

Hands on with Cloud Computing

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Created by :
Ankit Velani
Data Scientist,
Trendwise Software Solution,Bangalore.

Submitted at :
Department Of IS&E
Bapuji Institute of Engineering and Technology, Davangere

Overview

This document contains steps to set up various cloud services on the Amazon Web Service(AWS). Document divides in various section, Create Amazon account, Setup EC-2 on Amazon, Accessing Amazon EC2 machine using FileZilla and SSH, Installing Softwares (PHP,MySQL,R) on EC-2 and last Working with Amazon RDS.

Prerequisites

- Audience should have clear understanding on Computer Networking.
- Audience should know installing and uninstalling software in Computer.
- Audience should know any programming and DBMS.

Create Amazon Account

1. Open an amazon portal : <https://aws.amazon.com/free/>

The screenshot shows the AWS Free Tier landing page. At the top, there's a navigation bar with links for 'Products', 'Pricing', 'Software', 'Support', 'More', 'English', 'My Account', and 'Create an AWS Account'. Below the navigation bar is a large orange banner with the text 'AWS Free Tier' and a 'Create a Free Account' button. Underneath the banner, there are three main sections: 'Free Tier Details', 'Get Started', and 'Free Tier Software'. The 'Free Tier Details' section has a sub-section titled 'AWS Free Tier Details' with filters for 'FEATURED', '12 MONTHS FREE', 'ALWAYS FREE', 'PRODUCT CATEGORIES', and 'ALL'. There are also tabs for 'COMPUTE', 'STORAGE & CONTENT DELIVERY', and 'DATABASE'.

2. Click on *Create a Free account*

The screenshot shows the 'Sign In or Create an AWS Account' page. It asks for an 'E-mail or mobile number' and provides two options: 'I am a new user.' and 'I am a returning user and my password is:'. Below these options are two input fields. A large orange button labeled 'Sign in using our secure server' is prominently displayed. To the right, there's a graphic of a document with a checkmark and the text 'AWS Accounts Include 12 Months of Free Tier Access'. Below this, it says 'Including use of Amazon EC2, Amazon S3, and Amazon DynamoDB'. At the bottom, there's a link to 'aws.amazon.com/free' and a note about AWS Identity and Access Management and AWS Multi-Factor Authentication.

3. Choose option , Enter the **Email** , choose the option '**I am new user**' if you already have an account then choose option ' I am returning user and my password is '.
4. Click on **Sign in using our Secure Server**.
5. Fill your personal information.

Contact Information

Company Account Personal Account

* Required Fields

Full Name*

Country*

Address*
Apartment, suite, unit, building, floor, etc.

City*

State / Province or Region*

Postal Code*

Phone Number*

Security Check 
Please type the characters as shown above

AWS Customer Agreement Check here to indicate that you have read and agree to the terms of the AWS Customer Agreement

Create Account and Continue

6. Payment Verification. Amazon will verify your credit/debit card with minimal amount which is Rs. 2 , will be refund in 3-5 business day.

Payment Information

Please enter your payment information below. You will be able to try a broad set of AWS products for free via the Free Tier. We will only bill your credit or debit card for usage that is not covered by our Free Tier.

> Frequently Asked Questions

Error
Your card could not be successfully verified. You can retry your card or add a different one.

Cardholder's Name

* Cardholder's Name is a required field

Credit/Debit Card Number VISA 

* Credit/Debit Card Number is a required field

Expiration Date 07 2017

Use my contact address
(Bangalore Bangalore Karnataka 560037 IN)

Use a new address

Please Note
As part of our card verification process we will charge INR 2 on your card when you click the 'Verify Card and Continue' button below.
Our card verification process is a standard bank transaction. Your bank may charge a small fee for this transaction. Your bank will inform you about the charges.

7. Next Step, Amazon will verify the mobile number.

Identity Verification

You will be called immediately by an automated system and prompted to enter the PIN number provided.

1. Provide a telephone number
Please enter your information below and click the "Call Me Now" button.

Security Check

Please type the characters as shown above

Country Code: India (+91) | Phone Number: 9428307478 | Ext:

Call Me Now

2. Call in progress

3. Identity verification complete

Identity Verification

You will be called immediately by an automated system and prompted to enter the PIN number provided.

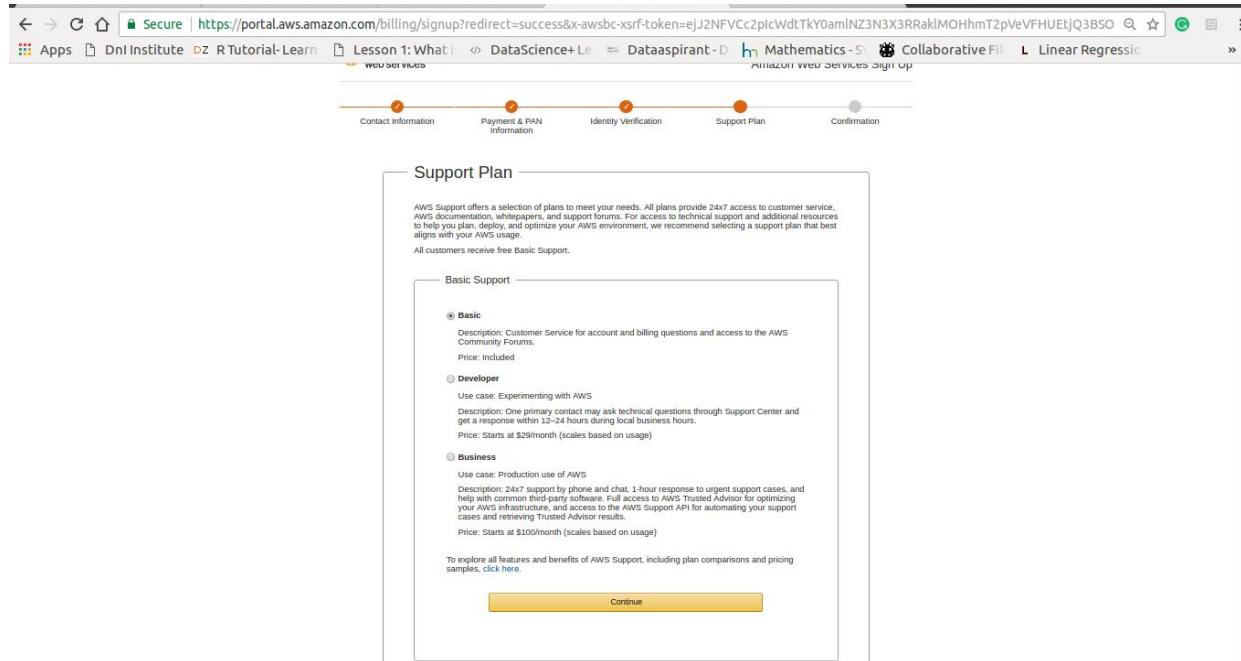
1. Provide a telephone number ✓

2. Call in progress ✓

3. Identity verification complete ✓
Your identity has been verified successfully.

Continue to select your Support Plan

8. Once verification finish , Amazon allow us to choose the plan for Cloud Services.



9. Chose the Basic plan.

10. Click on Continue.

11. Congratulation , you have successfully registered with Amazon Cloud Platform.

Setup EC-2 on Amazon Cloud.

What is Elastic Compute Cloud (EC2)?

- Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides secure, resizable compute capacity in the cloud. It is designed to make web-scale cloud computing easier for developers.
- Amazon EC2's simple web service interface allows you to obtain and configure capacity with minimal friction. It provides you with complete control of your computing resources and lets you run on Amazon's proven computing environment.
- Amazon EC2 reduces the time required to obtain and boot new server instances to minutes, allowing you to quickly scale capacity, both up and down, as your computing requirements change.
- Amazon EC2 changes the economics of computing by allowing you to pay only for capacity that you actually use. Amazon EC2 provides developers the tools to build failure resilient applications and isolate them from common failure scenarios.

1. Login to Amazon cloud portal. <https://console.aws.amazon.com>
2. Enter registered email and choose option 'I am returning user and my password is:'.
3. Click on Sign in using our secure server.

Secure | https://www.amazon.com/ap/signin?openid.assoc_handle=aws&openid.return_to=https%3A%2F%2Fsignin.aws.amazon.com%2Foauth%3Fresponse_type%3Dcode

Coming soon! We are updating the sign-in experience. [Learn more](#)

Sign In or Create an AWS Account

What is your email (phone for mobile accounts)?

E-mail or mobile number:

ankit.velania@aol.com

I am a new user.

I am a returning user
and my password is:

Sign in using our secure server

[Forgot your password?](#)

Get Started with Deep Learning on AWS

Apache MXNet is the most powerful framework for deep learning in the cloud

[Learn More](#)

Learn more about [AWS Identity and Access Management](#) and [AWS Multi-Factor Authentication](#), features that provide additional security for your AWS Account. View full [AWS Free Usage Tier](#) offer terms.

4. After successfully login, Console landing page will appear.

Secure | https://us-east-2.console.aws.amazon.com/console/home?region=us-east-2

Services ▾ Resource Groups ▾

AWS services

Find a service by name or feature (for example, EC2, S3 or VM, storage).

Recently visited services

All services

Build a solution

Get started with simple wizards and automated workflows.

	Launch a virtual machine With EC2 or Lightsail ~1 minutes		Build a web app With Elastic Beanstalk ~6 minutes		Host a static website With S3, CloudFront, Route 53 ~5 minutes
	Connect an IoT device With AWS IoT ~5 minutes		Start a development project With CodeStar ~5 minutes		Register a domain With Route 53 ~3 minutes

See more

Learn to build

Learn to deploy your solutions through step-by-step guides, labs, and videos.

Helpful tips

Manage your costs
Get real-time billing alerts based on your cost and usage budgets. [Start now](#)

Create an organization
Use AWS Organizations for policy-based management of multiple AWS accounts. [Start now](#)

Explore AWS

New Product Announcements
View the latest announcements from the AWS Summit - San Francisco. [Learn more](#)

Migrate from Oracle to Amazon Aurora
Learn how to migrate from Oracle to Amazon Aurora with minimal downtime. [View project](#)

5. Click on All Services ,

The screenshot shows the AWS Management Console home page. In the top navigation bar, the URL is https://us-east-2.console.aws.amazon.com/console/home?region=us-east-2#. Below the URL, there are tabs for 'Apps', 'DNI Institute', 'R Tutorial-Learn', 'Lesson 1: What is Data Science?', 'DataScience+ Learning', 'Dataaspirant', 'Mathematics - S...', 'Collaborative Fil...', and 'Linear Regressio...'. On the far right of the top bar, there are user profile icons for 'Ankit', 'Ohio', and 'Support'.

The main content area is titled 'AWS services' and features a search bar at the top. Below the search bar, there are two sections: 'Recently visited services' and 'All services'. The 'Compute' category is expanded, showing EC2, EC2 Container Service, Lightsail, Elastic Beanstalk, Lambda, and Batch. Other categories shown include 'Storage' (S3, EFS, Glacier, Storage Gateway), 'Database' (RDS), 'Developer Tools' (CodeStar, CodeCommit, CodeBuild, CodeDeploy, CodePipeline, X-Ray), 'Management Tools' (CloudWatch, CloudFormation, CloudTrail, Config, OpsWorks, Service Catalog, Trusted Advisor, Managed Services), 'Internet of Things' (AWS IoT, AWS Greengrass), 'Contact Center' (Amazon Connect), 'Game Development' (Amazon GameLift), 'Mobile Services' (Mobile Hub, Cognito, Device Farm, Mobile Analytics, Pinpoint), and 'Helpful tips' (Manage your costs, Create an organization).

6. Choose EC2 , from category " Compute "

This screenshot is identical to the previous one, showing the AWS Management Console home page. However, the 'Compute' category in the 'All services' section is now highlighted with a yellow background, and the 'EC2' service is specifically highlighted with a blue selection bar below it. The rest of the interface, including the sidebar and the 'Helpful tips' panel, remains the same.

7. It jumped to EC2 Dashboard. Click on [Launch Instance](#)

The screenshot shows the AWS EC2 Dashboard. On the left, there's a sidebar with navigation links like 'EC2 Dashboard', 'Instances', 'AMIs', etc. The main area has a heading 'Resources' and a summary of resources: 0 Running Instances, 0 Elastic IPs, 0 Dedicated Hosts, 0 Volumes, 0 Snapshots, 0 Key Pairs, 0 Load Balancers, 1 Security Groups, and 0 Placement Groups. Below this is a callout box with the text: 'Just need a simple virtual private server? Get everything you need to jumpstart your project - compute, storage, and networking – for a low, predictable price. Try Amazon Lightsail for free.' In the center, there's a 'Create Instance' section with a 'Launch Instance' button. To the right, there are sections for 'Account Attributes' (Supported Platforms: VPC, Default VPC: vpc-bd2d6dd4), 'Additional Information' (Getting Started Guide, Documentation, All EC2 Resources, Forums, Pricing, Contact Us), and 'AWS Marketplace' (Find free software trial products). At the bottom, there are links for Feedback, English, Privacy Policy, and Terms of Use.

8. Choose Amazon Machine Image(AMI) , for learning choose **Free tier eligible**.

9. Select AMI type [Ubuntu Server 14.04 LTS \(HVM\), SSD Volume Type - ami-019abc64](#) and click on Select.

10. Next step , choose instance type. Select the **t2.micro (Free tier eligible)**

The screenshot shows the 'Choose Instance Type' step in the Launch Instance Wizard. At the top, there's a breadcrumb navigation: '1. Choose AMI', '2. Choose Instance Type', '3. Configure Instance', '4. Add Storage', '5. Add Tags', '6. Configure Security Group', and '7. Review'. Below this, there's a section titled 'Step 2: Choose an Instance Type'. It says: '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.' There's a 'Filter by:' dropdown set to 'All instance types', a 'Current generation' dropdown, and a 'Show/Hide Columns' button. A table lists instance types: t2.nano, t2.micro (selected and highlighted in green), t2.small, t2.medium, and t2.large. The columns include Family, Type, vCPUs, Memory (GiB), Instance Storage (GB), EBS-Optimized Available, Network Performance, and IPv6 Support. At the bottom, there are buttons for 'Cancel', 'Previous', 'Review and Launch', and 'Next: Configure Instance Details'.

T2.mirco instance configuration.

Variable ECUs,

1 vCPUs

2.5 GHZ , Intel Xeon Family

1 GiB memory RAM

Check the free services

<https://aws.amazon.com/free/#legal>

11. Click on Review and Launch.

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 instance and complete the launch process.

AMI Details

Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-019abc64
 Free tier eligible
 Ubuntu Server 14.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).
 Root Device Type: ebs Virtualization type: hvm

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

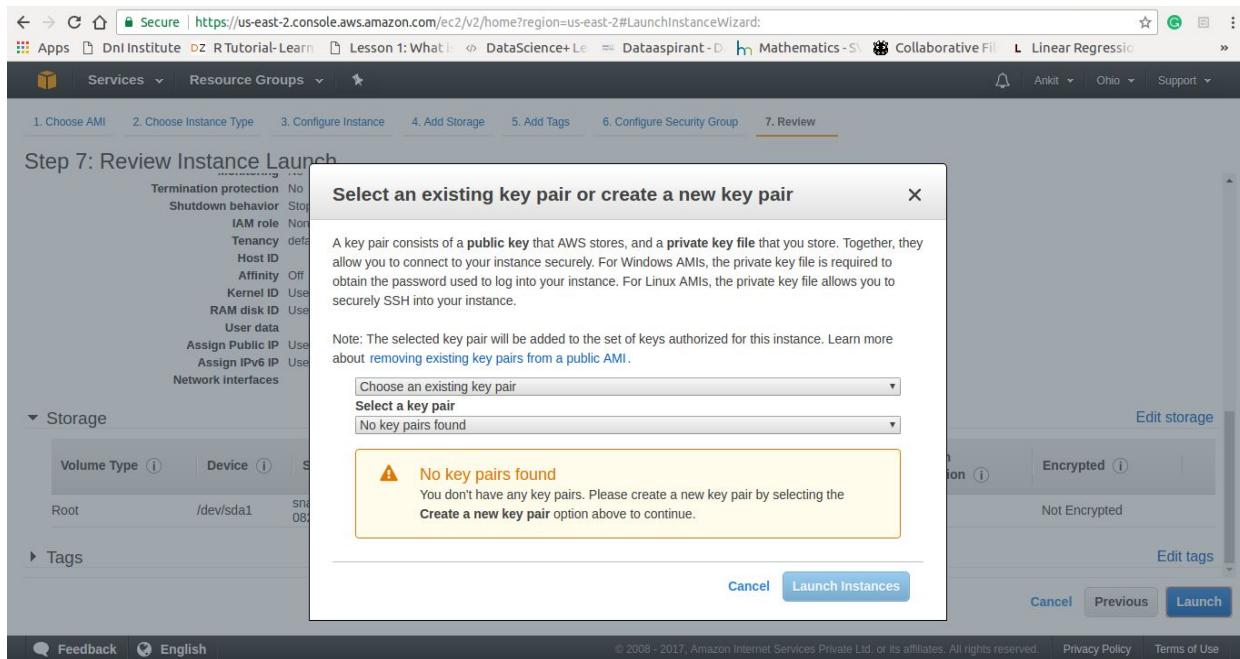
Security Groups

Security group name: launch-wizard-1
 Description: launch-wizard-1 created 2017-07-31T10:44:29.338+05:30

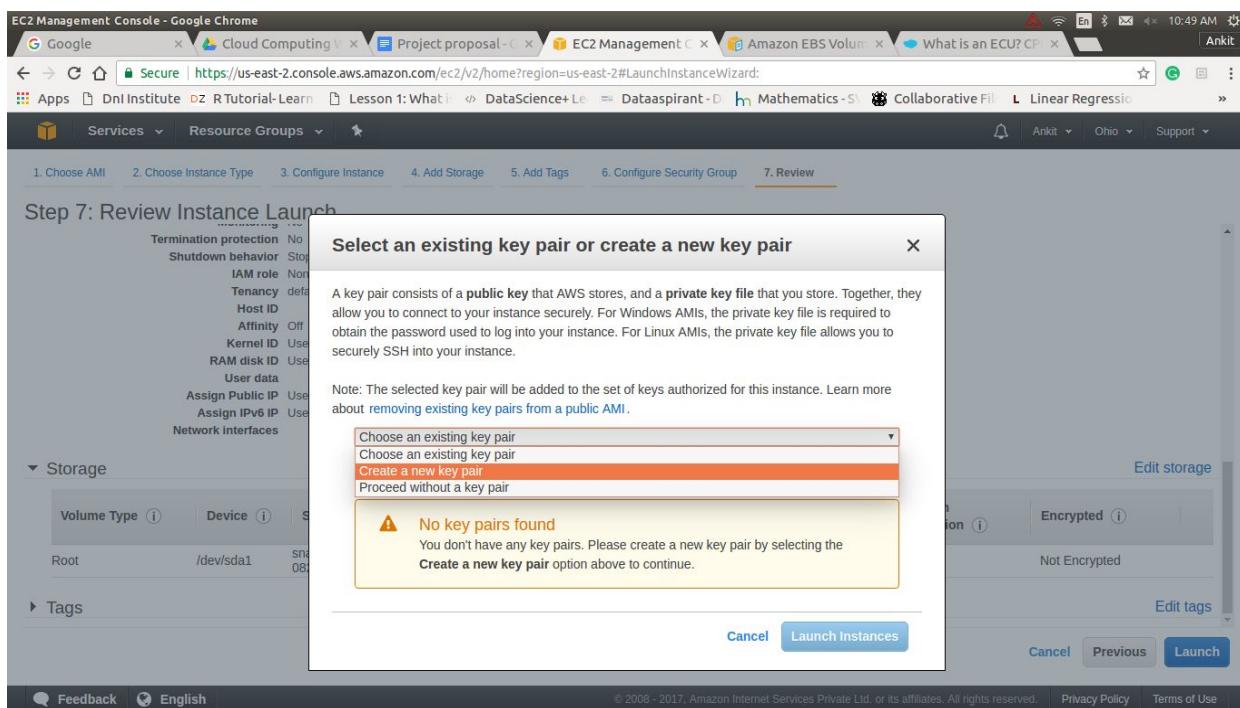
Buttons: Cancel, Previous, Launch

12. Click on Launch.

13. Next Screen , It will ask to create Key for accessing EC-2 Machine.



14. Select the option to create a new key pair from select box.



15. Write KeyName and Download Key Pair

Step 7: Review Instance Launch

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

AmazonEC2

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

16. After Download , Click on Launch Instances.

Your instances are now launching

The following instance launches have been initiated: i-0ad2d2f2e17281327 View launch log

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

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](#)

17. Click on **View Instances**.

18. Back to EC2 Dashboard , under **INSTANCES**, recently created instance will appear.

The screenshot shows the AWS EC2 Instances page. On the left sidebar, under the 'INSTANCES' section, 'Instances' is selected. In the main content area, there is a table with one row. The row details a single instance: Instance ID: i-0ad2d2f2e17281327, Instance Type: t2.micro, Availability Zone: us-east-2c, Instance State: running, Status Checks: 2/2 checks ... (green), Alarm Status: None, Public DNS (IPv4): ec2-52-14-56-150.us-east-2..., and Private IP: 52.14.56.150. The table has columns for Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, Public DNS (IPv4), and IPv4.

