CS 524 Intro to Cloud computing

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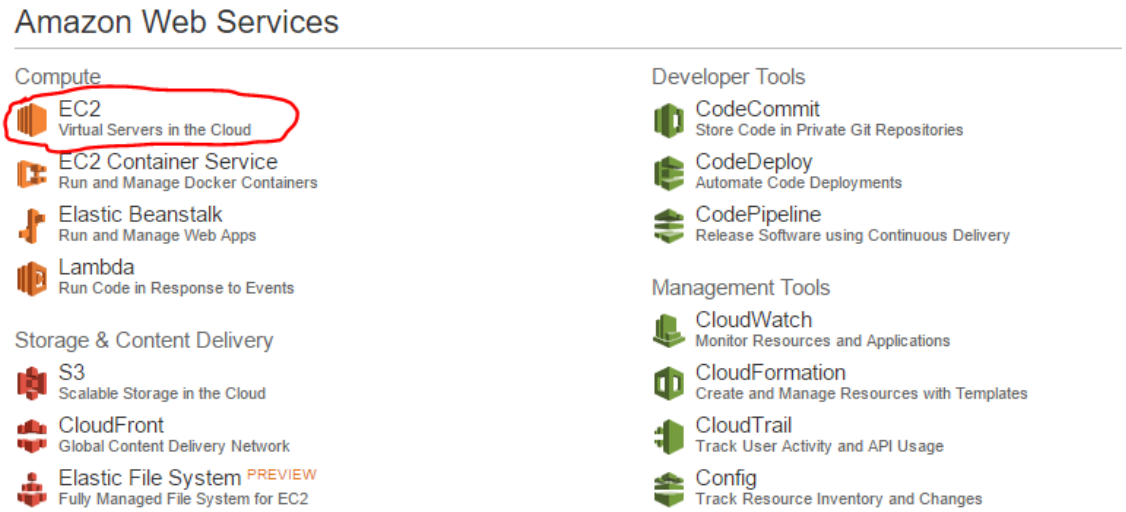
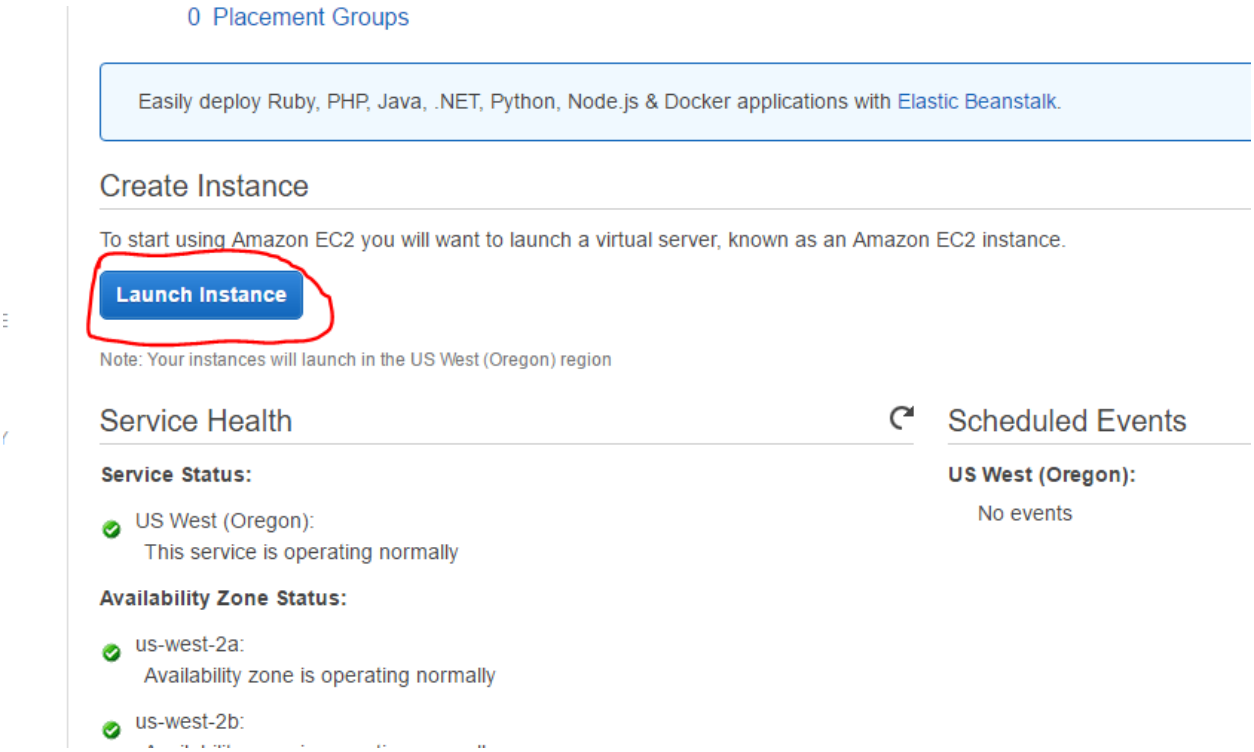
Lab Assignment 1

Step 1: Create an AWS Account by sign in or new user.

