Tutorial: How can I work with Jupyter at home?

There is two ways to work with Jupyter at home:

- Either you install Python, Jupyter and all other dependencies on your device so you can run Jupyter locally.
- Or you connect with the Tardis work stations you already use during the class!

There is dozens of tutorials on how to run Jupyter locally, let us therefore focus on the second solution!

The D-ITET Tardis computer network

The D-ITET has around 100 freely accessible computers to use for

- Student's personal computing/work
- Computer Classes or Student Labs
- Distributed Computing, when not in use

The computers in this network are called tardis and are enumerated with two-digit numbers and the letters: [b,c,d]. Each computer has a domain hostname and a (public) static IP address:

tardis-c13.ee.ethz.ch / 129.132.3.140

More info: https://computing.ee.ethz.ch/Workstations/ComputerRooms

Use Secure Shell to connect to a Tardis computer

First of all, make sure you are on the ETH Zurich network:

Use eth|eduroam WiFi or connect to the ETH virtual private network. (Almost all ETH servers are only available inside their network!)

Open a Terminal on your client and enter this command to open a SSH connection:

```
$ ssh <username>@tardis-c<XX>.ee.ethz.ch
```

Now as you are connected to a Tardis computer go to your python-class folder and start jupyter:

```
$ cd path_to_class/folder
$ anaconda
$ jupyter-notebook
```

Make note of the link that is given to you by Jupyter!

A practical approach to use SSH-Tunneling

SSH can redirect IP connections from your local computer by tunnelling them through the encrypted SSH session to the remote computer. This allows to establish connections to ports on the remote machine that are otherwise not accessible from the local computer (also by-passing firewalls). The endpoints of the tunnel are defined by an IP port on the local machine and on the remote machine. All connections to the port on the local machine will be forwarded the specified port on the remote machine.

Checkout the '-L' argument in 'man ssh' for more information.

(This can also be used to connect securely to a Desktop Environment using the VNC protocol)

To forward the port of your Jupyter-Notebook, enter this command in **another** local terminal (replace the missing keywords)

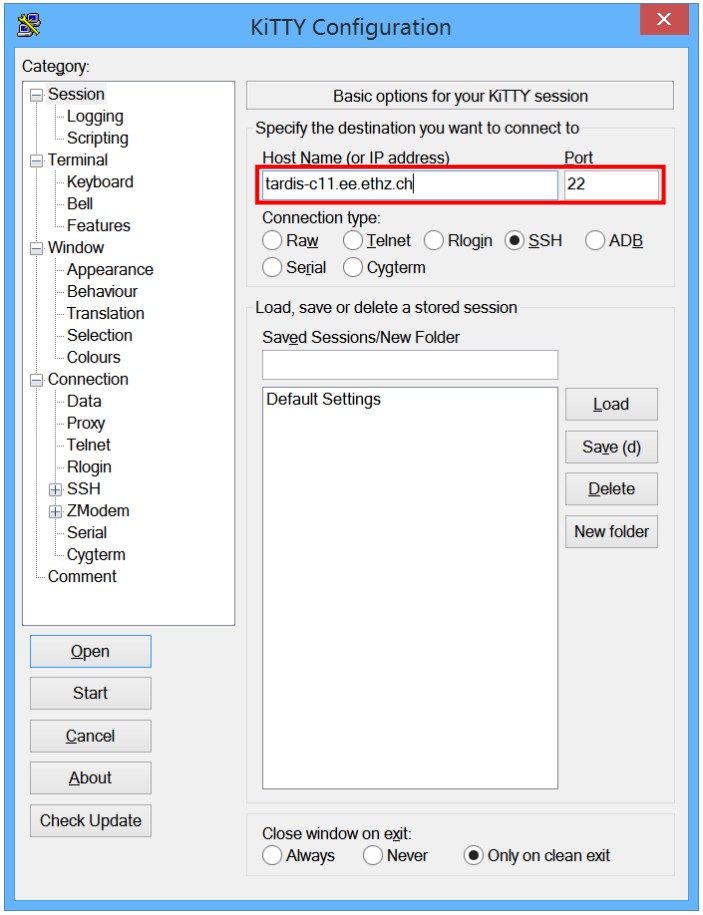
```
$ ssh -L localhost:8888:localhost:8888 <username>@tardis-cXX.ee.ethz.ch
```