19. Successfully launched t2.micro instance. We have description of an instance to access. For the password we must use Downloaded Key files. There is no option to create user defined password.

20. Description of the instance.

The screenshot shows the AWS EC2 Instances page with the same instance details as the previous screenshot. Below the main table, there is a detailed description panel for the instance. It includes fields such as Instance ID (i-0ad2d2f2e17281327), Instance state (running), Instance type (t2.micro), Availability zone (us-east-2c), Security groups (launch-wizard-1, view inbound rules), Scheduled events (No scheduled events), AMI ID (ubuntu/images/hvm-ssd/ubuntu-trusty-14.04-amd64-server-20170619 (ami-019abc64)), Platform (-), IAM role (-), Key pair name (AmazonEC2), and Network interfaces (eth0). It also shows Secondary private IPs (172.31.32.230), VPC ID (vpc-bd2d6dd4), and Subnet ID (subnet-94bd1ad9).

Setup EC2 with Windows Instance

- Kindly refer the same steps which we followed for Ubuntu instance , select the Windows as instance type in **step -9** ,rest steps will be the same as ubuntu.
- Choose micro instance for learning which is free-tier.

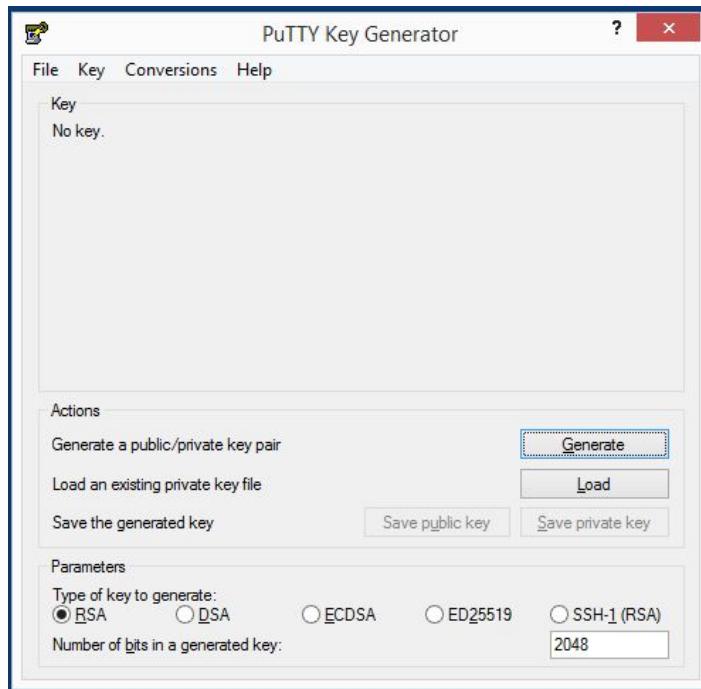
Step 1: Choose an Amazon Machine Image (AMI)

Image Name	Description	Root device type	Virtualization type	Action
Microsoft Windows Server 2016 Base Nano - ami-0994b56c	Microsoft Windows 2016 Datacenter Edition Nano, [English]	ebs	hvm	Select
Microsoft Windows Server 2012 R2 Base - ami-ceaa8bb8	Microsoft Windows 2012 R2 Standard edition with 64-bit architecture, [English]	ebs	hvm	Select
Microsoft Windows Server 2012 Base - ami-ffae8f9a	Microsoft Windows 2012 Standard edition with 64-bit architecture, [English]	ebs	hvm	Select
Microsoft Windows Server 2008 R2 Base - ami-37ab8a52	Microsoft Windows 2008 R2 SP1 Datacenter edition, 64-bit architecture, [English]	ebs	hvm	Select
Microsoft Windows Server 2003 R2 Base - ami-82af8ee7	(64-bit) / ami-47a68722 (32-bit)			Select

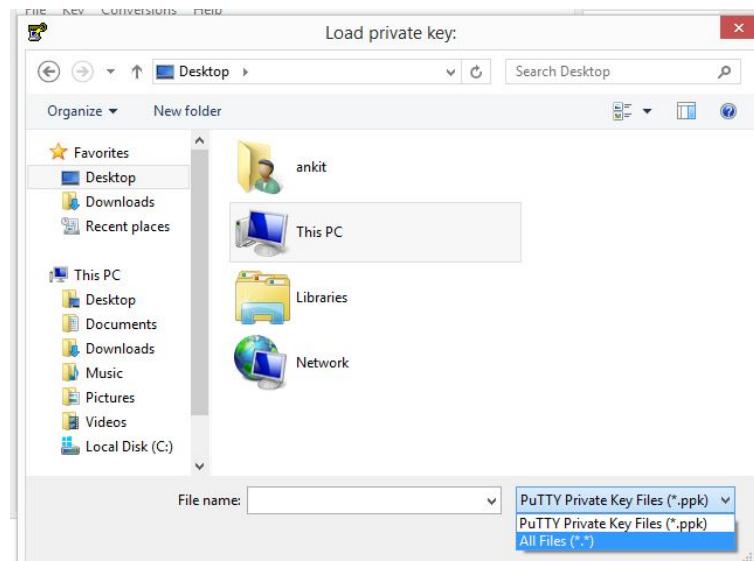
Converting Encrypted file to ppk (Private Key) to access EC2

Note : Make sure that Puttygen should be installed in your machine.

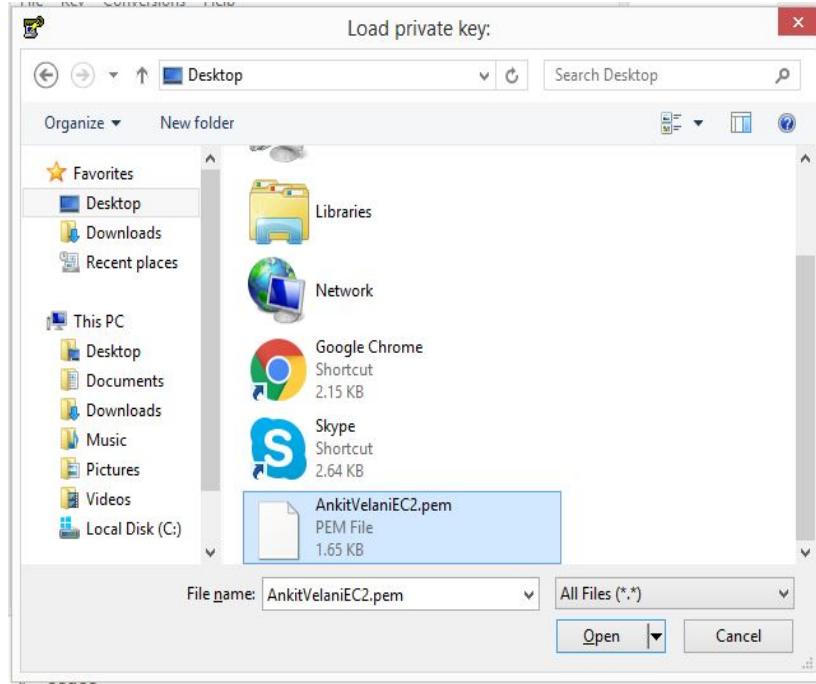
1. Open PuTTygen.



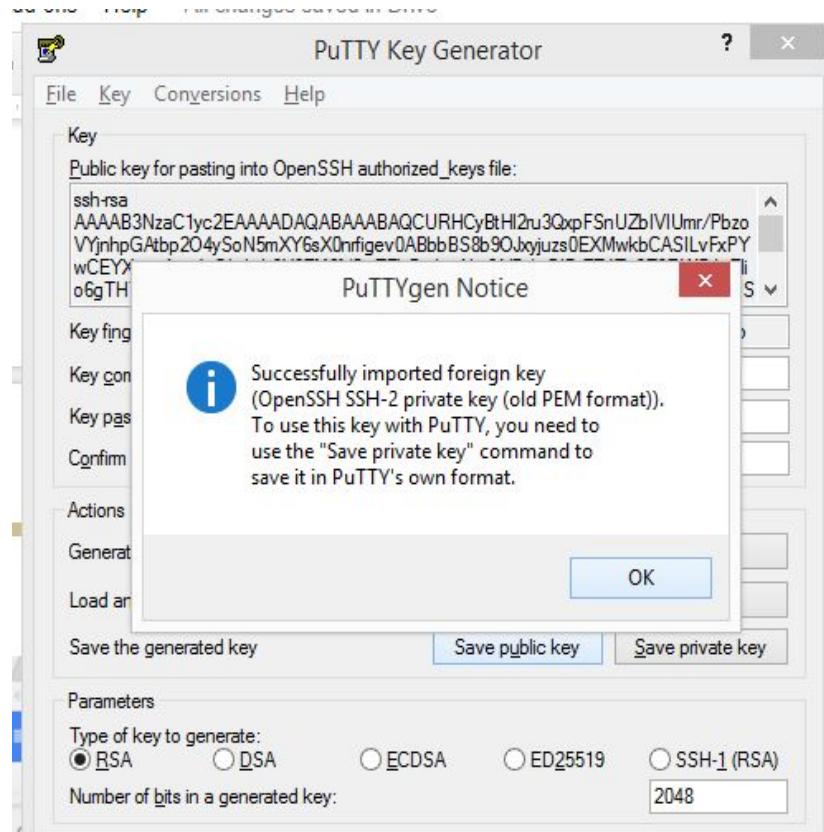
2. Click on **Load** , It gives FileBox , choose file type as **All Files(*)**



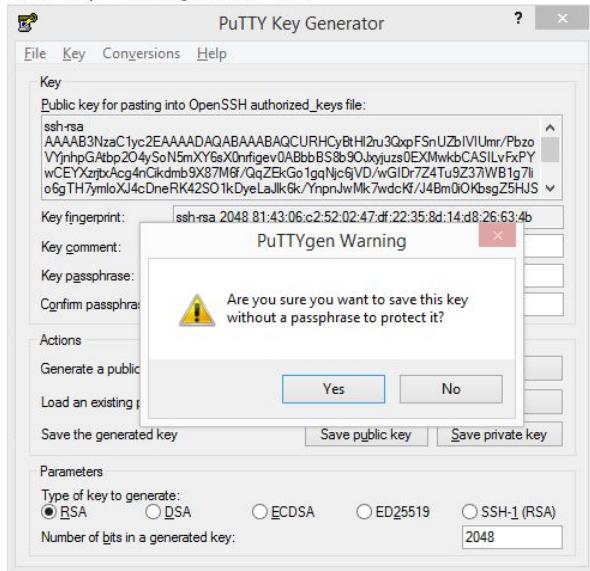
3. Select your .pem file and click on Open.



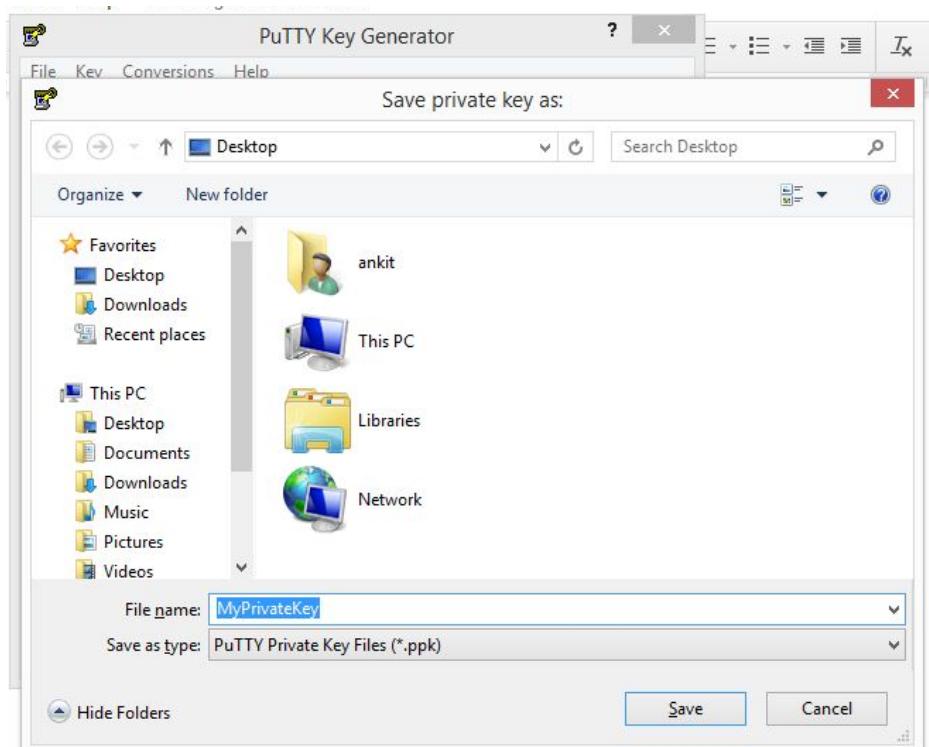
4. Click on Ok , if Putty show any notice.



5. Click on **Save private key**



6. Click on Yes.



7. Filebox file open and it allow to enter the filename which you want save the private key. Click on Save.
8. Close the PuttyGen software.

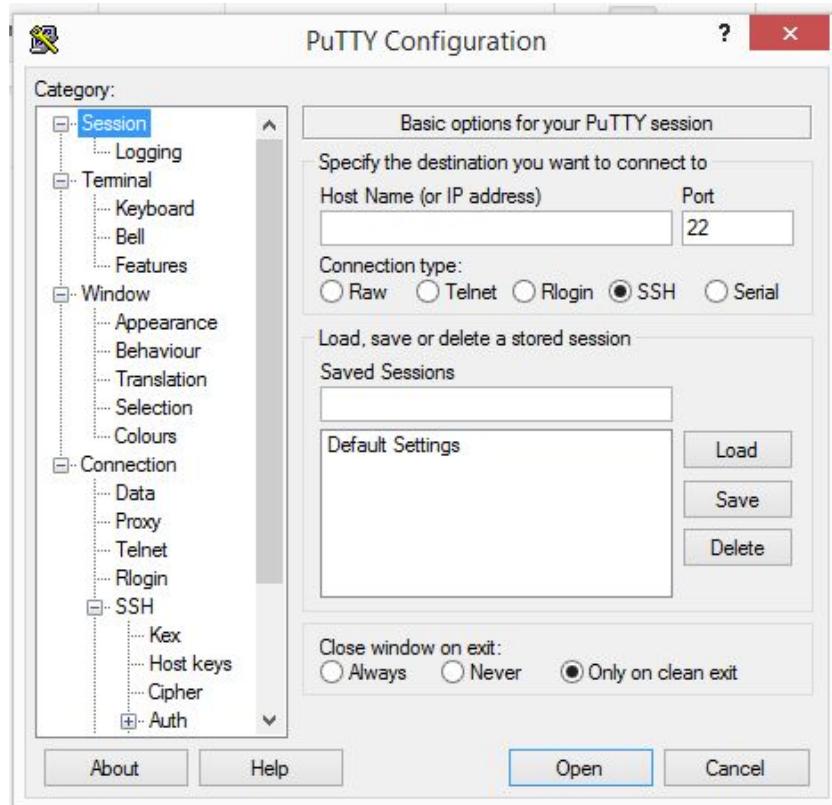
Congratulations :) Successfully created Private key(ppk) file.

Accessing Amazon EC2 Machine using SSH Client

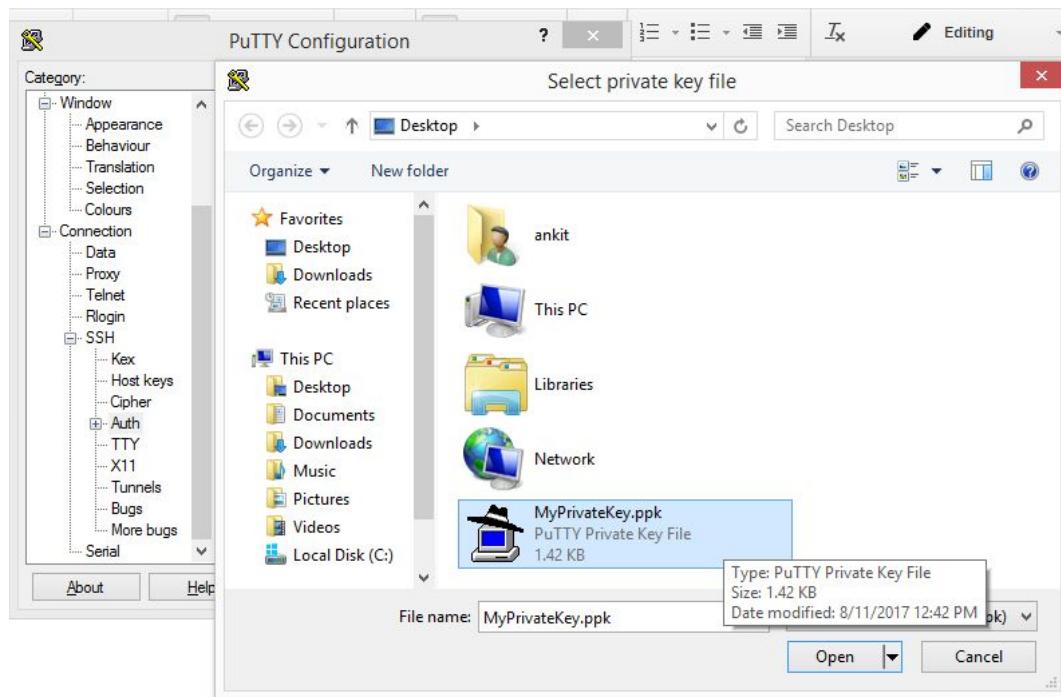
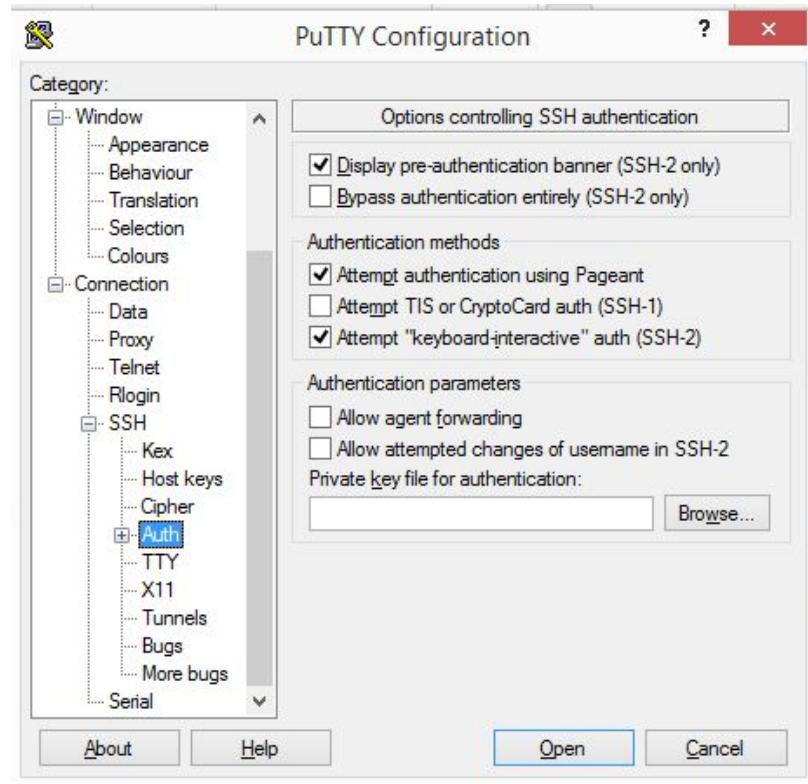
Note : Make sure that Putty ssh client should be installed in your machine.



