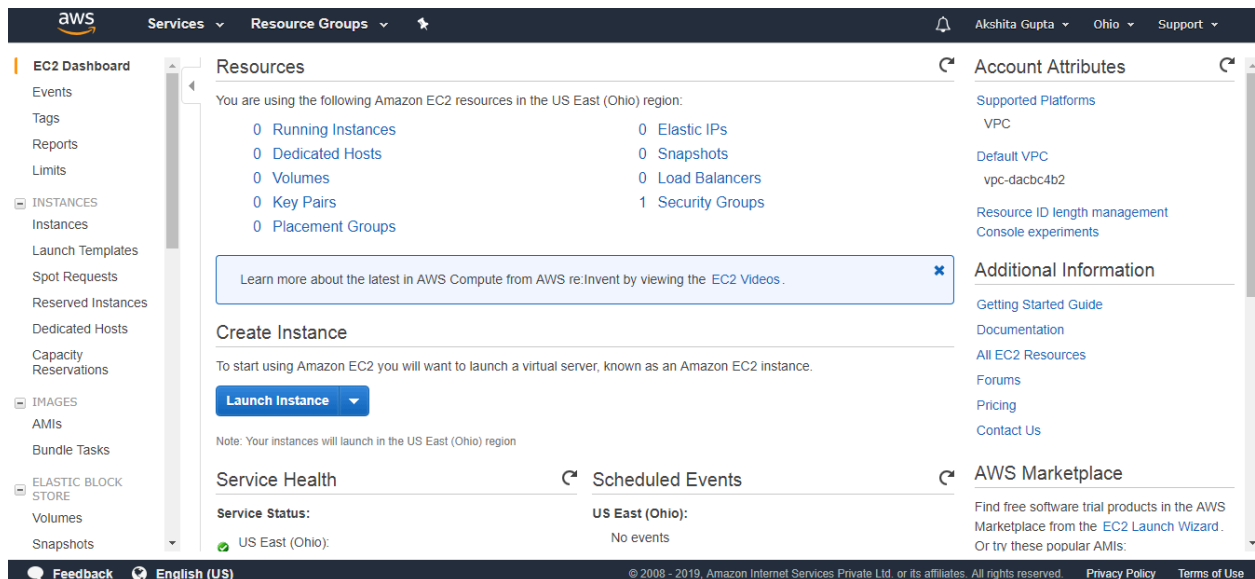


Creating an EC2 instance

T

- Sign in to the AWS Management Console.
- Click on the EC2 service.
- Click on the **Launch Instance** button to create a new instance.



- Now, we have different Amazon Machine Images. These are the snapshots of different virtual machines. We will be using Amazon Linux AMI 2018.03.0 (HVM) as it has built-in tools such as java, python, ruby, perl, and especially AWS command line tools.

aws Services Resource Groups

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

Quick Start |< < 1 to 20 of 20 AMIs > >|

My AMIs

AWS Marketplace

Community AMIs

☒ Free tier only ⓘ

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-04328208f4f0cf1fe (64-bit x86) / ami-0cc848dfaa82172af (64-bit Arm)

Free tier eligible

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras.

Root device type: ebs Virtualization type: hvm

Select

64-bit (x86)
64-bit (Arm)

Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0cd3dfa4e37921605

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 (x86)

Red Hat Enterprise Linux 7.6 (HVM), SSD Volume Type - ami-0b500ef59d8335eee (64-bit x86) / ami-0302c1ecc74930ba5 (64-bit Arm)

Free tier eligible

Red Hat Enterprise Linux version 7.6 (HVM), EBS General Purpose (SSD) Volume Type

Select

64-bit (x86)
64-bit (Arm)

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- Choose an Instance Type, and then click on the Next. Suppose I choose a t2.micro as an instance type.

aws Services Resource Groups

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

Cancel Previous Review and Launch Next: Configure Instance Details

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- The main setup page of EC2 is shown below where we define setup configuration.

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, assign an access management role to the instance, and more.

Number of instances ⓘ 1 [Launch into Auto Scaling Group](#) ⓘ

Purchasing option ⓘ ☐ Request Spot instances

Network ⓘ vpc-dacbc4b2 (default) [Create new VPC](#)

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

Auto-assign Public IP ⓘ Use subnet setting (Enable)

Placement group ⓘ ☐ Add instance to placement group

Capacity Reservation ⓘ Open [Create new Capacity Reservation](#)

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.](#)

Elastic Inference ⓘ ☐ Add an Elastic Inference accelerator
[Additional charges apply.](#)

T2/T3 Unlimited ⓘ ☐ Enable
[Additional charges may apply](#)

▼ **Advanced Details**

User data ⓘ ☒ As text ☐ As file ☐ Input is already base64 encoded
(Optional)

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Storage](#)

Where,

Number of Instances: It defines how many EC2 instances you want to create. I leave it as 1 as I want to create only one instance.

Purchasing Option: In the purchasing option, you need to set the price, request from, request to, and persistent request. Right now, I leave it as unchecked.

Tenancy: Click on the **Shared-Run a shared hardware instance** from the dropdown menu as we are sharing hardware.

Backward Skip 10s
Play Video
Forward Skip 10s

Network: Choose your network, set it as default, i.e., **vpc-dacbc4b2 (default)** where vpc is a virtual private cloud where we can launch the AWS resources such as EC2 instances in a virtual cloud.

Subnet: It is a range of IP addresses in a virtual cloud. In a specified subnet, you can add new AWS resources.

Shutdown behavior: It defines the behavior of the instance type. You can either stop or terminate the instance when you shut down the Linux machine. Now, I leave it as Stop.

Enable Termination Protection: It allows the people to protect against the accidental termination.

Monitoring: We can monitor things such as CPU utilization. Right now, I uncheck the Monitoring.

User data: In Advanced details, you can pass the bootstrap scripts to EC2 instance. You can tell them to download PHP, Apache, install the Apache, etc.

- Now, add the EBS volume and attach it to the EC2 instance. Root is the default EBS volume. Click on the **Next**.

The screenshot shows the 'Add Storage' step in the AWS Management Console. The top navigation bar includes the AWS logo, 'Services', 'Resource Groups', and user information 'Akshita Gupta' in 'Ohio'. The progress bar shows steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage (active), 5. Add Tags, 6. Configure Security Group, and 7. Review.

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) ⓘ	Delete on Termination ⓘ	Encrypted ⓘ
Root	/dev/xvda	snap-040ce2c3f0d1a8f58	8	Magnetic (standard)	N/A	N/A	<input checked="" type="checkbox"/>	Not Encrypted

[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.

At the bottom, there are navigation buttons: 'Cancel', 'Previous', 'Review and Launch' (highlighted in blue), and 'Next: Add Tags'.

Volume Type: We select the Magnetic (standard) as it is the only disk which is bootable.

Delete on termination: It is checked means that the termination of an EC2 instance will also delete EBS volume.

- Now, Add the Tags and then click on the Next.

