Up and Running with Amazon EC2

December 7th, 2021 PDM Code Clinic
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Overview

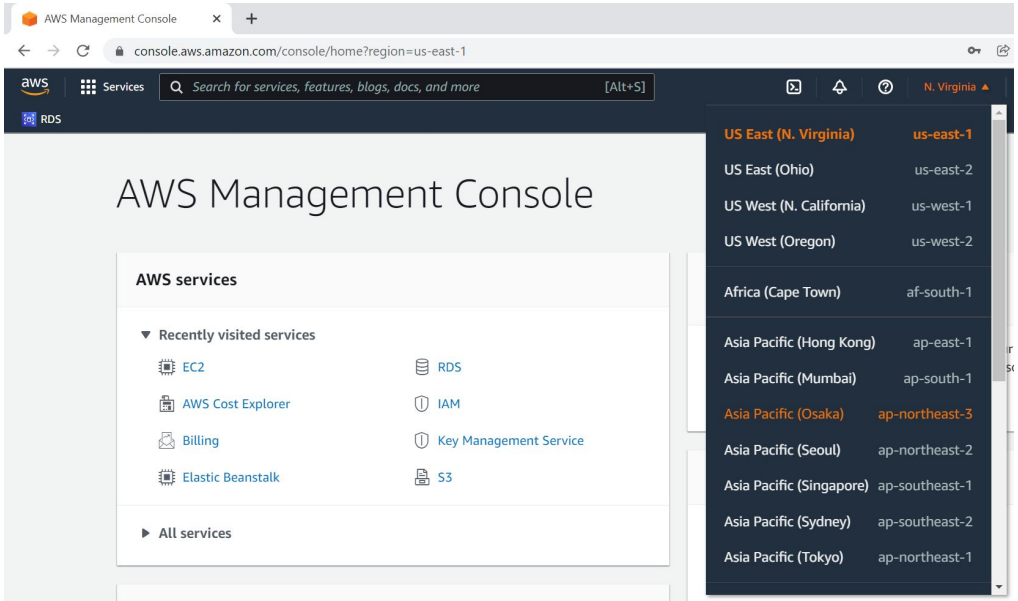
- Getting an EC2 instance up and running through the Amazon management console
  - Ssh, http and database connections
  - Installing Docker During Creation of EC2 Instance
- Connecting using SSH (Visual Studio Code)
- Cost of Cloud Resources
- Example: Running a Dockerized Django app on an EC2 instance

What is Amazon EC2?

- Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides secure, resizable compute capacity in the cloud.
- Can get a server up an running to use in minutes

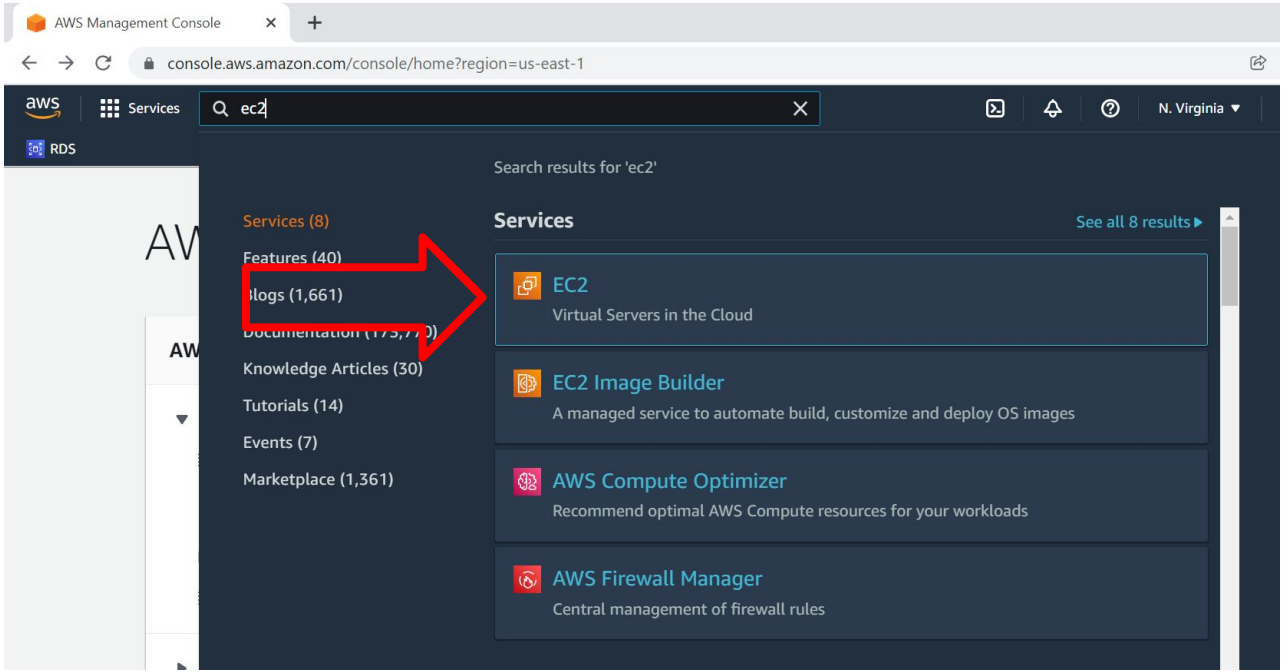
EC2 Instance Up and Running on Amazon

- Will be using the AWS Management Console
- First Pick Your Region where the EC2 instance will be running



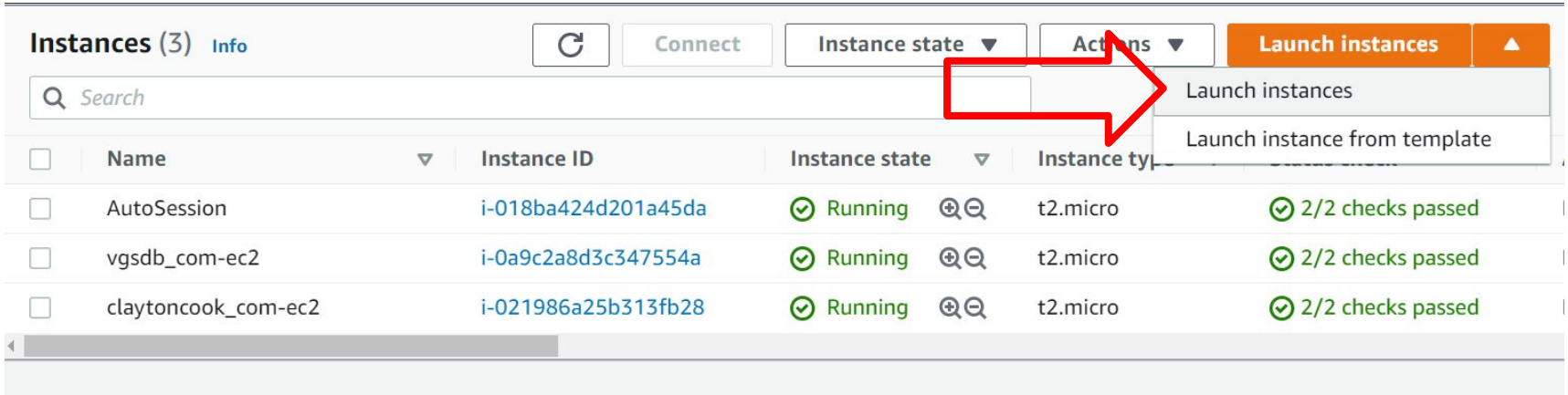
EC2 Instance Up and Running on Amazon

- Go to EC2 Console and Type “EC2”



