

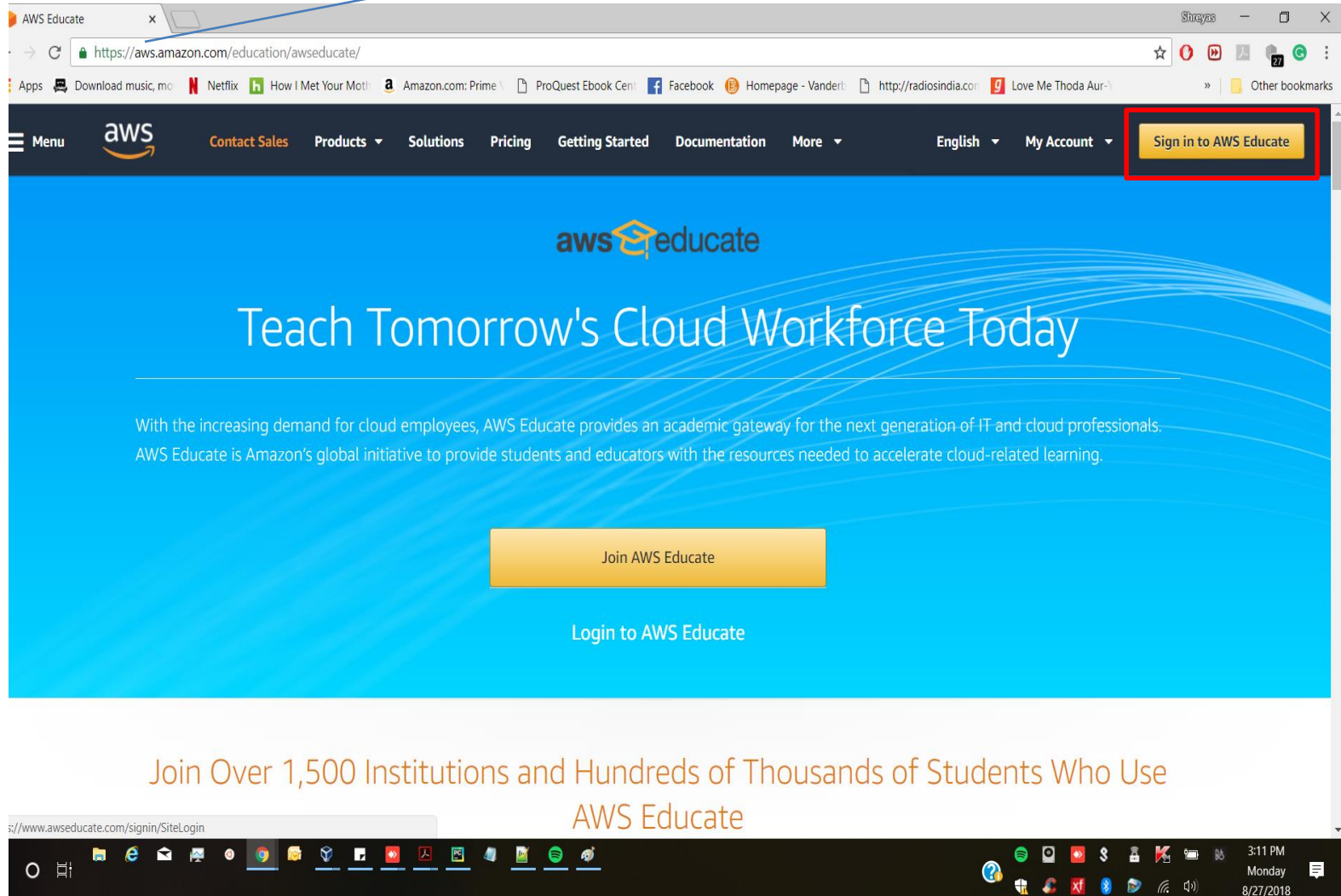
# Getting started with AWS Educate Classroom

Resilient Distributed System

Fall 2019

# AWS Educate Landing Page

<https://aws.amazon.com/education/awseducate/>

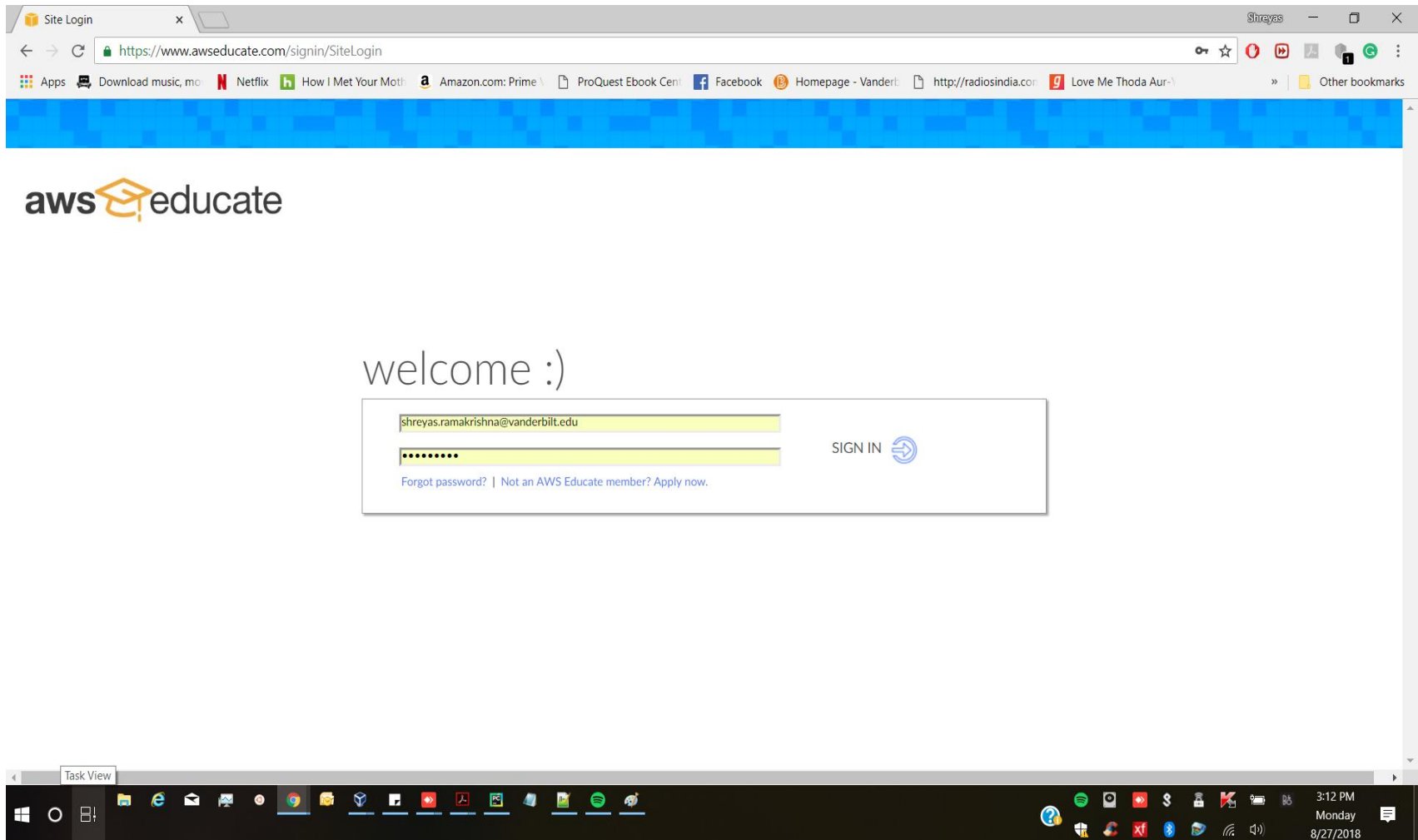


The screenshot shows the AWS Educate landing page in a web browser. The browser's address bar displays the URL <https://aws.amazon.com/education/awseducate/>. The page features a dark navigation bar with the AWS logo, a menu, and links for Contact Sales, Products, Solutions, Pricing, Getting Started, Documentation, and More. A red box highlights the 'Sign in to AWS Educate' button in the top right corner. The main content area has a blue background with the 'aws educate' logo and the headline 'Teach Tomorrow's Cloud Workforce Today'. Below the headline, a paragraph states: 'With the increasing demand for cloud employees, AWS Educate provides an academic gateway for the next generation of IT and cloud professionals. AWS Educate is Amazon's global initiative to provide students and educators with the resources needed to accelerate cloud-related learning.' A large yellow button labeled 'Join AWS Educate' is centered on the page. Below it, a link for 'Login to AWS Educate' is visible. At the bottom of the page, a text banner reads 'Join Over 1,500 Institutions and Hundreds of Thousands of Students Who Use AWS Educate'. The browser's taskbar at the bottom shows various application icons and the system clock indicating 3:11 PM on Monday, 8/27/2018.

