

QSM 4

Software Manual

March 2026

ANNOUNCEMENT

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NOTICES

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

PREFACE

About This Manual

This manual provides technical guidance for QSAN unified storage management, and it is intended for use by system administrators, designers, storage consultants, or anyone who has purchased these products and is familiar with servers and computer networks, network administration, storage system installation and configuration, storage area network management, and relevant protocols.

Related Documents

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

- [QIG \(Quick Installation Guide\)](#)
- [Hardware Manual](#)
- [Compatibility Matrix](#)
- [White Papers](#)
- [Application Notes](#)

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- Via the Web: https://www.qsan.com/technical_support
- Via Telephone: +886-2-77206355
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- Via Email: support@qsan.com

Information, Tip, and Caution

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



INFORMATION

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



TIP

TIP provides helpful suggestions for performing tasks more effectively.



CAUTION

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

Conventions

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

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

1. GETTING STARTED

QSM is a unified storage management system designed by QSAN. QSM's core technology provides the excellence, flexibility, and intelligence needed to simplify all content for a hybrid storage system. Its features set the foundation for the next generation of unified storage from enterprise data services for all workloads to proven its availability and optimization. This chapter explains how to discover the storage system and how to sign into QSM.

1.1. Discover the Storage System

The default setting for the management IP address is DHCP. For users who are going to install at the first time, we provide the XFinder Java utility to search for QSAN products on the network and aid quick access to the login page of the QSM web interface. Here's a [Quick Installation Guide](#) for the steps to discover a storage system and a video on discovering a storage system for the first time.

1.2. Initial Setup

The initial configuration wizard will guide the first-time user to initialize and set up the system quickly. Follow the instructions in the wizard to complete the process.



TIP

The system will not operate normally if none of the first four disk slots in the storage system are populated. Please check that at least one disk is installed in these slots to ensure proper operation. If disks are installed after the system is powered on, a reboot is required for the system to establish the necessary configurations to ensure all functions operate correctly.

2. USER INTERFACE

This chapter illustrates the graphical user interface of and provides a brief introduction to the desktop function menus.

2.1. Web UI Overview

To access the management web user interface, open a supported web browser and enter the management IP address or Hostname of the system. When the password has been verified, the dashboard is displayed.

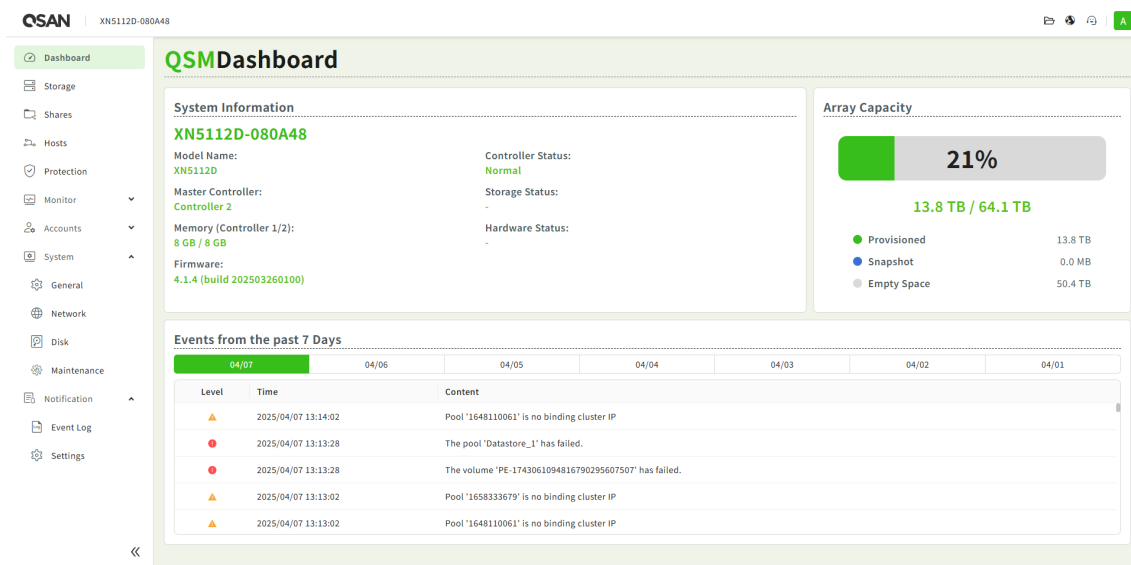


Figure 2-1 Dashboard View

The Web UI contains the following menus:

Dashboard

The **Dashboard** function menu represents a graphical overview of the array, including system information, array capacity, and events. For more information, see Section 3.1, [Dashboard Overview](#).

Storage

Select the **Storage** function menu to display the storage pools on the array, including disk groups and volumes. View and operate the storage pools and volumes. For more information, see Chapter 4, [Storage Menu](#).

Shares

Select the **Shares** function menu to display the file shares on the array. View and operate the file shares and their access control. For more information, see Chapter 5, [Shares Menu](#).

Hosts

Select the **Hosts** function menu to display the host objects on the array, including host groups, host profile, and connected volumes. View and operate the host objects and the connections between them. For more information, see Chapter 6, [Hosts Menu](#).

Protection

Select the **Protection** function menu to display the protection functions on the array. View and operate the protection functions such as snapshots and replications. For more information, see Chapter 7, [Protection Menu](#).

Monitor

Select the **Monitor** function menu to display the system health and array-wide information, including system modules and disks. For more information, see Chapter 8, [Monitor Menu](#).

Accounts

Select the **Accounts** function menu to display the user account information. View and manage the users and groups. For more information, see Chapter 9, [Accounts Menu](#).

System

Select the **System** function menu to display the system information. View and manage the system general settings, network settings, disks, and maintenance functions. For more information, see Chapter 10, [System Menu](#).

Notification

Select the **Notification** function menu to display the log events, and setup the notification methods. For more information, see Chapter 11, [Notification Menu](#).

2.2. Accessing the Management USB LCM

Optionally, we provide a portable USB LCM (LCD Control Module) for simple management. To access the management USB LCM, plug it into the USB port of the right ear in the front panel.



Figure 2-2 Portable USB LCM

After plugging the USB LCM into the system, the LCD screen shows the management port IP address and the system model name.

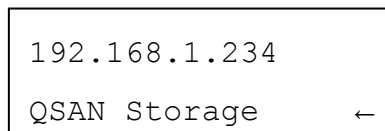


Figure 2-3 USB LCM Screen

To access the LCM options, use the **ENT** (Enter) button, **ESC** (Escape) button, ☐ (up) and ☐ (down) to scroll through the functions. **MUTE** button to mute the buzzer when the system alarms. If there are event logs occurred, events will be displayed on the first line of the LCM.

3. DASHBOARD MENU

The **Dashboard** menu displays the system information, storage capacity, and events. It helps the user to quickly view the basic information and system health.

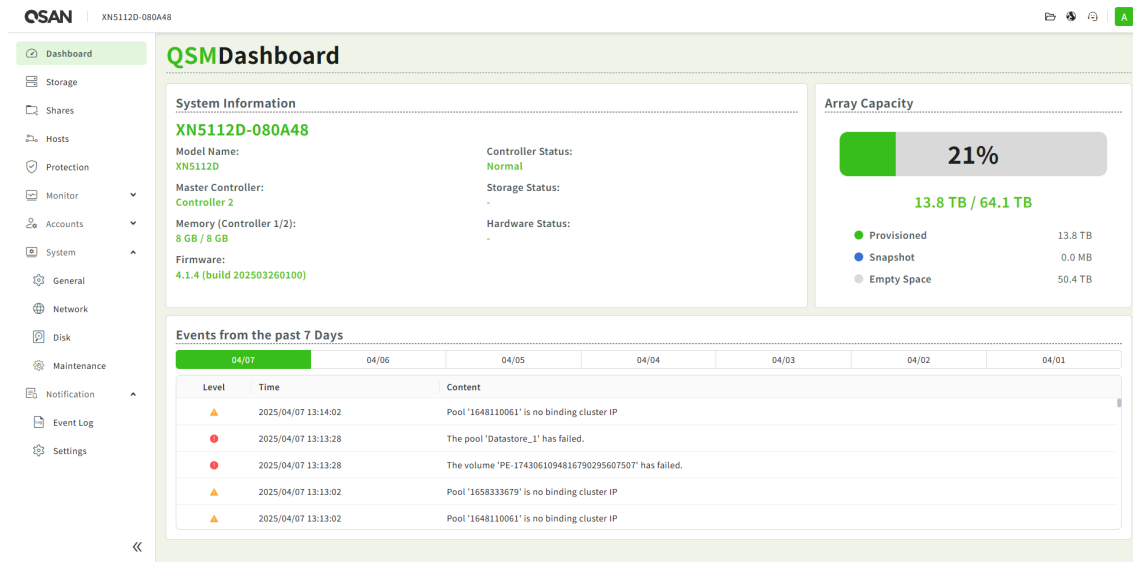


Figure 3-1 Dashboard View

3.1. Dashboard Overview

Select the **Dashboard** menu to show a summary of the overall system. It's divided into three blocks in the details pane. There are system information, array capacity, and events from the past 7 days.

3.1.1. System Information

The **System Information** pane displays the basic information of the system. To drill down and analyze the array details, click **System** -> **General**.

3.1.2. Array Capacity

The **Array Capacity** pane contains a summary of the capacity usage including the amount of storage occupied by provisioned volumes and snapshots.

The pane includes the following items:

- **Percentage (%):** Percentage of the system's storage space occupied by provisioned volumes and snapshots.
- **Provisioned:** Total provisioned capacity of all volumes.
- **Snapshots:** Physical space occupied by data unique to one or more snapshots.
- **Empty Space:** Unused space available for allocation.

3.1.3. Events

The **Events** pane contains events from the past 7 days. Click a date to view that day's events. To drill down and analyze the array details, click **Notification** -> **Event Log**.

3.1.4. Introduce the Upper Right Corner Icons

At the top right corner, there are three icons. The options are available in the icons.

File Manager

Click the  icon at the upper right corner to open a file manager to manage directories and files in the system.

Language

Click the  icon at the upper right corner to list the drop-down options to change the language in the web UI.

Help

Click the  icon at the upper right corner to popup the help information. Click the **Export** button to export the diagnosis report file. Comes with problems and test environment for analysis.

Login Account

Click the username at the upper right corner to list the drop-down options to execute the system functions.

4. STORAGE MENU

The **Storage** menu manages the storage pools. It displays the storage pool status and configures the storage pool. This chapter describes the details of storage management operations.

