

EECS402 Discussion 1!!

Accessing CAEN, Linux, VI

Welcome to EECS402 Discussion!

- Emily
 - OH: Tuesday 2:30-4:30pm, Wednesday 10am-12pm (in Beyster learning center)
 - emolson@umich.edu (try to post questions on Piazza)
- Kevin
 - OH: Wednesday 1-3, Friday 3:30-5:30pm (also in Beyster learning center)
 - yankevn@umich.edu

- Reach out if you need help!



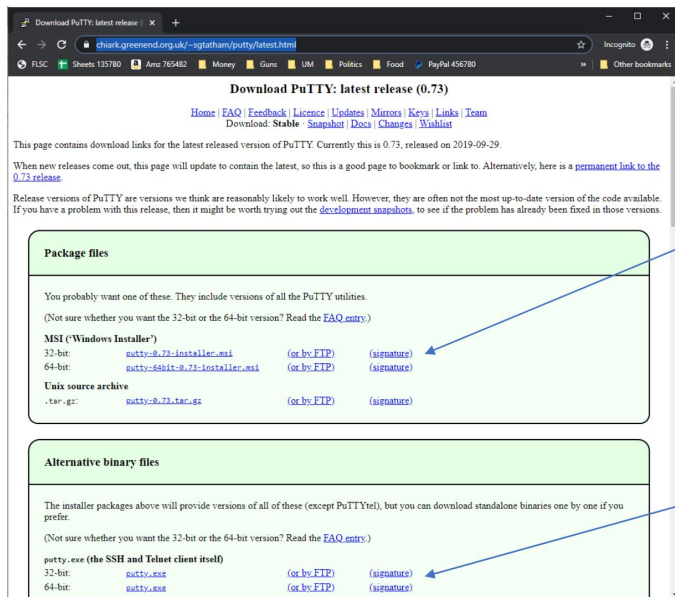
Tips/Resources

- Start projects early please
- Come to Office hours/ reach out if you need help
- Check Piazza often

- [Stackoverflow](#), [cppreference](#), [cplusplus](#), and just google searches are great resources

Logging into CAEN: Windows

- Download Putty: <https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>



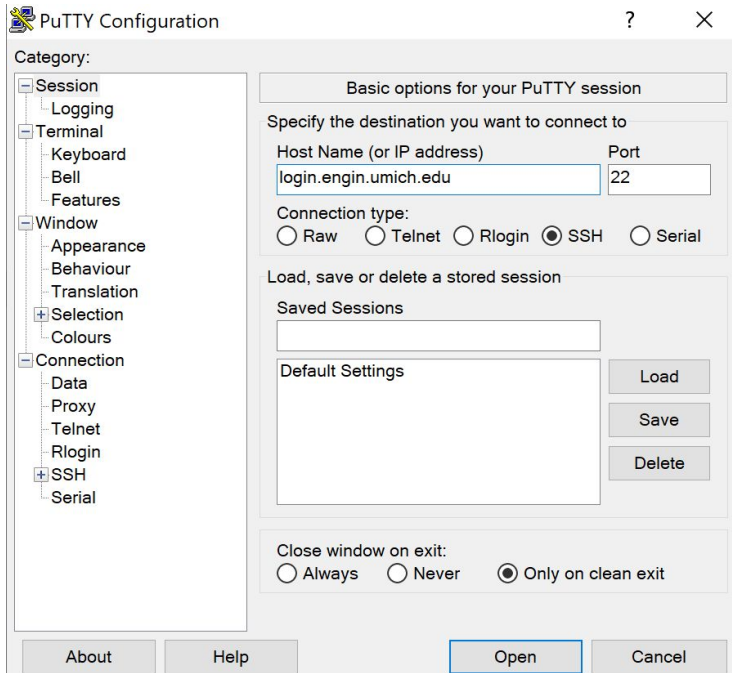
Download this one to install the putty program as you would any other program

If you don't want to install it, or don't have permissions to install it, download this one instead. You can execute this directly, without installing anything.

Logging into CAEN: Windows cont.