Step 2: Click on EC2 Amazon Web Service.

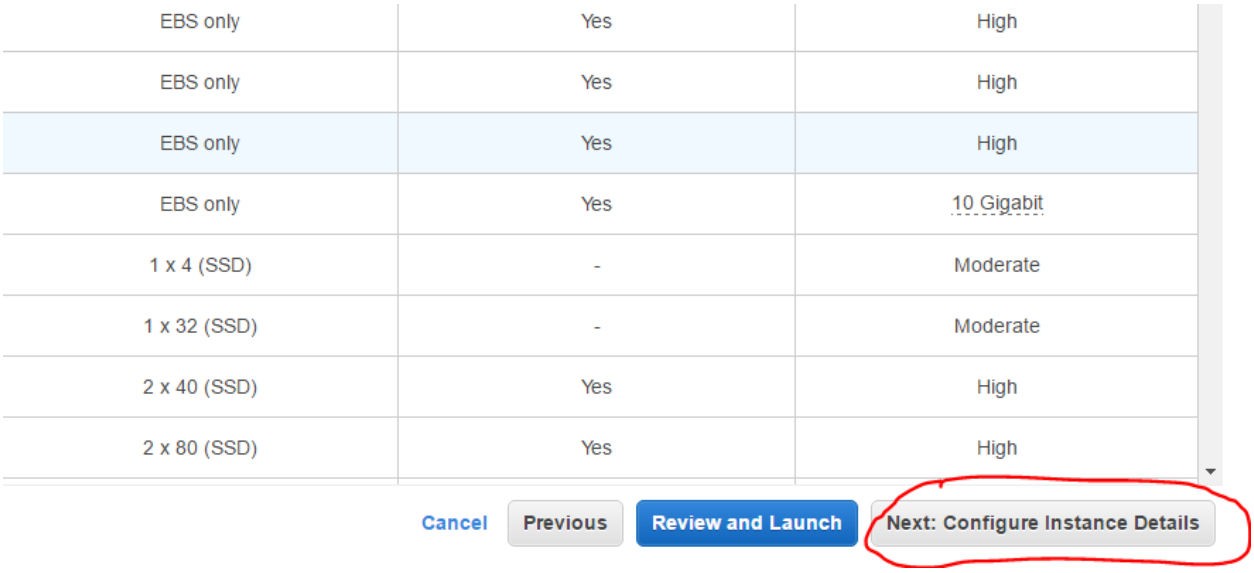


Step 3: Click on Launch instance in order to create AWS EC2 instance.



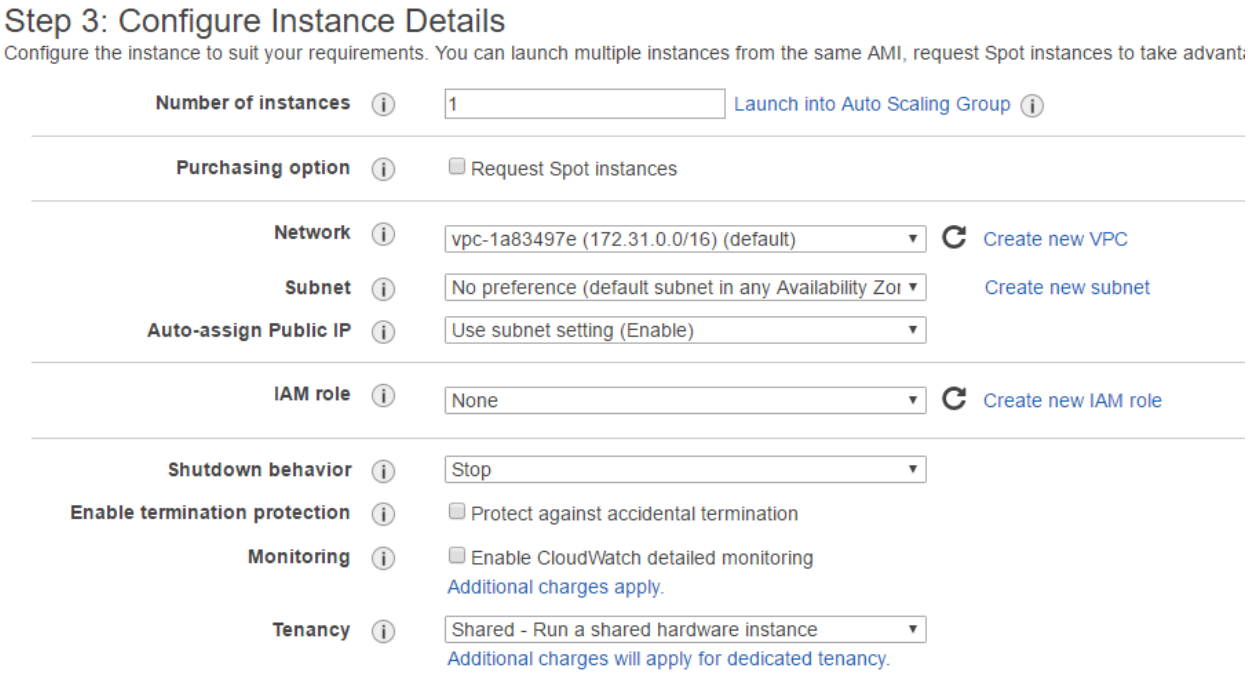
Step 4: Here we use Amazon Linux AMI to host AWS EC2 instance.

