Guide on how to make ndm scripts working on Windows (for SleepScoring)

1. Install WSL (Windows Subsystem for Linux)

1. Open **PowerShell as Administrator** and Run:
   wsl --install
2. This installs Ubuntu by default. **Restart** your computer if prompted.
3. Launch "Ubuntu" from the Start menu. Set up your **username** and **password** as instructed.

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2. Install Required Linux Packages

```
sudo apt update
sudo apt upgrade
sudo apt install build-essential g++ make git nano wget unzip \
   libxml2-dev libsamplerate0-dev cifs-utils
```

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3. Mounting Windows or Network Drives in WSL

- For regular Windows drives (C:, D:), WSL usually mounts automatically as /mnt/c, /mnt/d, etc.
- For **network shares** (like NAS), you must **mount manually** using cifs. Just mount your NAS to your virtual environment

Add to /etc/fstab:

```
sudo nano /etc/fstab
```

Add a line like:

```
//129.199.81.18/data5/        /PATH cifs username=USERNAME,password=PASSWORD,domain=DOMAIN,rw,noperm 0 0
```

- Replace USERNAME, PASSWORD, DOMAIN, PATH

C. Make and mount:

```
sudo mkdir -p /PATH
sudo mount -a
```

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4. Download & Prepare NDManager Scripts

Clone or copy NDManager scripts to your Linux-accessible path (for example on NAS) from:
https://github.com/neurosuite/ndmanager-plugins

for example, for me it's:
/mnt/d/Arsenii/GitHub/ndm_scripts/

Ensure all scripts are **executable**:

```
chmod +x /mnt/d/Arsenii/GitHub/ndm_scripts/ndmanager-plugins/scripts/*
```

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5. Compile Binaries (xpathReader, process_resample, etc.)

A. xpathReader:

```
cd /mnt/d/Arsenii/GitHub/ndm_scripts/ndmanager-plugins/src/xpathReader
g++ -I/usr/include/libxml2 -o xpathReader xpathReader.c -lxml2
cp xpathReader /mnt/d/Arsenii/GitHub/ndm_scripts/ndmanager-plugins/scripts/
```

B. process_resample:

```
cd /mnt/d/Arsenii/GitHub/ndm_scripts/ndmanager-plugins/src/process_resample
g++ -O2 -o process_resample process_resample.c -lsamplerate
cp process_resample /mnt/d/Arsenii/GitHub/ndm_scripts/ndmanager-plugins/scripts/
```

Repeat for any other binaries if needed.

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6. Make Scripts Discoverable

Option 1 (Recommended): Always prepend the script directory to the PATH when calling from MATLAB or scripts:

```
export PATH=$PATH:/mnt/d/Arsenii/GitHub/ndm_scripts/ndmanager-plugins/scripts
```

Option 2: Symlink binaries into /usr/local/bin:

```
sudo ln -s /mnt/d/Arsenii/GitHub/ndm_scripts/ndmanager-plugins/scripts/xpathReader /usr/local/bin/xpathReader
sudo ln -s /mnt/d/Arsenii/GitHub/ndm_scripts/ndmanager-plugins/scripts/process_resample /usr/local/bin/process_resample
# ...and so on for each binary
```

To make this permanent **for all shells** (even those called from MATLAB/system), add the export to the end of your ~/.bashrc:

```
echo 'export PATH=$PATH:/mnt/d/Arsenii/GitHub/ndm_scripts/ndmanager-plugins/scripts' >> ~/.bashrc
source ~/.bashrc
```

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7. Call from MATLAB (Windows) via WSL

When calling from MATLAB, paths must be translated to Linux/WSL style. But you don't have to do anything here. This step is already implemented in GUI LastStep

Example:

```
if ispc
    ndm_dir = 'D:\Arsenii\GitHub\ndm_scripts\ndmanager-plugins\scripts';
    wsl_ndm_dir = strrep(strrep(ndm_dir,'\','/'),'D:','/mnt/d');
    wsl_data_dir = strrep(strrep(FinalFolder,'\','/'),'Z:','/mnt/z');
    cmd = sprintf(['wsl bash -c "export PATH=$PATH:%s; cd %s && ./ndm_lfp %s/%s"'], ...
        wsl_ndm_dir, wsl_ndm_dir, wsl_data_dir, BaseFileName);
    system(cmd);
```

```
    cd(FinalFolder);
else
    system(['ndm_lfp ' BaseFileName]);
end
```

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8. Troubleshooting

- **“command not found”:** Make sure all binaries are in your $PATH (see step 6).
- **“Failed to translate ... path”**: Check you’ve translated Windows paths to /mnt/drive/ form for WSL commands.
- **Mount errors:** Double-check /etc/fstab and that network credentials are correct.
- **Permission denied:** Use chmod +x to ensure all scripts/binaries are executable.
- **Compilation errors:** Make sure you’ve installed all -dev packages (libxml2-dev, libsamplerate0-dev, etc).

or simply talk to Arsenii: arsgorv@gmail.com
