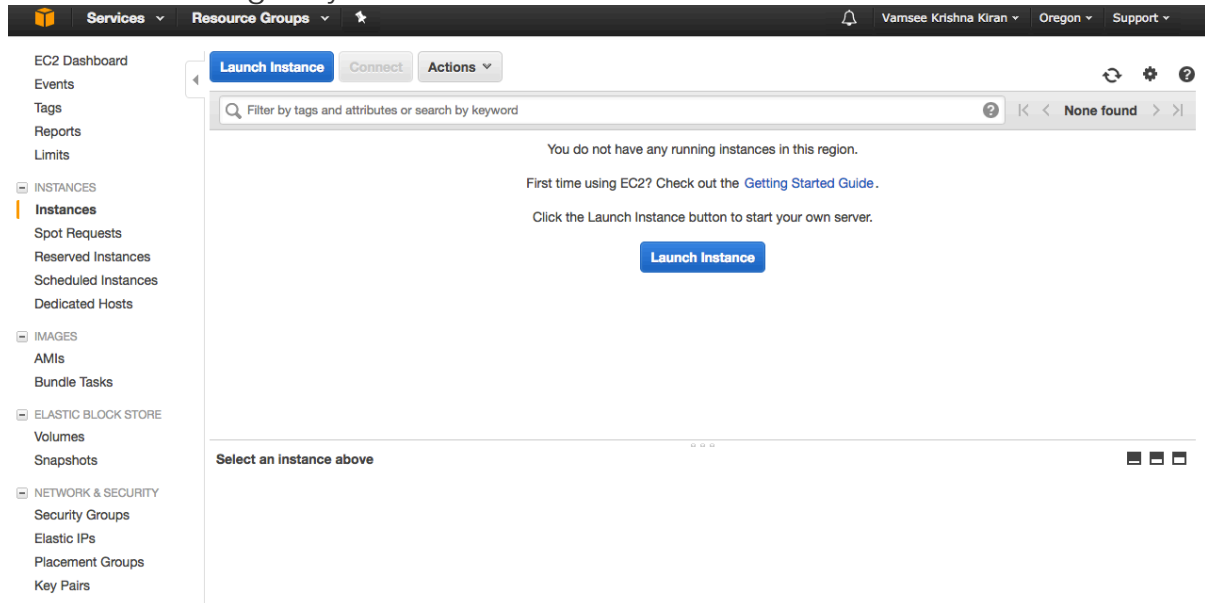


Launch a Linux VM

Step 1: Launch an Amazon EC2 Instance

- a. Open Amazon EC2 console and then click **Launch Instance** to create and configure your virtual machine.



Step 2: Configure your Instance

- a. With Amazon EC2, you can specify the software and specifications of the instance you want to use. In this screen, you are shown options to choose an Amazon Machine Image (AMI), which is a template that contains the software configuration (e.g. an operating system, an application server, and applications). From an AMI, you launch an instance, which is a copy of the AMI running as a virtual server in the cloud.

For this tutorial, find *Amazon Linux AMI* and click **Select**.

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI) Cancel and Exit

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start

My AMIs
AWS Marketplace
Community AMIs
☐ Free tier only ⓘ

Amazon Linux AMI 2017.03.1 (HVM), SSD Volume Type - ami-a07379d9

Free tier eligible

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

Root device type: ebs Virtualization type: hvm

Select

64-bit

SUSE Linux Enterprise Server 12 SP2 (HVM), SSD Volume Type - ami-e4a30084

Free tier eligible

SUSE Linux Enterprise Server 12 Service Pack 2 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.

Root device type: ebs Virtualization type: hvm

Select

64-bit

Red Hat Enterprise Linux 7.3 (HVM), SSD Volume Type - ami-b55a51cc

Free tier eligible

Red Hat Enterprise Linux version 7.3 (HVM), EBS General Purpose (SSD) Volume Type

Root device type: ebs Virtualization type: hvm

Select

64-bit

b. You will now choose an instance type. Instance types comprise of varying combinations of CPU, memory, storage, and networking capacity so you can choose the appropriate mix for your applications. For more information, see [Amazon EC2 Instance Types](#).

The default option of *t2.micro* should already be checked. This instance type is covered within the Free Tier and offers enough compute capacity to tackle simple workloads. Click **Review and Launch** at the bottom of the page.

