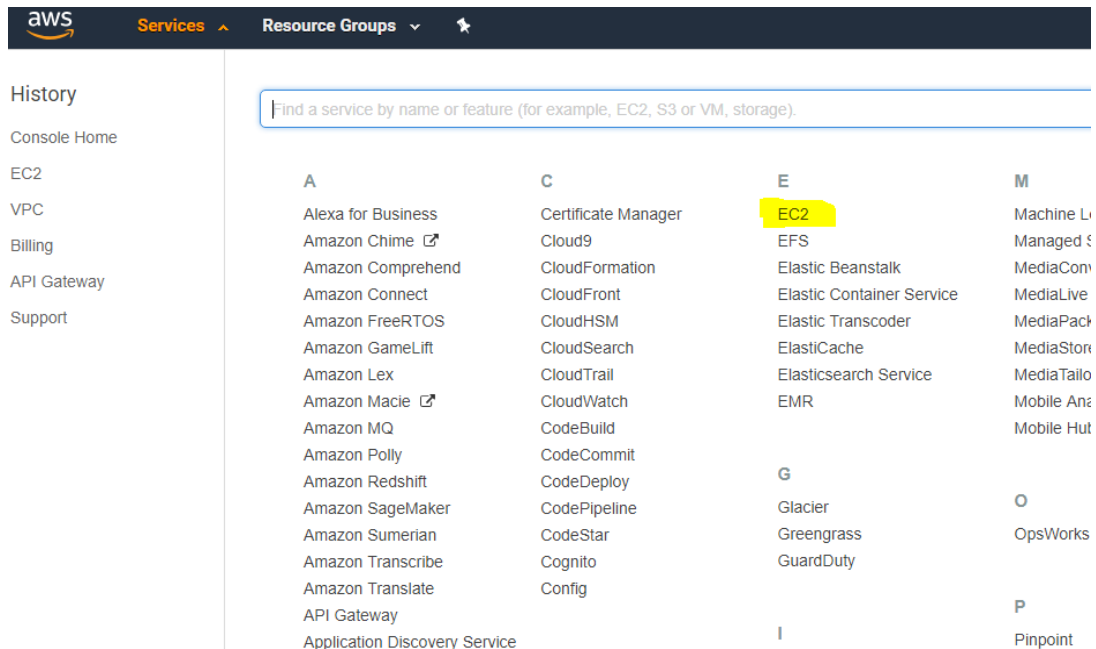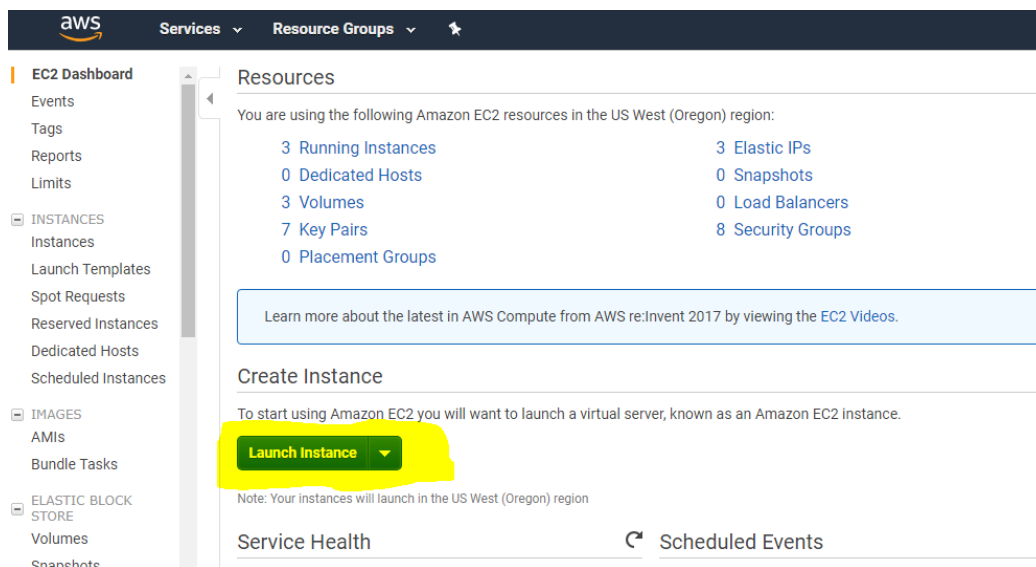# AWS and API Setup