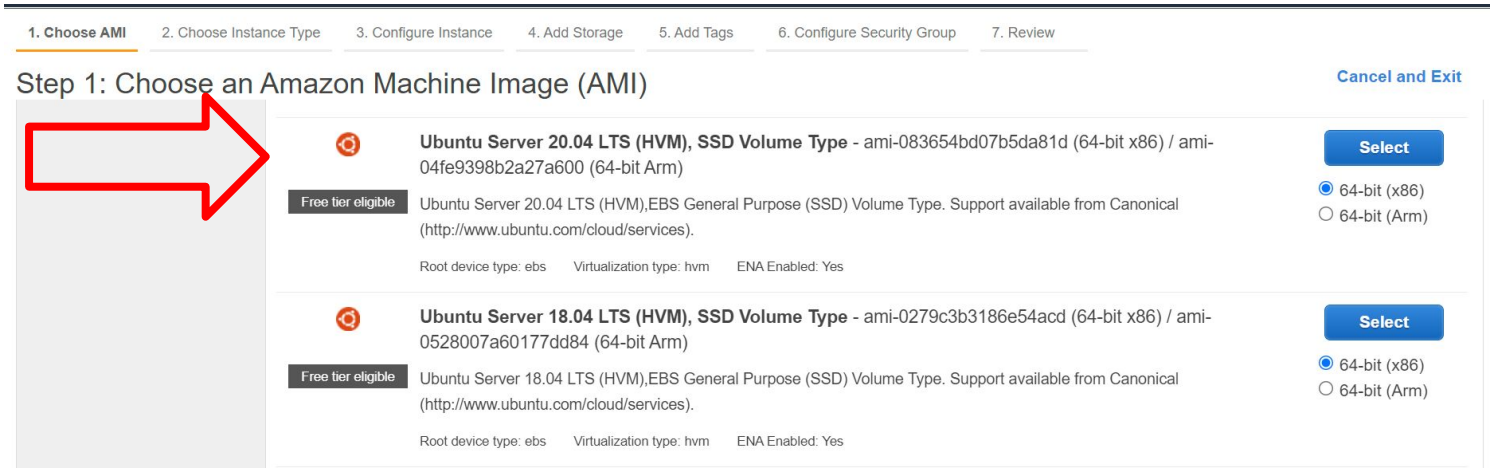
EC2 Instance Up and Running on Amazon

- Launch Instance and Follow build instructions



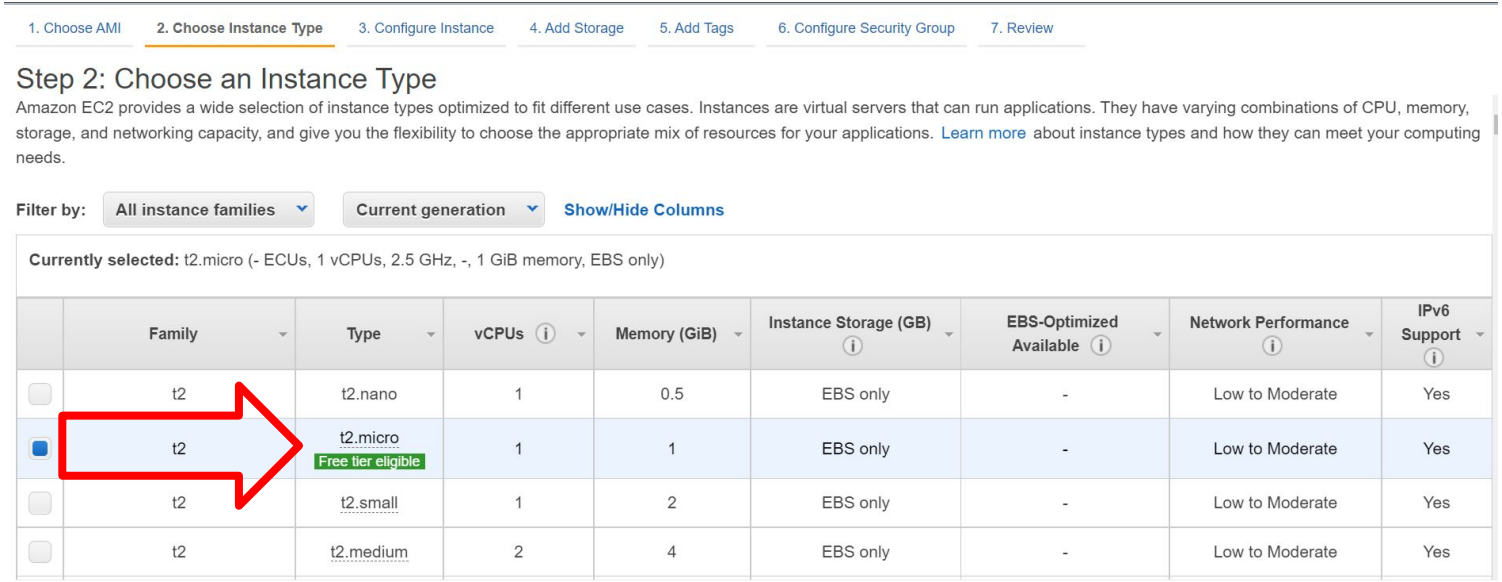
EC2 Instance Up and Running on Amazon

- Step 1: Select Amazon Machine Image (AMI)
  - **Ubuntu Server 20.04 LTS (HVM), SSD Volume Type**



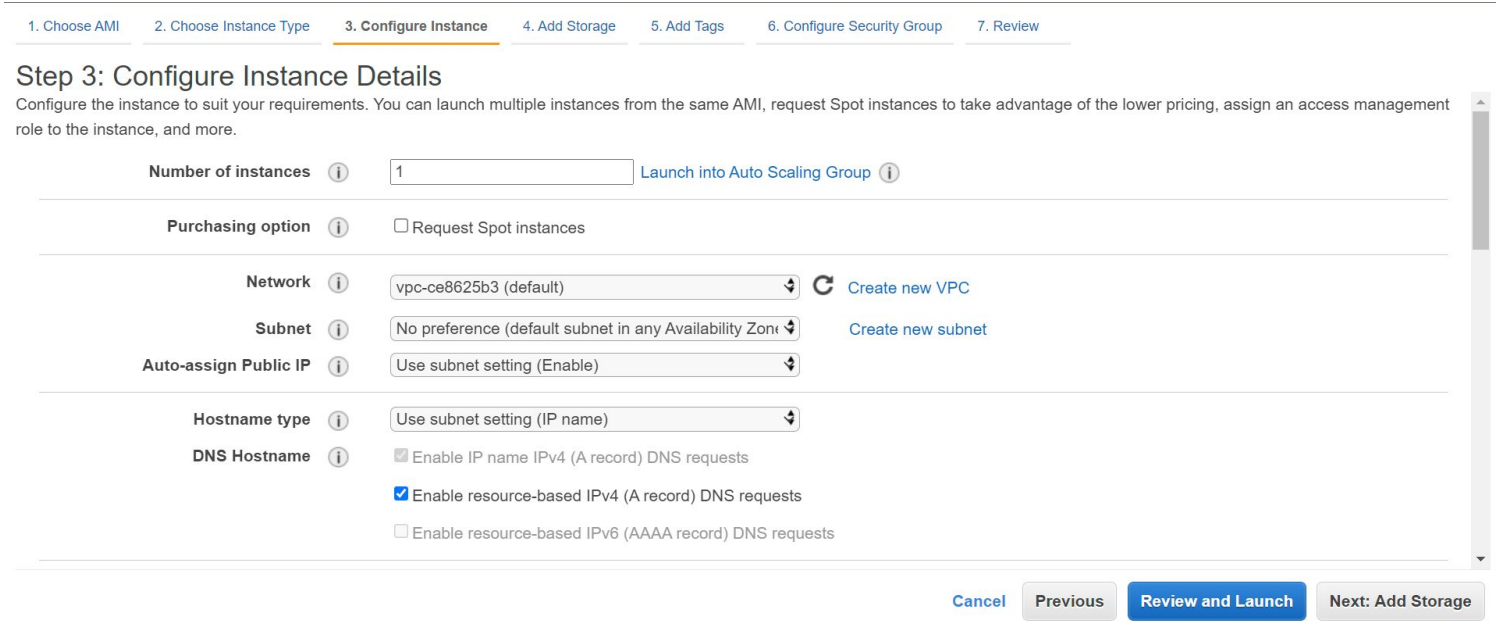
EC2 Instance Up and Running on Amazon

- Step 2: Choose an Instance Type
- t2.micro (Free Tier Eligible) and is smallest compute size