Services Resource Groups Vamsee Krishna Kiran Oregon Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance types Current generation Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs ⓘ	Memory (GiB)	Instance Storage (GB) ⓘ	EBS-Optimized Available ⓘ	Network Performance ⓘ	IPv6 Support ⓘ
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes

Cancel Previous **Review and Launch** Next: Configure Instance Details

c. You can review the configuration, storage, tagging, and security settings that have been selected for your instance. While you have the option to customize these settings, we recommend accepting the default values for this tutorial.

Click **Launch** at the bottom of the page.

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1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Add Tags

6. Configure Security Group

7. Review

Step 7: Review Instance Launch

AMI Details

Free tier eligible

Amazon Linux AMI 2017.03.1 (HVM), SSD Volume Type - ami-a07379d9

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

Root Device Type: ebs Virtualization type: hvm

Edit AMI

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Edit instance type

Security Groups

Security group name

launch-wizard-1

Description

launch-wizard-1 created 2017-06-20T12:41:52.003+05:30

Type

Protocol

Port Range

Source

Edit security groups

Cancel

Previous

Launch

d. On the next screen you will be asked to choose an existing key pair or create a new key pair. A key pair is used to log into your instance (just like your house key is used to enter your home). Select **Create a new key pair** and give it the name **MyKeyPair**. Next click the **Download Key Pair** button.

Be sure to save the key pair in a safe location on your computer. If you don't remember where you store your SSH private key (the file you are downloading), you won't be able to connect to your virtual machine.

Windows users: We recommend saving your key pair in your user directory in a sub-directory called `.ssh` (ex. `C:\user\{yourusername}\.ssh\MyKeyPair.pem`).

Note: You can't use Windows Explorer to create a folder with a name that begins with a period unless you also end the folder name with a period. After you enter the name (`.ssh.`), the final period is removed automatically.

Mac/Linux users: We recommend saving your key pair in the `.ssh` sub-directory from your home directory (ex. `~/ .ssh/MyKeyPair.pem`).

Note: On Mac, the key pair is downloaded to your Downloads directory by default. To move the key pair into the `.ssh` sub-directory, enter the following command in a terminal window: `mv ~/Downloads/MyKeyPair.pem ~/.ssh/MyKeyPair.pem`

Select an existing key pair or create a new key pair



A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair

Key pair name

MyKeyPair

Download Key Pair

You have to download the **private key file** (*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

Cancel

Launch Instances

After you have stored your key pair, click **Launch Instance** to start your Linux instance.

Note: It will take a few minutes to launch your instance.

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Launch Status

✓

Your instances are now launching
The following instance launches have been initiated: [i-09ea585da17766aff](#) [View launch log](#)

ℹ

Get notified of estimated charges
Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.

Click **View Instances** to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. [Find out](#) how to connect to your instances.

▼ Here are some helpful resources to get you started

[How to connect to your Linux instance](#)

[Learn about AWS Free Usage Tier](#)

[Amazon EC2: User Guide](#)

[Amazon EC2: Discussion Forum](#)

While your instances are launching you can also

e. Click **View Instances** on the next screen to view your instances and see the status of the instance you have just started.

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Launch Status

Get notified of estimated charges
Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instances

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▼ Here are some helpful resources to get you started

- [How to connect to your Linux instance](#)
- [Amazon EC2: User Guide](#)
- [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: Discussion Forum](#)

While your instances are launching you can also

- [Create status check alarms](#) to be notified when these instances fail status checks. (Additional charges may apply)
- [Create and attach additional EBS volumes](#) (Additional charges may apply)
- [Manage security groups](#)

View Instances

f. Make note of the *Public IP* address of your AWS instance, you will need this to connect to the instance in Step 3 part c.

Note: If your instance is still starting up, the *Public IP* address may not be shown yet. The *Instance State* column will show you if the instance is running yet, and the *Status Checks* column will tell you if the instance has passed the 2 checks to make sure it is done provisioning. You can refresh these values by pressing the refresh button on the right just above the table.

