



Intro to SSH and Flip

How to use OSU's computing resources
• and Linux servers, the right way



Introduction

- **Summer CS Essentials**
 - Goal: Practice skills for CS success in low-stakes environment
- **Today's Topic:**
SSH and OSU ENGR servers



What is flip?

- OSU Engineering Servers
 - Linux machines
 - Headless
 - Required for some classes
- flip: Development Server
 - flip1, flip2, flip3
 - No VPN Required





SSH

- Secure Shell Protocol
 - Log into a server, from your host
 - Different file space
 - Different CPU





How To SSH

- Prereq: SSH client
 - Pre-installed on your system*
- Access using terminal
 - Windows 11: Windows Terminal
 - Windows 10: Available in Microsoft Store
 - Linux: Varies
 - macOS: terminal

```
C:\Users\Aidan\AppData\Roam...
PS C:\Users\Aidan> Find-Module PoSH-SSH

Version Name Repository Description
-----
3.0.4 Posh-SSH PSGallery Provide SSH and SCP functionality for executing commands agai...

PS C:\Users\Aidan> ssh
usage: ssh [-#6AaCfGgkKwMnqStVvXxYy] [-B bind_interface]
          [-b bind_address] [-c cipher_spec] [-D [bind_address:]port]
          [-E log_file] [-e escape_char] [-F configfile] [-I pkcs11]
          [-i identity_file] [-J [user@]host[:port]] [-L address]
          [-l login_name] [-m mac_spec] [-O ctl_cmd] [-o option] [-p port]
          [-Q query_option] [-R address] [-S ctl_path] [-W host:port]
          [-w local_tun[:remote_tun]] destination [command]

PS C:\Users\Aidan> |
```



How To SSH

- Prereq: TEACH account
- If you haven't done this before:
 - <https://teach.engr.oregonstate.edu/>
 - Create New Account
 - Log in via ONID
 - This creates your engineering account

You can manage your account, monitor disk, email and print quotas, and change your password through this web interface.

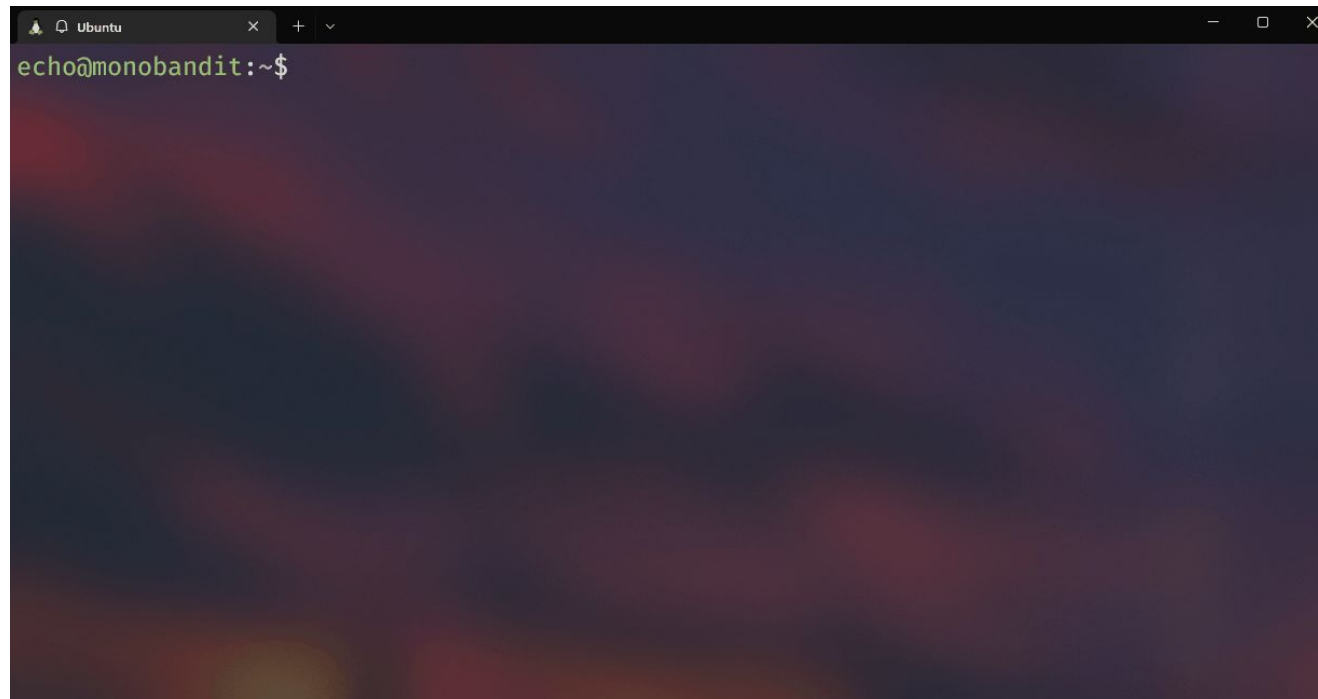
USERNAME: <input type="text"/>	+ <i>TEACH Home</i>
PASSWORD: <input type="password"/>	+ <i>TEACH Documentation</i>
<input type="button" value="Log me in"/>	+ <i>Contact Support</i>