Join Over 1,500 Institutions and Hundreds of Thousands of Students Who Use  
AWS Educate

# Sign into AWS Educate

- After you have clicked on “**Sign into AWS Educate**”. It will land you into the page shown below.
- Here use your login details and click on “**sign in**”



# My classroom

- After signing in into aws educate, you will land into the page shown below.
- Here you need to click onto “**My Classrooms**”

Home x Shreyas

https://www.awseducate.com/student/s/

Apps Download music, mo Netflix How I Met Your Moti Amazon.com: Prime ProQuest Ebook Cent Facebook Homepage - Vanderl http://radiosindia.com Love Me Thoda Aur Other bookmarks

awseducate My Classrooms Portfolio Career Pathways Badges Jobs AWS Account Logout

Shreyas Ramakrishna Consecutive Days: 1 Pathways Completed: 0 Badges Earned: 0 Preferred Language: English

New: Click to check out video updates from Educate @ re:Invent 2017

Cloud technology is everywhere, creating over 18 million cloud jobs worldwide (source: Wanted Analytics). AWS Educate introduces you to lucrative cloud-enabled careers through more than 25 learning pathways, each with content from industry professionals, learning activities and labs, opportunities to earn AWS Educate Badges and Certificates of Completion, and access to the AWS Educate Job Board. Coupled with courses at your school or through online providers, AWS Educate puts you on the pathway to your dream job in the clouds.

Begin your journey today!

What is Cloud Computing? - Amazon Web Services

Suggested Jobs

Développeur spécialisé AWS Cloud  
ExperTeam (groupe Neuronex)  
[more about this opportunity](#)

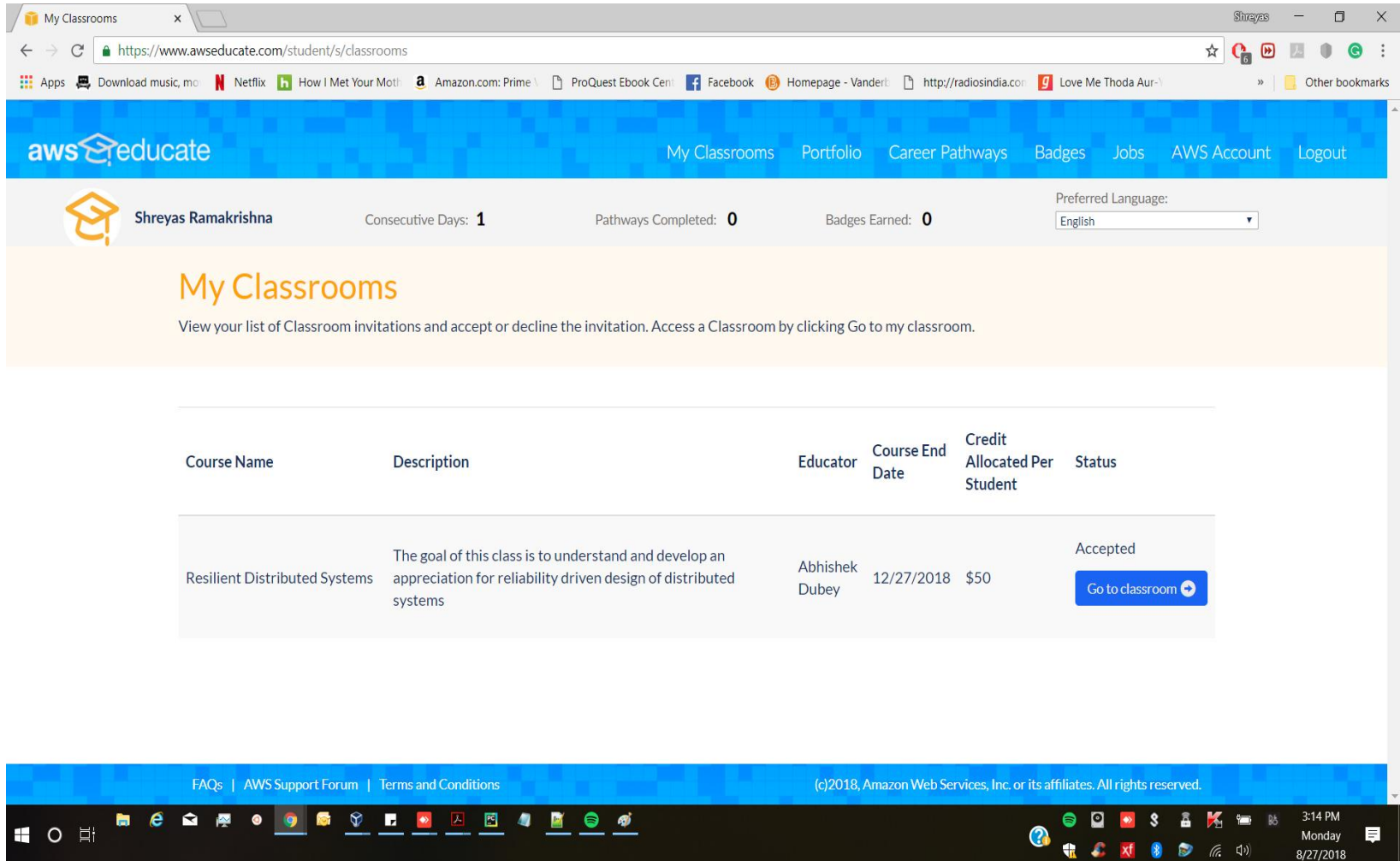
ServerLess and Microservice Developer  
COREXPRT  
[more about this opportunity](#)

Solution Analyst - Technology Consulting  
Deloitte Consulting  
[more about this opportunity](#)

3:13 PM  
Monday  
8/27/2018

# My classroom

- Once you click on “**My Classrooms**”, you will get into the page below.
- You must have got the request from the professor to join the classroom.
- You will be getting \$50 credit with this account.



The screenshot displays the AWS Educate 'My Classrooms' interface. At the top, the navigation bar includes links for My Classrooms, Portfolio, Career Pathways, Badges, Jobs, AWS Account, and Logout. The user's profile section shows the name Shreyas Ramakrishna and statistics: Consecutive Days: 1, Pathways Completed: 0, and Badges Earned: 0. A dropdown menu for Preferred Language is set to English.

## My Classrooms

View your list of Classroom invitations and accept or decline the invitation. Access a Classroom by clicking Go to my classroom.

Course Name	Description	Educator	Course End Date	Credit Allocated Per Student	Status
Resilient Distributed Systems	The goal of this class is to understand and develop an appreciation for reliability driven design of distributed systems	Abhishek Dubey	12/27/2018	\$50	Accepted

Go to classroom

FAQs | AWS Support Forum | Terms and Conditions

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3:14 PM Monday 8/27/2018

# Go to classroom

- Once you click on “**Go to Classrooms**”.
- You will be asked to continue. Just click on continue.
- This will open a new tab with Vocareum workbench.
- Now click on “**AWS Console**”.

The screenshot shows a web browser window with the Vocareum website. The browser tabs are 'My Classrooms' and 'Workbench'. The address bar shows the URL: <https://labs.vocareum.com/main/main.php?m=editor&nav=1&asnid=32605&stepid=32606>. The page has a dark blue header with the Vocareum logo and navigation links: 'My Classes', 'Manage', 'Help', and a user profile 'Shreyas'. The main content area is titled 'Welcome to AWS Educate Classroom Account' and includes a sub-header: 'Use your AWS Educate Classroom Account to access to a wide variety of AWS Services and start building! Click on the AWS Console button to sign in and get started.' Below this is a list of frequently asked questions:

- What regions can I use with a Classroom Account?
- Are Service Linked Roles supported?
- I can't start any resources. What happened?
- Can I create users within my Classroom Account for others to access?
- Can I create my own IAM policy within Starter Account or Classroom?
- How can I use IAM roles within AWS services?
- Are there any restrictions on AWS services in my Classroom Account?