Step 1 Create EC2 Machine

1. Select the EC2 Option from the services dropdown on your aws dashboard

2. On the next screen of EC2 Dashboard, Select the Launch Instance option

3. In this bootcamp we are using UBUNTU Server 16.04 Machine.

Step 1: Choose an Amazon Machine Image (AMI)

Cancel and Exit

Red Hat Enterprise Linux 7.4 (HVM), SSD Volume Type - ami-223f945a

Red Hat

Red Hat Enterprise Linux version 7.4 (HVM), EBS General Purpose (SSD) Volume Type

Free tier eligible

Root device type: ebs   Virtualization type: hvm   ENA Enabled: Yes

Select

64-bit

Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-4e79ed36

Ubuntu Server 16.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).

Free tier eligible

Root device type: ebs   Virtualization type: hvm   ENA Enabled: Yes

Select

64-bit

Are you launching a database instance? Try Amazon RDS

Hide

Amazon RDS

Amazon Relational Database Service (RDS) makes it easy to set up, operate, and scale your database on AWS by automating time-consuming database management tasks. With RDS, you can easily deploy **Amazon Aurora, MariaDB, MySQL, Oracle, PostgreSQL, and SQL Server** databases on AWS. Aurora is a MySQL- and PostgreSQL-compatible, enterprise-class database at 1/10th the cost of commercial databases. Learn more about RDS

Launch a database using RDS

4. Now select the instance type - T2.Micro (It comes under the free tier label)

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 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 compu

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 Perfo
☐	General purpose	t2.nano	1	0.5	EBS only	-	Low to M
☑	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to M
☐	General purpose	t2.small	1	2	EBS only	-	Low to M
☐	General purpose	t2.medium	2	4	EBS only	-	Low to M
☐	General purpose	t2.large	2	8	EBS only	-	Low to M

5. Enable auto assign IP – to open access from Internet

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 advantage of the lower pricing, instance, and more.

Number of instances ⓘ   1   Launch into Auto Scaling Group ⓘ

Purchasing option ⓘ   ☐ Request Spot instances

Network ⓘ   vpc-c85d48ac (default)   ↻ Create new VPC

Subnet ⓘ   No preference (default subnet in any Availability Zone)   Create new subnet

Auto-assign Public IP ⓘ   Enable

IAM role ⓘ   None   ↻ Create new IAM role

Shutdown behavior ⓘ   Stop

6. Set the default settings

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	Throughput (MB/s)
Root	/dev/sda1	snap-03b8725b8d432caad	8	General Purpose SSD (GP2)	100 / 3000	N/A

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.

→ (Use Default settings for this)

7. In next step "Add Tags" tab, Set the default settings

Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver.
A copy of a tag can be applied to volumes, instances or both.
Tags will be applied to all instances and volumes. Learn more about tagging your Amazon EC2 resources.

Key	(127 characters maximum)		Value	(255 characters maximum)		Instances ⓘ	Volumes ⓘ

This resource currently has no tags

Choose the Add tag button or click to add a Name tag .
Make sure your IAM policy includes permissions to create tags.

Add Tag   (Up to 50 tags maximum)

SKiP THIS! Just Press (Next

8. Configure the security groups as shown below

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 want to set up a web ser
allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. Learn more a
Amazon EC2 security groups.

Assign a security group: ● Create a **new** security group
○ Select an **existing** security group

Security group name: launch-wizard-5

Description: launch-wizard-5 created 2018-05-10T01:49:59.215+05:30

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ		Description ⓘ
SSH ▼	TCP	22	Anywhere ▼	0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop
HTTP ▼	TCP	80	Anywhere ▼	0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop

Add Rule   →Add rule. Initially there is only '1' rule present.
(SSH)

9. Save the .pem key to access the ec2 machine and then launch.

ance Launch
ch details. You ca   unch process.

