



Manual

euroNAS Pro 2010

euroNAS Premium 2010

Rev. 20100217

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Thank you for purchasing euroNAS Software

euroNAS is one of the most innovative NAS Software providers.

euroNAS Software is designed as flexible, hardware independent and high performing storage solution for small and mid size companies.

It is perfect for environments with limited IT personel or heterogenius environments. It supports all important networking protocols such as SMB (CIFS), NFS, FTP, AppleTalk and iSCSI SAN.

Connecting to the Server for the First Time

euroNAS is preset to aquire an IP address from a DHCP server. If you connect the monitor to the server - IP address will be shown. If no DHCP server is found on the network, euroNAS will default to an IP address of 10.10.10.1 (first NIC) and 10.10.10.2 (second NIC).

You can also discover the server using the default server name (euronas).

Alternately you can connect monitor and keyboard and configure TCP/IP settings manually.

To connect Using the Server Name

This option requires that name resolution services (WINS or DNS) are present in the networking environment

1. Default name of the server is „euronas“
Enter in the internet browser the following URL

http://euronas:3733

2. Administration will be opened. Connect using the user name „admin“ and default password „euronas“.
3. Configure the NAS Server

Features in euroNAS 2010 Products		Pro	Premium	Premium x64
Web Based User Interface		✓	✓	✓
Password protected access to the administration interface		✓	✓	✓
Support for several administration accounts		✓	✓	✓
Download Server				
Antivirus Software			✓	✓
Support for multiprocessor and multicore systems		✓	✓	✓
Support for 64-Bit extensions AMD (AMD64) and INTEL (EM64T)				✓
Active Directory (Windows 2000/2003 Member Server)		✓	✓	✓
Windows NT Domain		✓	✓	✓
Workgroup		✓	✓	✓
Embedded user and access management		✓	✓	✓
ACL Support		✓	✓	✓
Quota support		✓	✓	✓
Share level quota support		✓	✓	✓
Email Notification (int. Raid, APC UPS)		✓	✓	✓
Snapshot support			✓	✓
Snapshot (scheduling)			✓	✓
Size of each share can be set separately		✓	✓	✓
Online share capacity expansion		✓	✓	✓

Raid Support

Networking Support

Features in euroNAS 2010 Products		Pro	Premium	Premium x64
Software Raid Manager		✓	✓	✓
Software Raid 0		✓	✓	✓
Software Raid 1		✓	✓	✓
Software Raid 5		✓	✓	✓
Software Raid 6			✓	✓
HotSpare		✓	✓	✓
Raid Monitoring with Email Notification		✓	✓	✓
Online Raid Array expansion		✓	✓	✓
Support for Hardware RAID Controller			✓	✓
Hardware Raid Management Software			✓	✓
Hardware Raid HotSpare			✓	✓
Support for up to 2 Network Controllers		✓	✓	✓
Support for up to 6 Network Controllers			✓	✓
Gateway support for each separate NIC		✓	✓	✓
Network Bonding		✓	✓	✓
Load Balancing		✓	✓	✓
Port Failover		✓	✓	✓

Features in euroNAS 2010 Products		Pro	Premium	Premium x64
Local Backup			✓	✓
Server Synchronisation			✓	✓
Data Compression			✓	✓
User, ACLs and Date/Time support			✓	✓
Bandwith can be set manually			✓	✓
Each replication job has a separate log			✓	✓
Daily and hourly data synchronisation			✓	✓
APC UPS (USB) Support		✓	✓	✓
Time sync via NTP		✓	✓	✓
Quota support		✓	✓	✓

A. System Info

This page shows the most important information about the server.

