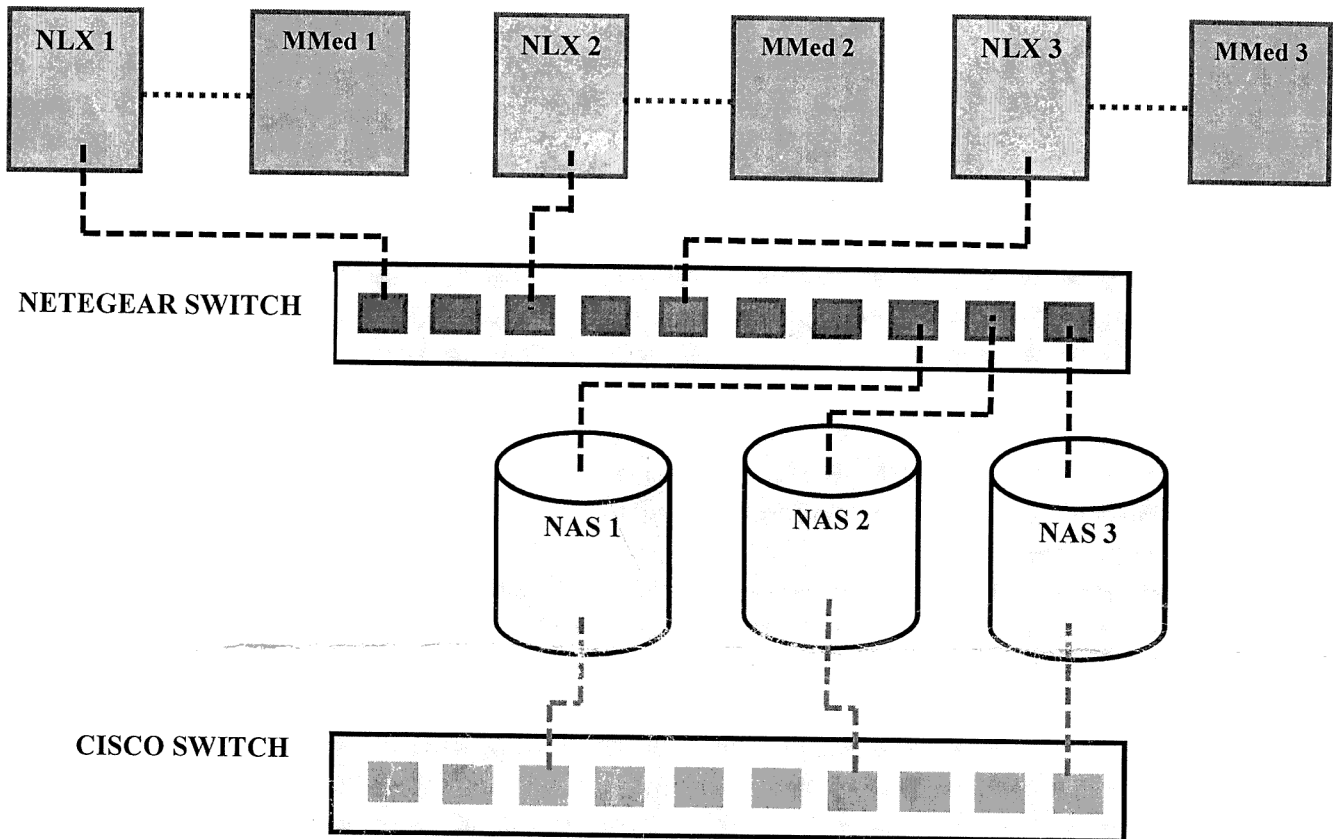# Configuration for Neuralynx Acquisition

The following scheme shows how is the Networks connections for the Neuralynx Acquisition and Saving Processes.