Select an existing key pair or create a new key pair   ✕

tances' secur
e accessible from
ditional ports in y

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.

Make sure you download

es only.
Edit security groups

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 .

6.04 LTS (HVM]
04 LTS (HVM),EBS
Virtualization type

Create a new key pair   ▼
Key pair name
any-name-you-like|

Edit AMI
Press Launch to open
Edit instance type

Download Key Pair

ECUs

Variable

💬 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.

Network Performance

Low to Moderate

Edit security groups

Now Press this

Cancel   **Launch Instances**   Cancel   Previous   **Launch**

10. Set up an elastic ip for the instance. Elastic IP - remains same (whereas the ip which comes associated by default with the instance changes) when you stop the instance and thus gives you a better control over the instance.
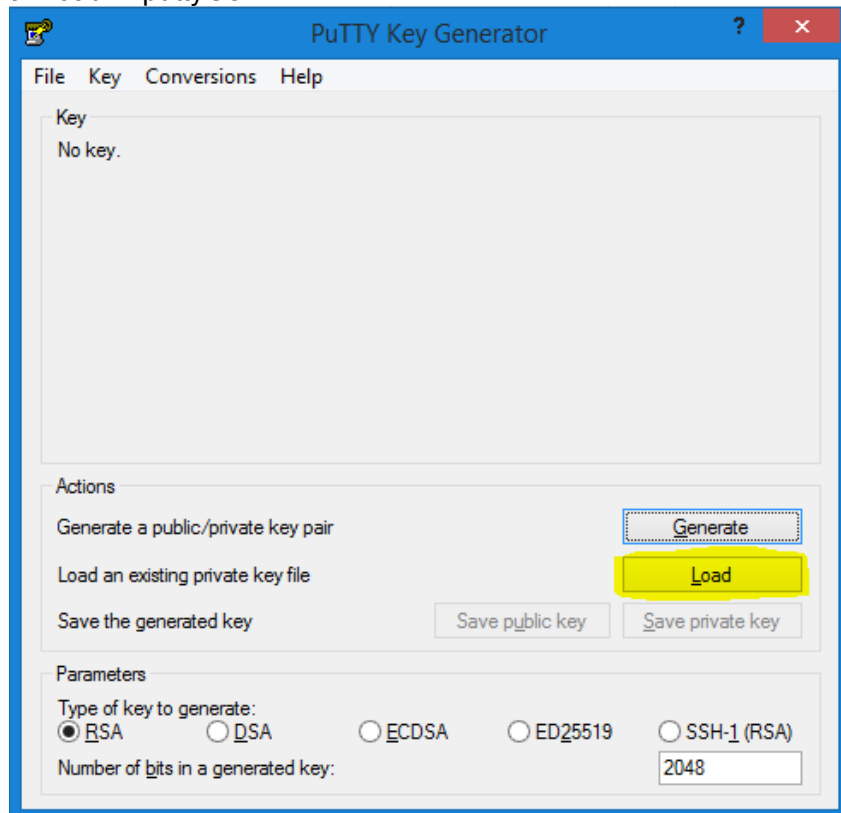
(Watch the ELASTIC-IP-CREATION.gif in files to see how its done)