1. Open Putty

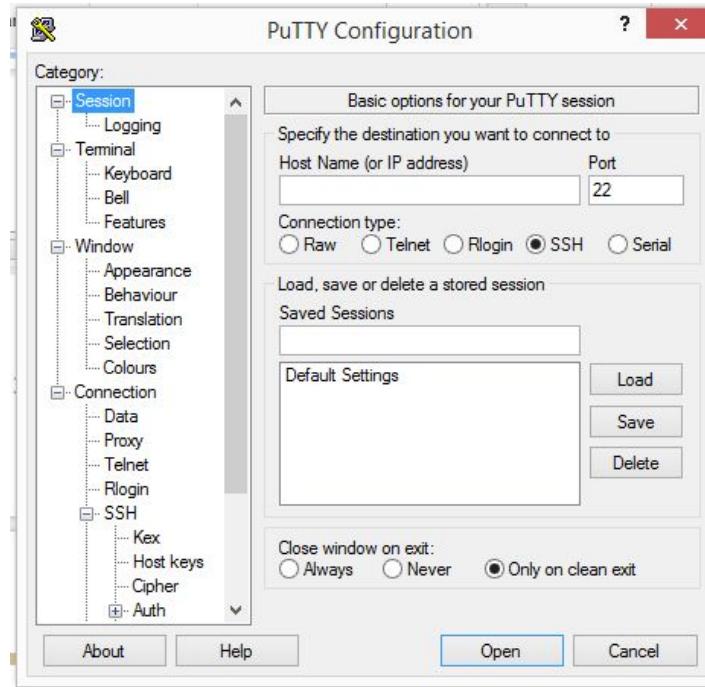


2. Go to **Connection > SSH > Auth** , Click on **Browse** , Choose private key (.ppk) file.



3. Click on open.

4. Go to Session.



5. Enter the Hostname (or IP address)

6. Open an Amazon cloud portal. <https://console.aws.amazon.com>

A screenshot of the AWS Management Console in a Google Chrome browser. The URL is https://us-east-2.console.aws.amazon.com/console/home?region=us-east-2. The page displays the 'AWS services' section with various service icons and names: EC2, Cost Explorer, Billing, Compute (EC2, EC2 Container Service, Lightsail, Elastic Beanstalk, Lambda, Batch), Developer Tools (CodeStar, CodeCommit, CodeBuild, CodeDeploy, CodePipeline, X-Ray), Internet of Things (AWS IoT, AWS Greengrass), Storage (S3, EFS, Glacier, Storage Gateway), Management Tools (CloudWatch, CloudFormation, CloudTrail, Config, OpsWorks, Service Catalog), Game Development (Amazon GameLift), Mobile Services (Mobile Hub, Cognito, Device Farm). To the right, there are 'Helpful tips' for managing costs and creating organizations, and an 'Explore AWS' section for new product announcements and migration guides.

7. Click EC2 under Compute Category.

8. Screen will be on EC2 Dashboard.

You are using the following Amazon EC2 resources in the US East (Ohio) region:

1 Running Instances	2 Elastic IPs
0 Dedicated Hosts	0 Snapshots
2 Volumes	0 Load Balancers
1 Key Pairs	3 Security Groups
0 Placement Groups	

Just need a simple virtual private server? Get everything you need to jumpstart your project - compute, storage, and networking – for a low, predictable price. Try [Amazon Lightsail for free](#).

Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

[Launch Instance](#)

Note: Your instances will launch in the US East (Ohio) region

Service Health

Service Status: **US East (Ohio):** This service is operating normally.

Scheduled Events

US East (Ohio): No events

AWS Marketplace

Find free software trial products in the AWS Marketplace from the [EC2 Launch Wizard](#). Or try these popular AMIs: [Barracuda NextGen Firewall F-Series - PAYG](#)

9. Click on Running Instances.

Description	Status Checks	Monitoring	Tags
Instance ID: i-0fcfc4fc3afe2f71e	Public DNS: ec2-52-14-202-117.us-east-2.compute.amazonaws.com		
Instance state: running			
Instance type: t2.micro			
Elastic IPs: -			
Availability zone: us-east-2c			

10. You will have one running instances and click on it. And you will find the Public DNS , Public IP and Private IP ...etc details.

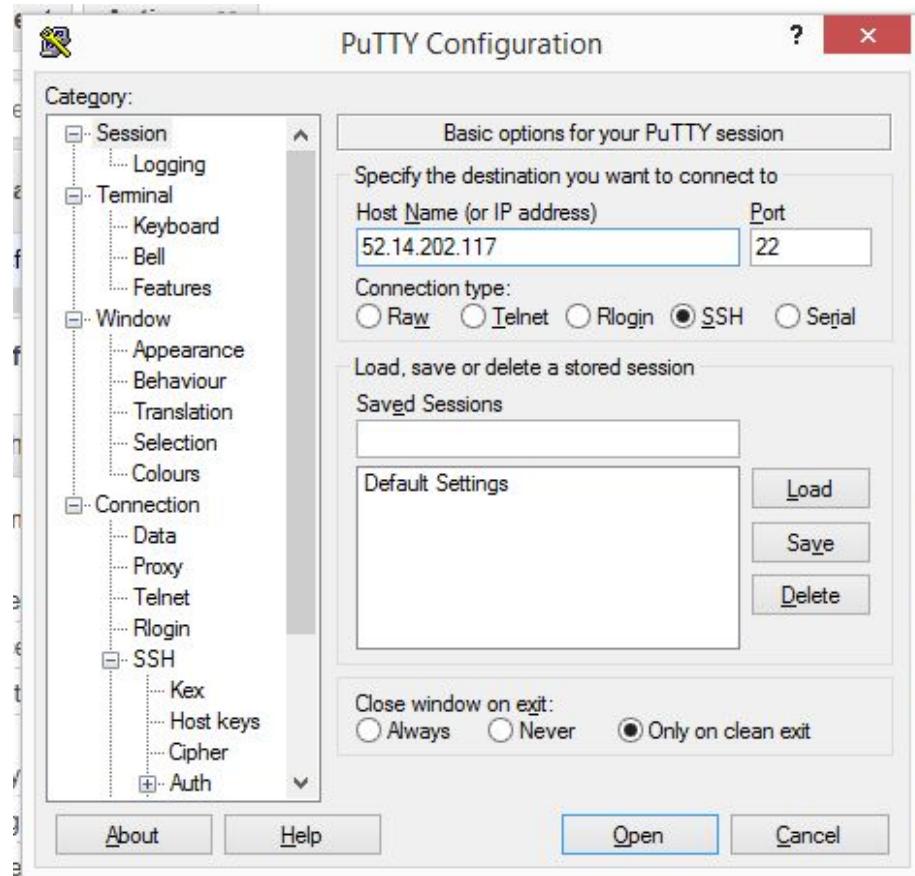
The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links like EC2 Dashboard, Events, Tags, Reports, Limits, Instances (which is selected), Spot Requests, Reserved Instances, Dedicated Hosts, Images, AMIs, Bundle Tasks, Elastic Block Store, Volumes, Snapshots, Network & Security, and Security Groups. The main content area has tabs for Launch Instance, Connect, and Actions. Below that is a search bar and a table with one row. The table columns include Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and Public DNS. The instance listed is 'i-0fcfc4fc3afe2f71e' with 't2.micro' type, 'us-east-2c' availability zone, and 'running' state. It has 2/2 checks passing and no alarms. The Public DNS is 'ec2-52-14-202-117.us-east-2.compute.amazonaws.com'. At the bottom, there are tabs for Description, Status Checks, Monitoring, and Tags, along with detailed information about the instance's configuration.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS
	i-0fcfc4fc3afe2f71e	t2.micro	us-east-2c	running	2/2 checks ...	None	ec2-52-14-202-117.us-east-2.compute.amazonaws.com

11. Copy the Public IP.

Public DNS (IPv4)	ec2-52-14-202-117.us-east-2.compute.amazonaws.com
IPv4 Public IP	52.14.202.117
IPv6 IPs	-
Private DNS	ip-172-31-43-82.us-east-2.compute.internal
Private IPs	172.31.43.82
Secondary private IPs	
VPC ID	vpc-09490460
Subnet ID	subnet-2304a56e

12. Go back to Putty SSH client , enter the Hostname as a Public IP.

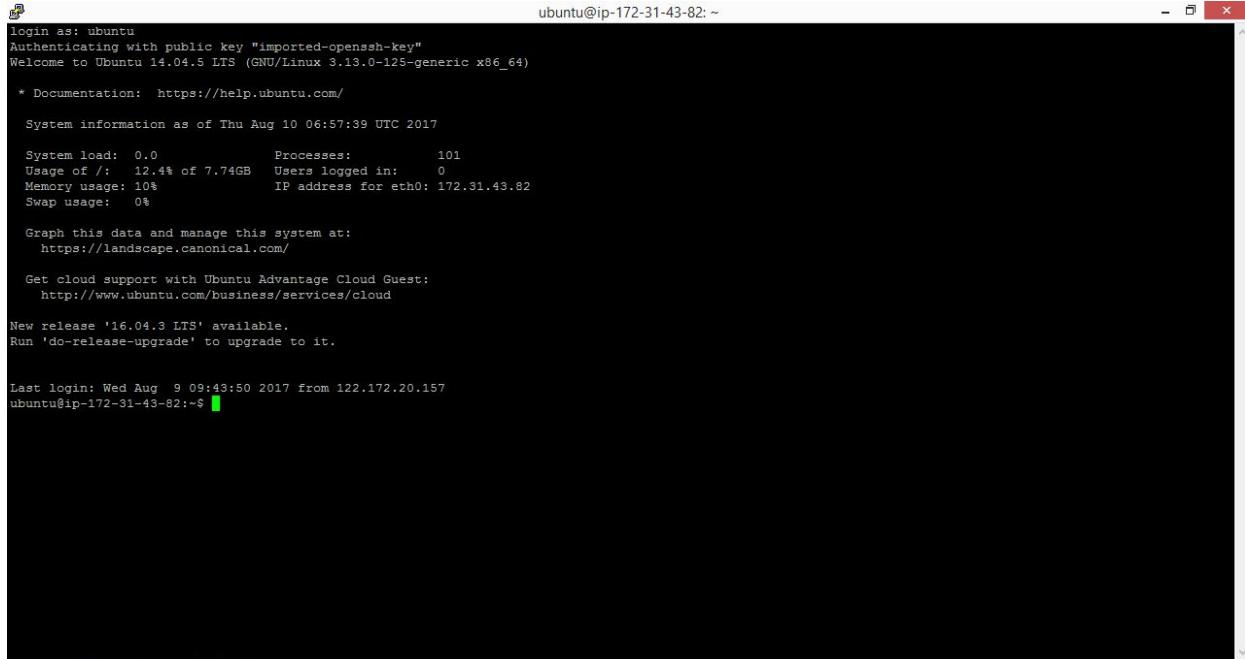


13. Click on Open.



14. Ask for username , login as : enter **ubuntu** as user name

15. After successfully login , will have terminal of EC2 virtual server.



The screenshot shows a terminal window titled "ubuntu@ip-172-31-43-82: ~". The window displays the following text:

```
login as: ubuntu
Authenticating with public key "imported-openssh-key"
Welcome to Ubuntu 14.04.5 LTS (GNU/Linux 3.13.0-125-generic x86_64)

 * Documentation: https://help.ubuntu.com/

 System information as of Thu Aug 10 06:57:39 UTC 2017

 System load: 0.0          Processes:      101
 Usage of /: 12.4% of 7.74GB   Users logged in:  0
 Memory usage: 10%           IP address for eth0: 172.31.43.82
 Swap usage:  0%

 Graph this data and manage this system at:
 https://landscape.canonical.com/

 Get cloud support with Ubuntu Advantage Cloud Guest:
 http://www.ubuntu.com/business/services/cloud

 New release '16.04.3 LTS' available.
 Run 'do-release-upgrade' to upgrade to it.

Last login: Wed Aug  9 09:43:50 2017 from 122.172.20.157
ubuntu@ip-172-31-43-82:~$
```

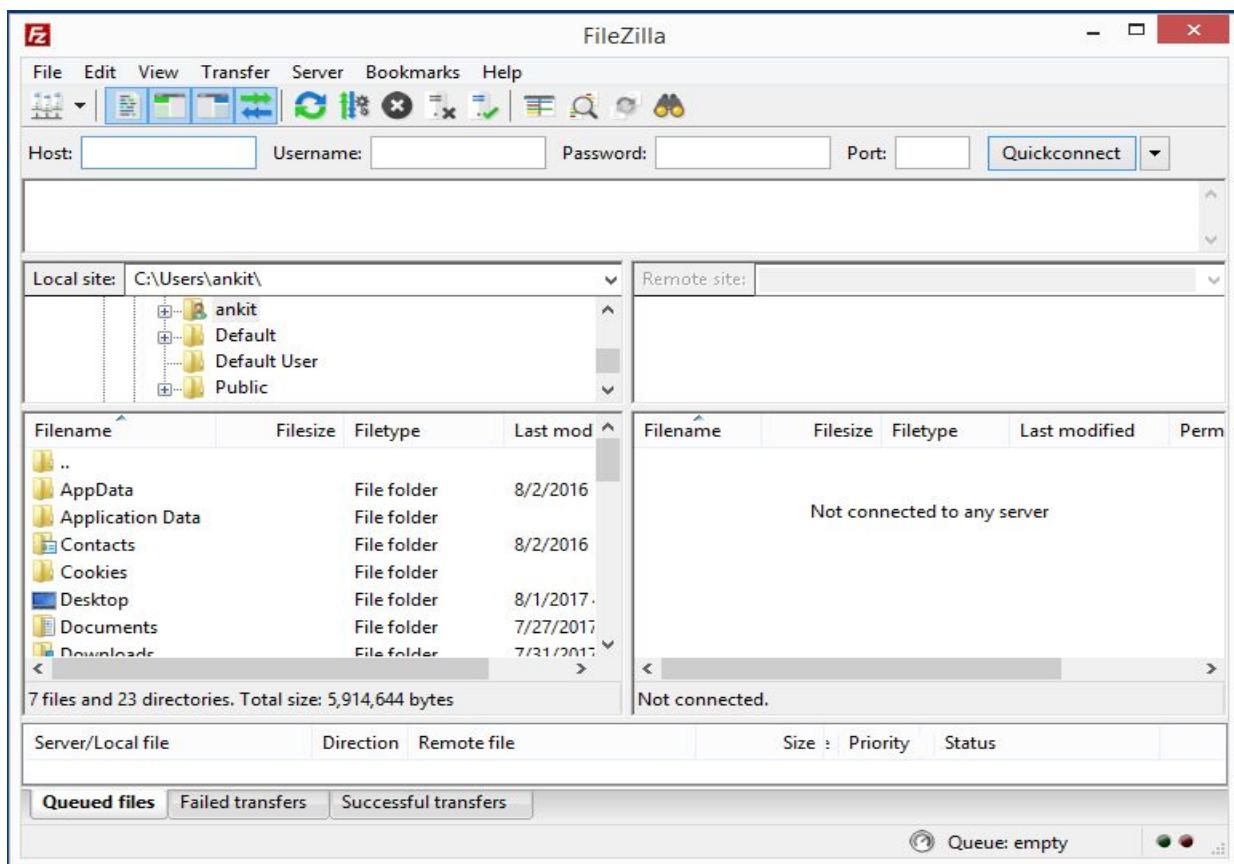
Congratulations :) you are connected to virtual machine using Putty SSH Client.

Accessing Amazon EC2 Machine using FileManager

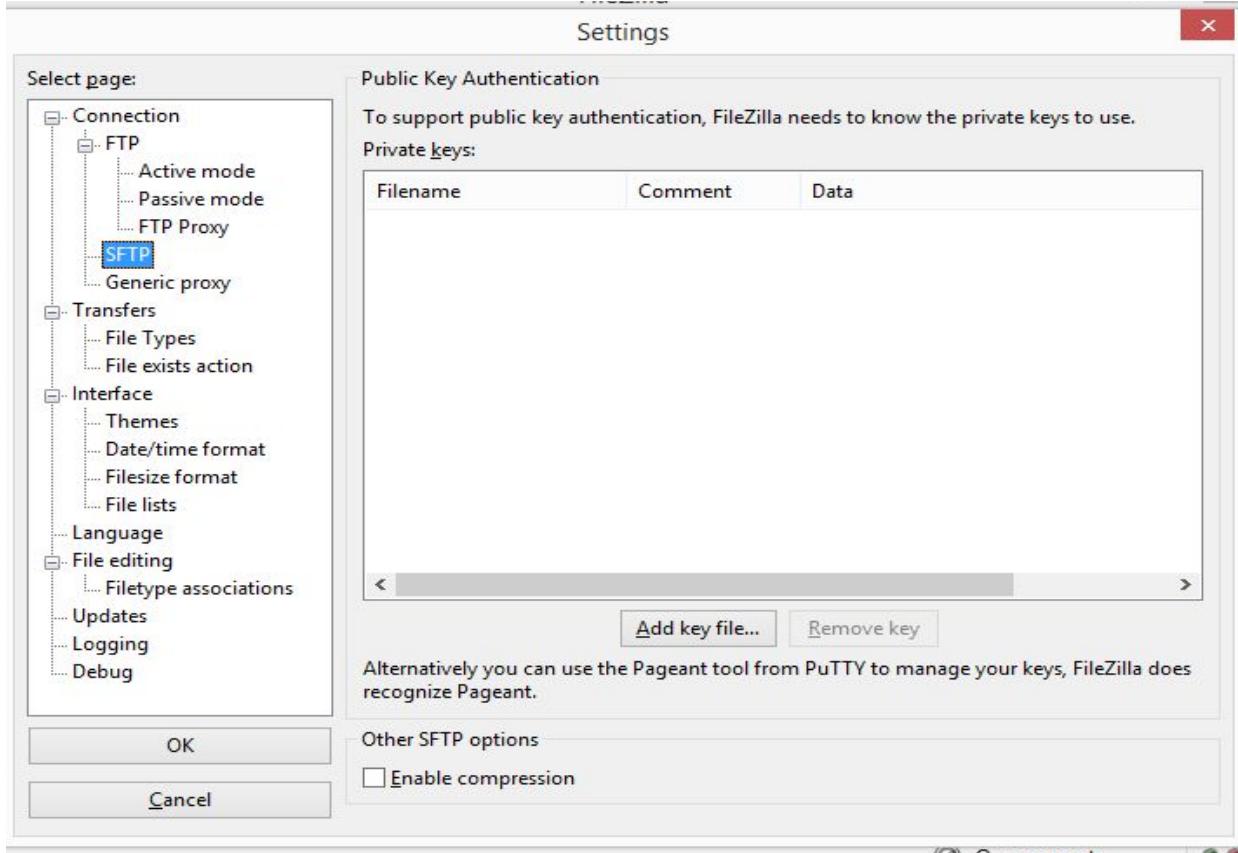
Note : Make sure that any one file manager (FileZilla , WinScp ..etc) should be installed in your machine.



