
How to Expand iSCSI for NVR7316

Application Notes

Version <1.0>



Technical Support Team

Preface

In this application guide, we are going to introduce how to setup the iSCSI storage devices and how to add iSCSI storage devices to Linux based NVR.

Follow the steps below to complete configurations:

1. **How to Connect to iSCSI-based Storage and NVR7316 ?**
2. **Configure iSCSI Storage.**
3. **Add iSCSI Storage to Linux-based NVR.**

1. How to Connect to iSCSI-based Storage and NVR7316?

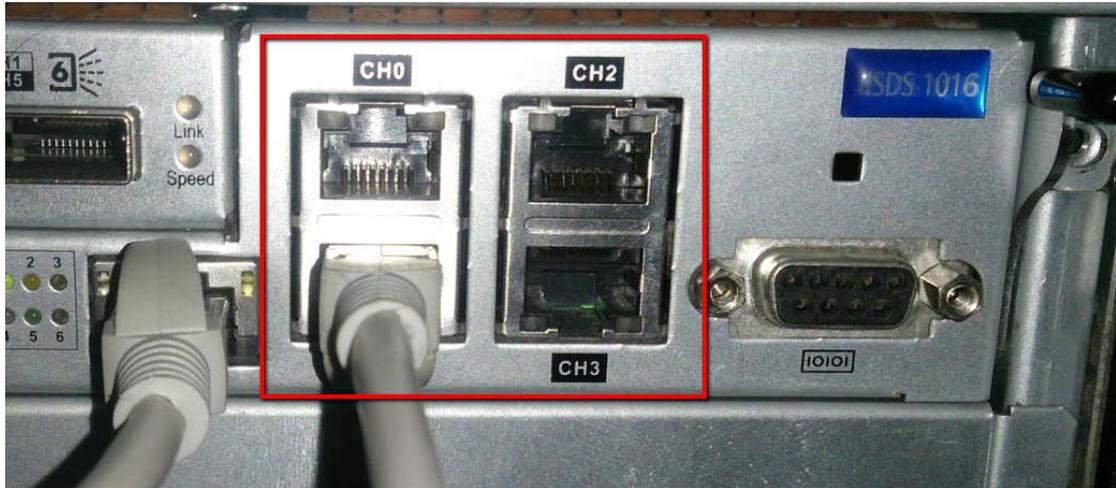
- The image below shows the rear panel of iSCSI storage, and location of all ports.



- The image below shows the LAN port for iSCSI traffic which is mainly used for the purpose of configuration management.



- Channel 0~3 are 4-port channels for iSCSI storage. Each channel, as one logical volume, will assign an IP address.



- ※ All the network cables must connect to GigaLAN Ports from core switch to your network.

2. Configure iSCSI Storage.

2.1 Install SANWatch Software Suite and Log in.

2.2 Add New Storage Devices.

2.3 Create a New Logical Volume.

2.4 Create New Partitions.

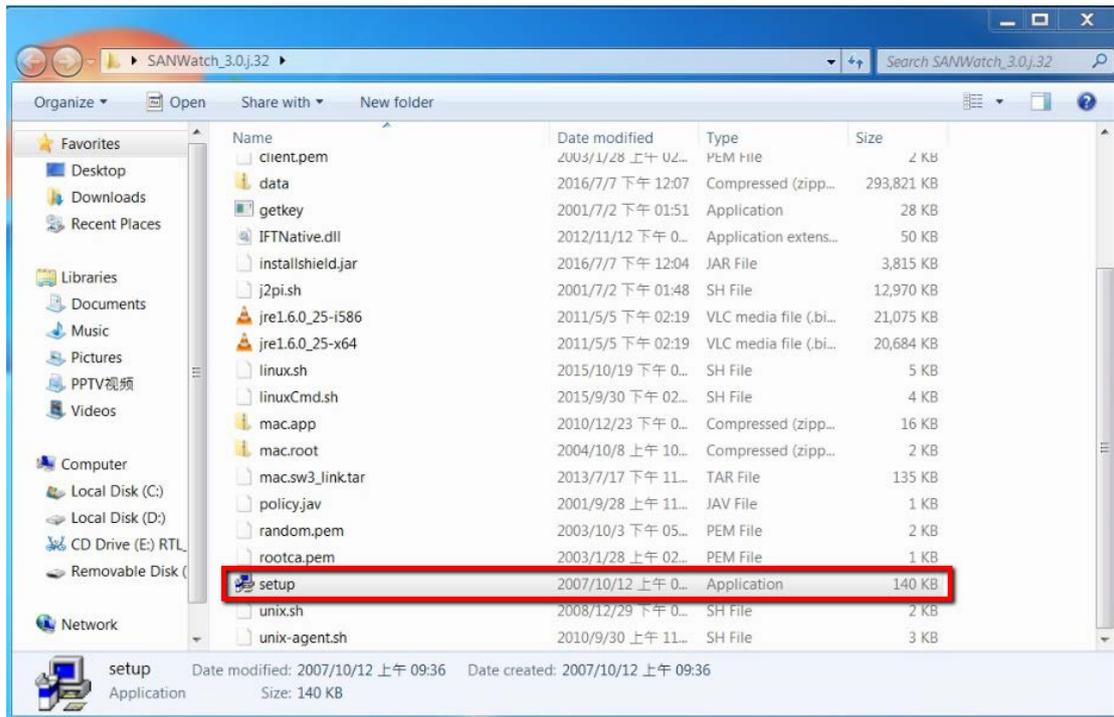
2.5 Host LUN Mapping

2.1 Install SANWatch Software Suite and Log in.

- Go to SANWatch download link:
https://www.dropbox.com/home/Surveon/Public/Tool?preview=SANWatch_3.0.j.27.zip
- Download the software and Unzip it.



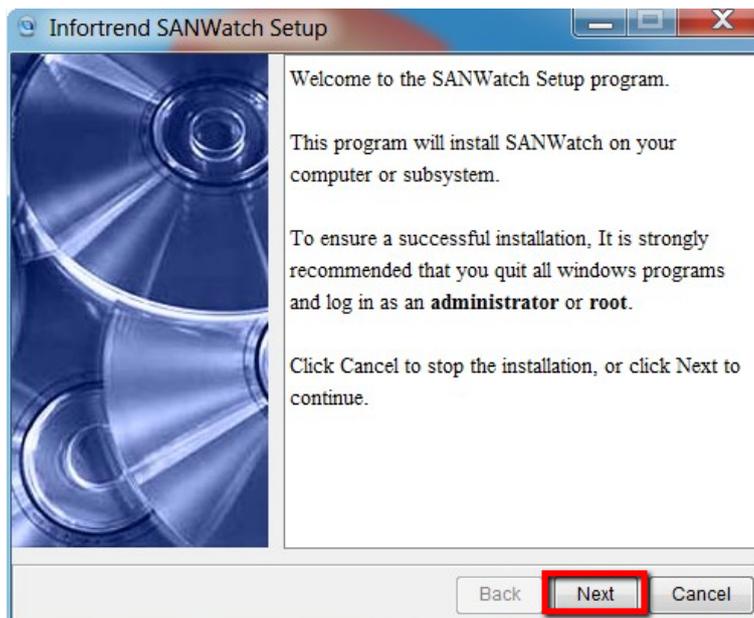
- Double click the “setup.exe” to launch the installation wizard.