Step 5: For configuring instance details related to security group, click on “Configure Instance Details” button.



EBS only	Yes	High
EBS only	Yes	High
EBS only	Yes	High
EBS only	Yes	10 Gigabit
1 x 4 (SSD)	-	Moderate
1 x 32 (SSD)	-	Moderate
2 x 40 (SSD)	Yes	High
2 x 80 (SSD)	Yes	High

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



Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advant

Number of instances 1 Launch into Auto Scaling Group

Purchasing option Request Spot instances

Network vpc-1a83497e (172.31.0.0/16) (default) Create new VPC

Subnet No preference (default subnet in any Availability Zor Create new subnet

Auto-assign Public IP Use subnet setting (Enable)

IAM role None Create new IAM role

Shutdown behavior Stop

Enable termination protection Protect against accidental termination

Monitoring Enable CloudWatch detailed monitoring
Additional charges apply.

Tenancy Shared - Run a shared hardware instance
Additional charges will apply for dedicated tenancy.

Step 6: Add storage up to 30GB for free tier (by default 8GB required for this instance).

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. Learn more about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Delete on Termination
Root	/dev/xvda	snap-eef4cdae	8	General Purpose SSD (GP2)	24 / 3000	☑

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Learn more about free usage tier eligibility and usage restrictions.

Step 7: Enter Key name and Value for Tag Instance.

Step 5: Tag Instance

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. Learn mor

Key (127 characters maximum)	Value (255 characters maximum)
Name	Amazon EC2 Linux Server

Create Tag (Up to 10 tags maximum)

Step 8: Select security group (select an existing group).

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you w unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. Learn more about Amazon EC2 security groups.

Assign a security group: ○ Create a **new** security group

◉ Select an **existing** security group

Security Group ID	Name	Description
sg-a3b0f7c4	default	default VPC security group

Step 9: Here, we review the details of instance, which to be launched in future.

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instan

▼ AMI Details

Amazon Linux AMI 2016.03.0 (HVM), SSD Volume Type - ami-c229c0a2

Free tier eligible

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, F

Root Device Type: ebs Virtualization type: hvm

▼ Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimiz
t2.micro	Variable	1	1	EBS only	-

