Linux Crash Course

W205

Agenda

- AWS and EC2
- Vagrant
- Doing things in Linux
- Git basics

AWS and EC2

AWS EC2

- How do we get a server?
- How do I start a server?
- OK now what?

Making an EC2 role in IAM

- IAM = Identity and Access Management
- You don't want a rogue key to have complete control over your AWS account
- We'll need to
  - Make a user
  - Assign ec2 privileges

PEM Files and Secret Keys

- **THIS IS IMPORTANT**
  - Download the **PEM** file someplace safe
  - Download the keys someplace safe
  - Don't lose them!
- If you do lose your keys
  - Make new keys
- Never, **ever** put your keys in a repo or on the Internet

Finding and Starting Your Server

- AWS tools way
  - Commands go here
- Web-console way
  - Demo

How Do I Get In?

- SSH (Secure Shell)
- You **need** that PEM file
  - `ssh -i /path/to/PEM root@address`
- For anything not on port 22
  - SSH tunnel
  - Set up an open port on deployment (be careful)

Vagrant

Vagrant Process

- Set up the environment
  - `vagrant up`
  - Runs Vagrantfile then bootstrap.sh
- Re-provision (if you change the bootstrap)
  - `vagrant provision`
- Connect to the VM
  - `vagrant ssh`
  - Use open ports for web

Shutting Down Vagrant

- Stop the VM
  - `vagrant halt`
- Restart the VM
  - `vagrant resume`
- Destroy the VM
  - `vagrant destroy`
  - Removes the whole image

Linux Basics

I've SSH'd, Now What?

- You are in bash. The Bourne Again Shell
  - This is a language
  - Also our primary way of navigating and administration
- We need to be able to
  - Move around
  - Set permissions
  - Look at stuff
  - Run stuff
  - Get help

Moving around and looking at stuff

- Where am I?
  - `pwd`
- What's in here?
  - `ls <directory path> or ls –alF <directory path>`
- What's in that file?
  - `less <file> or more  <file> or cat <file>`
- Change directory
  - `cd <directory path>`

Setting Permissions and Running Stuff

- Set the permission of a thing
  - `Chmod <options> <file or dir>`
  - `Options are (a|g|u)+(r|w|x)`
  - `Example: chmod u+x`
- Set the owner of a thing
  - `chown <user> <file or dir>`
- Running a thing in PATH, type the name
- Otherwise use the full path to the thing

Getting help

- For almost every command, you can ask the man
  - `man ls` tells you everything there is to know about `ls`
- Most programs respond with usage when given either –h, --help, or bad arguments

Git Basics

What is Git?

- Git is a *distributed version control system*
- Good for collaborating on code
  - Not good for sharing data
- Git is not github
  - GitHub is a site which provides space for hosting and sharing Git repos

How does (basically) git work?

- You create a local repository
  - Make and commit changes
  - This keeps track of your local work
- I can *clone* your repository
  - This is my local repository
  - I can make and commit changes
  - Your repository is the *origin* of mine
- I can *pull* updates from your repo to mine
- You can *pull* changes from me
- I may be allowed to *push* changes to you

Working with Git