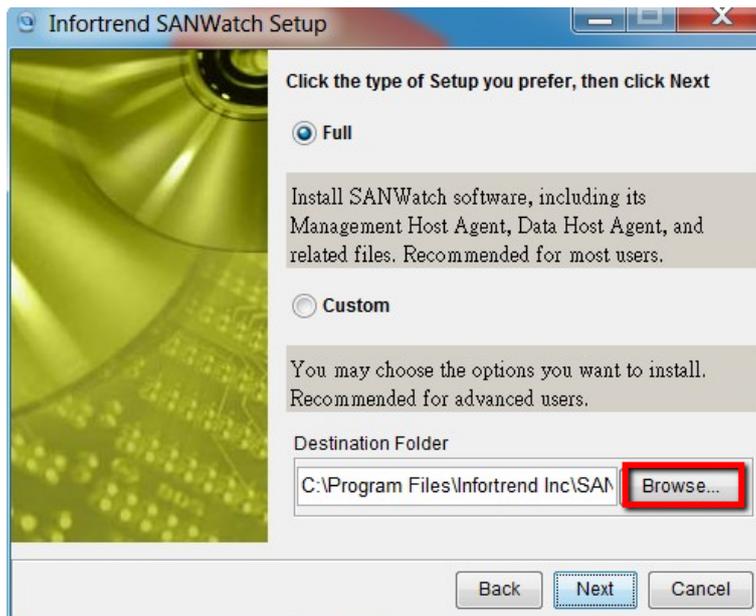
- Press “OK”.



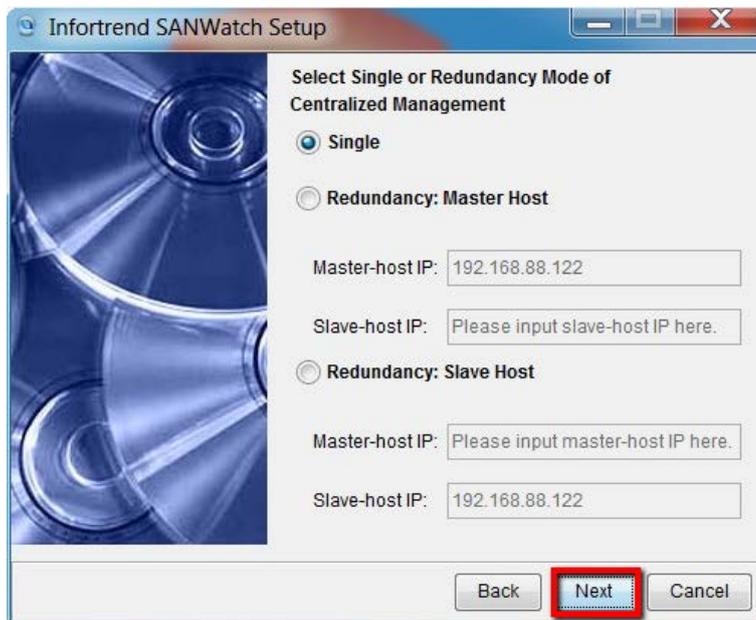
- Follow the steps to install it step by step. Click “Next” to continue.



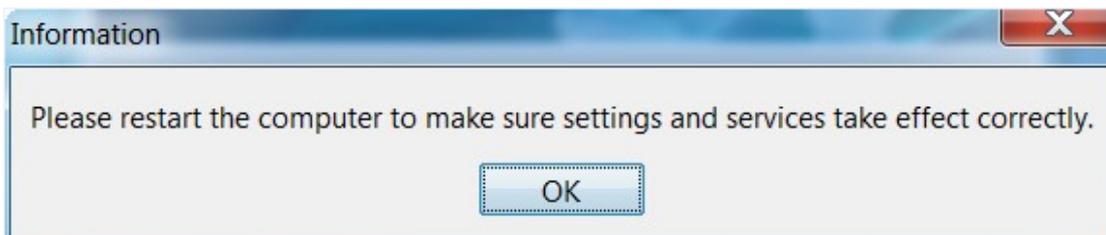
- In this step, press “Browse...” to select the path where you want to save it.



- Press “Next”.



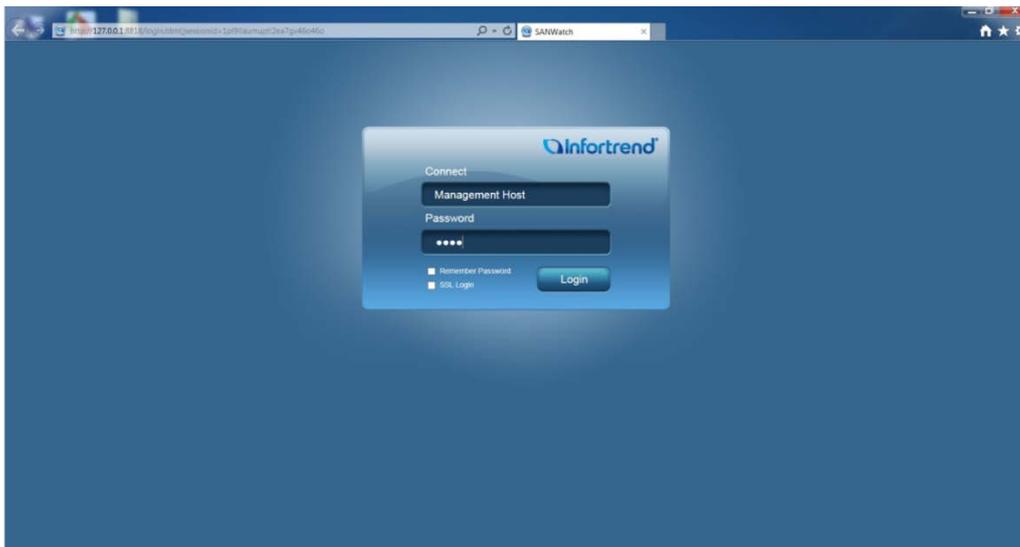
- After finished, it will show the information below. Then close all the running programs and restart your computer to take effect the settings.



- After restarting, press the “SANWatch” icon on your desktop.