- ▶ Servername
- ▶ Version
- ▶ Build
- ▶ System Information
- ▶ Time
- ▶ CPU and Swap
- ▶ Status of the Raid Array
- ▶ CPU Usage
- ▶ Installed Memory
- ▶ Swap Partition
- ▶ Network Information
- ▶ Shares
- ▶ iSCSI Targets

System Info

Servername	euronas			
Current time:	19:51:34	Physical Memory	1005 MB	
Version	Premium 2010	System Use	211 MB	
Build	20100211	System Cache	347 MB	
Manufacturer	Tyan Computer Corporation	Swap Partition	1999 MB	
Model	S2895	Swap Memory usage	0 %	
CPU	AMD Opteron(tm) Processor 242			
Speed	1607.355 MHz			
Number of CPUs	2			Online since 46 minutes
CPU Usage	<div style="display: flex; align-items: center;"> <div style="width: 100px; height: 10px; background-color: #ccc; border: 1px solid #000;"></div> <div style="width: 20px; height: 10px; background-color: #00ff00; border: 1px solid #000; margin-left: 5px;"></div> 2 % </div>			

Network Info

Network	IP-Address	Subnet	Gateway	Received	Sent
eth0	192.168.178.143	255.255.255.0	192.168.178.1	148 Megabyte	0 Megabyte
eth1	192.168.178.152	255.255.255.0	192.168.178.1	0 Megabyte	9 Megabyte

Shares on euronas

Share	Size	Usage	Free	Usage in %
iometer	1022M	148M	875M	15 %
backups	49G	4.2M	49G	1 %

iSCSI Targets

Target	Drive	Size	Status	Initiator
vmware1	2342	1000.00 MB	✓	initiator:iqn.1998-01.com.vmware:localhost-4e7e96b3
Xen	2342	1000.00 MB	✓	initiator:iqn.1998-01.com.vmware:localhost-4e7e96b3
HyperV	2342	1000.00 MB	✓	initiator:iqn.1998-01.com.vmware:localhost-4e7e96b3

B. Basic Settings

1. Time

- 1.1 Date / Time
- 1.2 Time Zone
- 1.3 Timesync via NTP

euroNAS can use NTP server to update its time.

NOTICE

This functionality is not recommended in an Active Directory environment.

2. Servername and Description

- 2.1. Servername
- 2.2. Description of the server is used for windows networks

3. Change user password

Here the password for each user can be set manually. It is also the only place where the admin password can be changed

IMPORTANT

It is not possible to recover admin password. If you forgot your admin password you will need to contact technical support

4. Swap Partition

Swap Partition is used when the system runs out of physical RAM during operation. If no swap partition is used the system will hang and become very slow. It is recommended to use a swap partition that is 1.5 larger than your system memory.

IMPORTANT

You should not set more than 2 GB of swap

C. Local Account Management

1. User and Group Management

euroNAS Server can check the identity of the users by using its internal user / password list

New users can be created via

„User Management“ - „Create new user“

New Groups can be created via

„Group Management“ - „Create new group“

NOTICE

Default setting for new shares is that everyone can access the shares. If you wish to limit this - define at least one user under access management.

euroNAS Server has already some pre defined user/group accounts

admin - Administrator (default password „euronas“)

guest - guest account (no password)

users - all local users

admins - all admin users

It is possible to change group membership for every user und „Group Management“ - „Change Group Membership“

Guidelines for creating users

- ▶ Special characters are not allowed in user names
- ▶ Duplicating Login Credentials for euroNAS and Windows or Macintosh Clients

You can simplify user access for Windows or Macintosh clients, by duplicating their login credentials on the euroNAS Server. This will help to bypass the login procedure when accessing the server.

IMPORTANT

This is only valid for local users - not domain users

Default users and groups cannot be modified or deleted

D. Share Management

Under share management you can create, modify and delete shares.

1. Shares

Shares on the server with their current usage

2. Currently accessed shares

Currently Accessed Shares list the shares that are currently mapped and used by the network clients

3. Shared Drives

Shared Drives are initialized drives or raid arrays on which the shares can be created.

If your drive is not listed - check first under „Disk Management“ - „Disk Info“ if the drive is listed there.

