[Release Date]

Jan 16, 2012

[Applicable Hardware]

Thecus N3200PRO / M3800 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 v3.00.03 installed, the new software doesn't allow users to downgrade to any firmware version below v3.00.03.
3. System Configuration Download/Upload does not support different software version. Reminder: After upgrade to latest firmware, download configuration and save separately.

[New Features/Changes]

1) Upgraded Linux kernel from 2.6.36 to 2.6.38

2) Performance fine tune.

3) Added M3800 support.

4) Added MAC OS X 10.7 Lion support with AFP and TimeMachine.

5) Enabled Linux kernel ACPI function. This might help fixing the WOL failure issue.

6) Added WAN/LAN are at the same IP segment support.

[Bug Fixes]

1) Fixed AFP/NFS folder name with space character issue.

2) Fixed TFTP permission issue.

3) Fixed ISO mount issue.

4) Fixed the mounting failure when USB/eSATA HDD with EXT3/XFS file system hot-plugged in.

5) M3800 user should create 3 folders manually for playback function:

3 Folders are: Movie, Music and Picture.

6) Fixed HDD cannot spin down issue.

7) Fixed RAID cannot rebuild issue.

8) Fixed the compatible issue with iTunes5.

[Limitations]

1. There is a capacity limit for different file systems. It means, if more than four 2 TB HDD installed, you may have select suitable file system when creating a RAID volume.

File System	Capacity Limit
EXT3	8 TB
EXT4	16 TB
XFS	16 TB

2. RAID rebuild: in case one HDD failed in RAID 1 and 5 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.

3. RAID create / rebuild : 4K alignment HDD are not allowed to be added into a non 4K alignment RAID disk set. It means, mixing up 4K alignment HDD and non-4K HDD will bring the NAS troubles. The RAID will be unstable when doing so.

4. RAID Expansion: When changing the RAID 5 configuration from three smaller disks to three 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.

5. XFS limitations :

   a. Since firmware 3.00.02, XFS supports user quota.

   b. XFS file system is with 16 TB limit.

6. 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 3.00.02. 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	N3200PRO, N4100PRO
5	N5200PRO, 1U4500, N0503, N4200
10	N5500, 1U4600
15	N7700, N7700Plus N8800, N8800Plus
25	N7700PRO, N7700SAS N8800PRO, N8800SAS N12000
50	N16000

   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.

7. 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.

8. 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.

9. 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.

10. To enable ADS support for Small Business Server 2003, we recommend do not install ISA server. Otherwise, N3200PRO may fail to join the AD.

11. User Quota : user quota has been added since firmware version 3.00.02.

a. Value "0" means "User Quota Disabled"

b. A quota setting will be applied across multiple RAID volumes. It means, if you set 10GB quota for user John, he will be having 10GB on every RAID. For a NAS with three RAID volumes, John will have 30GB quota in total.

c. "User Quota" is implemented in EXT3, EXT4, and XFS RAID.

d. When using "User Quota" in a Master and XFS RAID, disabling quota might not take effective until the NAS reboots.

e. When "User Quota" full, the user will have 10% tolerance within 7 days; thus he

can do some data moving and deleting temporarily.

  f. System log and Email Notification will remind the users whose "User Quota" reached the limit at 24:00 everyday.

  g. The status of "User Quota" across multiple RAID will be displayed on [User and Group Authentication > Quota > Quota Setting] page.

  h. It may take long time to enable the "User Quota" the 1st time.

  i. "User Quota" is calculated by UID in the NAS.

  j. When users put data into a public folder, the used capacity will not be added to quota calculation. Also, data copied through WebDisk will not be calculated either.

12. Supports the following USB wireless dongles only. And it has to be installed before NAS booting up, no PnP. However, USB wireless dongles are no longer supported since firmware version 3.00.02.

  [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)

13. Some attributes may not be included with files and folders when copying to a USB drive with FAT32 format.

14. 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.

15. 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.

16. Reset button : In case the admin password or HTTP port lost, use Reset botton to load factory default please. In that case, user accounts and groups will be erased, but RAID data won't be affected.

17. 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

18. 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.

19. NAS needs about 5 minutes to broadcast/register itself to other Mac OS through AppleTalk after booting up and service enabled.

20. While upgrade firmware version, note the special relation between add-on modules and firmware kernel/UI architecture.

Firmware Version	Kernel Version	Module Dependency
1.00.xx	2.6.23	V
3.00.02	2.6.36	V

a. Many application modules are kernel dependant; so, for firmware V3, you may need new modules.

b. Automatically disable all installed modules while NAS firmware upgrading from 1.xx.xx to 3.00.02 or above. Old and not working modules will have an exclamation mark "!" for reminder.

21. WebDisk : Only UTF-8 file name is supported.

22. File size has to be less than 1GB to be uploaded to Thecus NAS from web browsers. FTP software has no such limitation.

23. 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.

24. The following characters are not allowed to be included in the name used for files or folders on Thecus NAS.

   / \ : * ? " < > | [ ] = + ; ,

25. File and directory attributes can not be modified by an FTP client when the FTP server of Thecus NAS is enabled.

26. Anonymous FTP user could upload files into public folders but could not delete them.

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

28. Thecus NAS could work as a TFTP server since firmware 3.00.02.

   a. TFTP service folder should be public and without any ACL rule.

   b. Double byte file name (Chinese, Japanese, Korean, etc) may have problems in

case the TFTP client doesn't support UTF8. Anyway we recommend using single byte characters as the file name.

c. TFTP service runs at port 69 by default. It is changeable from admin web interface. Please notify possible port conflicts, if any.

d. The biggest file size is 4GB while transferring thru TFTP.

29. File system check page is in English, no multilingual.

30. 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.

31. UPnP function only works on WAN interface.

32. The create date is the same with modify date for every file copied into the NAS.

44. Thecus NAS uses the following service ports by default.

Services	Default TCP port
iTunes	3689
iSCSI	3260
Media	8080
Twonky (UI)	9000/9001
Nfsd	111/2049
Nsync	2000
Rsync	873
Printer Server	631
Mysql	3306
mail server	995/25
Upnp	2689
DLM2 (bt)	10000~10200
DLM2 (amule)	4662
DHCP	67/68
SNMP	161/162
FTP	20/21
Apache module	10080
Samba	139/445
SSH	22
HTTP	80
HTTPS	443

Services	Default UDP port
iTunes	5353
Nfsd	111/2049

Printer Server	631
Mysql	3306
Twonky	1900/1030
Upnp	1900
Samba	138/137
NTP	123
Udpr	11000/11001
DHCP	67/68
SNMP	161/162
DLM2	4672
Syslog	514
TFTP	69
FTP	20/21

[Known Problems]

1. Using samba protocol in MAC OS will not accept file names with blank characters in tail.
2. 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