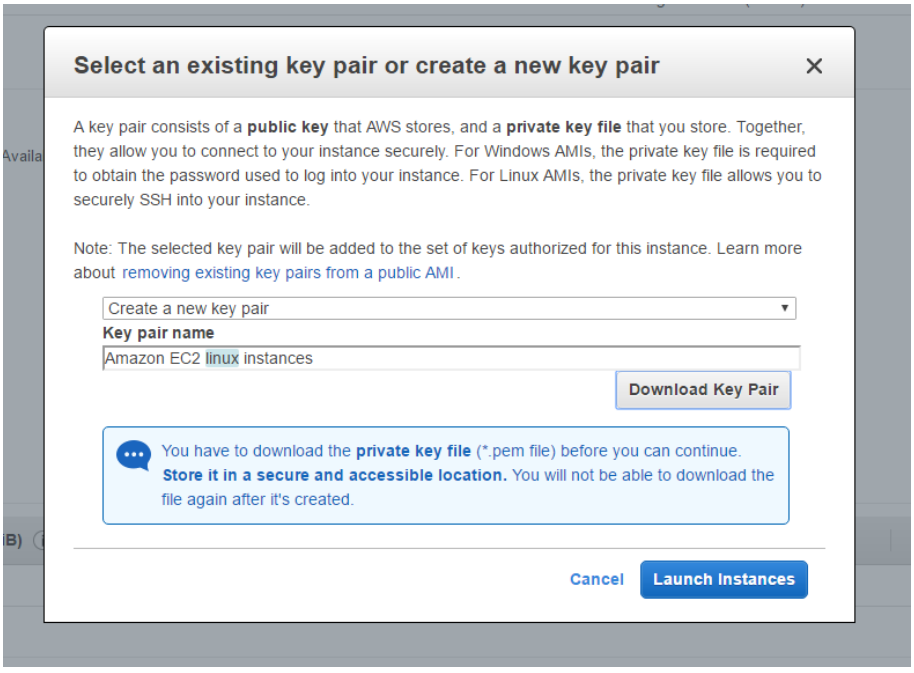
▼ Security Groups

Security Group ID	Name	Desc
sg-a3b0f7c4	default	default

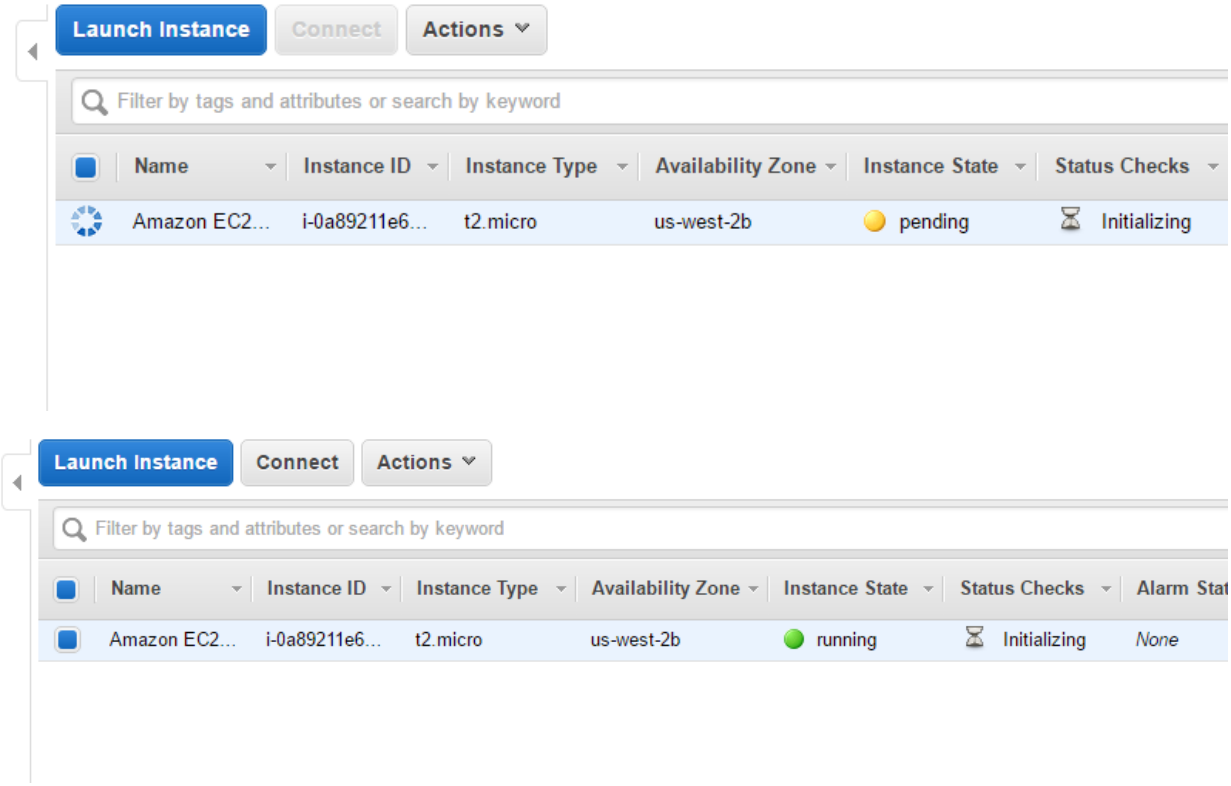
All selected security groups inbound rules

Security Group ID	Type	Protocol	Port Range
sg-a3b0f7c4	All traffic	All	All

Step 10: Download private key pair for making secure connection. After then click on “Launch Instance”.