Following information is listed

- ▶ Full Capacity
- ▶ Free capacity for creating new shares
- ▶ Shares with their size

4. Create new share

5. Modify share

Following settings can be modified:

- ▶ Name
- ▶ Description
- ▶ Size (Size cannot be reduced)
- ▶ Network protocols (NFS, Appletalk, FTP – Windows Networking is always on).

6.Delete Share

IMPORTANT

If the share is deleted - all data on that share will be permanently removed.

E. Network

1. Network Information

Here you can see the information about your network.

If you click on the network controller you can configure its TCP/IP settings

- ▶ How the network is configured (DHCP or manually)
- ▶ MAC Address
- ▶ IP Adresse
- ▶ Subnet
- ▶ Gateway
- ▶ Speed
- ▶ Information if the network cable is connected

NOTICE

Not every networking controller is capable of showing the speed and the connection status



The screenshot shows a window titled "Netzwerkkarte (eth0)" with a table of network settings. The table has two columns: the left column lists the setting name, and the right column shows the current value.

Netzwerkkarte (eth0)	
Netzwerk	DHCP
MAC Adresse	04:4b:80:80:80:03
IP Adresse :	192.168.1.150
Subnetz	255.255.255.0
Gateway	192.168.1.1
Geschwindigkeit	1000Mb/s
Kabel angeschlossen	yes

2. Domain and Wokgroup

Additionally to the local user/group authentication it is also possible to authenticate users via Windows Active Directory of NT domain.

Following methods are supported

- ▶ Workgroup (local user/group authentication)
- ▶ Windows Domain (Windows NT)
- ▶ Active Directory Domain (Windows Server 2000/2003/2008)

In order to join the domain you must have an administrator account for this domain.

Optionaly you can also join the organisational unit

NOTE

Additionally there is also an option to enable guest account. This enables users without local or domain accoutn to access the share (if guest is set under access control for that share).

3. TCP/IP Settings

IP address and subnet is needed for communication with other computers in the network.

If you wish to communicate to system outside of your local network you also need to set gateway. Following settings can be set

3.1. Manually

- ▶ IP address
- ▶ Subnet
- ▶ Gateway

3.2. DHCP

With DHCP euroNAS Server will pick up the settings from the local DHCP Server.

IMPORTANT

DHCP can change the IP address of the server frequently. This can cause problems for the clients to access the server.

In this case you can access the server via its name (if DNS or WINS service is active) or read its current IP address when connecting monitor on the server.

4. DNS / WINS Configuration

DNS (Domain Name Service) converts IP address of the server in its name.

WINS converts the specific microsoft computer names in an IP address.

NOTE

Currently WINS Server information cannot be picked up by the DHCP. This option must be set manually.

5. Host Editor

In case that a certain IP address cannot be resolved in a network. You can add manually its name in the host editor.

Following information can be set

- ▶ IP address of the computer
- ▶ Hostname (long) Example computer1.domain.local
- ▶ Hostname (short) Example computer1 (without domain)

6. Network Bonding

With this option you can bond 2 or more networking controllers to act as a single networking controller. This helps reducing the risk of losing the networking connection on a cable failure and can help to improve the performance and the bandwidth of the server.

euroNAS supports following methods:

- ▶ Load Balancing (Speed)

Network bandwidth is theoretically double and both networking cards share the load.

- ▶ Port Failover (Redundancy)

If one networking controller fails - other controller takes over the connection in real time. Network clients have no impact.

7. Ping

This tool helps troubleshooting networking issues in the network.

F. Access Control

euroNAS Supports heterogenous environments and supports 2 methods of authentication

- Access via Windows Network, FTP or AppleTalk
- Access via NFS Protokoll (Unix / Linux)

NOTE

Local users and groups can be added or removed from the share. You can also assign read only permissions for certain users and groups

AppleTalk and FTP Users cannot be authenticated via Domain
- only local accounts are accepted.