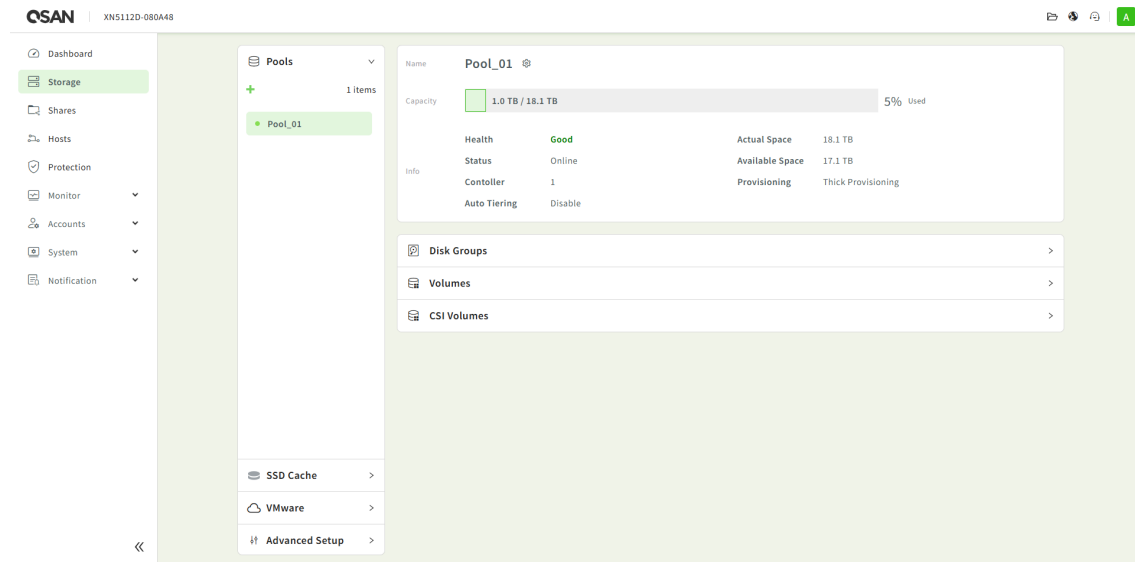


Figure 4-1 Storage View

4.1. Storage Pools

Select the **Storage** menu and **Pools** item to manage the storage pools. In this menu, you can create, modify, delete, or view the status of all pools.

4.1.1. Create a Pool

1. Click the **+** icon and select the **Pool** or **Dedup & Compression Pool** option to open a wizard to create a pool. Follow the instructions in the wizard to complete the process.
2. Select a **Pool Provisioning** as Thick or Thin Provisioning. Enable **Pool Encryption** when applying SED disks. Enable **Auto Tiering** when installing different type of disks.
3. Click the **Select Disks** to make up the storage pool. Depending on the number of disks selected, certain RAID types are available.

4. Select **Block** or **File** to create block or file volumes.
5. Select **Normal** to create general RAID usage volumes.
6. Then allocate the volume capacity.
7. Click the **Apply** button to confirm the settings. The system will automatically run the storage creation in the background.



INFORMATION

Deduplication and compression pool requirements:

- 16 GB memory per controller
- License required
- All SSDs required
- Thin provisioning pool

For more information about deduplication and compression pool, see the [Dedup and Compression Pool](#).

4.1.2. List and Configure Pools

All pools are listed in the **Pools** pane. Click one of them to display the details. Click the  icon beside the pool name to list the drop-down options. The following options are available.

Rename

1. Click the **Rename** option to rename the pool.
2. Enter a new **Pool Name**. The maximum length of the pool name is 15 characters. Valid characters are [A~Z | a~z | 0~9 | -_<>].
3. Click the **Apply** button to rename.

Edit

1. Click the **Edit** option to change disk properties of the pool.
2. Click the radio button to Enable or Disable.

- **Disk Write Cache:** Enabling the disk write cache will improve write I/O performance but have a risk of losing data when power failure.
 - **Disk Read-ahead:** When enabling the disk read-ahead, the system will preload data to disk buffer based on previously retrieved data. This feature will efficiently improve the performance of sequential data retrieved.
 - **Disk Command Queuing:** When enabling the disk command queuing, the system will send multiple commands to a disk at once to improve performance.
 - **Disk Standby** (*Only visible for hybrid storage models*): Check to enable the auto spin down function of disks. The disks will be spun down for power saving when they are idle for the period specified.
3. After changing the disk properties, click the **Apply** button to take effect.

Change Preferred Controller

1. Click the **Change Preferred Controller** option to change the pool ownership to the other controller.
2. Click the **Apply** button to take effect.

Scrub

1. Click the **Scrub** option to regenerate parity for the pool.
2. Click the **Apply** button to proceed.



INFORMATION

It supports RAID level 5, 6, 50, 60 and RAID EE level 5EE, 6EE, 50EE, 60EE.

Activate / Deactivate

1. Click the **Deactivate** option to deactivate the pool. Afterwards, the disks can be moved to another system for disk roaming.
2. Click the **Activate** option to activate the pool.

Set Thin Provisioning Policy

1. Select a percentage for **Write Upper Limits** when the pool reaches the specified percentage of usage, the volume will become read-only
2. Click the **Apply** button to take effect.

Delete

1. Click the **Delete** option, and then pop up a confirm dialog box.
2. Click the **Confirm** button to confirm and delete.

4.1.3. List and Configure Disk Groups

Click the **Disk Groups** pane to list all disk groups in the pool. This is a tutorial example, see [Expanding Pool and Volume Capacity](#). The following options are available.

Create a Disk Group

1. Click the **+ Create Diskgroup** button to create a disk group. Follow the instructions in the wizard to complete the process.
2. Click the **Select Disks** to make up the storage pool. Depending on the number of disks selected, certain RAID types are available.
3. Click the **Apply** button to confirm the settings.

Delete Disk Groups

1. Check the disk group checkboxes which you want to delete.
2. Click the  button, and then pop up a confirm dialog box.
3. Click the **Apply** button to confirm and delete.



CAUTION

If the pool contains only one disk group, it cannot be deleted. If the disk group is being used and not empty, it also cannot be deleted.

Click the  icon to list the drop-down options. The following options are available.

Disk Information

1. Click the **Disk Info** option to display the disk information in the disk group.
2. Click the **Close** button to close the window.

Edit

1. Click the **Edit** option to change the property of the disk group.
2. Click the radio button to Enable or Disable.
 - **High Latency Disk Warning:** Enable the high latency disk warning to predict which disks are at risk.
3. Click the **Apply** button to take effect.

4.1.4. List and Configure Volumes

Click the **Volumes** pane to list all volumes in the pool. There are two tabs corresponding to **Block Volume** and **File Volume**. Click on one to list them. The following options are available.

Create Volumes

1. Click the **+ Create Volume** button to create block or file volumes. Follow the instructions in the wizard to complete the process.
2. Select **Block** or **File** to create block or file volumes.
3. Select **Normal** to create general RAID usage volumes.
4. Then allocate the volume capacity.
5. Click the **Apply** button to confirm the settings.

Delete Volumes

1. Check the volume checkboxes which you want to delete.
2. Click the  button, and then pop up a confirm dialog box.
3. If the volumes are already existed in the **Shares**, **Hosts**, or **Protection**, it will display the dialog asking you how to handle the items you would like to delete.
4. Click the **Confirm** button to confirm and delete.

Click the  icon at the end of the volume to list the drop-down options. The following options are available.

Edit

1. Click the **Edit** option to change the volume properties.
2. Volume advanced settings can be configured optionally.
 - **Background I/O Priority:** The options are **High**, **Medium**, and **Low**. It will influence volume initialization, rebuild, and migration.
 - **Cache Mode:** The options are **Write Through** and **Write Back**. Write back optimizes the system speed but comes with the risk where the data may be inconsistent between cache and disks in one short time interval.
 - **Video Editing Mode:** Click the radio button to **Enable** or **Disable** the video editing mode. It is optimized for video editing usage to get a more stable performance figure without high and low peaks but slower in average.
 - **Read Ahead:** Click the radio button to **Enable** or **Disable** the read ahead of the volume. The system will discern what data will be needed next based on what was just retrieved from disk and then preload this data into the disk's buffer. This feature will improve performance when the data being retrieved is sequential.
 - **Use For** (only for block volume): The options are **Raid** and **Replication**. Raid is for general RAID usage, and replication is for the target volume of local clone or remote replication.
3. After changing the volume properties, click the **Apply** button to take effect.

Extend Volume

1. Click the **Extend Volume** option to extend the volume capacity.
2. Enter a new **Capacity** to be extended.
3. Click the **Apply** button to extend.

WORM (only for file volume)

WORM is the abbreviation of Write Once Read Many. For more information, see the [WORM White Paper](#) from QSAN website.

1. Click the **WORM** option to enable WORM.
2. Enter the **Retention Period**.
3. Click the **Apply** button to extend.

4.1.5. List and Configure CSI Volumes

Click the **CSI Volumes** pane to list all CSI volumes in the pool. The following options are available. For more information, see the [CSI Driver and Kubernetes Integration Application Note](#) from QSAN website.

Delete Volumes

1. Check the volume checkboxes which you want to delete.
2. Click the  button, and then pop up a confirm dialog box.
3. Click the **Confirm** button to confirm and delete.

4.2. Object Storage

The **Object Storage** service enables S3-compatible object-based data access on the system. Administrators can configure the service port and manage authentication credentials (Access Keys) from this page. Access Path: **System > Service > Object Storage**

4.2.1. Access Keys Management

Access Keys are used to authenticate applications and users connecting to the Object Storage service.

Existing Access Keys

The page displays all currently configured Access Keys.
Available actions:

- **Add** – Create a new Access Key.
- **Remove** – Delete the selected Access Key.
- **Edit** – Modify the selected Access Key settings.

Create Access Key

To create a new Access Key:

1. Click **Add**.

2. Configure the following fields:

Access Key

- Enter a custom Access Key, or
- Click **Generate** to automatically create one.

Secret Key

- A corresponding Secret Key is required for authentication.
- This key is used together with the Access Key for secure access.

Description (Optional)

Enter a description to help identify the key's purpose or assigned user.

1. Click **Create** to complete the setup.
2. Click **Cancel** to discard changes.

4.2.2. Create New Bucket

The **Create New Bucket** wizard allows administrators to create an Object Storage bucket and define its access permissions through a structured three-step process. Access Path: **Storage > Object Storage > Create New Bucket**

The wizard includes:

1. Bucket Information
2. Access Control
3. Ready to Complete

Bucket Information

Configure the storage location and capacity for the new bucket.

Pool Located

Select the storage pool where the bucket will reside.

- The bucket can only be created within a single storage pool.

