ResLab

Installation procedure

1. Install windows

2. Install RAID system in BIOS

https://www.asus.com/de/support/FAQ/1007642/

3. Install drivers

1. Intel® Optane™ Memory and Storage Management from Microsoft store
    - https://www.microsoft.com/de-de/p/intel-optane-memory-and-storage-management/9mzng5hzwz1t?activetab=pivot:overviewtab
2. Install Intel-Driver and Support Assistant
3. Other Drivers for Mainboard (Always the **latest**!):
    - Date: 02.2020:
    - https://www.asus.com/de/Motherboards/PRIME-H370-PLUS/HelpDesk_Manual/
        - VGA (Version 26.20.100.7210)
        - Audio (Version 6.0.1.8339)
        - LAN (Version 10.31.828.2018)
        - Chipset (Version 1914.12.0.1256)

4. Activate Windows

- Run in cmd.exe with admin rights
- Make sure, the current date is correct
- RRZN: https://www.luis.uni-hannover.de/kms.html

1. slmgr -skms kms.rrzn.uni-hannover.de:1688
2. slmgr -ipk W269N-WFGWX-YVC9B-4J6C9-T83GX
3. slmgr -ato

5. Windows/Computer Settings

1. Disable automatic updates
    - Just “show new updates but dont download/install”
    1. “Windows” + “R” → services.msc

    2. “Windows Update” deaktivieren
2. Disable Standby & HardDisk Shutdown
3. Manually set Pagefile to 8096 MB on C:
    - https://www.windowscrush.com/moving-windows-pagefile-to-another-drive.html
4. Disable hibernate
    - anyway useless on SSD, eats space and may wear SSD
    - Run in cmd.exe with admin rights
        - powercfg -h off
5. Stop C:\Windows\Installer folder to grow beyong good and evil
    - Run in cmd.exe with admin rights
        - reg add HKLM\Software\Policies\Microsoft\Windows\Installer /v MaxPatchCacheSize /t REG_DWORD /d 0 /f
6. Limit Recyclebin to 1 GB
7. Rename Windows-Partition to “System”
8. Disable useless services (services.msc in command-promt)
    - Windows Search
9. Move User Folders (Right-click, Location, Move)
    - C:\Users\ResLab-Main\Desktop → D:\System\Users\ResLab-Main\Desktop
    - C:\Users\ResLab-Main\Downloads → D:\Downloads
    - C:\Users\ResLab-Main\My Documents → D:\System\Users\ResLab-Main\My Documents
    - C:\Users\ResLab-Main\My Music → D:\System\Users\ResLab-Main\My Music
    - C:\Users\ResLab-Main\My Pictures → D:\System\Users\ResLab-Main\My Pictures
    - C:\Users\ResLab-Main\My Videos → D:\System\Users\ResLab-Main\My Videos
    - C:\Users\ResLab-Main\Saved Games → D:\System\Users\ResLab-Main\Saved Games
10. Install german language
11. Create new “Install” folders in D and safe each .exe in there:
    1. D:\Install
    2. D:\Install\Motherboard Drivers
    3. D:\Install\Software_normal for “normal” computer software
    4. D:\Install\Software_ResLab for “special” software of the Lab
12. Deinstall Software:
    - One Drive
13. Dateiendungen anzeigen:
    1. Öffnen Sie irgendeinen Ordner.
    2. Klicken Sie im oberen Bereich auf den Reiter „Ansicht“.
    3. Wählen Sie hier den Bereich „Ein-/ausblenden“ aus und setzen Sie einen Haken unter „Dateinamenerweiterungen“.
14. Share for D-Drive (Read only)
15. Share for D:\Public (Read + Write)
16. Make hidden files and folders visible

Install all latest Windows Updates

6. Install Software

1. Mozilla Firefox
    1. Install AddblockPlus
2. Sophos → RRZN: https://www.luis.uni-hannover.de/antiviren.html
3. Time Watch → https://www.blue-series.com/en/products/time-watch/
    - Server: ptbtime1.ptb.de
    - Server selbst hinzufügen: time1.rrzn.uni-hannover.de
4. AFS → https://iqwiki.iqo.uni-hannover.de/doku.php?id=it:configuration_stuff:connectafs:start
    - Version: afs_iqo_1.7.33.zip
5. CCleaner
6. Notepad++
7. Libre office
8. FoxitReader
9. CPU-Z for stress test of CPU
10. Launchy
11. Ditto
12. Mathematica → https://iqwiki.iqo.uni-hannover.de/doku.php?id=main:mathematica
13. Install first Git and than TortoiseGit
    - Use your institute email and kerberos login credentials the first time it asks for such login details
14. MiniTool ShadowMaker Free

7. Backup with Minitool shadow maker free

- from C to D in D:\backupdata

8. Install Software

1. CrystalDiskInfo (Version: 8.4.0)
    - add to SysTray (for SMART warnings etc)
2. TightVNC (Version 2.8.27)
    - Client & Server
        - Server:
            - Login-PW: HMaser
            - Admin-Password: HMaser
            - Server: Uncheck “Accept incoming connections” (not yet using VNC)
3. Puresync (Version 3.6.2)

- Important data is copied to the respective folders representin the name of the computer automatically
- Ask Admin:
  - Computer should have full write access (but not delete) to \\afs\iqo.uni-hannover.de\projects\magnesium\Backups
  - Computer can read the whole \\afs\iqo.uni-hannover.de\projects\magnesium\
  - This is utilized by giving these PCs a **static IP adress** (assigned via their MAC) and these IPs are in the AFS group **iqo-hosts:mg-lab**
- Create \\afs\iqo.uni-hannover.de\projects\magnesium\ as Network adress
- configure the correct folders to be backed up to AFS
  - Nessary Backup folders:
    - D:Counter_Data → \\afs\iqo.uni-hannover.de\projects\magnesium\Backups\reslab\Backup_Counter_Data
  - Backups are copied to the AFS every night at 04:00 using the program PureSync, which is installed on all PCs
- The data stored on AFS is automatically backuped to the Rechenzentrum (AFS backup). So all data “should” be safe then in case of fire/water/acid/nuclear-winter or whatever :)