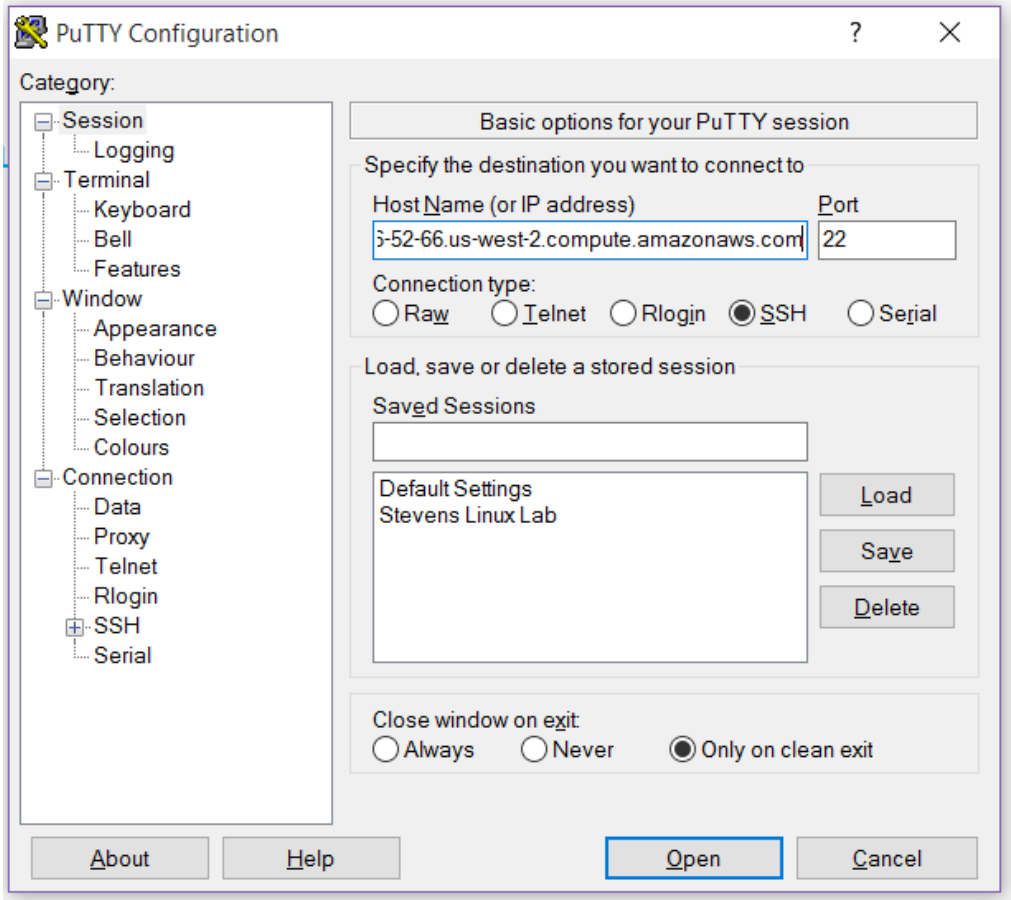


Snapshot of launched EC2 instances. It will take few minutes to make instance status as "running" after launch.



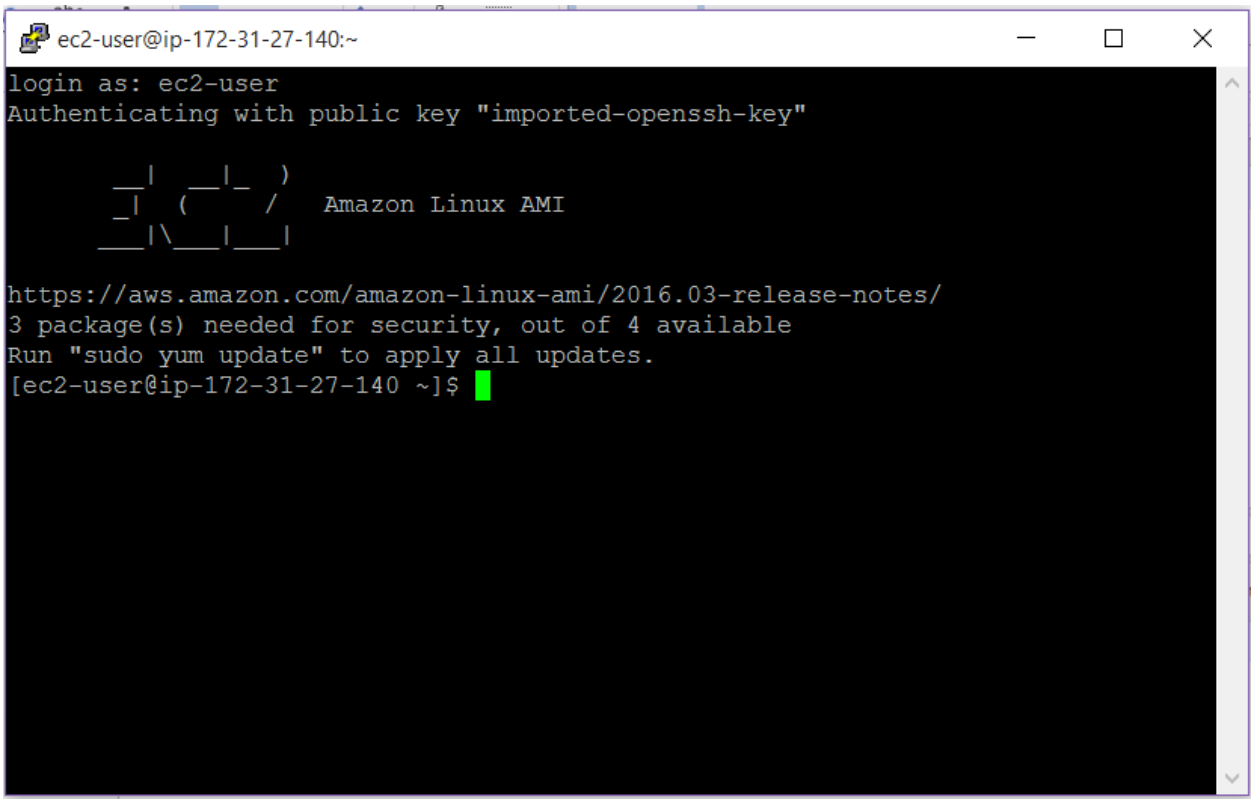
Configuration with Linux SSH

I have downloaded that key and that key I need to change over into ppk utilizing any outsider key generator (I have utilized Putty generator). Now I need to arrange DNS setting and IP configure to connect instance with Linux SSH.



