

## Win10 LTSC 1809 upgrade on Thermo TNG system PC's

The easiest way to upgrade is most likely to have Thermo help you upgrade and/or buy a new PC from Thermo and have them install it for you. Of course, this comes at a price, so you may have to try doing it yourself.

In this document, I use screen shots preparing our Dell Optiplex XE2 for our TNG instruments / EASYnLC.

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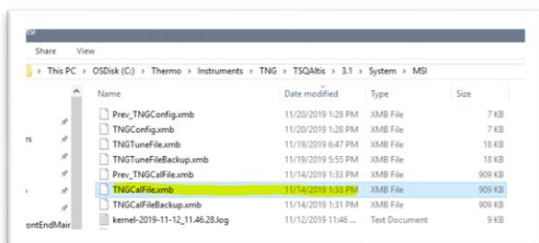
## Install Win10 LTSC 1809

If you have a spare PC or can afford a new PC with an extra Ethernet card that is a great way to go, you can load everything, keep your original PC in case you run into problems, and need to recover. (You should get the min requirements from Thermo, but something like the Optiplex XE3, i7 8<sup>th</sup> gen, 16 GB or more, 1TB hard drive, with a second 1 TB hard drive).

If not I would strongly recommend making a system image backup onto the D drive. I always backup and delete all the raw files and other unnecessary files before I start and before making the image backup.

### Calibration file backup

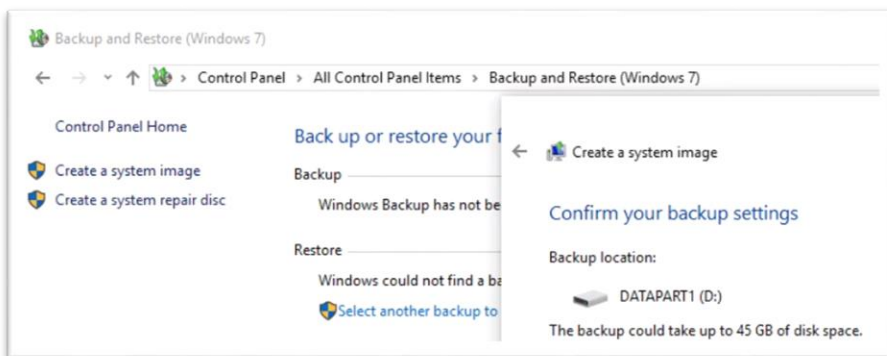
1. Before you begin make a backup copy of the calibration file, then run all the calibration checks and calibrate the ones that fail. The cali file is located here: C:\Thermo\Instruments\TNG\TSQAltis\3.1\System\MSI\TNGCalFile.xmb



2. I usually copy the whole “System” folder to the D drive and to our server...  
C:\Thermo\Instruments\TNG\TSQAltis\3.1\System  
This folder can be large so alternatively you can just copy the MSI folder, which contains the cali file  
C:\Thermo\Instruments\TNG\TSQAltis\3.1\System\MSI  
Note the Fusion and Lumos are the same, just says Fusion or Lumos instead of Altis
3. Backup/copy all the data and files and delete them from the C drive.
4. Open instrument configuration and remove all configured instruments

### Create system Image

5. Create an image backup to the D drive.



### Uninstall Thermo software (optional)

6. Optional uninstall Thermo software in the following order
  - o Instrument driver
  - o LCdevices (EASyNLc, library, devices)
  - o Freestyle
  - o Xcalibur
  - o Foundation
  - o and restart the PC

**Install Win10 LTSC**

## 7. Install Win10 LTSC

- when prompted select country, keyboard, and "Domain Join Instead of using a Microsoft account, create a user and password
- during the install it'll ask you to "get going fast" select "customize" and turn off all options
- select no to all the
  - o No: do more across devices with activity history
  - o No: voice control
  - o No: let Microsoft and apps use your location
  - o No: find my device
  - o No: Ink typing
  - o No: diagnostic data
  - o No: advertising ID

**Install additional software**

8. Install Sophos (UW uses Sophos for virus protection)
9. Install your preferred web browser
10. Install MS Office or LibreOffice
11. Install Adobe reader
12. Install WinSCP and Putty (if you use those)
13. Install Skyline (optional)  
<https://skyline.ms/Wiki/home/software/Skyline/page.view?name=default>
14. Install remote desktop app (optional) we use Cloudberry which is now MSP360  
<https://www.msp360.com/remote-desktop.aspx>
15. Do all the updates

## Windows 10 settings

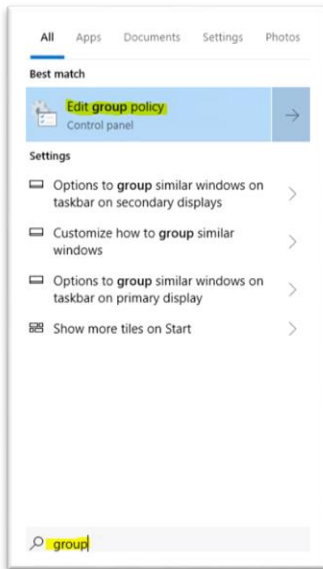
### Windows update settings

To prevent win10 from doing automatic updates and rebooting etc. we have to edit the Local Group Policy Editor. Here is a link to a site describing this:

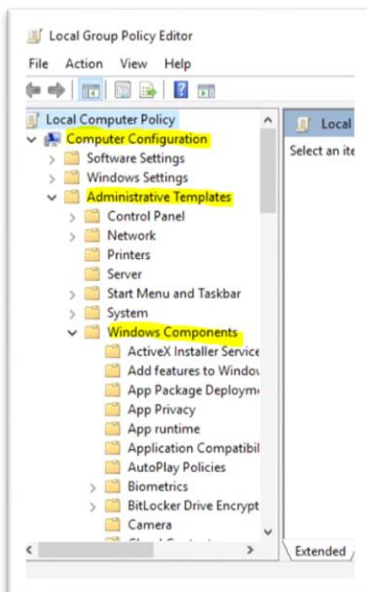
<https://www.tenforums.com/tutorials/8013-enable-disable-windows-update-automatic-updates-windows-10-a.html>

### Group Policy Editor

To configure local Group Policy and Windows Updates and Microsoft product updates, click on the magnifying glass next to the windows icon on the bottom left side of the task bar and search for "group policy" and it will come up with "Edit group policy"



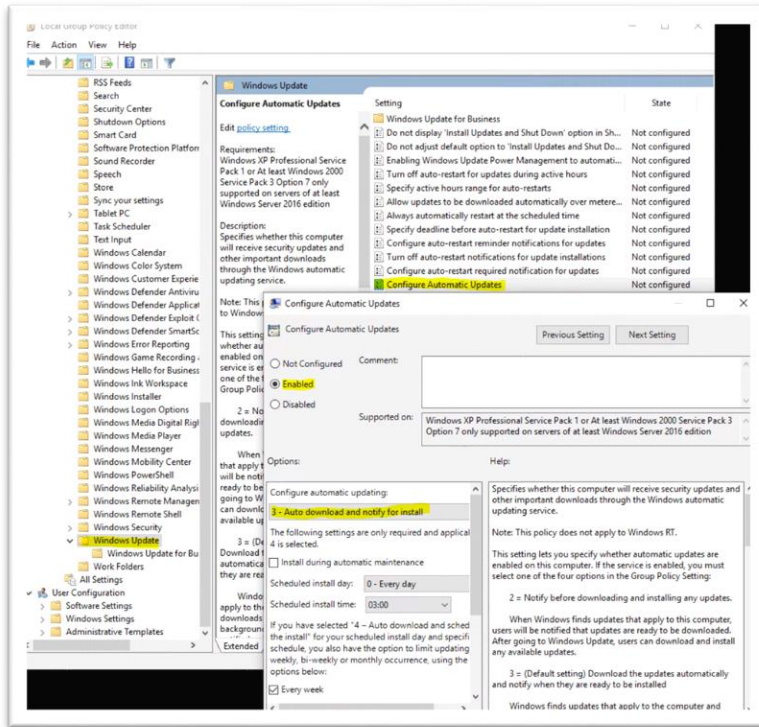
Click on it to open the Local Group Policy Editor. In the left pane expand: Computer Configuration/Administrative Templates/Windows Components/



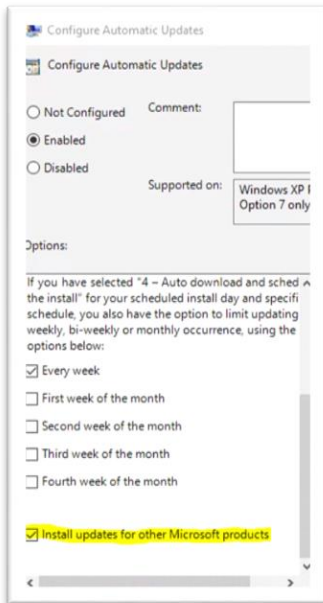
Scroll to the bottom and select Windows Updates

### Configure Automatic Update

In the right pane, select “Configure Automatic Update” and then “Edit Policy setting”  
Set the automatic updating to 3-Auto download and notify for install



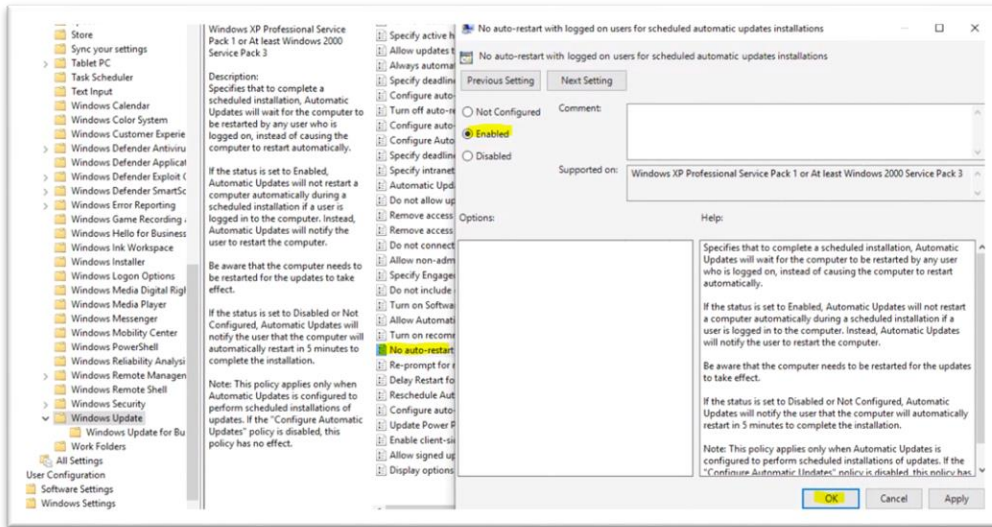
In the Configure automatic updating field, scroll down and check Install updates for other Microsoft products:



Click Ok.

**Turn off automatic restart:**

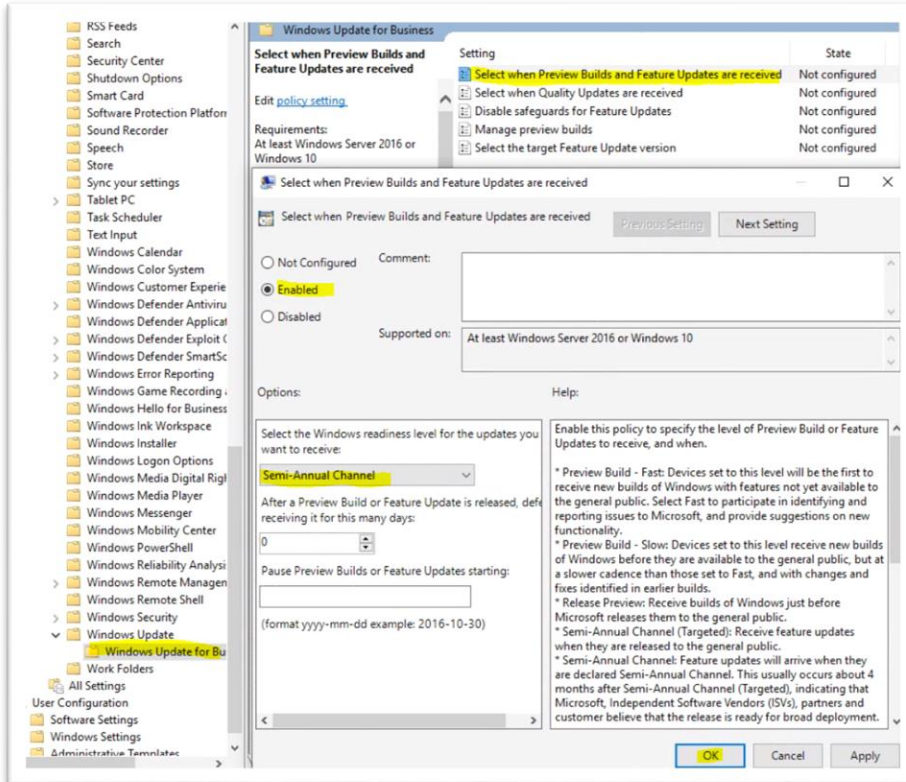
Click on “No auto-restart with logged on users for scheduled automatic updates” and select “Edit policy setting”:



Click Ok.

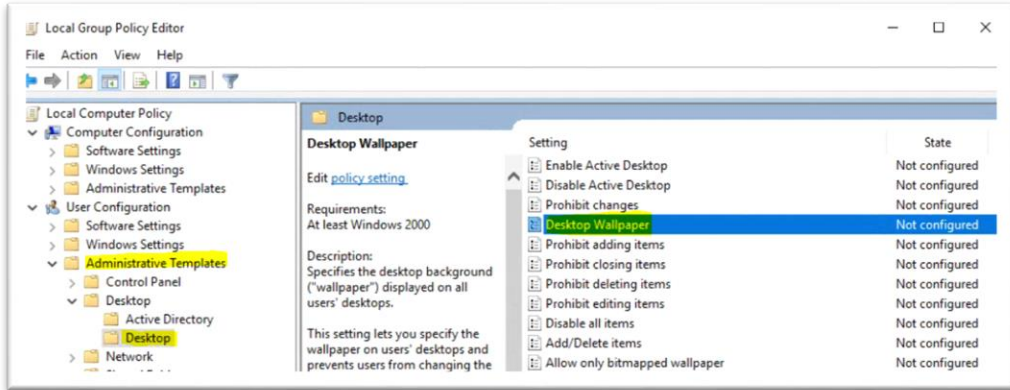
**Defer Windows Updates**

Select when feature Updates are received, select “Current Branch for Business”



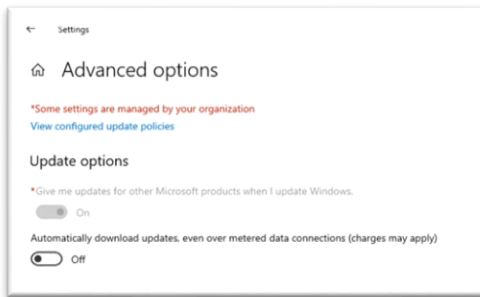
### Desktop Wallpaper

If your desktop wallpaper is locked i.e. if you can't change it, it may be set in group policy as well, disable it to be able to choose your own wallpaper.