EC2 Instance Up and Running on Amazon

- Step 3: Configure Instance Details
- Can use defaults



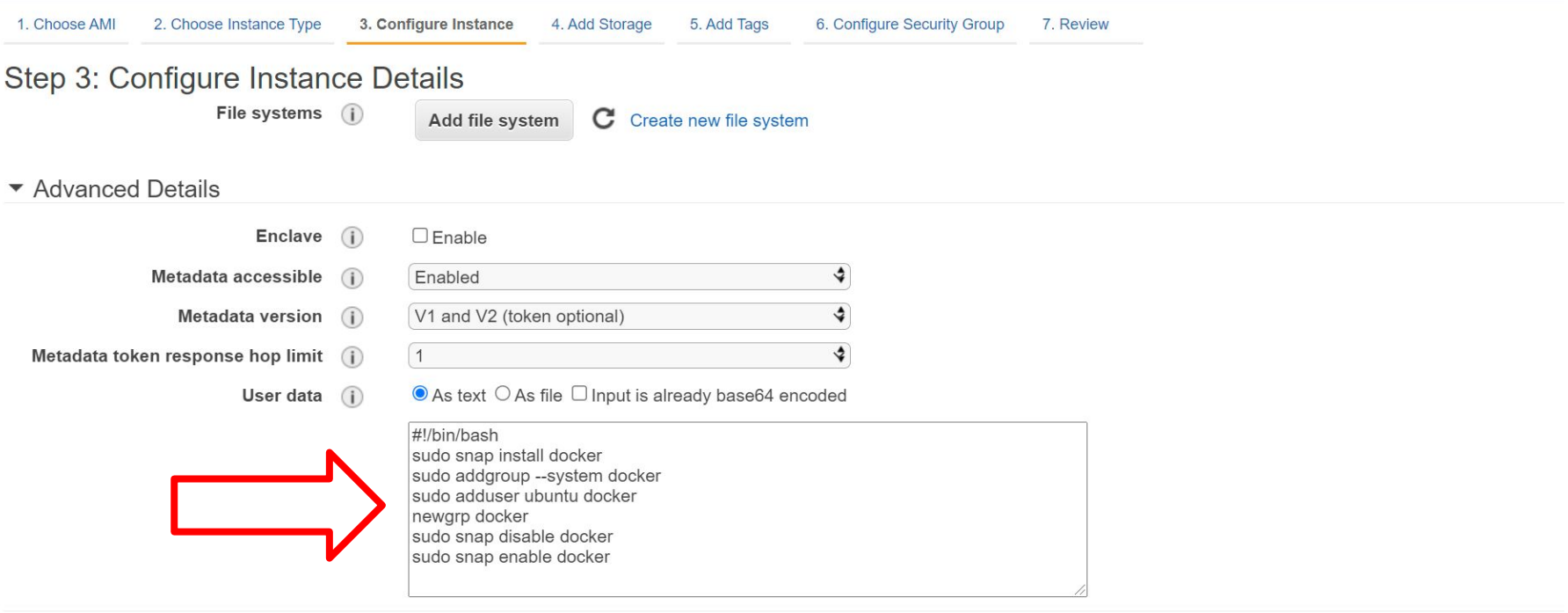
EC2 Instance Up and Running on Amazon

- Step 3: Configure Instance Details (Docker Install)
- If you want Docker Installed on setup can use advanced rules and run bash script below

```
#!/bin/bash
sudo snap install docker
sudo addgroup --system docker
sudo adduser ubuntu docker
newgrp docker
sudo snap disable docker
sudo snap enable docker
```

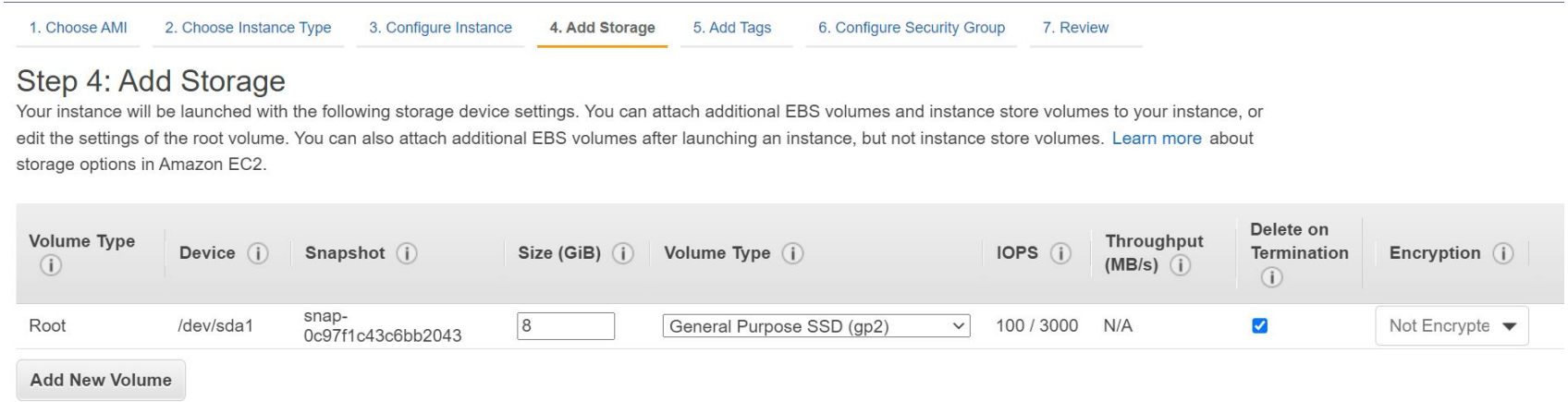
EC2 Instance Up and Running on Amazon

- Step 3: Configure Instance Details (Docker Install)