| NLX 1 | MMed 1 | NLX 2 | MMed 2 | NLX 3 | MMed 3 |

NETEGEAR SWITCH

NAS 1   NAS 2   NAS 3

CISCO SWITCH

·········· Private Network : 192.168.1. for MM-NLX Interface

— — — — Private Network : 192.168.0. for NAS connection

— — — — — Clinic Network: Connection to the Clinic Network

(handwritten) (MHK fansday) RAHA thandvtage

anstandsraymicro

Micro_u AR → RA

" u AL → LA

" uAHR → RAH

uAHL → LAH

micromed

MEDICAL EQUIPMENT

Private Network : 192.168.1. ·········· for Micromed-Neuralynx Interface

This Network creates the private connection between MM Acquisition PC and Neuralynx PC. On it will pass only the data streaming of the acquisition from Neuralynx to Micromed Computer.
Each MM PC has the same configuration, similarly each NX PC has the same configuration: this is to avoid errors during the setting for acquisition.
MM PCs have the following IP address (on the second network card): 192.168.1.2; Subnet Mask: 255.255.255.0
NX PCs have the following IP address: 192.168.1.3; Subnet Mask: 255.255.255.0

Connection Procedure

1- Neuralynx side
   Connect the Neuralynx on the Plug named NLX-NETCOM with a network cable. The Ethernet Interface must be the one with the label. If the light on the Card is blinking, the connection is ready. Open the *Internet* Explorer Browser and write :
   \\192.168.1.2\System98\
   If User and Password are required, insert
   user: *aufnahme*   *(handwritten)* EP12\ aufnahme
   password: *eeg*
   Once in the folder, go to the "Settings" subfolder and copy the file with the name "Micromed.cfg" to the Neuralynx Desktop. This file contains the settings for Cheetah program.

2- Micromed side
   In SystemPLUS Software, select the following configuration on Extras→Systemeinstellungen→EEG:
   Verstärker/Schnitstelle
   - Digital Lynx Sx 256
   - Network
   Download the Connect and Montages files ready for Neuralynx Acquisition from the dedicated folder on the server, or prepare the connect files.

Once the two Computers are so set, the acquisition can start.

Note: in order to check the connections between the two PC's, open the command window on each PC and test with the command "ping -IP Adress from the other PC-" and verify that the pinging run fine. If no, please check the network cable and the connection.

(handwritten) An orange Steckdose ↑

1. Strom - computer an (zusätzliche Sicherung) + Verstärker
2. Netzwerk ⓧ Verstärker an
3. Umbenennen der Channels (Micro_u AR) → RA
   (R/L vom Anfang/Ende verstanden) (Micro u RA)
4.) Headstages anschließen (Referenz: Eingang/Rot an Stirnelektrode, Ausgang/Schwarz beliebig (meist unter Schlüsselbein Adapter umstellen lassen)
5.) Cheetah Atlas starten (dann umstellen lassen)
6.) Head Boxes tauschen (2 Stück)

IQNet

GSO

GSO MED

QUALITY SYSTEM CERTIFIED   UNI EN ISO 9001:2008   UNI EN ISO 13485:2004

(handwritten) Cluster   öffnen über Window → Add Window → Time
7.) 2 Windows microwire
   2 Macro   8.) rechte Maus klick → zoom 8x   1 Oberfläche/EKG

AR / RA
R EC
R A-H
R M H
R PHL
R P H
L A

micromed

MEDICAL EQUIPMENT

Private Network : 192.168.0. ----- for NAS connection

This Network allows the Neuralynx Computers to connect to the NAS Systems in the Serverroom, through the Netgear Switch (it's allocated in Serverroom, Rack n.3).

NAS Configuration
Each DiskStation has a Volume, composed by 8 Disks in Synology Hybrid Raid (RAID 5) with a total capacity of 25,0 TB.