[Create a new account \(Enable your Engineering resources\)](#)



How To SSH

- `ssh <ONID>@flip.engr.oregonstate.edu`
 - <ONID>: Your ONID username

A terminal window with a dark background and light text. The window title is "Ubuntu". The prompt is "echo@monobandit:~\$".

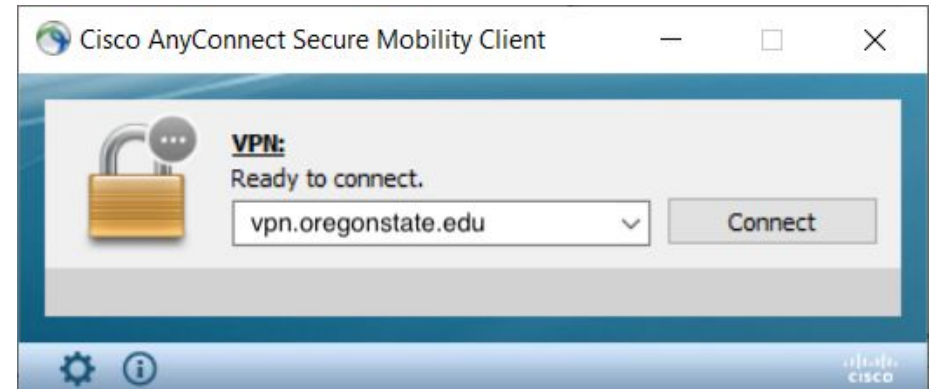
```
Ubuntu x + v - □ x
echo@monobandit:~$
```



The ENGR Servers

- flip: 'Exposed'
 - Can be accessed from any network
- Other engr servers
 - Protected: No access outside OSU's network
 - Solution: VPN, ProxyJump

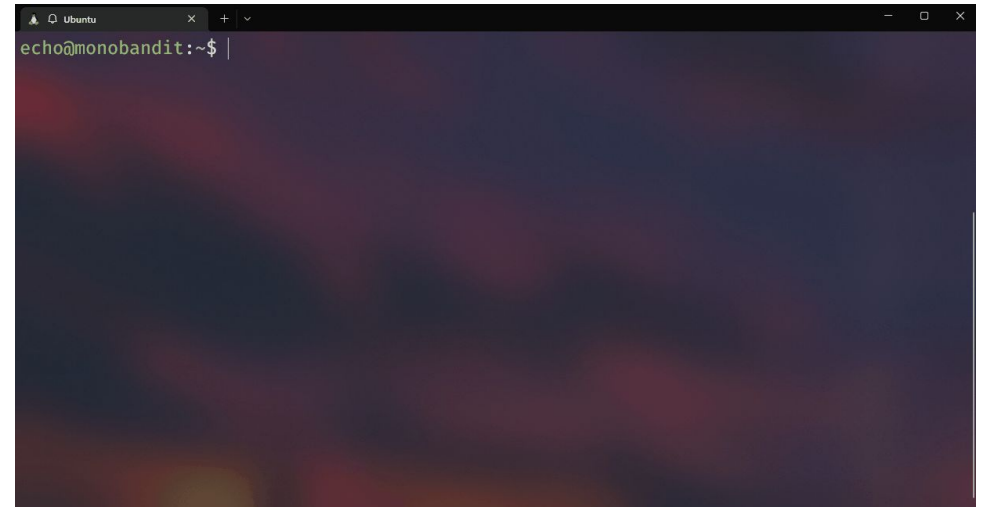
- VPN: Virtual Private Network
 - Be on OSU's network, from outside OSU campus
- Setup:
<https://oregonstate.teamdynamix.com/TDClient/1935/Portal/KB/ArticleDet?ID=76790>
- Issues:
 - Slow
 - Privacy – monitors traffic
 - Tedious to use/log in





VPNs and How to Not Use Them

- **SSH ProxyJump**
 - <https://www.redhat.com/sysadmin/ssh-proxy-bastion-proxyjump>
- Bounce from flip to any internal server
- `ssh -J`
`<ONID>@flip.engr.oregonstate.edu`
`<ONID>@os1.engr.oregonstate.edu`





Conclusion

- flip: Use Linux without installing Linux
- Useful for many classes
- Provides standardized environment for grading
- Next Week: SSH Keys