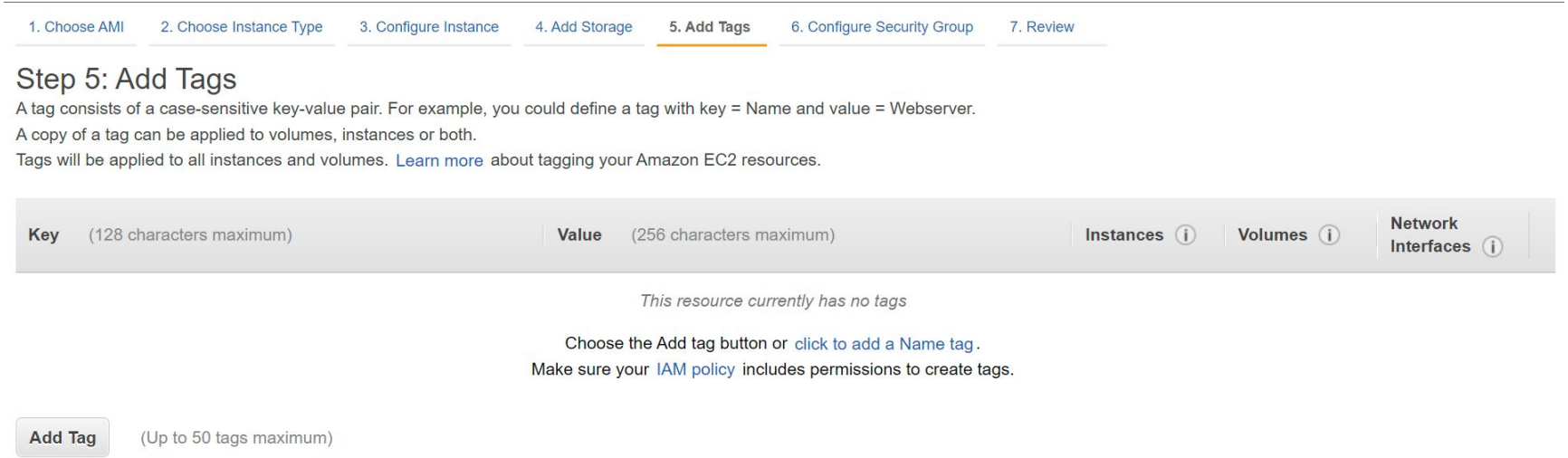
EC2 Instance Up and Running on Amazon

- Step 4: Add Storage
  - Default of 8 GiB



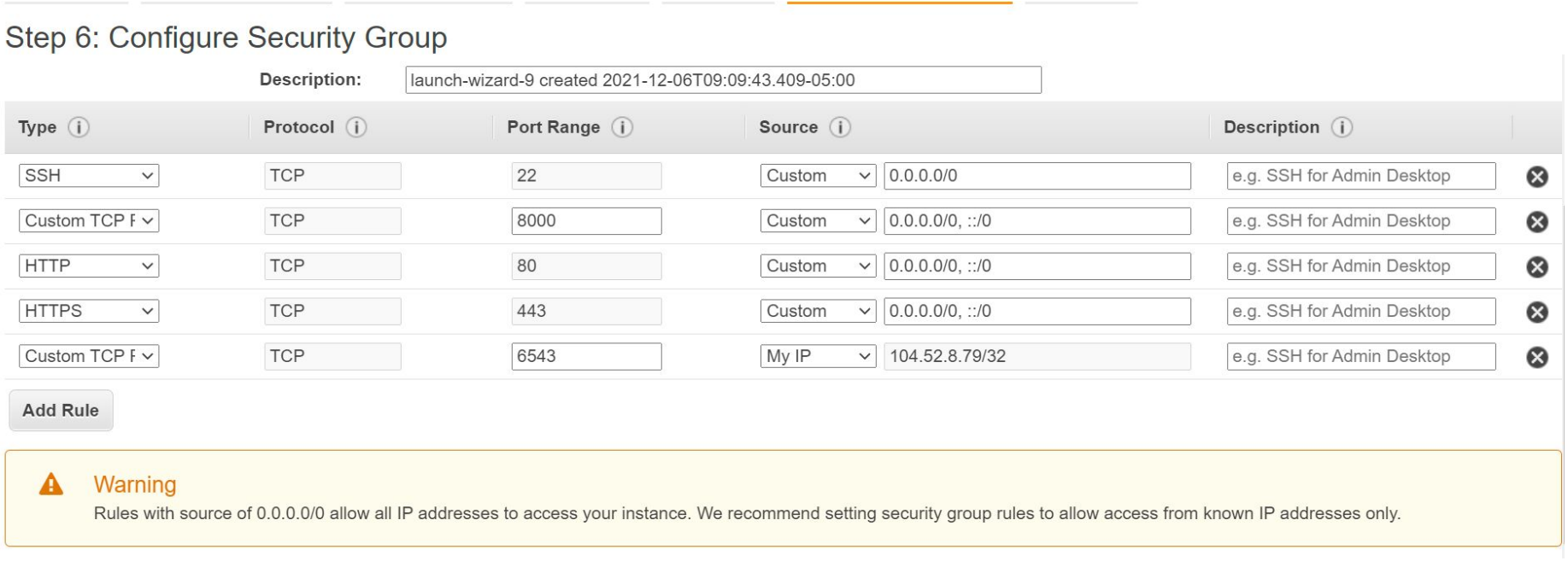
EC2 Instance Up and Running on Amazon

- Step 5: Add Tags
  - Tags are metadata attached to an AWS resource. Each tag is a label consisting of a user-defined key and value. Tags can help you manage, identify, organize, search for, and filter resources.



EC2 Instance Up and Running on Amazon

- Step 6: Configure Security Group
  - A set of firewall rules that control the traffic for your instance



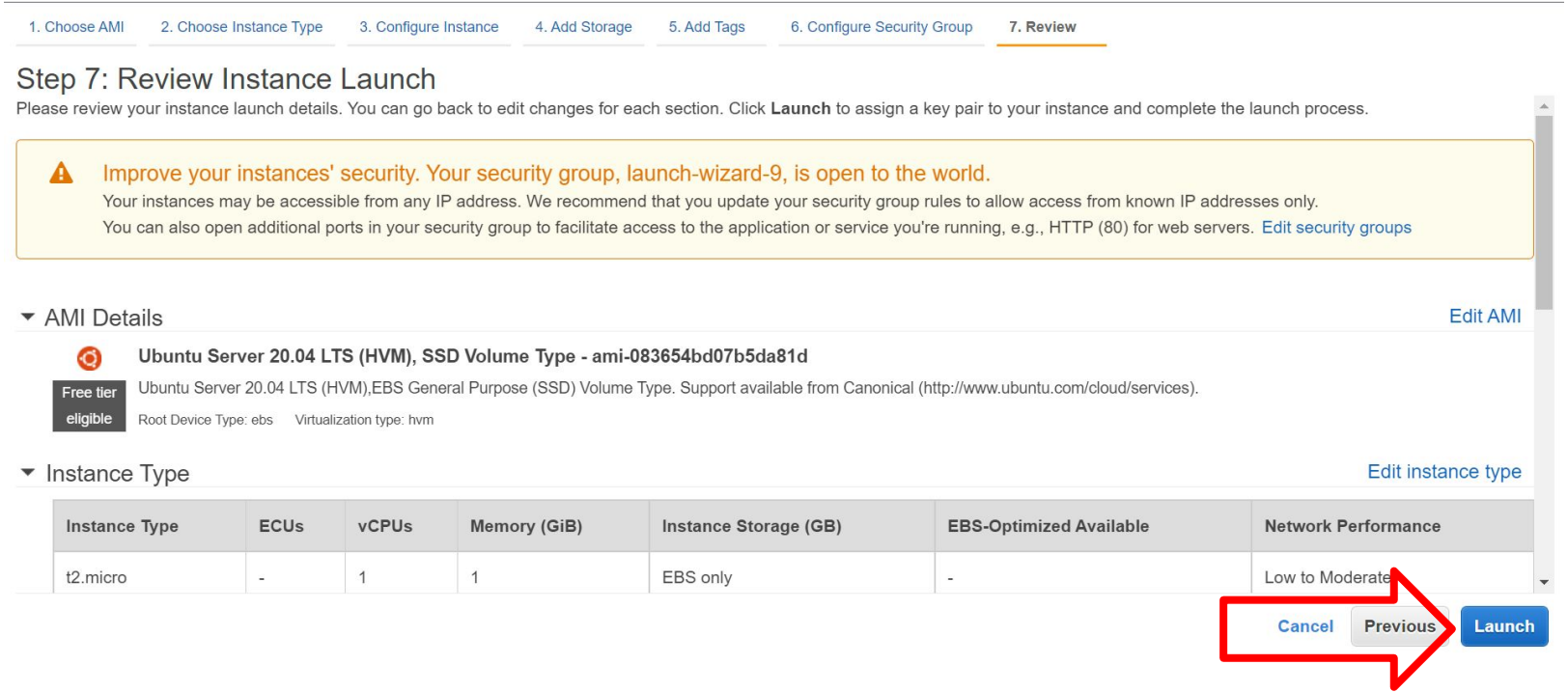
EC2 Instance Up and Running on Amazon

- Step 6: Configure Security Group

- SSH: Port 22 - so you can remote into server
- TCP Port 8000 - I use this port so I can run development server to test connections
- HTTP Port 80 - Default port for connection to server over the internet
- HTTPS Port 443 - Default port for connection to server that is using a TLS certificate for encrypted web traffic data
- TCP Port 6543 - I use this port for database connection, note that I set the source to my IP address so that connection is limited