3. NFS Access

If NFS is enabled for the share you can set the IP Adresses
that are allowed to access the server

NFS Service will not start if at least one share does not have a
configured NFS access. Server can be reached by using the IP
address:/volumes/name of the share.
For example: 192.168.1.1:/volumes/www

G. Quota Management

Users connected to the server can have their own personal
share. With Quota Management you can control how much
space they are allowed to use on certain share.

Before you can use quota on the share - they must be enabled
for that share and the system must be rebooted.

H. Disk Management

1. Disk Management

1.1. Disk Info:

Following information are shown

- ▶ Name
- ▶ Manufacturer and Model
- ▶ Capacity
- ▶ Raid Membership
- ▶ If the drive has been initialized
- ▶ S.M.A.R.T. Status (if supported by the drive)
- ▶ Temperature in Celsius (if supported by the drive)

euroNAS is compatible to all drives larger than 2 GB

euroNAS Premium supports additionally single drives larger than 2 TB. This are usually Raid Arrays connected to the hardware raid controller.

With all euroNAS Products you can create software raid arrays larger than 2 TB

Drive	Model	Capacity	Raid Member	Initialized	S.M.A.R.T	Temperature
sdc	ATA HDS722580VLSA80 V320	78533 Megabyte	md0	yes	OK	37 °C
sdb	ATA ST380811AS 3.AA	76319 Megabyte	md0	yes	OK	41 °C

S.M.A.R.T.

S.M.A.R.T. Tool helps you to find out the current status of your hard disk. If supported by the drive it will provide you many useful information and help you to find out if the drive will soon fail.

Model Family	Seagate Barracuda 7200.9 family			
Device Model:	ST380811AS			
Firmware Version:	3.AAE			
Serial Number:	3P5062K9			
User Capacity:	80,026,361,856 bytes			
SMART overall-health test	PASSED			
Serial Number:	3P5062K9			
Attribute	Value	Worst	Threshold	Raw Value
Raw_Read_Error_Rate	112	095	006	146762139
Spin_Up_Time	095	095	000	0
Start_Stop_Count	100	100	020	251
Reallocated_Sector_Ct	100	100	036	0
Seek_Error_Rate	074	060	030	28326723
Power_On_Hours	100	100	000	549
Spin_Retry_Count	100	100	097	0
Power_Cycle_Count	100	100	020	421
Temperature_Celsius	041	060	000	41
Current_Pending_Sector	100	100	000	0
Offline_Uncorrectable	100	100	000	0
UDMA_CRC_Error_Count	200	200	000	0
Multi_Zone_Error_Rate	100	253	000	0

3. Initialize drive (create shared drive)

Before you can create a share on euroNAS Server you must initialize the disks in your system.

Initialisation will remove all existing data on that drive - please make sure that all data is backed up prior initializing

During the initialisation you will be prompted for the name of the shared drive. This helps you later to identify the drive more easily. Under „Shares“ - „Shared Drives“ you can check the usage and shares on that drive.

4. Filesystem check and repair

In case that you are having problems to access the data on a certain share you can perform check and repair of your share.

There are 2 methods:

- ▶ Default
- ▶ Advanced (deletion of the filesystem journal and repair)

Second option should only be used if there is no other option left. It is a dangerous option that can cause data loss. You should only use this option if advised by technical support

I. Software Raid

Raid is a method of combining disk drives into one logical storage unit. It provides disk fault tolerance and can operate at higher throughput levels than a single disk drive.

euroNAS Supports hardware raid controllers and also has an embedded software raid functionality.

euroNAS Software Raid helps saving the costs for the hardware raid controller and offers high reliability, monitoring service, email notification, expansion capabilities and logging.

Advantages of euroNAS Software Raid :

- ▶ helps reducing costs for an additional Hardware Raid Controller
- ▶ Redundancy
- ▶ Hardware Independence

Features (Software Raid)

- ▶ Raid Monitoring

Raid array is being monitored by monitoring service. In case of drive failure you will receive a notification email. All raid events are logged in a log file.