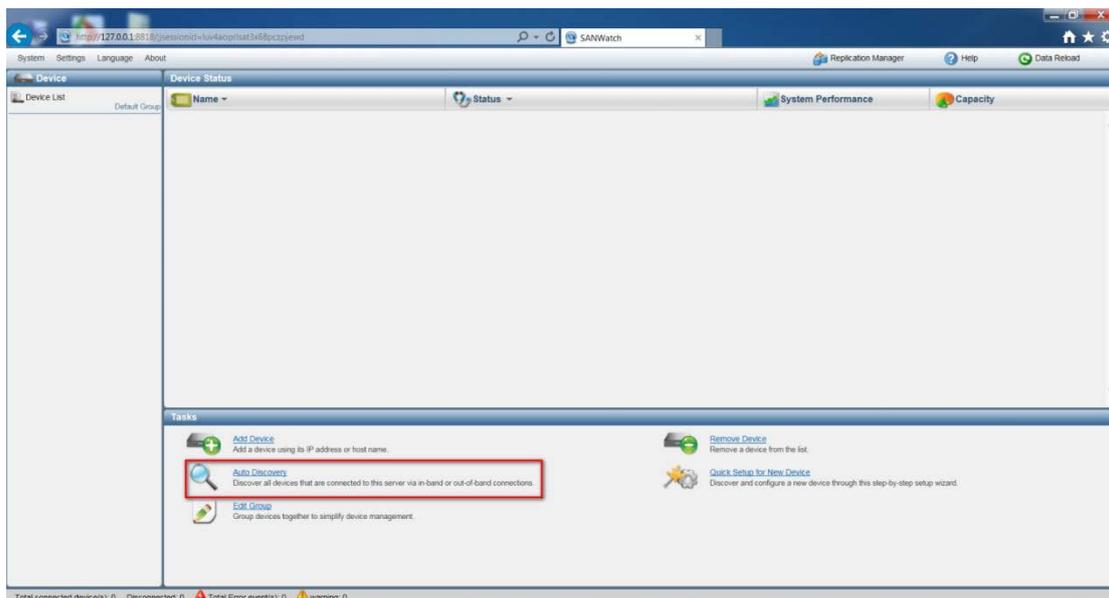


- Log in SANWatch platform. The default password is root and use the default as ID.

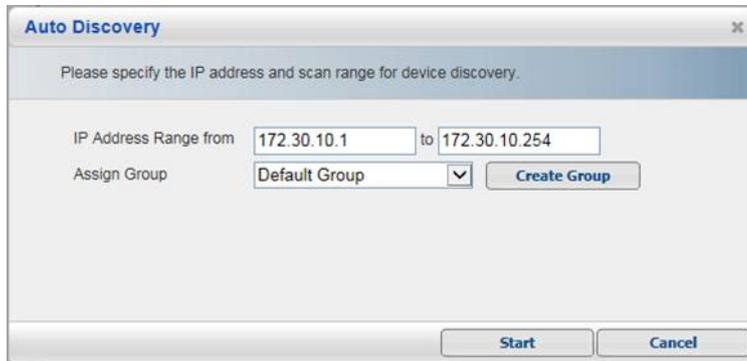


2.2 Add New Storage Devices.

- Users can go to “Tasks” > “Auto Discovery” to search your iSCSI device automatically. Or go to “Tasks” > “Add Device” add the iSCSI device(s) manually.

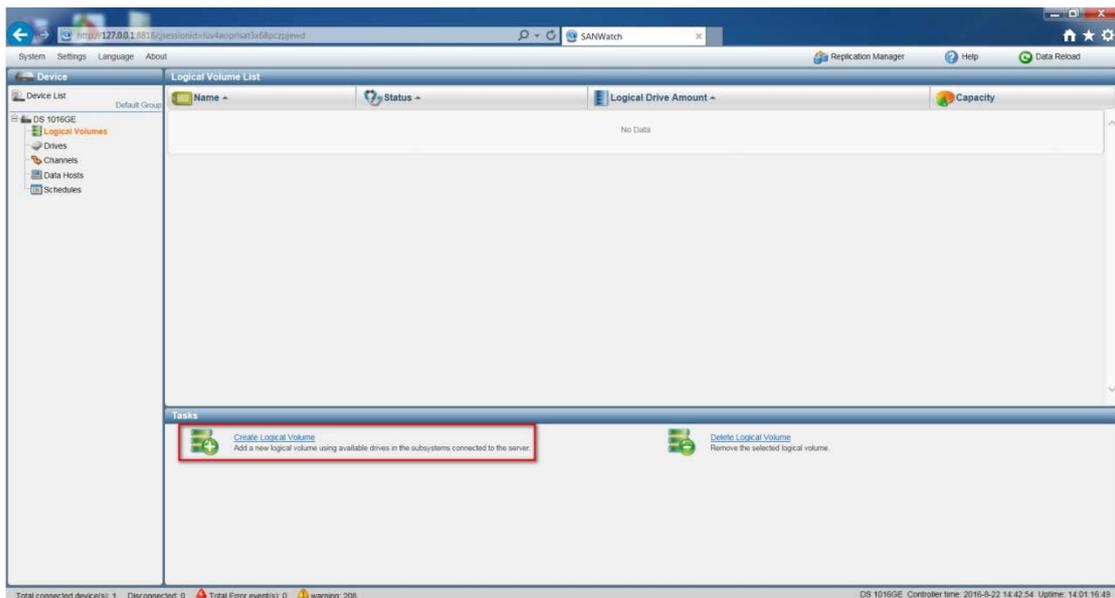


- For “Auto Discovery” selection, assign the scan range of starting IP address, and ending IP address.



2.3 Create a New Logical Volume.

- After adding on a new storage device to the device list, click the device name and click “Logical Volumes”. Then, go to “Task” > “Create Logical Volume” to create new logical volume(s).



- Select the HDD(s) from illustration below by clicking the HDD(s) or checking the slot-number. The selected HDD(s) will turn highlighted yellow. Then, in “RAID Level” drop-down list, select one RAID Level for this new logical volume. Select “Next” to proceed.

Create Logical Volume
Create a logical volume and configure its parameters.

Logical Volume Name: Logical Volume 1

RAID

Slot	Size	Type
<input checked="" type="checkbox"/> 1	931.25 GB	SATA
<input checked="" type="checkbox"/> 2	931.25 GB	SATA
<input checked="" type="checkbox"/> 3	931.25 GB	SATA
<input checked="" type="checkbox"/> 4	931.25 GB	SATA
<input type="checkbox"/> 5	931.25 GB	SATA
<input type="checkbox"/> 6	931.25 GB	SATA
<input type="checkbox"/> 7	931.25 GB	SATA
<input type="checkbox"/> 15	931.25 GB	SATA

Number of Member Drives: 4
Write Policy: Default
Stripe Size: 128K
SED Security: Disable
RAID Level: RAID6
Total Capacity: 1.81 TB

Next Cancel

- When finishing, check the summary list and press “OK”> “Close” to exit.

Summary
View the summary of Quick Setup and confirm the parameters.