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EC2 Dashboard
Events
Tags
Reports
Limits

INSTANCES
Instances
Spot Requests
Reserved Instances
Scheduled Instances
Dedicated Hosts

IMAGES
AMIs
Bundle Tasks

ELASTIC BLOCK STORE
Volumes
Snapshots

NETWORK & SECURITY
Security Groups
Elastic IPs
Placement Groups
Key Pairs

Launch Instance
Connect
Actions

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
	i-09ea585da17766aff	t2.micro	us-west-2c	running	2/2 checks ...	None	ec2-35-165-165-10

Instance: i-09ea585da17766aff

Public DNS: ec2-35-165-165-106.us-west-2.compute.amazonaws.com

Description

Status Checks

Monitoring

Tags

Instance ID	i-09ea585da17766aff	Public DNS (IPv4)	ec2-35-165-165-106.us-west-2.compute.amazonaws.com
Instance state	running	IPv4 Public IP	35.165.165.106
Instance type	t2.micro	IPv6 IPs	-

Step 3: Connect to your Instance

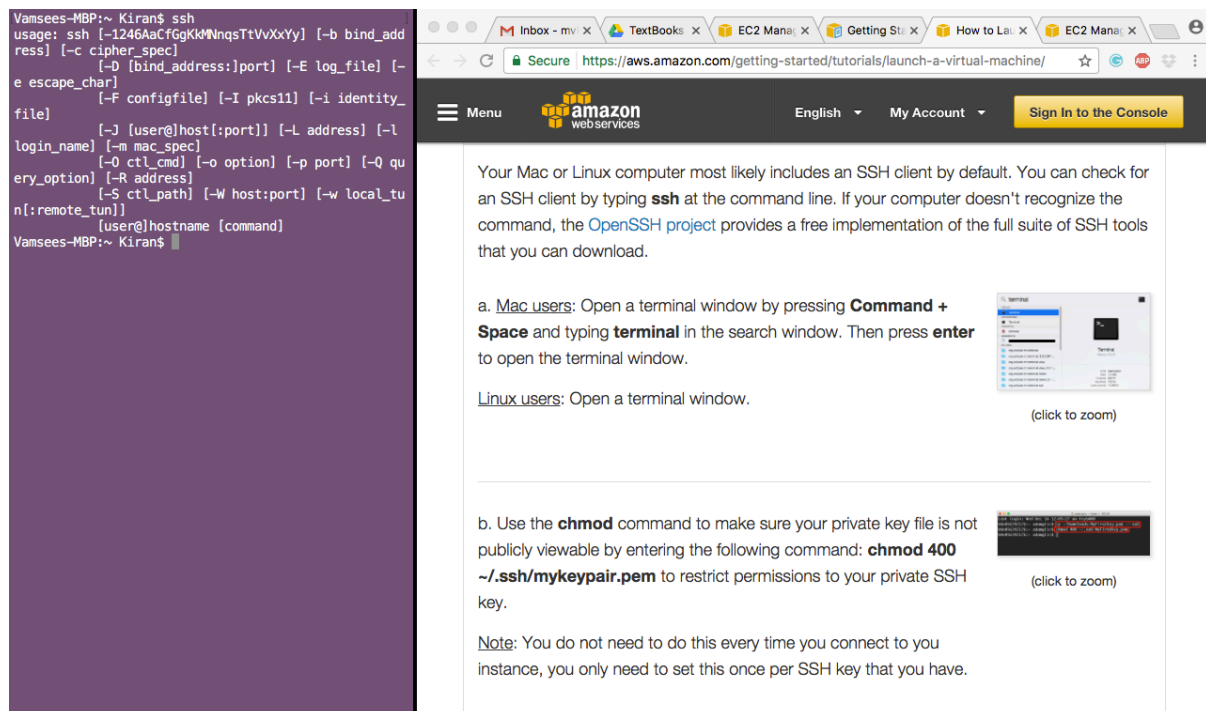
Your Mac or Linux computer most likely includes an SSH client by default.

You can check for an SSH client by typing `ssh` at the command line. If your

computer doesn't recognize the command, the [OpenSSH project](#) provides a free implementation of the full suite of SSH tools that you can download.

a. Mac users: Open a terminal window by pressing **Command + Space** and typing **terminal** in the search window. Then press **enter** to open the terminal window.

