



[Release Date]

June 1, 2009

[Applicable Hardware]

Thecus N5200 / 1U4500 IP Storage Server

[Software Upgrade/Downgrade Note]

1. We recommend backup the RAID data before firmware upgrade. There is potential risk of data loss when upgrade the NAS firmware and Thecus is not responsible for any data loss and recovery.
2. After firmware v2.01.09 installed, the new software doesn't allow users to downgrade to any firmware version below v2.01.09.
3. System Configuration Download/Upload does not support different software version.
Reminder : After upgrade to latest firmware, download configuration and save separately.
4. Stackable and iSCSI functions are available on N5200BPRO / N5200BRPRO / 1U4500 models. Standard N5200B / N5200BR won't have them.
5. **For the NAS with the following WD or Samsung HDD, DO NOT APPLY this firmware 2.01.09. There have been some cases reporting this firmware may cause below HDD degraded or even RAID N/A.**
 - WD5001ABYS-01YNA
 - WD10EACS
 - WD RE2-GP WD1000FYPS
 - Samsung HD103UJ 1AA0
 - Samsun HD753LJ
 - SAMSUNG HD501LJ

[New Features/Changes]

- 1) Added support for On-Line RAID Migration and On-Line RAID Expansion.

Note: Thecus strongly recommends NAS admin to backup the RAID data before doing the On-Line RAID Migration and Expansion. There is potential risk of permanent data loss when doing Migration/Expansion with disk drives having physical problems, and Thecus is not responsible for any data loss and recovery expense.

- 2) Changed the SMART info of Disk Status in admin Web UI.

- Reallocated Sector Count: less than 32 show OK
- Current Pending Sector: 0 shows OK
- Raw Read Error Rate: no need to check, so hide it
- Seek Error Rate: no need to check, so hide it



- Hardware ECC Recovered: no need to check, so hide it

- 3) Added XFS support while creating RAID volume.**
- 4) Changed FTP folder list thus FTP user could only see the folders with permissions.**
- 5) Added code page CP1251 and KOI8-R support in FTP.**
- 6) Added Gmail TLS support for Email Notification.**
- 7) Removed the firmware version from login page of Web UI.**
Special thanks to Falk John falk.john@fajo.de
- 8) Added Russia language in admin web interface.**
- 9) Upgraded Samba version to 3.0.34 for Windows Vista clients with MS Hotfix KB955302 installed.**
- 10) Added Secure FTP support.**
- 11) Added two selectable modes for Nsync: Incremental and Synchronize.**
- 12) Added two HDD test functions: SMART values checking and bad block scanning.**
- 13) Added Bonjour service support (Zero-configuration networking by Apple).**
- 14) Added support for iSCSI Expansion. (For N7700/N8800, N5200PRO and 1U4500 only)**

Note.

1. The maximum iSCSI volume would be 16TB, and the minimum expansion size is 1GB.
2. iSCSI service will be stopped till the expansion completes.
3. iSCSI expansion just handles the volume size. The partition(s) inside the volume won't be adjusted.
4. iSCSI expansion just support local RAID, does not support add-on RAID by iSCSI stackable.

- 15) Added Samba Native/Compatible mode in Advanced option (Local Master).**

[Bug Fixes]

- 1) Fixed the RAID Migration issue while using Seagate 1.5 TB HDD. (For N5200PRO and 1U4500 only; N5200 standard version doesn't support HDD bigger than 1TB)**
- 2) Fixed the issue that on cold booting, NAS could not detect Hitachi E7K1000 and 7K1000.B drives.**
- 3) Fixed the issue that iSCSI volume could not be sliced over 2TB.**
- 4) Fixed the bandwidth control of FTP.**
- 5) Fixed the HDD detection issue when below HDD hot plugged in.**
- Seagate 750G, 1TB, and 1.5TB

- Note: 1. N5200 doesn't support 1.5TB; just N5200PRO and 1U4500 support it.
2. Please contact Seagate support to confirm the HDD firmware fits Linux



software RAID or not.