Logical Volume:

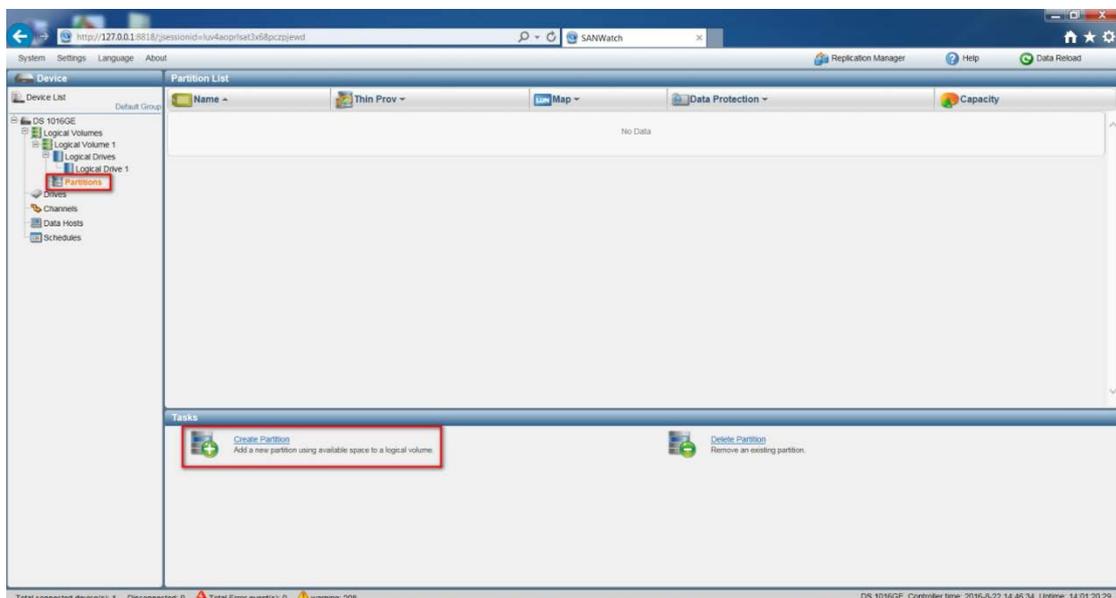
Logical Volume Name: Logical Volume 1
Data Protection Level: Better Protection
Number of Member Drives: 4
Write Policy: Default
Stripe Size: 128K
SED Security: Disable
Total Capacity: 1.81 TB
Used / Available Drives: 4 / 4

Back OK Cancel



2.4 Create New Partitions.

- In the new logical volume, select “Partitions”> “Create Partition” to create a new partition.



- Create a new partition and assign complete free size in this partition.

The screenshot shows the 'Create Partition' dialog box with the following configuration:

- Partition Name: Partition 1
- Size: 1.81 TB
- Initialize Partition After Creation
- Enable Thin-Provisioning
- Minimum Reserved Space: 0 TB 0 %
- Map Partition to Host
- Logical Volume Information: Volume Name: Logical Volume 1, Free Size: 1.81 TB

Buttons: Next, Cancel

- Press "Yes".

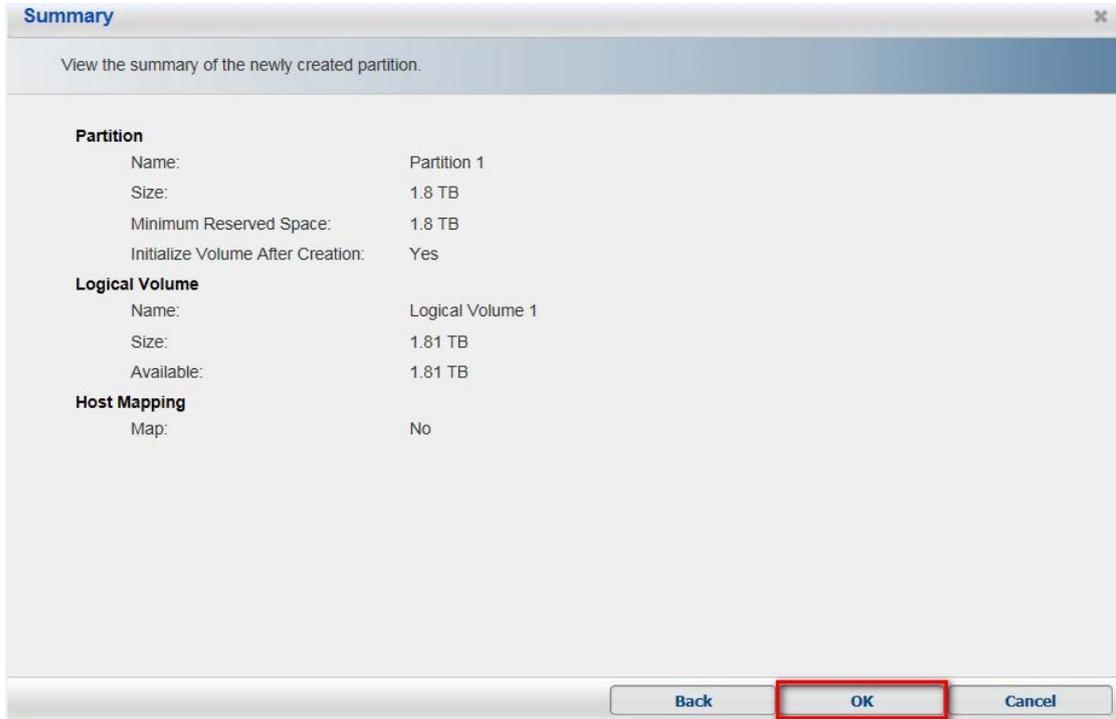
The screenshot shows a 'Warning' dialog box with the following text:

Warning

The logical volume may not contain enough space for data service afterward. Are you sure you want to create the partition?

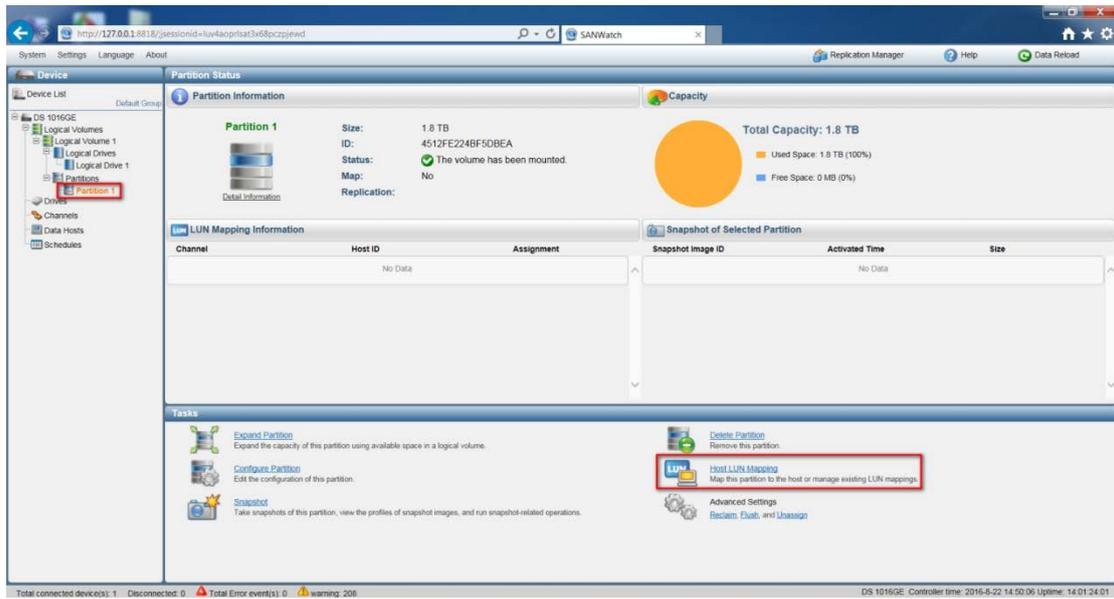
Buttons: Yes, No

- Press “OK” to finish creating the new partition. In the pop-up information, press “Close” to exit.