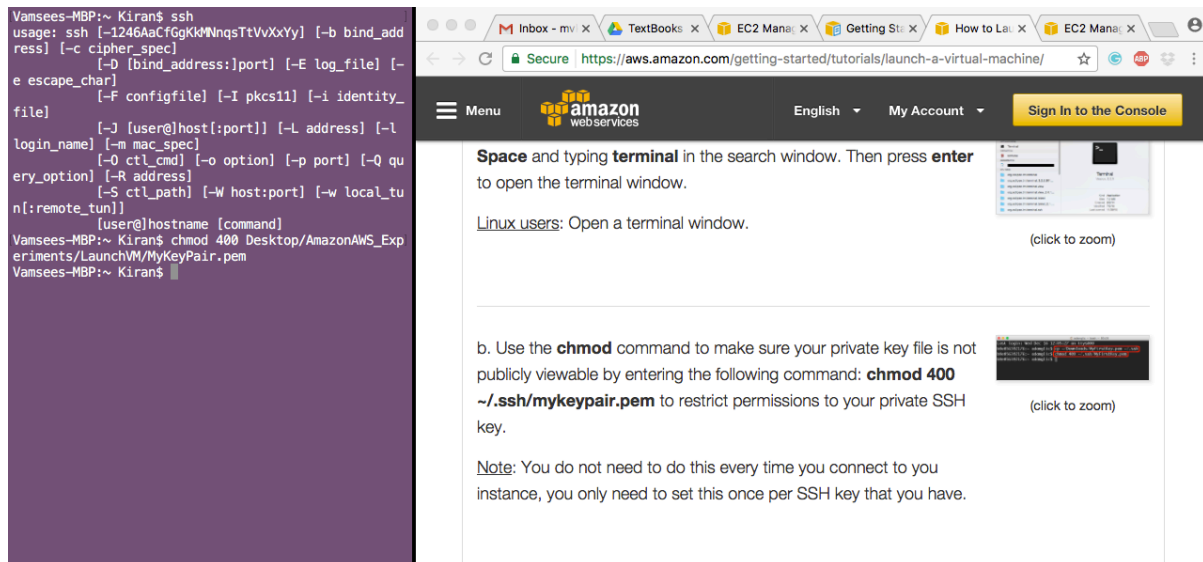
Linux users: Open a terminal window.



The image shows a side-by-side comparison. On the left is a terminal window from a Mac, displaying the SSH command syntax: `usage: ssh [-1246AaCfGgKkMNnqsTtVvXxYy] [-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] n[:remote_tun]`. On the right is a screenshot of the AWS 'Launch a virtual machine' tutorial page. The page text explains that most Mac or Linux computers have an SSH client by default and provides instructions for Mac users (pressing **Command + Space** and typing **terminal**) and Linux users (opening a terminal window). It also includes a section for using the **chmod** command to restrict permissions on the private key file: `chmod 400 ~/.ssh/mykeypair.pem`. A note at the bottom states that this needs to be done only once per SSH key.

b. Use the **chmod** command to make sure your private key file is not publicly viewable by entering the following command: **chmod 400 ~/.ssh/mykeypair.pem** to restrict permissions to your private SSH key.

Note: You do not need to do this every time you connect to your instance, you only need to set this once per SSH key that you have.



c. Use SSH to connect to your instance. In this case the user name is `ec2-user`, the SSH key is stored in the directory we saved it to in step 2 part d, and the IP address is from step 2 part f. The format is `ssh -i {full path of your .pem file} ec2-user@{instance IP address}`.

Windows users: Enter `ssh -i 'c:\Users\yourusername\.ssh\MyKeyPair.pem' ec2-user@{IP_Address}` (ex. `ssh -i 'c:\Users\adamglic\.ssh\MyKeyPair.pem' ec2-user@52.27.212.125`)