Open PuTTY

ENGR



PuTTY Configuration

Category:

- Session
- Logging
- Terminal
- Keyboard
- Bell
- Features
- Window
- Appearance
- Behaviour
- Translation
- Selection
- Colours
- Connection
- Data
- Proxy
- Telnet
- Rlogin
- SSH
- Serial

Basic options for your PuTTY session

Specify the destination you want to connect to

Host Name (or IP address) Port

Connection type:
☐ Raw ☐ Telnet ☐ Rlogin ☒ SSH ☐ Serial

Load, save or delete a stored session

Saved Sessions

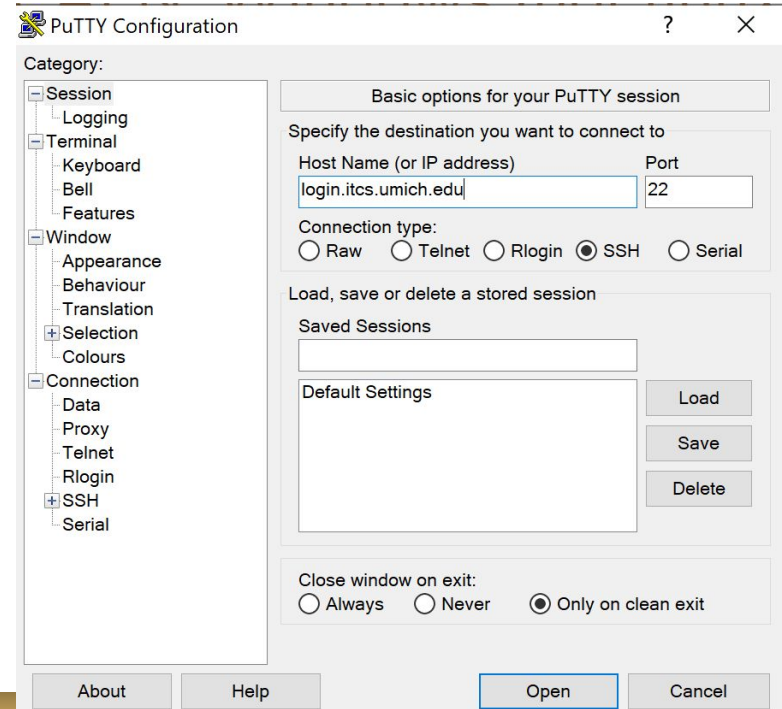
Default Settings

Load Save Delete

Close window on exit:
☐ Always ☐ Never ☒ Only on clean exit

About Help Open Cancel

non-ENGR



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About Help Open Cancel

Logging into CAEN: Windows & Mac

Open terminal (Mac) or Command Prompt (Windows)

If in CoE:

```
$ ssh <username>@login.engin.umich.edu
```

If not in CoE:

```
$ ssh <username>@login.itcs.umich.edu
```

```
emolson@DESKTOP-SDRJGK7:~$ ssh emolson@login.engin.umich.edu
Password:
Duo two-factor login for emolson

Enter a passcode or select one of the following options:

1. Duo Push to XXX-XXX-9100
2. Phone call to XXX-XXX-9100
3. SMS passcodes to XXX-XXX-9100

Passcode or option (1-3): _
```

Logging into CAEN: Linux

Same as Mac and Windows

Open your command prompt

If in CoE:

```
$ ssh <username>@login.engin.umich.edu
```

If not in CoE:

```
$ ssh <username>@login.its.umich.edu
```

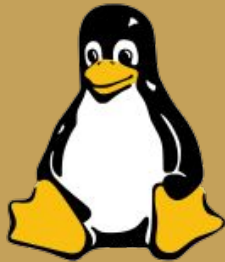
If you want to download Linux, follow [EECS280 tutorial](#)

```
emolson@DESKTOP-SDRJGK7:~$ ssh emolson@login.engin.umich.edu
Password:
Duo two-factor login for emolson

Enter a passcode or select one of the following options:

1. Duo Push to XXX-XXX-9100
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3. SMS passcodes to XXX-XXX-9100

Passcode or option (1-3):
```



