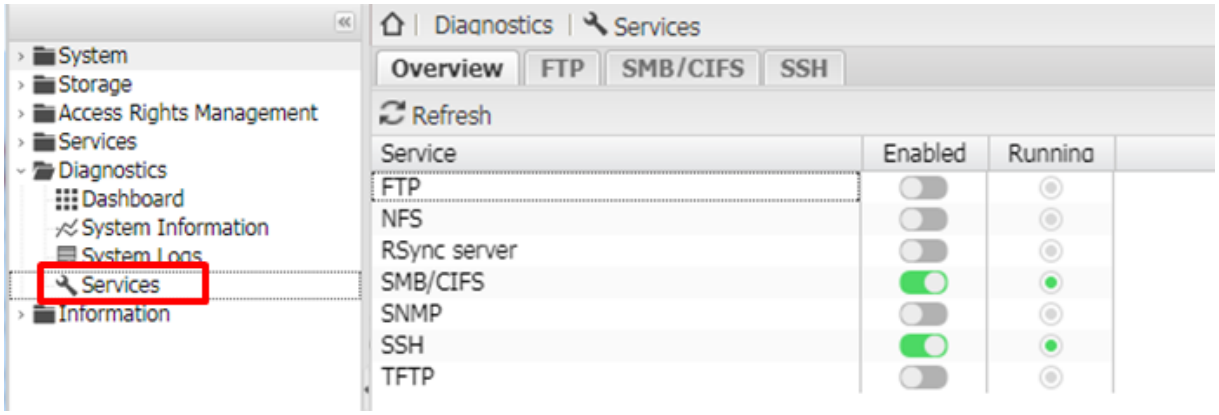
### 3.5.3 System Logs

Choice the type of log to check.




### 3.5.4 Services

View the status of all services.



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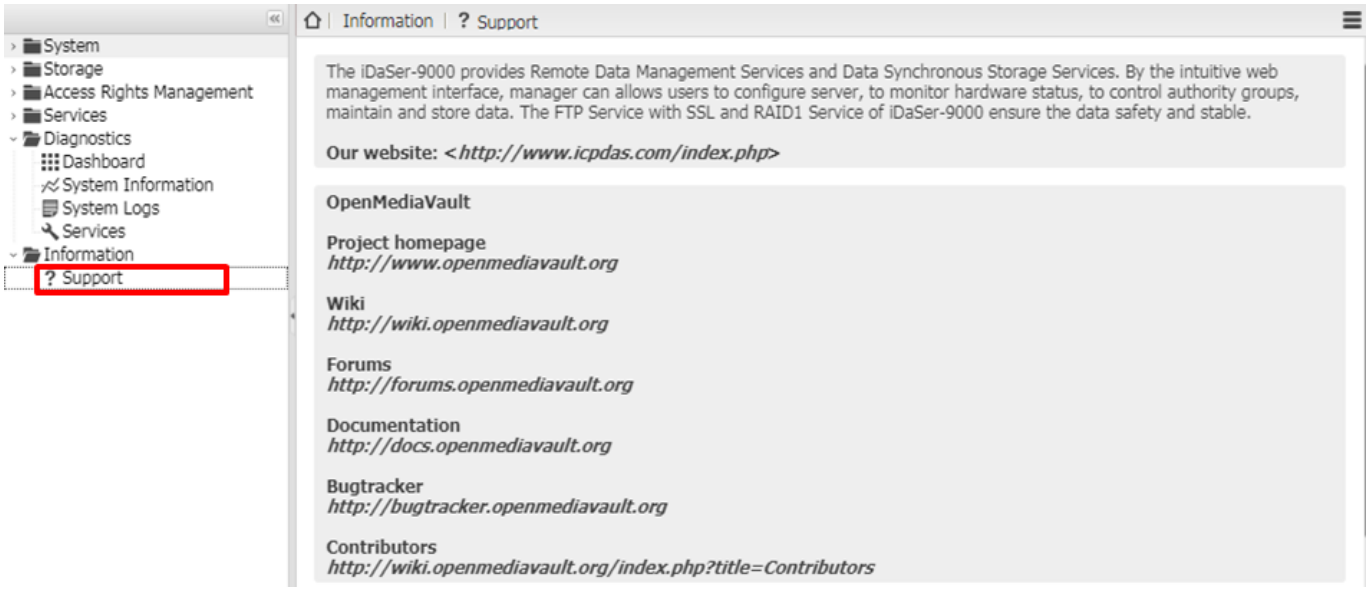
# 3.6 Information

## 3.6.1 Support

For more details for configure the services ,you can refer to [OpenMediaVault]



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# Appendix A. User setting backup/restore