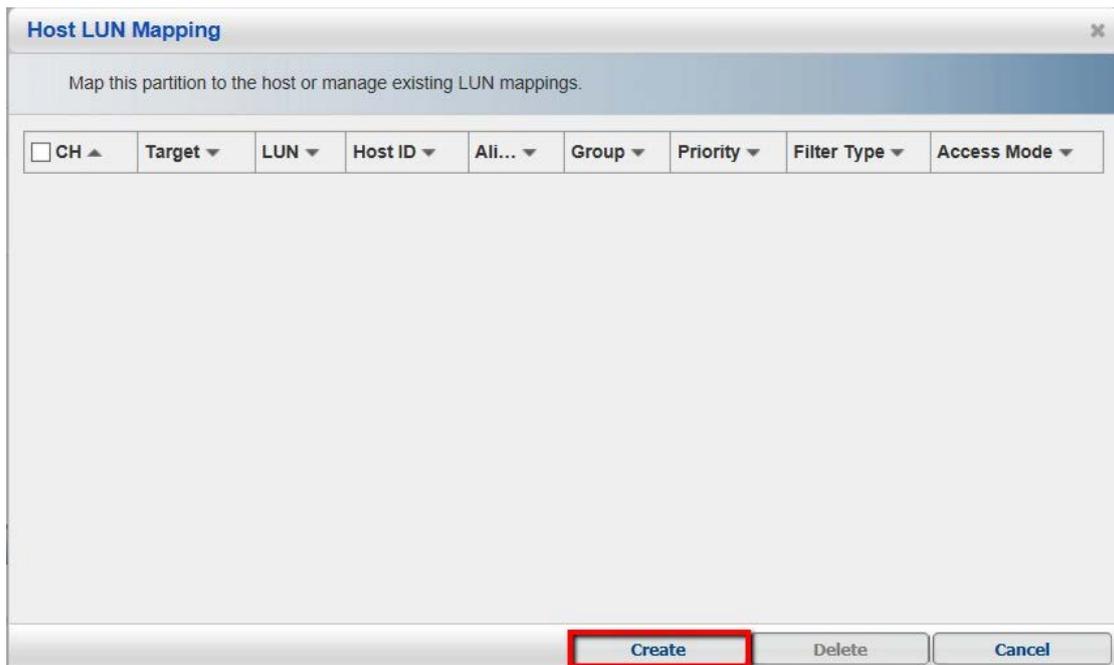


2.5 Host LUN Mapping

- Select new partition and go to “Task” > “Host LUN Mapping”.



- Press “Create” to create a new LUN Mapping.



- In configuration window, check “Customize the host LUN mapping configurations” and select “iSCSI 1.0 Gbps”. Then, select one Channel among Channel 0~3. Press “OK” and “Close” to exit.

Create Host LUN Mapping

Create LUN Mapping to host

Create a host LUN mapping set automatically.

SAS 6.0 Gbps iSCSI 1.0 Gbps

Customize the host LUN mapping configurations.

SAS 6.0 Gbps iSCSI 1.0 Gbps

Slot A

Channel 0 ID: ---- Channel 1 ID: ---- Channel 2 ID: ---- Channel 3 ID: ----

Customize the LUN Number: 0

Use Extended Host LUN Functionality:

Alias: PC

Filter Type: Include

Access Mode: Read/Write

Configure iSCSI Initiator Alias

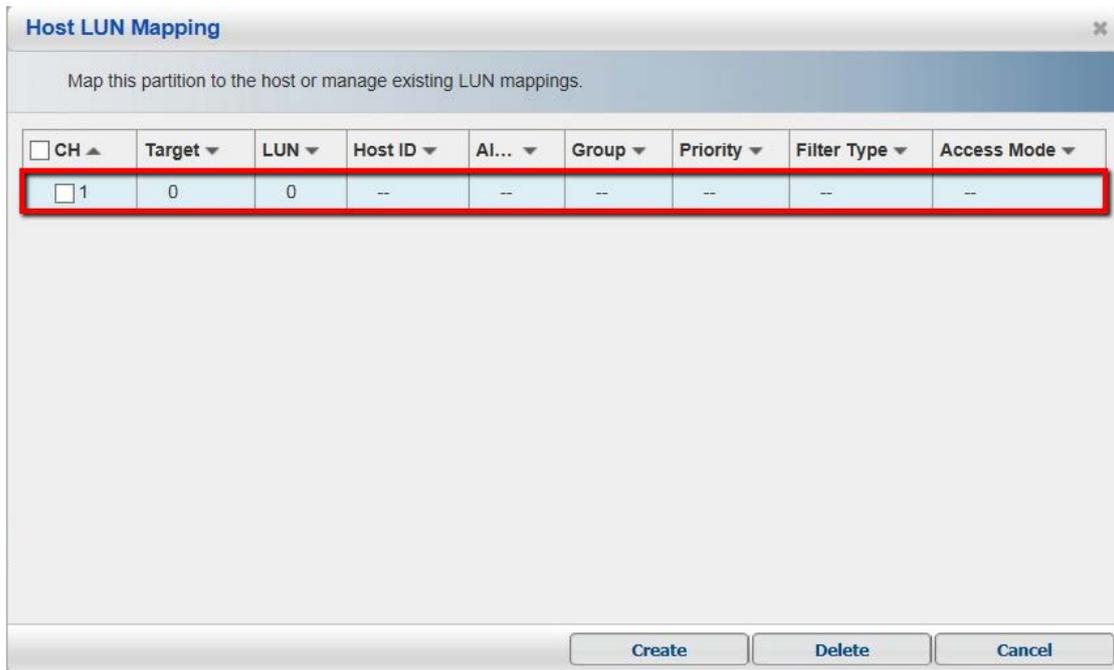
OK Cancel

Information

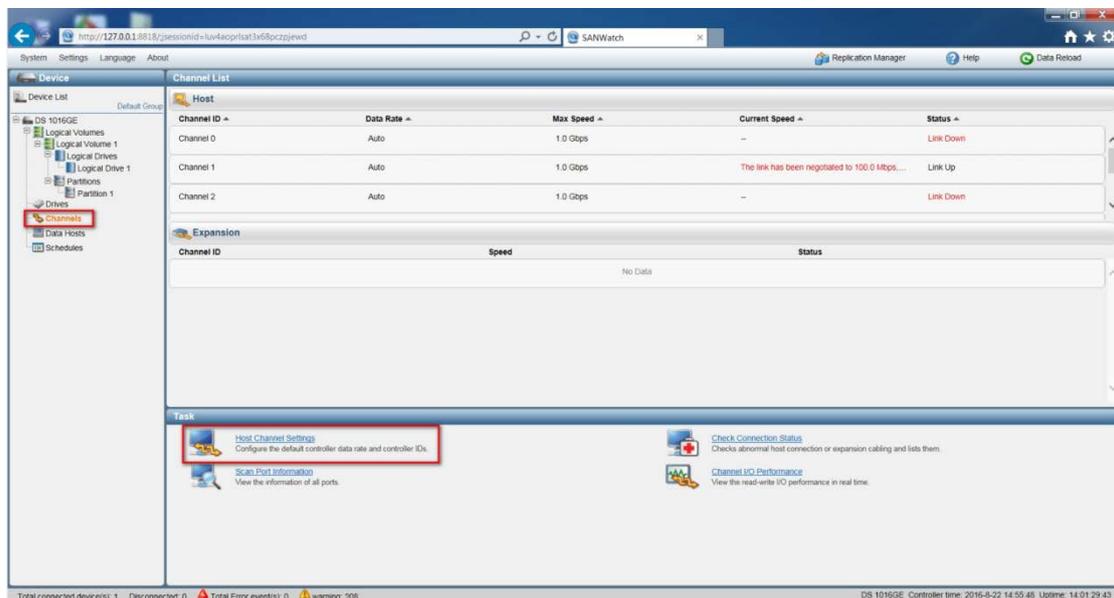
The task has been completed.

Close

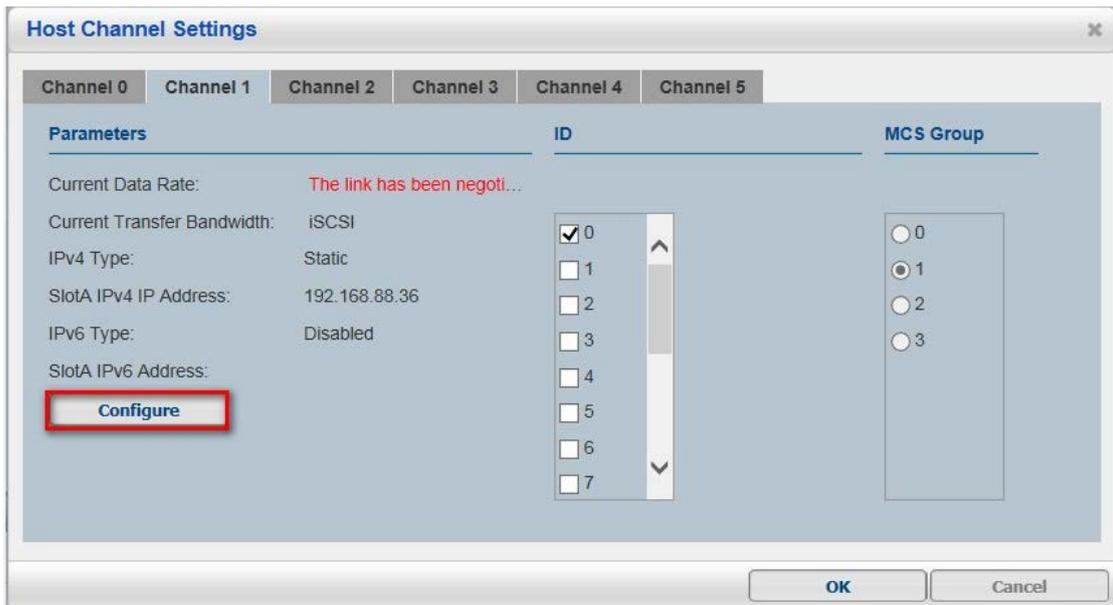
- In the table, we can see the channel number displayed and press “Cancel” to exit.



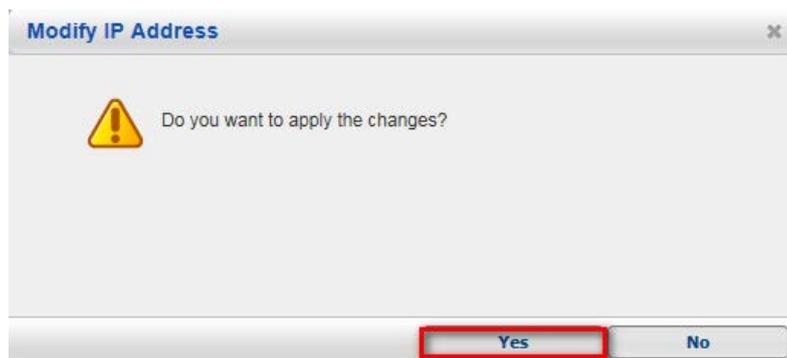
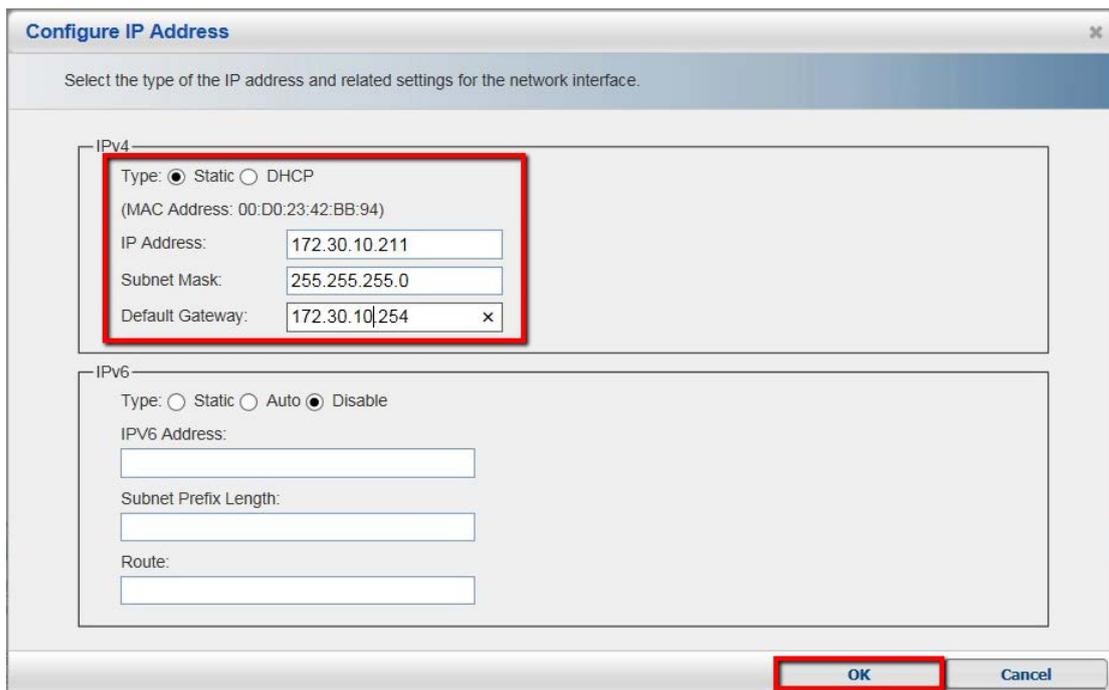
- Go to “Channels” > “Task” > “Host Channel Settings”.



