



How to Build an Encrypted RAID Volume on Your Thecus NAS



Thecus® RAID encryption

Thecus' AES 256bit RAID Volume Encryption feature allows users to encrypt RAID volumes on their Thecus NAS with a writable USB disk. Once a RAID volume has been encrypted, no one will be able to access their NAS to retrieve data or modify settings without the USB disk containing the encrypted key; therefore, users' precious data will be 100% secure even if someone has stolen their hard drives or the even their entire NAS server.

Applicable Models: N4200, N0503, N5500, N7700 Series, N8800 Series, 1U4600R /1U4600S

Please read below notes carefully before starting:

Notes

1. Enabling the RAID volume encryption will affect the performance of the NAS.
2. Once a RAID volume has been encrypted, RAID volume expansion will be limited to operate in offline mode.
3. The RAID Volume Encryption feature is available on firmware v3.00.04 and above.
4. Once a RAID volume has been created with encryption, the encryption cannot be removed. Deleting the RAID volume will recover the space, but all data contained in the RAID volume will be lost.

1. In the Web UI, tick the check box next to the word **Encryption** found on the **RAID Information** page.

The screenshot shows the RAID Configuration web interface. The 'RAID Information' tab is active, displaying a 'Create RAID' section. A table lists six disks with their capacities and models. Below the table, the RAID Level is set to RAID 0. The RAID ID is 'RAID0'. The Encryption checkbox is checked, and a password field is visible. The File System is set to EXT3.

| Disk No. | Capacity (MB) | Model | Status | Used | Spare |
|----------|---------------|------------------|--------|-------------------------------------|--------------------------|
| 1 | 476,940 | Hitachi HDP72... | OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2 | 476,940 | Hitachi HDP72... | OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3 | 476,940 | Hitachi HDP72... | OK | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 | N/A | N/A | N/A | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 | N/A | N/A | N/A | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 | N/A | N/A | N/A | <input type="checkbox"/> | <input type="checkbox"/> |

RAID Level: JBOD RAID 0 RAID 1 RAID 5 RAID 6 RAID 10

RAID ID: RAID0 (Allow 0~9, a~z, A~Z) Master RAID - Take effect after checked box

Encryption: Password: ***** (Allow 1~16 characters) Confirm Password: *****

Quick Raid: (Enable this setting to enhance RAID creation time if there is no partition existed inside of hard disk)

Stripe Size(KB): 64

Data Percentage: 10 %

File System: EXT3

2. A new window will appear as below. Click “OK” to confirm:



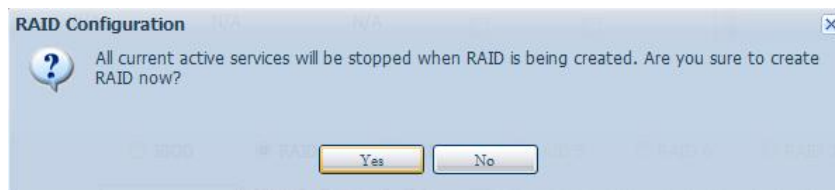
3. Type in your desired password into the **Password** field.
4. Confirm your password by entering it again into the **Confirm Password** field.
5. Connect a writable USB disk to the USB port on the Thecus NAS.
6. Click on the “**Create**” button under the RAID information page to proceed.

***The USB disk will be used to store the encrypted key.**

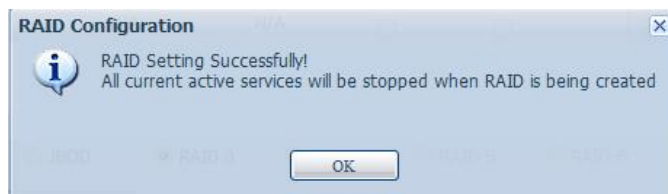
WARNING

- 1. Please keep the USB disk in a safe place and backup the encrypted key.
- 2. There is no way to rescue data if the encrypted key is lost.
- 3. You can find the encrypted key file on the USB disk in the following format: xxxxxx.key

7. A new window will appear as below, click “Yes” to proceed.



8. A new window will appear as below, click “OK” to proceed.



When completed, a padlock symbol will appear in the **RAID information** window:



The image shows the 'RAID Information' window. It has 'Create' and 'Edit' buttons. Below is a table with columns: Mas... RAID, ID, RAID Level, Status, Disks Used, Total Capacity, Data Capacity, and iSCSI Capa... The first row of data has a padlock icon in the RAID Level column, which is highlighted with a red box.

| Mas... RAID | ID | RAID Level | Status | Disks Used | Total Capacity | Data Capacity | iSCSI Capa... |
|-------------|-------|---|---------|------------|----------------|-------------------|---------------|
| * | RAID0 |  0 | Healthy | 1,2 | 927.7 GB | 0.2 GB / 116.6 GB | N/A |

When re-starting your Thecus NAS again after reboot or shut down, you will need to insert the USB key into the USB port on the NAS containing the encrypted key to access data and modify settings.

The following error message will appear if the USB key is not found.



For any questions regarding this How To Guide, please email us:

webmaster@thecus.com

--End--