- Ensure the selected pool has sufficient unallocated capacity.

Bucket Name

Enter a unique bucket name.

- The name must not duplicate existing buckets.
- Use a clear naming convention for easier identification.

Capacity

Specify the bucket capacity (GB).

The system will display:

- Total Capacity
- Used Capacity
- Available Capacity

Click **Next** to proceed.

Access Control

Configure which Access Keys are allowed to access this bucket and define their permissions.

Access control is configured in two sub-steps:

Select Access Keys

Select one or more Access Keys that will be authorized to access the bucket.

- Use the checkbox to select individual Access Keys.
- Use the **Select All** option to authorize all listed keys.
- Only selected Access Keys will have permission to access this bucket.

Click **Next** to proceed to permission configuration.

Configure Access Keys

Define detailed permissions for each selected Access Key.

For each Access Key, configure the following:

Access Key

Displays the selected Access Key identifier.

Prefix (Optional)

Specify a prefix to restrict access to a specific path within the bucket.

- Leave blank to allow access to the entire bucket.
- Enter a prefix (e.g., `projectA/`) to limit access to objects under that path only.
- Prefix-based restriction enhances fine-grained access control.

Actions (Permission Settings)

Select the allowed operations for the Access Key:

- **GET** – Allows downloading or reading objects.
- **PUT** – Allows uploading or overwriting objects.
- **LIST** – Allows listing objects within the bucket.
- **DELETE** – Allows deleting objects.

Permissions can be configured independently per Access Key.

For example:

- Read-only access: enable **GET** and **LIST**
- Upload-only access: enable **PUT**
- Full control: enable **GET, PUT, LIST, DELETE**

Carefully assign permissions based on security and operational requirements.

Ready to Complete

Review all configuration settings before finalizing:

- Storage pool
- Bucket name
- Allocated capacity
- Authorized Access Keys
- Prefix restrictions

- Assigned permissions

Click **Create** to complete the bucket creation process, or **Previous** to modify settings.

4.3. Dedup and Compression Pool

Data reduction is a technique used to decrease the amount of data stored and transmitted by eliminating redundancy information. This process aims to enhance storage efficiency, reduce costs, and improve performance in data handling and analysis. Regardless of the approach, data reduction is a complex process in which engineers and scientists must make tradeoffs between space savings, processing savings, and data fidelity. For more information, see the [Dedup and Compression White Paper](#) from QSAN website.

The total capacity of the pool will be limited depending on the system memory size. The following are the deduplication and compression pool parameters.

Table 4-1 Dedup and Compression Pool Parameters

ITEM	VALUE
The maximum pool capacity per system	System memory x 1,024
The maximum number of pools per system	2
The maximum number of volumes per system	System memory / 4

The following is the mapping table between deduplication and compression pool memory, capacity, and volume number.

Table 4-2 Dedup and Compression Pool Mapping Table

SYSTEM MEMORY PER CONTROLLER	MAXIMUM DECUP & COMPRESSION POOL CAPACITY PER SYSTEM	MAXIMUM NUMBER OF VOLUMES PER SYSTEM
8 GB	8 TB	2
16 GB	16 TB	4
32 GB	32 TB	8
64 GB	64 TB	16
128 GB	128 TB	32
256 GB	256 TB	64
512 GB	512 TB	128
1,024 GB	1,024 TB	256

4.4. Hot Spares

The system can set free disks as global spares. If one disk drive of the pool fails or has been removed from any singly redundant RAID, the pool status will change to degraded mode. Now, the system will search the spare disk to execute pool / volume / data rebuild into a healthy RAID drive automatically. For more information, see the [Configure Disk Settings](#).

4.5. SSD Cache

SSD cache allows an SSD to function as read cache or write buffer for an HDD volume. In SSD read cache, it is a secondary cache that improves performance by keeping frequently accessed

data on SSDs where they are read far more quickly than from the HDD volume. When reads or writes are performed, the data from the HDDs are copied into the SSD cache. Although the data is duplicated to SSD cache pool, it does not matter if the read cache pool is corrupted.

In SSD write cache, SSDs are a write buffering storage that improves performance by storing the write data in SSDs temporary where they are write far more quickly than to the HDD volume. And then the write data will be flushed to the HDD volume at the appropriate time. It may take risk of losing data during the period that the write data is stored in SSD cache if the SSD cache pool is corrupted. The write data has not yet written back to the HDD volume. So, the read-write cache pool needs data protection to protect the write data.

The available capacity of the SSD cache is proportional to the size of the controller's system memory. The following is a mapping table of SSD cache pool memory and capacity.

Table 4-3 SSD Cache Pool Mapping Table

SYSTEM MEMORY PER CONTROLLER	MAXIMUM SSD CACHE POOL CAPACITY PER SYSTEM
8 GB	2 TB
16 GB	4 TB
32 GB	8 TB
64 GB	16 TB
128 GB	32 TB
256 GB	64 TB
512 GB	128 TB
1,024 GB	256 TB



CAUTION

Using SSD read-write cache may take risk of losing data if the SSD cache pool is corrupted. User has to monitor the health of the SSD cache pool carefully.

For more information, see the [SSD Cache White Paper](#) from QSAN website.

Select the **Storage** menu and **SSD Cache** item to manage the SSD cache pools. In this menu, you can create, modify, delete, or view the status of all SSD cache pools.

4.5.1. Create an SSD Cache Pool

1. Click the **+** icon open a wizard to create an SSD cache pool. Follow the instructions in the wizard to complete the process.
2. Click the **Select Disks** to make up the storage pool.
3. Select to **Cache Mode** for read cache or read / write cache, then specify a volume to enable SSD cache.
4. Click the **Apply** button to confirm the settings.



INFORMATION

SSD cache pool requirements:

- 8 GB memory per controller
- All SSDs required
- Read / write cache mode requires 3 SSDs or more

4.5.2. List and Configure SSD Cache Pools

All SSD cache pools are listed in the **SSD Cache** pane. Click one of them to display the details.

Click the  icon beside the pool name to list the drop-down options. The following options are available.

Rename

1. Click the **Rename** option to rename the pool.
2. Enter a new **Pool Name**. The maximum length of the pool name is 15 characters. Valid characters are [A~Z | a~z | 0~9 | -_<>].

Click the **Apply** button to rename.

Delete

1. Click the **Delete** option, and then pop up a confirm dialog box.
2. Click the **Apply** button to confirm and delete.

4.5.3. List and Configure SSD Groups

Click the **SSD** pane to list all disk groups in the SSD cache pool. The following options are available.

Edit SSD Groups

1. Click the **Edit SSD** button to edit SSD group. Follow the instructions in the wizard to complete the process.
2. Click the **Select Disks** to make up the storage pool.
3. Click the **Apply** button to confirm the settings.

4.5.4. List and Configure Bound Volumes

Click the **Volumes** pane to list all bound volumes in the SSD cache pool. The following options are available.

Add Volumes

1. Click the **+ Add Volume** button to add volumes in the SSD cache pool. Follow the instructions in the wizard to complete the process.
2. Check the volume checkboxes which you want to bond.
3. Click the **Apply** button to confirm the settings.

Unbond Volumes

1. Check the volume checkboxes which you want to unbond.
2. Click the  button, and then pop up a confirm dialog box.
3. Click the **Apply** button to unbond.

4.6. VMware Datastores

VMware Datastore serves as a fundamental component in VMware's virtualization infrastructure, specifically within vSphere environments. It acts as a logical container for storing various types of files related to virtual machines (VMs), including virtual disks, templates, and ISO images. For more information, see the [VMware Setup Guide Application Note](#) from QSAN website.

Select the **Storage** menu and **VMware** item to manage the VMware datastores. In this menu, you can create, modify, delete, or view the status of all VMware datastores.

4.6.1. Create a Datastore

1. Click the **+** icon to open a wizard to create a datastore. Follow the instructions in the wizard to complete the process.
2. Select a **Service Plan** based on your application. Enable **Datastore Encryption** when applying SED disks. Enable **Auto Tiering** when installing different type of disks.
3. Click the **Select Disks** to make up the storage pool. Depending on the number of disks selected, certain RAID types are available.
4. Click the **Apply** button to confirm the settings. The system will automatically run the storage creation in the background.

4.6.2. List and Configure Datastores

All pools are listed in the **VMware** pane. Click one of them to display the details. Click the  icon beside the pool name to list the drop-down options. The following options are available.

Delete

1. Click the **Delete** option, and then pop up a confirm dialog box.
2. Click the **Confirm** button to confirm and delete.

4.6.3. List and Configure Disk Groups

Click the **Disk Groups** pane to list all disk groups in the datastore.

4.6.4. List and Configure Protocol Endpoints

Click the **Protocol Endpoint** pane to list all protocol endpoints in the datastore. Click the  icon to copy the **Target Host** into the clipboard.

4.6.5. List and Configure Virtual Volumes

Click the **Protocol Endpoint** pane to list all virtual volumes in the datastore. The following options are available.

Delete Virtual Volumes

1. Check the virtual volume checkboxes which you want to delete.
2. Click the  button, and then pop up a confirm dialog box.
3. Click the **Apply** button to confirm and delete.

4.7. Auto Tiering

Auto tiering is the automated progression or demotion of data across different tiers (types) of storage devices and media. The movement of data takes place in an automated way with the help of software and is assigned to the ideal storage media according to performance and capacity requirements. It also includes the ability to define rules and policies that dictate when data can be moved between the tiers, and in many cases provides the ability to pin data to tiers permanently or for specific periods of time. For more information, see the [Auto Tiering White Paper](#) from QSAN website.

Select the **Storage** menu, **Advanced Setup** item, and **Auto Tiering** subitem to operate the advanced setup for auto tiering pool. The following options are available.

Relocate Pool

1. Check the pool checkboxes which you want to relocate.

2. Click the **Relocate Start** button, and then pop up a confirm dialog box.
3. Click the radio button for **Relocate Rate**.
4. Click the **Apply** button to proceed.

4.8. VASA Provider

Select the **Storage** menu, **Advanced Setup** item, and **VASA Provider** subitem to operate the advanced setup for VASA provider. For more information, see the [VMware Setup Guide Application Note](#) from QSAN website.

5. SHARES MENU

The **Shares** menu manages the file shares. It displays the share status, configures the permission, and connected hosts. This chapter describes the details of share management operations.