- Samsung 750G and 1TB

- 6) Modified the time zone from GMT+2 to GMT+1 for Amsterdam, Berlin, Rome, Stockholm, and Vienna.
- 7) Fixed Link Aggregation / 802.3ad compatibility issue with Netgear GS724T switch.

[Limitations]

- 1. For N5200BPRO and 1U4500, some users said Seagate had new firmware for 1.5 TB drives. So Thecus recommends contacting Seagate if you plan to use Seagate 1.5 TB drives. Also, please back up RAID data regularly, no matter the HDD is in Thecus compatibility list or not.

Users' feedback:

Seagate P/N: 9JU138-300, 9JU138-336 with SD15, SD16, and SD17 ==> SD1A or newer

Seagate P/N: 9JU138-301 with CC1G ==> CC1H or newer

- 2. N5200/N5200PRO/1U4500 doesn't support hard disk drives that won't spin up before "start unit" command receives; such as Seagate Barracuda 7200.9 series.
- 3. Target USB function : once RAID created and Target USB capacity determined, you have to AC off and then on to make it works. In addition, the maximum capacity of Target USB is limited at 2TB.
- 4. Reset button : you could use reset button to load the factory default in firmware v1.00.03 or later version.
 - a. When the N5200/N5200PRO/1U4500 successfully boots up, press the reset button for 10 seconds. And then the NAS will automatically reboot itself.
 - b. This resets the N5200/N5200PRO/1U4500 to its factory default.
 - WAN IP: 192.168.1.100
 - LAN IP: 192.168.2.254 (It will be 192.168.2.100 in firmware v1.00.03)
 - HTTP port: 80
 - HTTPS port: 443
 - Admin password: admin
 - User accounts and groups will be erased, but RAID data won't be affected.
- 5. iSCSI Target (for N5200B/BR PRO and 1U4500S/R only) : up to 5 iSCSI target volumes are supported for each RAID.
 - a. For NAS admin without cluster based OS/applications to manage multiple initiators connected to the same iSCSI volume, we highly recommend every iSCSI volume is connected by single iSCSI imitator. However, in case NAS admin has cluster based OS/applications, up to 8 initiators is possible.
 - b. Uncontrolled concurrent access to the same iSCSI target volume may result data corruption or un-predicable results.
 - c. iSCSI target may be disconnected from initiator if other RAID settings on the



N5200 / N5200PRO / 1U4500 FW v2.01.09 Release Note

same target NAS being altered.

- d. Verified iSCSI initiators:
 - Windows: Microsoft initiator v2.0.4
 - StarPort initiator 3.5.2
 - MAC OS: globalSAN iSCSI initiator version 3.0 (1150)
 - Linux: open-iscsi 2.0-865
- e. There may exist **2TB volume capacity limitation** on some initiators running 32bit OS.
6. Stackable function (for N5200B/BR PRO and 1U4500S/R only) : Support of stackable function across Thecus N5200/1U4500 series NASes.
 - a. **The concurrent connection on target iSCSI volume of Thecus NAS will be limited to 1 if the initiator comes from other Thecus NASes.**
 - b. The internal file system format of stackable target is ReiserFS
7. Active Directory Support behavior in ACL configuration page had been changed since firmware v2.00.08. Before AD Sync is pressed, search criteria has to be a fully match string to user account. After AD Sync is pressed, search criteria can be only beginning part of the user account. Only 1000 search results will be displayed.
8. Once the RAID created, there will be about 5% data used by EXT3 file system. The capacity stores the journal and inodes; which are necessary to keep RAID data safer.
9. RAID Expansion: When changing the RAID 5 configuration from five smaller disks to five bigger disks, you have to change one disk at a time and then rebuild the RAID. Lastly, click on "Expand" button to resize the total capacity. Otherwise, you may see additional capacity was added into the snapshot partition.
10. Since firmware v2.00.01, the option "Add new disk as spare disk" has been removed.
11. Supports the following USB wireless dongles only. And it has to be installed before NAS booting up, no PnP.
 - [ZyDAS ZD1211]
 - a. 3Com 3CRUSB10075 (Manufacture ID: 6891, Device ID: A727)
 - b. Zyxel G220USB (Manufacture ID: 0586, Device ID: 3401)
 - c. PCI GW-US54mini (Manufacture ID: 14EA, Device ID: AB13)
 - [ZyDAS ZD1211B]
 - d. Zyxel ZyAIR G-220 V2 (Manufacture ID: 0586, Device ID: 340F)
12. Some attributes may not be included with files and folders when copying to a USB drive with FAT32 format.
13. If a USB hard drive is connected to NAS formatted as FAT16/32, the following restrictions apply:
 - Copy file with size greater than or equal to 2 GB to the NAS can not be performed due to FAT file system limitation.
 - Files created by Mac OS X like DS_Store can not be copied to the FAT16/32 USB drive.