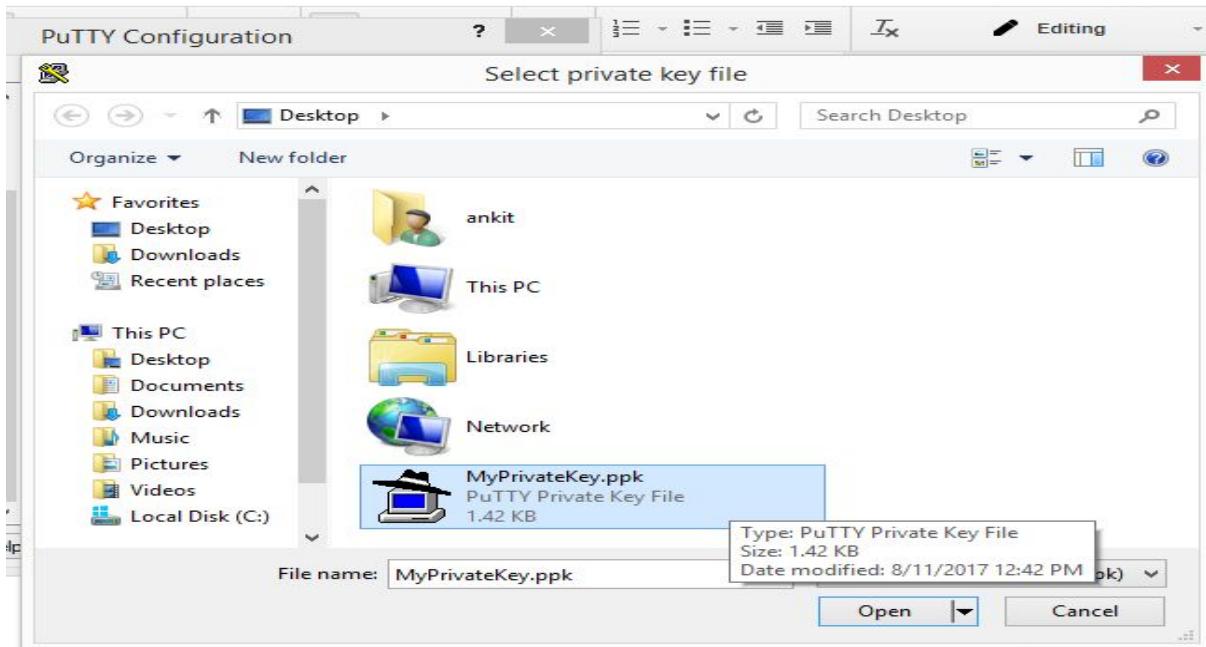
1. Open FileZilla.



2. Go to **Edit Menu > Connection > SFTP.**



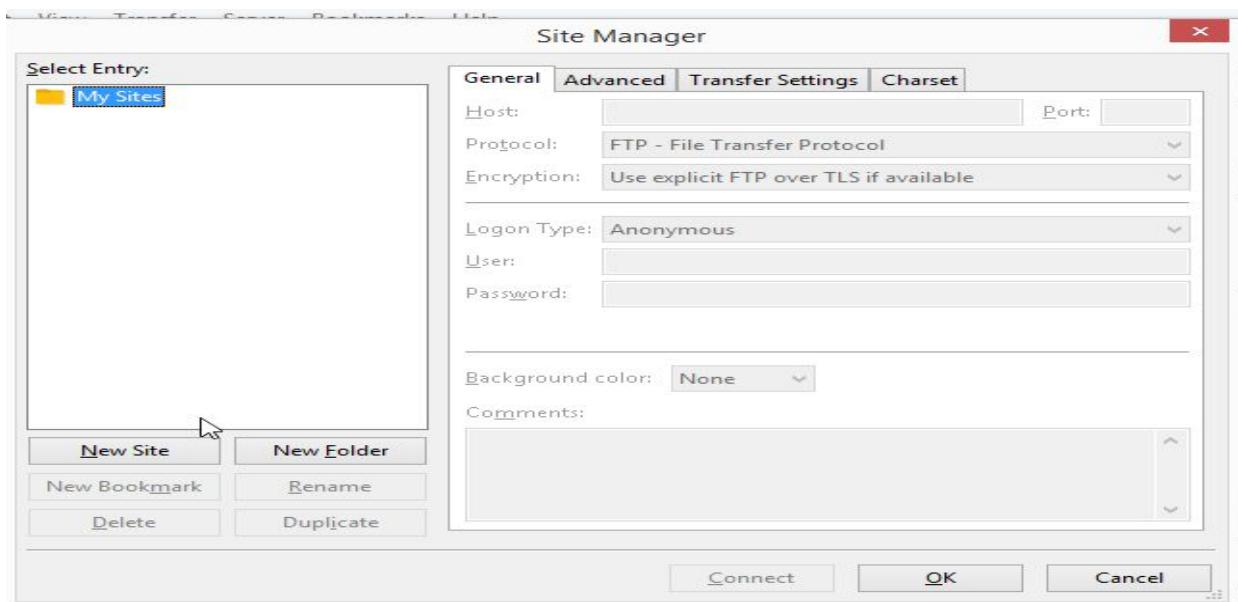
3. Click on **Add key file...**



4. Select your **.pem** or **.ppk** file and click on **Open**.

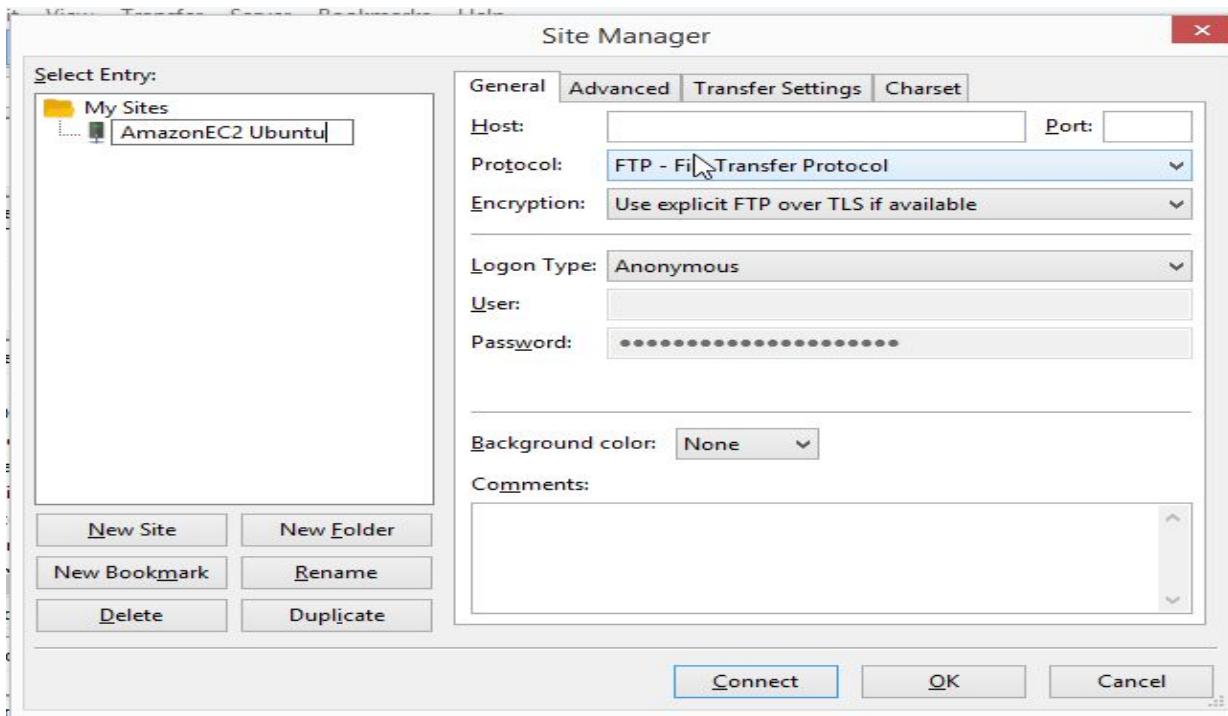
5. Click on **OK**.

6. Go to **File Menu > Site Manager**.



7. Click on **New Site**.

8. Enter Site Name as **AmazonEC2 Ubuntu**



9. Open an Amazon cloud portal. <https://console.aws.amazon.com>

10. Click **EC2** under Compute Category.

11. Screen will be on EC2 Dashboard.

Resources

You are using the following Amazon EC2 resources in the US East (Ohio) region:

1 Running Instances	2 Elastic IPs
0 Dedicated Hosts	0 Snapshots
2 Volumes	0 Load Balancers
1 Key Pairs	3 Security Groups
0 Placement Groups	

Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

Service Health

Scheduled Events

AWS Marketplace

12. Click on Running Instances.

Instances

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public IP
i-0fcfc4fc3afe2f71e	i-0fcfc4fc3afe2f71e	t2.micro	us-east-2c	running	2/2 checks ...	None	ec2-52-14-202-117.us-east-2.compute.amazonaws.com

Instance: i-0fcfc4fc3afe2f71e Public DNS: ec2-52-14-202-117.us-east-2.compute.amazonaws.com

Description	Status Checks	Monitoring	Tags
Instance ID: i-0fcfc4fc3afe2f71e	Instance state: running	Instance type: t2.micro	Elastic IP: -
Public DNS (IPv4): ec2-52-14-202-117.us-east-2.compute.amazonaws.com	IPv4 Public IP: 52.14.202.117	IPv6 IPs: -	Private DNS: in-172-31-43-82.us-east-2.compute.amazonaws.com

13. You will have one running instances and click on it. And you will find the Public DNS , Public IP and Private IP ...etc details.

The screenshot shows the AWS EC2 Instances page. On the left, there's a navigation sidebar with links like EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Spot Requests, Reserved Instances, Dedicated Hosts, Images, AMIs, Bundle Tasks, Elastic Block Store, Volumes, Snapshots, Network & Security, Security Groups, and Firewall. The 'Instances' link is highlighted. The main content area has tabs for Launch Instance, Connect, and Actions. Below that is a search bar and a table header with columns: Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and Public DNS. A single instance is listed: i-0fcfc4fc3afe2f71e, t2.micro, us-east-2c, running, 2/2 checks, None, and ec2-52-14-202-117.us-east-2.compute.amazonaws.com. Below the table are tabs for Description, Status Checks, Monitoring, and Tags. The 'Description' tab is selected, showing detailed information about the instance, including its ID, state, type, availability zone, security groups, scheduled events, AMI ID, and network details like public and private DNS, IP addresses, and VPC ID.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS
i-0fcfc4fc3afe2f71e	t2.micro	us-east-2c	running	2/2 checks	None		ec2-52-14-202-117.us-east-2.compute.amazonaws.com

Description **Status Checks** **Monitoring** **Tags**

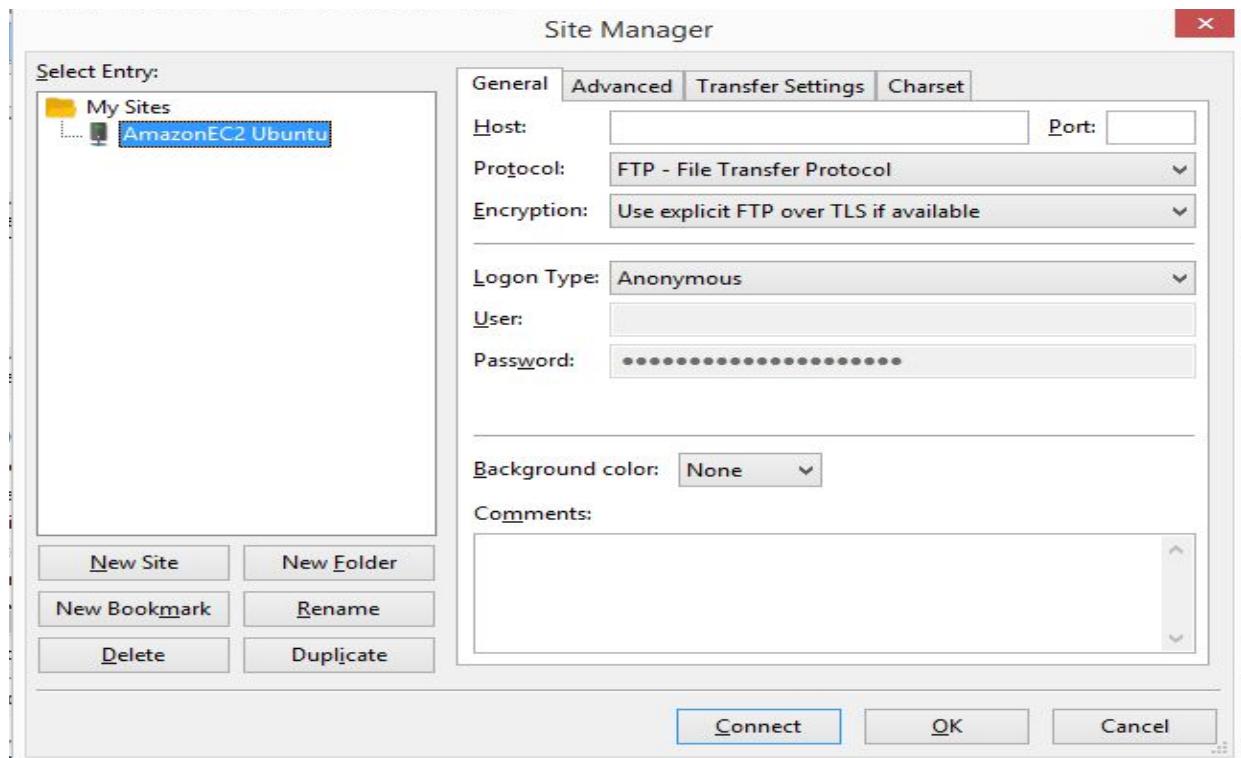
Instance ID: i-0fcfc4fc3afe2f71e
 Instance state: running
 Instance type: t2.micro
 Elastic IPs:
 Availability zone: us-east-2c
 Security groups: launch-wizard-1, view inbound rules
 Scheduled events: No scheduled events
 AMI ID: ubuntu/images/hvm-ssd/ubuntu-trusty-14.04-amd64-server-20170718 (ami-13391926)

Public DNS (IPv4): ec2-52-14-202-117.us-east-2.compute.amazonaws.com
 IPv4 Public IP: 52.14.202.117
 IPv6 IPs: -
 Private DNS: ip-172-31-43-82.us-east-2.compute.internal
 Private IPs: 172.31.43.82
 Secondary private IPs:
 VPC ID: vpc-09490460
 Subnet ID: subnet-2304a56e

14. Copy the Public IP.

Public DNS (IPv4)	ec2-52-14-202-117.us-east-2.compute.amazonaws.com
IPv4 Public IP	52.14.202.117
IPv6 IPs	-
Private DNS	ip-172-31-43-82.us-east-2.compute.internal
Private IPs	172.31.43.82
Secondary private IPs	
VPC ID	vpc-09490460
Subnet ID	subnet-2304a56e

