Guide to using Whisper on UBELIX

Creating an UBELIX cluster account

To use UBELIX, you need to request access from the UBELIX team. To request the activation of your Campus Account, please send a request via https://serviceportal.unibe.ch/hpc   including:

• a brief description of what you want to use the cluster for. In this case it would be to use the Whisper installation of DSL to transcribe an audio/interview to text.
• your Campus Account username
Students must additionally provide:
• the name of the institute (e.g. Mathematical Institute)
• if available, the name of the research group (e.g. Numerical Analysis)

If you possess multiple Campus Accounts (staff and student) use your staff account since this one is more specific. As soon as we get your email we will activate your account for UBELIX. Once activated, you will receive a confirmation email containing initial instructions

For more information: http://hpc-unibe-ch.github.io/getting-Started/account.html

Accessing the UBELIX cluster

To access the UBELIX cluster you need to be connected to the wifi/network on campus or through a VPN connection to the university campus network.

To connect via VPN, you need to install FortiClient. You can find all the necessary information to do so here:
-   Windows

Once connected to the university network by campus wifi/network or VPN, open a command line interface of your choice.

How to open a command line interface on Windows:

- Go the the desktop screen
- Do a right mouse click on the background, make sure **not** to select any apps.
- Press option "Open in terminal"

Once the command line interface is open, type the following command to log in:

`ssh <user_name>@submit03.unibe.ch`

(e.g.: ssh ab12c345@submit03.unibe.ch)

Then type in your password. To protect your privacy, you cannot see the typed characters on screen, they are 'hidden'. It may seem like you are not typing at all, but you are.
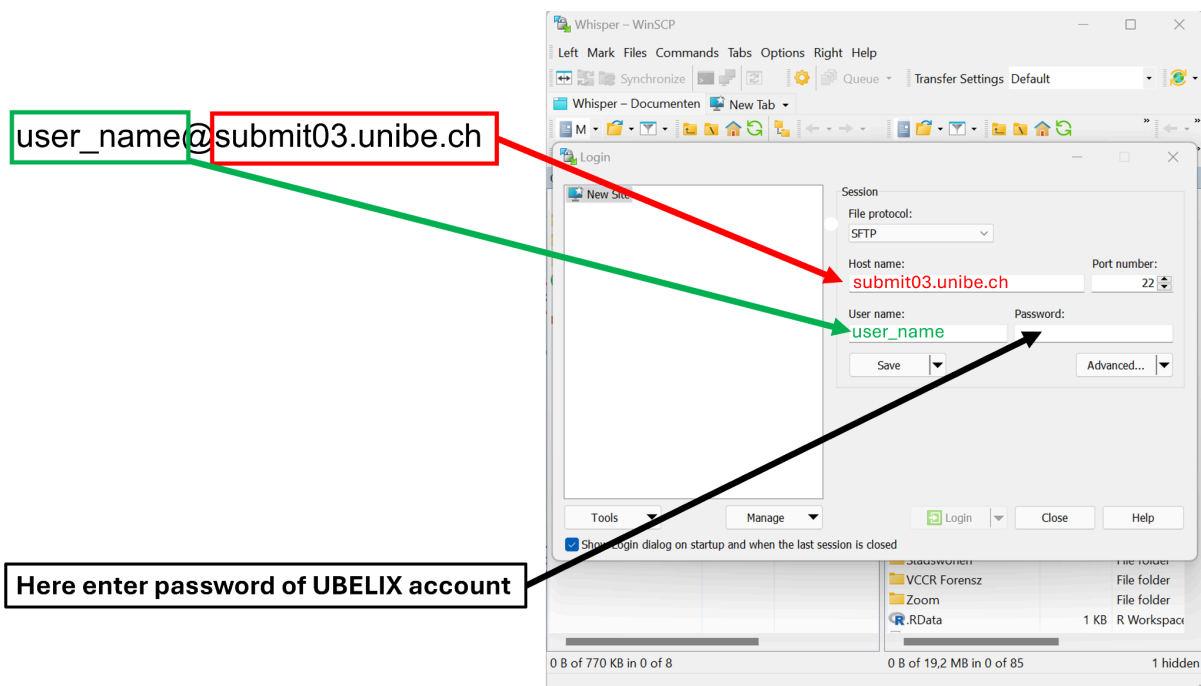
Accepted file formats
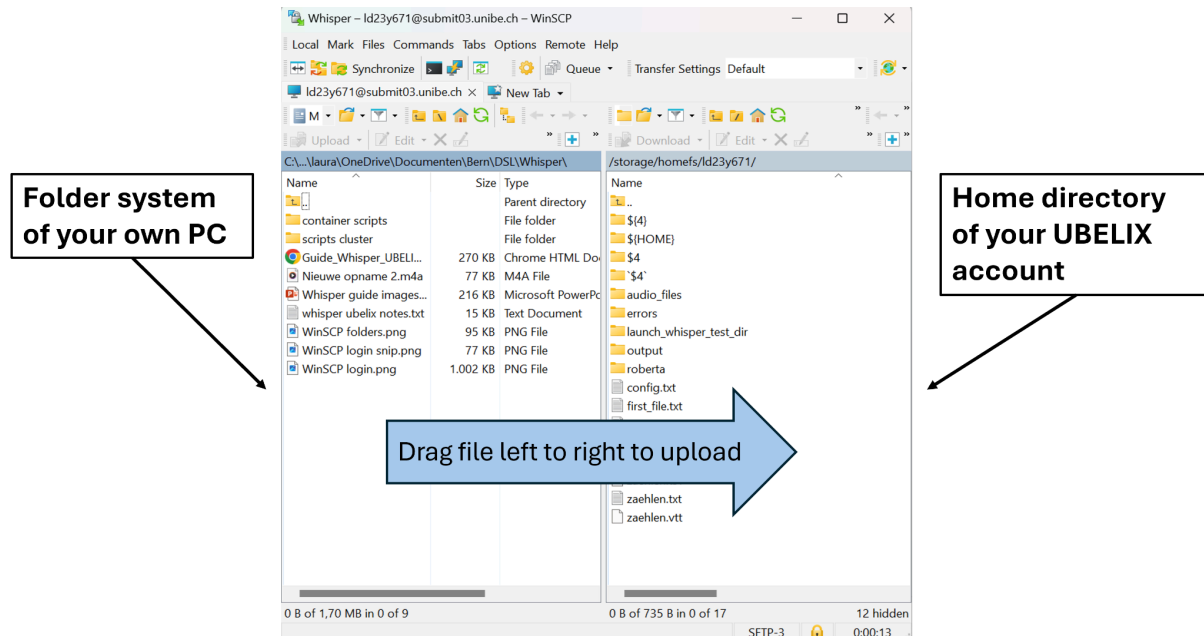
- m4a
- mp3
- webm