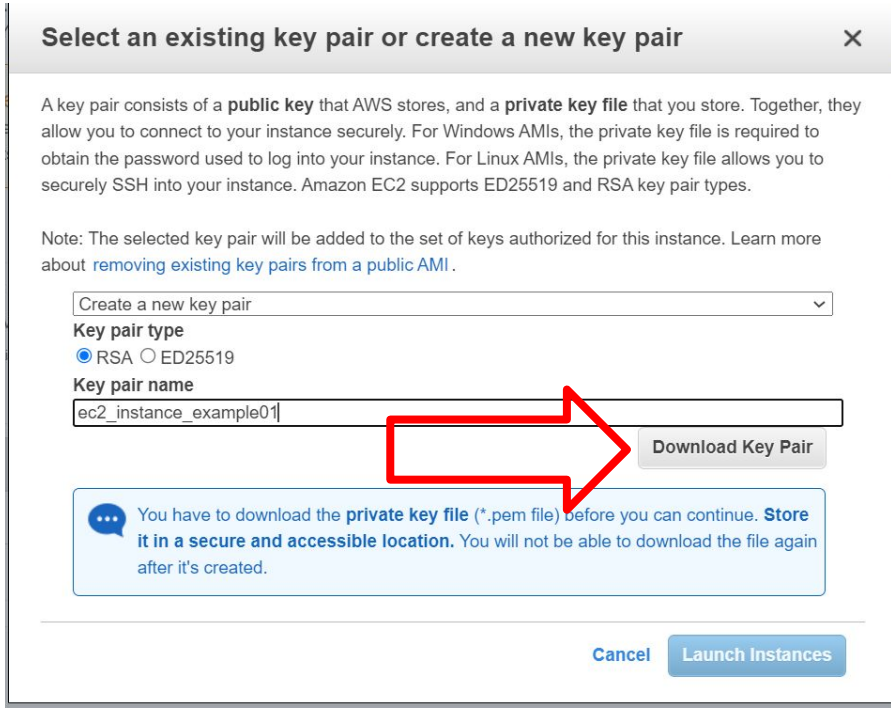
EC2 Instance Up and Running on Amazon

- Step 7: Review



EC2 Instance Up and Running on Amazon

- Step 8: Create Key Pair and Download



EC2 Instance Up and Running on Amazon

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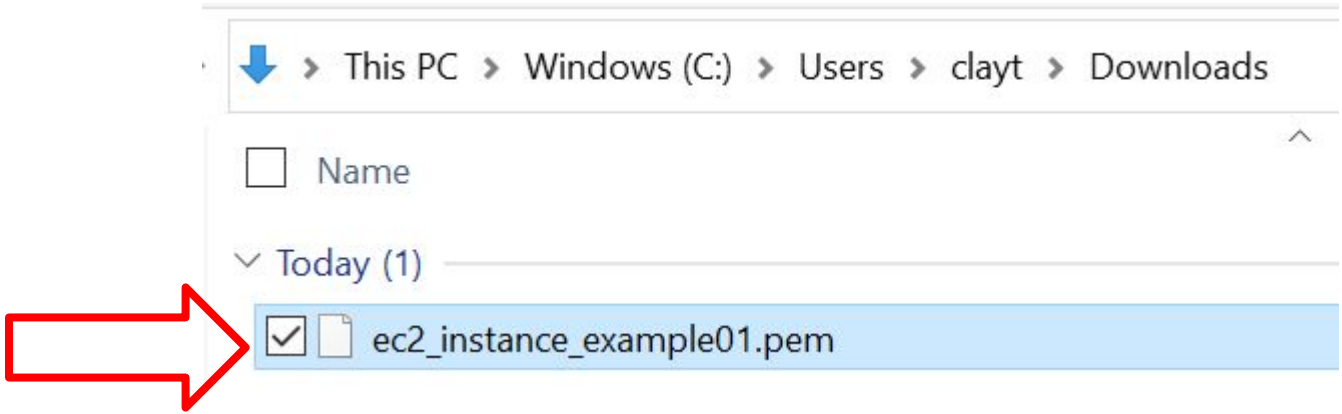
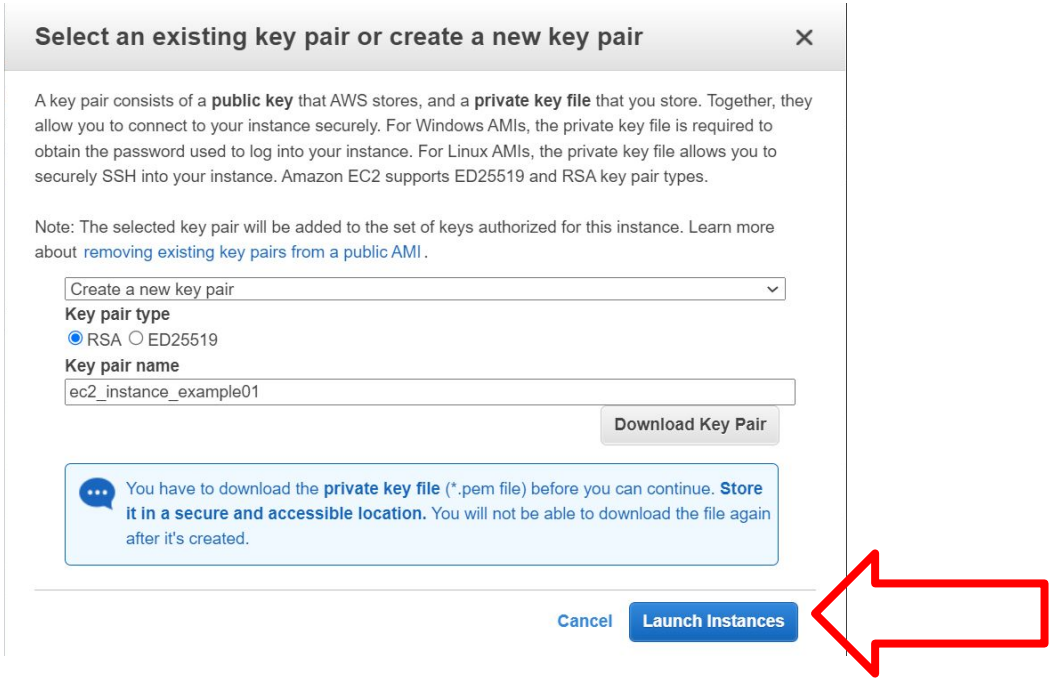