15. Next , Open the FileZilla. And Go to **File Menu > SiteManager > AmazonEC2 Ubuntu**



16. Enter following details.

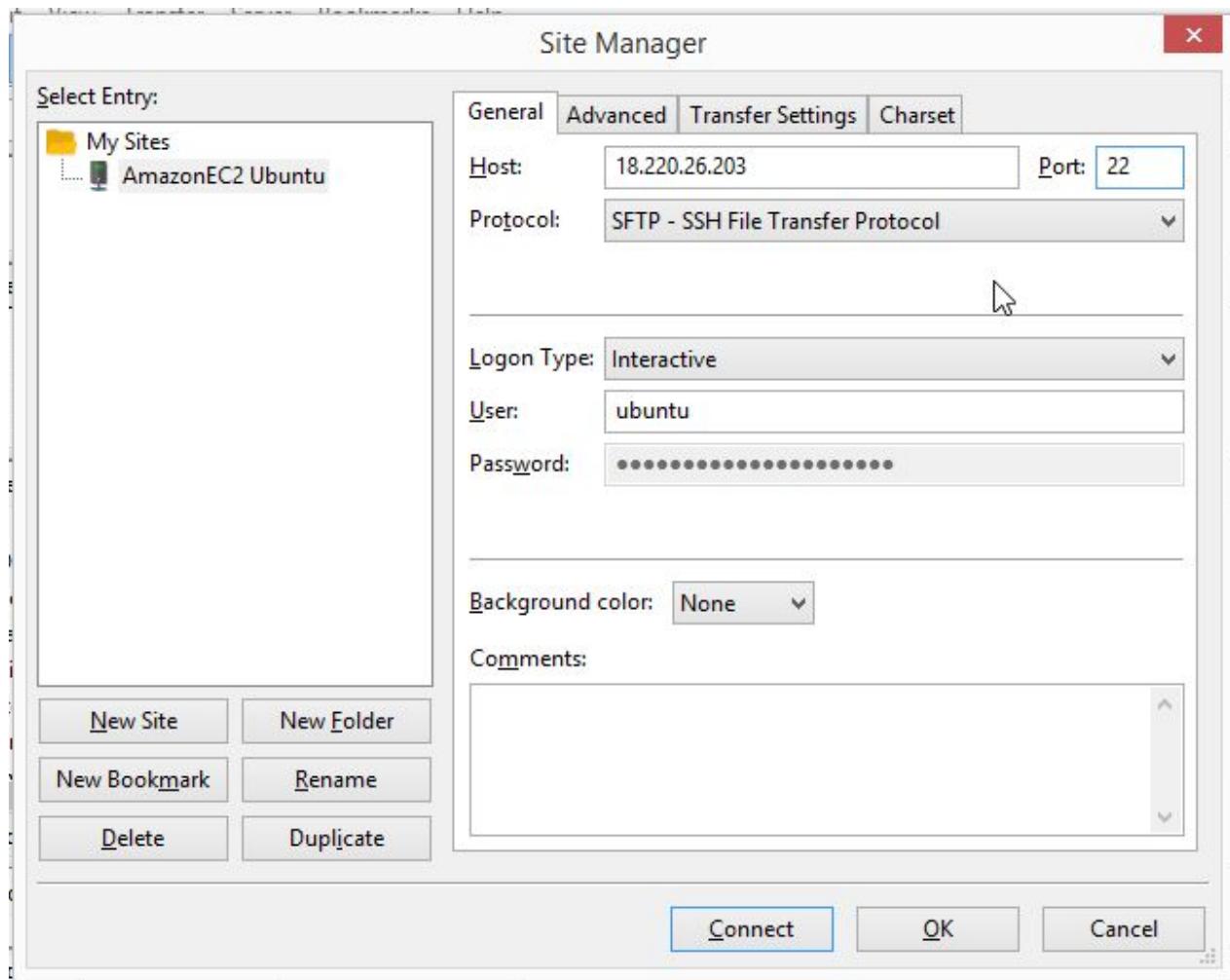
Host : Public IP

Port : 22

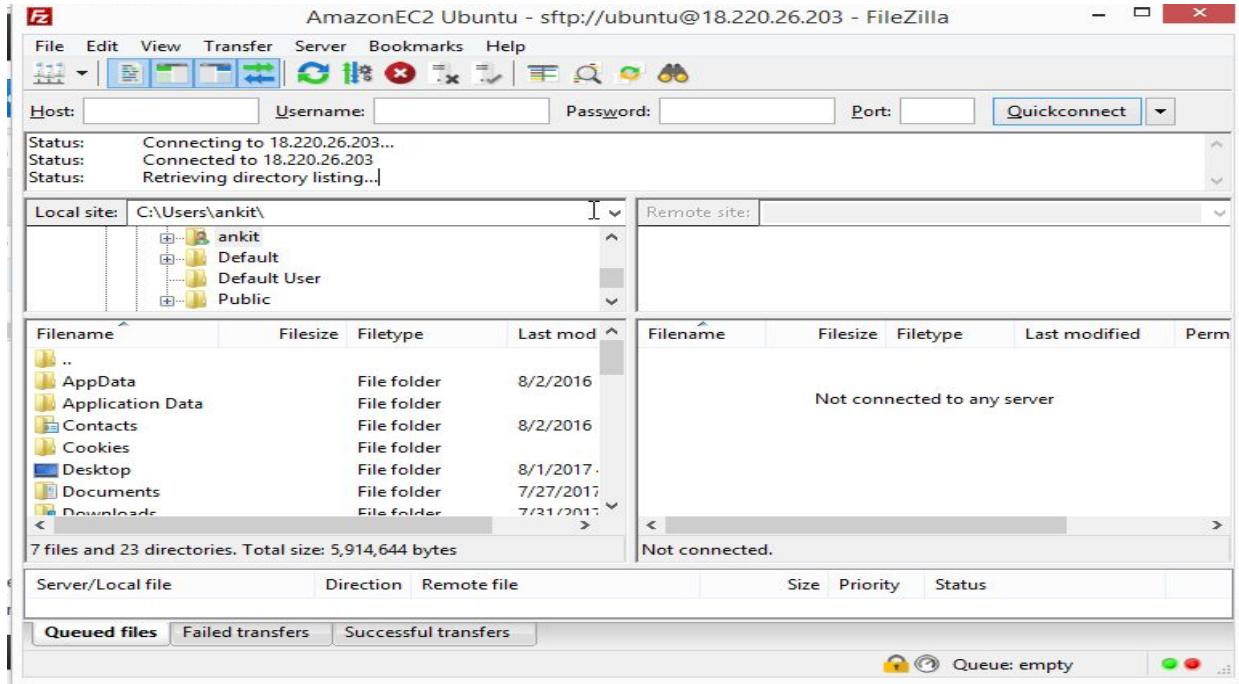
Protocol : SFTP

Logon Type : Interective

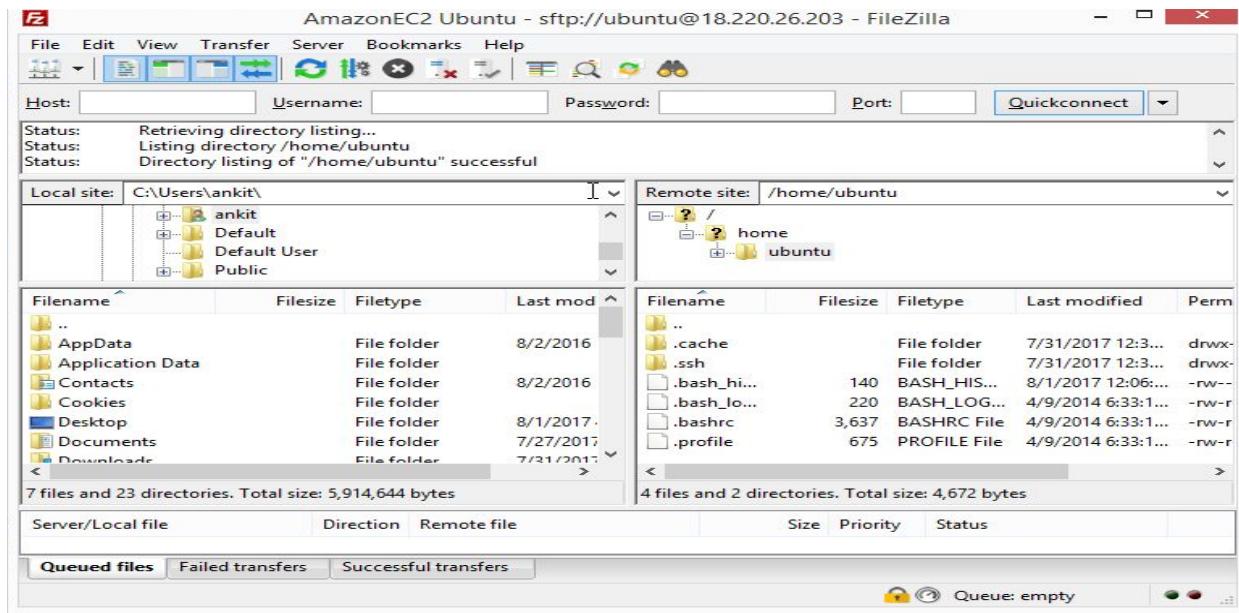
User : ubuntu



17. Click on connect and it will take you on another screen.



18. Once it successfully connected it will show the Remote Site in the right side of the box.

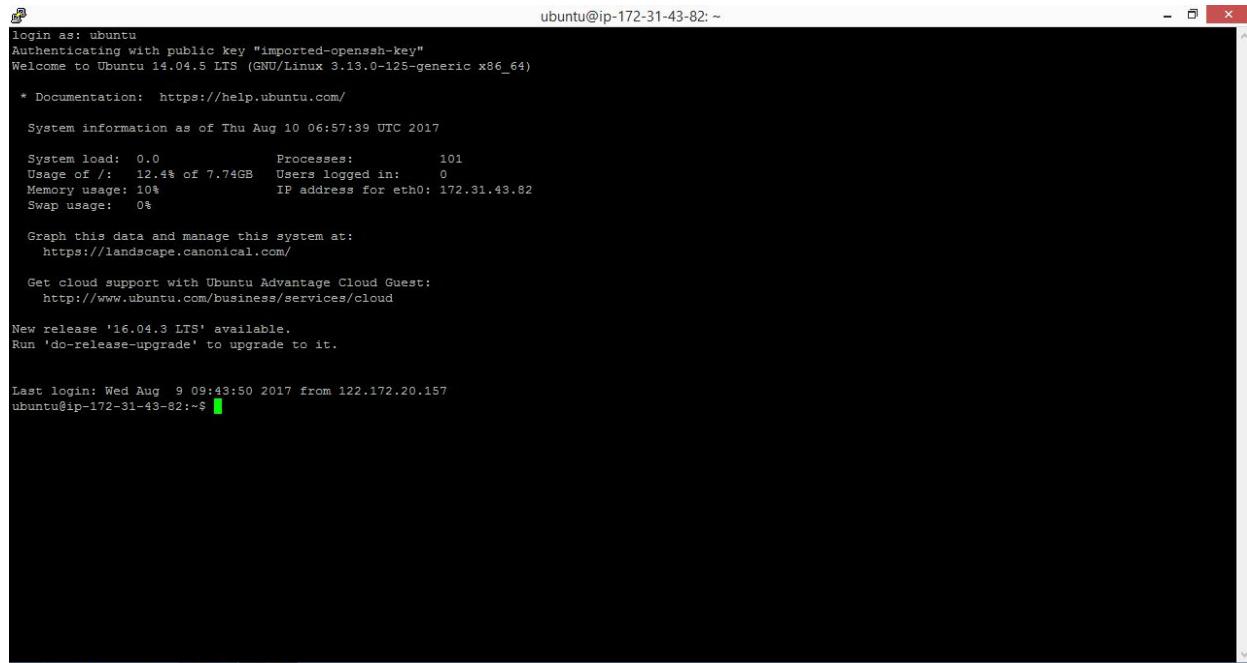


Note : You are accessing Amazon EC Virtual machine using FileZilla file manager , it's easy to download, upload and file manipulation.

Congratulations :) you are connected to virtual machine using File Manager.

Configuring Apache2 on Ubuntu 14

Note : Before you start executing command , **first connect EC-2 with Putty SSH client.**



```

login as: ubuntu
Authenticating with public key "imported-openssh-key"
Welcome to Ubuntu 14.04.5 LTS (GNU/Linux 3.13.0-125-generic x86_64)

 * Documentation: https://help.ubuntu.com/
 
 System information as of Thu Aug 10 06:57:39 UTC 2017

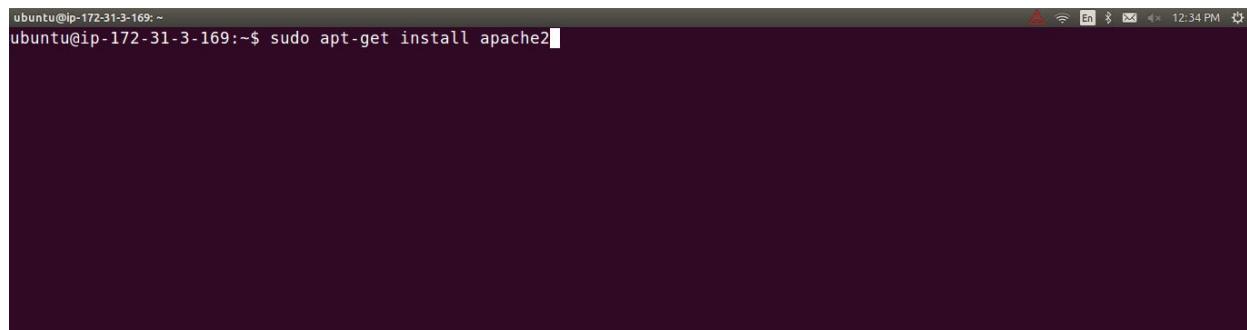
 System load: 0.0          Processes:      101
 Usage of /: 12.4% of 7.74GB   Users logged in:    0
 Memory usage: 10%           IP address for eth0: 172.31.43.82
 Swap usage:  0%
 
 Graph this data and manage this system at:
 https://landscape.canonical.com/
 
 Get cloud support with Ubuntu Advantage Cloud Guest:
 http://www.ubuntu.com/business/services/cloud

New release '16.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Wed Aug  9 09:43:50 2017 from 122.172.20.157
ubuntu@ip-172-31-43-82:~$ 
```

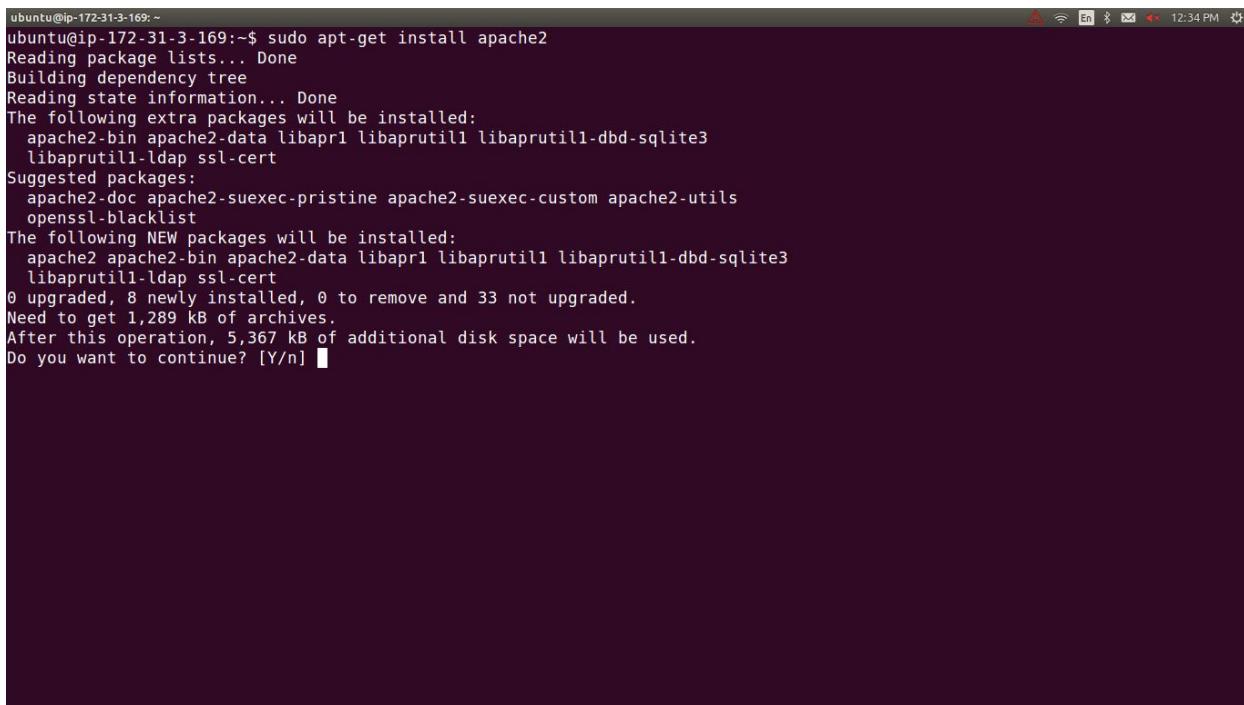
1. Execute command

```
sudo apt-get update
sudo apt-get install apache2
```



```

ubuntu@ip-172-31-3-169: ~
ubuntu@ip-172-31-3-169:~$ sudo apt-get install apache2 
```

A screenshot of a terminal window on an Ubuntu system. The terminal shows the command `sudo apt-get install apache2` being run and its output. The output includes package lists, dependency building, state information, extra packages to be installed (such as apache2-bin, libapr1, libaprutil1, libaprutil1-dbd-sqlite3, libaprutil1-ldap, and ssl-cert), suggested packages (apache2-doc, apache2-suexec-pristine, apache2-suexec-custom, apache2-utils, and openssl-blacklist), and a summary of the operation. It indicates 0 upgraded, 8 newly installed, 0 to remove, and 33 not upgraded. The user is prompted with "Do you want to continue? [Y/n]".

```
ubuntu@ip-172-31-3-169:~$ sudo apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  apache2-bin apache2-data libapr1 libaprutil1 libaprutil1-dbd-sqlite3
  libaprutil1-ldap ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine apache2-suexec-custom apache2-utils
  openssl-blacklist
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data libapr1 libaprutil1 libaprutil1-dbd-sqlite3
  libaprutil1-ldap ssl-cert
0 upgraded, 8 newly installed, 0 to remove and 33 not upgraded.
Need to get 1,289 kB of archives.
After this operation, 5,367 kB of additional disk space will be used.
Do you want to continue? [Y/n] ■
```

2. Enter [Y] for continue installation of an apache2
3. Change the permission to html directory , so outside it can be accessible.

`sudo chmod -R 777 /var/www/html`

Congratulations :) Apache service is installed on Ubuntu EC2 machine.

Configuring PHP on Ubuntu 14

1. Execute command

```
sudo apt-get update
sudo apt-get install php5 libapache2-mod-php5 php5-mcrypt
```

ubuntu@ip-172-31-3-169:~\$ sudo apt-get install php5 libapache2-mod-php5 php5-mcrypt

```
ubuntu@ip-172-31-3-169:~$ sudo apt-get install php5 libapache2-mod-php5 php5-mcrypt
Reading package lists... Done
Building dependency tree...
Reading state information... Done
The following extra packages will be installed:
  libmcrypt4 php5-cli php5-common php5-json php5-readline
Suggested packages:
  php-pear libmcrypt-dev mcrypt php5-user-cache
The following NEW packages will be installed:
  libapache2-mod-php5 libmcrypt4 php5 php5-common php5-json
  php5-mcrypt php5-readline
0 upgraded, 8 newly installed, 0 to remove and 33 not upgraded.
Need to get 4,950 kB of archives.
After this operation, 20.8 MB of additional disk space will be used.
Do you want to continue? [Y/n] 
```

2. Enter [Y] for continue installation of an php
3. Next, Restart the apache2 service to recognise php is installed.

```
sudo service apache2 restart
```

Congratulations :) PHP is installed on Ubuntu EC2 machine.

Configuring MySQL on Ubuntu 14

1. Execute command

```
sudo apt-get update
sudo apt-get install mysql-server php5-mysql
```

ubuntu@ip-172-31-3-169:~\$ sudo apt-get install mysql-server php5-mysql

```
ubuntu@ip-172-31-3-169:~$ sudo apt-get install mysql-server php5-mysql
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
 libaio1 libdbd-mysql-perl libdbi-perl libhtml-template-perl libmysqlclient18
 libterm-readkey-perl mysql-client-5.5 mysql-client-core-5.5 mysql-common
 mysql-server-5.5 mysql-server-core-5.5
Suggested packages:
 libclone-perl libmldb-perl libnet-daemon-perl libplrpc-perl
 libsql-statement-perl libipc-sharedcache-perl tinyca mailx
The following NEW packages will be installed:
 libaio1 libdbd-mysql-perl libdbi-perl libhtml-template-perl libmysqlclient18
 libterm-readkey-perl mysql-client-5.5 mysql-client-core-5.5 mysql-common
 mysql-server mysql-server-5.5 mysql-server-core-5.5 php5-mysql
0 upgraded, 13 newly installed, 0 to remove and 33 not upgraded.
Need to get 9,677 kB of archives.
After this operation, 97.5 MB of additional disk space will be used.
Do you want to continue? [Y/n] 
```

2. Enter [Y] for continue installation of MySql

3. Next,MySQL will ask username for root user

Provide password : **root**

At the end we have user credential for MySQL database.

Username : root

Password : root

ubuntu@ip-172-31-3-169: ~
Package configuration

```
Configuring mysql-server-5.5
While not mandatory, it is highly recommended that you set a password for the MySQL administrative "root" user.
If this field is left blank, the password will not be changed.
New password for the MySQL "root" user:
<0k>
```

ubuntu@ip-172-31-3-169: ~
Package configuration

```
Configuring mysql-server-5.5
Repeat password for the MySQL "root" user:
<0k>
```

4. Next, Restart the apache2 service to recognise mysql-server is installed.

sudo service apache2 restart

Congratulations :) MySQL is installed on Ubuntu EC2 machine.

Configuring HTTP and HTTPS port on EC2

1. Open an Amazon cloud portal. <https://console.aws.amazon.com>

The screenshot shows the AWS Management Console homepage. On the left, there's a sidebar titled "AWS services" with a search bar. Under "Recently visited services", there's a link to "EC2". Under "All services", there are categories like Compute, Storage, and Database, each with sub-links such as EC2, S3, and Lambda. On the right, there's a "Helpful tips" section with links to "Manage your costs" and "Create an organization". Below that is a "Explore AWS" section with links to "New Product Announcements" and "Migrate from Oracle to Amazon Aurora".

2. Click EC2 under Compute Category.
3. Screen will be on EC2 Dashboard.

The screenshot shows the EC2 Dashboard. On the left, there's a sidebar with links for EC2 Dashboard, Instances, Images, and Network & Security. The main area shows "Resources" with statistics: 1 Running Instances, 0 Dedicated Hosts, 2 Volumes, 1 Key Pairs, 0 Placement Groups, 2 Elastic IPs, 0 Snapshots, 0 Load Balancers, and 3 Security Groups. There's also a callout for "Amazon Lightsail for free". On the right, there's a "Account Attributes" section with "Supported Platforms" (VPC), "Default VPC" (vpc-bd2d6dd4), and "Resource ID length management". Below that is an "Additional Information" section with links to "Getting Started Guide", "Documentation", "All EC2 Resources", "Forums", "Pricing", and "Contact Us". At the bottom, there's a "AWS Marketplace" section with a note about trial products and a link to the "EC2 Launch Wizard".

4. Click on Running Instances.

The screenshot shows the AWS EC2 Instances page. On the left sidebar, under the 'INSTANCES' section, 'Instances' is selected. In the main content area, there is a table with one row. The row details a single instance: Instance ID i-0fcfc4fc3afe2f71e, Instance Type t2.micro, Availability Zone us-east-2c, and Instance State running. Below the table, a detailed view of the instance is shown with tabs for Description, Status Checks, Monitoring, and Tags. The 'Description' tab is selected, displaying the following information:

Instance ID	i-0fcfc4fc3afe2f71e	Public DNS (IPv4)	ec2-52-14-202-117.us-east-2.compute.amazonaws.com
Instance state	running	IPv4 Public IP	52.14.202.117
Instance type	t2.micro	IPv6 IPs	-
Elastic IPs		Private DNS	ip-172-31-43-82.us-east-2.compute.internal
Availability zone	us-east-2c	Private IPs	172.31.43.82

5. Click on Security group for example here is **launch-wizard-1** name for security group.

The screenshot shows the AWS Instance details page for the instance i-0fcfc4fc3afe2f71e. At the top, it displays the Public DNS: ec2-52-14-202-117.us-east-2.compute.amazonaws.com. Below this, there are tabs for Description, Status Checks, Monitoring, and Tags. The 'Description' tab is selected, showing the following instance details:

Instance ID	i-0fcfc4fc3afe2f71e
Instance state	running
Instance type	t2.micro
Elastic IPs	
Availability zone	us-east-2c
Security groups	launch-wizard-1 , view inbound rules
Scheduled events	No scheduled events
AMI ID	ubuntu/images/hvm-ssd/ubuntu-trusty-14.04-amd64-server-20170718 (ami-43391926)

6. It show the security group information for the selected group name.

Name	Group ID	Group Name	VPC ID	Description
sg-906393f8	launch-wizard-1	vpc-09490460	launch-wizard-1 created 2017-08-09T15:0...	

7. Click on Inbound

Type	Protocol	Port Range	Source
SSH	TCP	22	0.0.0.0/0

8. Click on Edit

Edit inbound rules

Type	Protocol	Port Range	Source
SSH	TCP	22	Custom 0.0.0.0/0

Add Rule

NOTE: Any edits made on existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created.

