N4200 FW v3.02.01 Release Note

[Release Date]

Apr 13, 2010

[Applicable Hardware]

Thecus N4200 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 v3.02.01 installed, the new software doesn't allow users to downgrade to any firmware version below v3.02.01.
3. System Configuration Download/Upload does not support different software version.
   Reminder : After upgrade to latest firmware, download configuration and save separately.
4. N4200 FW 3.02.01 needs OLED firmware V008 or newer to provide better OLED messages. NAS admin will see “wrong PIC version” on the OLED display after upgrade the NAS firmware to FW 3.02.01. It is just a reminder and won’t affect all NAS services and functions. In case NAS admin plans to keep the OLED firmware (PIC) up to date, please refer to the document at Thecus website.
   http://www.thecus.com/Downloads/FW/N4200/N4200_OLED_FWUPG.pdf
   http://www.thecus.com/Downloads/FW/N4200/N4200_OLED_FW_V008.bin

[New Features/Changes]

1) Upgrade Netatalk to 2.0.5 for MAC AFP protocol.

2) Added MAC Time Machine support.

3) Link Aggregation supports the following modes.

- mode=0 balance-round-robin (the switch must TRUNK these two ports)
- mode=1 active-backup
- mode=2 balance-xor
- mode=4 802.3ad
- mode=5 balance-tlb
- mode=6 balance-alb

4) Added NTLM V2 support in ADS mode.

5) Upgraded Intel GbE NIC driver to e1000e 1.1.2 for better performance.

6) Limited stripe size to minimum 32KB while creating RAID.

7) Changed the login page to a stylish Flash. In case the browser does not support Flash, the login page will show current style.

8) Added shortcut icon when admin logged on.

9) Added an option to set "Local Master" on/off.
10) Enabled "tcp selective acknowledgements" to tune up the performance.

[Bug Fixes]

1) Fixed the iSCSI target disconnecting issue while adding or making changes to existing iSCSI target.
2) Fixed the issue that snapshot backup is not readable while admin password changed.
3) Fixed the issue that Dual DOM wrongfully repair itself after file system check done and rebooted.
4) Fixed HDD spin down issue.
5) Fixed the issue that workgroup name cannot be changed while not joining AD.
6) Upgraded Samba to version 3.4.3 to fix multiple vulnerabilities.
   Special thanks to Falk John
   Also, Windows 7 will be able to login share folder by AD account.
7) Fixed the vulnerability issue reported by Falk John.
   (Authentication bypass in /adm/login.php)
8) Fixed the issue that Nsync could not backup data to legacy FTP server.
9) Fixed the issue that "size on disk" is too big compared with "size" in Windows File Manager.
10) Fixed the issue that WebDisk cannot login while HTTPS port changed.
11) Fixed the WebDisk login delay while DNS was not setup correctly.
12) Fixed the AFP character set issue that the applied change won't take effect before rebooting the NAS.
13) Fixed the iTunes service locked up issue when libid3tag processing the id3 tag of special MP3 files.
14) Fixed the snapshot issue that oldest copy would not be replaced by new copy.

[Limitations]

1. There is an 8 TB limitation for EXT3 file system. It means, if more than four 2 TB HDD installed in Thecus NAS, you may have to create two EXT3 RAID volumes. And both are smaller than 8 TB in capacity. Note: XFS is without the 8 TB limitation.
2. 1U4600/N0503/N4200/N5500/N7700 series/N8800 series support up to three RAID volumes. For ZFS RAID volume, just one is allowed. In addition, Snapshot function is only available in ZFS RAID.
3. 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 in Thecus NAS. 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

4. RAID volume encryption : AES 256 bits
   a. NAS admin has to insert an USB flash disk to save encryption key file on it.
   b. To encrypt an existing RAID is not possible. Please do it while creating a new RAID.
   c. NAS performance will drop significantly while using encrypted RAID.
   d. The USB flash disk (key file) should exist whenever the NAS reboots/boots up and doing RAID configuring.
   e. Encrypted RAID doesn't support on-line Expansion, just off-line Expansion is doable.
   f. Encrypted RAID doesn't support file system check.
   g. If the USB flash disk (key file) lost or key file modified, the RAID data will be INACCESSIBLE FOREVER and no way to recover it.
5. 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.
6. 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 shutdown, administrator has to manually add spare in Admin Web GUI to start the RAID rebuilding.
7. 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, utilize the newly added capacity from Space Allocation page.
8. ZFS limitations :
   a. Share folders on ZFS RAID are only allowed to be access by Samba.
   b. ZFS does not support NFS
      . When share folders created on ZFS RAID, NFS button in admin Web UI will be grayed out. [Storage > Folder]
      . NFS clients could not showmount the share folders created on ZFS RAID.
   c. ZFS does not support AFP
      . Mac computers could not find the share folders created on ZFS RAID even if the AFP service had been enabled from the NAS. In case the NAS just has ZFS RAID, Mac computers will fail to connect to the NAS.
   d. ZFS does not support FTP
      . When FTP user login into the NAS, all folders created on ZFS RAID are invisible and inaccessible.
   e. ZFS does not support ACL folder when doing Nsync in FTP mode
      . When doing Nsync in "Legacy FTP Server" mode, the Nsync folder on Target NAS is inaccessible, so the Nsync task always fails.
   f. ZFS does not need file system check

9. XFS limitations :
    a. XFS file system does not support folder quota.
10. iSCSI Target : the maximum numbers of iSCSI target volumes depend on the physical memory size and also the CPU power of each Thecus NAS. So the following limit applies since FW 3.01.01. No matter one RAID or multiple RAID volumes exist in a NAS, the maximum limit will be the same.