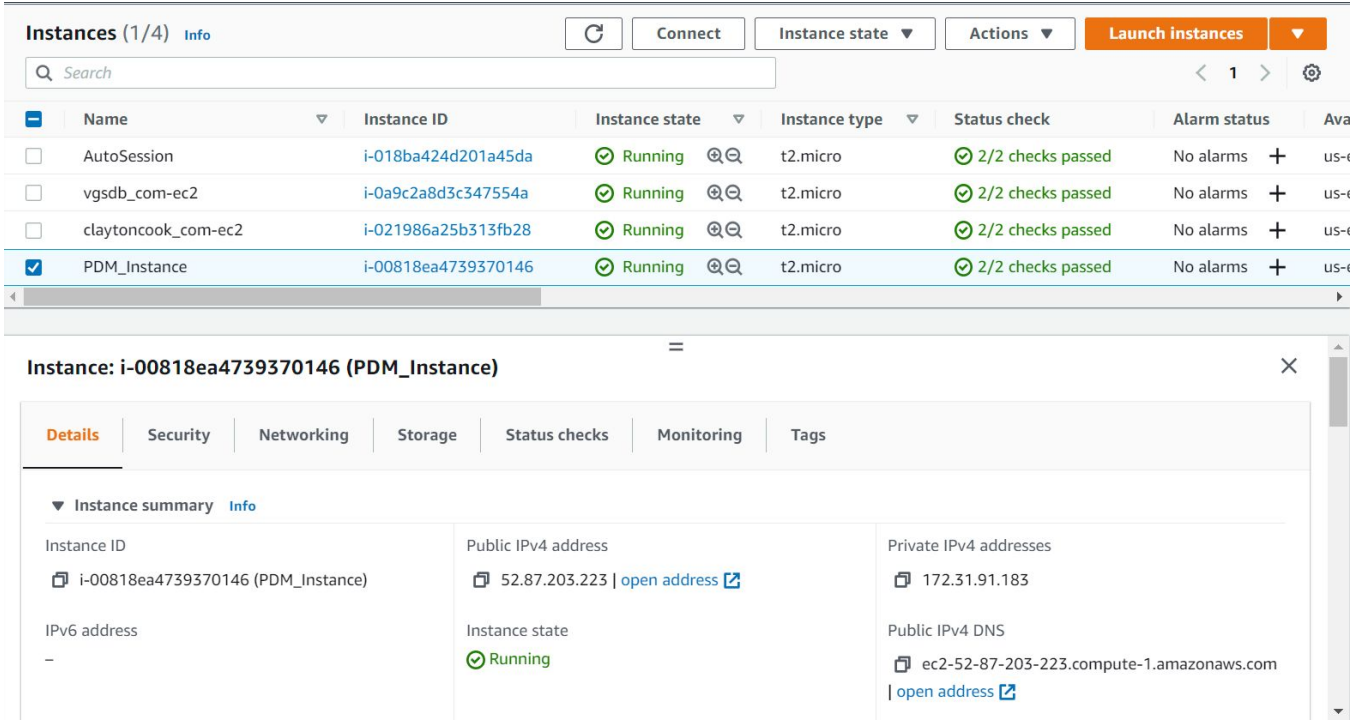
EC2 Instance Up and Running on Amazon

- Step 9: Launch Instance



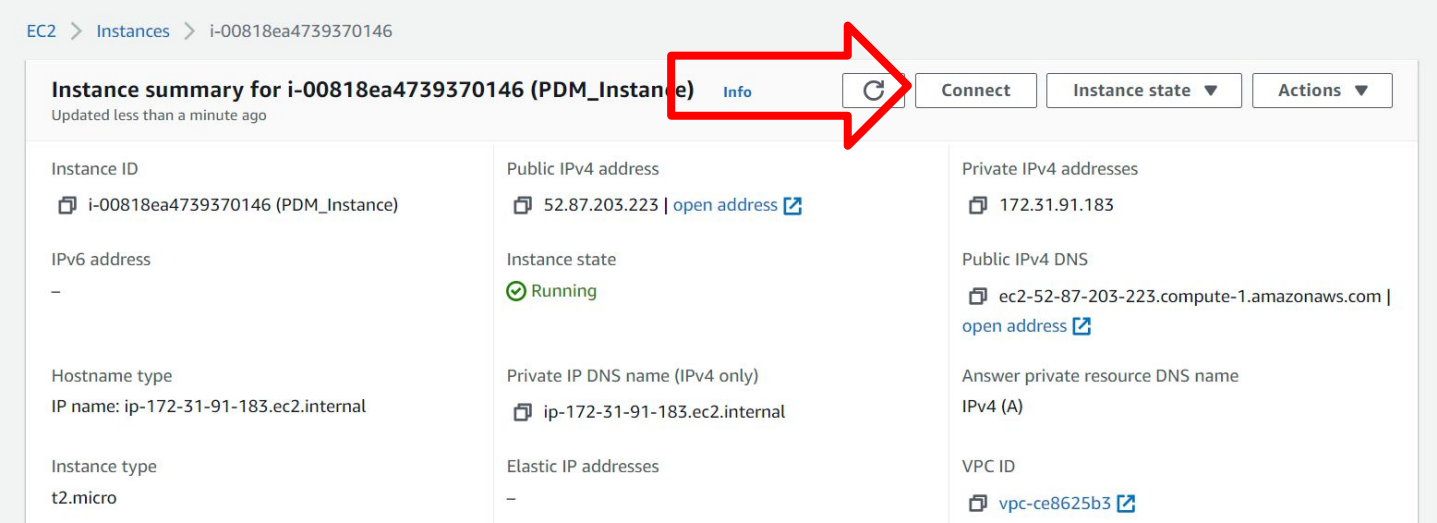
EC2 Instance Up and Running on Amazon

- Instance on EC2 Console after Status Checks



Connecting using SSH

- Connecting With Management Console



Connecting using SSH

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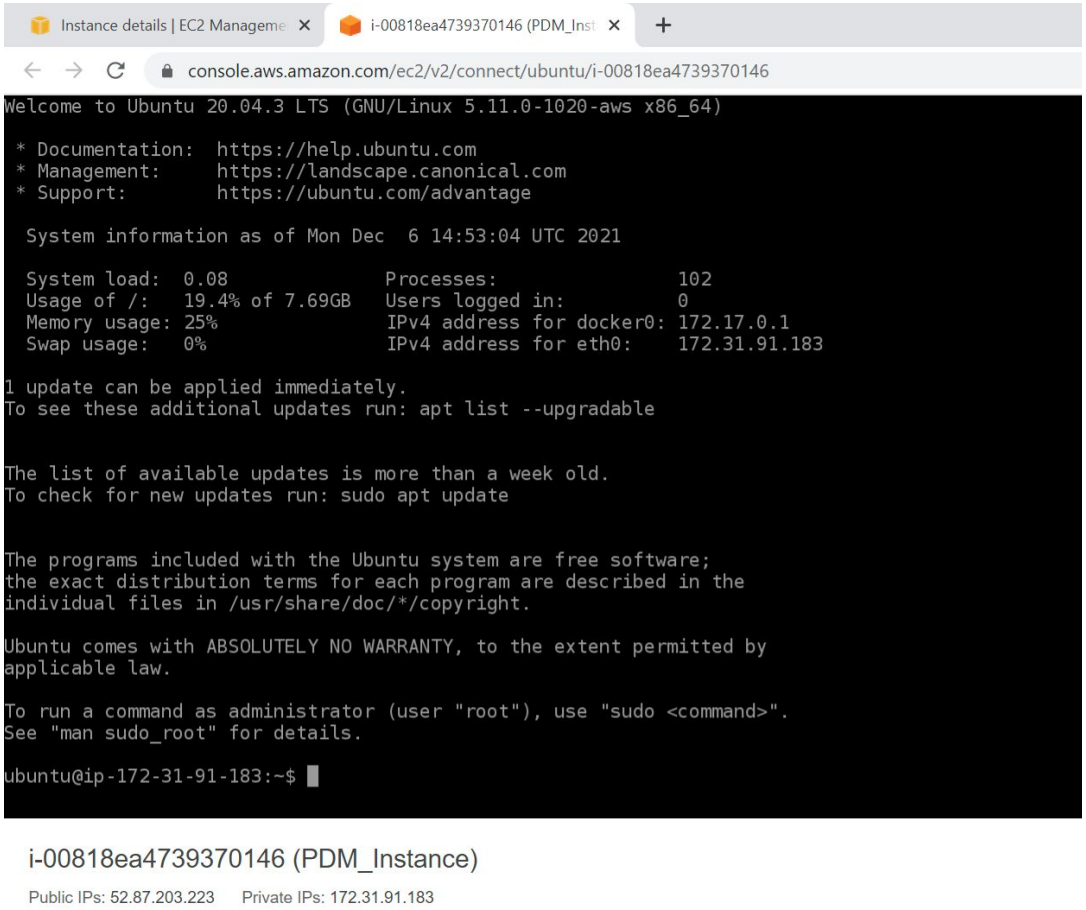
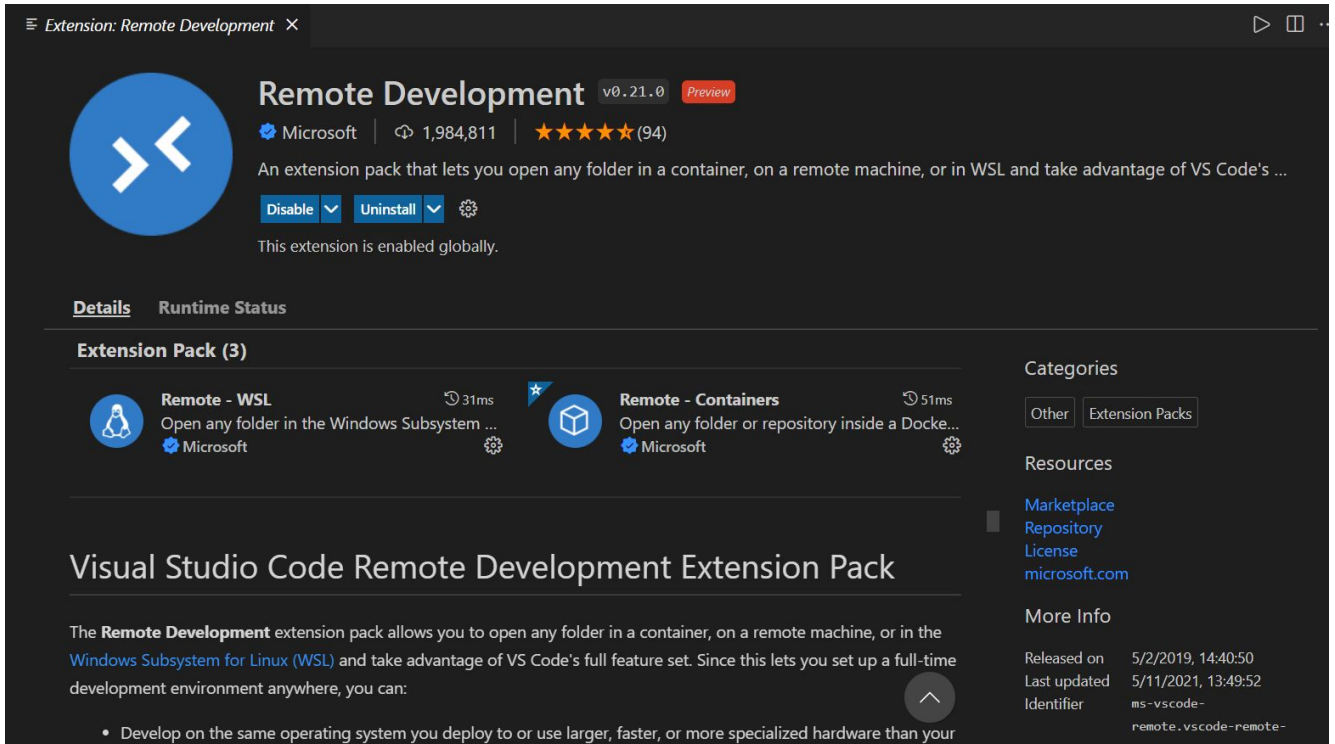