Cancel Save

9. Click on Add Rule

Protocol

- All TCP
- All UDP
- All ICMP - IPv4
- All ICMP - IPv6
- All traffic
- SSH
- SMTP
- DNS (UDP)
- DNS (TCP)
- HTTP**
- POP3
- IMAP
- LDAP
- HTTPS
- SMTPS
- Custom TCP

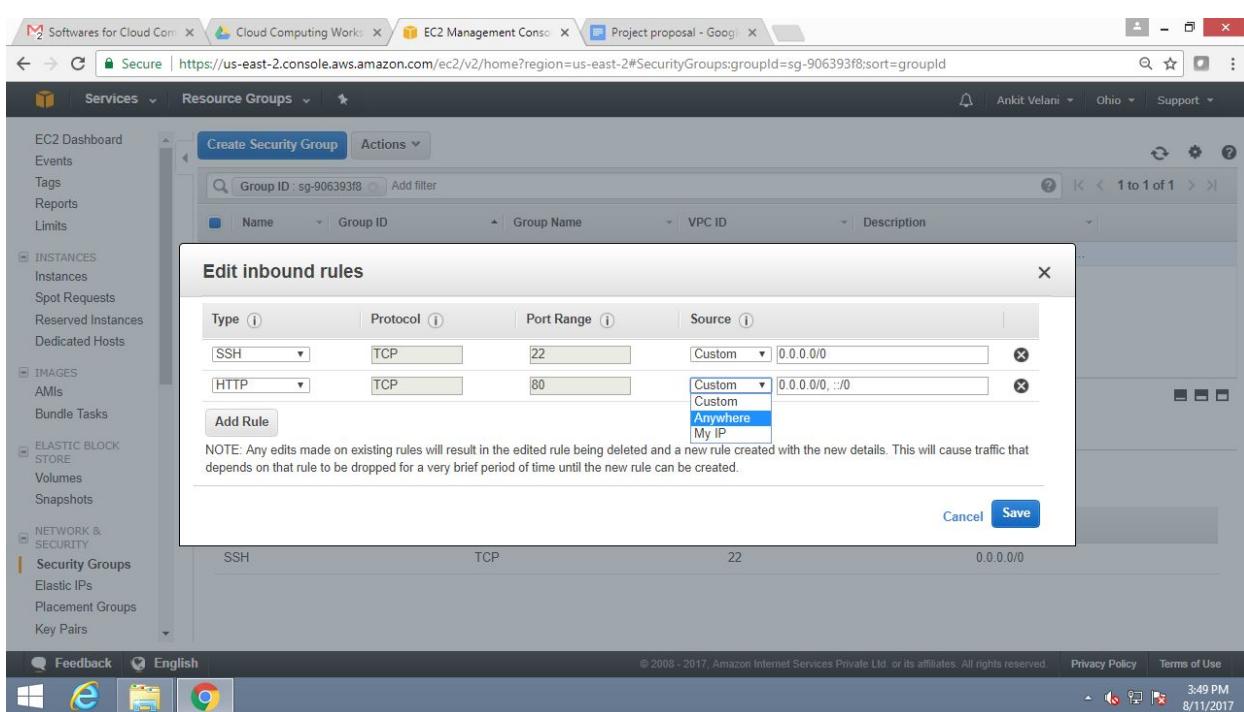
Protocol Port Range Source

TCP	22	Custom 0.0.0.0/0
TCP	0	Custom CIDR, IP or Security Group

Add Rule

NOTE: Any edits made on existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created.

Cancel Save



10. Select Rule type as **HTTP** and Source as **Anywhere**.
 11. Click on **Save**.
 12. For adding more rules follow the same steps.
 13. Copy EC-2 public IP and access from the web-browser.

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links: EC2 Dashboard, Events, Tags, Reports, Limits, INSTANCES (with Instances selected), SPOT REQUESTS, Reserved Instances, Dedicated Hosts, IMAGES (with AMIs selected), Bundle Tasks, ELASTIC BLOCK STORE (with Volumes selected), Snapshots, and NETWORK & SECURITY (with Security Groups selected). The main content area has tabs: Launch Instance, Connect, Actions, and a search bar. Below that is a table with columns: Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and Public DNS. One row is visible: i-0fcfc4fc3afe2f71e, t2.micro, us-east-2c, running, 2/2 checks, None, ec2-52-14-202-117.us-east-2.compute.amazonaws.com. At the bottom, there are tabs for Description, Status Checks, Monitoring, and Tags, followed by detailed instance information.

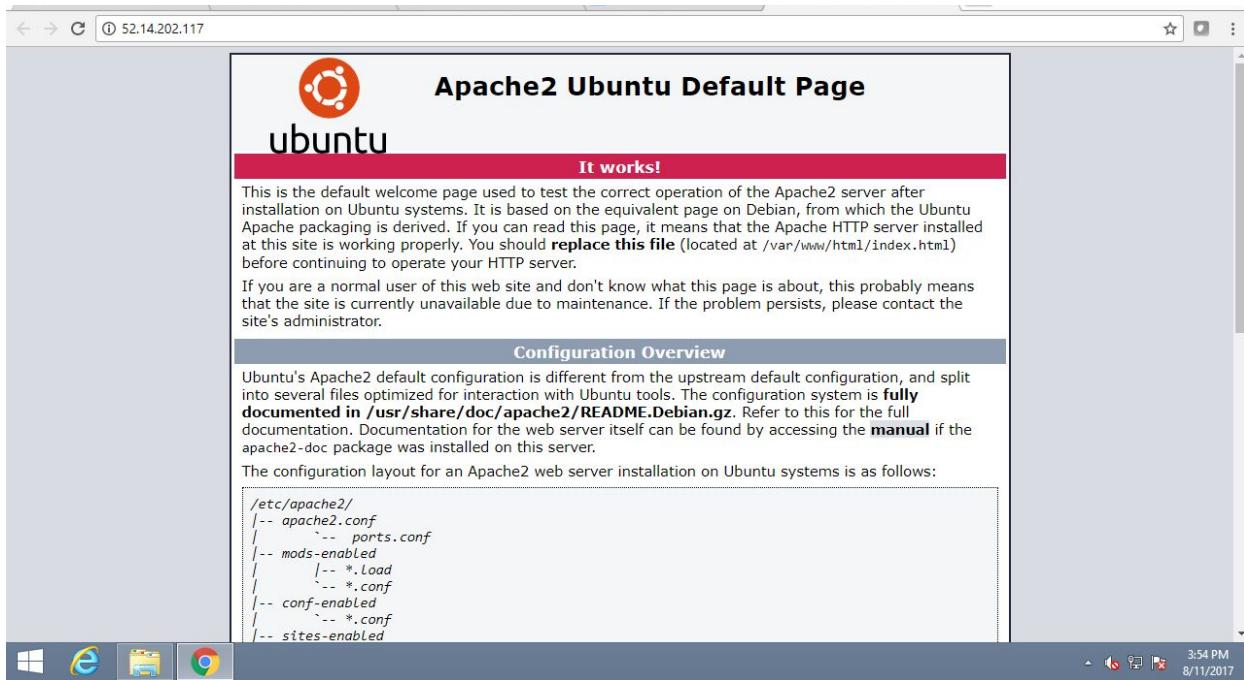
	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS
	i-0fcfc4fc3afe2f71e	t2.micro	us-east-2c	running	2/2 checks	None		ec2-52-14-202-117.us-east-2.compute.amazonaws.com

Description

Instance ID	i-0fcfc4fc3afe2f71e	Public DNS (IPv4)	ec2-52-14-202-117.us-east-2.compute.amazonaws.com
Instance state	running	IPv4 Public IP	52.14.202.117
Instance type	t2.micro	IPv6 IPs	-
Elastic IPs		Private DNS	ip-172-31-43-82.us-east-2.compute.internal
Availability zone	us-east-2c	Private IPs	172.31.43.82
Security groups	launch-wizard-1, view inbound rules	Secondary private IPs	
Scheduled events	No scheduled events	VPC ID	vpc-09490460
AMI ID	ubuntu/images/hvm-ssd/ubuntu-trusty-14.04-amd64-server-20170718 (ami-13391926)	Subnet ID	subnet-2304a56e

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Public DNS (IPv4)	ec2-52-14-202-117.us-east-2.compute.amazonaws.com
IPv4 Public IP	52.14.202.117
IPv6 IPs	-
Private DNS	ip-172-31-43-82.us-east-2.compute.internal
Private IPs	172.31.43.82
Secondary private IPs	
VPC ID	vpc-09490460
Subnet ID	subnet-2304a56e



14. If Web-browser is displaying Apache2 Ubuntu Default Page then we have successfully configures HTTP port on EC-2.

Congratulation :) Now EC-2 Machine can be accessible using HTTP port.

Setup MySQL on Amazon RDS.

What is Amazon RDS ?

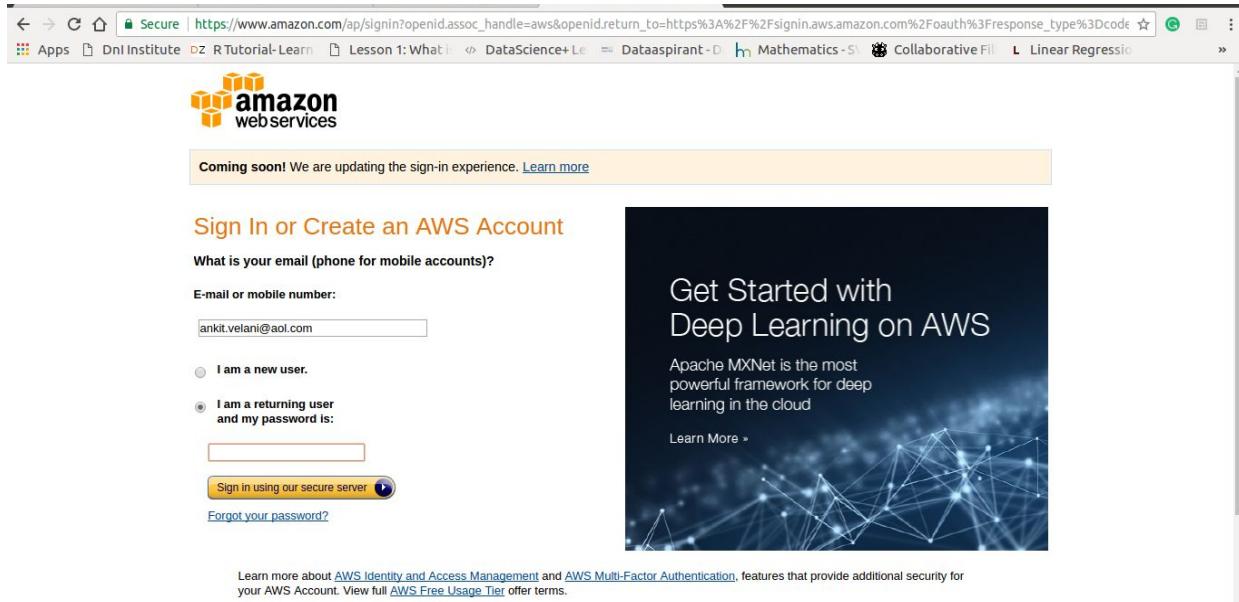
Amazon Relational Database Service (Amazon RDS) is a web service that makes it easier to set up, operate, and scale a relational database in the cloud. It provides cost-efficient, resizable capacity for an industry-standard relational database and manages common database administration tasks.

Why would you want a managed relational database service? Because Amazon RDS takes over many of the difficult or tedious management tasks of a relational database.

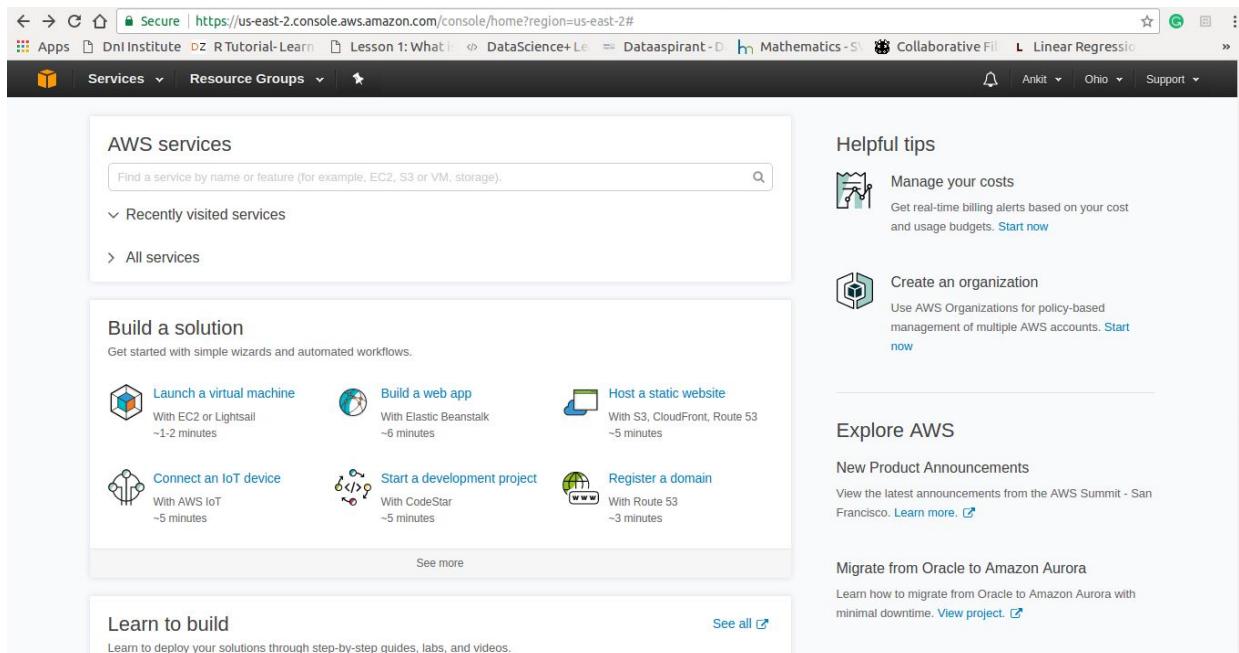
- When you buy a server, you get CPU, memory, storage, and IOPS, all bundled together. With Amazon RDS, these are split apart so that you can scale them independently. So, for example, if you need more CPU, less IOPS, or more storage, you can easily allocate them.
- Amazon RDS manages backups, software patching, automatic failure detection, and recovery.
- In order to deliver a managed service experience, Amazon RDS does not provide shell access to DB instances, and it restricts access to certain system procedures and tables that require advanced privileges.
- You can have automated backups performed when you need them, or create your own backup snapshot. These backups can be used to restore a database, and the Amazon RDS restore process works reliably and efficiently.
- You can get high availability with a primary instance and a synchronous secondary instance that you can failover to when problems occur. You can also use MySQL, MariaDB, or PostgreSQL Read Replicas to increase read scaling.
- You can use the database products you are already familiar with: MySQL, MariaDB, PostgreSQL, Oracle, Microsoft SQL Server, and the new, MySQL-compatible Amazon Aurora DB engine (for information, see Aurora on Amazon RDS).
- In addition to the security in your database package, you can help control who can access your RDS databases by using AWS IAM to define users and permissions. You can also help protect your databases by putting them in a virtual private cloud.

Setup MySQL on Amazon RDS.

1. Login to Amazon cloud portal. <https://console.aws.amazon.com>
2. Enter registered email and choose option 'I am returning user and my password is:'.
3. Click on Sign in using our secure server.



4. After successfully login, Console landing page will appear.



5. Click on All Services ,

The screenshot shows the AWS Management Console homepage. In the top navigation bar, there are tabs for 'Services' and 'Resource Groups'. Below the navigation, there's a search bar and a 'Helpful tips' sidebar.

AWS services

Find a service by name or feature (for example, EC2, S3 or VM, storage).

Recently visited services

All services

- Compute**
 - EC2
 - EC2 Container Service
 - Lightsail
 - Elastic Beanstalk
 - Lambda
 - Batch
- Storage**
 - S3
 - EFS
 - Glacier
 - Storage Gateway
- Database**
 - RDS
- Developer Tools**
 - CodeStar
 - CodeCommit
 - CodeBuild
 - CodeDeploy
 - CodePipeline
 - X-Ray
- Management Tools**
 - CloudWatch
 - CloudFormation
 - CloudTrail
 - Config
 - OpsWorks
 - Service Catalog
 - Trusted Advisor
 - Managed Services
- Internet of Things**
 - AWS IoT
 - AWS Greengrass
- Contact Center**
 - Amazon Connect
- Game Development**
 - Amazon GameLift
- Mobile Services**
 - Mobile Hub
 - Cognito
 - Device Farm
 - Mobile Analytics
 - Pinpoint

Helpful tips

- Manage your costs**
Get real-time billing alerts based on your cost and usage budgets. [Start now](#)
- Create an organization**
Use AWS Organizations for policy-based management of multiple AWS accounts. [Start now](#)

Explore AWS

- New Product Announcements**
View the latest announcements from the AWS Summit - San Francisco. [Learn more](#)
- Migrate from Oracle to Amazon Aurora**
Learn how to migrate from Oracle to Amazon Aurora with minimal downtime. [View project](#)

6. Choose RDS, from category " Database"

The screenshot shows the AWS Management Console homepage with the 'Database' category expanded under the 'Database' section. The 'Database' section contains the following services:

- RDS
- DynamoDB
- ElastiCache
- Redshift

Other sections visible include Storage, Management Tools, Game Development, Mobile Services, Security, Identity & Compliance, Application Services, Messaging, Analytics, and Business Productivity.

7. Click on RDS.

8. Click on Get Started Now

9. Click on Free tier eligible only , Click on MySQL

Select Engine

To get started, choose a DB Engine below and click Select.

Free tier eligible only ?

DB Engine	Description	Select
MySQL	MySQL Community Edition	Select
Amazon Aurora	MySQL-compatible edition	Select
MariaDB		
PostgreSQL		
ORACLE		
SQL Server		

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 6 TB.
- Instances offer up to 32 vCPUs and 244 GiB Memory.
- Supports automated backup and point-in-time recovery.
- Supports cross-region read replicas.
- Free tier eligible

Amazon Aurora

MySQL-compatible edition

Enterprise-class database, starting at <\$1/day.

- Up to 5 times the throughput of MySQL.
- Up to 64TB of auto-scaling SSD storage.
- 6-way replication across three Availability Zones.
- Up to 15 Read Replicas with sub-10ms replica lag.
- Automatic monitoring and failover in less than 30 seconds.

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10. Click on Select.

Step 1: Select Engine

Step 2: Specify DB Details

Step 3: Configure Advanced Settings

Free Tier

The Amazon RDS Free Tier provides a single db t2 micro instance as well as up to 20 GB of storage, allowing new AWS customers to gain hands-on experience with Amazon RDS. Learn more about the RDS Free Tier and the instance restrictions here.

Only show options that are eligible for RDS Free Tier

Instance Specifications

DB Engine: mysql
License Model: general-public-license
DB Engine Version: MySQL 5.6.35

Review the Known Issues/Limitations to learn about potential compatibility issues with specific database versions.

DB Instance Class: - Select One -
Multi-AZ Deployment: - Select One -
Storage Type: - Select One -
Allocated Storage*: 5 GB

⚠ Provisioning less than 100 GB of General Purpose (SSD) storage for

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11. Select the Only "show options that are eligible for RDS Free Tier"

Step 1: Select Engine

Step 2: Specify DB Details

Step 3: Configure Advanced Settings

Free Tier
The Amazon RDS Free Tier provides a single db.t2.micro instance as well as up to 20 GB of storage, allowing new AWS customers to gain hands-on experience with Amazon RDS. Learn more about the RDS Free Tier and the instance restrictions here.