14. NFS share is limited to public folders. In case you enable an NFS share on non-public (ACL) folder, the NFS client could successfully mount it but won't be able to read/write files.
15. HTTP and HTTPS ports should follow the rules given below.
 - Larger than 1024
 - Could not use 3169
 - Port 80 (HTTP) and 443 (HTTPS) are allowed
16. If AC power lost during RAID building, admin has to manually resume it through Web GUI.
 - a. You will see "Total Capacity: N/A" after building process completed.
 - b. Manually remove RAID.
 - c. Create RAID again.
17. RAID rebuild : in case one HDD failed in RAID 1, 5, 6, and 10 configurations, please hot unplug failed one and hot plug in new one; then RAID rebuilding will automatically start. If the replacement is done after NAS rebooting or shutdown, administrator has to manually add spare in Admin Web GUI to start the RAID rebuilding.
18. When adding an HDD into JBOD RAID, all services such as WebDisk, SMB/CIFS, and FTP will be temporarily disabled. Once the JBOD resizing completes, all services will be turned on according to original settings.
19. To enable ADS support for Small Business Server 2003, we recommend do not install ISA server. Otherwise, N5200/N5200PRO/1U4500 may fail to join the AD.
20. Mac OS Limitations
 - a. When using Mac OS X (post 10.2 with AppleTalk) without SMB, do not use Japanese characters in folder or file names to prevent errors accessing the data over a network.
 - b. Mac OS 9 and Mac OS X can not see files on the network with names made up of over 32 characters.
 - c. Mac OS 8.x/9.x only support local character encoding on file names (without Unicode support).
 - d. Occasionally, when a file is accessed by a Mac OS computer within a shared folder, an information file will be created in the same folder. If the file is then deleted by a Windows OS computer, the original file may no longer be accessible by Mac OS computers.
 - e. The following characters are not allowed to be included in the name used for a file or shared folder when using Mac OS (AppleTalk) devices.
? [] / \ = + < > ; : " , | *
 - f. Writing a file larger than 2 GB is not allowed by MAC OS-9.
21. NAS needs about 3~5 minutes to broadcast/register itself to other Mac OS through AppleTalk after booting up and service enabled.
22. For Mac users, NAS user accounts created in old firmware may fail to log in before



admin re-entering the user's password. SMB/CIFS users don't have this issue.

23. WebDisk : Only UTF-8 file name is supported.
24. File size has to be less than 1GB to be uploaded to the N5200/N5200PRO/1U4500 from web browsers. FTP software has no such limitation.
25. File names and folder names should not contain more than 250 characters in their entire directory path to prevent errors occur in the file copy operations.
26. The following characters are not allowed to be included in the name used for files or folders on the N5200.
/ \ : * ? " < > | [] = + ; ,
27. When copying a file that uses superscript in its file name (common with some international character sets), the date and time attributes may not be properly set on the N5200/N5200PRO/1U4500 for that particular file.
28. File and directory attributes can not be modified by an FTP client when the N5200/N5200PRO/1U4500 FTP server is enabled.
29. Anonymous FTP user could upload files into public folders but could not delete them.
30. File system check page is in English, no multilingual.
31. Disk Power Management : some HDD may not respond to "idle spin down" command, and they won't get into stand by mode even if the specified idle time had been reached.
32. Stackable function (for N5200B/BR PRO and 1U4500S/R only): To avoid the RAID name confliction while combined different RAID sets in one NAS by using disk roaming, the target NAS should modify the RAID name first before inserting the roaming RAID set.
33. Beep Notification : beep notification will be turned on automatically when upgrade to or re-install firmware v2.00.04. This is to remind NAS administrator in case any critical event happens; such as RAID degraded.
34. UPnP function only works on WAN interface.
35. The create date is the same with modify date for every file copied into the NAS.
36. N5200/N5200PRO/1U4500 supports Setup Wizard v1.1.6 or later.
37. Single file size upper limitation: 2TB
38. The file downloaded from N5200/N5200PRO/1U4500 via Microsoft IE might include extension index number in its file name.
39. Windows 95/98 clients can not display files with double-byte file name correctly.
40. Because of Windows 95/98 compatibility issues, share folder name may have a problem when it is longer than 12 characters.