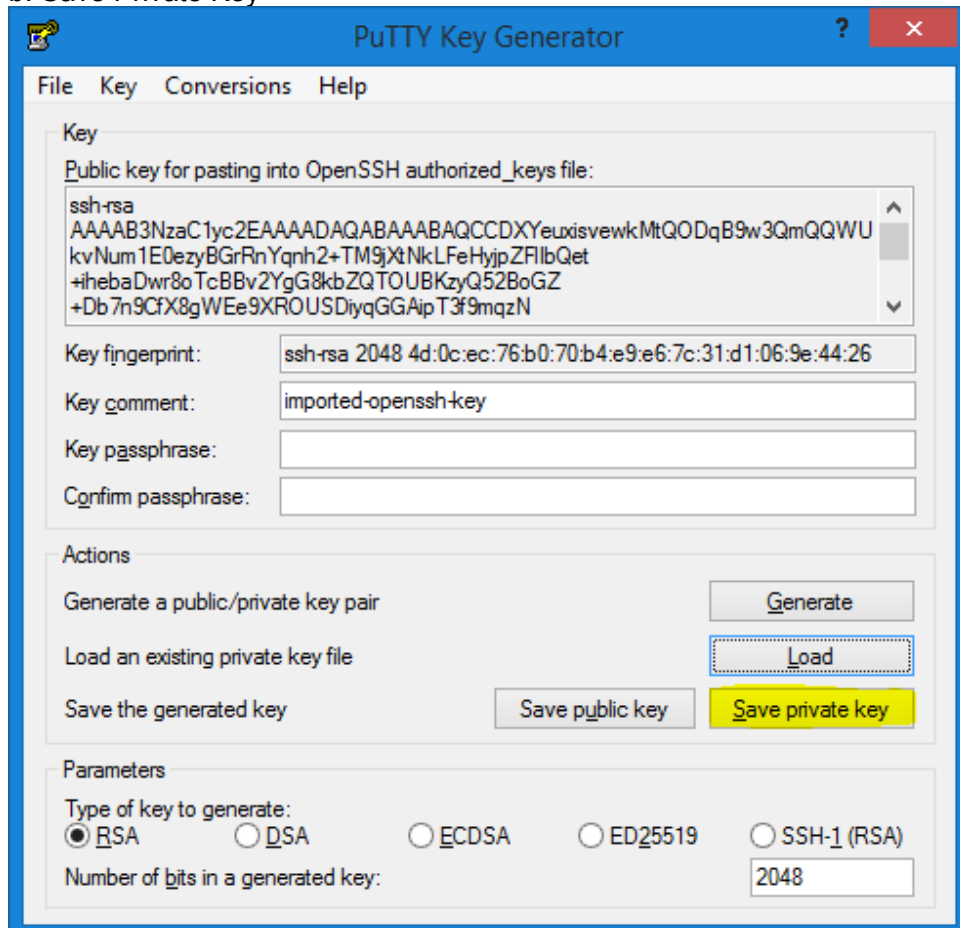# 11. Associate the above elastic IP Address with your ec2 instance.

(Watch the ELASTIC-IP-ASSOCIATION.gif in files to see how its done)
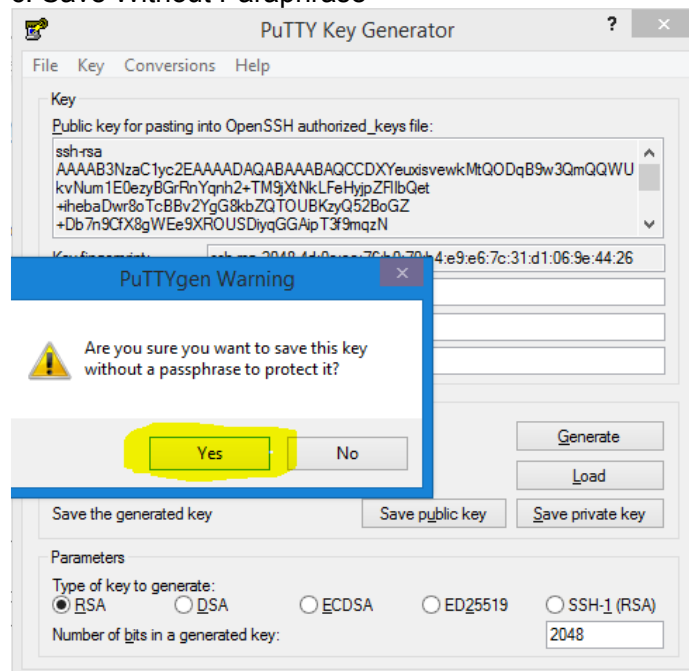
Step 2 Connect to instance using Putty