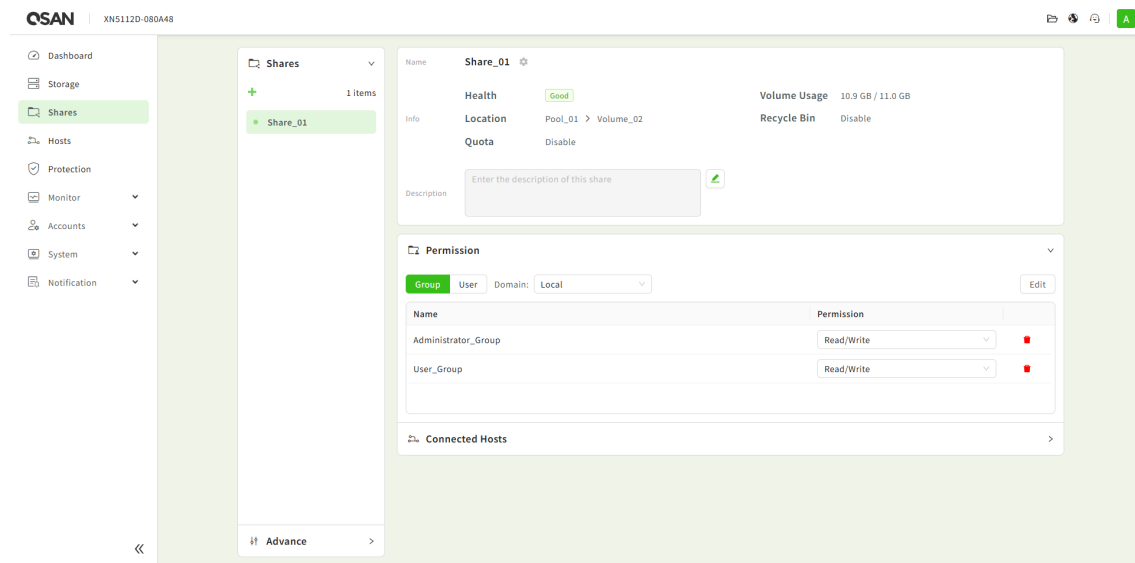


Figure 5-1 Shares View

5.1. File Shares

Select the **Shares** menu and **Shares** item to manage the file shares. In this menu, you can create, modify, delete, or view the status of all shares.

5.1.1. Create a Share

1. Click the **+** icon to create a share. Follow the instructions in the wizard to complete the process.
2. Select a type, then enter a name and set the share permissions.
3. Click the **Apply** button to confirm the settings.

5.1.2. List and Configure Shares

All Shares are listed in the **Shares** pane. Click one of them to display the details. Click the  icon beside the share name to list the drop-down options. The following options are available.

Enable Userhome / Disable Userhome

1. Click the **Enable Userhome** option to enable users' home directory. This permission will then be assigned to each user.
2. Click the **Disable Userhome** option to disable users' home directory.

Enable Recycle Bin / Disable Recycle Bin

1. Click the **Enable Recycle Bin** option to enable the recycle bin feature.
2. Click the **Disable Recycle Bin** option to disable.

Remove

1. Click the **Remove** option, and then pop up a confirm dialog box.
2. Click the **Confirm** button to confirm and remove.

Edit

1. Click the  icon to edit the description.
2. Click the  icon to apply.

5.1.3. List and Configure Permission

Click the **Permission** pane to list groups and users' permissions in the share. The following options are available.

Edit

1. Click the **Edit** button to edit the share's permission.
2. Click the **Group** or **User** tab, and then select the name of the group or user to allow access, or uncheck it to deny access.
3. Click the **Apply** button to take effect.

Permission

1. Click the drop-down options in the **Permission** to change the permission.

Delete

1. Click the  icon to delete the group or user's permission.
2. Click the  icon to delete.

5.1.4. List Connected Hosts

1. Click the **Connected Hosts** pane to list all connected hosts in the shares.

5.2. Advanced Settings

Select the **Shares** menu and **Advance** item to configure the advanced settings.

5.2.1. Configure ACL

1. Click the **ACL** option to configure the access control option.
2. Click the switch to turn  ON (Enable) or  OFF (Disable).
 - **Enable Windows ACL:** Check to enable Windows ACL.

6. HOSTS MENU

The **Hosts** menu manages the host groups. It displays the host group status, configures the host profile, and connected volumes. This chapter describes the details of host group management operations.

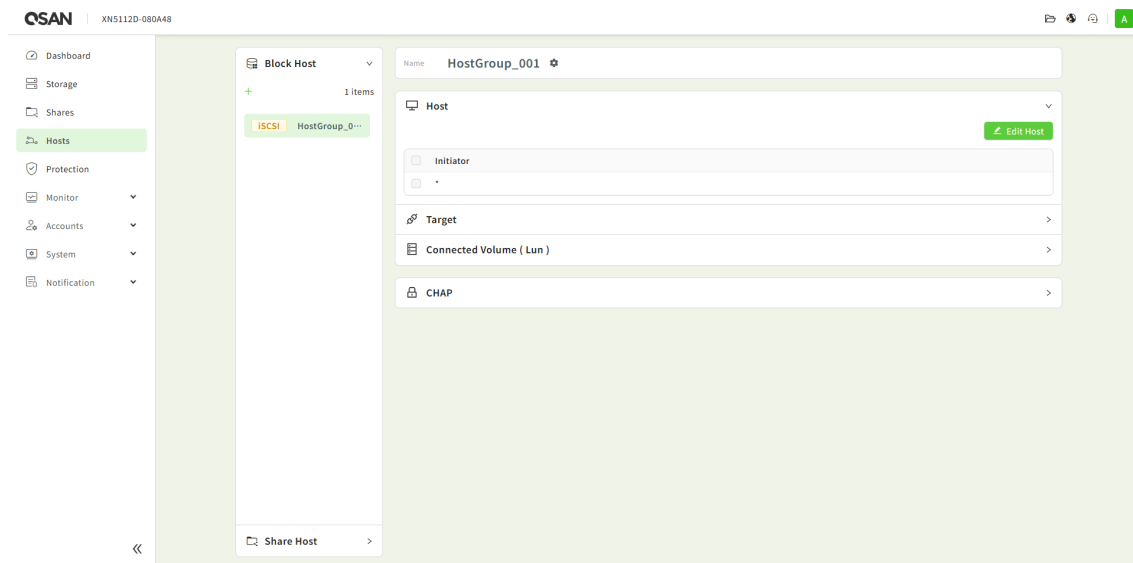


Figure 6-1 Hosts View

6.1. Block Hosts

Select the **Hosts** menu and **Block Host** item to manage the block host groups. In this menu, you can create, modify, delete, or view the status of all host groups. This is a tutorial example, see [Fibre Channel Configuration and Mounting on Windows](#).

6.1.1. Create a Block Host Group

1. Click the **+** icon to create a block host. Follow the instructions in the wizard to complete the process.
2. Select a connection protocol, then enter a name, select ports, and connected volumes.
3. Click the **Apply** button to confirm the settings.

6.1.2. List and Configure Block Host Groups

All host groups are listed in the **Block Host** pane. Click one of them to display the details. Click the  icon beside the host group name to list the drop-down options. The following options are available.

Rename

1. Click the **Rename** option to rename the host group.
2. Enter a new **Group Name**. The maximum length of the group name is 32 characters. Valid characters are [A~Z | a~z | 0~9 | -_<>].
3. Click the **Apply** button to rename.

Delete

1. Click the **Delete** option, and then pop up a confirm dialog box.
2. Click the **Apply** button to confirm and delete.

6.1.3. List and Configure Hosts

Click the **Host** pane to list all host profiles in the host group. The following options are available.

Edit Host

1. Click the **Edit Host** button to edit the hosts.
2. Click the radio button to select host as **All (*)** or **Custom**.
3. If select the **Custom** option, click the + button to add a host IQN, click the  icon to delete it from the list.
4. Select the host IQN to enable, or uncheck it to disable.
5. Click the **Apply** button to take effect.



CAUTION

Any changes may cause the connection to be lost or the data in transit lost.

6.1.4. List and Configure Targets

Click the **Target** pane to list targets in the host group. The following options are available.

Edit Interface

1. Click the **Edit Interface** button to edit the interfaces.
2. Select the interface to allow access, or uncheck it to deny access.
3. Click the **Apply** button to take effect.

6.1.5. List and Configure Connected Volumes

Click the **Connected Volume (LUN)** pane to list all volumes in the host group. The following options are available.

Connect Volumes

1. Click the **Mapping LUN** button to connect volumes.
2. Select the volume name to allow access, or uncheck it to deny access.
3. Click the **Apply** button to take effect.

6.1.6. List and Configure CHAPs

Click the **CHAP** pane to list all CHAPs in the host group. The following options are available.

Edit CHAP

1. Click the **Edit CHAP** button to edit the CHAP accounts.
2. Click the **+** button to add a CHAP account, click the  icon to delete the CHAP account from the list.

3. Select the CHAP account to enable, or uncheck it to disable.
4. Click the radio button to **Enable** or **Disable** the Mutual CHAP.
5. Click the **Apply** button to take effect.

6.2. Share Hosts

Select the **Hosts** menu and **Share Host** item to manage the share host groups. In this menu, you can create, modify, delete, or view the status of all host groups.

6.2.1. Create a Share Host Group

1. Click the **+** icon to create a block host. Follow the instructions in the wizard to complete the process.
2. Select the connection protocols to enable, then enter a name, select the NFS permission if NFS protocol is enabled, and select connected shares.
3. Click the **Apply** button to confirm the settings.

6.2.2. List and Configure Share Host Groups

All host groups are listed in the **Share Host** pane. Click one of them to display the details. Click the  icon beside the host group name to list the drop-down options. The operations are the same as section 6.1.2, [List and Configure Block Host Groups](#).

6.2.3. List and Configure Hosts

Click the **Host** pane to list all hosts in the host group. The following options are available.

Edit Host

1. Click the **Edit Host** button to edit the hosts.
2. Click the radio button to select host as **All (*)** or **Custom**.
3. If select the **Custom** option, click the **+** button to add a host name or IP address, click the  icon to delete it from the list.
4. Select the host name or IP address to enable, or uncheck it to disable.
5. Select the NFS permission if NFS protocol is enabled.

6. Click the **Apply** button to take effect.

6.2.4. List and Configure Services

Click the **Service** pane to list services in the host group. The following options are available.

Edit Service

1. Click the **Edit Service** button to edit the services.
2. Select the connection protocol to enable, or uncheck it to disable.
3. Click the **Apply** button to take effect.

6.2.5. List and Configure Shares

Click the **Share** pane to list all shares in the host group. The following options are available.

Edit Share

1. Click the **Edit Share** button to edit the shares.
2. Select the share name to allow access, or uncheck it to deny access.
3. Click the **Apply** button to take effect.