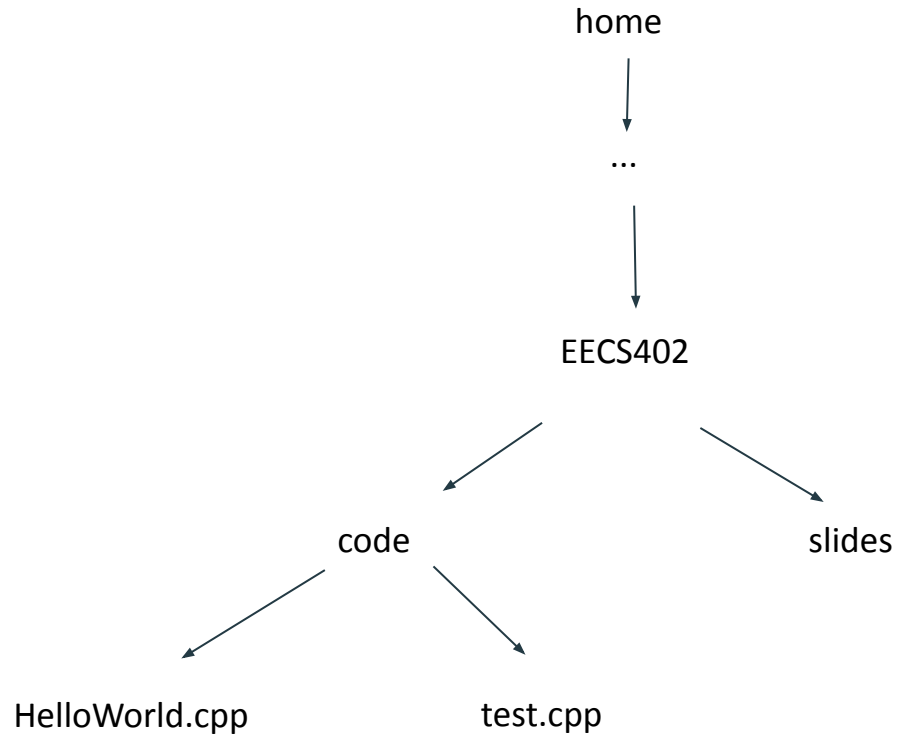
Now we're on CAEN's Linux!

Using Linux- common commands

- pwd (print work directory): prints current working directory
- ls (list): prints a list of the contents of your current directory
- ls -l : lists all the contents with extra information
- mkdir <name>: makes a new directory with the name you give
- cd <directory name>: changes your current directory to be the name you give if that directory exists within the current directory
- cd .. : changes your current directory to be “up one” from the directory you are in
- rm <filename> : removes a file of the name you give if that filename exists
- touch <filename> : adds a file to the current directory with given name

A more extensive list: https://umich.instructure.com/files/15900447/download?download_frd=1

Example



Using VI

VI is used to edit files in CAEN

To access it:

`$ vi <filename>` : opens the specified file in VI

Using VI

Command Mode

:q - quit out of VI (returns to normal Linux)

:w - 'write' saves file

i - go to insert mode

[And many more](#)

Insert Mode

Once in insert mode, you can type normally

Press esc to exit

Compiling and running code using CAEN

```
$ g++ -std=c++98 -Wall helloworld.cpp -o helloworld.exe
```

Do not mess
this part up!!!!

- g++ (the linux compiler)
- -std=c++98 (the version of c++ we use)
- -Wall (gives feedback for bugs)
- helloworld.cpp (your source code)
- helloworld.exe (the executable)

```
$ ./helloworld.exe
```

- Runs the executable

Getting Files to CAEN

Recommended: FileZilla (https://filezilla-project.org/download.php?show_all=1)