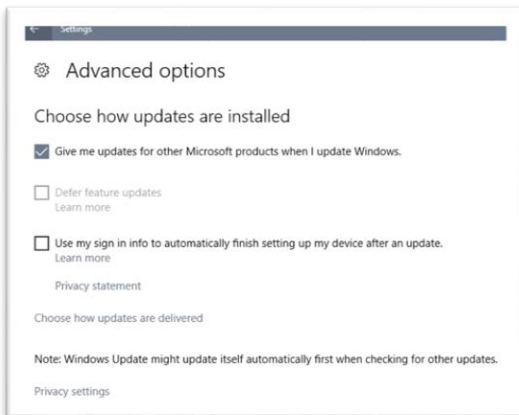
### Microsoft products update settings

Note if you did set that via the group policy it will be grayed out, i.e. you can skip this step



Otherwise, you can set it here:

To get Microsoft products updates go to Settings/Update & Security/Advanced options and check "Give me updates for other Microsoft products when I update Windows"

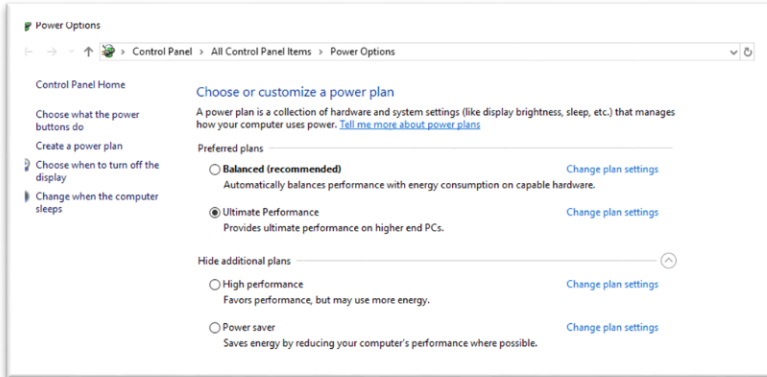


## Power settings

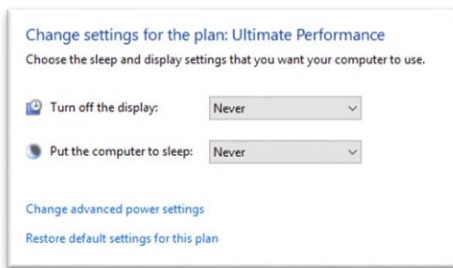
To keep the PC from turning off the hard drive I set the following power settings

Go to Control Panel/Power Options

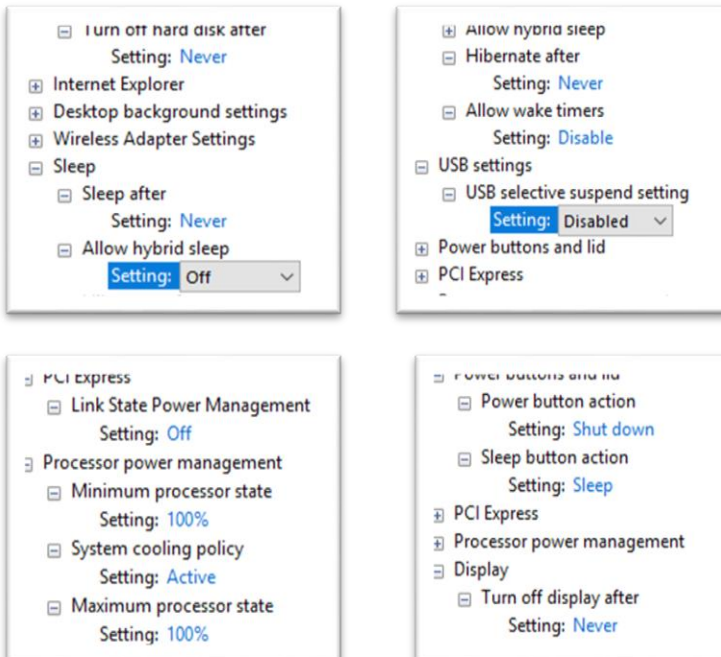
The “High performance” or “Ultimate performance” plan may be hidden, if so click on show additional plans, and select “High Performance” or “Ultimate performance” and then “Change plan settings”



Select Change plan settings and adjust settings as follows:



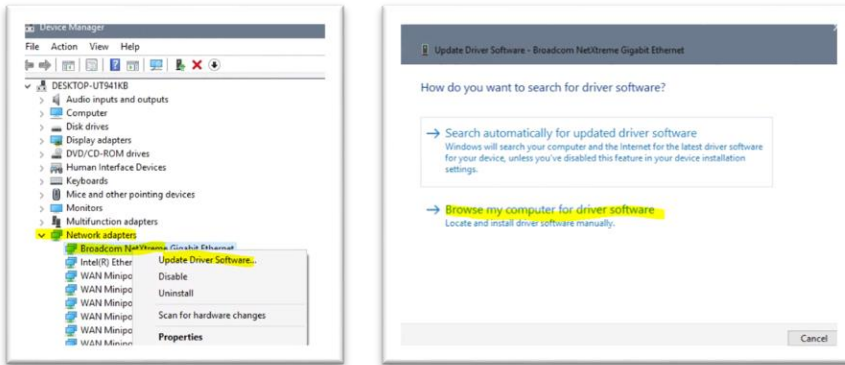
Click on “Change advanced power settings” and check, and adjust settings as follows:



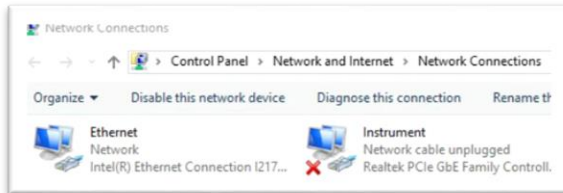


### Configure the Ethernet card for the instrument

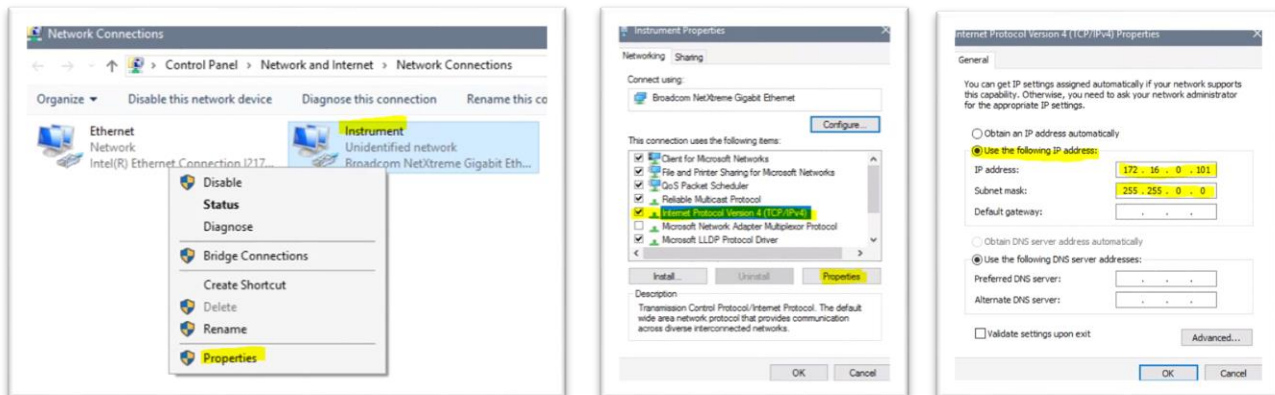
If this is a new PC and you need to install a card, power the PC off, unplug it, open up the side panel and install the card. Reconnect and power up the PC. It will likely find the card and install the drivers. If not you should have gotten a driver CD with it or you can find it online from the manufacturer. Save the driver onto your desktop, then go to Control Panel/Device Manager and under Network adapters find your new card, right mouse click and select Update Driver Software. Then Browse my computer and navigate to the folder where you saved the drive and hit ok.



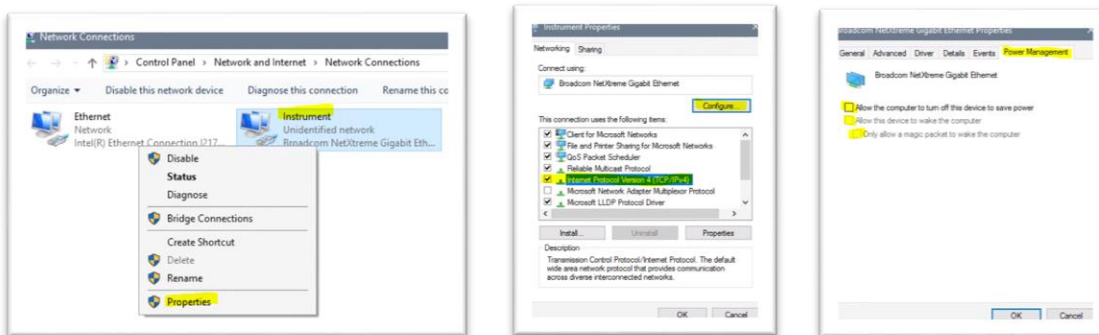
Go to “Control Panel\Network and Sharing Center” and on the left side of the window select “Change adapter settings”. In a new window you should see two cards (maybe three, e.g. we have a third one for the nanoAcquity). If you don’t know which one is the instrument card just unplug the mass spec Ethernet cable from the back of the PC and it will show as disconnected, rename it to instrument and plug it back in.