On the right side, there is a sidebar titled 'Your Classroom Account Status' with the following information:

- Active** (User icon): full access ([shreyas.ramakrishna@vanderbilt.edu](mailto:shreyas.ramakrishna@vanderbilt.edu))
- \$49.94** (Dollar sign icon): remaining credits (estimated)
- 0:59** (Clock icon): session time

Below the status information are two buttons: 'Account Details' and 'AWS Console'. At the bottom of the sidebar is a video player titled 'Your Journey to a Cloud Career with AWS Educate' showing a cartoon illustration of a person's journey through various cloud-related tasks.

The Windows taskbar at the bottom shows the time as 3:17 PM on Monday, 8/27/2018, with various system icons and open applications.



# AWS Service Page

- Clicking on “**AWS Console**” will land you into the AWS services page.
- This is the page where you can actually begin using the AWS services.
- For the course we will use EC2 instance. Please click on it.

The screenshot displays the AWS Management Console interface. At the top, the navigation bar includes the AWS logo, 'Services', 'Resource Groups', and a user profile section. The main content area is divided into several sections:

- AWS services:** A search bar with the placeholder text 'Find a service by name or feature (for example, EC2, S3 or VM, storage)'. Below it, a 'Recently visited services' section lists EC2 (highlighted with a red box), IAM, AWS Organizations, Billing, and Support. An 'All services' link is also present.
- Build a solution:** A section titled 'Get started with simple wizards and automated workflows.' featuring six quick-start options: 'Launch a virtual machine' (With EC2, ~2-3 minutes), 'Build a web app' (With Elastic Beanstalk, ~6 minutes), 'Build using virtual servers' (With Lightsail, ~1-2 minutes), 'Connect an IoT device' (With AWS IoT, ~5 minutes), 'Start a development project' (With CodeStar, ~5 minutes), and 'Register a domain' (With Route 53, ~3 minutes). A 'See more' link is at the bottom.
- Helpful tips:** Includes 'Manage your costs' (Monitor your AWS costs, usage, and reservations using AWS Budgets. [Start now](#)) and 'Create an organization' (Use AWS Organizations for policy-based management of multiple AWS accounts. [Start now](#)).
- Explore AWS:** Features 'Machine Learning with Amazon SageMaker' (The fastest way to build, train, and deploy machine learning models. [Learn more.](#)) and 'Amazon Relational Database Service (RDS)' (RDS manages and scales your database for you. RDS supports Aurora, MySQL, PostgreSQL, MariaDB, Oracle, and SQL Server. [Learn more.](#)).
- Learn to build:** A section at the bottom with a 'See all' link.
- AWS Fargate Runs Containers for You:** A section at the bottom right.

The Windows taskbar at the bottom shows the system clock as 3:18 PM on Monday, 8/27/2018.

# EC2 Dashboard

- Selecting “EC2” will lead you to the EC2 dashboard.
- You can see information about running instances, IP address’s, etc.
- Once here, we can create our first instance

The screenshot displays the AWS Management Console's EC2 Dashboard for the US East (N. Virginia) region. The interface is divided into several sections:

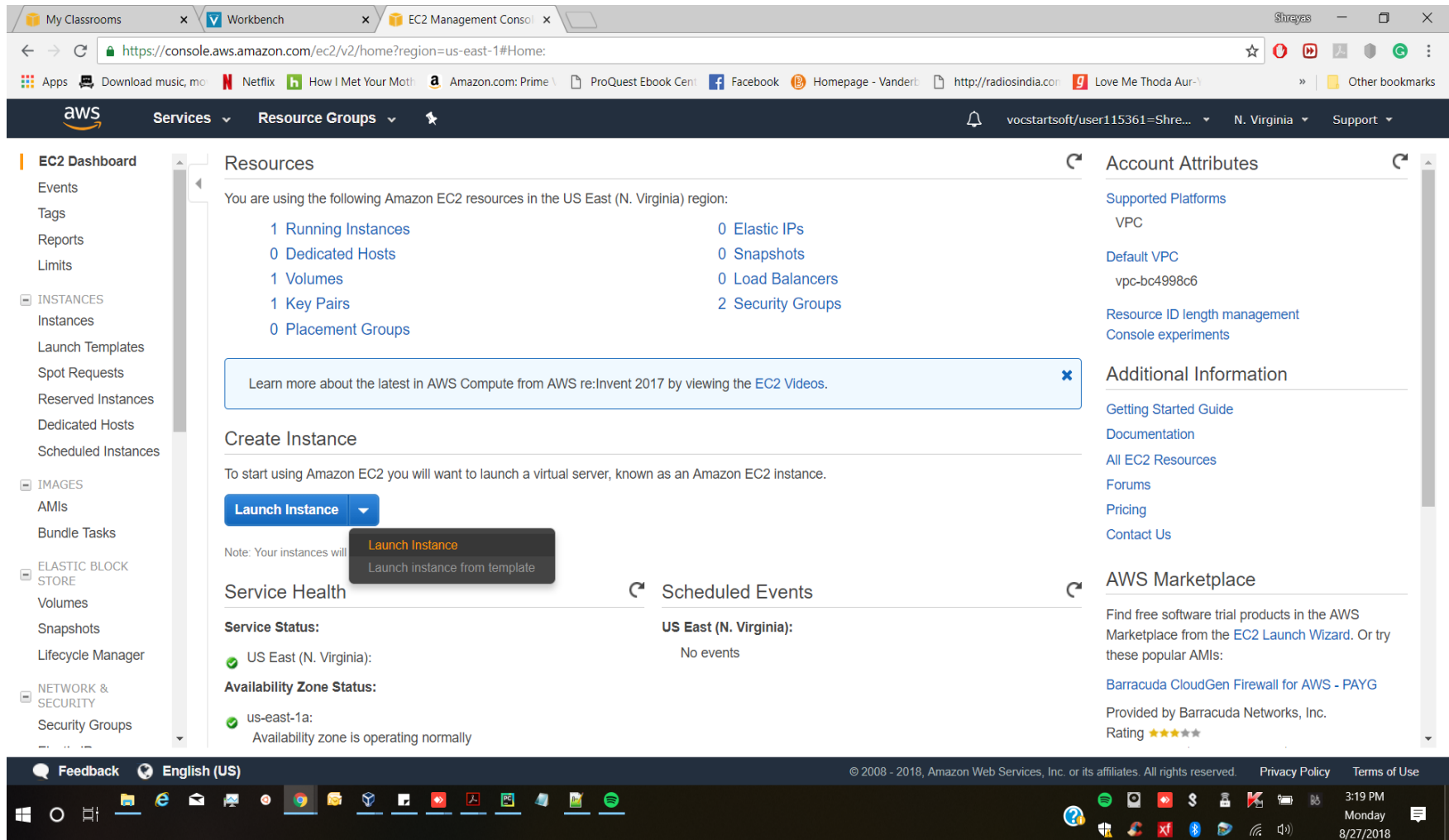
- Left Navigation Panel:** Contains links to EC2 Dashboard, Events, Tags, Reports, Limits, INSTANCES (Instances, Launch Templates, Spot Requests, Reserved Instances, Dedicated Hosts, Scheduled Instances), IMAGES (AMIs, Bundle Tasks), ELASTIC BLOCK STORE (Volumes, Snapshots, Lifecycle Manager), and NETWORK & SECURITY (Security Groups).
- Resources Section:** Displays a summary of EC2 resources in the US East (N. Virginia) region:
  - 1 Running Instances
  - 0 Elastic IPs
  - 0 Dedicated Hosts
  - 0 Snapshots
  - 1 Volumes
  - 0 Load Balancers
  - 1 Key Pairs
  - 2 Security Groups
  - 0 Placement GroupsA banner below this section promotes AWS re:Invent 2017 content.
- Create Instance Section:** Provides instructions on how to launch an Amazon EC2 instance and includes a prominent "Launch Instance" button. A note specifies that instances will launch in the US East (N. Virginia) region.
- Service Health Section:** Shows the status of the service:
  - Service Status:** US East (N. Virginia) is operational.
  - Availability Zone Status:** us-east-1a is operational.
- Scheduled Events Section:** Indicates that there are no events scheduled for the US East (N. Virginia) region.
- Account Attributes Section:** Lists account details such as Supported Platforms (VPC), Default VPC (vpc-bc4998c6), and Resource ID length management.
- Additional Information Section:** Provides links to the Getting Started Guide, Documentation, All EC2 Resources, Forums, Pricing, and Contact Us.
- AWS Marketplace Section:** Promotes free software trial products available in the AWS Marketplace, specifically mentioning Barracuda CloudGen Firewall for AWS - PAYG.