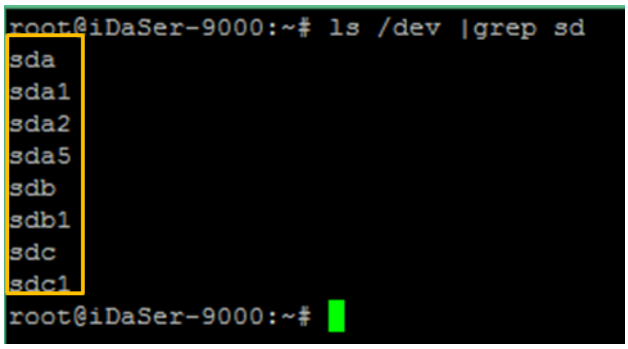
**I.Advance preparation:**

1. USB flash

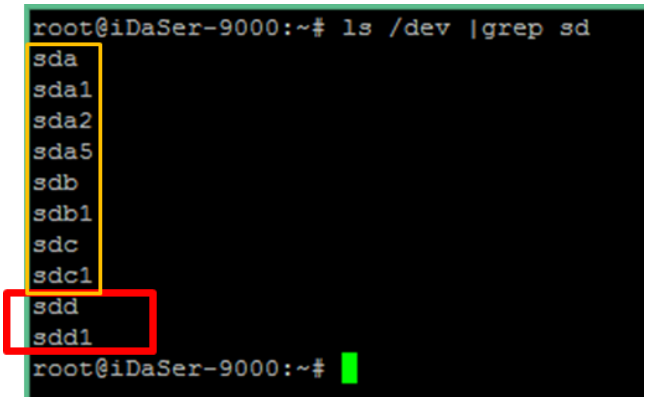
Make a backup of user's setting to the USB or restore the user's setting from the USB.

**User Setting Backup**

Step1: Run "ls /dev |grep sd" command to ensure the latest states of disks.




Step2: Insert the USB flash into iDaSer-9000, and command "ls /dev |grep sd",and ensure the latest states of disks.




Step3: Comparing the two messages to figure out the new disk which is USB flash. In the example ,the disk "sdd" is USB flash.

Step4: Command "mount -v -t auto /dev/xxx /mnt/usb ", and the "xxx" means the character device name. In the example , the command is" mount -v -t auto /dev/sdd1 /mnt/usb " . In this way , the USB flash had been already mounted to the folder "/mnt/usb"

Step5: User setting backup

For OS image Version 0.12 or earlier versions=>

a. Run"tar -zcvf /mnt/usb/iDaSer_yyyymmddHHMMSS.bak /etc "command to make a



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backup.

b. Run"ls /mnt/usb/" command to confirm that backup file (iDaSer_yyyymmddHHMMSS.bak) has built.

```
root@iDaSer-9000:~# ls /mnt/usb/
iDaSer_20160722092013.bak
root@iDaSer-9000:~#
```

For OS image Version 0.12(including ) and other latest versions=>

a. Run"/APP/backup_cmd/backup.sh -b /mnt/usb" command to make a backup.

```
root@iDaSer-9000:~# /APP/backup_cmd/backup.sh -b /mnt/usb
tar: Removing leading `/' from member names
Backup finish.
root@iDaSer-9000:~#
```

b. Run"ls /mnt/usb/" command to confirm that backup file (iDaSer_yyyymmddHHMMSS.bak) has built.

```
root@iDaSer-9000:~# ls /mnt/usb/
iDaSer_20160722092013.bak
root@iDaSer-9000:~#
```

=END=

### III. User Setting Restoring

Step1: Run"ls /dev |grep sd" command to confirm the states of disks.

```
root@iDaSer-9000:~# ls /dev |grep sd
sda
sda1
sda2
sda5
sdb
sdb1
sdc
sdc1
root@iDaSer-9000:~#
```

Step2: Insert USB flash into iDaSer-9000 ,and run "ls /dev |grep sd" command again to confirm the states of disks.



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```
root@iDaSer-9000:~# ls /dev |grep sd
sda
sda1
sda2
sda5
sdb
sdb1
sdc
sdc1
sdd
sdd1
root@iDaSer-9000:~#
```

Step3: Compareing the messages to figure out the character device name of USB flash.

The character device name of USB flash is "sdd" here.

Step4: Run"mount -v -t auto /dev/xxx /mnt/usb " ,and the "xxx" is the character device name.

In the example, the command is " mount -v -t auto /dev/sdd1 /mnt/usb ". In this way, the new disk has been mount to the folder "/mnt/usb".

```
root@iDaSer-9000:~# mount -v -t auto /dev/sdd1 /mnt/usb/
mount: you didn't specify a filesystem type for /dev/sdd1
       I will try type vfat
/dev/sdd1 on /mnt/usb type vfat (rw)
root@iDaSer-9000:~# _
```

Step5: Executing user setting restoring.

For OS image Version 0.12 or earlier versions=>

a. Run "tar -zxvf /mnt/usb/iDaSer_yyyymmddHHMMSS.bak -C / " command to restore

For OS image Version 0.12(including ) and other latest versions=>

a. Run "/APP/backup_cmd/backup.sh -r /mnt/usb/iDaSer_yyyymmddHHMMSS.bak" command to restore.