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 (i)	Volumes (i)	
Name	MyEc2webserver	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="X"/>
Department	Developer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="X"/>

(Up to 50 tags maximum)

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In the above screen, we observe that we add two tags, i.e., the name of the server and department. Create as many tags as you can as it reduces the overall cost.

- **Configure Security Group.** The security group allows some specific traffic to access your instance.

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic to 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 server and 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](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group ☐ Select an existing security group

Security group name:

Description:

Type (i)	Protocol (i)	Port Range (i)	Source (i)	Description (i)	
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop	<input type="button" value="X"/>
HTTP	TCP	80	Custom 0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop	<input type="button" value="X"/>
HTTPS	TCP	443	Custom 0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop	<input type="button" value="X"/>

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- **Review an EC2 instance** that you have just configured, and then click on the **Launch** button.

Step 7: Review Instance Launch

Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0cd3d4e37921605

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.

Free tier eligible

Root Device Type: ebs Virtualization type: hvm

▼ Instance Type [Edit 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

▼ Security Groups [Edit security groups](#)

Security group name: WebServer
Description: WebServer

Type (1)	Protocol (1)	Port Range (1)	Source (1)	Description (1)
SSH	TCP	22	0.0.0.0/0	
HTTP	TCP	80	0.0.0.0/0	
HTTP	TCP	80	:::0	
HTTPS	TCP	443	0.0.0.0/0	
HTTPS	TCP	443	:::0	

▼ Instance Details [Edit instance details](#)

[Cancel](#) [Previous](#) [Launch](#)

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- Create a new key pair and enter the name of the key pair. Download the Key pair.

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

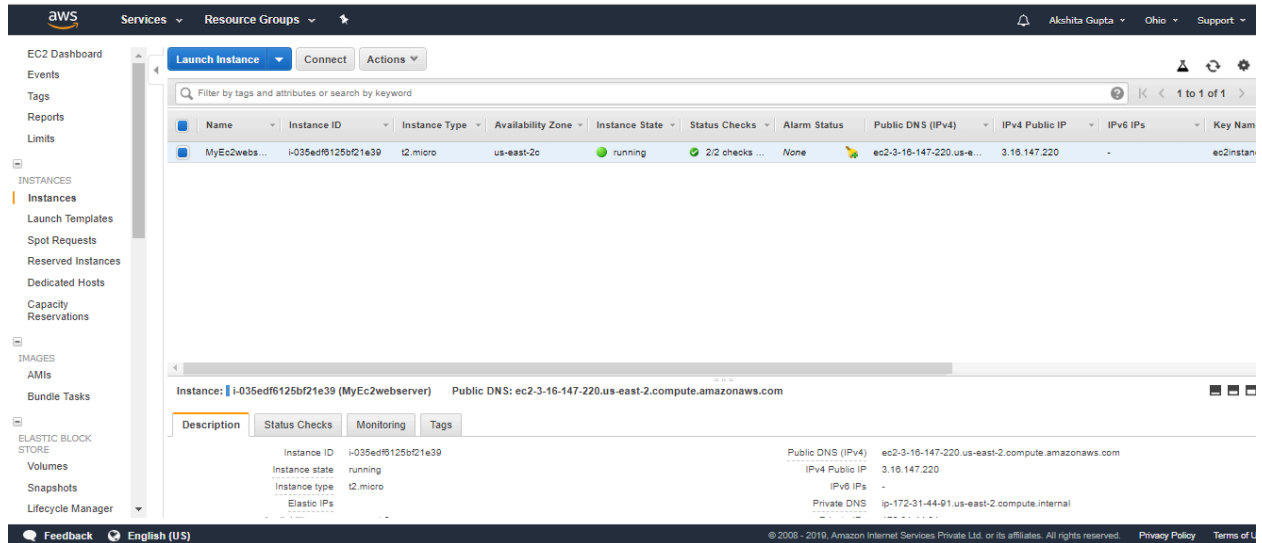
ec2instance

[Download Key Pair](#)

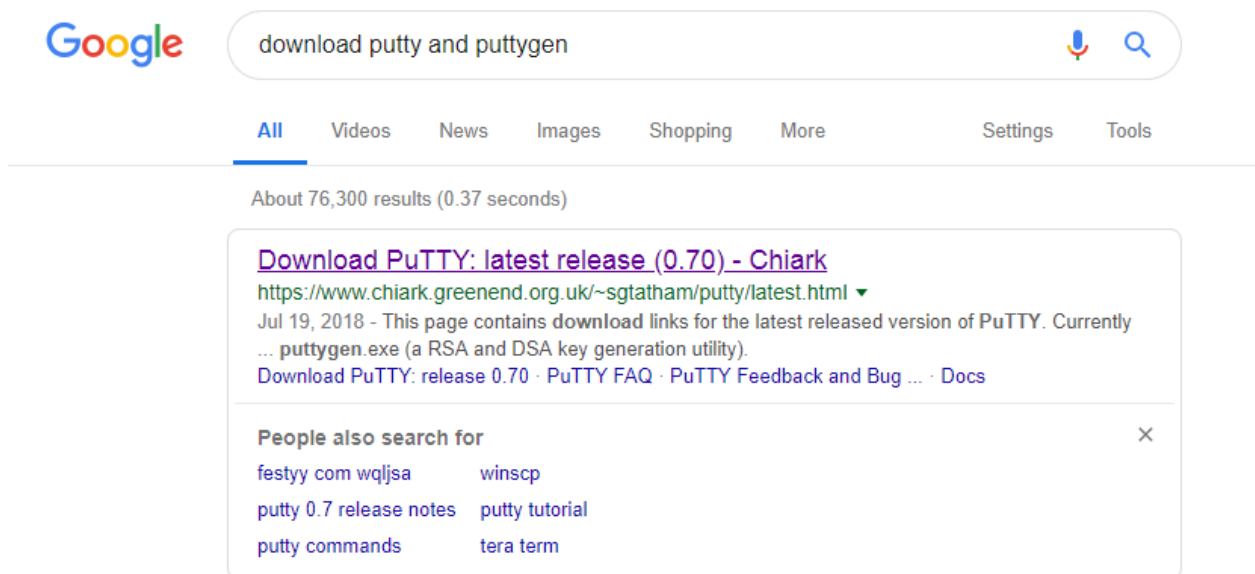
⋮ You have to download the private key file (*.pem file) before you can continue. Store it in a secure and accessible location. You will not be able to download the file again after it's created.

[Cancel](#) [Launch Instances](#)

- Click on the Launch Instances button.



- To use an EC2 instance in Windows, you need to install both **Putty** and **PuttyKeyGen**.
- Download the **Putty** and **PuttyKeyGen**.