The bottom of the image shows the Windows taskbar with various application icons and the system clock indicating 3:18 PM on Monday, 8/27/2018.



# EC2 Dashboard

- Selecting “**EC2**” will lead you to the EC2 dashboard.
- Here click on “**Launch Instance**”. (I already have one instance running, so it shows 1 running instance, if you are creating your first, then it will be 0)



The screenshot displays the AWS Management Console's EC2 Dashboard. The left-hand navigation pane lists various services, with 'EC2 Dashboard' selected. The main content area is divided into several sections: 'Resources' showing a summary of EC2 resources in the US East (N. Virginia) region (1 Running Instance, 0 Elastic IPs, 0 Dedicated Hosts, 1 Volumes, 1 Key Pairs, 0 Placement Groups); 'Create Instance' with a 'Launch Instance' button and a dropdown menu; 'Service Health' indicating that the US East (N. Virginia) service is healthy; 'Scheduled Events' showing no events; 'Account Attributes' providing details about supported platforms and VPC; and 'AWS Marketplace' listing trial products. A bottom status bar contains feedback links, language settings, copyright information, and the current date and time (Monday, 8/27/2018, 3:19 PM).

My Classrooms x Workbench x EC2 Management Console x Shreyas

https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#Home:

Apps Download music, mo Netflix How I Met Your Moti Amazon.com: Prime ProQuest Ebook Cent Facebook Homepage - Vander: http://radiosindia.com Love Me Thoda Aur- Other bookmarks

aws Services Resource Groups vocstartsoft/user115361=Shre... N. Virginia Support

**EC2 Dashboard**

- Events
- Tags
- Reports
- Limits
- INSTANCES
  - Instances
  - Launch Templates
  - Spot Requests
  - Reserved Instances
  - Dedicated Hosts
  - Scheduled Instances
- IMAGES
  - AMIs
  - Bundle Tasks
- ELASTIC BLOCK STORE
  - Volumes
  - Snapshots
  - Lifecycle Manager
- NETWORK & SECURITY
  - Security Groups

**Resources**

You are using the following Amazon EC2 resources in the US East (N. Virginia) region:

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

Learn more about the latest in AWS Compute from AWS re:Invent 2017 by viewing the [EC2 Videos](#).

**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 Instance](#)
- [Launch instance from template](#)

**Service Health**

**Service Status:**

- US East (N. Virginia):

**Availability Zone Status:**

- us-east-1a: Availability zone is operating normally

**Scheduled Events**

**US East (N. Virginia):**

- No events

**Account Attributes**

**Supported Platforms**

- VPC

**Default VPC**

- vpc-bc4998c6

**Resource ID length management**

**Console experiments**

**Additional Information**

- [Getting Started Guide](#)
- [Documentation](#)
- [All EC2 Resources](#)
- [Forums](#)
- [Pricing](#)
- [Contact Us](#)

**AWS Marketplace**

Find free software trial products in the AWS Marketplace from the [EC2 Launch Wizard](#). Or try these popular AMIs:

- [Barracuda CloudGen Firewall for AWS - PAYG](#)

Provided by Barracuda Networks, Inc.

Rating ★★★★★

Feedback English (US)

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3:19 PM Monday 8/27/2018

# Choose your instance type

- First step is to choose the type of instance. This varies with your application.
- For the course you can select the “**free tier Ubuntu server 18.04**” instance.

The screenshot shows the AWS Management Console interface for the 'Launch Instance Wizard'. The browser address bar shows the URL: `console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:`. The console header includes the AWS logo, 'Services', 'Resource Groups', and user information: 'vocstartsoft/user115361=Shre...', 'N. Virginia', and 'Support'.

The wizard progress bar shows seven steps: 1. Choose AMI (active), 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, and 7. Review.

**Step 1: Choose an Amazon Machine Image (AMI)**

On the right side of the step header, there are links for 'Cancel and Exit' and 'Hide'.

Two AMIs are listed:

- SUSE Linux Enterprise Server 15 SP1 (HVM), SSD Volume Type** - ami-0b5372ab3202bd20b (64-bit x86) / ami-0072af0151f6e67b9 (64-bit Arm). It is marked as 'Free tier eligible'. The description mentions 'SUSE Linux Enterprise Server 15 Service Pack 1 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.' The root device type is 'ebs', virtualization type is 'hvm', and ENA is enabled. Selection options are '64-bit (x86)' (selected) and '64-bit (Arm)'.
- Ubuntu Server 18.04 LTS (HVM), SSD Volume Type** - ami-07d0cf3af28718ef8 (64-bit x86) / ami-0c46f9f09e3a8c2b5 (64-bit Arm). It is also marked as 'Free tier eligible'. The description mentions 'Ubuntu Server 18.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services)'. The root device type is 'ebs', virtualization type is 'hvm', and ENA is enabled. Selection options are '64-bit (x86)' (selected) and '64-bit (Arm)'.

A promotional banner for Amazon RDS is shown at the bottom, titled 'Are you launching a database instance? Try Amazon RDS.' It describes Amazon RDS as a managed database service and includes a 'Launch a database using RDS' button.

# Choose your instance type

- This shows all the available “**Ubuntu**” instance type.
- Here just select the default “**t2.micro**” instance. It is under free tier.
- Click on “**Next: Configure Instance Details**”.

## Step 2: Choose an Instance Type

Filter by: All instance types ▾ Current generation ▾ [Show/Hide Columns](#)

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

	Family ▾	Type ▾	vCPUs ⓘ ▾	Memory (GiB) ▾	Instance Storage (GB) ⓘ ▾	EBS-Optimized Available ⓘ ▾	Network Performance ⓘ ▾	IPv6 Support ⓘ ▾
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes

[Cancel](#)

[Previous](#)

[Review and Launch](#)

[Next: Configure Instance Details](#)

# Configure Instance Details

- Just leave this as it is.
- Click on “**Next: Add storage**”

Select the number of EC2 instances you want.

## 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	<input type="text" value="1"/>	<a href="#">Launch into Auto Scaling Group</a>
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	<input type="text" value="vpc-bc4998c6 (default)"/>	<a href="#">Create new VPC</a>
Subnet	<input type="text" value="No preference (default subnet in any Availability Zone)"/>	<a href="#">Create new subnet</a>
Auto-assign Public IP	<input type="text" value="Use subnet setting (Enable)"/>	
Placement group	<input type="checkbox"/> Add instance to placement group.	
IAM role	<input type="text" value="None"/>	<a href="#">Create new IAM role</a>
Shutdown behavior	<input type="text" value="Stop"/>	
Enable termination protection	<input type="checkbox"/> Protect against accidental termination	
Monitoring	<input type="checkbox"/> Enable CloudWatch detailed monitoring <a href="#">Additional charges apply.</a>	
Tenancy	<input type="text" value="Shared - Run a shared hardware instance"/>	

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

# Add Storage

- Just leave this as it is. We can use the basic instance for our assignments
- Click on “**Next: Add Tags**”

## 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/sda1	snap-044fd4b3187843283	<input type="text" value="8"/>	General Purpose SSD (GP2) ▼	100 / 3000	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.

Cancel

Previous

Review and Launch

Next: Add Tags

# Add Tags

- Just leave this as it is.
- Click on “**Next: Configure Security Group**”

## 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.

<b>Key</b> (127 characters maximum)	<b>Value</b> (255 characters maximum)	<b>Instances</b> ⓘ	<b>Volumes</b> ⓘ
-------------------------------------	---------------------------------------	--------------------	------------------

*This resource currently has no tags*

Choose the Add tag button or [click to add a Name tag](#).

Make sure your [IAM policy](#) includes permissions to create tags.