- mp4
- mpga
- wav
- mpeg

How to upload files to UBELIX

Install and open the WinSCP app: https://winscp.net/eng/download.php

1. Log in with the credentials received from UBELIX:

2. **Upload the audiofile to be transcribed by dragging it from your PC folder to the UBELIX directory. The _left panel_ in the WinSCP app is the folder system of your own PC, the _right panel_ is the directory (folder) system of the UBELIX cluster. The directory (folder) you log into on the _right panel_ is the home directory of your UBELIX account.**

Command to start Whisper

1. **Copy the path to the whisper script onto the command line of the command line interface. To paste into the command line you do a right mouse click instead of ctrl-v.**

`/storage/research/dsl_shared/solutions/whisper/scripts/transcribe.sh`

2. **Behind the path to the script paste the path to your audio file with a space in between the two. <u>Note that Whisper in its current form can only handle 1 audiofile per command.</u>**
   a. **Copy ' ls ' into an empty command line and press 'Enter' . If you see your file listed, you can launch whisper by copying the following command:**

`/storage/research/dsl_shared/solutions/whisper/scripts/transcribe.sh <audio_file.mp3>`

(Replace <audio_file.mp3> with the name of your audio file)

Press _Enter_ to send your command

b. **If you do not see your audio file listed you can retrieve the path to it as such:**

```
find $HOME -name "<audio_file.mp3>"
```

(Replace <audio_file.mp3> with the name of your audio file)

The complete command should look as such:

```
/storage/research/dsl_shared/solutions/whisper/scripts/transcribe.sh
/storage/homefs/<your_user_name>/<path/to/your/audio_file.mp3>
```

(Replace <your_user_name> with your UBELIX user name, e.g.: ab12c345; and replace the <path/to/your/audio_file.mp3> with the result from the ' `find` ' command)

Press *Enter* to send your command

3. **If the script has launched your Whisper job successfully it will report a job number. Example:**

```
Submitted batch job <1234567>
```

Check the status of your job on the cluster:

```
squeue --me
```

The output looks like this:

```
JOBID    PARTITION   NAME    USER    ST   TIME  NODES  NODELIST(REASON)
1234567        gpu  whisper  ld23y671  R   0:07     1           gnode18
```

- ST: status of your job. PD means 'pending', it is waiting in the queue. R means your job is running.
- TIME: reports the amount of time for which your job has been running.

(If there is no output right after starting your job something likely went wrong. Even audio files of a few seconds take a minimum of half a minute to process.)