Do a right mouse click on the instrument card and select “Properties”  
 Now select Internet Protocol Version 4 (TCP/IPv4) and click on “Properties”  
 Click on “use the following IP address:”  
 Specify the IP address: 172.16.0.101  
 and Subnet mask: 255.255.0.0



Now set the Power management as shown in the screen shot below:

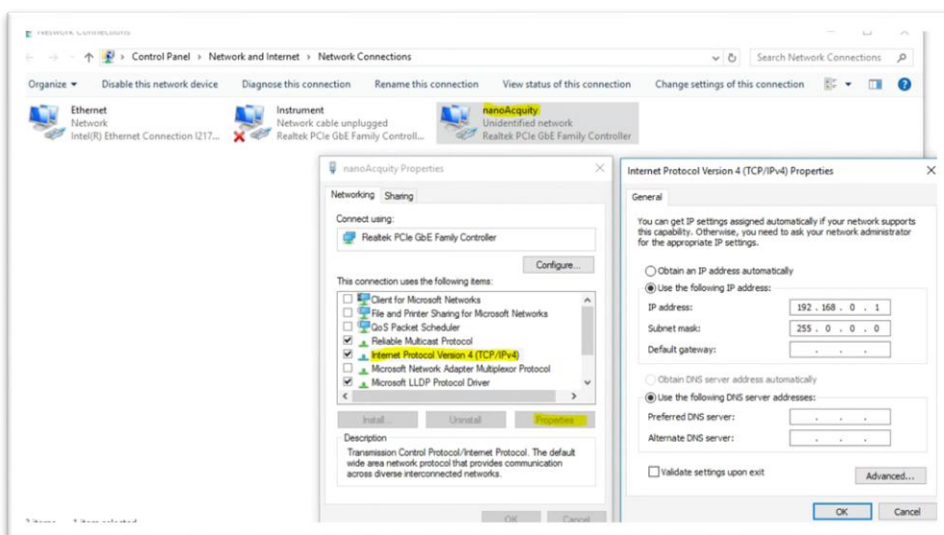


nanoAcquity (if present) Ethernet card settings:

Click on “use the following IP address:”