<b>Add Tag</b>	(Up to 50 tags maximum)
----------------	-------------------------

[Cancel](#)

[Previous](#)

[Review and Launch](#)

[Next: Configure Security Group](#)



# Configure Security Group

- Here you can add “**ALL TCP**” from your IP and any other address to be accessing the Instance. This will open up all the TCP ports.
- SSH TCP Port 22 for ssh access.
- For now you add these two to your security group.
- You can make changes later depending upon your application.
- Click on “**Next: Review and Launch**”

[←](#)
[→](#)
[↺](#)
[console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:](#)

[☆](#)
[🔴](#)
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[ØMQ - The Guide -...](#)
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[Services](#)
[Resource Groups](#)

[🔔](#)
[vocstartsoft/user115361=Shre...](#)
[N. Virginia](#)
[Support](#)

[1. Choose AMI](#)
[2. Choose Instance Type](#)
[3. Configure Instance](#)
[4. Add Storage](#)
[5. Add Tags](#)
[6. Configure Security Group](#)
[7. Review](#)

## Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web 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 <small>i</small>	Protocol <small>i</small>	Port Range <small>i</small>	Source <small>i</small>	Description <small>i</small>
SSH ▾	TCP	22	Custom ▾ 0.0.0.0/0	e.g. SSH for Admin Desktop ✕
All TCP ▾	TCP	0 - 65535	Anywhere ▾ 0.0.0.0, ::0	e.g. SSH for Admin Desktop ✕

[Add Rule](#)

**Warning**

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

# Review Instance Launch

- So after you have finalized your instance details, you can launch it
- After you click on “Review and Launch”, you will land into the page shown below.
- Now just “**Launch**” your instance.

## 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.

 **Improve your instances' security. Your security group, launch-wizard-2, is open to the world.**

Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only.

You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

### ▼ AMI Details

[Edit AMI](#)

**Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-04169656fea786776**

Free tier  
eligible

Ubuntu Server 16.04 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

[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

launch-wizard-2


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

# Creating a key pair

- Before you can launch your Instance, you need to create a key pair.
- Just name a key pair, I have named mine “RDS2018”
- Now **download your key pair** and save it somewhere. You will need it at a later time for login.
- You will use this key to login into any instance you create in the future.

## Step 7: Review Instance Launch

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

 **Improve your instances' security.** Your se  
Your instances may be accessible from any IP addre  
You can also open additional ports in your security gr

### ▼ AMI Details



**Ubuntu Server 16.04 LTS (HVM), SSD Volu**

Free tier  
eligible

Ubuntu Server 16.04 LTS (HVM),EBS General Purp  
Root Device Type: ebs Virtualization type: hvm

### ▼ Instance Type

Instance Type	ECUs	vCPUs
t2.micro	Variable	1

### ▼ Security Groups

### 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**

RDS2018

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.

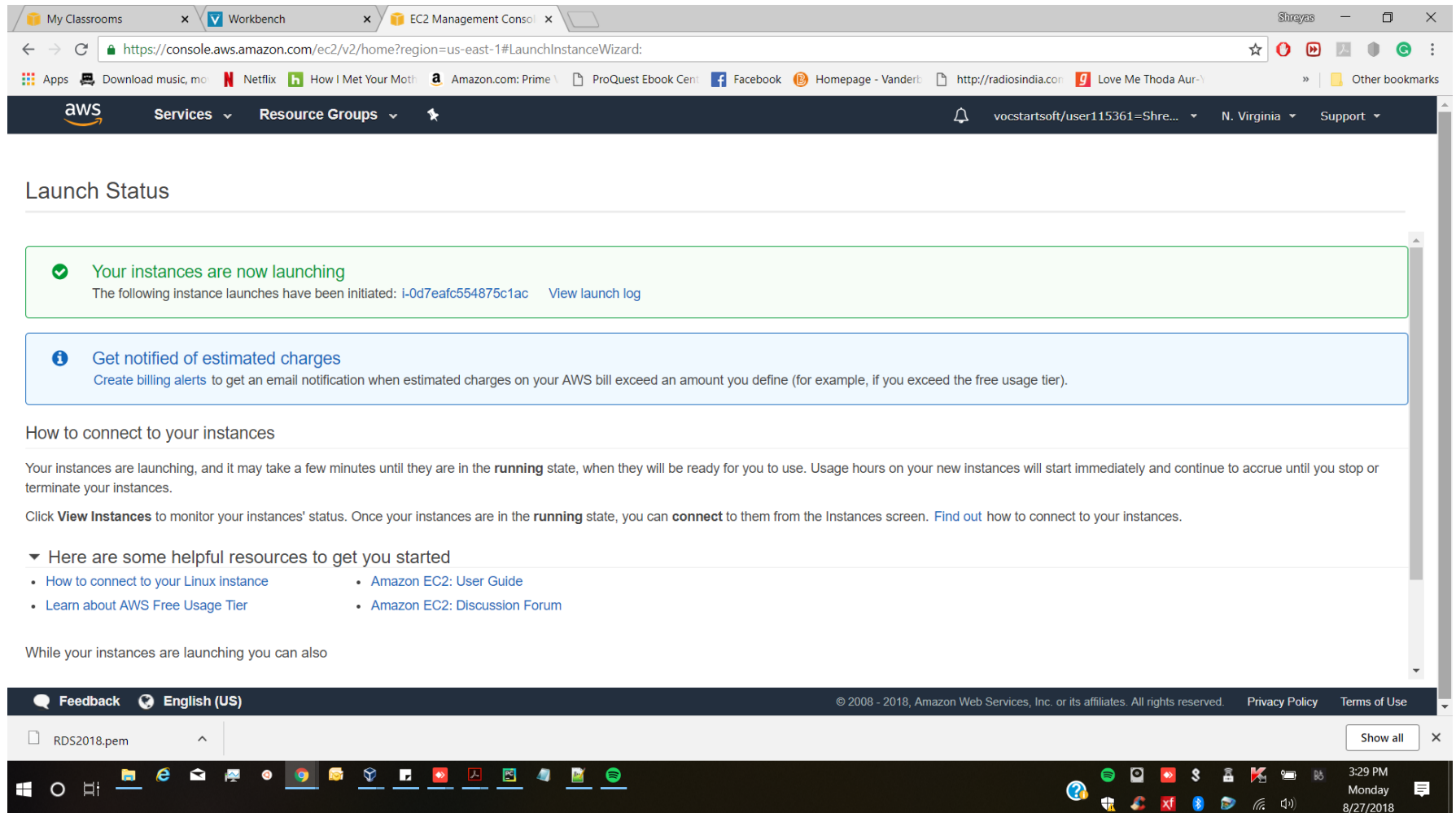
Cancel

Launch Instances

RDS2018.pem

# Launch Instance

- After you have created a key pair and saved it, launch your instance.
- On the bottom right you see “**View Instances**”, select it.
- This will take you back to EC2 dashboard.



The screenshot shows the AWS Management Console interface. At the top, there are tabs for 'My Classrooms', 'Workbench', and 'EC2 Management Console'. The browser address bar shows the URL: <https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard>. The console header includes the AWS logo, 'Services', 'Resource Groups', and user information for 'vocstartsoft/user115361=Shre...'. The main content area is titled 'Launch Status' and features a green success message: 'Your instances are now launching'. Below this, it states 'The following instance launches have been initiated: i-0d7eafc554875c1ac' with a link to 'View launch log'. A blue informational box suggests getting notified of estimated charges. The 'How to connect to your instances' section explains the 'running' state and provides a link to 'View Instances'. A 'Helpful resources' section lists links for connecting to Linux instances, AWS Free Usage Tier, and Amazon EC2 guides/forums. The footer contains feedback, language settings, and copyright information.

My Classrooms x Workbench x EC2 Management Console x

Shreyas

← → ↻ <https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard> ☆

Apps Download music, mo Netflix h How I Met Your Moth Amazon.com: Prime ProQuest Ebook Cent Facebook Homepage - Vanderb http://radiosindia.com Love Me Thoda Aur- Other bookmarks

aws Services Resource Groups

vocstartsoft/user115361=Shre... N. Virginia Support

## Launch Status

✓ Your instances are now launching

The following instance launches have been initiated: [i-0d7eafc554875c1ac](#) [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](#)
- [Amazon EC2: User Guide](#)
- [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: Discussion Forum](#)

While your instances are launching you can also

Feedback English (US)

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RDS2018.pem

Show all x

3:29 PM Monday 8/27/2018

# EC2 Dashboard

- You can see your instances on the dashboard.
- Once you have launched your instance, it may take some time for initializing before you can use it.
- **Public DNS** is important, as you need it along with your key pair to login into your instance.