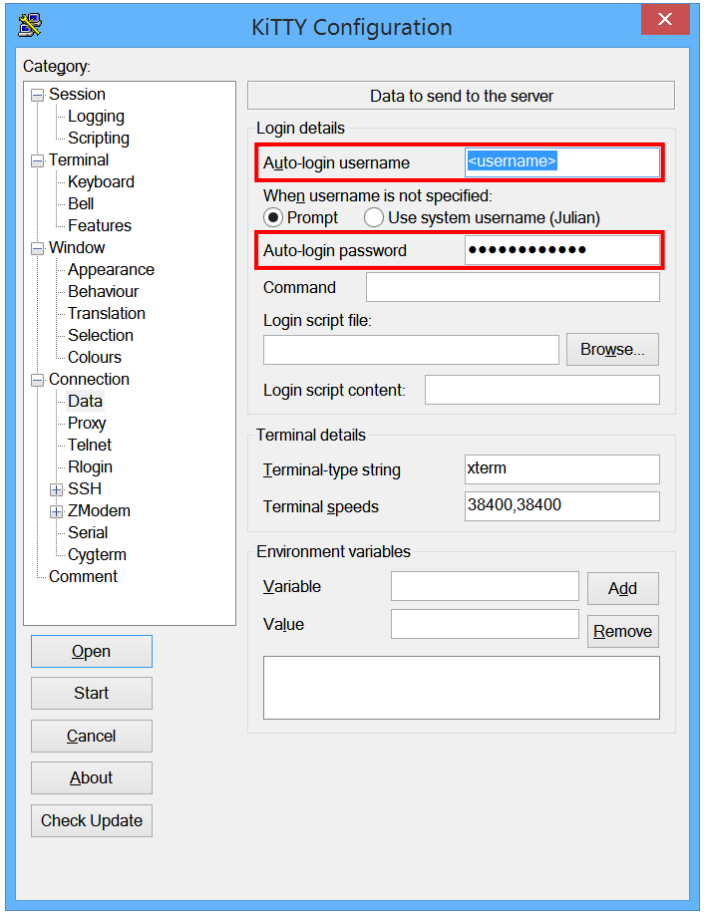
Now open the link given by jupyter notebook in your local browser.

The link can look like: http://127.0.0.1:8888/tree?token=c88dc46125c8c4a2c50848fc2e0756439b2a8edf4ad154b2

Note: closing this SSH session will also close the forwarded network connection from your computer to jupyter-notebook on tardis-cXX.

