DAT105 / DIT051 Computer Architecture

September 2020

Instructions for remote connection to the Lab computers

In order to run simulations for lab assignments, you need a Linux operating system. You can either use your own computer or the lab computers at Chalmers. But, at the current situation the lab sessions will run remotely. Therefore, you can only use the lab computers through a remote connection. In this document, we provide you some instructions for this remote connection.

Step1: Connect to Chalmers VPN
You need to be connected to the Chalmers network. Hence, you must use Chalmers VPN. For more information you can check the following links:

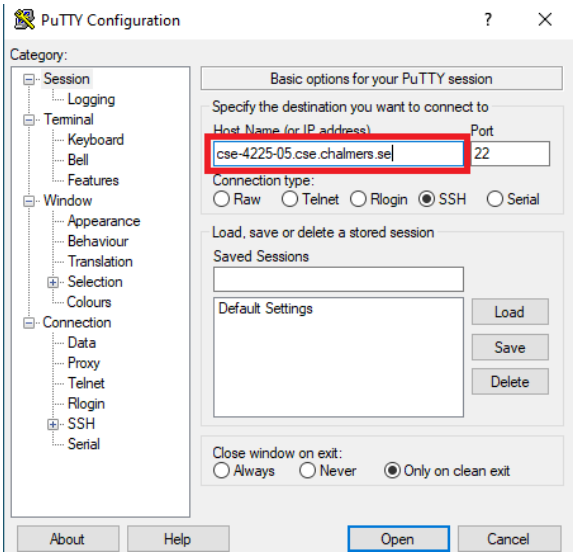
https://it.portal.chalmers.se/itportal/Student/Student
https://it.portal.chalmers.se/itportal/NonStuDATWindows/VPNEgenWindows10
https://it.portal.chalmers.se/itportal/NonStuDATLinux/VPN-Ubuntu

Step2: Install an SSH client:
Linux: From Linux operating system, you can simply use the 'ssh' command from the terminal (https://www.ssh.com/ssh/command/) to connect.
For file transfer you can use 'scp' command (https://linux.die.net/man/1/scp) or another software such as FileZilla (https://filezilla-project.org/).
Windows: From Windows operating system, you need to install an SSH client such as the following: https://www.putty.org/, https://mobaxterm.mobatek.net/
For file transfer you can either use SCP support on your SSH client (if available) or FileZilla (https://filezilla-project.org/).

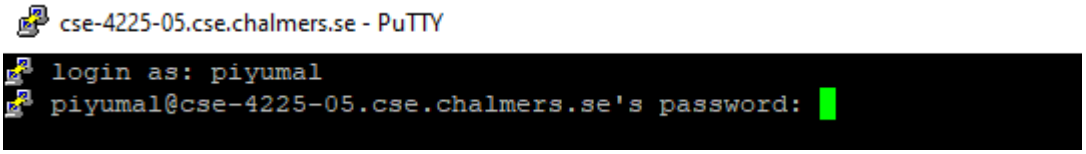
Step 3: Connect through SSH:
You must use "computer_name.cse.chalmers.se" as the address to connect and login with CID credentials. Replace "computer_name" with the name of the computer which will be provided for your group in Canvas. For example you can use the following command in linux:
ssh CID@computer_name.cse.chalmers.se

After installing necessary applications: Step by step instructions for connecting to the remote server and launching the simulations