7. PROTECTION MENU

The **Protection** menu manages the protection functions. It displays the snapshot status, configures the replication, rsync, cloud backup, XMirror, Microsoft 365, and QSeal backup functions. This chapter describes the details of protection operations.

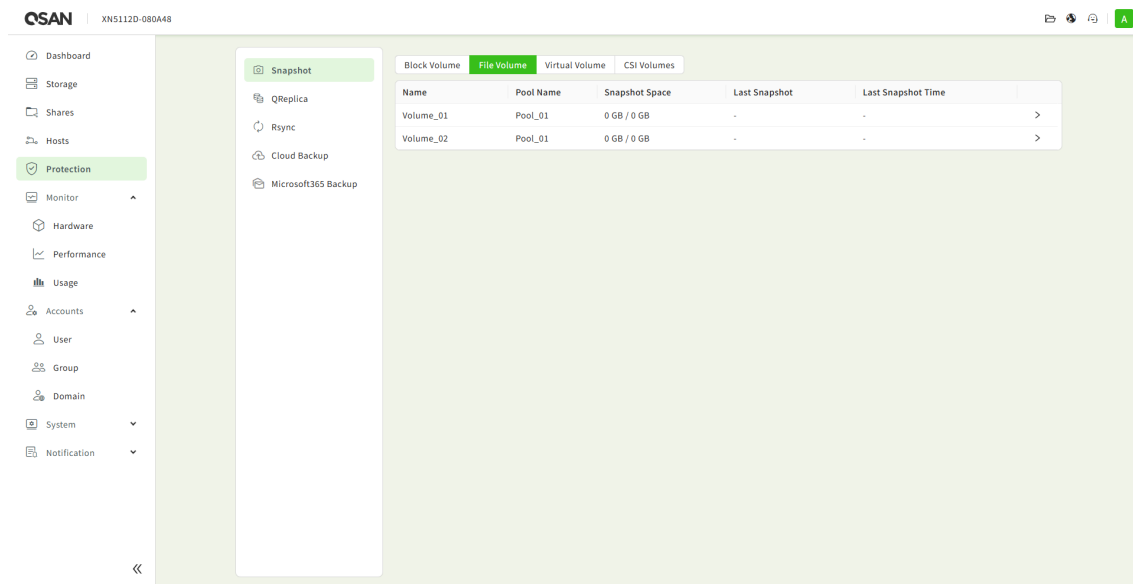


Figure 7-1 Protection View

7.1. Snapshot

Select the **Protection** menu and the **Snapshot** item to manage the snapshot volumes. Click the **Block Volume**, **File Volume**, **Virtual Volume**, or **CSI Volumes** tab to list all volumes. Click the > icon at the end of the volume name to display the details.

7.1.1. Configure Snapshot Settings

The following options are available.

Snapshot Space

1. Click the **Extend Snapshot Space** button to configure the snapshot space. Or click the **Reset** button to clear all snapshots.
2. Enter a number for snapshot space.
3. Click the **Apply** button to take effect.



TIP

Volumes in the thin provisioning pool will automatically reserve 10% of the capacity for the snapshot space. However, volumes in the thick provisioning pool are not preserved. You should enable the snapshot space manually.

Schedule

1. Click the **Edit** button to setup the snapshot schedule.
2. Click the radio button for **Schedule Type**.
3. Click the **Apply** button to take effect.

7.1.2. Take and Rollback Snapshot

There are two tabs below the snapshot settings. One is the **Snapshots** tab to display all volume snapshots; the other is the **Deleted Snapshots** tab of the snapshot recycle bin. The following options are available.

Take a Snapshot

1. Click the  button to take a snapshot.
2. The recommended **Snapshot Name** is provided. Enter a new **Snapshot Name** if necessary.
The maximum length of the snapshot name is 31 characters. Valid characters are [A~Z | a~z | 0~9 | -_<>].
3. Click the **Apply** button to take a snapshot.

Delete Snapshot

1. Click the , and then pop up a confirm dialog box.
2. Click the **Apply** button to confirm and delete.

Rollback Snapshot

1. Click the , and then pop up a confirm dialog box.
2. Click the **Apply** button to confirm to roll back the snapshot to the volume.



CAUTION

Before executing rollback, it is better that the disk is unmounted on the host computer for flushing data from cache. When a snapshot has been rolled-back, the related snapshots which are earlier than it will also be removed. But the rest snapshots will be kept after rollback.

7.1.3. List Deleted Snapshots

Click the **Deleted Snapshots** tab. It's a recycle bin of the deleted snapshots. The following options are available.

Rescue Snapshot

1. Click the , and then pop a confirm dialog box.
2. Click the **Apply** button to rescue the deleted snapshot and it will be back to the snapshot volumes.

Destroy Snapshot

1. Click the  icon, and then pop a confirm dialog box.
2. Click the **Apply** button to confirm and delete.



CAUTION

If a snapshot has been deleted, the other snapshots which are earlier than it will also be deleted. The space occupied by these snapshots will be released after deleting.

Click the <- **Back** icon to return to the snapshot list.

7.1.4. Enable Snapshot Lock

Click the **Snapshot Lock** feature brick. It's a security mechanism to prevent unauthorized UI attack. Check the following steps for enablement:

3. Switch on the **Snapshot Lock**
4. Enter the Password and Confirm the Password
5. Click **Apply** to enable snapshot lock

7.2. Replication

Select the **Protection** menu and the **QReplica** item to manage the replication tasks. The following are tutorial examples, see [Asynchronous Replication](#) and [Synchronous Replication](#).

7.2.1. Traffic Shaping

The traffic shaping function can help reserve the necessary bandwidth for non-replication I/O operations. Eight shaping groups can be set. In each shaping group, peak and off-peak time slots are provided for different bandwidths.

1. Click the **Traffic Shaping** button to edit the traffic shaping settings. Follow the instructions in the wizard to complete the process.

2. Select a **Profile** to edit.
3. Enter a speed number for the traffic limit. If desired, enable **Peak Traffic Limit**, then set the peak period and another speed number.

7.2.2. Create a Replication Task

1. Click the **Add** button to create a replication task. Follow the instructions in the wizard to complete the process.
2. Select **Local** to copy data to local or **Remote** to copy data to another QSAN product, then click the **Next** button.
3. Select **Async** or **Sync** type, then click the **Next** button.
4. Enter a task name, then click the **Next** button.
5. Select the source pool and volume, then click the **Next** button.
6. Click the radio button for **Schedule Type**, then click the **Next** button.
7. Select a **Traffic Shaping**, then click the **Next** button.
8. Click the **Apply** button to confirm and create a task.

7.2.3. List and Configure Tasks

Click the  icon beside the task name to list the drop-down options. The following options are available.

Rename

1. Click the **Rename** option to rename the pool.
2. Enter a new **Name**. The maximum length of the pool name is 32 characters. Valid characters are [A~Z | a~z | 0~9 | -_<>].
3. Click the **Apply** button to rename.

Re-replicate

1. Click the **Re-replicate** option to re-replicate all data from the source to the target.
2. Click the **Confirm** button to proceed.

Delete

1. Click the **Delete** option, and then pop a confirm dialog box.

2. Click the **Confirm** button to confirm and delete.

Schedule

1. Click the  button to setup the snapshot schedule.
2. Click the radio button for **Schedule Type**.
3. Click the **Apply** button to take effect.

Replicate Now

1. Click the **Replicate Now** button to perform the replication immediately.

7.3. Rsync

Select the **Protection** menu and the **Rsync** item to manage the rsync function.

7.3.1. About Rsync

Rsync is a software application that can synchronize the files and directories of two system. Once connected, it will invoke the remote host's rsync and then the two programs will determine what parts of the local file need to be transferred so that the remote file matches the local one.

7.3.2. Rsync Client

Click the **Client** tab to configure the rsync client settings. The following options are available.

Manage Clients

1. Click the **Manage** button to add rsync clients, and then pop up a confirm dialog box.
2. Click the  button to add a target, enter a name, IP address, port, user, and password.
3. Click the **Create** button to confirm the settings.
4. Click the  icon to delete it from the list.
5. Click the **Confirm** button to take effect.

Create a Task

1. Click the **Add** button to create a task. Follow the instructions in the wizard to complete the process.
2. Select a direction of rsync task. Enter the desired settings and schedule.
3. Click the **Apply** button to confirm the settings.

Delete Task

1. Click the  icon, and then pop a confirm dialog box.
2. Click the **Apply** button to confirm and delete.

7.3.3. Rsync Server

Click the **Server** tab to configure the rsync server settings. The following options are available.

Setting

1. Change the **Port, Maximum Upload Rate, Maximum Download Rate** if necessary.
2. Click the **Apply** button to take effect.

Add Rsync User

1. Click the **Add** button to add a rsync user. Follow the instructions in the wizard to complete the process.
2. Enter a name, password, and add available shares.
3. Click the **Apply** button to confirm the settings.

Delete Rsync User

1. Check the user checkboxes which you want to delete.
2. Click the  button, and then pop a confirm dialog box.
3. Click the **Apply** button to confirm and delete.

Edit Available Shares

1. Click the  icon at the end of the sync user name to edit.
2. Select the share to enable, or uncheck it to disable.
3. Click the **Apply** button to confirm the settings.

Select the **Protection** menu and the **Cloud Backup** submenu to manage the cloud backup tasks.

7.4. Cloud Backup

Select the **Protection** menu and the **Cloud Backup** item to manage the cloud backup tasks. This is a tutorial example, see [Cloud Backup Solution Enhances Your Data Protection](#).

7.4.1. About Cloud Backup

Cloud Backup is a solution that stores data in the cloud, offering high availability and disaster recovery capabilities. S3 Compatible refers to storage services that support the same APIs as Amazon S3, enabling seamless integration with various applications and backup tools. Users can easily back up data to S3-compatible cloud platforms, ensuring data security and scalable storage.

7.4.2. Add an Account

1. Click the **Add Account** button to add a cloud provider. Follow the instructions in the wizard to complete the process.
2. Select a cloud provider, then click the **Next** button.
3. Enter a name, server, access key, and secret key. Then click the **Next** button.
4. Click the **Apply** button to confirm the settings.

7.4.3. Create a Backup Task

1. Click the **Create** button to create a task. Follow the instructions in the wizard to complete the process.
2. Enter a name, select upload or download action, select the local and cloud path. Then click the **Next** button.
3. Click the radio button for **Schedule Type**. Then click the **Next** button.
4. Click the **Apply** button to create a task.

7.4.4. List and Configure Tasks

Click the  icon at the end of the task to list the drop-down options. The following options are available.