[Known Problems]

1. The HDD LED should blink green to indicate the HDD read/write activity. Please apply "ledpatch_1.00.00.2a.bin" in case you see it's red. The patch file is available here: http://www.thecus.com/Downloads/ledpatch_1.00.00.2a.bin.

1) Load the patch just like upgrading a firmware. [Admin Web GUI: System /



N5200 / N5200PRO / 1U4500 FW v2.01.09 Release Note

Firmware Upgrade / Browse / ledpatch_1.00.00.2a.bin / Apply]

2) It requires rebooting to take effect.

In addition, during the NAS booting, the first 50 seconds, HDD LED may partially glow red or orange. It's a normal behavior and no worries about that please! Once the booting completes, the LED will blink green when reading/writing HDD.

2. On system log page, you will see the following messages whenever the NAS boots up. It doesn't really mean there had been a disk problem. Actually, it means "the NAS successfully boots up and RAID configuration is checked OK".

```
2006/09/17 15:49:52 N5200/N5200PRO : mdadm: /dev/md0 has been started with 5 drives.
```

```
2006/09/17 15:49:58 N5200/N5200PRO : Healthy: The system N5200/N5200PRO is recovered from the disk problem.
```

3. Disk Power Management is not ready in firmware v1.00.03 and earlier versions. It has been implemented since v1.00.04.

4. Could not completely delete share folders if SMB/CIFS users are using the share files.

5. Web GUI : Can not login Web UI when the NetBIOS name is with an underscore.

6. Failed to edit or delete a folder that its folder name contains a superscript "".

7. MAC OS 9 Apple network browser sometimes freezes for 5~10 minutes after selecting N5200; however, using afp://IP always works fine on both MAC OS-9/X

8. FTP client can list up to 2000 files in a single folder.

9. Using samba protocol in MAC OS will not accept file names with blank characters in tail.

10. Cannot handle DHCP IP assignment with more than one default gateways.

11. Nsync source cannot detect the shutdown or connection lost of target peer.

12. Stackable error handling while target iSCSI volume removed or changed during initiator file transfer in progress.

13. AD users cannot access file via AFP on MAC OS.

14. IE7 will show certification error alert while user access WEB admin UI.

[Attention]

1. During firmware upgrade process, it is imperative that user DO NOT turn off the power to N5200/N5200PRO/1U4500 or closes the browser window. This will lead to catastrophic result. If your browser is set to cache the screen, after firmware upgrade has started for 5 minutes, please press CTRL-F5 to reload browser screen from server instead of from browser cache.

2. When installing the Windows Wizard program of N5200/N5200PRO/1U4500 on WinXP Professional SP1 or SP2, the firewall UDP ports 10000 and 10001 need to be opened.

3. Reset to factory default function automatically resets all the system settings including network settings, administrator password, user groups, language setting, system notification setting, and time zone setting.

4. Hardware reset button triggers the N5200/N5200PRO/1U4500 to reset its network settings and administrator password.



N5200 / N5200PRO / 1U4500 FW v2.01.09 Release Note

5. Users should obey the international RF regulatory rules as they set up the wireless RF channel on the N5200. The RF operating channels for different regions have been specified as following. Thecus has no responsibility for users attempting to violate the international RF regulation.

11 for N. America

14 Japan

13 Europe (ETSI)

2 Spain

4 France