- Download the putty.exe and puttygen.exe file.

putty.exe (the SSH and Telnet client itself)

32-bit: [putty.exe](#) (or by FTP) (signature)

64-bit: [putty.exe](#) (or by FTP) (signature)

pscp.exe (an SCP client, i.e. command-line secure file copy)

32-bit: [pscp.exe](#) (or by FTP) (signature)

64-bit: [pscp.exe](#) (or by FTP) (signature)

psftp.exe (an SFTP client, i.e. general file transfer sessions much like FTP)

32-bit: [psftp.exe](#) (or by FTP) (signature)

64-bit: [psftp.exe](#) (or by FTP) (signature)

puttytel.exe (a Telnet-only client)

32-bit: [puttytel.exe](#) (or by FTP) (signature)

64-bit: [puttytel.exe](#) (or by FTP) (signature)

plink.exe (a command-line interface to the PuTTY back ends)

32-bit: [plink.exe](#) (or by FTP) (signature)

64-bit: [plink.exe](#) (or by FTP) (signature)

pageant.exe (an SSH authentication agent for PuTTY, PSCP, PSFTP, and Plink)

32-bit: [pageant.exe](#) (or by FTP) (signature)

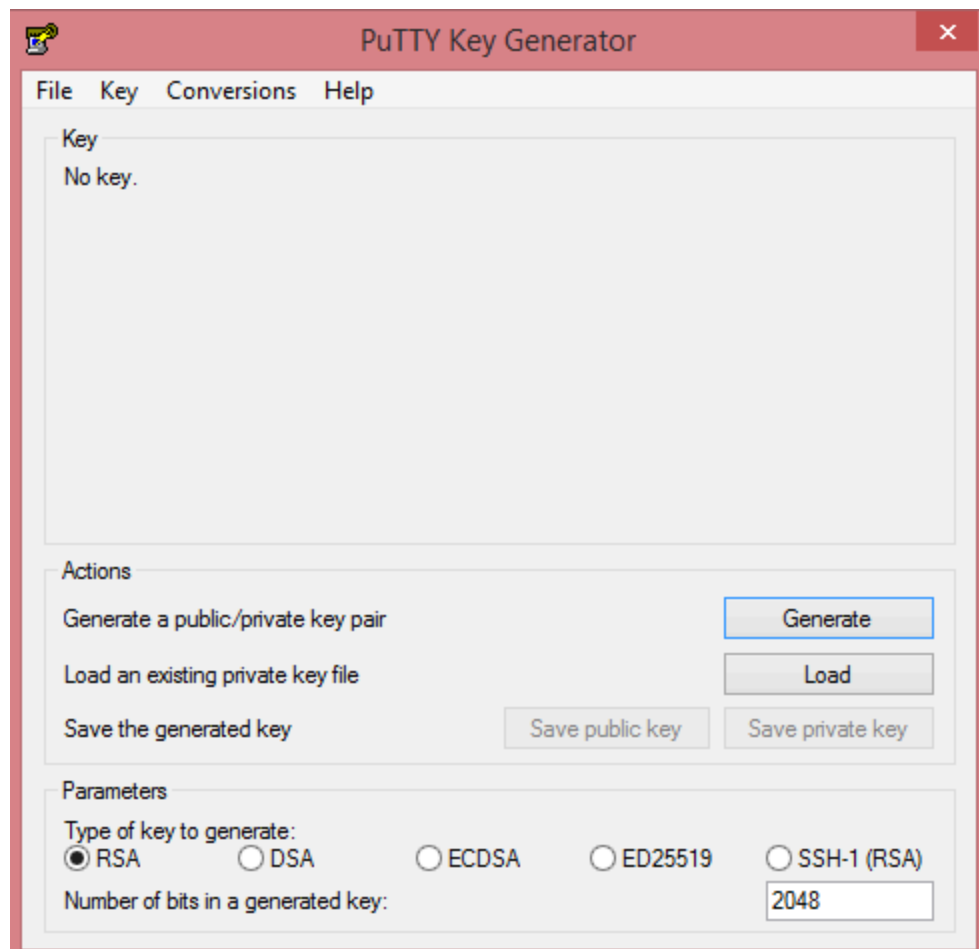
64-bit: [pageant.exe](#) (or by FTP) (signature)

puttygen.exe (a RSA and DSA key generation utility)

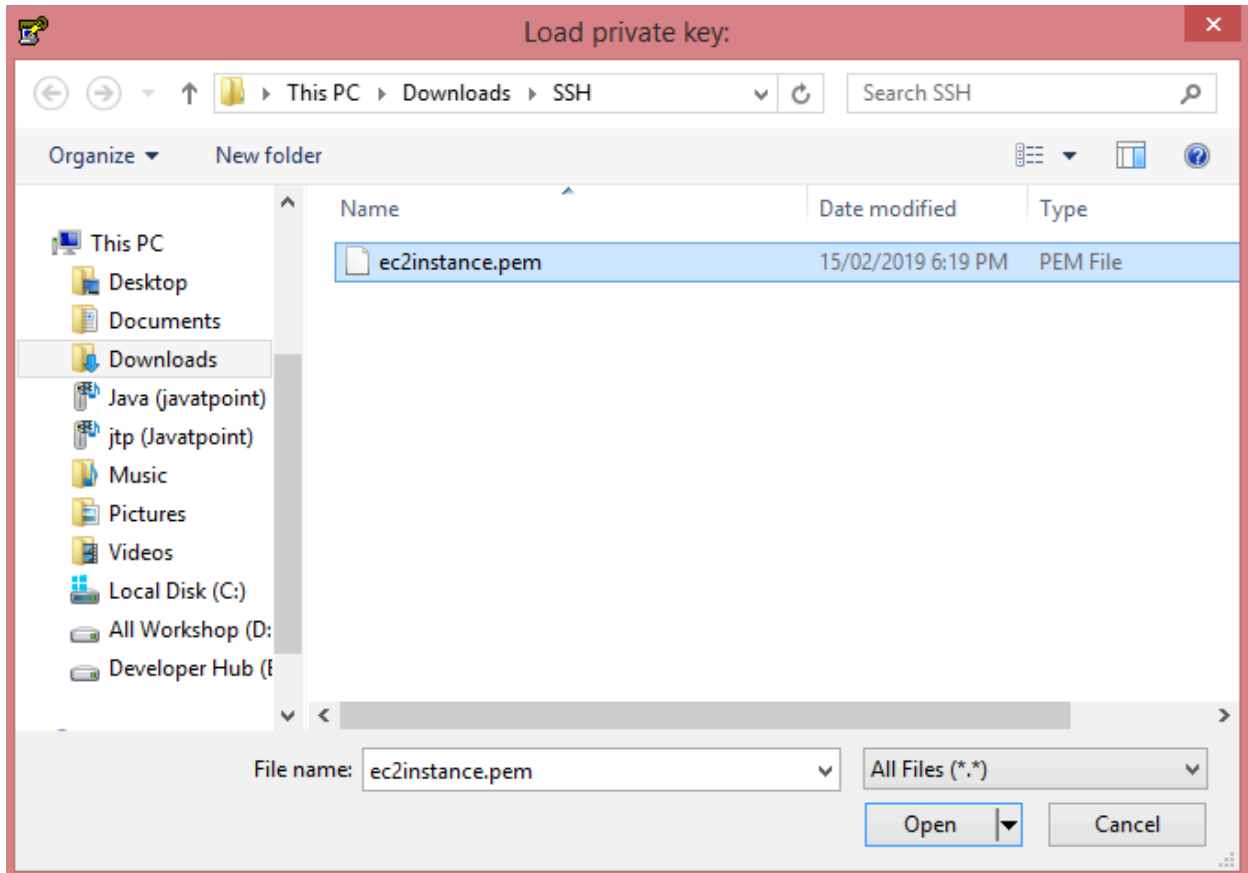
32-bit: [puttygen.exe](#) (or by FTP) (signature)