1. Convert key to .ppk from .pem
   a. Load in puttyGen

   b. Save Private Key

c. Save Without Paraphrase

2. Setup Putty
   a. Enter the Hostname to the specified field. You will get the hostname from AWS EC2 Dashboard as shown below in the figure.

b. Set the key in Putty in the field shown below

PuTTY Configuration

Category:

- Features
- Window
  - Appearance
  - Behaviour
  - Translation
  - Selection
  - Colours
- Connection
  - Data
  - Proxy
  - Telnet
  - Rlogin
  - SSH
    - Kex
    - Host keys
    - Cipher
    - Auth
    - TTY
    - X11
    - Tunnels
    - Bugs
    - More bugs

Options controlling SSH authentication

☑ Display pre-authentication banner (SSH-2 only)
☐ Bypass authentication entirely (SSH-2 only)

Authentication methods
☑ Attempt authentication using Pageant
☐ Attempt TIS or CryptoCard auth (SSH-1)
☑ Attempt "keyboard-interactive" auth (SSH-2)

Authentication parameters
☐ Allow agent forwarding
☐ Allow attempted changes of username in SSH-2
Private key file for authentication:
[   ] Browse...

About   Help   Open   Cancel

① Select this ↑ option

② Put here .ppk file which we generated

using putty gen

c. Save Settings for this, so as to avoid this procedure again and again. (Note once you save your settings they will be available under saved sessions and you can select and load them.)

Save settings with a name so you don't have to do this again

PuTTY Configuration

Category:

- Session
  - Logging
- Terminal
  - Keyboard
  - Bell
  - Features
- Window
  - Appearance
  - Behaviour
  - Translation
  - Selection
  - Colours
- Connection
  - Data
  - Proxy
  - Telnet
  - Rlogin
  - SSH
  - Serial

Basic options for your PuTTY session

Specify the destination you want to connect to
Host Name (or IP address)   Port
[ec2-34-217-190-195.us-west-2.compute.] [22]

Connection type:
○ Raw ○ Telnet ○ Rlogin ● SSH ○ Serial

Load, save or delete a stored session
Saved Sessions
[any-name-you-like-for-these-settings]

Default Settings
Bootcamp Machine
Demo EC2
Demo EC2 with VPC
Demo EC2 with VPC - Jatin
EC2-Test
Hostinger