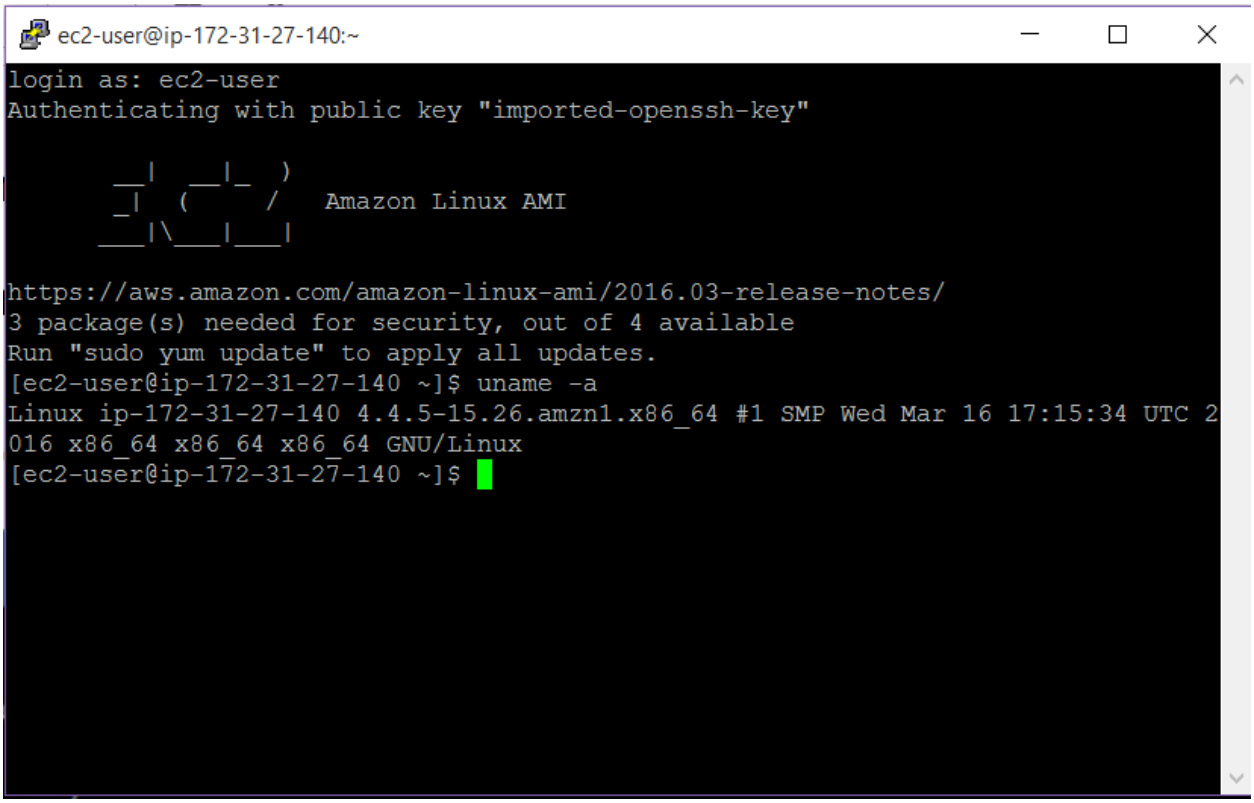
Now we get connected to Amazon EC2 and it is Amazon Linux AMI; so, we can run Linux commands to get the system details.

Here, we use by default login user id “ec2-user”.



cmd 1: uname -a

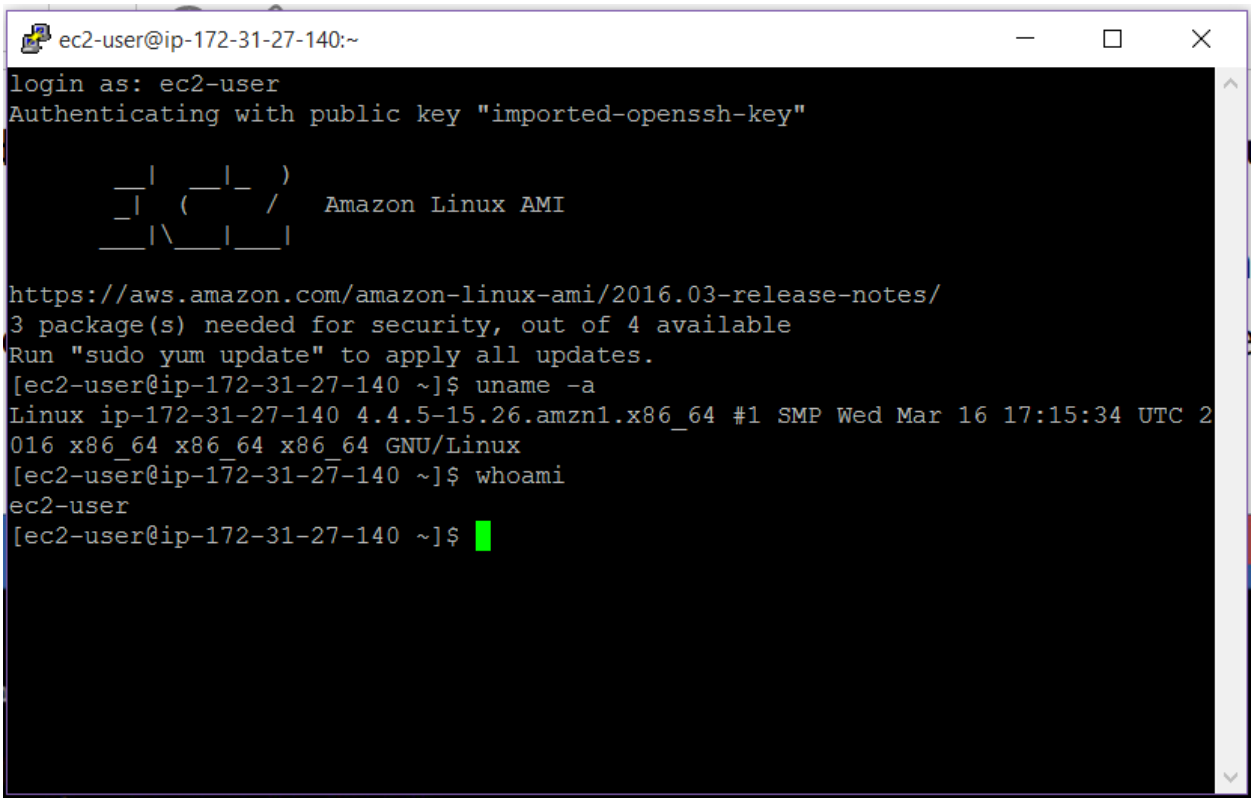
It gives system identification. Option -**a** prints the name, version and different insights about the current machine and the operation system running on it. Here I have run 64bit Amazon instance which is begun on ec2-user login. It demonstrates the version of Linux. Here it is GNU/Linux.