Only show options that are eligible for RDS Free Tier

Instance Specifications

DB Engine	mysql
License Model	general-public-license
DB Engine Version	MySQL 5.6.35
DB Instance Class	db.t2.micro — 1 vCPU, 1 GiB RAM
Multi-AZ Deployment	No
Storage Type	General Purpose (SSD)
Allocated Storage*	5 GB

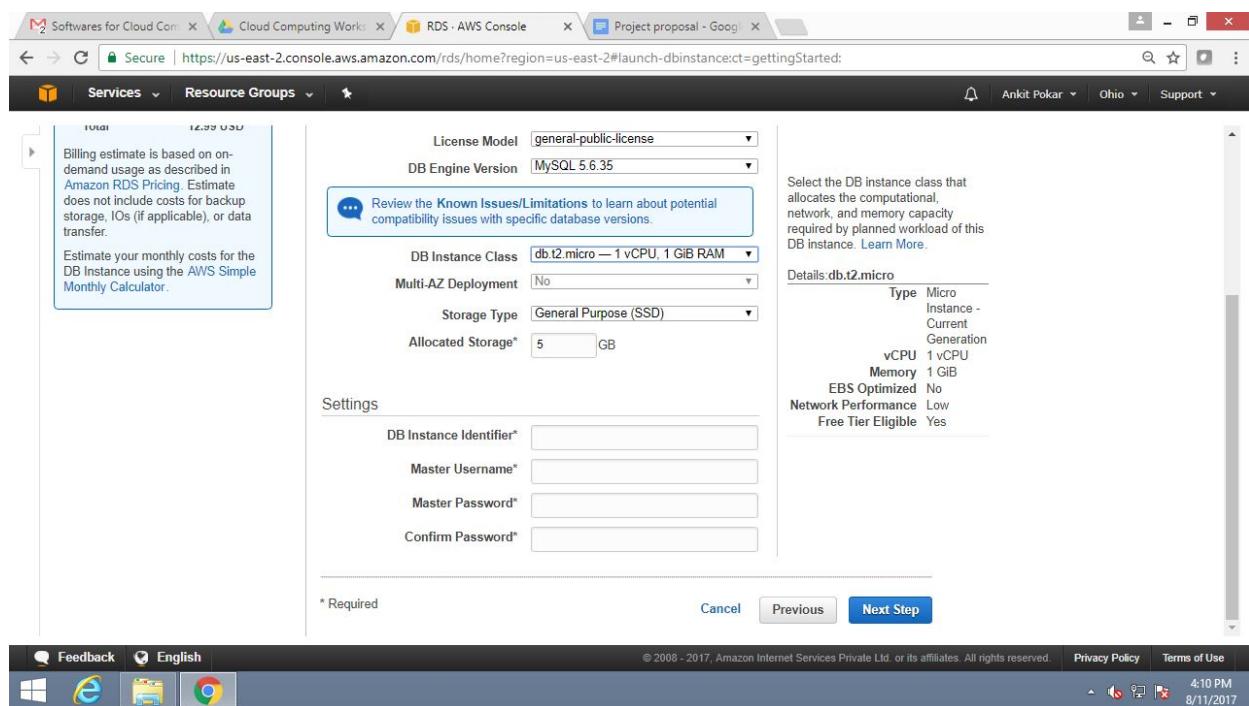
Review the Known Issues/Limitations to learn about potential compatibility issues with specific database versions.

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12. Free tier Instance configuration

Details:db.t2.micro	
Type	Micro Instance - Current Generation
vCPU	1 vCPU
Memory	1 GiB
EBS Optimized	No
Network Performance	Low
Free Tier Eligible	Yes

13. Scroll down the page and specify the database configuration



Settings

DB Instance Identifier*	<input type="text" value="cms"/>
Master Username*	<input type="text" value="root"/>
Master Password*	<input type="password" value="....."/>
Confirm Password*	<input type="password" value="....."/>

14. Specify the Database settings

DBInstance Identifier :====> Database Instance name : **cms**

Master Username :====> **root**

Master Password :====> **mypassword**

Confirm Password :====> **mypassword**

Billing estimate is based on on-demand usage as described in [Amazon RDS Pricing](#). Estimate does not include costs for backup storage, I/Os (if applicable), or data transfer.

Estimate your monthly costs for the DB Instance using the [AWS Simple Monthly Calculator](#).

Review the Known Issues/Limitations to learn about potential compatibility issues with specific database versions.

DB Instance Identifier*: cms

Master Username*: root

Master Password*:
Confirm Password*:

* Required Cancel Previous **Next Step**

15. Click on Next.

16. It allow us to do any advanced configuration.

Step 1: Select Engine
Step 2: Specify DB Details
Step 3: Configure Advanced Settings

Configure Advanced Settings

Network & Security

VPC*: Default VPC (vpc-ba2b68d3)
Subnet Group: default
Publicly Accessible: Yes
Availability Zone: No Preference
VPC Security Group(s): Create new Security Group
default (VPC)
launch-wizard-1 (VPC)
launch-wizard-2 (VPC)

Database Options

Database Name:
Note: if no database name is specified then no initial MySQL database will be created on the DB instance.
Database Port: 3306
DB Parameter Group: default.mysql5.6
Option Group: default.mysql-5-6

DB Parameter Group: default.mysql5.6
 Option Group: default.mysql-5-6
 Copy Tags To Snapshots:
 Enable IAM DB Authentication: No Preference
 Enable Encryption: No

Backup
 Please note that automated backups are currently supported for InnoDB storage engine only. If you are using MyISAM, refer to detail here.
 Backup Retention Period: 7 days
 Backup Window: No Preference

Monitoring
 Enable Enhanced Monitoring: No

Maintenance
 Auto Minor Version Upgrade: Yes
 Maintenance Window: No Preference

* Required Cancel Previous **Launch DB Instance**

17. Click on **Launch DB Instance**.

Step 1: Select Engine
 Step 2: Specify DB Details
 Step 3: Configure Advanced Settings

Your DB Instance is being created.
 Note: Your instance may take a few minutes to launch.

Connecting to your DB Instance
 Once Amazon RDS finishes provisioning your DB instance, you can use a SQL client application or utility to connect to the instance.
 Learn about connecting to your DB instance

View Your DB Instances

18. Click to **View Your DB Instance**.

The screenshot shows the Amazon RDS Dashboard. On the left, there's a sidebar with options like Instances, Clusters, Reserved Instances, Snapshots, Parameter Groups, Option Groups, Subnet Groups, Events, Event Subscriptions, and Notifications. The main area has tabs for Launch DB Instance, Show Monitoring, and Instance Actions. A search bar at the top right says 'Search DB Instances...'. Below it, a table shows one instance: Engine: MySQL, DB Instance: cms, Status: creating, Current Activity: None, Class: db.t2.micro, VPC: vpc-ba2b68d3, Multi-AZ: No. A note says 'Endpoint: Not available yet'. Under the 'Monitoring' tab, there are sections for Alarms and Recent Events (which is empty) and Monitoring. The monitoring section shows CPU, Memory, and Storage metrics with 'No Data' for all. At the bottom, there are buttons for Instance Actions, Tags, and Logs.

Congratulation :) Successfully created MySQL Database on Amazon RDS.

Working with RDS MySQL

1. Jump to RDS dashboard.

The screenshot shows the AWS RDS MySQL dashboard. On the left, a sidebar lists various RDS resources: Instances, Clusters, Reserved Instances, Snapshots, Parameter Groups, Option Groups, Subnet Groups, Events, Event Subscriptions, and Notifications. The main content area features a section titled "Amazon Aurora" with a brief description and a "Launch Aurora (MySQL)" button. Below this is a "Resources" section showing usage statistics for DB Instances, Parameter Groups, Snapshots, Option Groups, Reserved DB Purchases, Subnet Groups, Recent Events, and Event Subscriptions. A "Create Instance" section includes a "Launch a DB Instance" button. To the right, there's an "Additional Information" section with links to Starting with RDS, Overview and Features, Documentation, Articles and Tutorials, Data import guide for MySQL, Data import guide for Oracle, Data import guide for SQL Server, Pricing, and Forums. A "What's New" section highlights "Amazon Aurora – Lambda Integration". The bottom of the page includes standard AWS navigation links like Feedback, English, Privacy Policy, and Terms of Use.

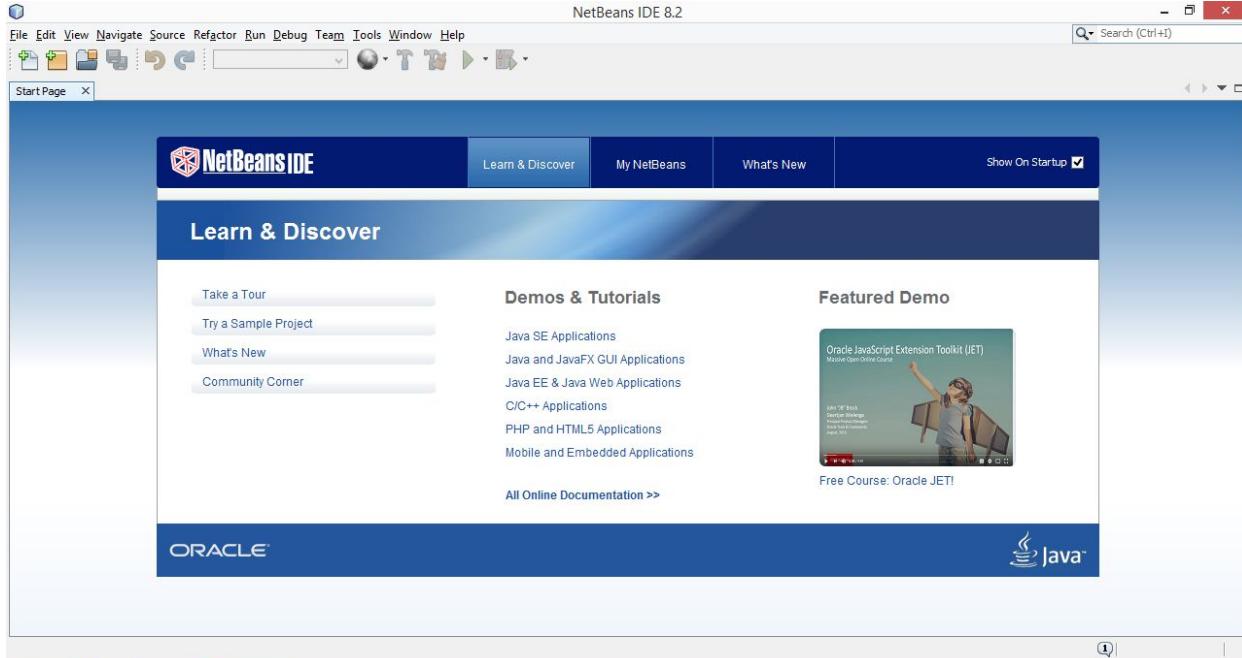
2. Click on DB Instances.

The screenshot shows the AWS RDS Instances dashboard. The sidebar is identical to the previous dashboard. The main area displays a table for "All Instances" with one entry: "MySQL cms available". The table includes columns for Engine, DB Instance, Status, CPU, Current Activity, Maintenance, Class, VPC, Multi-AZ, and Replication Role. Below the table, the "Endpoint" is listed as "cms.czjoadsbahy9.us-east-2.rds.amazonaws.com:3306 (authorized)". There are two tabs: "Alarms and Recent Events" and "Monitoring". The "Alarms and Recent Events" tab shows four recent events: "Finished DB Instance backup" (Aug 11 4:24 PM), "Backing up DB instance" (Aug 11 4:23 PM), "DB instance created" (Aug 11 4:22 PM), and "DB instance restarted" (Aug 11 4:21 PM). The "Monitoring" tab displays metrics for CPU, Memory, and Storage, along with corresponding line graphs for Read IOPS, Write IOPS, and Swap Usage. At the bottom, there are buttons for "Instance Actions", "Tags", and "Logs". The footer includes standard AWS links.

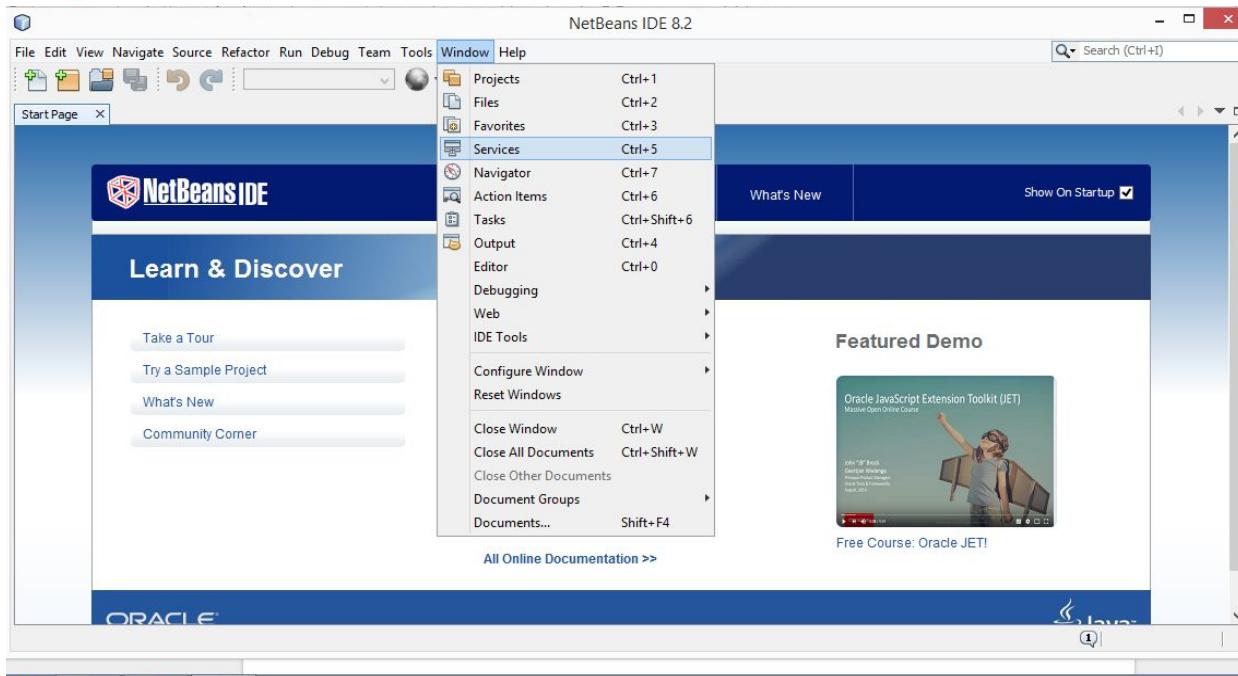
3. Endpoint of the DB Instances help us to access MySQL.

The screenshot shows the AWS RDS console with a search bar at the top. Below it is a table header with columns: Engine, DB Instance, Status, CPU, and Current Allocated Storage. A single row is selected, showing 'MySQL' as the engine, 'cms' as the instance name, 'available' as its status, and '1.17%' as its current allocated storage. At the bottom, there is a large blue button labeled 'Endpoint: cms.czjoadsbahy9.us-east-2.rds.amazonaws.com:3306 (authorized)'. There is also an information icon (i) next to the endpoint text.

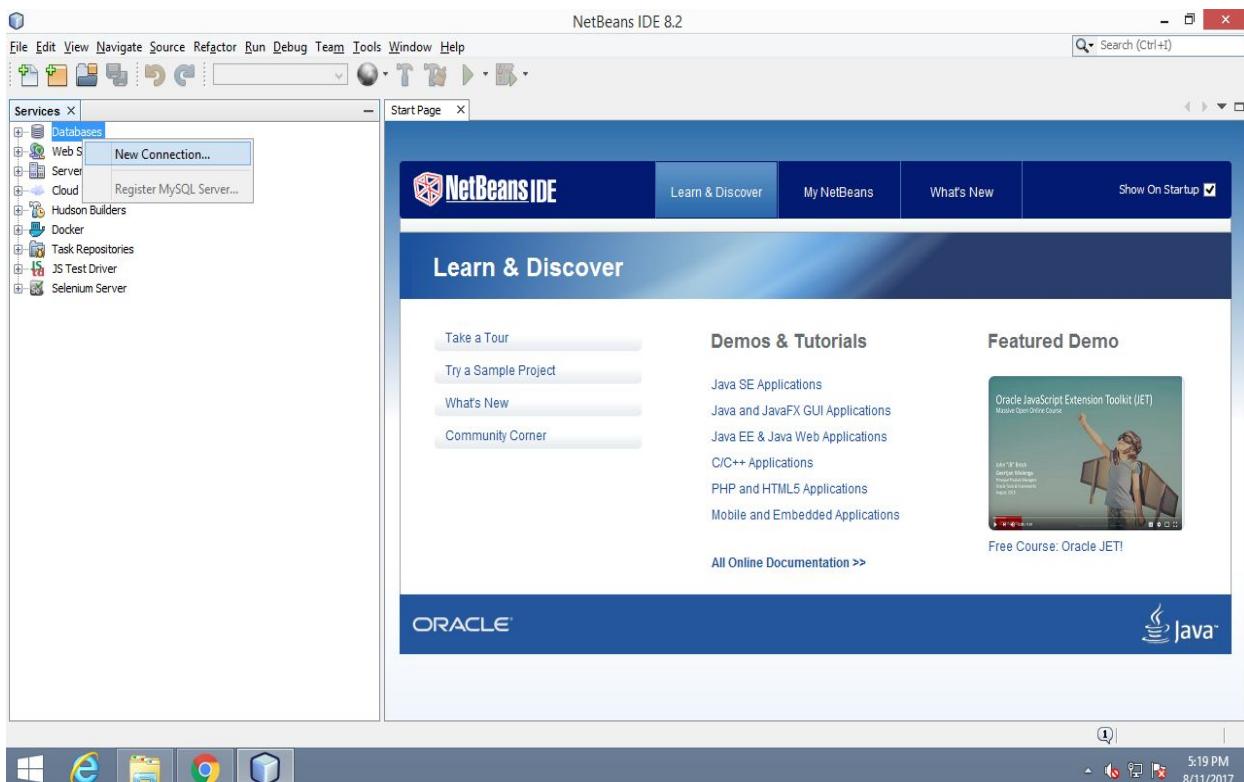
4. We can use this Endpoint to connect with MySQL Database in any programming language or tools like MySQL WorkBench, SqlWorkbenchJ, in Netbeans or Eclipse ..etc
5. We will try to connect with Netbeans. Open **Netbeans**.