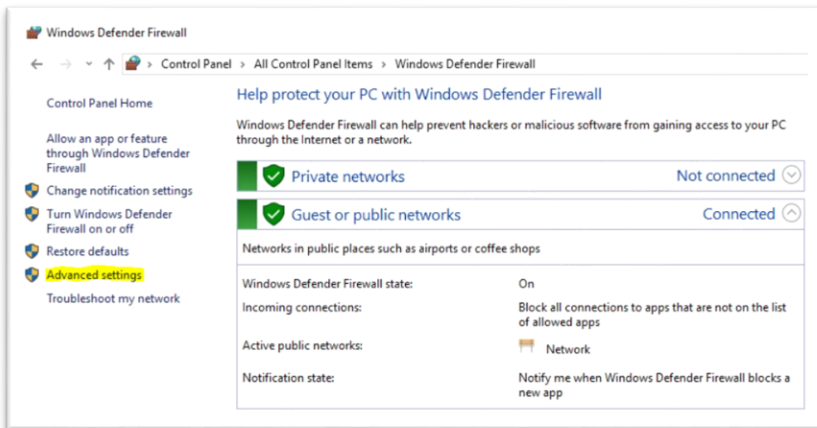
Specify the IP address: 192.168.0.1

and Subnet mask: 255.0.0.0

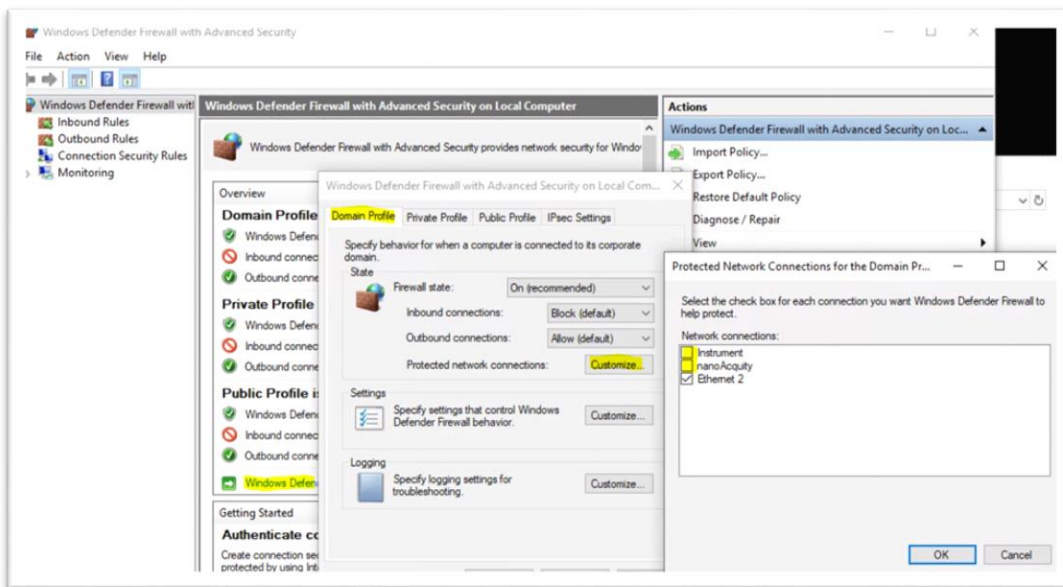


## Windows Firewall settings

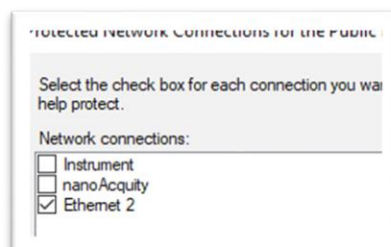
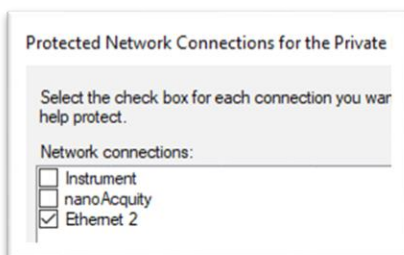
Go to Control panel/Windows Firewall and select "Advanced settings"



Select "Windows Firewall Properties" and then next to Protected network connections: select "Customize" and uncheck the instrument and the nanoAcquity if present, but leave Ethernet checked.



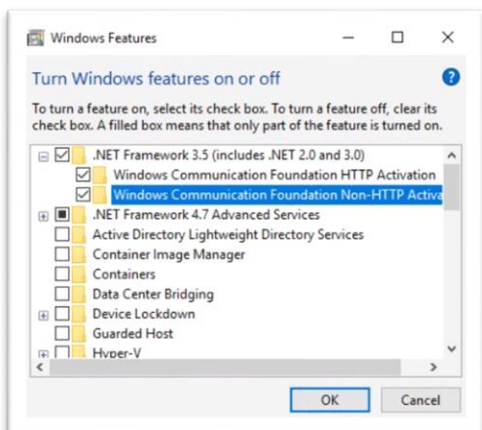
Do the same for the public profile and private profile



## Turn on windows features

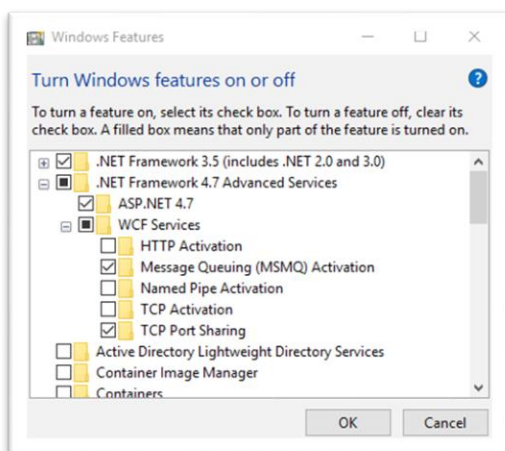
Search for windows features or go to Control Panel/Programs and Features and select "Turn Windows features on or off"

Select: .NET Framework 3.5 ((includes .Net 2.0 and 3.0) and hit ok, it will download the necessary files



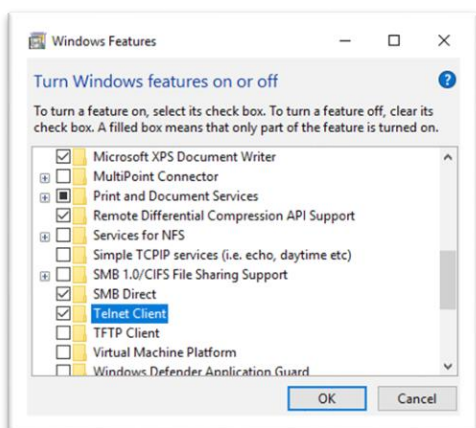
And then under .NET Framework 4.7 Advanced Services

Select ASP .NET4.7 and Message Queuing (MSMQ) Activation and TCP Port Sharing



Click OK and Reboot

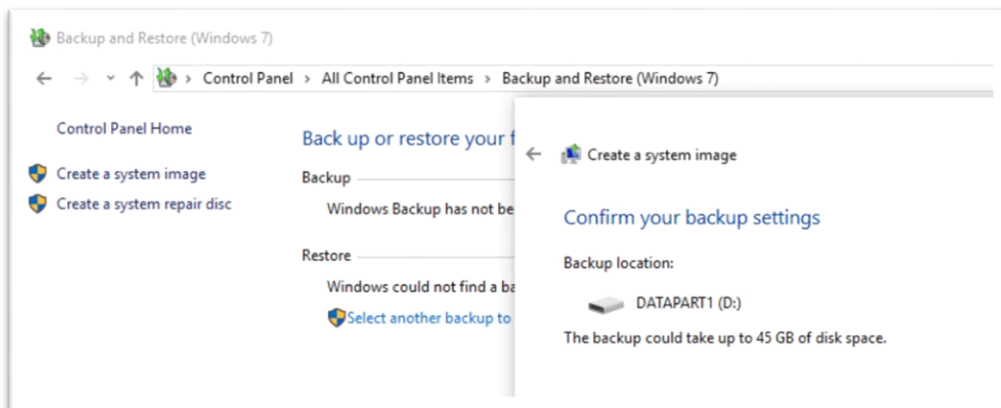
Then turn on Telnet Client:



Click ok

## System Image

Now is a really good time for a system image backup, if you created one earlier, go find it and rename it. Otherwise it will be overwritten.