Load
Save   Press
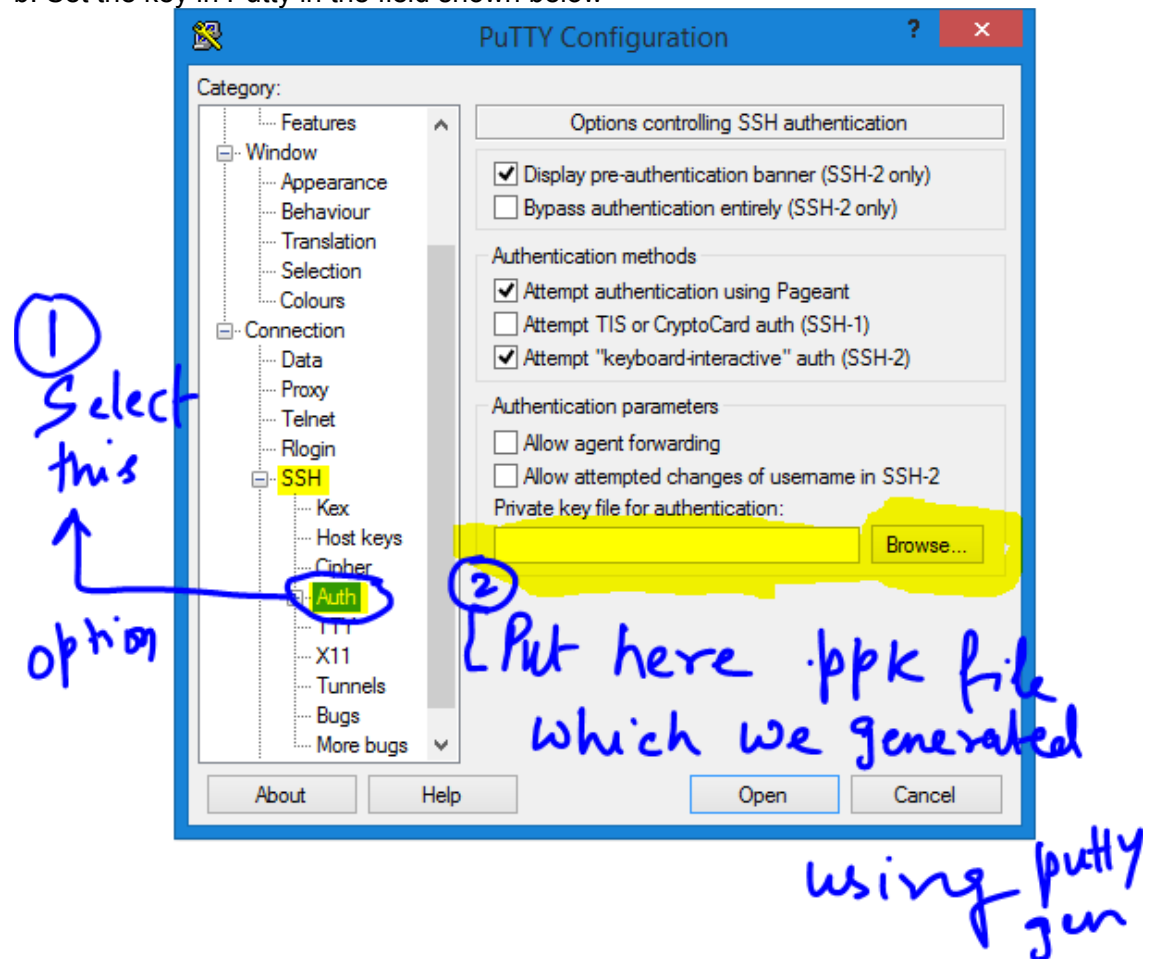Delete

Close window on exit:
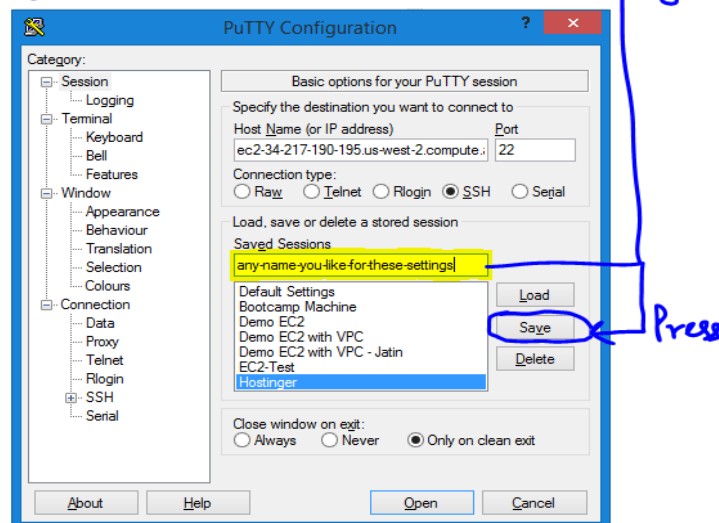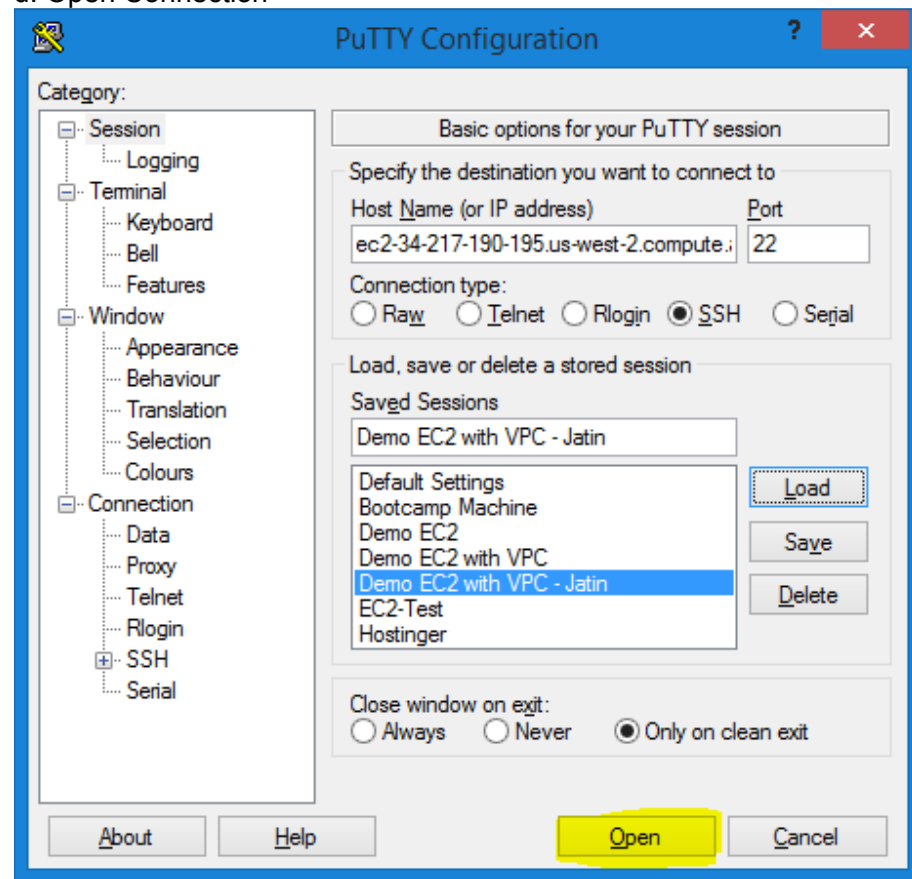○ Always ○ Never ● Only on clean exit