	Volume	HDD Management	iSCSI LUN	iSCSI Target

Create Remove Manage Beep off

Volume

Volume 1

Used: 0.00%
Available: 100.00%

Properties

Name	Volume 1
Type	Synology Hybrid RAID (SHR) (With data protection of 1 disk fault-tolerance)
File System	ext4
Status	Normal
Capacity	25.04 TB
Used	1.07 GB
Available	25.04 TB

Disk Info

	Number	Disk Size	Status
DS1812+	Disk 1	3.64 TB	Normal
DS1812+	Disk 2	3.64 TB	Normal
DS1812+	Disk 3	3.64 TB	Normal
DS1812+	Disk 4	3.64 TB	Normal
DS1812+	Disk 5	3.64 TB	Normal
DS1812+	Disk 6	3.64 TB	Normal
DS1812+	Disk 7	3.64 TB	Normal
DS1812+	Disk 8	3.64 TB	Normal

Each Volume has a Shared Folder named NLX_NAS_XX (where XX is the number of the NAS).

File Station

NLX_NAS_03   Filter   ?

Upload Create Action Tools Options   Advanced Search

DiskStation_3
NLX_NAS_03

Name	Size	File Type	Modified Date	Owner

Available: 25640 GB, Total: 25641   Page 1 of 1   C Items per page 50   No data

IQNet   IQNet

csq

CSQ
MED

QUALITY SYSTEM CERTIFIED   UNI EN ISO 9001:2008   UNI EN ISO 13485:2004

The first Network Interface is set:
Diskstation_1 : IP 192.168.0.21; Subnet Mask: 255.255.255.0
Diskstation_2 : IP 192.168.0.22; Subnet Mask: 255.255.255.0
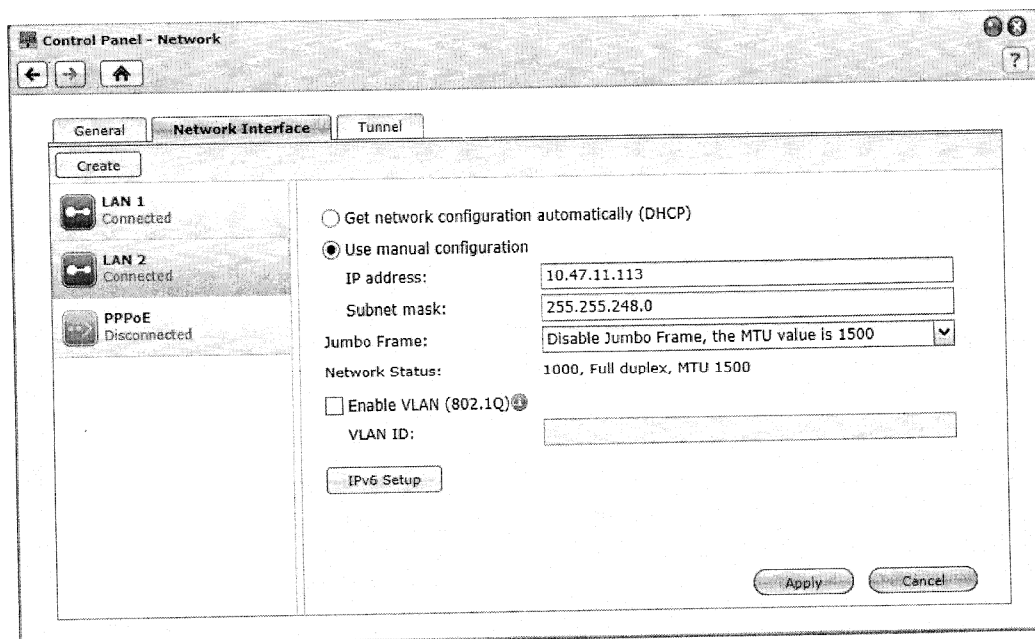Diskstation_3 : IP 192.168.0.23; Subnet Mask: 255.255.255.0
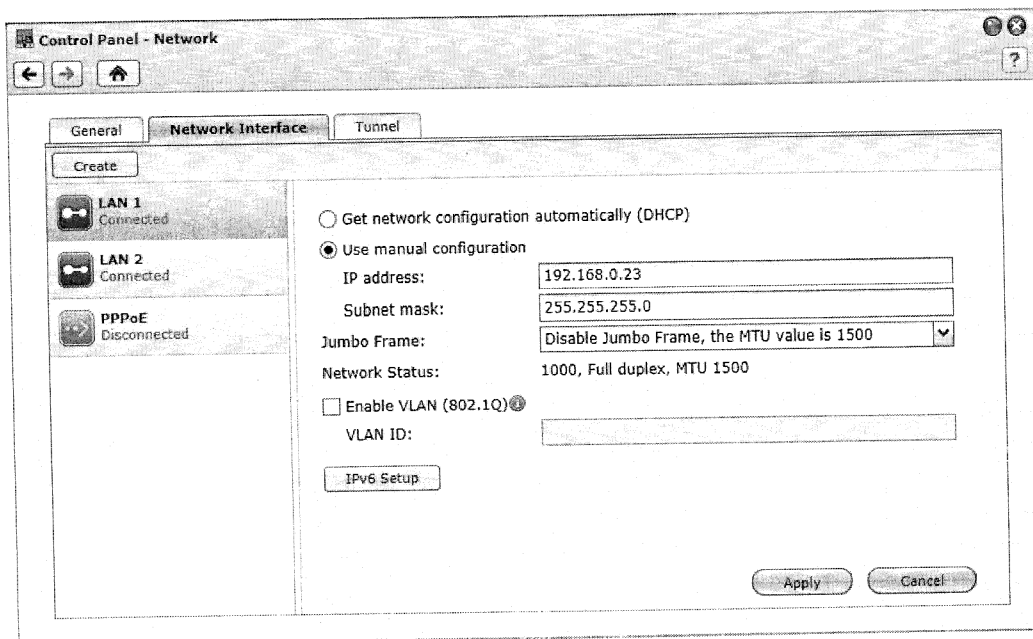
The second Network interface is connected to the Domain with this IP configuration:
Diskstation_1 : IP 10.47.11.111; Subnet Mask: 255.255.248.0
Diskstation_2 : IP 10.47.11.112; Subnet Mask: 255.255.248.0
Diskstation_3 : IP 10.47.11.113; Subnet Mask: 255.255.248.0