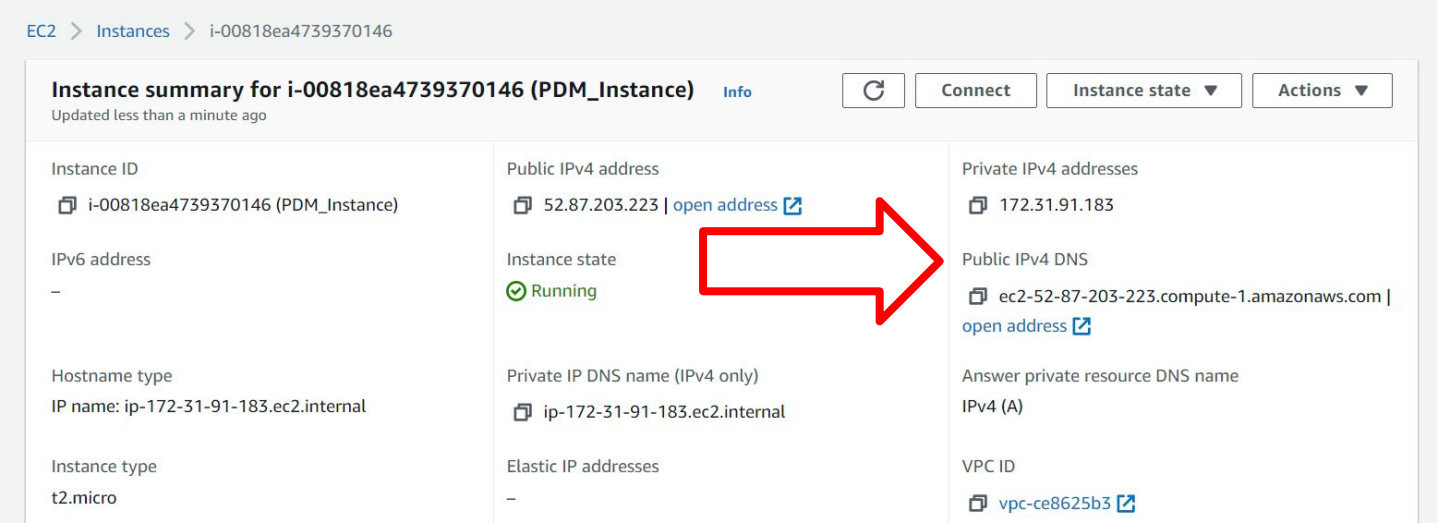
Connecting using SSH

- I use Visual Studio Code extension **Remote Development**



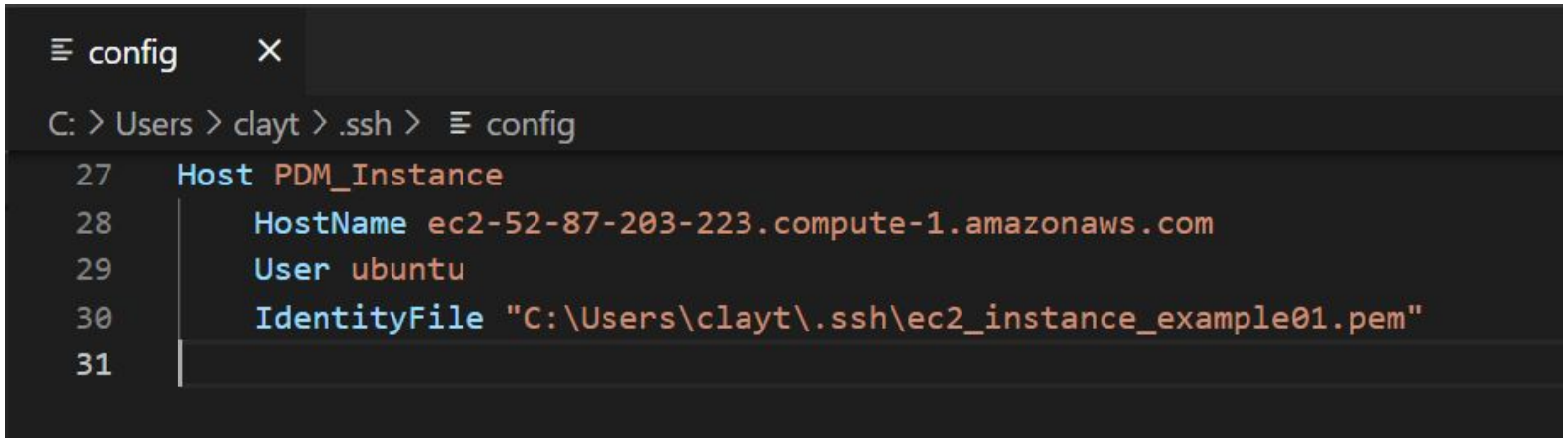
Connecting using SSH

- HostName can be found on EC2 management console as the Public IPv4 DNS



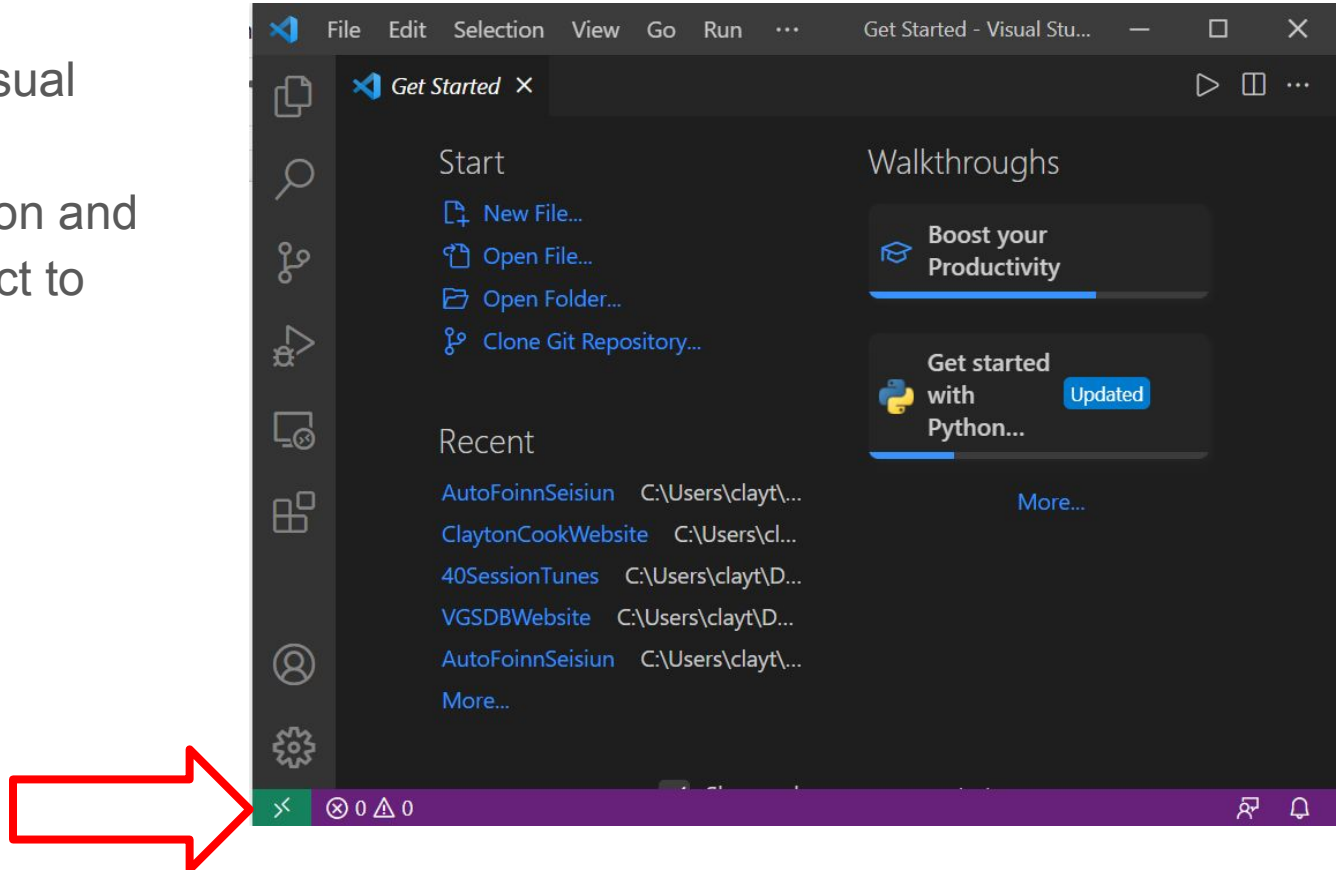
Connecting using SSH

- Setup you config file for connection settings



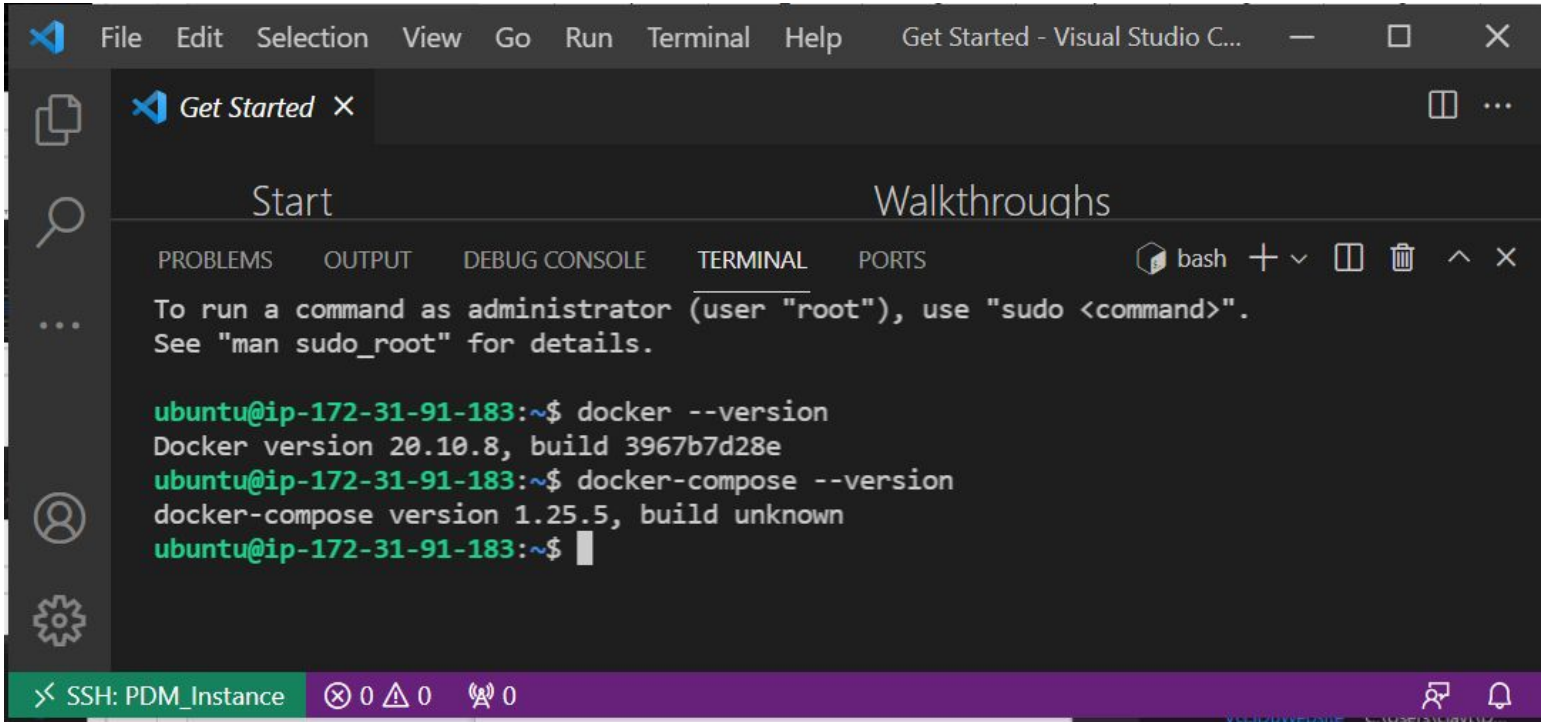
Connecting using SSH

- Connecting Visual Studio
- Click Green Icon and Select “Connect to Host…”



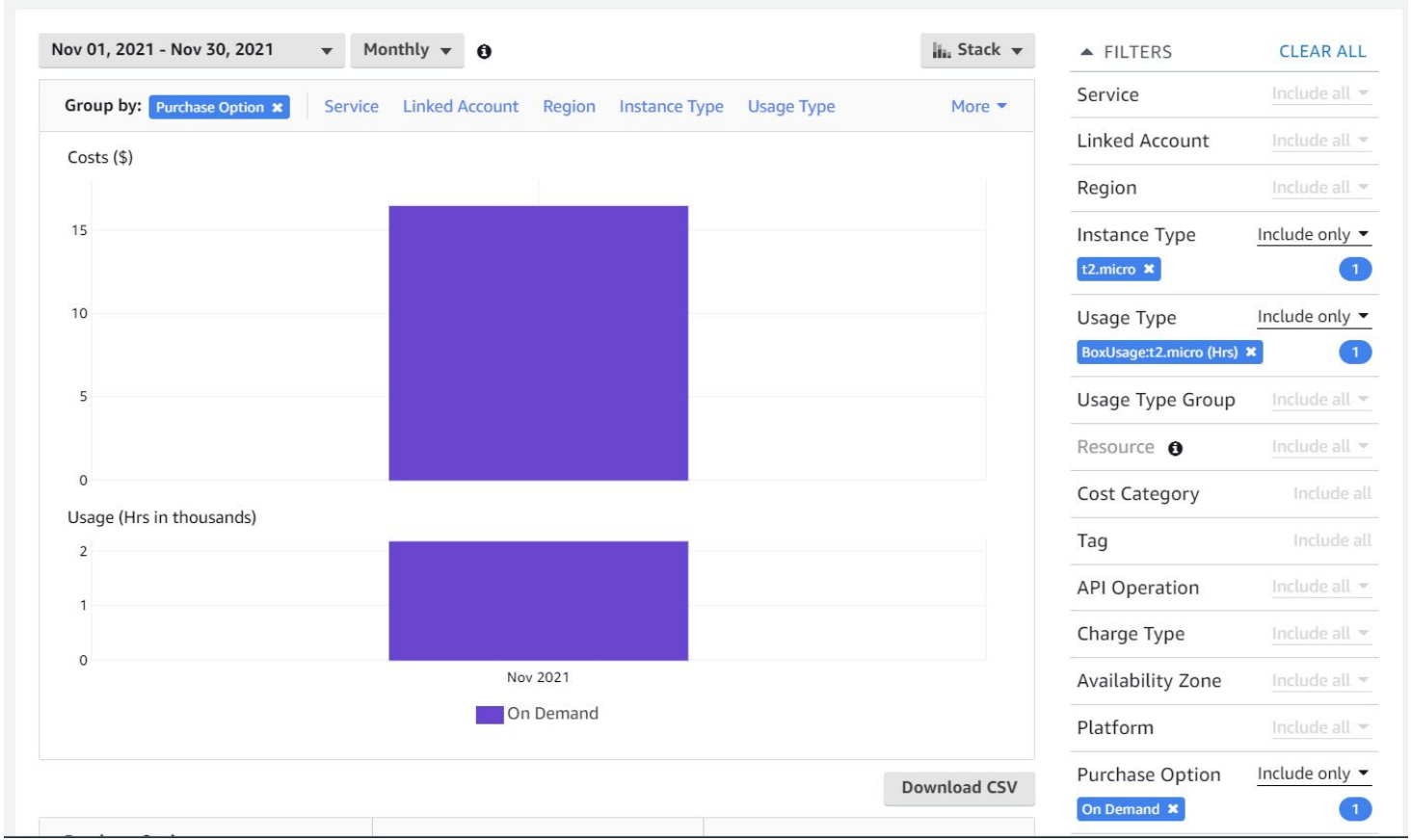
Connecting using SSH

- Connecting Visual Studio



Cost of Cloud Resources

- AWS Cost Explorer



Cost of Cloud Resources

- Will be dependent on location of server
- 00.00758 $/Hr ~ $6/month

- Can lower cost with purchase of Savings Plans within Cost Management console
- For first year of AWS can use a month worth of t2.micro for free

Running a Dockerized Django app on an EC2 instance

Run A Few Commands to Install Example Applications

- git clone https://github.com/claytoncook12/PDMPresentation20211207.git
- cd PDMPresentation20211207/

Run Docker Image

- docker-compose -f docker-compose.yml build
- docker-compose -f docker-compose.yml up -d

Connecting to Running Instance

- 52.87.203.223 (Will Change if Instance is Stopped or Rebooted)