64-bit: [puttygen.exe](#) (or by FTP) (signature)

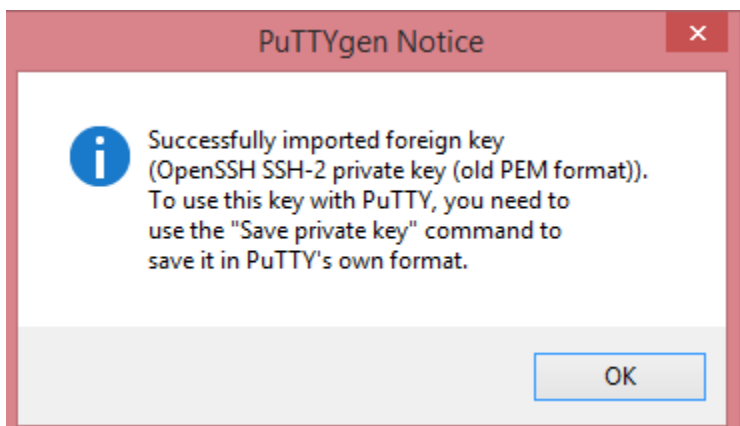
- In order to use the key-pair which we have downloaded previously, we need to convert the pem file to ppk file. Puttygen is used to convert the pem file to ppk file.
- Open the Puttygen software.
- Click on the Load.



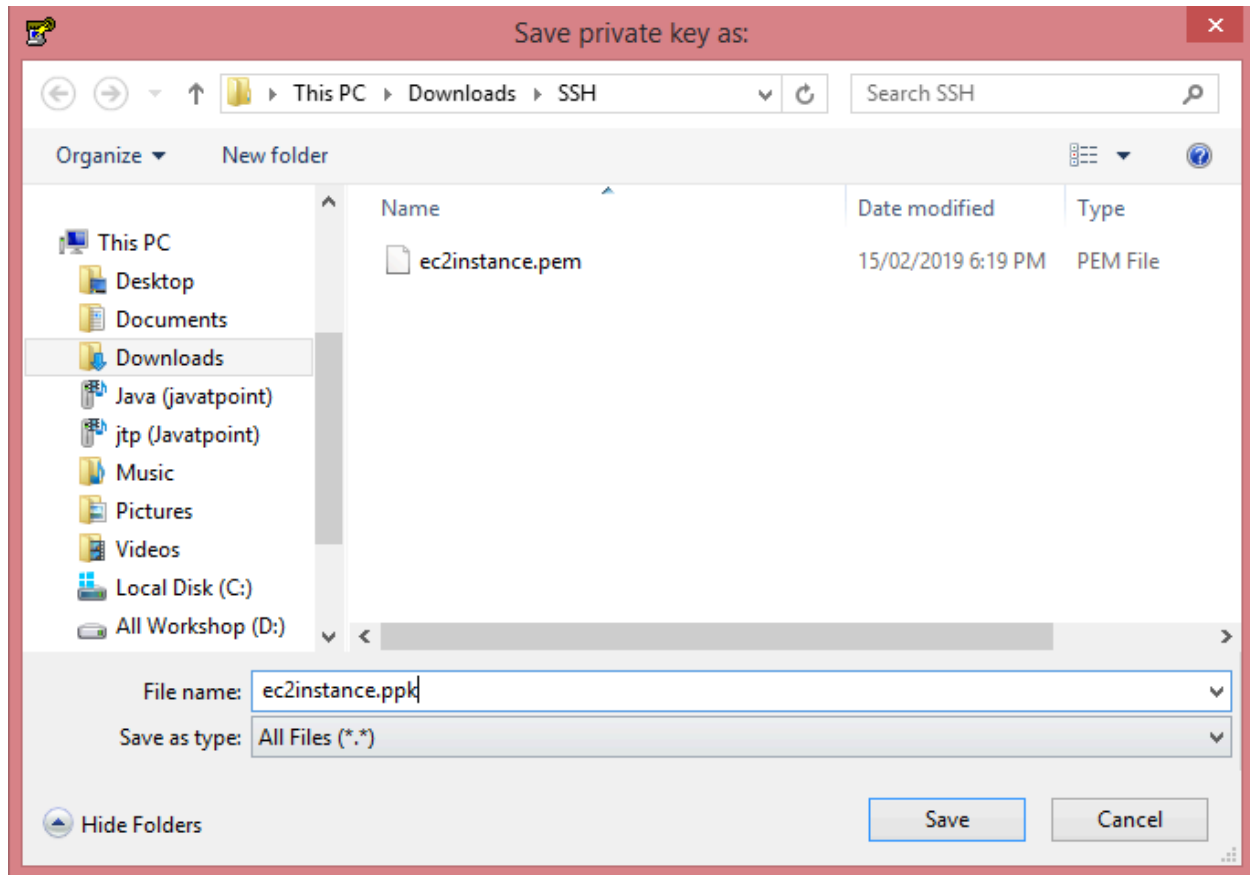
- Open the key-pair file, i.e., ec2instance.pem.



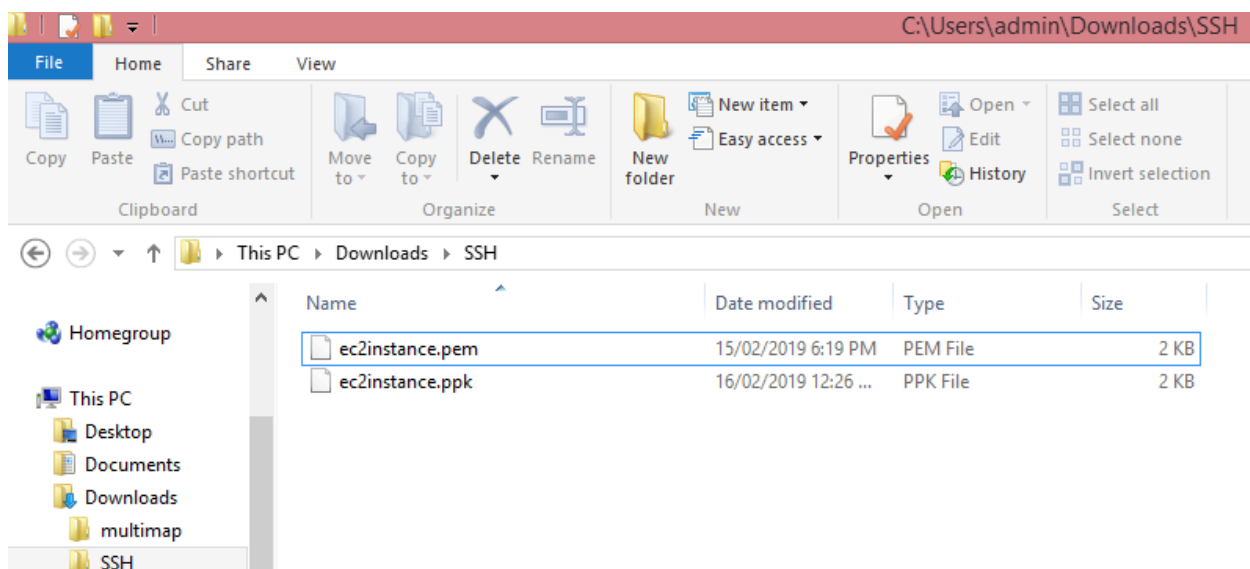
- Click on the OK button.