cmd 2: whoami

It display effective user name and username connected with the current powerful client ID.

The **whoami** display the client name (i.e., login name) of the manager of the current login session to standard login. Here, login is indicated as above (ec2-user).



cmd 3: df -h

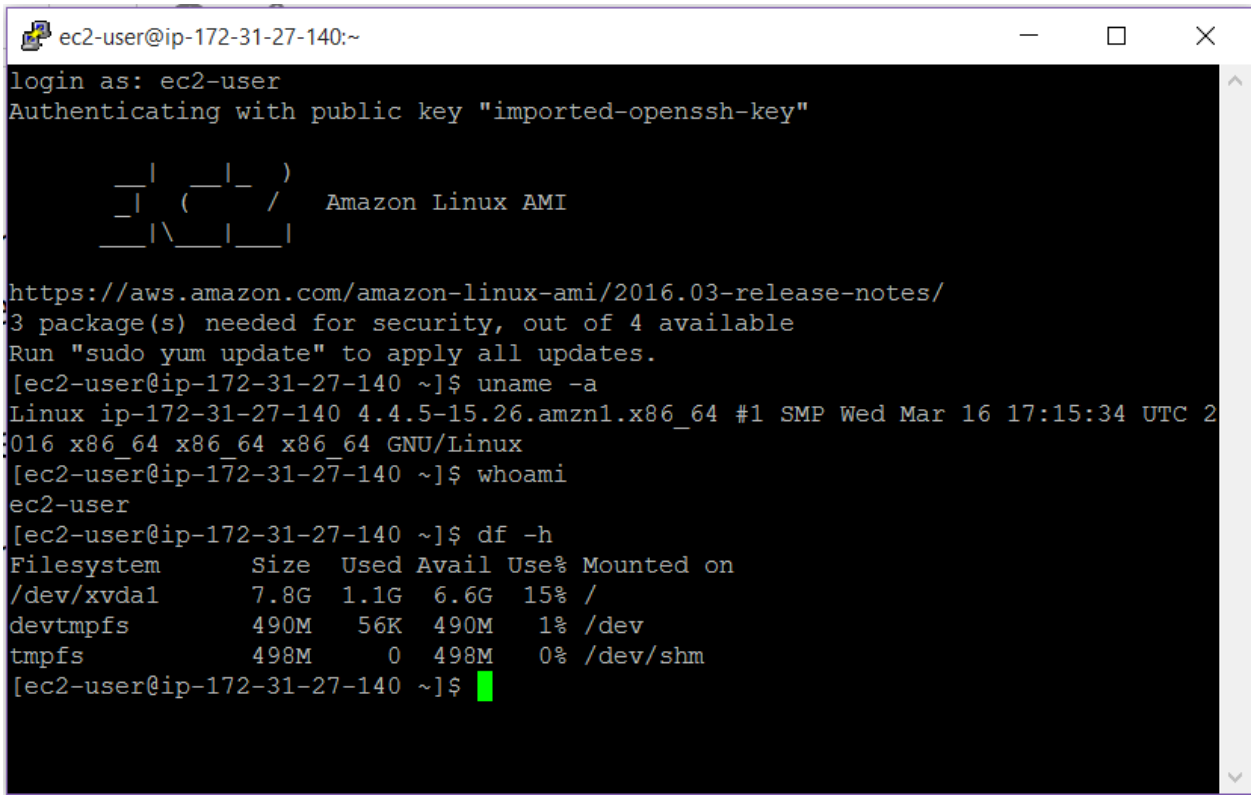
df is used to check the file system disk usage
-h, --human-readable= print sizes in human readable format

Command gives following information in below image is:

The first column of Filesystem is the device record way name of file system (generally the hard disk parts).

The second column gives information of memory allocated to different hard disk parts.