```
root@iDaSer-9000:~# /APP/backup_cmd/backup.sh -r /mnt/usb/iDaSer_20160722092013.
bak
Restore finish.
root@iDaSer-9000:~#
```

=END=



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# Appendix B. System backup/restore

**Warning:** After executing the operation, the data in SD card will be all removed. It's suggested that user makes a backup for user's data and user's setting. Please refer to the "**Appendix A User setting backup/restore**"

### I. Advance preparation

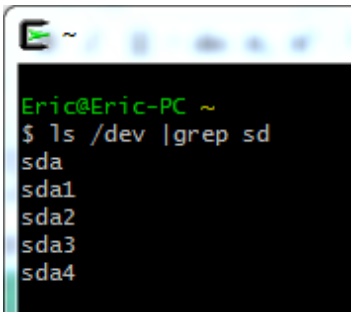
Prepare the implements in advance：

1. 4GB micro SD card
2. micro SD adapter
3. A PC contains Cygwin ( download from https://cygwin.com/install.html )

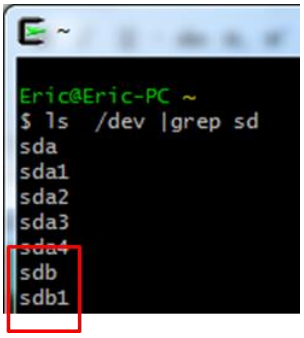
### II. System recovery

Step1：Put the file "iDaSer_xxxxxxxx.img.gz" to C:\cygwin\home\username\

Step2：Select "Run as Administrator" to open Cygwin, run command "ls /dev |grep sd"




Step3: Insert the micro SD adapter (SD card inside), and run command "ls /dev |grep sd" again.




Comparing the messages to figure out the new disk that is the SD card.

In the example, the driver of the character device name of the SD card is "sdb".



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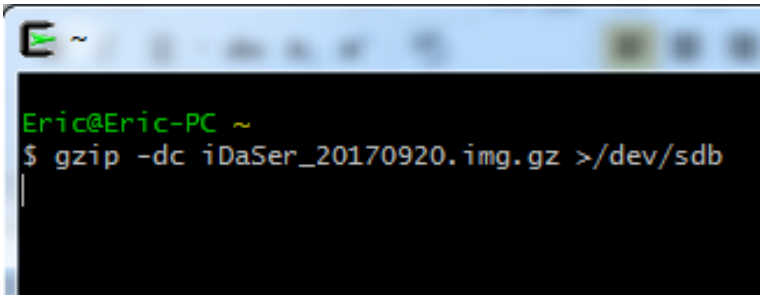
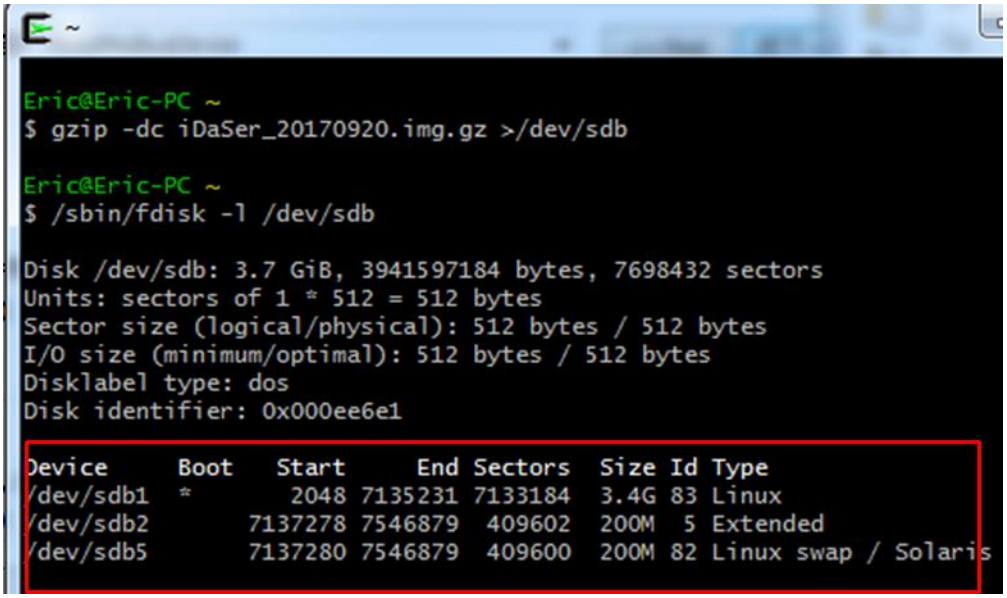
Step4：Select the partition of disk, and follow the command below：

"dd if=/dev/zero of=/dev/xxx bs=512 count=1" ; "xxx" is the driver the character device name.In this example, the command is" dd if=/dev/zero of=/dev/sdb bs=512 count=1"

Step5：run system restore command "gzip -dc iDaSer_xxxxxxxx.img.gz>/dev/xxx " ; "xxx" is the driver the character device name. In the example, the command is" gzip -dc iDaSer_20170920.img.gz >/dev/sdb "




After restoring , run command "/sbin/fdisk –l /dev/sdb",to check the partitions below.




=END=



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# Appendix C. Revision History

This chapter provides revision history information to this document.

The table below shows the revision history.

| Revision | Date | Description |
|---|---|---|
| 1.0.0 | October 2017 | Initial issue |



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