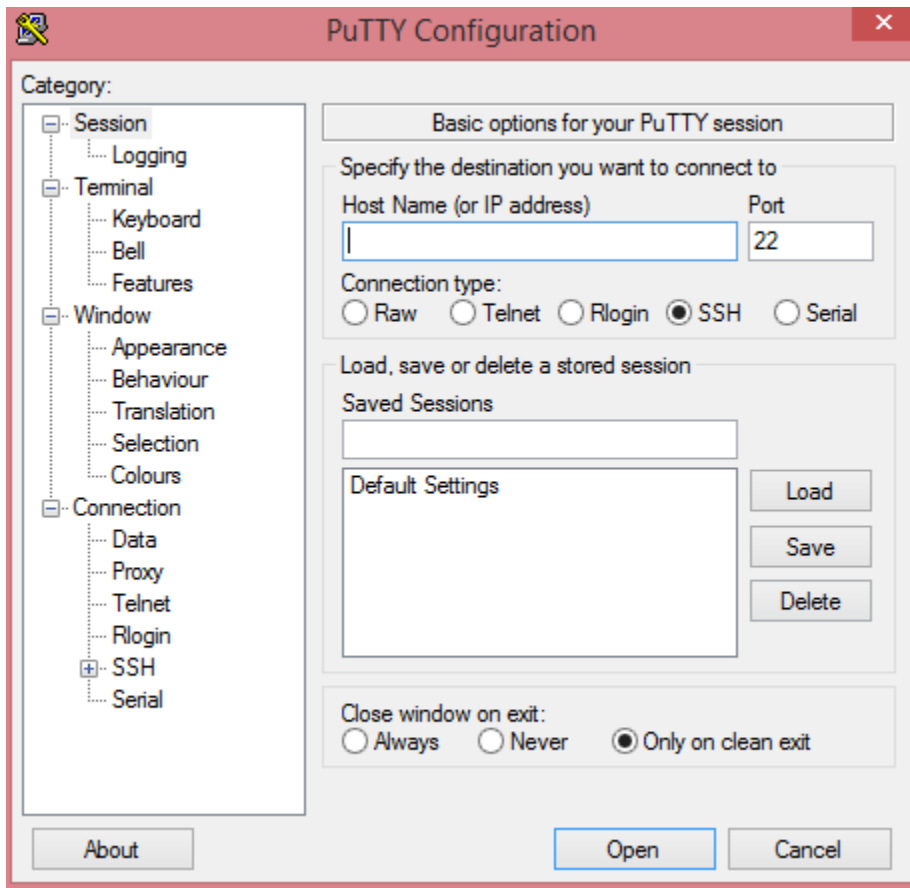
- Click on the Save private key. Change the file extension from pem to ppk.



- Click on the Save button.
- Move to the download directory where the ppk file is downloaded.



- Open the Putty.



- Move to the EC2 instance that you have created and copy its IP address.

Instance: **i-035edf6125bf21e39 (MyEc2webserver)** Public DNS: [ec2-3-16-147-220.us-east-2.compute.amazonaws.com](#)