Edit

1. Click the **Edit** option to change the task properties.
2. After changing the task properties, click the **Apply** button to take effect.

Run

1. Click the **Run** option to execute the task immediately.
2. The **Status** field will show the percentage of execution.

Delete

1. Click the **Delete** option, and then pop a confirm dialog box.
2. Click the **Confirm** button to confirm and delete.

7.5. Microsoft 365 Backup

Select the **Protection** menu and the **Microsoft 365 Backup** item to manage the Microsoft 365 email backup tasks. This is a tutorial example, see [Backup Microsoft 365 Email](#).

7.5.1. Add an Account

1. Click the **Add** button to add a Microsoft 365 email account. It will open a Microsoft 365 login screen.
2. After verifying the Microsoft 365 account, follow the instructions in the wizard to complete the process.
3. Enter a task name and select a share as the backup path. Then click the **Next** button.
4. Choose email addresses to backup.
5. Click the radio button for **Schedule Type**. Then click the **Next** button.
6. Click the **Apply** button to confirm the settings.

7.5.2. Delete Accounts

1. Check the task checkboxes which you want to delete.
2. Click the  button, and then pop up a confirm dialog box.

3. Click the **Confirm** button to confirm and delete.

7.5.3. List and Configure Tasks

Click the  icon at the end of the task to list the drop-down options. The following options are available.

Run

1. Click the **Run** option to execute the task immediately.

7.6. QSeal

The **Create QSeal Task** wizard guides administrators through configuring a QSeal data protection task. Access Path **Protection > QSeal > Create Task**. The process consists of three steps:

1. Source
2. Settings
3. Ready to Complete

This step defines the task name, temporary target network settings, and connection parameters to the source system.

Task Name

Specify a name to identify the QSeal task.

Target Network Settings

Configure the temporary network interface used during task execution.

Target Interface

Select the network interface to be used during the task.

Target IP Address

Target Netmask

Target Gateway

Connecting to Source

Define the connection parameters for the source system.

Source IP Address

Source Port

Specify the communication port for the connection.

Source Username / Password

Provide valid credentials for authentication.

Settings

This step defines the destination storage location for the QSeal task.

Target Volume

Select the volume on the target system where QSeal data will be stored.

- The page displays all available volumes.
- Only one volume can be selected.
- Ensure the selected volume has sufficient available capacity.

The chosen volume will store the QSeal task data and related output.

Selecting the correct target volume is critical. Modifying the destination after task creation may require recreating the task.

Click **Next** to proceed to the final review page.

Step 3: Ready to Complete

Review all configured settings before creating the task.

The summary includes:

- Task name
- Target network configuration
- Source connection details
- Selected target volume

Click **Create** to finalize the QSeal task configuration or **Previous** to modify settings.

7.7. XMirror

Select the **Protection** menu and the XMirror item to manage the XMirror backup tasks.

7.7.1. Add an XMirror Zone

To create a new XMirror synchronization zone:

1. Navigate to **Protection** → **XMirror**.
2. Click **Add/Join Zone**.
3. Select **Create New Zone**.
4. Click **Next** to proceed.

Step 1: Zone Settings

Configure the required fields:

- **Zone Name**
Enter a unique name for the synchronization zone.
- **Path Mode**
Select **Share-based** (file-level synchronization only).

Step 2: Sync Mode Configuration

Select the synchronization behavior:

Sync Mode Options

- **Mirror**
Bi-directional synchronization. Changes on either side are synchronized to maintain identical data sets.
- **Push**
One-way synchronization from the local device to the remote device.
- **Pull**
One-way synchronization from the remote device to the local device.

Select the appropriate mode based on your deployment requirement.

Click **Next** to proceed.

Step 3: Select Path

Choose the shared folder(s) to be included in synchronization.

Only file-level shared paths are supported.

Click **Next**.

Step 4: Ready to Complete

Review the configuration summary.

Click **Finish** to create the XMirror zone.

The system will establish the synchronization relationship based on the selected Sync Mode.

7.7.2. Join Existing Zone

This section explains how to join an already created XMirror synchronization zone.

Step 1: Mode Selection

Select **Join Existing Zone**.

Join an existing synchronization zone. Only file-level paths are supported.

Step 2: Remote Settings

Enter the remote device information:

- **Remote Device IP**
Enter the management IP address of the remote device.
- **Username**
Enter an account with administrative privileges on the remote device.
- **Password**
Enter the corresponding password.

Click **Verify** to validate the connection.

All required fields must be completed before proceeding.

Click **Next** ☐ after verification succeeds.

Step 3: Select Zone

Select the target zone from the remote device.

The system will display available zones that can be joined.

Click **Next** to proceed.

Select Path

Choose the shared folder(s) to participate in synchronization.

Only file-level shared paths are supported.

Click **Next** to continue.

Ready to Complete

Review the configuration summary:

- Zone Name
- Sync Mode
- Path Mode (Share-based)
- Selected Paths

Click **Finish** to complete the process.

8. MONITOR MENU

The **Monitor** menu displays array health status, system performance and usage. This chapter describes the details of monitor operations.

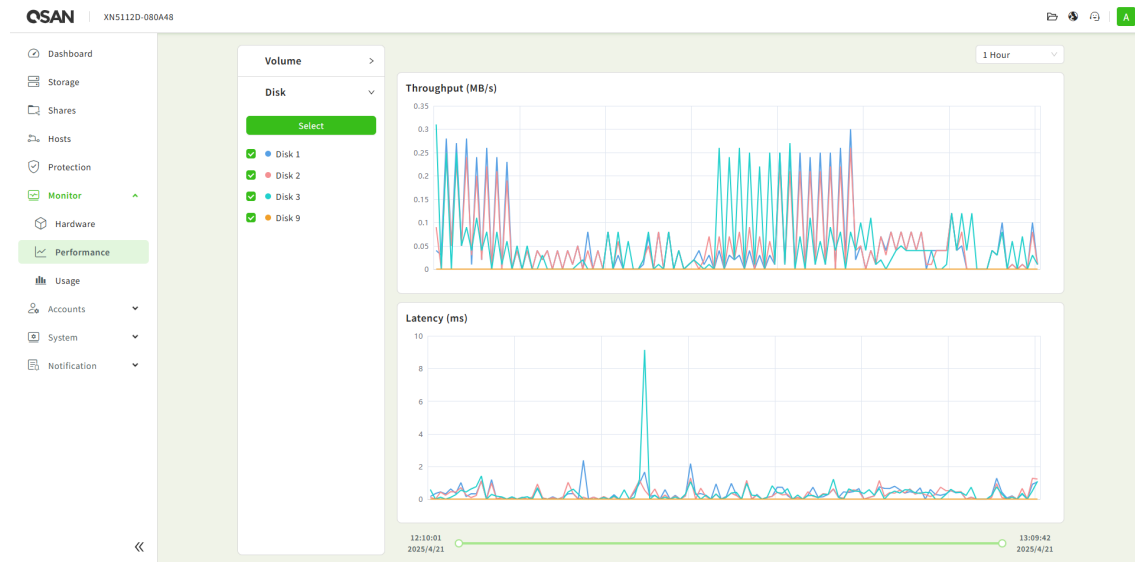


Figure 8-1 Monitor View

8.1. Hardware Submenu

Select the **Monitor** menu and the **Hardware** submenu to display the array information.

8.1.1. List Arrays

All arrays including head and expansion units are listed in the **Arrays** item. Click one of them to display the details. In the **Head** unit, there are front and rear pictures in the right pane. You can move your mouse over the name in **Modules** or **Disks** icons to watch the location of the component. This table shows the component descriptions.

Table 8-1 Hardware Component Descriptions

NAME	DESCRIPTION
Component Health	The status of the component: Green Color / Normal: The component is good. Orange Color / Abnormal: The component is abnormal. Red Color / Warning: The component has failed.

8.2. Performance Submenu

Select the **Monitor** menu and the **Performance** submenu to display the volume and disk performance.



INFORMATION

QSM maintains a rolling one-year history of data. The granularity of the historical data increases with age. Older data points are spaced further apart in time than the nearest data points

8.2.1. Volume Performance

Select the **Volume** submenu to view the volume performance.

1. Click the **Select** button and select volumes. All volumes are listed in the **Volume** pane. Check the volume checkboxes which you want to display the performance.
2. Switch the All, Read, or Write tab to view all performance, only read, or only write performance numbers.

3. Change the **Range** in the upper right corner or slide the time bar at the bottom to view different time range.

8.2.2. Disk Performance

Select the **Disk** submenu to view the disk performance.

1. Click the **Select** button and select disks. All disks are listed in the **Disk** pane. Check the disk checkboxes which you want to display the performance.
2. Change the **Range** in the upper right corner or slide the time bar at the bottom to view different time range.

8.3. Usage Submenu

Select the **Monitor** menu and the **Usage** submenu to display resource usage. Click the **CPU** or **Memory** item to view it.

9. ACCOUNTS MENU

The **Accounts** menu manages the account settings. It displays the user and group status, configures their properties and permissions. This chapter describes the details of account management operations.

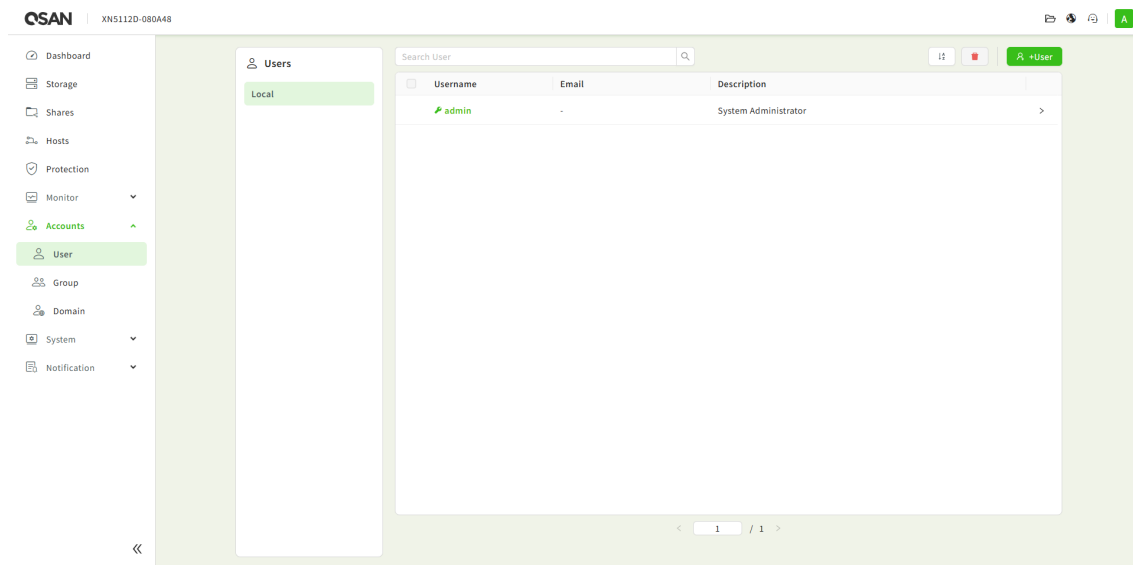


Figure 9-1 Account View

9.1. User Submenu

Select the **Accounts** menu and the **User** submenu to configure user settings.