- ▶ Hardware Independent

euroNAS Software Raid does not depend on any mass storage controller - in case of system failure just plug the drive in another system and boot with euroNAS - Raid arrays will be automatically recognized and imported.

- ▶ Software Raid supports following methods: Raid 0, Raid 1, Raid 5, Raid 6 and Hot Spare

- ▶ Raid Expansion

Raid 5 and 6 can be easily expanded with additional drives (during expansion Raid array is not in a redundant state - please make sure that you backup the data first)

You can find more info about different Raid levels on page 40

Raid creation is simple ...

1. Select the drives



2. Assign a name for the raid array

Please enter the name for the shared drive (Raid md0)

RAID 0 (Speed - no redundancy)
 RAID 1 (Mirroring - redundancy)
 RAID 5 (Capacity - redundancy)
 RAID 6 (Capacity - higher redundancy)

Reserved for Snapshots

Raid Info shows you the current status of the raid array:

```
Name :                testraid (md0)
Raid Level :          raid1
Size :                78150676 (74.53 GiB 80.03 GB)
Creation Time :       18 Feb 2010 (09:56:09)
Status testraid :    Rebuild Status : 2% complete
Members :
#      Disk           Model              Status
0      sdb             ST380811A5        active
1      sdc             HD5722580VLSA80   active
```

Raid Repair

In case of drive failure the status of the raid array will be “degraded”. Under Raid Info you will get an additional option “repair” - if you choose this option you will be able to select the drive with which you want to replace the failed drive.

Optionally you can also define the replacement drive

Server Synchronisation

euroNAS Server Synchronisation is a cost-effective Data Replication Solution for data protection and recovery. It is ideal for nearline backup of server data, remote office backup and recovery.

With euroNAS Server Synchronisation you are getting the capability to replicate the contents of shares between source and destination euroNAS servers. The incremental copy only copies changed bytes (not the entire file) to reduce the amount of data being sent over the network, keeping network resources available for increased productivity.

Following methods are supported:

- ▶ Local Backup (from one share to another or from one drive to another)
- ▶ euroNAS Server to another euroNAS Server