Description

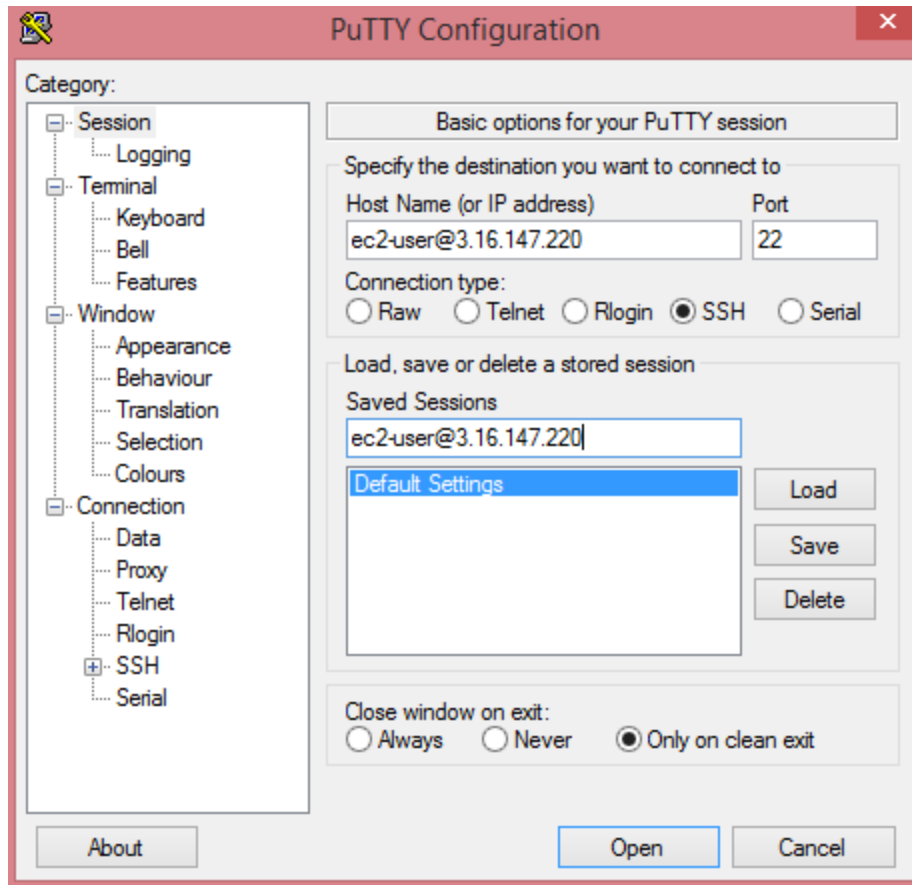
Status Checks

Monitoring

Tags

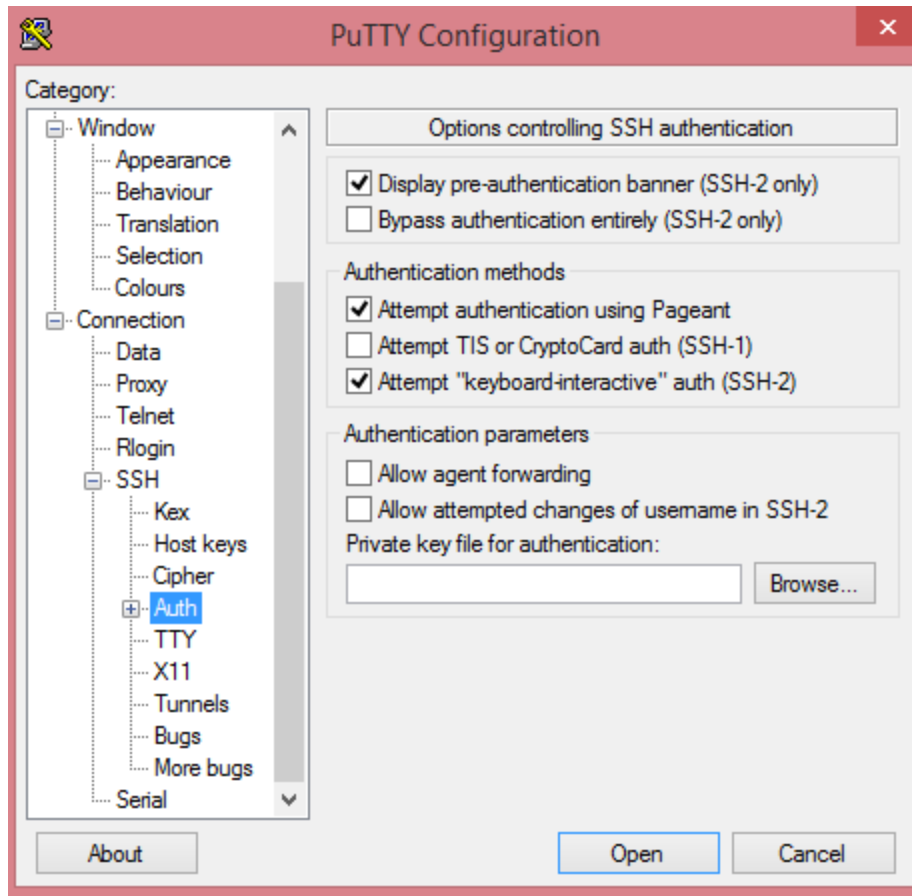
Instance ID	i-035edf6125bf21e39	Public DNS (IPv4)	ec2-3-16-147-220.us-east-2.compute.amazonaws.com
Instance state	running	IPv4 Public IP	3.16.147.220
Instance type	t2.micro	IPv6 IPs	-
Elastic IPs		Private DNS	ip-172-31-44-91.us-east-2.compute.internal
Availability zone	us-east-2c	Private IPs	172.31.44.91

- Now, move to the Putty configuration and type `ec2user@`, and then paste the IP address that you have copied in a previous step. Copy the Host Name in Saved Sessions.

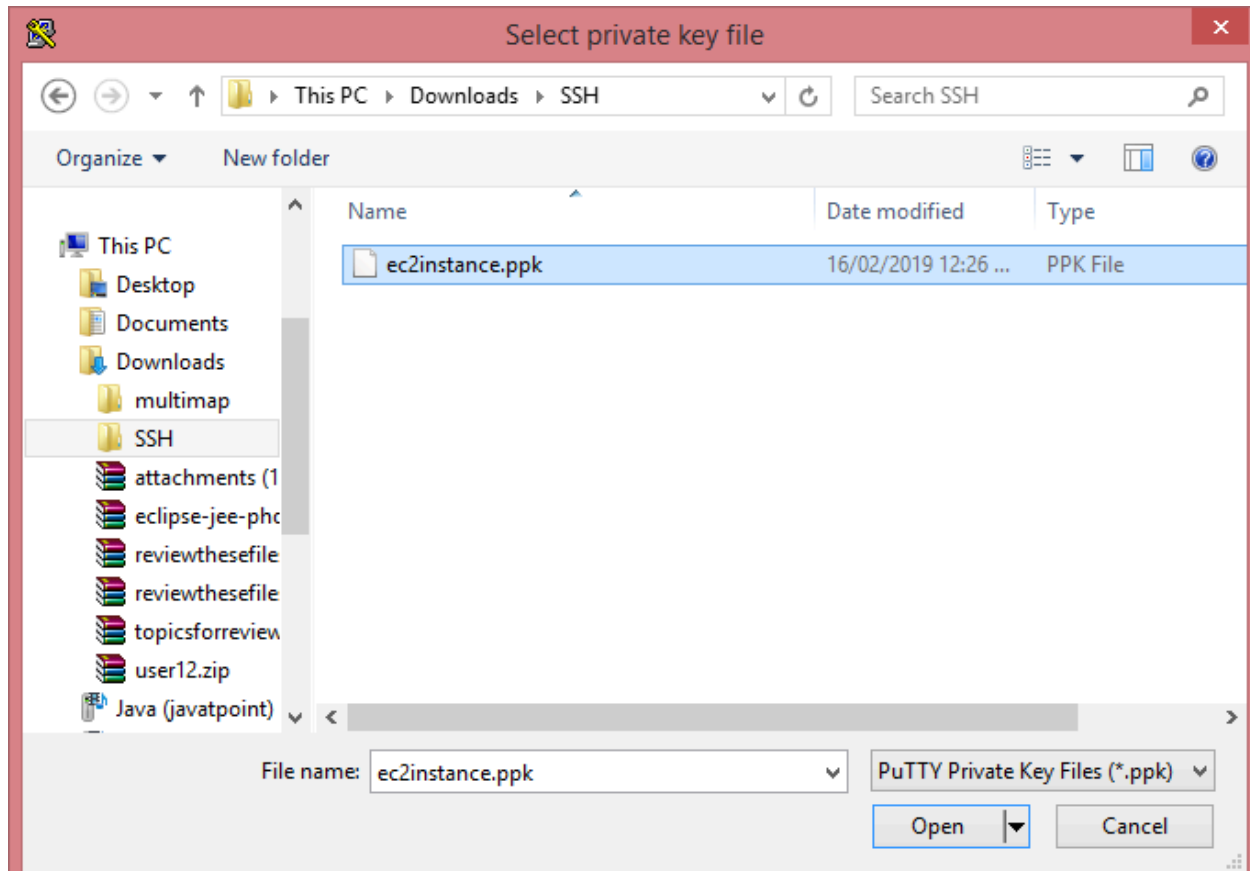


Now, your Host Name is saved in the default settings.

