# Using the omega server

"omega" is a UTA server that runs Linux. All students have access to it. You can log in using your NetID and MyMav password. You need to communicate with this server in 2 ways:

- *transfer files* (from your machine to the server and back) and
- *run commands* to compile and run your code (you can also edit the code files using editors such as Pico or vi).

OIT FAQ page for omega: https://uta.service-now.com/kb_view.do?sysparm_article=KB0010329

Note: when connecting to omega, for port, use 22.

## Mac

- Connect from the terminal using "ssh –X <netid>@omega.uta.edu" (for x-windows support) or "ssh <netid>@omega.uta.edu". OIT page: https://uta.service-now.com/kb_view.do?sysparm_article=KB0011171
- If these do not work, you may need to download the recent version of Fugu to move files between omega and your computer.

## Windows

- To transfer files you can use either FileZilla or WinSCP.
  FileZilla: (OIT link) https://uta.service-now.com/kb_view.do?sysparm_article=KB0010276, (direct link https://filezilla-project.org/download.php?type=client – in the installation process, at the end, it will ask if you want to make Bing and Opera your default search engines. Make sure the boxes are unchecked.)
  WinSCP: (direct link): https://winscp.net/eng/index.php
- To compile and run your code.
  - o Windows 10 has built-in SSH. You can just run this command in the Command Prompt:
    - ▪ "ssh <netid>@omega.uta.edu" e.g. "ssh astefan@omega.uta.edu".
    - ▪ it will ask about certificates,
    - ▪ just type "yes" and hit enter.
    - ▪ next type your NetID password.
  - o Older Windows (7/XP/8) should use Putty. See the OIT link: https://uta.service-now.com/kb_view.do?sysparm_article=KB0010275 or directly https://www.putty.org/

To compile your code on omega, look for tutorials on compiling C code on Linux or Unix.

For information on how to navigate and use a Linux system (delete files, change directories,… ) do a Google search for tutorials on Unix commands.

OIT (Office of Information Technology) webpage: http://www.uta.edu/oit/index.php. Location: 1st floor of Central Library.

## Main steps:

1. Write a simple C program, 'hw0_task1.c' on your machine. Test that it runs on your machine.

```
//===================== Example file:
#include <stdio.h>
int main(){
    printf("Hello world!\n");
    return 0;
```

```
}
//=====================
```

2. Connect with Pulse Secure VPN.  It is needed to access Omega if off campus (sometimes even if on campus WiFi, in extreme cases).
    a. For Pulse Secure VPN you will need to use a 2-factor Authentication. See
       https://blog.uta.edu/oit/2019/09/13/sign-up-for-netidplus-for-students/
    b. If you need additional help with the multiple factor Authentication, please see OIT.
3. Log on to omega
4. Upload your files:
    a. Create a directory, e.g. 'hw0' (on omega).
    b. Upload the 'hw0_task1.c' file
5. From the omega terminal window compile it. E.g.
       gcc -o t1 hw0_task1.c
   here 't1' is the name of the executable. Run it:
       ./t1
6. You should see the output.
7. If you want to compile your code with the C99 compiler, use   -std=c99   :
       gcc -std=c99  -o t1 hw0_task1.

If you only compile and run on omega (not edit) remember to:

- Upload the file after you change it on your machine. Note that you may need to REFRESH the side of your local machine in order to upload the most recent version of the file.
- Recompile it before you run it.
- Otherwise you will still be running the older versions.

There are text editors, Pico and vi, on omega that you can use if you want to edit files directly on omega. There are several online tutorials and cheat sheets with commands for using them. Do your own search.