9.1.1. List and Configure Local Users

All users are listed in the pane. The following options are available.

Add a User

Click the **+User** button to add a user. Follow the instructions in the wizard to complete the process.

Sort by Users

Click the  button to sort by username.

Delete Users

1. Check the user checkboxes which you want to delete.
2. Click the  button, and then pop up a confirm dialog box.
3. Click the **Apply** button to confirm and delete.



CAUTION

The default user cannot be deleted.

Click one username to display the details. The following options are available.

Edit

1. Click the  icon to edit the email and description.
2. Click the  icon to apply.
3. Click the switch to turn  ON (Enable) or  OFF (Disable).
 - **Assign as Admin:** Enable to assign the user as an administrator.
 - **Enable this user:** Enable or disable the user.
4. Click the  button to change password.
5. Click the  button to delete the user.

Click the **Group** tab to list the join groups. The following options are available.

Join Groups

Click the **Join Groups** button to join groups. Follow the instructions in the wizard to complete the process.

Click the **Share Permission** tab to list the share permissions. The following options are available.

Setting

Click the  button to set the share permission.

Click the <- **Back** icon to return to the user list.

9.2. Group Submenu

Select the **Accounts** menu and the **Group** submenu to configure group settings.

9.2.1. List and Configure Local Groups

All groups are listed in the pane. The following options are available.

Add a Group

Click the **+Group** button to add a group. Follow the instructions in the wizard to complete the process.

Sort by Groups

Click the  button to sort by group name.

Delete Groups

1. Check the group checkboxes which you want to delete.
2. Click the  button, and then pop up a confirm dialog box.
3. Click the **Apply** button to confirm and delete.



CAUTION

The default groups cannot be deleted.

Click one group name to display the details. The following options are available.

Edit

1. Click the  icon to edit the description.
2. Click the  icon to apply.
3. Click the  button to delete the group.

Click the **Users** tab to list the join users. The following options are available.

Add Users

Click the **Add Users** button to add users. Follow the instructions in the wizard to complete the process.

Click the **Share Permission** tab to list the share permissions. The following options are available.

Setting

Click the  button to set the share permission.

Click the <- **Back** icon to return to the group list.

9.3. Domain Submenu

Select the **Accounts** menu and the **Domain** submenu to manage domains.

9.3.1. Join a Domain

1. Click the  icon to open a wizard to join a domain. Follow the instructions in the wizard to complete the process.
2. Select a **Security Mode** as Active Directory or LDAP.

Active Directory

- **AD domain name:** The name or address of the AD server.
- **Administrator account:** The admin account of the AD server.
- **Administrator password:** The admin password of the AD server.
- **Netbios Domain:** Microsoft domain name.

LDAP (Lightweight Directory Access Protocol)

- **LDAP Server IP:** The IP address of the LDAP server.
- **Administrator password:** The password of the LDAP admin.
- **Base DN:** The domain of the LDAP server.
- **Admin DN:** The admin of the LDAP server.
- **User Base DN:** The OU (Organization Unit) in which users are stored.
- **Group Base DN:** The OU (Organization Unit) in which groups are stored.

3. Then click the **Join** button to join a domain.

9.3.2. Manage Domain

Click the  icon beside the domain name to list the drop-down options. The following options are available.

Delete

1. Click the **Delete** option, and then pop up a confirm dialog box.
2. Click the **Apply** button to confirm and delete.

10. SYSTEM MENU

The **System** menu manages the system settings. It configures general system settings, network ports, data service, disks, maintains system firmware. This chapter describes the details of system operations.

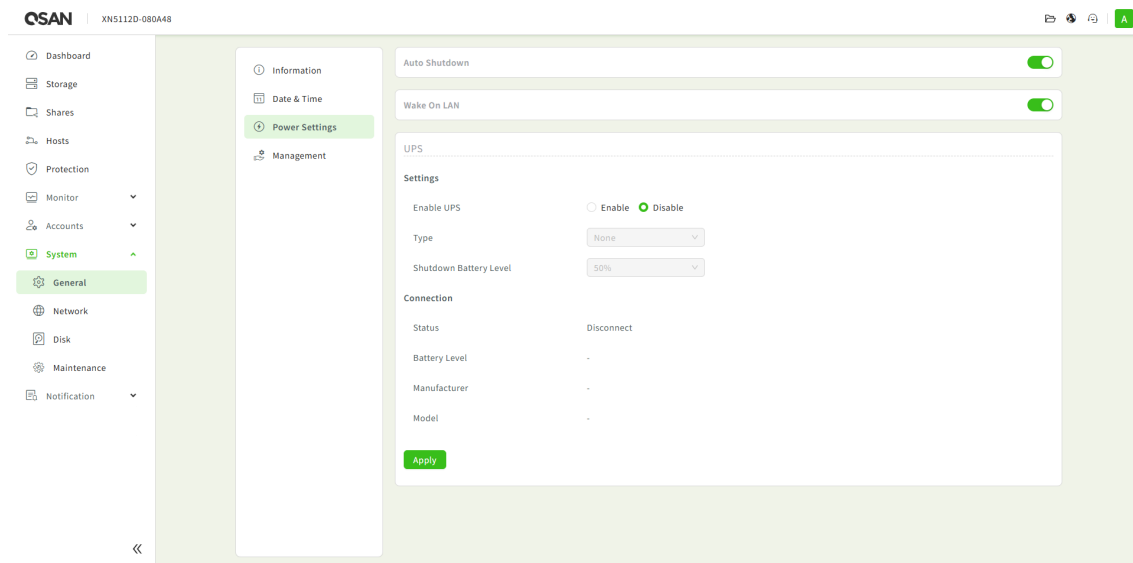


Figure 10-1 System View

10.1. Configure General Settings

Select the **System** menu and the **General** submenu to configure system settings.

10.1.1. System Information

Click the **Information** item to display system, controllers, and backplane information.

10.1.2. Date & Time Settings

Click the **Date & Time** item to change the current time. Date and time can be set by manually or synchronized from a NTP (Network Time Protocol) server. When finished, click the **Apply** button to take effect.

10.1.3. Power Settings

Click the **Power Settings** item to configure the boot options. Click the switch to turn  ON (Enable) or  OFF (Disable).

- **Auto Shutdown:** Check to enable the auto shutdown feature. If it is enabled, the system will shut down automatically when the voltage and temperature exceed a critical level.



TIP

For better protection and to avoid a single short period of abnormal voltage or temperature, enabling the setting could trigger an automatic shutdown. This is done using several sensors placed on key systems that the system checks every 30 seconds for present voltages or temperatures.

-
- **Wake-on-LAN:** Check to enable the wake-on-LAN feature. If it is enabled, the system will accept a magic packet from the management port to power on the system.



TIP

To execute wake-on-LAN function, MAC address of management port is needed.

10.1.4. Management Settings

Click the **Management** item to configure the login options and service ports.

Login Option

- **Auto Logout:** When the auto logout option is enabled, you will be logged out of the admin interface after the time specified.

Management Port

- Uncheck to disable the service ports of **HTTP** and **HTTPS**. If the default port numbers of the service ports are not allowed on your network environment, they can be changed here.

When finished, click the **Apply** button to take effect.

10.1.5. Application Acceleration Mode

The **Application Acceleration Mode** enhances overall system throughput and IOPS performance for demanding workloads. This feature is designed for environments requiring improved responsiveness and higher processing efficiency. Access Path: **System > General > Performance Tuning > Application Acceleration Mode**

Mode Status

Displays the current operating status of Application Acceleration Mode.

- **Disabled** – Performance acceleration is not active.
- **Enabled** – The selected performance profile is applied.

Click **Turn On** to enable the feature.



INFORMATION

Enable **Application Acceleration Mode** only if your environment meets the required conditions. Ensure a **UPS** is properly installed to prevent data inconsistency during power loss,

10.2. Configure Network Settings

Select the **System** menu and the **Network** submenu to configure network ports.

10.2.1. Ethernet Settings

Click the **Ethernet** item to configure cluster IP and private IP information. The following options are available.

DNS Setting

1. Click the **DNS Setting** button to configure DNS server addresses.
2. Click the **Apply** button to take effect.

Configure Cluster IP

1. Click the **Cluster** tab to list cluster IPs.
2. Click the **+Add** button to add a cluster IP.
3. Click the  icon to list the drop-down options. Click the **Settings** option to change the settings, click the **Remove** option to delete the cluster IP.

Configure Private IP

1. Click the **Private** tab to list LAN port IPs.
2. Click the **Link Aggregation** button to configure link aggregation settings.
3. Click the  icon to list the drop-down options. Click the **Edit** option to change the settings, click the **Set Default Gateway** option to set the LAN port as default gateway, click the **Add VLAN** option to change the VLAN setting.

10.2.2. Fibre Channel Settings

Click the **Fibre Channel** item to display fibre channel information. The following options are available.

Edit Setting

1. Click the  icon to list the drop-down options. Change the **Speed** or **Topology** settings.

2. Click the **Apply** button to take effect.

10.2.3. Data Service Settings

Click the **Data Service** item to configure CIFS and NFS settings. The following options are available.

CIFS Setting

1. Change the **Server Description**, **Workgroup** if necessary.
2. Enable or disable **Local Master Browser** option and **SMB Encryption** option.
3. Click the **Apply** button to take effect.

NFS Setting

1. Change the **Statd Port** if necessary.
2. Enter **NFSv4 Domain**.
3. Click the **Apply** button to take effect.

FTP Setting

1. Change the **Login Banner** and some FTP settings if necessary.
2. Check **Upload** or **Download** checkboxes to limit the bandwidth.
3. Click the **Apply** button to take effect.

WebDAV Setting

1. Change **WebDAV Port** or **WebDAVs Port** if necessary.
2. Click the **Apply** button to take effect.

10.3. Configure Disk Settings

Select the **System** menu and the **Disk** submenu to configure disk drives.

10.3.1. List Arrays

All arrays including head and expansion units are listed in the **Arrays** item. Click one of them to display the details. The following options are available.