On the Domain you can see each NAS with the name:

QUALITY SYSTEM CERTIFIED   UNI EN ISO 9001:2008   UNI EN ISO 13485:2004

- DISKSTATION_1
- DISKSTATION_2
- DISKSTATION_3

Neuralynx Configuration

The second Network Card (the first is reserved for MM-NLX Interface) on the PC is set with a specific IP Address, in order to connect it automatically to the NAS System.
The IP Addresses are so set:
- Neuralynx 1 → IP 192.168.0.101; Subnet Mask: 255.255.255.0
- Neuralynx 2 → IP 192.168.0.102; Subnet Mask: 255.255.255.0
- Neuralynx 3 → IP 192.168.0.103; Subnet Mask: 255.255.255.0

Each PC has 3 different Network Drives already set:

nlx_nas_01 (\\192.168.0.21) (X:)

nlx_nas_02 (\\192.168.0.22) (Y:)

nlx_nas_03 (\\192.168.0.23) (Z:)

When available, the resources allow you to save data on them.

nlx_nas_01 (\\192.168.0.21) (X:)

nlx_nas_02 (\\192.168.0.22) (Y:)

nlx_nas_03 (\\192.168.0.23) (Z:)

Connection Procedure

Connect the second Network Card of Neuralynx Computer to the Network Plug on the Wall. The name of the Plug is PRX-NLX-VTR.
If the light on the Network Card is blinking, the connection is ready.
Normally the user: \admin and password: *admin* is required to access the resources.
Once the connection between Neuralynx Computer and Netegear Switch is ready, directly on the computer Resources you can find the 3 NAS Resources mapped, with the name:

nlx_nas_01 (\\192.168.0.21) (X:)

nlx_nas_02 (\\192.168.0.22) (Y:)

nlx_nas_03 (\\192.168.0.23) (Z:)