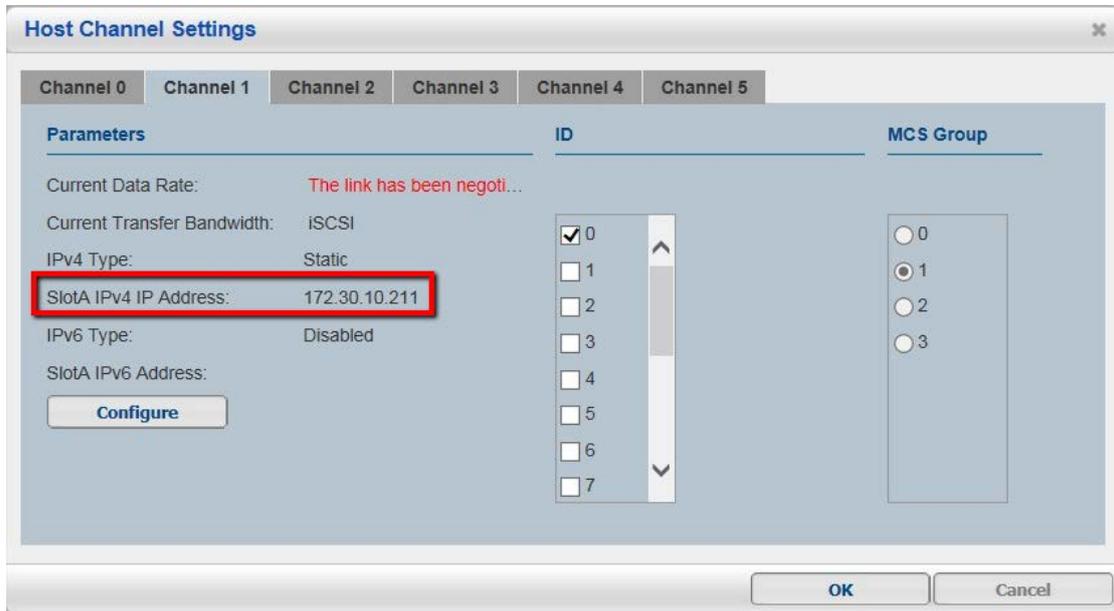
- Select the channel just created, and then press “Configure”.



- Setup the IP address, subnet mask and default gateway for this channel. Press “OK” and “Yes”.

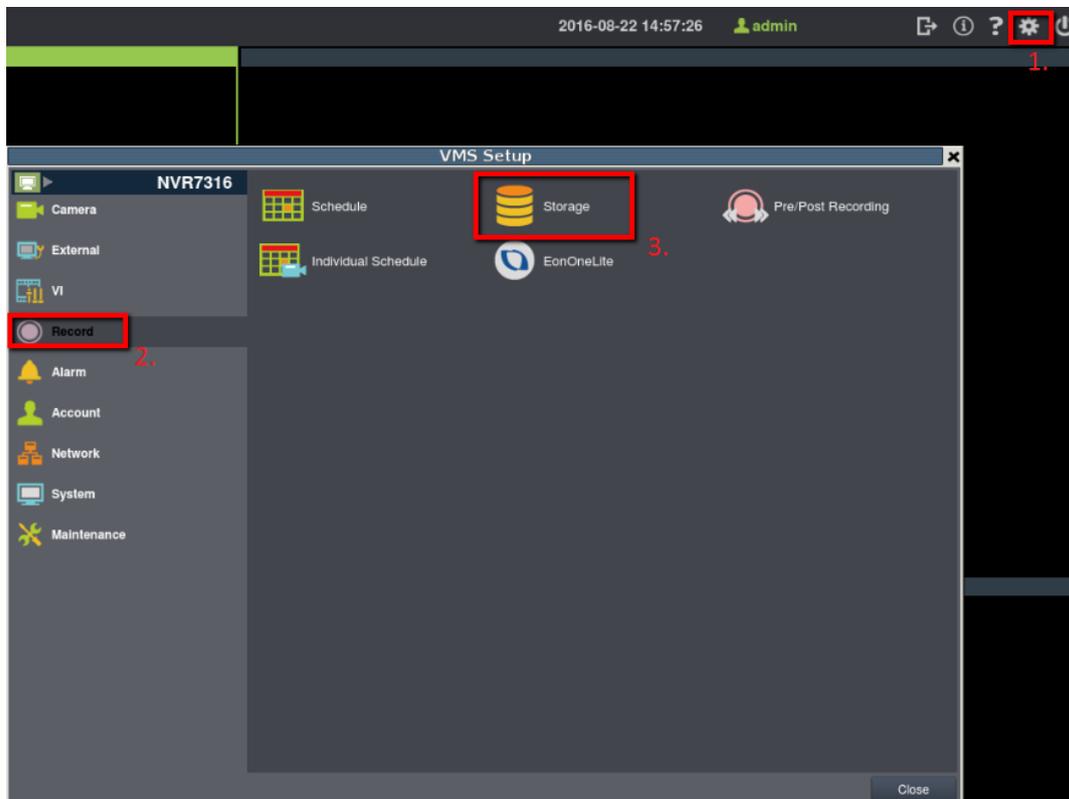


- After finishing, clicking the channel tab, you will see the IP address has been assigned to this channel.