## Install Thermo instrument software

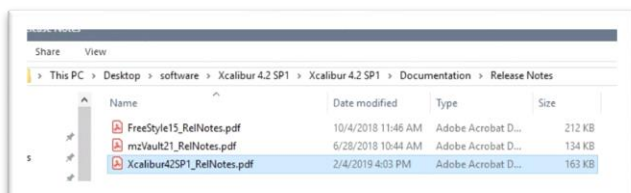
You should have all the software, but if not you should be able to register and download it from this site:

<https://thermo.flexnetoperations.com/control/thmo/login>

### Xcalibur and Foundation

If you downloaded the .zip file, extract all

Then go to the release notes

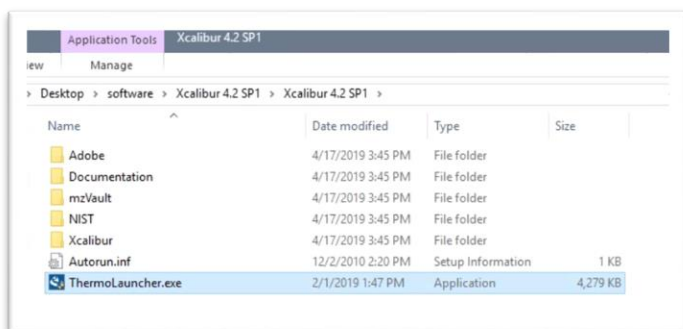


In there you'll find min system requirements and instructions how to install the SW.

Install Xcalibur first by double clicking on the "ThermoLauncher.exe".

If you haven't installed Adobe reader yet, you can do that now.

Then select Xcalibur, will automatically install Foundation if it is not present and then Xcalibur. It will also install Freestyle.

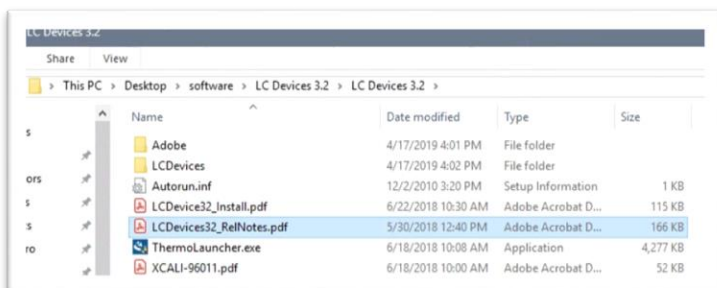


Note it will prompt for a reboot and continue the install after the reboot.

After it's installed I usually reboot one more time.

### LC Devices

Same for the LC-Devices, download the latest version, extract all and read the readme file:



Install LC Devices by double clicking on the "ThermoLauncher.exe"

During the install, select the instrument you want to install, e.g. EASYnLC or Waters nanoAcquity (if you have a functional driver)

Do a reboot.

### Instrument software

Download the latest version, extract all and read the readme file.

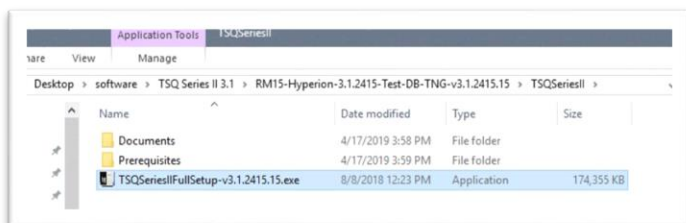
You may find that the system folder is still present even after the Win10 upgrade:

C:\Thermo\Instruments\TNG\TSQAltis\3.1\System

You can try installing the software, but it may give you an error that the System folder from an older version is present.

If so move it to a different location or rename it. And try again.

Now install the instrument software by double clicking the installer:



During the install make sure you select the correct options for your instrument (e.g. FAIMS, ETD and Internal calibrant etc).

Now copy the the original TNGCalFile.xmb into the folder and replace the existing one:

C:\Thermo\Instruments\TNG\TSQAltis\3.1\System\MSI\TNGCalFile.xmb

And the TNGConfig.xmb into the folder and replace the existing one: C:\Thermo\Instruments\TNG\TSQAltis\3.1\System\MSI\TNGConfig.xmb

Now open instrument configuration and add the instrument and LC system and hit done.

Reboot the PC and reset electronics on the instrument if necessary.

If you upgraded to a newer version software for the Fusion/Lumos run the upgrade procedure as described in the release notes and installation instructions. Note last time I did it, I found the syringe pump turned off during the "Upgrade with Calmix" procedure and it failed part of the upgrade, so I restarted the syringe pump and ran it again. It would now skip the part that already passed and run the remaining procedures.

For the install of the EASYnLC virtual display see <https://proteomicsresource.washington.edu/instruments/EASYnLC.php>

Note if the Thermo Software version" app won't open, install

The file missing while launching version info should include in this runtimes library:

<https://www.microsoft.com/en-us/download/details.aspx?id=5555>