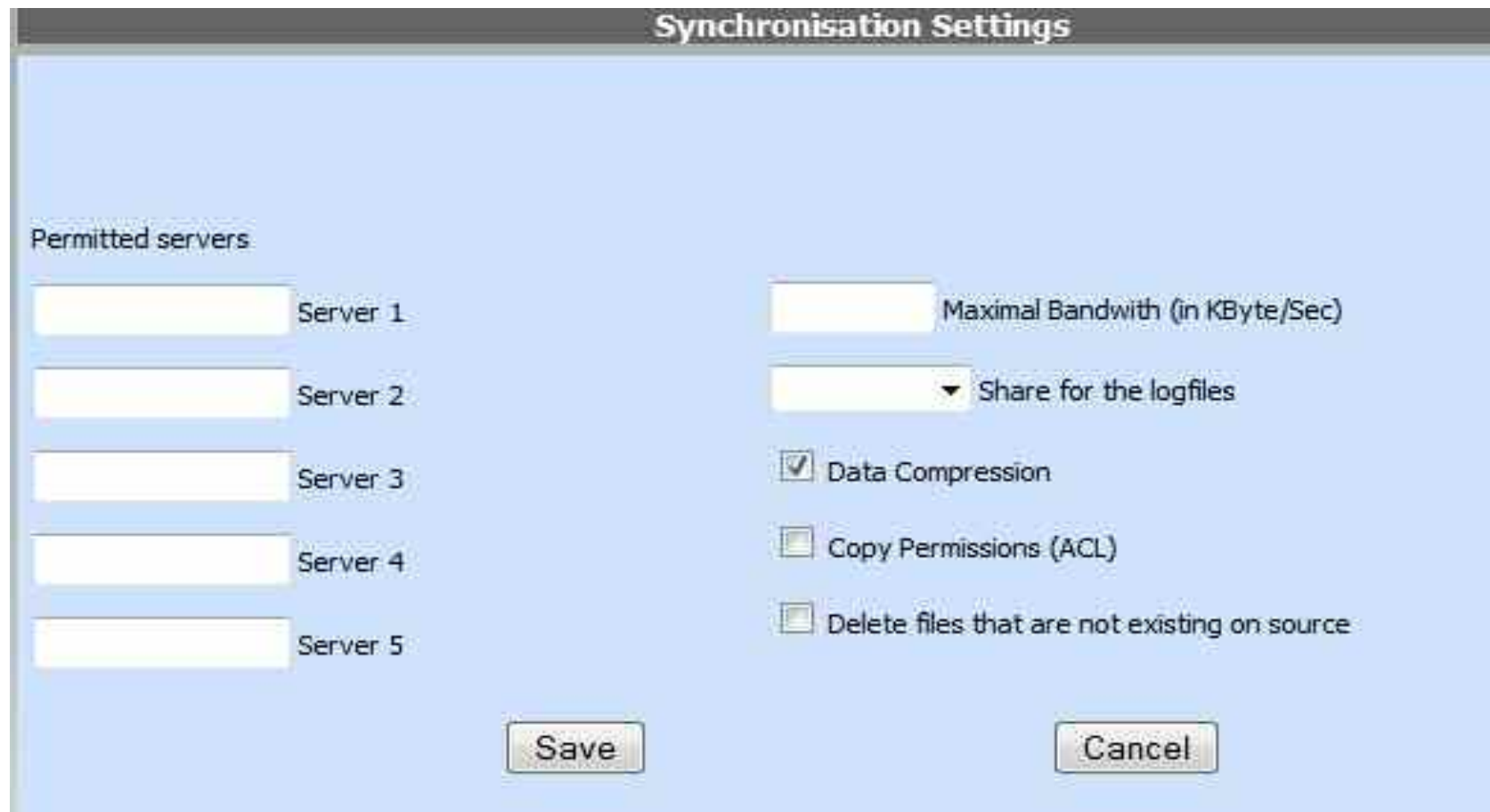
1. Start/Schedule Synchronisation

Synchronisation can be started manually or be scheduled to run on a certain days or every few hours (for example every 3 hours).

2. Status

Status show the current running jobs and if the synchronisation service is active

3. Settings



The screenshot shows a dialog box titled "Synchronisation Settings". It contains several configuration options:

- Permitted servers:** A list of five servers, each with an empty text input field to its left. The servers are labeled "Server 1", "Server 2", "Server 3", "Server 4", and "Server 5".
- Maximal Bandwidth (in KByte/Sec):** A text input field.
- Share for the logfiles:** A dropdown menu.
- Data Compression:** A checked checkbox.
- Copy Permissions (ACL):** An unchecked checkbox.
- Delete files that are not existing on source:** An unchecked checkbox.

At the bottom of the dialog, there are two buttons: "Save" and "Cancel".

▶ Server

Here you can define which IP Addresses are allowed to connect to the server for synchronisation

▶ Bandwidth

Here you can specify the maximum amount of network bandwidth that the synchronisation will consume during jobs

▶ Access Control List (ACL) Support

Files are being copied with their security settings (ACLs)

▶ Data Compression

Data is compressed before sending over network

▶ Share where the log files will be stored

4. Configure shares for synchronisation

Before you can use the share for synchronisation you must add them to the service first.

NOTE

Synchronisation service will not start until at least one share is added

5. Job Management

Under Job Management you can see the properties of the job and delete jobs that you don't need any more

J. System

1. Hardware Information

Following options are shown

- ▶ Name of the server
- ▶ OS Version
- ▶ CPU
- ▶ How many CPUs
- ▶ CPU Speed
- ▶ Memory
- ▶ Networking Controller
- ▶ Disk Controllers

2. APC-UPS

UPS Service will shut down the server if the battery on the UPS Module reaches critical level.