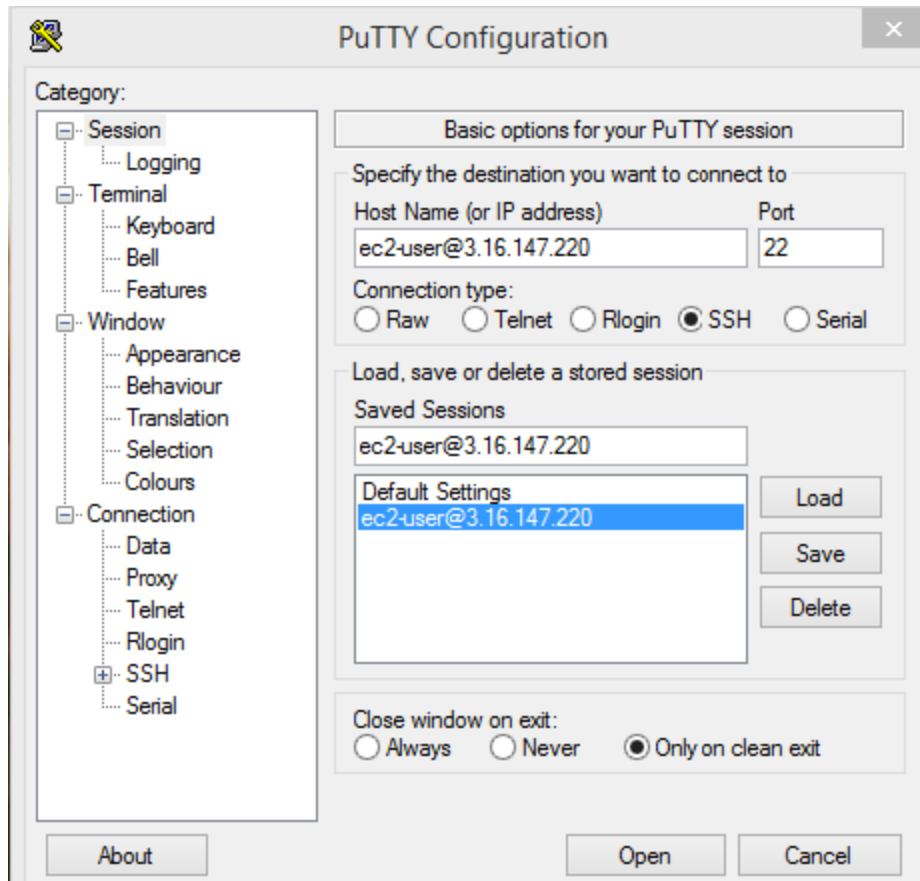
- Click on the SSH category appearing on the left side of the Putty, then click on the Auth.



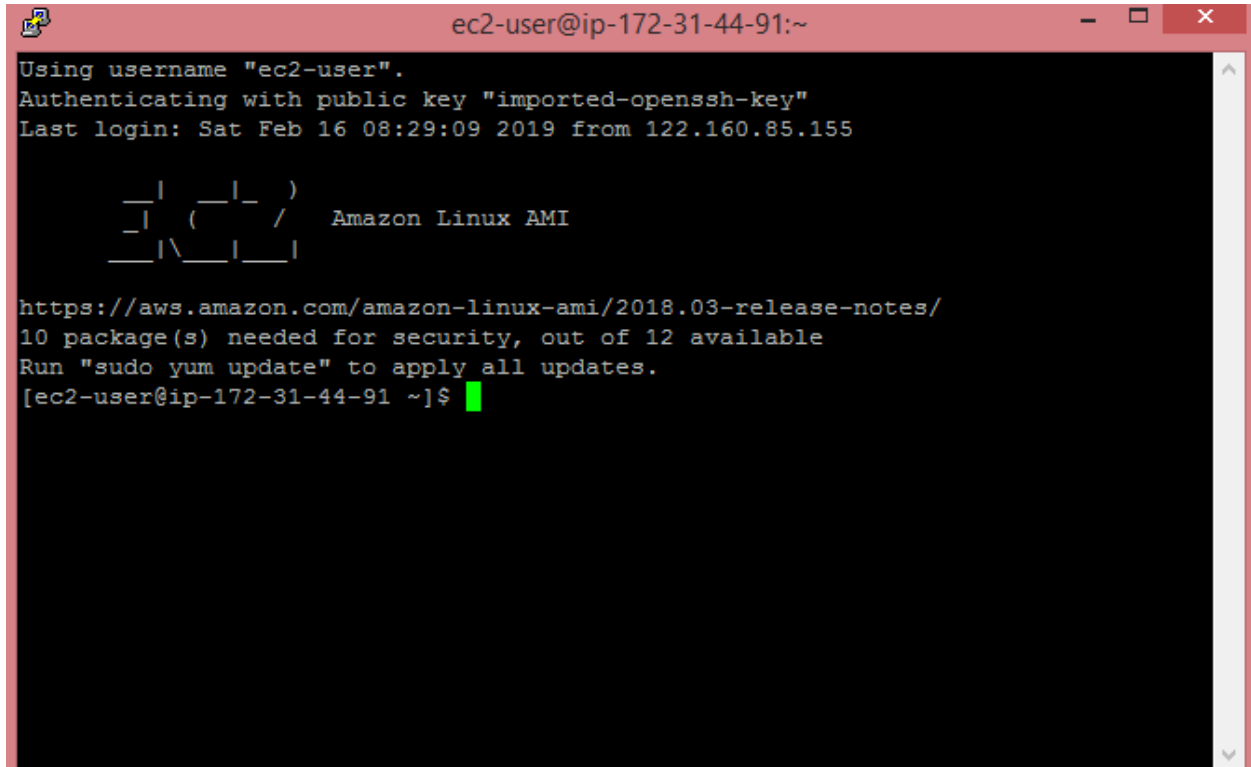
- Click on the Browse to open the ppk file.



- Move to the Session category, click on the Save to save the settings.



- Click on the Open button to open the Putty window.

A terminal window with a red title bar containing the text 'ec2-user@ip-172-31-44-91:~'. The terminal output shows the login process for the 'ec2-user' using a public key, followed by a message about security updates. A green cursor is visible at the end of the command prompt.

```
ec2-user@ip-172-31-44-91:~
Using username "ec2-user".
Authenticating with public key "imported-openssh-key"
Last login: Sat Feb 16 08:29:09 2019 from 122.160.85.155

  ____|  _||   _|
  |  _/ (  __/   )
  |___|\\___|___|   Amazon Linux AMI

https://aws.amazon.com/amazon-linux-ami/2018.03-release-notes/
10 package(s) needed for security, out of 12 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-44-91 ~]$
```

The above screen shows that we are connected to the EC2 instance.