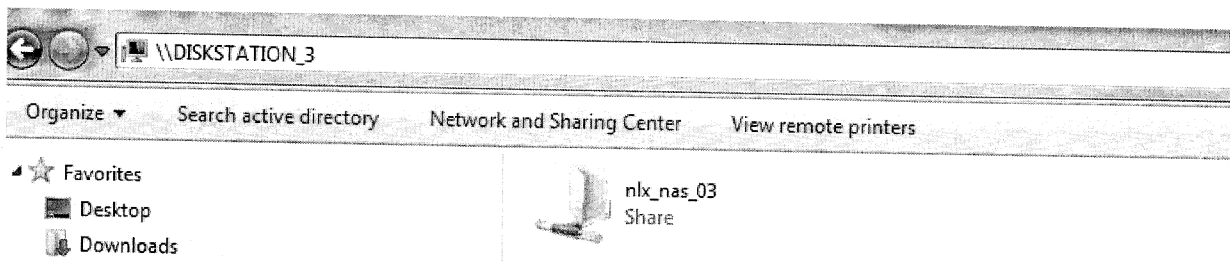After this it's possible to save data on the remote folders.

Clinic Network : ▬ ▬ ▬ ▬ **to access to the data through a PC on the Network**

You can access to the data saved on the NAS through the Clinic Network. Search on the Network Resources:
- \\DISKSTATION_1
- \\DISKSTATION_2
- \\DISKSTATION_3

User: *admin* and password: *admin* are required to access to the sheared folders.
Each Diskstation has one shared folder which can contain the data.

\\DISKSTATION_3

Organize ▾   Search active directory   Network and Sharing Center   View remote printers

▲ ☆ Favorites
   ■ Desktop
   📁 Downloads

nlx_nas_03
Share

It's possible to map the network drive on the PC.

# Connection for Maintenance Processes

Connect the PC on the PRX-NLX-VTR in the room or directly on the NETGEAR Switch on the Serverroom.
Set the IP Interface on the Laptop with the IP: 192.168.0.80.
If you have installed Synology Assistant you can enter and manage the units directly with this tool.
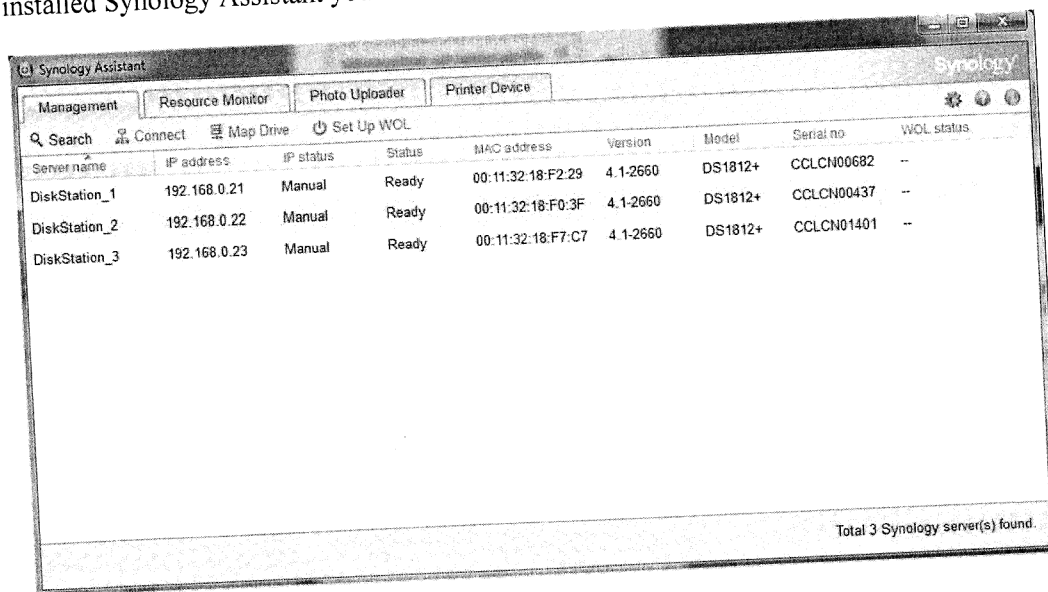
If you don't have the program, insert directly on Internet Explorer:
- http://192.168.0.21:5000/webman/index.cgi
- http://192.168.0.22:5000/webman/index.cgi
- http://192.168.0.23:5000/webman/index.cgi