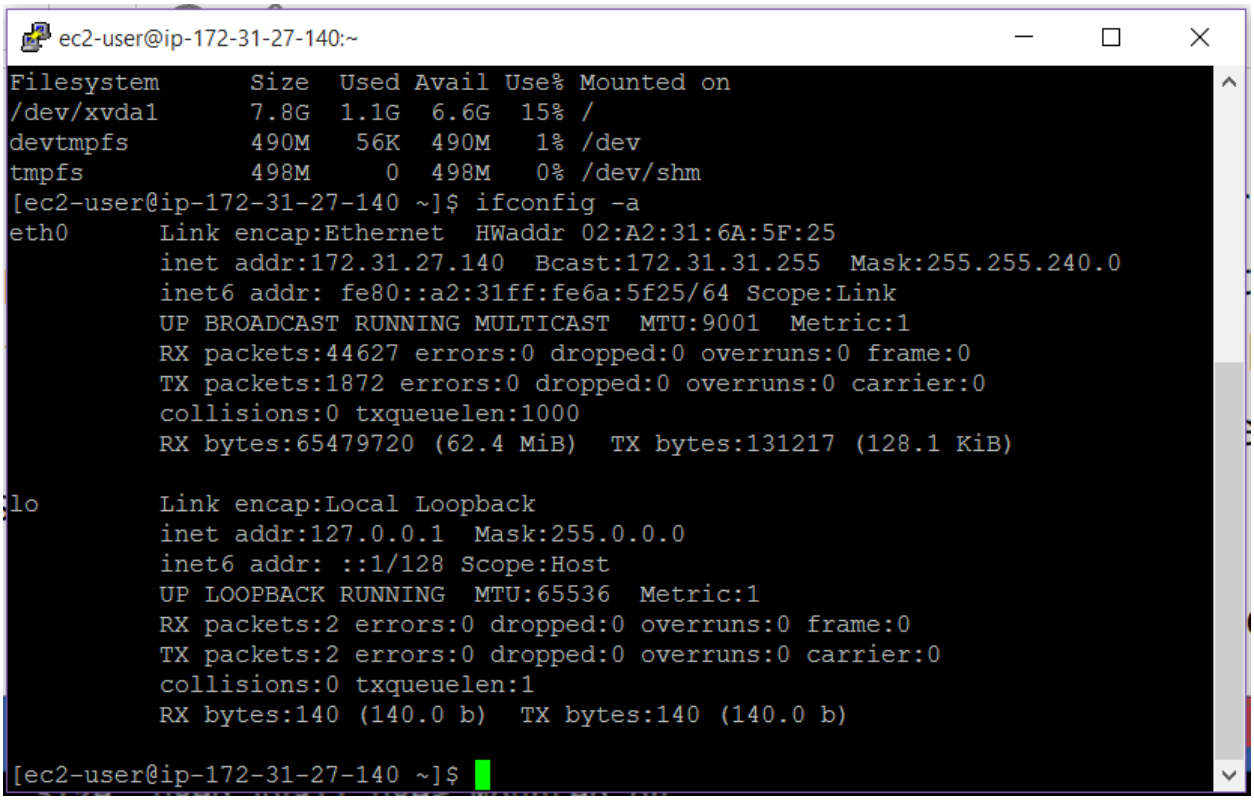
The last column gives an insights about where each disk is mounted.



cmd 4: ifconfig -a

This command gives an insights about current network configuration information, setting up an IP address, netmask or broadcast address to a network interface, creating an alias for network interface, setting up hardware address and enable or disable network interfaces.

ifconfig command with -a argument will display information of all active or inactive network interfaces on server. **-a** = display all interfaces which are currently available, even if they are down.



cmd 5: netstat

netstat ("system statistics") is a command line tool that shows network connection(both approaching and friendly), routing tables, and various system interface (network interface controller or software characterized system interface) and system convention insights.

It is used for discovering issues as a part of the system and to focus the measure of activity on the system as an execution estimation. Also, this yield is indicated as take after.

Netstat: netstat command displays various network related information such as network connections, routing tables, interface statistics and other details. The output is explained below:

1. Proto: The protocol (usually unix) used by the socket.

2. RefCnt: The reference count

3. Flags: The flags displayed is SO_ACCEPTON (displayed as ACC), SO_WAITDATA (W) or SO_NOSPACE (N). SO_ACCECPTON is used on unconnected sockets

4. Type: There are several types of socket access:

- SOCK_DGRAM: The socket is used in Datagram mode.
- SOCK_STREAM: This is a stream socket.
- SOCK_RAW: The socket is used as a raw socket.
- SOCK_RDM: serves reliably-delivered messages.
- SOCK_SEQPACKET: sequential packet socket.
- SOCK_PACKET: Raw interface access socket.

5. State: contain one of the following Keywords:

- FREE: The socket is not allocated
- LISTENING: The socket is listening for a connection request.
- CONNECTING: establish a connection.
- CONNECTED: connected.
- DISCONNECTING: disconnecting.
- (empty): socket is not connected to another one.

6. PID/Program name: Process ID (PID) and process name of the process that has the socket open.

7. Path: path name as which the corresponding processes attached to the socket.