After configuring the service you should check the status of your device. If no information is shown - UPS device cannot be accessed correctly.

NOTE

Only APC UPS devices are supported

3. OS Update

Copy the update file to the root directory on one of the euroNAS shares. During the update procedure you will be asked to select the share and the update file.

Updating the operating system is always a risk - please make sure that you have the latest backup of your data first.

4. Shutdown

5. Reboot

6. Configure automatic shutdown

With this feature you can tell the server to shut down automatically every day at defined time

K. Services

1. Email Notification

Email Notification is a very useful tool for unattended installations. If configured you will receive notification emails if something goes wrong with the server. Following events are reported:

- ▶ Software Raid
- ▶ UPS Messages

You need to set the following parameters

- ▶ SMTP Server:
- ▶ Sender Email
- ▶ Receptient
- ▶ User Name (SMTP)
- ▶ Password (SMTP)

2. Windows File Sharing

Data transfer between SMB/CIFS Clients

3. AppleTalk (AFP)

Data transfer for Apple MAC systems. euroNAS supports AppleTalk protocol 3.1

Currently only local users can authenticate using this method.

4. NFS

Standard Unix/Linux file sharing.

Before the service can be started - at least one share needs to have NFS access enabled (share properties) and NFS access must be configured for this share.

5. Webserver

euroNAS Server has an embedded Apache Webserver. It is configured to look for the html documents on the share with the name „www“. If you wish to use the webserver you must configure one share with this name

6. FTP Server

L. Snapshots

Snapshots is the quickest way to freeze the data at a particular point in the past. This is a useful feature in case of virus attack or recovering deleted documents.

Creation takes usually several seconds and the data can be accessed through the additional share „snap“.

You can also assign users that are allowed to access the snapshot share.

This feature is supported under euroNAS Premium

M. iSCSI

iSCSI (Internet SCSI).

iSCSI capsulates SCSI protocol in standard ethernet packets and enables their transport over standard IP network. This enables the use of standard ethernet network infrastructure in a SAN environment.

euroNAS iSCSI acts as iSCSI Target and enables clients to connect to it via an iSCSI Initiator and to use the iSCSI Target as a local drive on their systems.

iSCSI Initiator kann be software based or a hardware iSCSI-Host-Bus-Adapter.

1.Create iSCSI Target

Here you can create the iSCSI Target. If you click on CHAP you can create the target that uses CHAP Authentication (this can also be set later under "Target Settings")

2.Configured iSCSI Targets

All configured iSCSI Targets with their connection status are listed here

3.Access Control

Here you can define which IP Addresses are allowed to see and access the target. If no IP Address is defined - any iSCSI Initiator is allowed to see and to connect to this target

4.Target Settings

Here you can see and change properties of the Target

- ▶ Name
- ▶ Size
- ▶ Authentication

5.iSNS Server

If your network has iSNS server implemented - you can configure it here

6. Delete iSCSI Target

If you delete the iSCSI Target - all data on this Target will be permanently lost

Create new target

Shared drive: 2342
Full capacity: 78532 Megabyte
Used: 55832 MB
Snapshots: 15700 MB
Unassigned: 7000 MB

test Name
7000 Size in Megabyte

Create Back CHAP

Configured iSCSI Targets

Back

Target	Drive	Size	Status	Connected Initiators
vmware1	2342	1000.00 MB	✓	initiator:iqn.1998-01.com.vmware.localhost-4e7e96b3
Xen	2342	1000.00 MB	✓	initiator:iqn.1998-01.com.vmware.localhost-4e7e96b3
HyperV	2342	1000.00 MB	✓	initiator:iqn.1998-01.com.vmware.localhost-4e7e96b3

Virtualisation with euroNAS

euroNAS Premium is perfect for use as a data storage for your virtual images. It has been successfully tested with VMware ESX Server 3.x and 4.x, Citrix Xen and Microsoft Hyper-V 2008 Server. It can be used via NFS or iSCSI.