The screenshot displays the AWS Management Console's EC2 Dashboard. At the top, there are buttons for 'Launch Instance', 'Connect', and 'Actions'. Below these is a search bar and a table of instances. The table has columns for Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, Public DNS (IPv4), IPv4 Public IP, and IPv6 IP. Two instances are listed: one in a 'shutting-down' state and another in a 'running' state. Below the table, the detailed view for the instance 'i-01236bad70e313700' is shown. It includes tabs for Description, Status Checks, Monitoring, and Tags. The Description tab is active, showing the Instance ID, Instance state, Instance type, Public DNS (IPv4), IPv4 Public IP, and IPv6 IPs. The Public DNS (IPv4) is highlighted with a red box.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IP
	i-01236bad70e3137...	t2.micro	us-east-1b	shutting-do...		None	ec2-54-167-241-31.co...	54.167.241.31	-
	i-0d7eafc554875c1ac	t2.micro	us-east-1b	running	Initializing	None	ec2-34-203-188-79.co...	34.203.188.79	-

Instance: **i-01236bad70e313700**    Public DNS: **ec2-54-167-241-31.compute-1.amazonaws.com**

Description	
Instance ID	i-01236bad70e313700
Instance state	shutting-down
Instance type	t2.micro
Public DNS (IPv4)	ec2-54-167-241-31.compute-1.amazonaws.com
IPv4 Public IP	54.167.241.31
IPv6 IPs	-

# Stopping EC2 Instance

- Always remember to stop your aws instance after work.
- To start or stop EC2 instance go to: Actions → Instance State → Stop

The screenshot shows the AWS Management Console for an EC2 instance. The 'Actions' menu is open, showing options like 'Connect', 'Create Template From Instance', 'Launch More Like This', 'Instance State', 'Instance Settings', 'Image', 'Networking', and 'CloudWatch Monitoring'. The 'Instance State' sub-menu is open, showing 'Start', 'Stop', 'Stop - Hibernate', 'Reboot', and 'Terminate'. The instance details for 'i-03b7f091814e7a83b' are visible below.

Instance: **i-03b7f091814e7a83b** Public DNS: **ec2-54-148-174-215.us-west-2.compute.amazonaws.com**

Description		Status Checks	Monitoring	Tags
Instance ID	i-03b7f091814e7a83b	running	Public DNS (IPv4)	ec2-54-148-174-215.us-west-2.compute.amazonaws.com
Instance state	running		IPv4 Public IP	54.148.174.215
Instance type	t2.micro		IPv6 IPs	-
Elastic IPs			Private DNS	ip-172-31-18-182.us-west-2.compute.internal
Availability zone	us-west-2b		Private IPs	172.31.18.182
Security groups	launch-wizard-1, view inbound rules, view outbound rules		Secondary private IPs	-
Scheduled events	No scheduled events		VPC ID	vpc-02fd867b
AMI ID	ubuntu/images/hvm-ssd/ubuntu-bionic-18.04-amd64-server-20190722.1 (ami-06f2779464715dc5)		Subnet ID	subnet-59f65b20
Platform	-		Network Interfaces	eth0
IAM role	-		Source/dest. check	True
Key pair name	aws-key		T2/T3 Unlimited	Disabled
Owner	572027264408		EBS-optimized	False
Launch time	August 27, 2019 at 10:10:34 AM UTC-5 (less than one hour)		Root device type	ebs
Termination protection	False		Root device	/dev/sda1
Lifecycle	normal		Block devices	/dev/sda1
Monitoring	basic		Elastic Graphics ID	-
Alarm status	None		Elastic Inference accelerator ID	-
Kernel ID	-		Capacity Reservation	-
RAM disk ID	-		Capacity Reservation Settings	Open
Placement group	-			
Partition number	-			
Virtualization	hvm			
Reservation	r-0384be858ac3e63cf			



# SSH for connecting to EC2 instance (Ubuntu)

Resilient Distributed System

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# SSH to EC2 instance

- Open a terminal on your Ubuntu Desktop/VM.
- Type: `ssh -i aws-key.pem ubuntu@ec2-18-236-163-10.us-west-2.compute.amazonaws.com`
- This will get you access to the EC2 instance.

The screenshot shows the AWS Management Console interface for EC2 instances. At the top, there are buttons for 'Launch Instance', 'Connect', and 'Actions'. Below these is a search bar and a table of instances. The table has columns for Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, Public DNS (IPv4), IPv4 Public IP, and IPv6 IP. Two instances are listed: one with ID 'i-01236bad70e3137...' in a 'shutting-down' state, and another with ID 'i-0d7eafc554875c1ac' in a 'running' state. Below the table, the details for instance 'i-01236bad70e313700' are shown, including its Public DNS (IPv4) address: 'ec2-54-167-241-31.compute-1.amazonaws.com'. A red box in the command list above highlights the public DNS address 'ec2-18-236-163-10.us-west-2.compute.amazonaws.com', and a blue arrow points from this box to the 'Public DNS (IPv4)' field in the instance details.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IP
	i-01236bad70e3137...	t2.micro	us-east-1b	shutting-do...		None	ec2-54-167-241-31.co...	54.167.241.31	-
	i-0d7eafc554875c1ac	t2.micro	us-east-1b	running	Initializing	None	ec2-34-203-188-79.co...	34.203.188.79	-

Instance: i-01236bad70e313700 Public DNS: ec2-54-167-241-31.compute-1.amazonaws.com

Description		Status Checks	Monitoring	Tags
Instance ID	i-01236bad70e313700			
Instance state	shutting-down			
Instance type	t2.micro			

Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs
ec2-54-167-241-31.compute-1.amazonaws.com	54.167.241.31	-

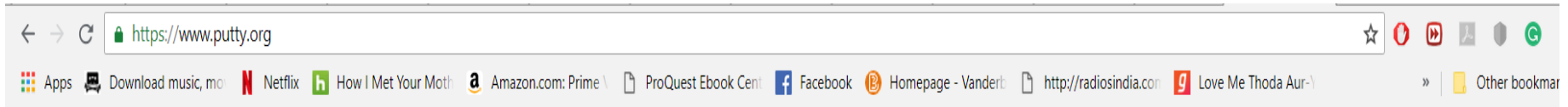
# PUTTY for connecting to EC2 instance (Windows)

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# Download PUTTY

- Putty is used to connect to your EC2 instance.
- Download it from <https://www.putty.org/>



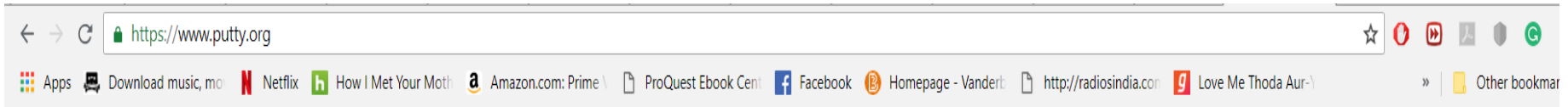
## Download PuTTY

PuTTY is an SSH and telnet client, developed originally by Simon Tatham for the Windows platform. PuTTY is open source software that is available with source code and is developed and supported by a group of volunteers.

You can download PuTTY [here](https://www.putty.org/).