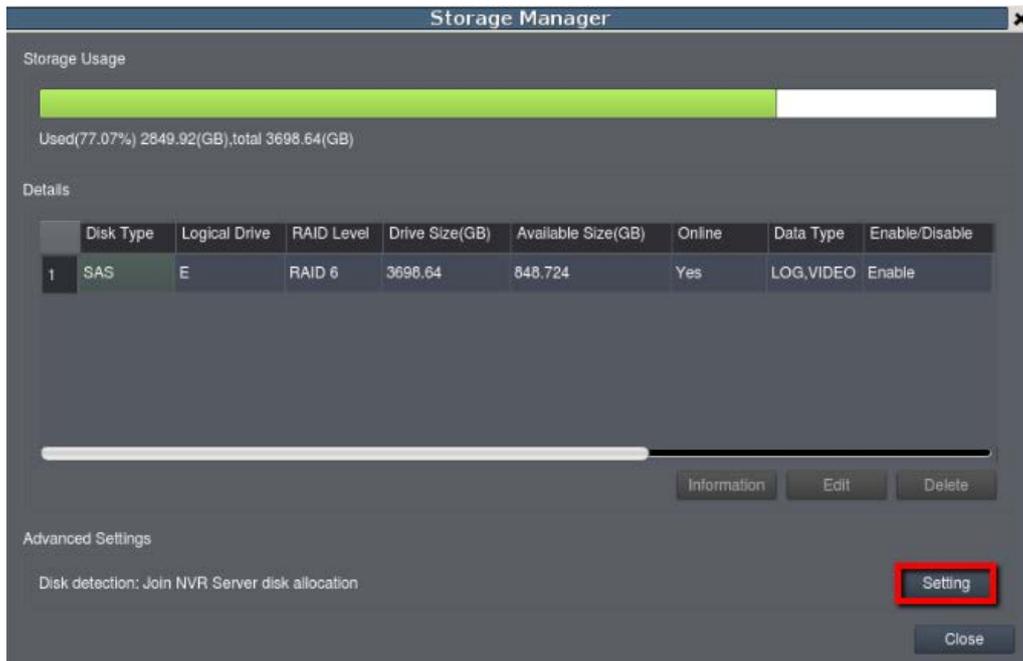


3. Add iSCSI Storage to Linux-based NVR.

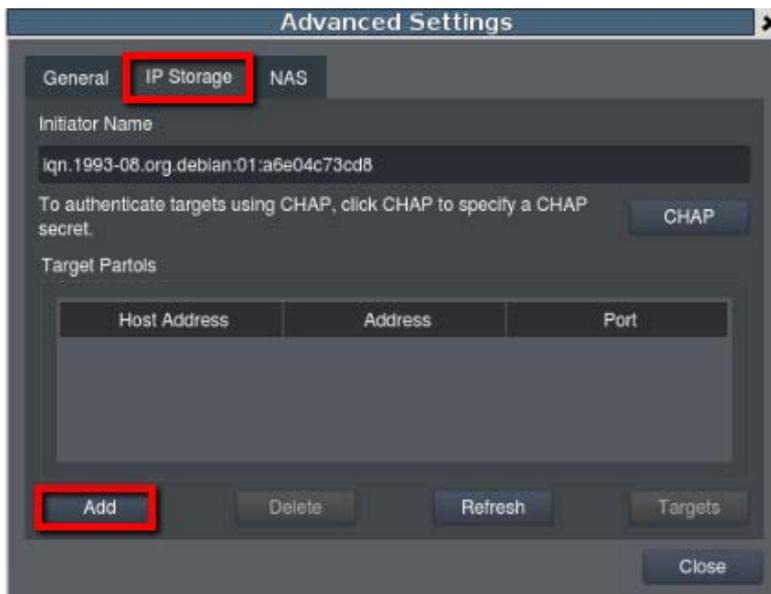
- Go to NVR local server screen, "Setup"  > "Record" > "Storage".



- Press "Setting".



- Select "IP Storage" tab>"Add".



- Enter one iSCSI IP address.

Type the Host Address to setup your iSCSI: Enter the storage LAN IP address.

- (For example, we set IP as 172.30.10.241.)

Data Address: Enter the storage Channel IP and port number.

- (For example, we set IP as 172.30.10.211.)

Add Target Portal

Type the Host Address to config your iSCSI

172.30.10.241

Data Address Port

172.30.10.211 3260

OK Cancel

- Click “Targets”.

Advanced Settings

General IP Storage NAS

Initiator Name

iqn.1993-08.org.debian:01:a6e04c73cd8

To authenticate targets using CHAP, click CHAP to specify a CHAP secret. CHAP

Target Portals

Host Address	Address	Port
172.30.10.241	172.30.10.211	3260

Add Delete Refresh Targets Close

- Click “Connect”. After connected, the status will change to “Connected”, and then press “Close” to exit.

IP Storage

Description

select Login to access the storage devices for that target.

If a target is persistent, the initiator will attempt to reconnect to it each time the NVR is rebooted.

Targets:

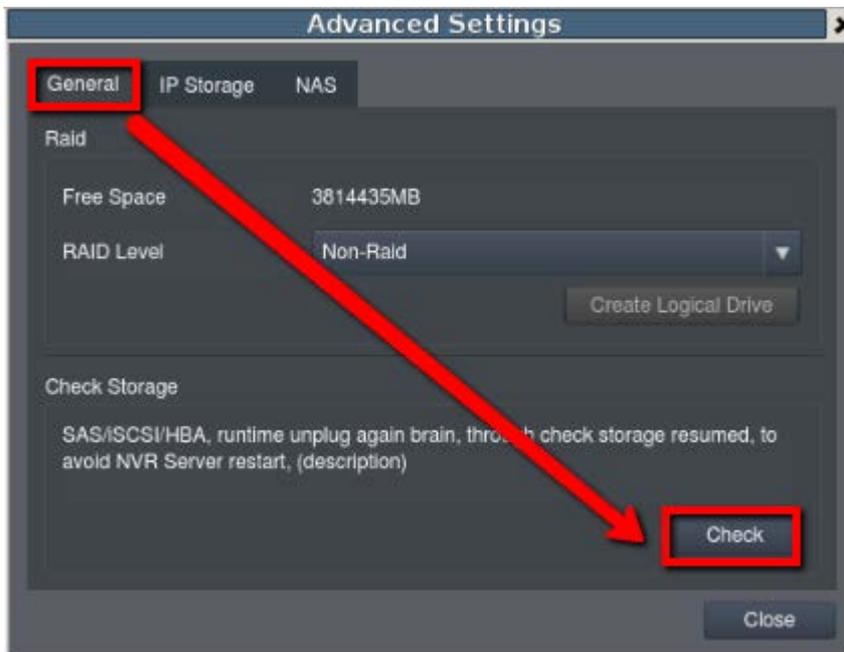
Name	Status
iqn.1993-08.org.debian:01:a6e04c73cd8	Disconnected

Connect Advanced

Close



- Select "General" tab>"Check".



- After finishing all steps, close the window. In Storage Manager, you will see from the list that iSCSI has been added to NVR system.

The screenshot shows the 'Storage Manager' window. At the top, there is a 'Storage Usage' section with a green progress bar and text indicating 'Used(54.74%) 3034.92(GB),total 5544.60(GB)'. Below this is a 'Details' section containing a table with the following data:

	Disk Type	Logical Drive	RAID Level	Drive Size(GB)	Available Size(GB)	Online	Data Type	Enable/Disable
1	SAS	E	RAID 6	3034.92	1660.96	Yes	L2D0 vBUDC	Enable
2	iSCSI	F	RAID 6	1645.95	1660.96	Yes	NO	Enable

Below the table, there are buttons for 'Information', 'Edit', and 'Delete'. At the bottom, there is an 'Advanced Settings' section with the text 'Disk detection: Join NVR Server disk allocation' and buttons for 'Setting' and 'Close'.