User: *admin* and password: *admin* are required in order to enter and manage the NAS Systems with Synology Assistant Software or Internet Interface.
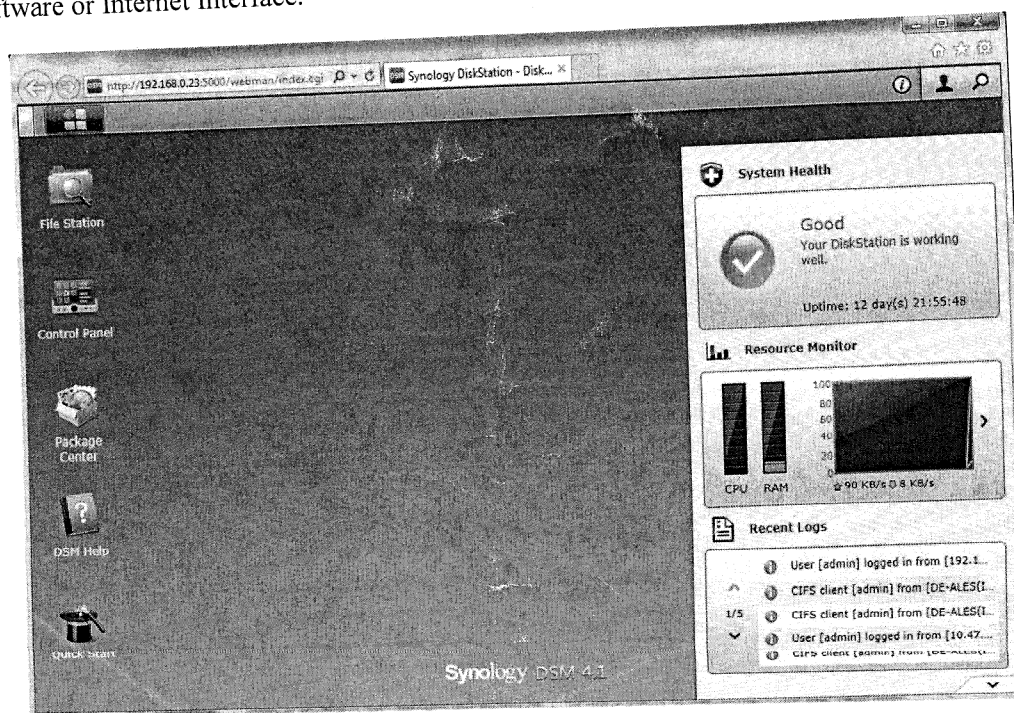
Macro: Headstage 001 / Subject Ground

↳ Window 1, Window 2 (002)

(über die jeweiligen Time Windows weiss man
welches Macro/Micro/Oberflächen Wires sind)

Micro: Headstage 005 Reference 1 oder 2 oder 3, 4

Oberfläche: ~~~~~~ wie Macro

→ Input-Range auf ± 1000 µV

Referenz: - Rot an Stirn mit Verbindungs-
stecker

- Schwarz unter Schlüsselbein mit
Verbindungsstecker

- Grauer Endstück in RA1

Neuen Ordner für Patienten mit
034 .... im Laufwerk E oder (f)
anlegen. Dann Head-Boxes tauschen
dann record

Brummen auf Signal wegen Blutdruck-
messgerät / Lautsprecher

- Settings ~~~~~ speichern in Config-file
nachdem Fenster eingestellt wurden
- Bei gutem Signal ~~~~~ ...