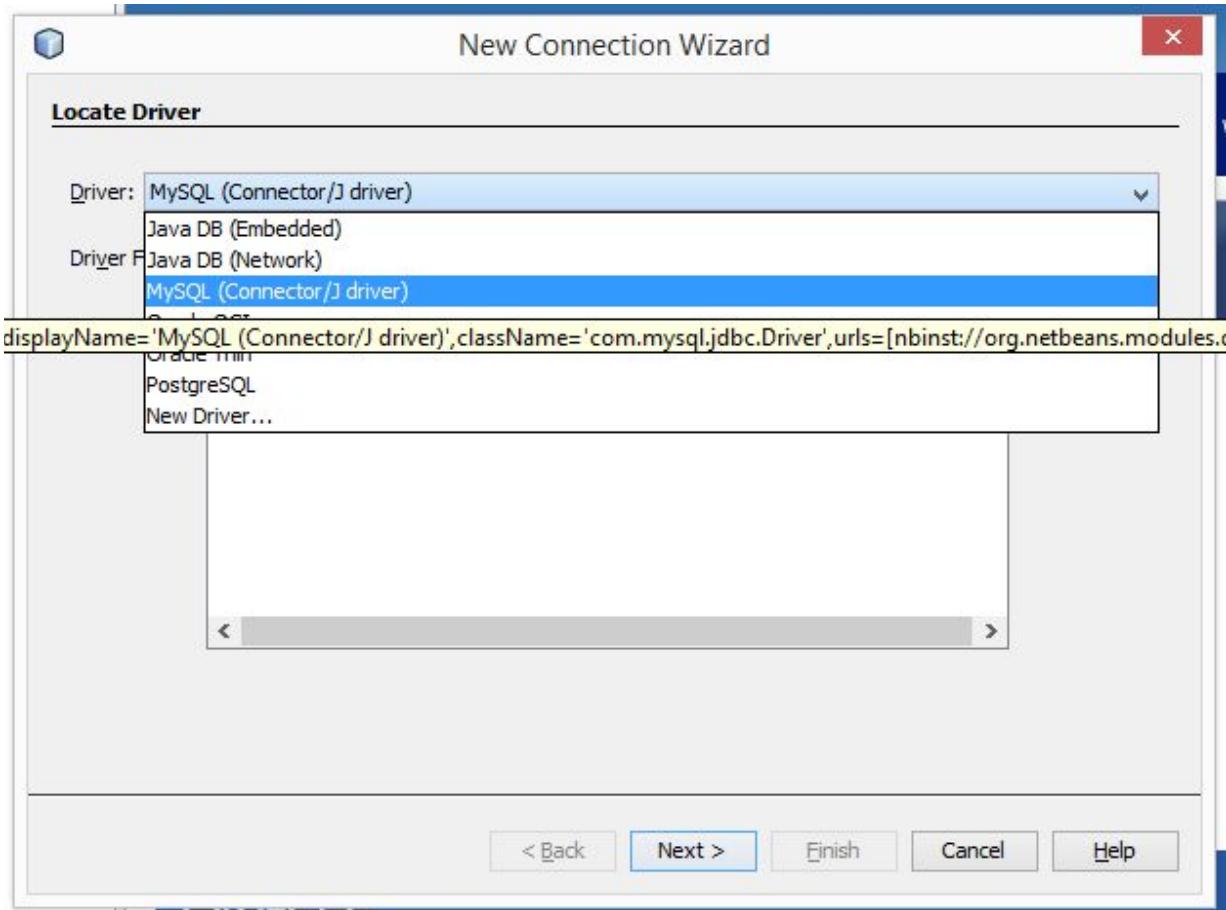
6. Go to Windows > Services



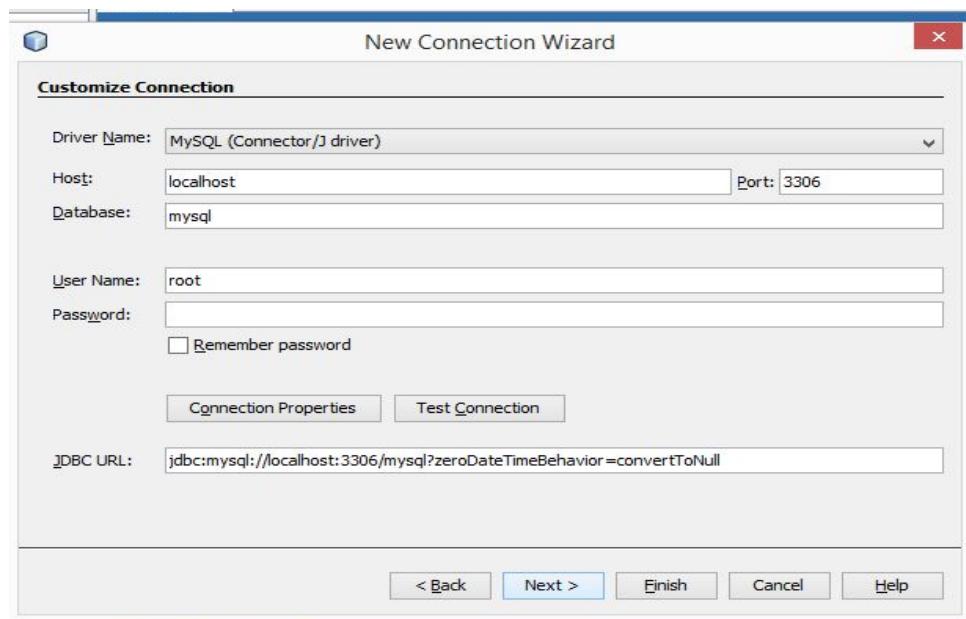
7. Right click on Databases > New Connection.



8. Select MySQL Driver from dropdown.



9. Click on **Next**.



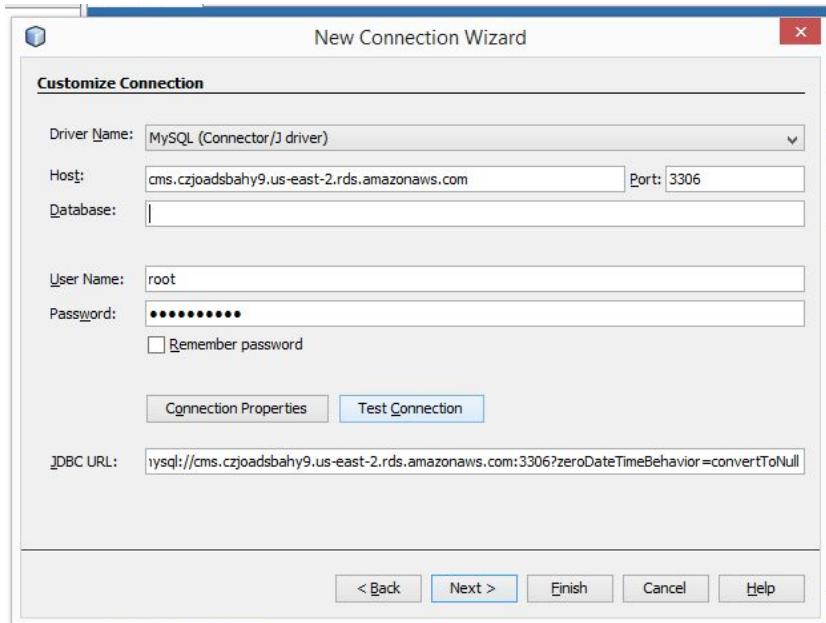
10. Provide connection details.

Host : Paste **Endpoint** of MySQL RDS.

Database: provide **database name** if you have already created otherwise **blank**.

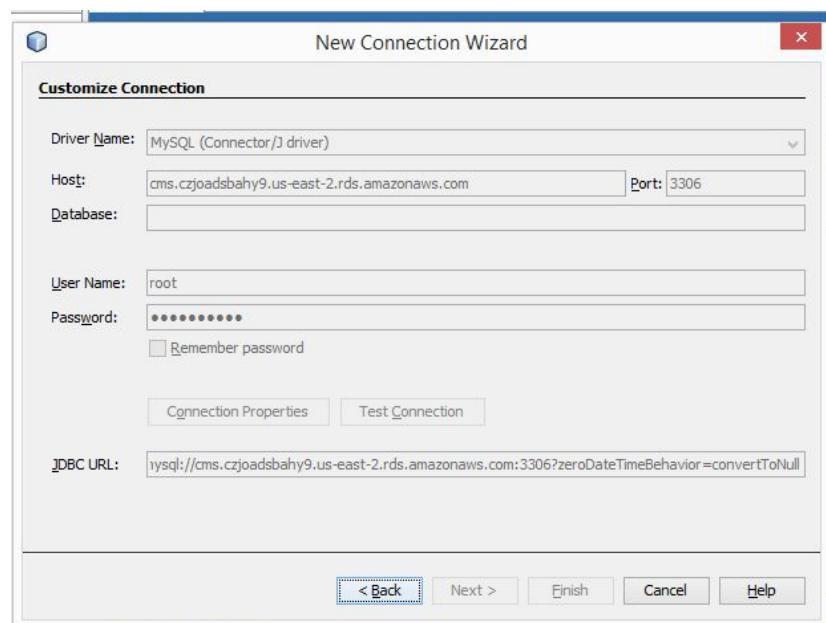
Username : Database **Username (root)**

Password : Database **Password (my password)**

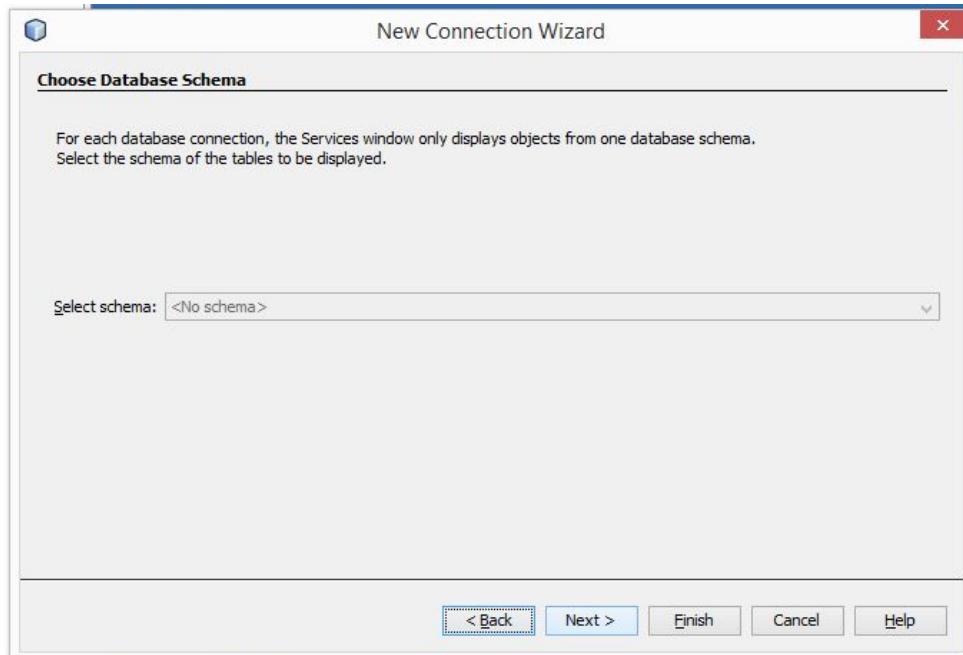


11. Click on Test Connection.

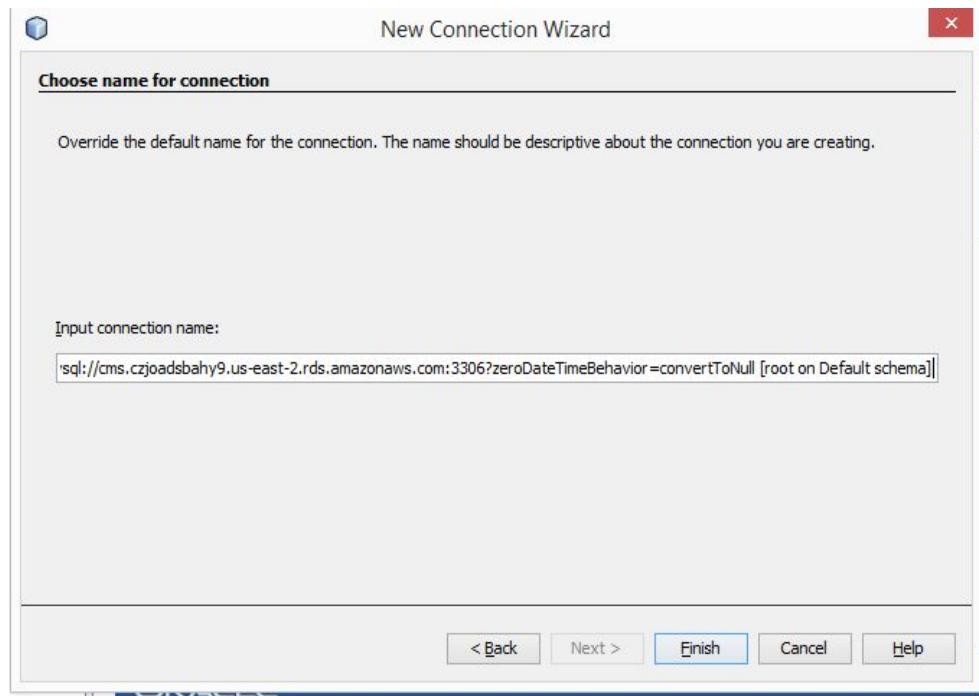
12. If Connection is successfully then click on Next.



13. Select Schema , We do not have any schema yet.

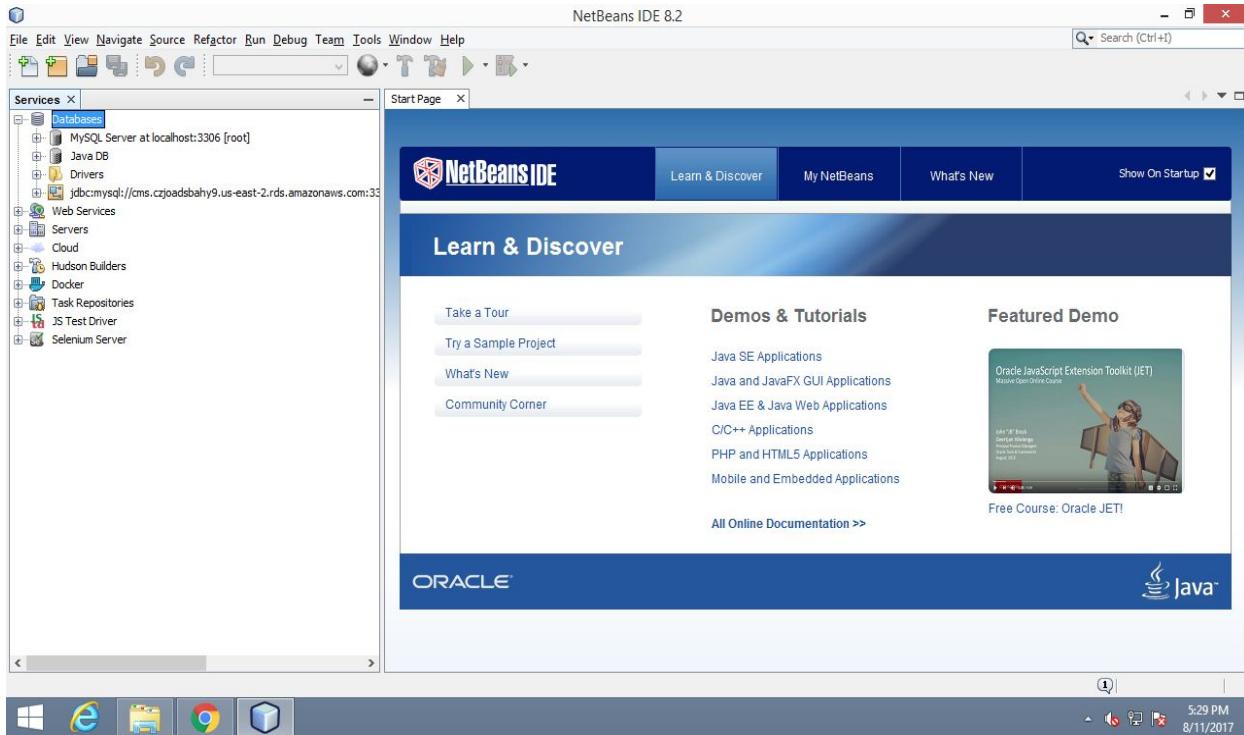


14. Click on Next.

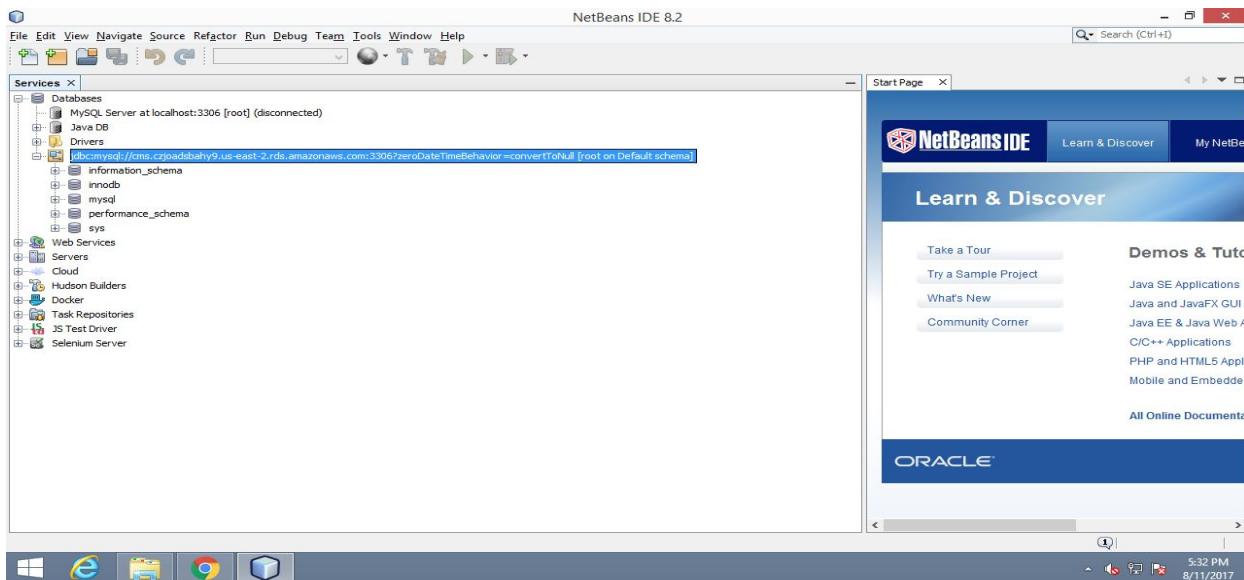


15. Click on Finish.

16. Now , Expand the Databases in netbeans.



17. Expand MySQL RDS Connection String.



18. Database name will appear in the list. Now it's easy for us to create database , tables and also query on tables of MySQL RDS.

Congratulation :) Successfully Connected Netbeans with Amazon RDS.

Resource Person Profile



Ankit Velani

Data Scientist

Motivated Data Scientist with the experience of 3 years in building data driven solutions; with a background of Software development, data profiling, and statistical modeling, willing to learn new technologies, commendable skills in statistical languages, machine learning. Ability to work in different work environments and provide data-driven solutions.

ankit.velani@aol.com

9428307478

Bangalore, India

[ankit.velani](#)

www.linkedin.com/in/ankitvelani

WORK EXPERIENCE

Data Scientist

Trendwise Software Solutions

04/2015 – Present

Bangalore

Achievements/Tasks

- Worked with clients both domestic and International to solve and provide data driven solutions.
- Worked on project Business Intelligence for a Learning Management Center; Analyzed the current complexities in the client's process and provided the data driven solutions.
- Used Text mining techniques to analyze the Call Center Data; found out the key problems in products of the client company.
- Performed Sentiment Analysis to find out a quality of a Customer call; used Audio Data of a call center.
- Used Business rules techniques to score inquiry from clients; will be used by sales team for business expansion.

Software Engineer

Trendwise Software Solutions

11/2014 – 03/2015

Bangalore

Achievements/Tasks

- Worked with Canadian client to build Multi Comment, A Multi Language Feed Back Web Application.
- Designed a dashboard to provide insight of key customer complaints; Company will use this useful insight to improve customer experience.
- Designed the REST API for the Android application.
- Designed Responsive Web Interface for an internal project.

EDUCATION

Master Of Computer Application

Siddaganga Institute of Technology

01/2011 – 07/2014

Tumkur, Karnataka

O Level

National Institute of Electronics and Information Technology (NIELIT)

06/2010 – 07/2014

New Delhi

SKILLS

R Python Machine Learning Data Mining
 Tableau NLP SQL Bluemix AWS Cloud
 Google Cloud Azure ML Studio PHP

PUBLICATION & TECHNICAL TALK

Conducted workshop in 3 Engineering colleges with a participation of 600 students. (06/2016 – Present)

Workshops were aimed to provide hands-on experience in Data Exploratory Analysis, Regression, Classification, Clustering and Text Mining using R.

National level paper presented on "Pragmatic Study of LEACH and T-LEACH Protocols of Wireless Sensor Network".

In this paper, the study of LEACH (Low-Energy Adaptive Clustering Hierarchy), a clustering-based protocol shows that utilization of randomized rotation of cluster-heads to evenly distribute the energy load among the sensors in the network.

National level paper presented on "Social media analytics: A survey of analysis conducted on Social Media".

In this paper, we present a pragmatic study of the different kinds of behavioral studies conducted on Social Networking Sites (such as Facebook, Twitter, LinkedIn etc.).

Project Mentor

ICT Incubation Center (2015-16) student project in collaboration with Siddaganga Institute of Technology, Tumkur, titled "Tumkur Mobile value added service".

CERTIFICATES

Cloud Computing (09/2015 – 09/2015)

Data Analytics using R (03/2016 – 03/2016)

Data Manipulation at Scale: Systems and Algorithms (10/2015 – 02/2016)