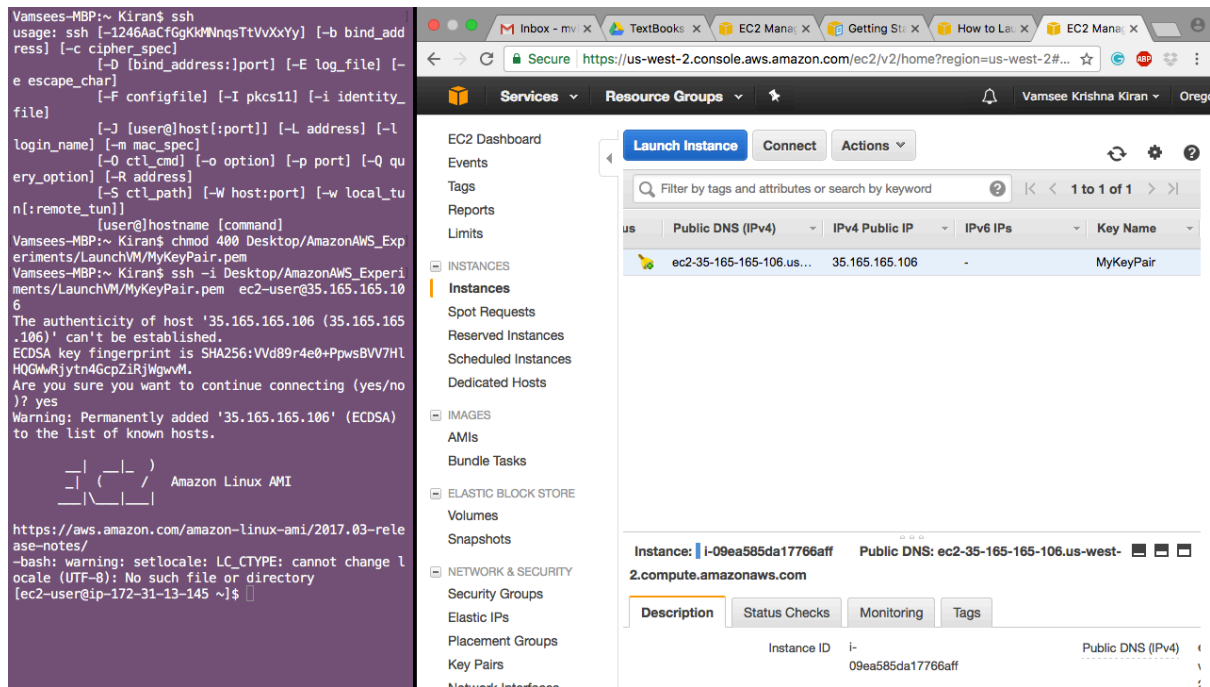
Mac/Linux users: Enter `ssh -i ~/.ssh/MyKeyPair.pem ec2-user@{IP_Address}` (ex. `ssh -i ~/.ssh/MyKeyPair.pem ec2-user@52.27.212.125`)

Note: if you started a Linux instance that isn't Amazon Linux, there may be a different user name that is used. common user names include `ec2-user`, `root`, `ubuntu`, and `fedora`. If you are unsure what the login user name is, check with your AMI provider.

You'll see a response similar to the following:

The authenticity of host 'ec2-198-51-100-1.compute-1.amazonaws.com (10.254.142.33)' can't be established. RSA key fingerprint is 1f:51:ae:28:df:63:e9:d8:cf:38:5d:87:2d:7b:b8:ca:9f:f5:b1:6f. Are you sure you want to continue connecting (yes/no)?

Type `yes` and press `enter`.



You'll see a response similar to the following:

Warning: Permanently added 'ec2-198-51-100-1.compute-1.amazonaws.com' (RSA) to the list of known hosts.

You should then see the welcome screen for your instance and you are now connected to your AWS Linux virtual machine in the cloud. The welcome screen is nothing but the command prompt of the Linux machine that you just launched.

Now you can access the terminal of the virtual machine you launched. For example, you can create some directories etc. on the VM as follows:

```
Vamsees-MBP:~ Kiran$ ssh -i Desktop/AmazonAWS_Experiments/LaunchVM/MyKeyPair.pem ec2-user@35.165.165.106
The authenticity of host '35.165.165.106 (35.165.165.106)' can't be established.
ECDSA key fingerprint is SHA256:Vvd89r4e0+PpwsBVV7HlHQGWwRjytn4GcpZiRjWgwvM.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '35.165.165.106' (ECDSA) to the list of known hosts.

 _ | ( _ | )
 _ | ( _ | ) Amazon Linux AMI

https://aws.amazon.com/amazon-linux-ami/2017.03-release-notes/
-bash: warning: setlocale: LC_CTYPE: cannot change locale (UTF-8): No such file or directory
[ec2-user@ip-172-31-13-145 ~]$ ls
[ec2-user@ip-172-31-13-145 ~]$ ls
[ec2-user@ip-172-31-13-145 ~]$ mkdir vamsee
[ec2-user@ip-172-31-13-145 ~]$ ls
vamsee
[ec2-user@ip-172-31-13-145 ~]$
```