9. System Restore with windows

10. Copy old Data from other Hard drives

1. Do not forget to sort! 🙂

11. Install drivers for the printers

1. under \\printserv
   1. login: IQO\afsusername + afs password
   - prn-1101-001-d123a-1 for color
     - https://iqwiki.iqo.uni-hannover.de/doku.php?id=groups:fwj:physiqo2019:sonstiges:farbe_drucken
   - prn-1101-003-d323-1 for black/white

12. Required software for ResLab

1. Labview 2012 Fall for Wavemeter-Software and Monitoring for Meerstetter & RedLab-Card
   - ftp://labview@softdis.uni-hannover.de
     - User: labview
     - Passwort: Ee2Di7
   - NI-Account (if asked):

        - User: zipfel@iqo.uni-hannover.de
        - Password: magnesium24
2. (maybe) Labview 2011 for Comb (?)
    - File name: LVRTE2011fstd
3. Ni-drivers for Comb
    - File name: NIDAQ1600f0Config
4. FiberLaser
5. Fiber Comb Control
6. Highfinesse Wavemeter WS/6-200
7. Wavemeter-Labview-Software
8. TracerDAQ
9. RbMon
10. TEC Service XY
11. K&K FXE / FXX_App 1.4 + put K+K_Counter_Data on desktop
12. stable32
13. Strahl.exe

13. Software should start automatically by turning on the pc

- Autostart
    - go to Taskmanager
    - go to Autostart
    - right click to activate software
- To add programs to the autostart, proceed as follows:
    - Press “Win” + “R” and enter the command **shell:startup**.
    - The autostart folder opens. You add more applications by creating a shortcut to the original file in the startup folder. To do this, drag the file into the autostart folder while holding down the right mouse button and then release the button. Select “Create shortcuts here”.
    - After a Windows restart, the new programs should be started during the autostart
- Activate the following software:
    - Network Identity Manager
    - HighFinesse wavemeter
    - Wavemeter ResLab.exe
    - FXX_App

14. Create shortcuts on the desktop

1. Dieser PC (folder)
2. AFS (folder)
3. Mg-AFS (folder)

4. FiberLaser
5. Fiber Comb Control
6. HighFinesse Wavemeter
7. Wavemeter ResLab.exe
8. FXX_App
9. Counter_Data (folder)
10. TEC Service
    1. R1
    2. R2
    3. ECDL
11. put this Mathematica files to desktop:
    1. Allan-Live with time graph
    2. Kamm-Frequenzneu kombiniert
    3. allen-combined
    4. Allan-Live 1.2
    5. Allan-Live 1.2 - USB
    6. Virtual Beat
    7. VirtualBeat_DDSDivider_Error
    8. InstantDrift
    9. PTB Laser Frequenz
    10. PTB Laser Frequenz 1703test

15. Backup with Minitool shadow maker free

16. System Restore with windows

17. Install ALLAN live Py!

1. Install Python (Version: >3.8.2) [download the .exe or .zip in browser and install]
2. During the installation of Python:
    1. Important: “yes” to “Add Python 3.8 to PATH”
3. To edit the code in VS Code, install “Python” and “Python for VS Code” in VS Code
4. Upgrade “pip” in Terminal with “python -m pip install –upgrade pip”
5. Install all requirements with “ pip install -r requirements.txt ” or install one after the other requirement in Terminal with pip install **XXX**:
    1. (versions and requirements are updated in the repositry, which you can find below)

1. numpy==1.18.2
2. matplotlib==3.1.2
3. PyQt5==5.14.1

You need to be in the path of the cloned repositry to be able to access the

4. pandas==1.0.3
5. allantools==2019.09
6. pyqtgraph==0.10.0
7. Install git-cola (Version: 3.6)
    1. Open Git bag/Git cola
    2. sign up here with your AFS credentials: https://git.iqo.uni-hannover.de/mg/allan-live-py
        1. copy the https link
    3. clone in Git bag the link
    4. create a new folder in D
8. run “allan-live.py”

content of requirements.txt!

Old software under windows 7

Name	Description	Information
NetView	GPS receiver Pyhton Compiler	Control software for GPS signal.
Spyder		Programming software, for expample: Code for Einstein-Telescope
USB Serial/Terminal	Control Software for H-Maser Programming the USB-DDS Programming the USB-Serial	

Hardware of ResLab

- Mainboard: ASUS Prime H370-Plus
- CPU: A0148063 – Intel Core i7-8700, 6x 3.20GHz, tray, Sockel 1151 v2, Coffee Lake-S CPU
- CPU vent: Freezer 13 from Arctic
- SSD:V-NAND SSD 860 Pro Sata 6 Gb/s from Samsung [Size: 256 Gb]
- HD: 2x 2000GB WD Red WD20EFAX 256MB 3.5“ (8.9cm) SATA 6Gb/s
- RAM: 32GB G.Skill Aegis DDR4-3000 DIMM CL16 Dual Kit
- NI-Card:
- Serial Adapter:
- Power supply unit: EVGA Supernova 530 G3
- Computer chassis: Inter-Tech Case IPC Server 4U-4088-S
- Drive drawer: LC-Power Festplattenadapter für 3.5” Festplatten (LC-ADA-525-35-SWAP)
- Chassis vent: NB-BlackSilent PRO [120x120x25] from NoiseBlocker