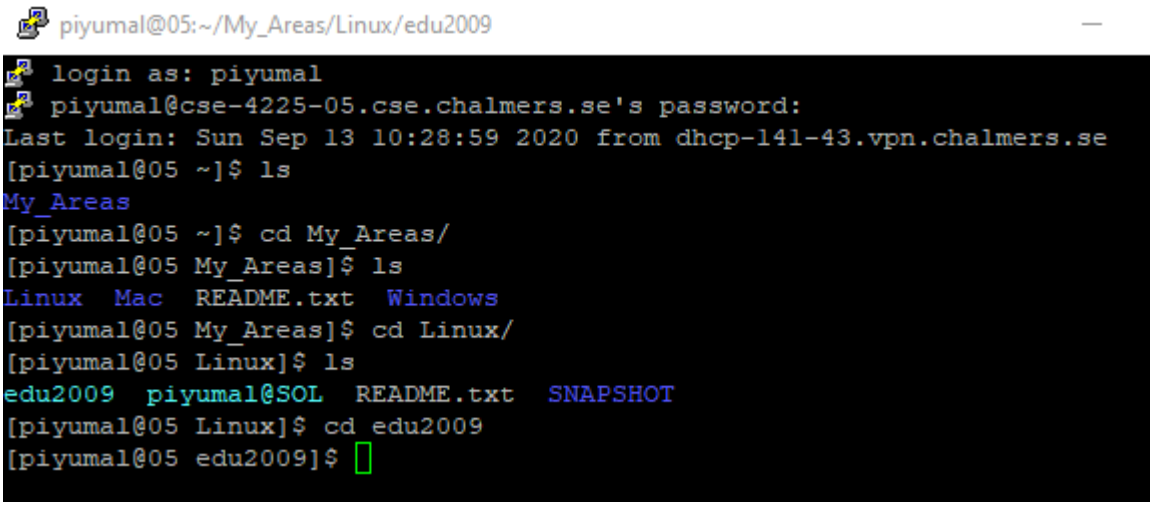
1. Remotely connect to the server using Putty. Enter your host name followed by ".cse.chalmers.se"



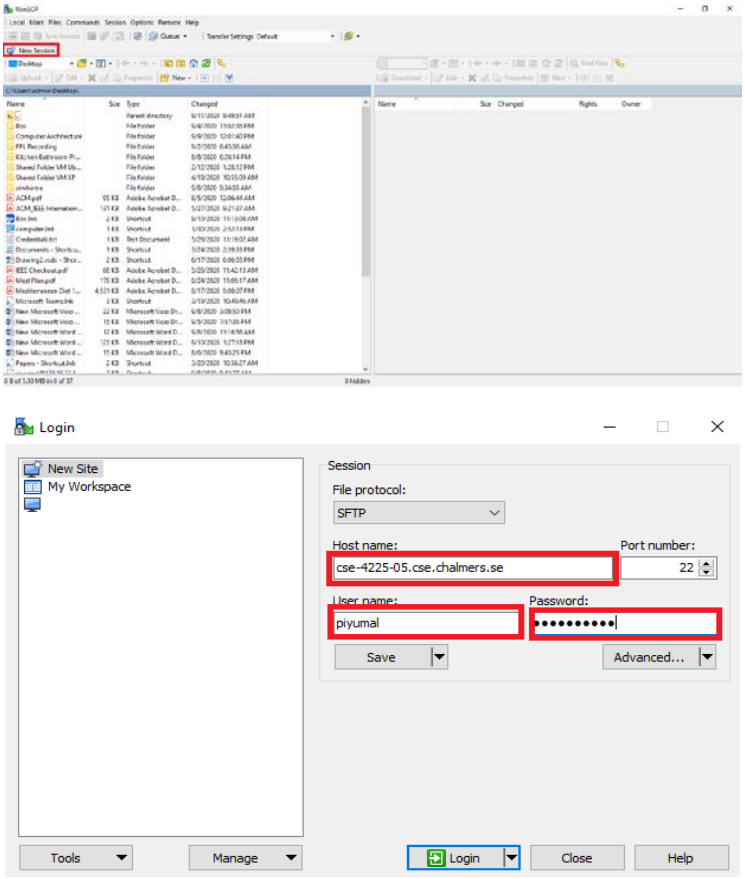
2. Use your CID and password to login:



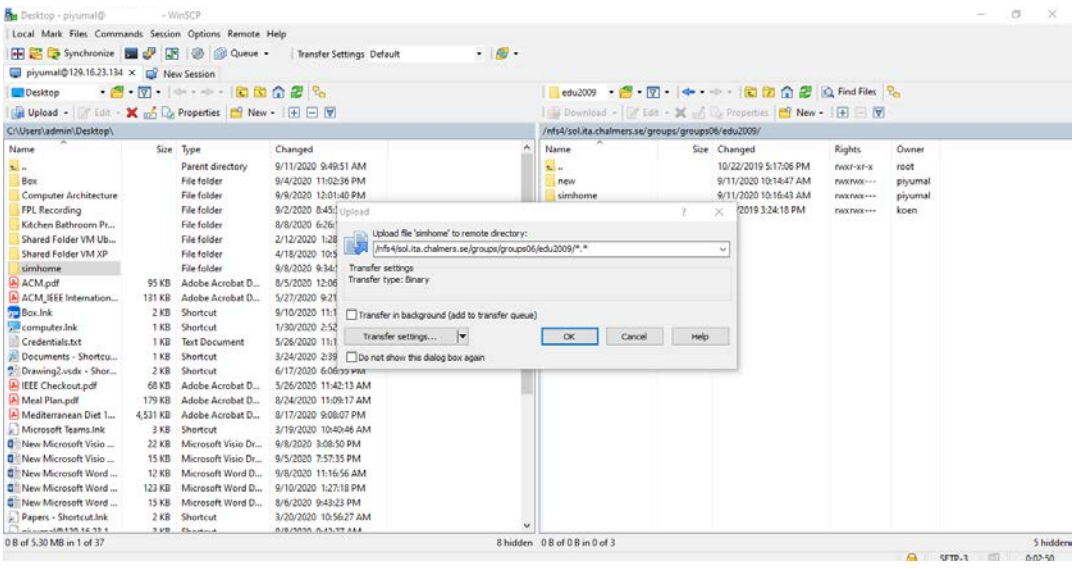
3. Navigate to the working directory:



4. For copying and managing files we will use SCP.



5. Upload simhome folder to the working directory:



6. Make a new directory inside /simhome/config for each task. Let Lab1-Task1 be the directory for the first task:

piyumal@06:~/My_Areas/Linux/edu2009/simhome/configs

```
[piyumal@06 simhome]$ ls
apps  base1.txt  bin  configs  Readme.txt  runsim_profile  runsim_sim
[piyumal@06 simhome]$ cd configs
[piyumal@06 configs]$ ls
gsm-untoast-output_small.decode.run  Lab1-Task1  qsort_small-output.txt
[piyumal@06 configs]$
```

7. Copy the configuration file, base 1.txt in this case to the configs folder

8. If you want to edit the config file you may use a text editor like nano

```
[piyumal@06 Lab1-Task1]$ ls
base1.txt                              Stats_base1_gsm-untoast.txt
gsm-untoast-output_small.decode.run    Stats_base1_jpeg-cjpeg.txt
jpeg-cjpeg_output_small_encode.jpeg    Stats_base1_qsort.txt
qsort_small-output.txt                 Stats_base1_stringsearch-cabce.txt
Stats_base1_dijkstra.txt
[piyumal@06 Lab1-Task1]$ nano base1.txt
```

9. Change permissions of runsim_sim script with the following command:

piyumal@06:~/My_Areas/Linux/edu2009/simhome

```
[piyumal@06 simhome]$ chmod +x runsim_sim
```

10. It's time to run the simulation

piyumal@06:~/My_Areas/Linux/edu2009/simhome

```
[piyumal@06 simhome]$ ./runsim_sim Lab1-Task1 base1
```

```
[piyumal@06 simhome]$ ./runsim_sim Lab1-Task1 base1
running app dijkstra
Shortest path is 1 in cost. Path is:  0 41 45 51 50
Shortest path is 0 in cost. Path is:  1 58 57 20 40 17 65 73 36 46 10 38 41 45 51
Shortest path is 1 in cost. Path is:  2 71 47 79 23 77 1 58 57 20 40 17 52
Shortest path is 2 in cost. Path is:  3 53
```

11. Results/Statistics of the simulation are located at the specific folder you place the config file for each task:

piyumal@06:~/My_Areas/Linux/edu2009/simhome/configs/Lab1-Task1

```
[piyumal@06 Lab1-Task1]$ ls
base1.txt                              jpeg-cjpeg_output_small_encode.jpeg  Stats_base1_dijkstra.txt     Stats_base1_jpeg-c
gsm-untoast-output_small.decode.run    qsort_small-output.txt               Stats_base1_gsm-untoast.txt  Stats_base1_qsort.
[piyumal@06 Lab1-Task1]$
```