N. UPnP (Personal Edition)

UPnP Service enables you to stream the multimedia content to uPnP capable devices such as AVM Fritz! Media, Terratec Noxon, XBOX 360, Playstation 3 etc.

euroNAS Supports compressed Audio-, Video- and picture formats such as MPEG2, WMV9, WMA9 Pro, MP3 and JPEG.

Only euroNAS Pro PE 2009 supports this functionality

Following formats are supported :

Video : asf, avi, dv, divx, wmv, mjpg, mjpeg, mpeg, mpg, mpe, mp2p, vob, mp2t, m1v, m2v, m4v, m4p, mp4ps, ts, ogm, mkv, rmvb, mov, qt, hdmov

Audio : aac, ac3, aif, aiff, at3p, au, snd, dts, rmi, mp1, mp2, mp3, mp4, mpa, ogg, wav, pcm, lpcm, l16, wma, mka, ra, rm, ram, flac

Bilder : bmp, ico, gif, jpeg, jpg, jpe, pcd, png, pnm, ppm, qti, qtf, qtif, tif, tiff

O. Download Server (Personal Edition)

Download Server is based on MLDonkey server and enables you the following possibilities:

- ▶ Direct file download
- ▶ Torrent download
- ▶ eDonkey downloads

Download Server can be managed using Windows Client „Sancho“

Before you can manage the download server you should specify the IP address range that is allowed to administer the server.

Login Name for the Downloadserver is

User : admin

Password : euronas

Only euroNAS Pro PE 2009 supports this functionality

P. Antivirus

euroNAS Premium has an embedded Antivirus software. It scans the shares for the viruses.

Under Configuration you can set the time when the shares should be scanned and also decide which shares should be scanned.

Under Connection Settings you can set the proxy server (if needed).

IMPORTANT

If your proxy server needs authentication be aware that the password is stored in clear text on the euroNAS Server. Still - no user can see this password via network.

Each share contains following folders - this folders must not be deleted

- ▶ log in antivirus_euronas
- ▶ quaranteen in antivirus_euronas

folder log contains events for this share (for example found viruses)

quaranteen is the folder where the infected files are stored.

Additional Info

euroNAS Software Raid supports following options:

Raid 0

Advantage : Performance and Capacity

Disadvantage : No Redundancy

Raid 1 (Mirroring)

Advantage : Redundancy

Disadvantage: 50% of the capacity is lost

Raid 5

Advantage : Redundancy, Capacity and Performance (read)

Disadvantage : slower write performance

Raid 6

Advantage : greatest redundancy - up to 2 drives can fail.
Redundant even during a rebuild. Good read performance

Disadvantage : Capacity of 2 drives is lost - slower write performance

ACL Support

Standard access control controls who is allowed to access the share - with Access Control List (ACL) support you can decide who is allowed to access certain folders and files.

euroNAS uses POSIX ACL permission control

This example shows how the acls are set :

The file has been created by user admin (his default group is admins). User Mike and the group euronas have access to this file

```
# file: testfile
```

```
# owner: admin
```

```
# group: admins <-- POSIX group of the user (primary group).
```

```
user::rwx <-- user permissions (admin)
```

```
user:mike:r-x <-- permissions for Mike
```

```
group::r-- <-- permissions for the owner's group (admins)
```

```
group:euronas:r-- <-- permissions for the group euronas
```

```
mask:rwx <-- mask for the group
```

```
other::--- <-- permissions for other users
```

NOTICE

If you are using Windows you can set the ACLs directly from the client - just select properties of the file/folder and select security tab.

ONLY THE FILE OWNER CAN CHANGE THIS SETTINGS