Clear Read Error

1. Check the disk checkboxes which you want to clean the read error of the disk drive and reset the failed status.
2. Click the **Clear Read Error** button, and then pop up a confirm dialog box.
3. Click the **Apply** button to confirm and clear.

Instant Erase

1. Check the disk checkboxes which you want to erase the disks instantly.
2. Click the **Instance Erase** button, and then pop up a confirm dialog box.
3. Click the **Apply** button to confirm and erase.

Click the  icon at the end of the disk to list the drop-down options. The following options are available.

S.M.A.R.T.

S.M.A.R.T. (Self-Monitoring Analysis and Reporting Technology) is a diagnostic tool for disk drives to deliver warning of drive failures in advance. It provides users a chance to take actions before a possible drive failure. Click the **S.M.A.R.T.** option to display S.M.A.R.T. information.

Click the **Close** button to close the window.

Set Hot Spare

1. The **Hot Spare** option appears if the disk drive is free. Click the **Hot Spare** option to set it as a global or local spare disk.
2. Click the **Apply** button to take effect.

Set Free Disk

1. The **Free Disk** option appears if the disk drive is not free. Click the **Free Disk** option to set it as a free disk.

2. Click the **Apply** button to take effect.

Turn on disk location light

1. Click to turn on the disk location light, click again to turn off.

10.4. Maintenance

Select the **System** menu and the **Maintenance** submenu to provide Firmware Update, Configuration Backup, and Reset functions.

10.4.1. Firmware Update

Click the **Firmware Update** item to be used to update controller firmware, expansion unit firmware.



TIP

Before upgrading, we recommend you to export your system configurations first in the **Configuration Backup** function menu.

Head Unit Firmware Update

Please prepare new controller firmware file named “xxxx.bin” in local hard drive, click the  icon to select the firmware file. Then click the **Update** button, it will pop up a warning message, click the **Confirm** button to start upgrading the firmware.

When upgrading, there is a progress bar running. After finished upgrading, the system must reboot manually to make the new firmware take effect.

Synchronization

If the firmware versions between two controllers are different, it will display a warning message. Click the **Synchronize** button to synchronize and force a reboot.

Expansion Unit Firmware Update

To upgrade expansion unit firmware, first select an expansion unit. Then other steps are the same as the head unit firmware update. After finished upgrading, the expansion unit must reboot manually to make the new firmware take effect.

10.4.2. Configuration Backup

Click the **Configuration Backup** item to be used to either save system configuration (export) or apply a saved configuration (import).

Export Configuration

1. Select the **Configuration Type** to export system or volume configuration.
2. Click the **Export** button to save a file.

Import Configuration

1. Select the **Configuration Type** to import system or volume configuration.
2. Click the  icon to select the configuration file.
3. Click the **Import** button.



CAUTION

The Import option will import system or volume configurations. The current configurations will be replaced.

10.4.3. Reset

Click the **Reset** item to reset the system configurations back to the factory default settings, clean all configurations of the expansion enclosure ID.

Reset Expansion ID

Click the **Reset** button to clean all configurations of expansion enclosure ID. A clean will cause the system shutdown, and then you must start manually.

Reset to Factory Defaults

Click the **Reset** button to progress reset to defaults and force a reboot. The default settings are:

- Reset **LAN 1 Port** IP address to DHCP, and then fix IP address: 169.254.1.234/16.
- Reset admin's **Password** to 1234.

Restore Volume

1. Select a volume name.
2. Click the **Restore** button, it will pop up a filter dialog.
3. Click the **Confirm** button to proceed.



CAUTION

The volume restoration can restore your previous volume configurations when pool corruption or mistaken deletion occurs. Before restoration, please make sure all member disks are installed in the exact same slots as before. The volume restoration does not guarantee that all lost data will be recovered.

■

11. NOTIFICATION MENU

The **Notification** menu displays event logs and configures the notification settings. This chapter describes the details of notification operations.

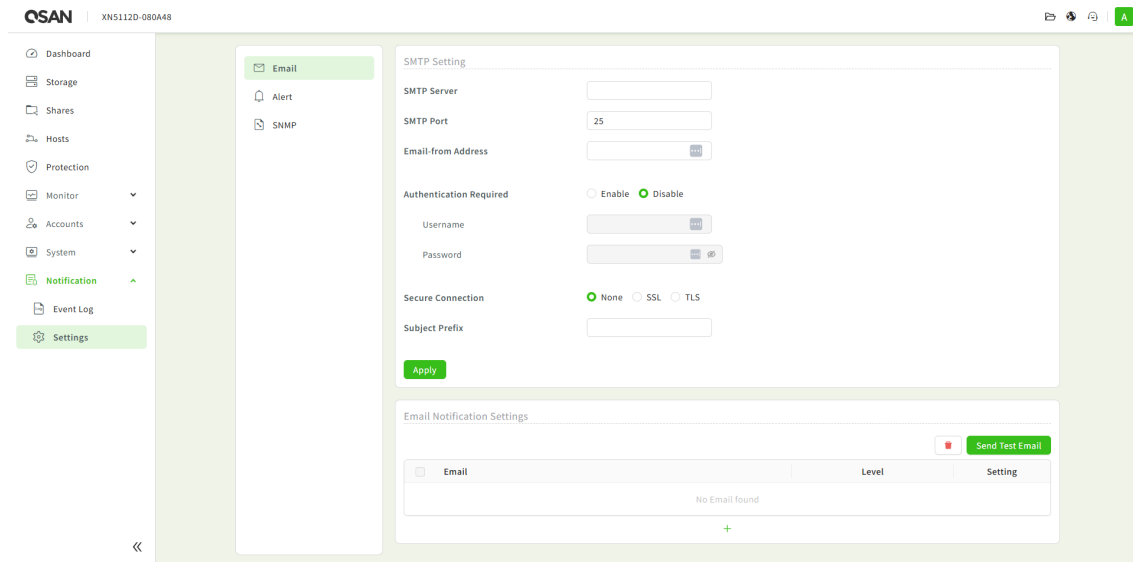


Figure 11-1 Notification View

11.1. Event Log

Select the **Notification** menu and the **Event Log** submenu to show event messages. Click **All**, or **Information**, **Warning**, **Error** tab to filter the event levels.

The event logs are displayed in reverse order which means the latest event log is on the first / top page. They are saved in the first four disk drives of the head unit; each disk drive has one copy of event log. For one system, there are four copies of event logs to make sure users can check event log any time when there are failed disks. If there are no disk drives in the first four slots, the event logs will keep in memory temporary and will disappear after system reboots.

The event logs record all system events. Each event has time frame that identifies the type of event that occurred, and has one of the following severities:

- **Error:** A failure occurred that may affect data integrity or system stability. Correct the problem as soon as possible.
- **Warning:** A problem occurred that may affect system stability, but not data integrity. Evaluate the problem and correct it if necessary.
- **Information:** An operation recorded that may help to debug.

The following options are available.

Download Event Logs

1. Click the  icon to save the event log as a file. It will pop up a filter dialog.
2. Select the option and then click the **Download** button to download event logs.

Mute Buzzer

1. Click the  icon to stop alarm if the system alerts.
2. Click the **Mute** button to take effect.

Clear Event Logs

1. Click the  icon to clear all event logs.
2. Select the option and then click the **Clear** button to clear event logs.

11.2. Configure Notification Settings

Select the **Notification** menu the **Settings** submenu to configure the notification settings via **Email**, **Alert**, and **SNMP**.

11.2.1. Email Settings

Click the **Email** item to be used to setup alerts on the front display. The device buzzer is also managed here.

SMTP Settings

- **SMTP Server:** Enter the IP address or FQDN (Fully Qualified Domain Name) of SMTP server to deliver the notification mails.
- **SMTP Port:** Default is port 25. You can change the SMTP port here.
- **Email-from Address:** Enter the sender email address.
- **Authentication Required:** Some email servers require authentication for SMTP relay. Check to enable authentication and enter the **Username** and **Password**.
- **Secure Connection:** Using SSL (Secure Sockets Layer) or TLS (Transport Layer Security) for secure connection.
- **Subject Prefix:** The input string will be appended to the front of the email subject.

When finished, click the **Apply** button to take effect.

Email Notification Settings

1. Click the **+** icon to add new email address. Enter the email address for receiving the event notifications. You can also select which levels of event logs which you would like to receive.
2. Click the **Apply** button to add.



TIP

Please make sure the IP address of DNS server is well-setup in **Network**. So, the event notification emails can be sent successfully.

3. Click the **Send Test Email** button to send a test email to check if it works properly.

11.2.2. Alert Settings

Click the **Alert** item to be used to setup alerts on the front display. The device buzzer is also managed here.

Device Buzzer

Click the switch to turn  ON (Enable) or  OFF (Disable) the device buzzer.



INFORMATION

The device buzzer features are listed below:

- The buzzer alarms 1 second when system boots up successfully.
- The buzzer alarms continuously when there is error occurred. The alarm will be stopped after error resolved or be muted.
- The alarm will be muted automatically when the error is resolved. For example, when a RAID 5 pool is degraded and alarm rings immediately, user replaces one disk drive for rebuild. When the rebuild process is done, the alarm will be muted automatically.

11.2.3. SNMP Settings

Click the **SNMP** item to be used to setup SNMP (Simple Network Management Protocol) traps for alerting with event logs and setup SNMP server settings for client monitoring.

Download MIB Files

- **SNMP MIB File:** Click the **Download** button to save the SNMP MIB file which can be imported to the SNMP client tool to get system information. You can view fan, voltage, and system status via SNMP MIB.

SNMP Server and Trap

- **Enable SNMP Service:** Click the radio button to Enable or Disable. Enable SNMP service to send system event logs to SNMP trap agent and SNMP server. Then fill in the necessary information below.
- **SNMP Trap:** The default SNMP trap port is 162. You can check or uncheck the alert levels which you would like to receive. And then fill in up to three SNMP trap addresses for receiving the event notifications.
- **SNMP Version:** Select SNMP supported versions: v1/v2, or v3. Then fill in the necessary information below.

When finished, click the **Apply** button to take effect.

12. SUPPORT AND OTHER RESOURCES

12.1. Getting Technical Support

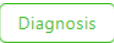
After installing your device, locate the serial number on the sticker located on the side of the chassis or from the **QSM -> System -> General -> Information** and use it to register your product at https://www.qsan.com/business_partnership. We recommend registering your product in QSAN partner website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

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

Information to Collect

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

Information for Technical Support

If the technical support requests you to download the Service Package, please navigate in the **QSM -> Help**, and then click the  button to download the diagnosis report file. Then

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

12.2. Documentation Feedback

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

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

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