On Windows: using PuTTY/KiTTY





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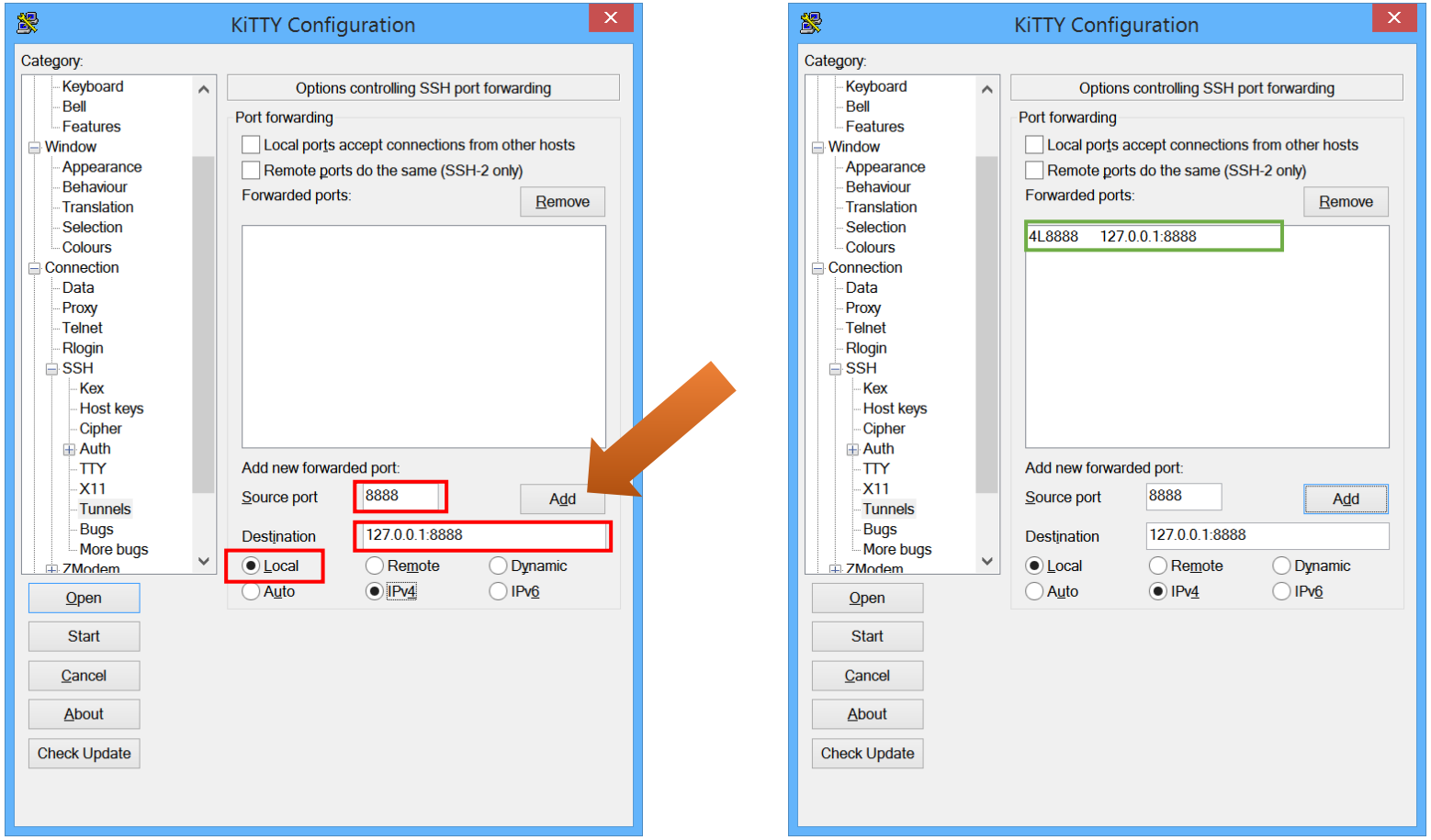
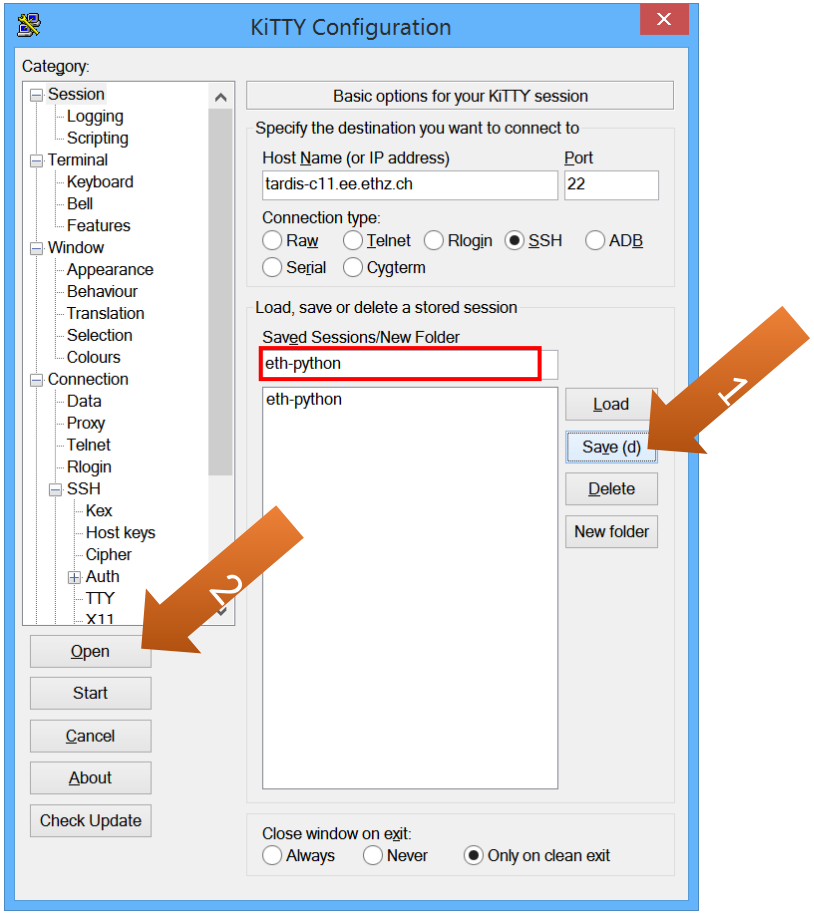
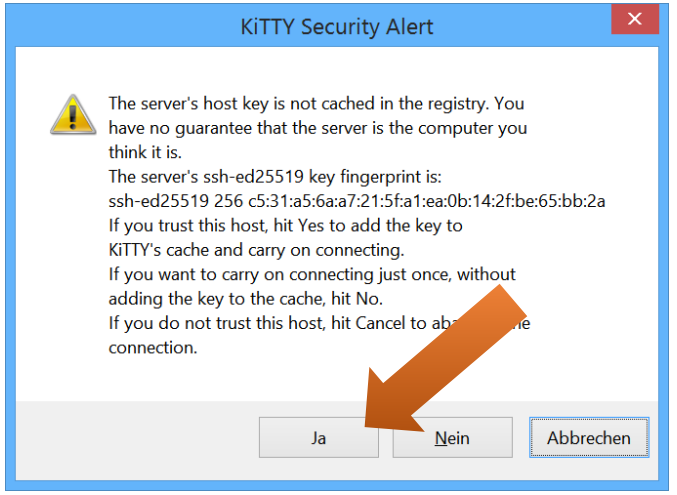


On Windows: using PuTTY/KiTTY





On Windows: using PuTTY/KiTTY

Shell Prompt