# Download PuTTY

- PuTTY is used to connect to your EC2 instance.
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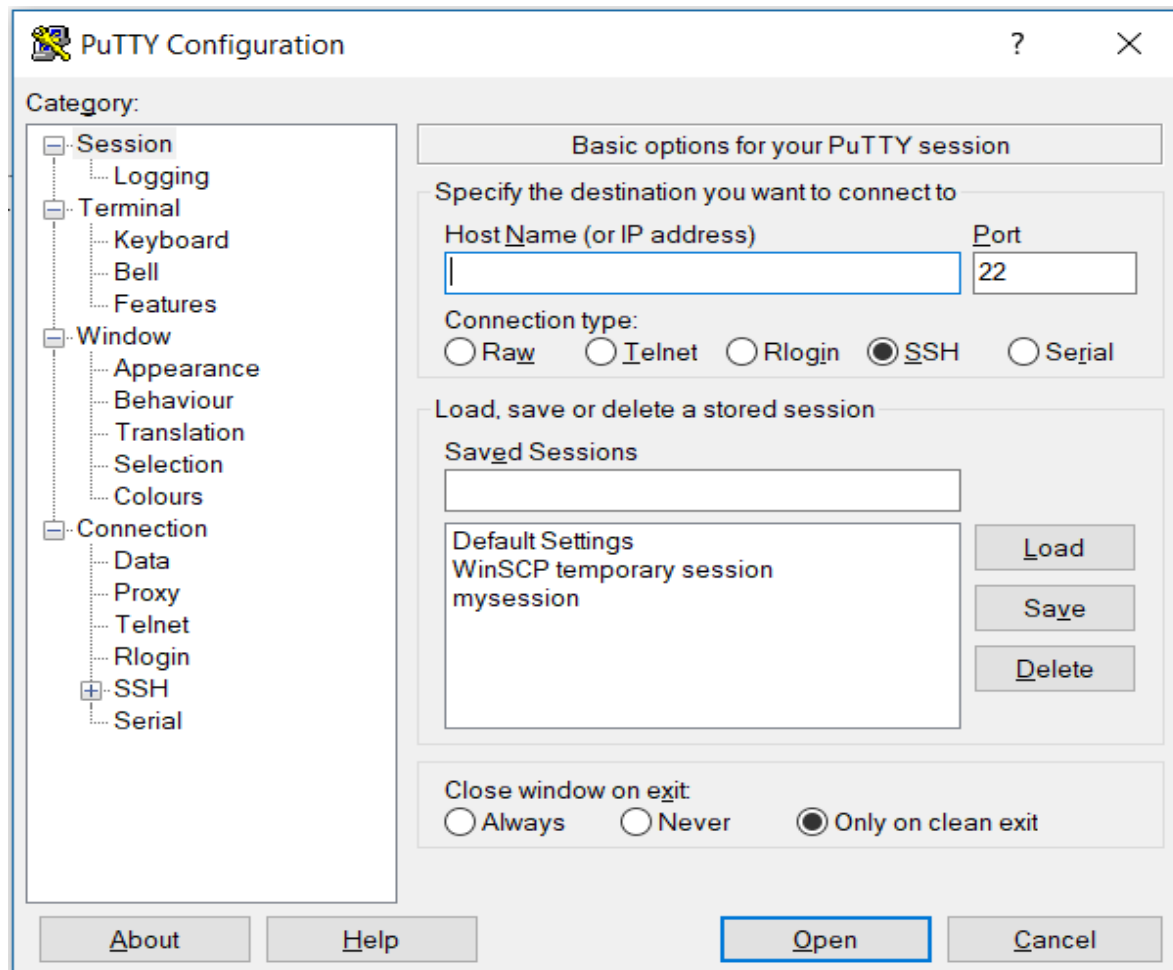
## Download PuTTY

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You can download PuTTY [here](https://www.putty.org/).

# PuTTY

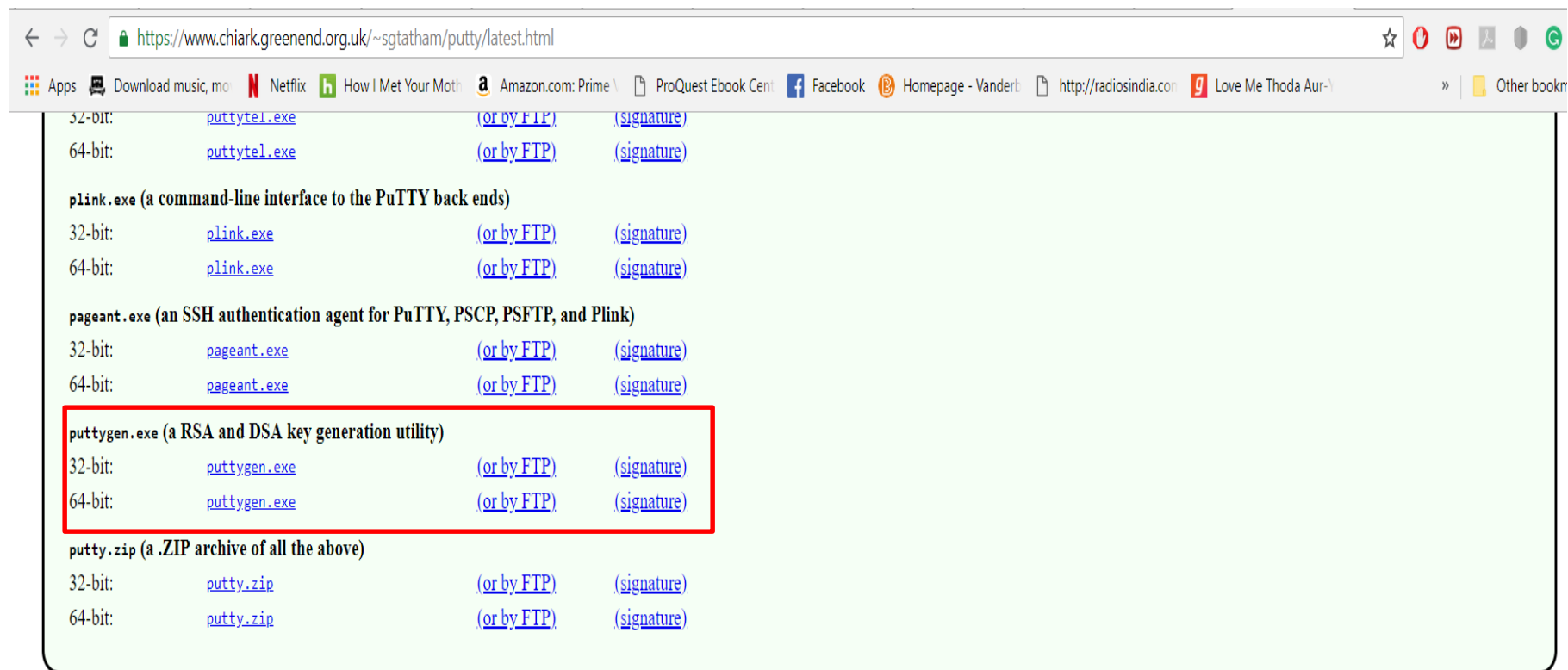
- Once you have downloaded PuTTY successfully, it looks like this.





# Download Puttygen for private key

- The key which was generated by aws (RDS2018.pem) will not be recognized by putty.
- You need to convert this into a private key for logging into the instance.
- For converting the default public key to a private key, you need to use a tool called **puttygen**.
- Download from <https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>

A screenshot of a web browser displaying the Putty download page. The browser's address bar shows the URL: https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html. The page content lists various Putty-related executables and archives, each with links for downloading, via FTP, and for a digital signature. The 'puttygen.exe' section is highlighted with a red rectangular box. The browser's taskbar at the bottom shows several open applications, including 'Apps', 'Download music, mo', 'Netflix', 'How I Met Your Moth', 'Amazon.com: Prime', 'ProQuest Ebook Cent', 'Facebook', 'Homepage - Vanderb', 'http://radiosindia.com', 'Love Me Thoda Aur', and 'Other bookr'.

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](#))

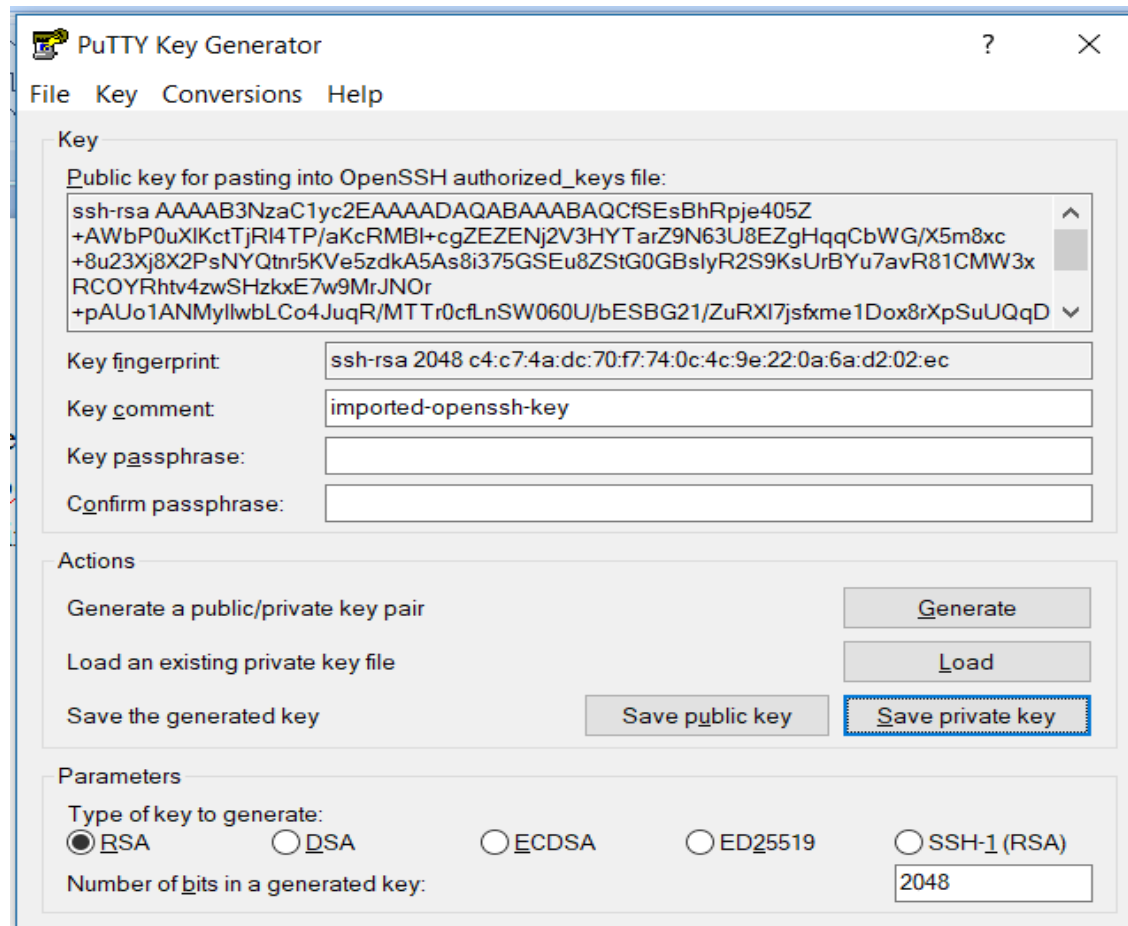
**putty.zip (a .ZIP archive of all the above)**