Max. No of iSCSI Targets	Model Name
2	N4100PRO
5	N5200PRO, 1U4500, N0503, N4200
10	N5500, 1U4600
15	N7700, N7700Plus N8800, N8800Plus
25	N7700PRO, N7700SAS N8800PRO, N8800SAS

    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 initiator. 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 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 is a system advanced option to choose 4K or 512 bytes block size for iSCSI volume, and the default is 4K bytes. 512 bytes block size may encounter 2TB volume capacity limitation on some initiators running 32bit OS. Nevertheless, 4K block size could slice the iSCSI volume over 2TB, but, there might be compatibility issue. For VMware, we recommend using 512 bytes block size.
11. iSCSI Expansion : there are some limitations applied.
    a. The maximum iSCSI volume would be 16TB, and the minimum expansion size is 1GB.
    b. iSCSI service will be stopped till the expansion completes.
    c. iSCSI expansion just handles the volume size. The partition(s) inside the volume won't be adjusted.

d. iSCSI expansion just support local RAID, does not support add-on RAID by iSCSI stackable.

12. Stackable function : Support of stackable function across Thecus 1U4500/N0503/N4200 /N5500/N7700 series/N8800 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, and the maximum capacity is 16 TB.
13. iSCSI Thin-Provisioning
    a. The Thin-Provision capacity has to be determined first.
    b. Up to five iSCSI Thin-Provision target can be created on the Thin-Provision capacity.
    c. The total virtual size of iSCSI Thin-Provision targets could not exceed 16 TB in a RAID.
    d. The virtual size should be larger than the real capacity and less than 16 TB.
    e. When determine the virtual size, the minimum increase is 100GB.
    f. When the total used capacity reaches 90% of real Thin-Provision capacity, NAS will send E-mail notifications out every 10 minutes until the capacity expanded. Also, system log will show capacity warning in admin web interface. The host server won't receive any notification before the iSCSI Thin-Provision target full.
14. iSCSI LUN ID in admin web interface
    a. The iSCSI LUN ID is between 0 and 254.
    b. Duplicate ID is not allowed excepting ID 0.
    c. Mac computer just recognized the first iSCSI volume.
15. Active Directory Support behavior : 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.
16. To enable ADS support for Small Business Server 2003, we recommend do not install ISA server. Otherwise, Thecus NAS may fail to join the AD.
17. Target USB function : the maximum capacity of Target USB is limited at 2TB. Just 1U4500/1U4600/N5200/N5500 features target USB function; the other Thecus NAS don't have it.
18. 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)

19. Some attributes may not be included with files and folders when copying to a USB drive with FAT32 format.
20. 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.
21. 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. Currently we implemented NFS V3.
22. 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
23. 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 supports 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.
24. NAS needs about 5 minutes to broadcast/register itself to other Mac OS through AppleTalk after booting up and service enabled.
25. While upgrade firmware to 3.00.06 and later, note the special relation between add-on modules and firmware:
    a. Owing to new UI design since FW 3.00.06, old modules installed in old FW version will not work properly. So, please uninstall every existing module and then find the latest version from Thecus website.
    b. DLM function in FW 2.x.x will no longer exist in new FW 3.00.06. A new DLM2 with DHT support for BT and eMule will be available by end of September or

early October ’09 through Thecus module installation interface.

c. For N7700SAS and N8800SAS, the DLM2 module v1.0.5 will not work since new FW 3.00.06. Please do remove it before upgrading. The new DLM2 module v1.0.9 will be available by end of September or early October ‘09.

26. WebDisk : Only UTF-8 file name is supported.
27. File size has to be less than 1GB to be uploaded to Thecus NAS from web browsers. FTP software has no such limitation.
28. 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.
29. The following characters are not allowed to be included in the name used for files or folders on Thecus NAS.
    / \ : * ? ” < > | [ ] = + ; ,
30. File and directory attributes can not be modified by an FTP client when the FTP server of Thecus NAS is enabled.
31. Anonymous FTP user could upload files into public folders but could not delete them.
32. FTP client can list up to 2000 files in a single folder.
33. File system check page is in English, no multilingual.
34. 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. In addition, N7700SAS and N8800SAS do not support SAS HDD spin down at current moment.
35. Disk S.M.A.R.T. Test : N7700SAS and N8800SAS do not support Disk S.M.A.R.T. Test on SAS HDD.
36. UPnP function only works on WAN interface.
37. The create date is the same with modify date for every file copied into the NAS.
38. Single file size upper limitation: 2TB for EXT3 file system.

[Known Problems]

1. Using samba protocol in MAC OS will not accept file names with blank characters in tail.
2. AD users cannot access file via AFP on MAC OS.
3. IE7 / IE8 will show certification error alert while user access WEB admin UI via HTTPS.

[Attention]

1. During firmware upgrade process, it is imperative that user DO NOT turn off the power to Thecus NAS 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. Thecus strongly recommends NAS admin to backup the RAID data before doing the 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.

3. When installing the Windows Wizard program of Thecus NAS on Windows XP Professional SP1 or SP2, Windows Vista, and newer OS, the firewall UDP ports 10000 and 10001 need to be opened.
4. 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.
5. Users should obey the international RF regulatory rules as they set up the wireless RF channel on the NAS. 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