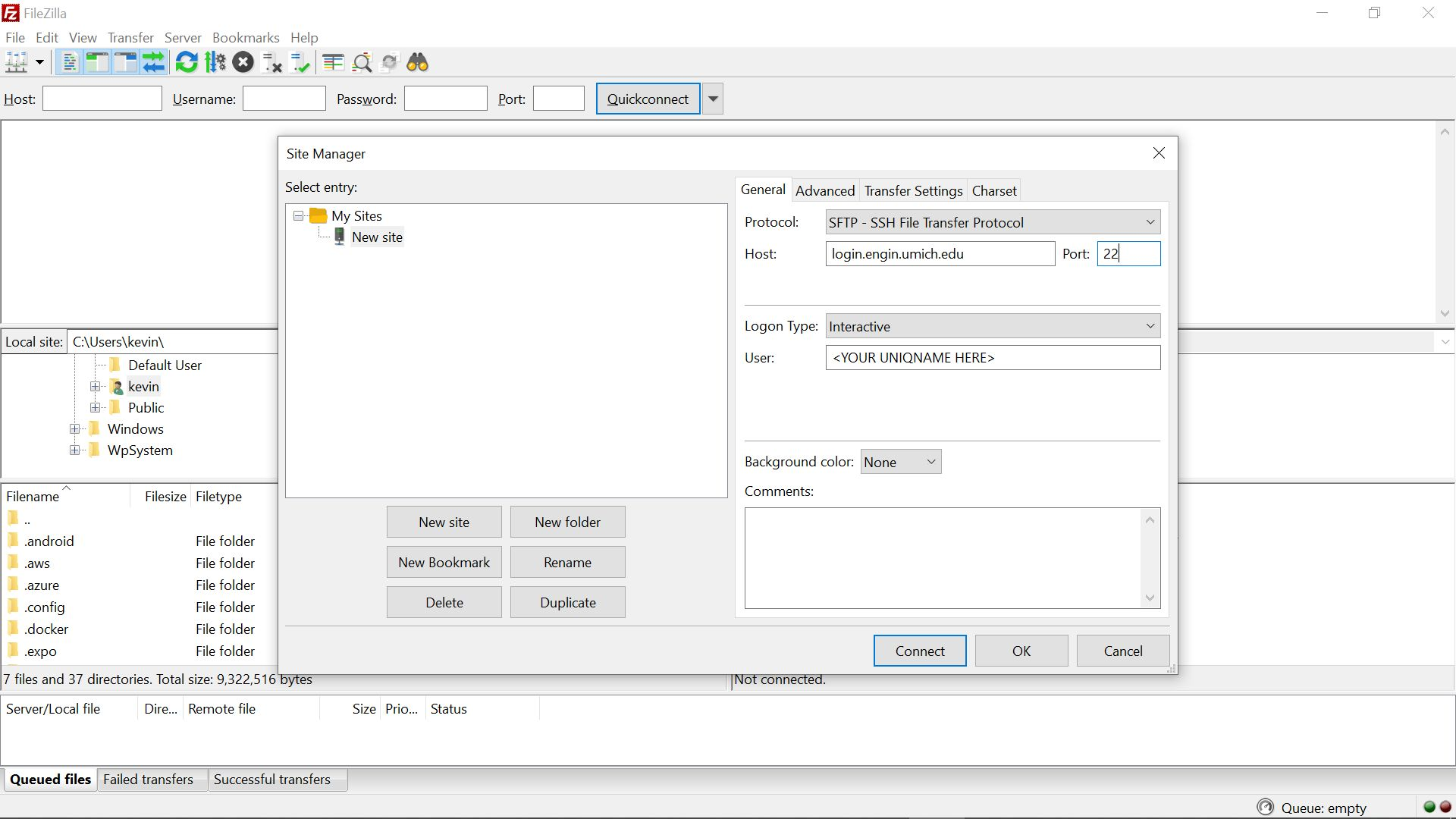
- Note: Please use the link above. For some reason the “main download page” gave me a virus (yikes!)

Other options: pscp, scp, github, mfile

- Note: name files and folders without spaces to make your life easier

Setting Up FileZilla

1. Download the version that works for your OS
 - a. https://filezilla-project.org/download.php?show_all=1 (Use this link, NOT the main link)
2. Open the Site Manager (File -> Site Manager) and click “New site”
3. Set “Protocol:” to **SFTP**
4. Set “Host:” to **login.engin.umich.edu** (CoE) or **login.itcs.umich.edu** (not CoE)
5. Set “Logon Type:” to **Interactive**
6. Set “User:” to **your username** (Ex. yankevn)



FileZilla Quality of Life Change

- You may notice FileZilla asks you to reauthenticate with each file transfer/operation
 - a. This is because FileZilla uses a new connection for each transfer
- To fix, do the following:
 - a. Open Site Manager (File -> Site Manager)
 - b. Go to Transfer Settings
 - c. Make sure the "Limit number of simultaneous connections" is checked and set the value to 1



Identifier Types

Types

int: 5, 1, 7, 8, 10

double: 5.4, 4, 7.8, 11.4

bool: true/false

char: 'a', '4', 'g', '9'

Feedback Form



Emily:

Kevin: <https://forms.gle/Xm3SJKcqXPXJAAMk7>