- Run the command **sudo su**, and then run the command **yum update -y** to update the EC2 instance.

```
root@ip-172-31-44-91:/home/ec2-user
(12/12): python27-libs-2.7.15-1.124.amzn1.x86_64.rpm | 6.8 MB 00:00
-----
Total | 15 MB/s | 85 MB 00:05
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Updating : glibc-common-2.17-260.175.amzn1.x86_64 1/23
  Updating : glibc-2.17-260.175.amzn1.x86_64 2/23
  Updating : 1:openssl-1.0.2k-16.146.amzn1.x86_64 3/23
  Updating : krb5-libs-1.15.1-34.44.amzn1.x86_64 4/23
  Updating : python27-2.7.15-1.124.amzn1.x86_64 5/23
  Updating : python27-libs-2.7.15-1.124.amzn1.x86_64 6/23
  Updating : libcurl-7.61.1-7.91.amzn1.x86_64 7/23
  Updating : curl-7.61.1-7.91.amzn1.x86_64 8/23
  Updating : python27-devel-2.7.15-1.124.amzn1.x86_64 9/23
  Updating : aws-cfn-bootstrap-1.4-31.22.amzn1.noarch 10/23
  Updating : amazon-ssm-agent-2.3.274.0-1.amzn1.x86_64 11/23
  Installing : kernel-4.14.97-74.72.amzn1.x86_64 12/23
  Cleanup : python27-devel-2.7.14-1.123.amzn1.x86_64 13/23
  Cleanup : curl-7.53.1-16.84.amzn1.x86_64 14/23
  Cleanup : aws-cfn-bootstrap-1.4-30.21.amzn1.noarch 15/23
  Cleanup : python27-2.7.14-1.123.amzn1.x86_64 16/23
  Cleanup : python27-libs-2.7.14-1.123.amzn1.x86_64 17/23
```

Note: `sudo su` is a command which is used to provide the privileges to the root level.

- Now, we install the apache web server to ensure that an EC2 instance becomes a web server by running a command **`yum install httpd -y`**.

```
root@ip-172-31-44-91/home/ec2-user
[root@ip-172-31-44-91 ec2-user]# yum install httpd -y
Loaded plugins: priorities, update-motd, upgrade-helper
amzn-main | 2.1 kB 00:00
amzn-updates | 2.5 kB 00:00
Resolving Dependencies
--> Running transaction check
---> Package httpd.x86_64 0:2.2.34-1.16.amzn1 will be installed
--> Processing Dependency: httpd-tools = 2.2.34-1.16.amzn1 for package: httpd-2.2.34-1.16.amzn1.x86_64
--> Processing Dependency: apr-util-ldap for package: httpd-2.2.34-1.16.amzn1.x86_64
--> Processing Dependency: libaprutil-1.so.0()(64bit) for package: httpd-2.2.34-1.16.amzn1.x86_64
--> Processing Dependency: libapr-1.so.0()(64bit) for package: httpd-2.2.34-1.16.amzn1.x86_64
--> Running transaction check
---> Package apr.x86_64 0:1.5.2-5.13.amzn1 will be installed
---> Package apr-util.x86_64 0:1.5.4-6.18.amzn1 will be installed
---> Package apr-util-ldap.x86_64 0:1.5.4-6.18.amzn1 will be installed
---> Package httpd-tools.x86_64 0:2.2.34-1.16.amzn1 will be installed
--> Finished Dependency Resolution

Dependencies Resolved
```

- Run the command **cd /var/www/html**.

```
root@ip-172-31-44-91/var/www/html
[root@ip-172-31-44-91 ec2-user]# cd /var/www/html
[root@ip-172-31-44-91 html]#
```

- To list the files available in the html folder, run the command **ls**.

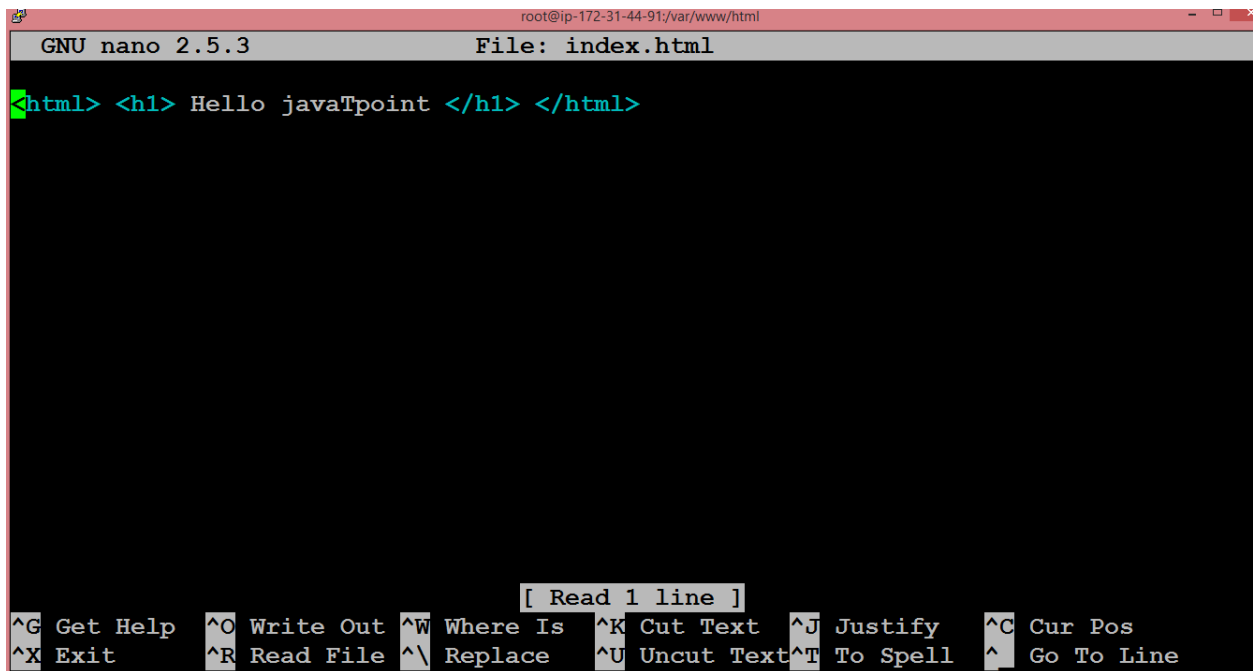
```
root@ip-172-31-44-91:/var/www/html
[root@ip-172-31-44-91 ec2-user]# cd /var/www/html
[root@ip-172-31-44-91 html]# ls
[root@ip-172-31-44-91 html]#
```

We observe that on running the command **ls**, we do not get any output. It means that it does not contain any file.

- We create a text editor, and the text editor is created by running the command **nano index.html** where index.html is the name of the web page.

```
root@ip-172-31-44-91:/var/www/html
[root@ip-172-31-44-91 html]# nano index.html
```

- The text editor is shown below where we write the HTML code.



```
root@ip-172-31-44-91:/var/www/html
GNU nano 2.5.3 File: index.html
<html> <h1> Hello javaTpoint </h1> </html>

[ Read 1 line ]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line
```

After writing the HTML code, press ctrl+X to exit, then press 'Y' to save the page and press Enter.

- Start the Apache server by running the command **service httpd start**.

```
root@ip-172-31-44-91:/var/www/html
[root@ip-172-31-44-91 html]# nano index.html
[root@ip-172-31-44-91 html]# service httpd start
Starting httpd:
[root@ip-172-31-44-91 html]#
```

- Go to the web browser and paste the IP address which is used to connect to your EC2 instance. You will see the web page that you have created.



Not secure | 3.16.147.220



Apps



Webmail Login



Google Translate

○