About   Help   Open   Cancel

d. Open Connection

Step 3 Install Python and its dependencies

1) Install Python
   a.   sudo apt-get install python 2.7

2) Install development python dependencies
   a.   sudo apt-get install python-setuptools

   Note : Run sudo apt-get update if you face any error like "Failed to fetch the resource"

   b.   sudo apt-get install python-dev
   c.   sudo apt-get install build essential
   d.   sudo apt-get install python-pip

3) Install development related libraries
   a.   pip install numpy scipy sklearn
   b.   sudo apt-get install python-pil
   c.   sudo apt-get install python-joblib
   d.   sudo apt-get install python-flask
   e.   To install opencv use this command
         curl -s
         "https://raw.githubusercontent.com/arthurbeggs/scripts/master/install_apps/install_opencv2.sh"
         | bash

Step 4 Setup File Zilla for File Transfer

1) Add new site in site manager
2) Add 'Amazon AWS key(.pem)' in Edit->Settings->SFTP

Step 5 Configure Apache server on EC2

1) sudo apt-get Install apache2
2) sudo apt-get install libapache-mod-wsgi

Run "curl" => to => TEST => Everything is working

Step 6 Setting up the Flask app

1) Create Directory:
   a. /var/www/FlaskApplications

2) Create another directory:
   a. /var/www/Flaskapplications/SampleApp

3) Change Permissions:
   a. sudo chown –R ubuntu:ubuntu /path/to
   b. sudo chown –R 755 /path/to

4) Place the .conf file at
   a. /etc/apache2/sites-available/SampleApp.conf
   b. Change – hostname

5) Place the .wsgi file at
   a. /var/www/FlaskApplications/

6) To test the setup, Place 'demo.py' file in /var/www/Flaskapplications/sampleApp/api/

7) Run
   a. sudo a2enmod wsgi
   b. sudo apachectl restart
   c. sudo a2ensite sampleApp

8) Run
   a. sudo service apache2 reload
   b. sudo /etc/init.d/apache2 reload
   c. sudo service apache2 restart
   d. sudo /etc/init.d/apache2 reload