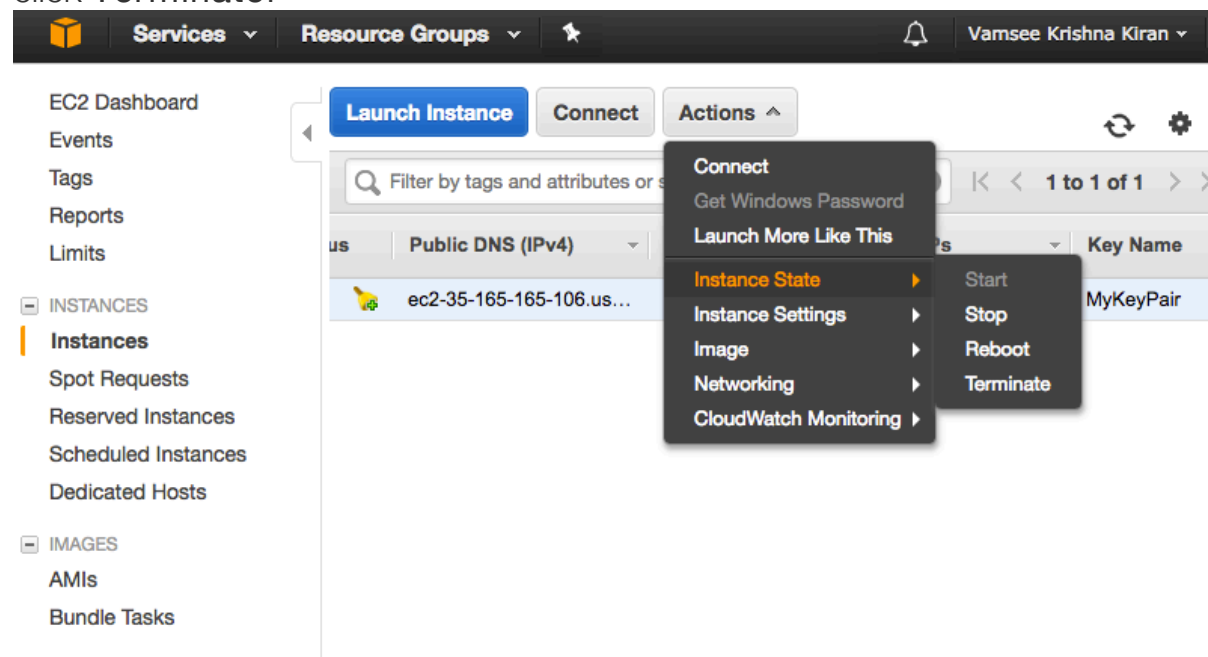

To come out of the VM terminal, type exit. This will exit from terminal of VM by closing the connection to VM. You will come back to your host machine terminal now.

```
https://aws.amazon.com/amazon-linux-ami/2017.03-release-notes/
-bash: warning: setlocale: LC_CTYPE: cannot change locale (UTF-8): No such file or directory
[ec2-user@ip-172-31-13-145 ~]$ ls
[ec2-user@ip-172-31-13-145 ~]$ ls
[ec2-user@ip-172-31-13-145 ~]$ mkdir vamsee
[ec2-user@ip-172-31-13-145 ~]$ ls
vamsee
[ec2-user@ip-172-31-13-145 ~]$ exit
logout
Connection to 35.165.165.106 closed.
Vamsees-MBP:~ Kiran$
```

Step 4: Terminate Your Instance

You can easily terminate the instance from the EC2 console. In fact, it is a best practice to terminate instances you are no longer using so you don't keep getting charged for them.

a. Back on the EC2 Console, select the box next to the instance you created. Then click the **Actions** button, navigate to *Instance State*, and click **Terminate**.



b. You will be asked to confirm your termination - select **Yes, Terminate**.

Note: This process can take several seconds to complete. Once your instance has been terminated, the Instance State will change to *terminated* on your EC2 Console.