In the directory 'output' inside the audio file directory, you can find files named according to the job number with more detailed reports on your job in case an error occurs.

If there is no output anymore from the "squeue --me" command, your job has finished running and the transcription files should be ready to download.
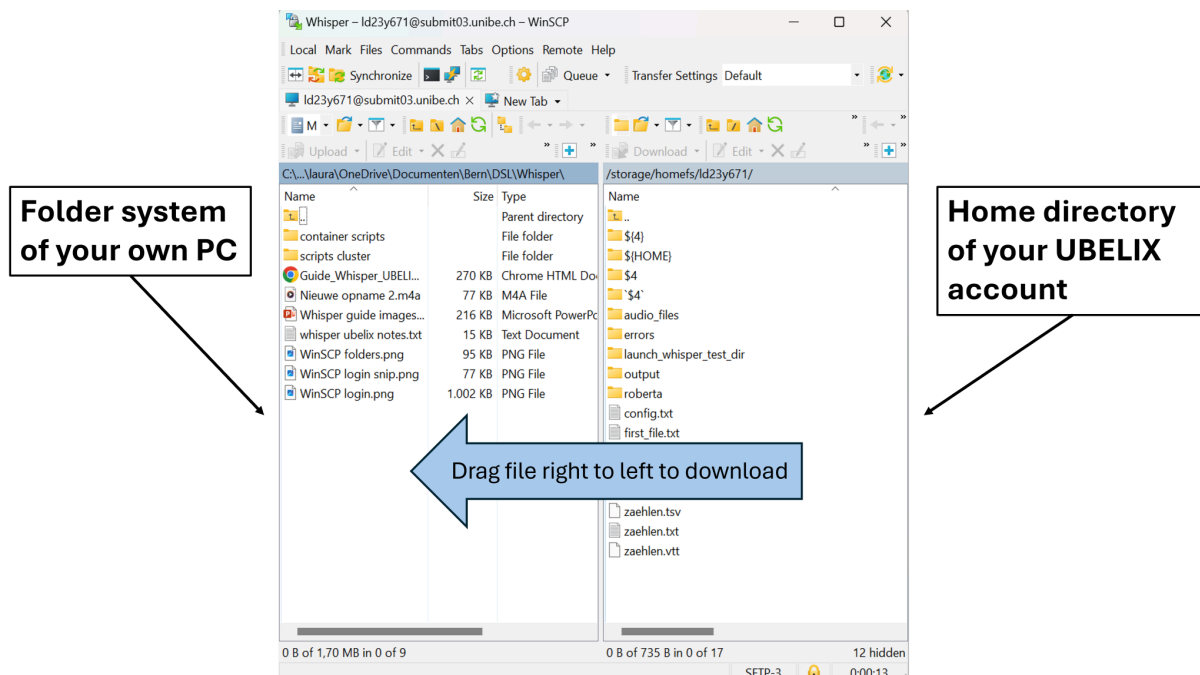
4. **Once your job has finished you can find the transcription files in the same directory (folder) as where your audio file is. You can check the files and their sizes with the following command:**

```
ls -lh </path/to/audio_file_directory>/
```

You can also check this by refreshing the home directory panel in WinSCP. If the files appear there, their time of creation and their size.

Get the transcription from the cluster onto your PC

1. Log into WinSCP again as described earlier.
2. In the **left panel** of the WinSCP app go to the folder where you want to save the transcription files onto your own PC.
3. In the **right panel** of the WinSCP app go to the directory (folder) where you uploaded your audio file onto the UBELIX cluster. Whisper will have deposited the transcription files in the same directory as where you uploaded your audiofile.
4. Drag the transcription file from the right to the left panel. Once the download is finished, you can open the file from your PCs file system.

Advanced options

If you have experience working with Whisper or the command line you can change some of the default options of Whisper yourself.

Currently supported options:
- Task (-t): change the default from transcribe to translate, to translate any language to English.
- Language (-l): change from the default German to any of the other Whisper supported languages (https://github.com/openai/whisper#available-models-and-languages)
- Model (-m): change model size. Whisper already by default runs on large-v3, so you can only switch to smaller models. Smaller models might be preferable if your job runs for too long.

For more information on how to enter your own options in Whisper, enter either of the following commands:

/storage/research/dsl_shared/solutions/whisper/scripts/transcribe.sh -h

Example of a command with language changed to French, task changed to translate and model changed to tiny:

/storage/research/dsl_shared/solutions/whisper/scripts/transcribe.sh
/storage/homefs/<your_user_name>/<path/to/your/audio_file.mp3> -l fr -t translate -m tiny