Installation of GNXAS on Windows (Windows Linux Subsystem)
(August 2023, A. Trapananti, M. Minicucci)

Note: on Windows 11 everything should work smoothly. On Windows 10 installation works only with WLS2 and still some issues are reported in running Linux GUI applications (upgrade to Win11 strongly recommended).

1) install a Linux distribution on WLS2, for example distribution Ubuntu 22.04.2 LTS.
   From Microsoft Store, look for Ubuntu 22.04.2 LTS and install it like any other app.

2) run it from the Windows Start menu. The first time it will require to set a username and password. You will get a terminal from which you can run GNXAS for Linux or any other Linux software.
    It is strongly recommended to avoid working across operating systems with your files.
    Store and download your files in the WLS file system if you are working in a Linux command line.

3) It may be useful to install some software, such as gnuplot, emacs or gedit editors:
   ```
   sudo apt-get update
   sudo apt-get install gnuplot
   sudo apt-get install emacs
   sudo apt install x11-apps -y
   ```

4) Download one of the GNXAS packages from:
   http://gnxas.unicam.it/pag_gnxas/gnxas_download_linux64.html
   directly to your WLS file system. For example, for the **- PC Linux (11.2013 - static - gfortran compiler)** package (recommended), from your home directory type:
   ```
   wget
   http://gnxas.unicam.it/XASLABtars/gnxas_08_2021_Linux_64ubu18.04.tar.gz
   ```

5) Copy the downloaded package (tar.gz file) in `/usr/local/gnxas` (requires root privilege to create the new folder and move the file there).
   ```
   sudo mkdir /usr/local/gnxas
   sudo gnxas_08_2021_Linux_64ubu18.04.tar.gz /usr/local/gnxas
   cd /usr/local/gnxas
   sudo tar -xzvf gnxas_08_2021_Linux_64ubu18.04.tar.gz
   ```

6) You need to install some libraries. From any directory run:
   ```
   sudo apt-get update
   sudo apt-get install libquadmath0
   ```

7) The software should run.
   Add this line to your `~/.bashrc` file:
   ```
   export PATH=/usr/local/gnxas:$PATH
   ```

Installation of topdrawer (recommended to plot GNXAS output files)

1) Add the foreign architecture i386:

```
sudo dpkg --add-architecture i386

sudo dpkg --print-foreign-architectures
```
should return i386

```
sudo apt-get update
```

2) Install the foreign libraries:
```
sudo apt-get install libxtst6:i386
sudo apt install libxt6:i386
```

3) download the Debian package from:
`wget` http://gnxas.unicam.it/XASLABtars/topdrawer_5.12.14c-2_i386.deb

and install it:
```
sudo dpkg -i topdrawer_5.12.14c-2_i386.deb
```

Topdrawer should run (try td) , but problems with colors often occur:
Create a new `.Xresources` file in `/home/user/` and add the following lines:

```
Ugs*width:       800
Ugs*height:      600
Ugs*white:       White
Ugs*black:       #ff0000
Ugs*red:         #ff9000
Ugs*green:       #ff6600
Ugs*blue:        Blue
Ugs*yellow:      Yellow
Ugs*magenta:     #0099ff
Ugs*cyan:        #0066ff
Ugs*background:  #000000
```

Then in terminal run the following commands:

```
xrdb -o .Xresources
```