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

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

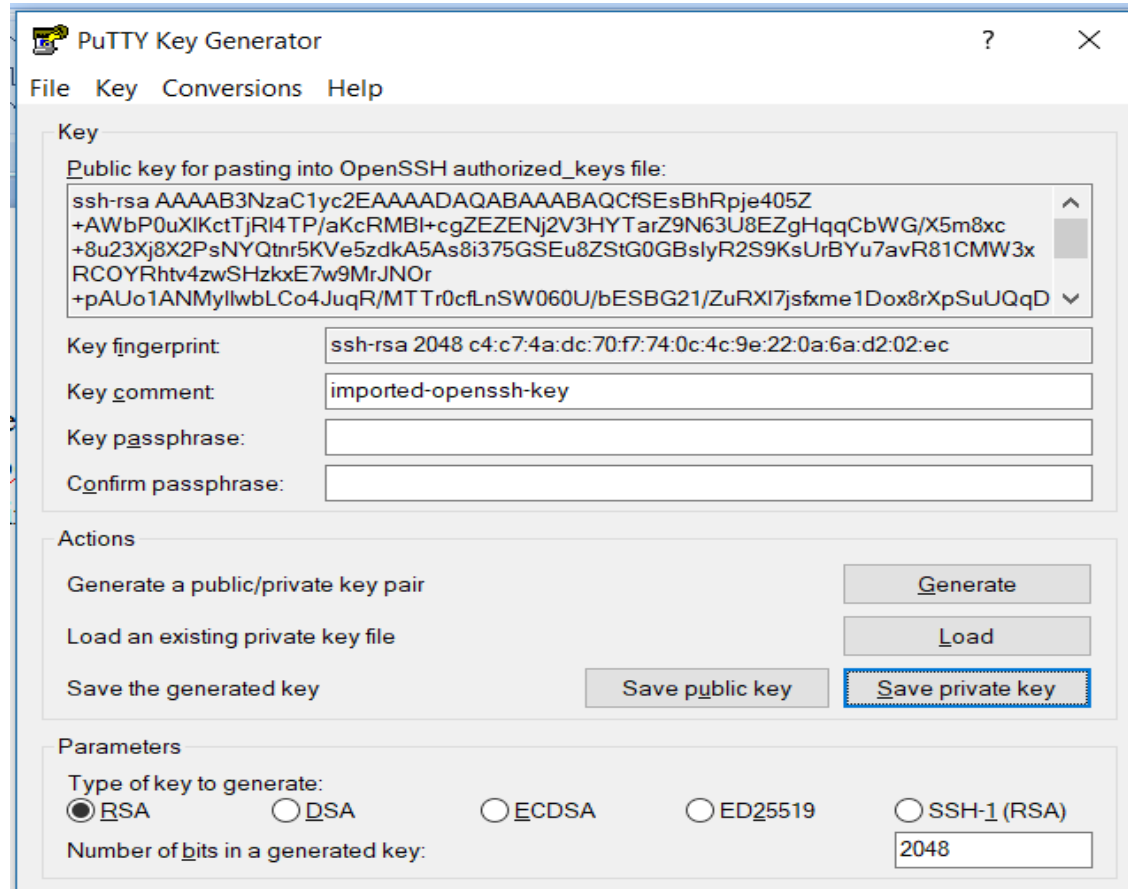
# Generating Private key

- After downloading Puttygen, we can convert the default key to a private key.
- The default key has extension .pem and we will convert it into .ppk
- Open Puttygen, it looks like the image shown below.



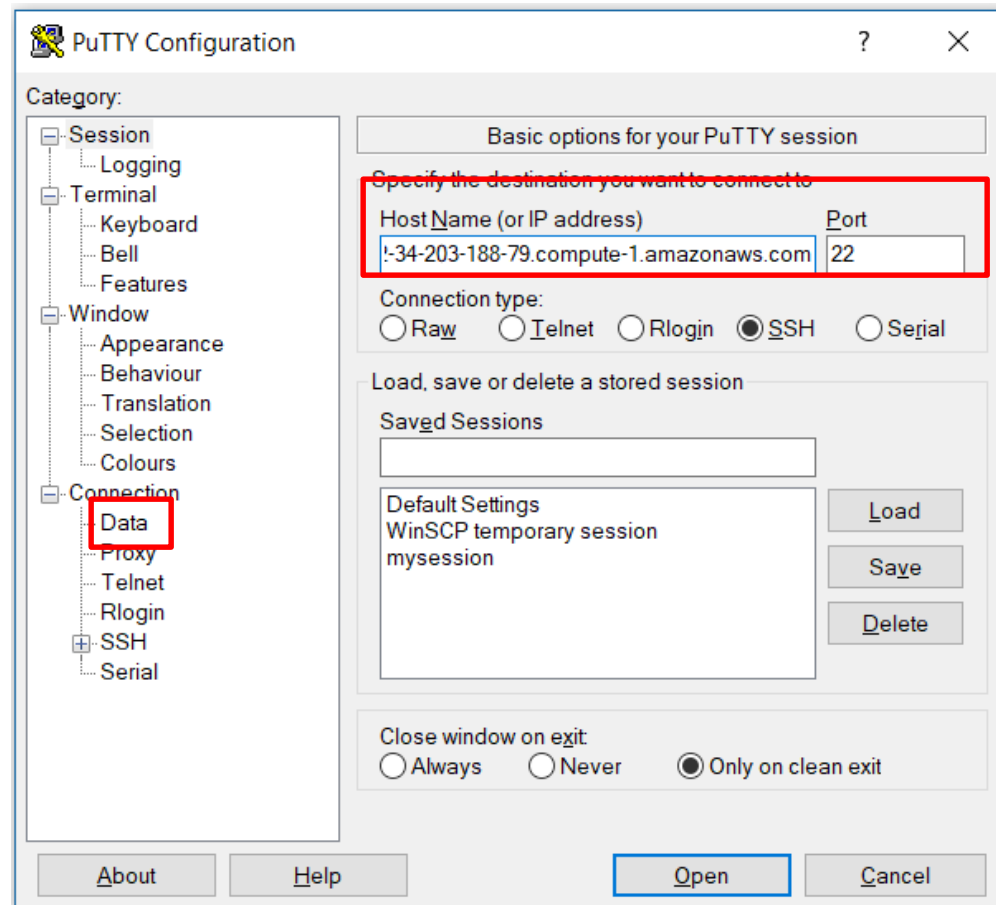
# Generating Private key

- Here “**Load**” the .pem file (RDS2018.pem)
- Then select “**Save private key**”, this will pop up a warning as you do not have a key phrase set up.
- I am not setting it up, you can set it up if you want. It is another wrapper of security.
- So you can save the .pem (RDS2018.pem) file. This file will be used for connecting to the EC2 instance.



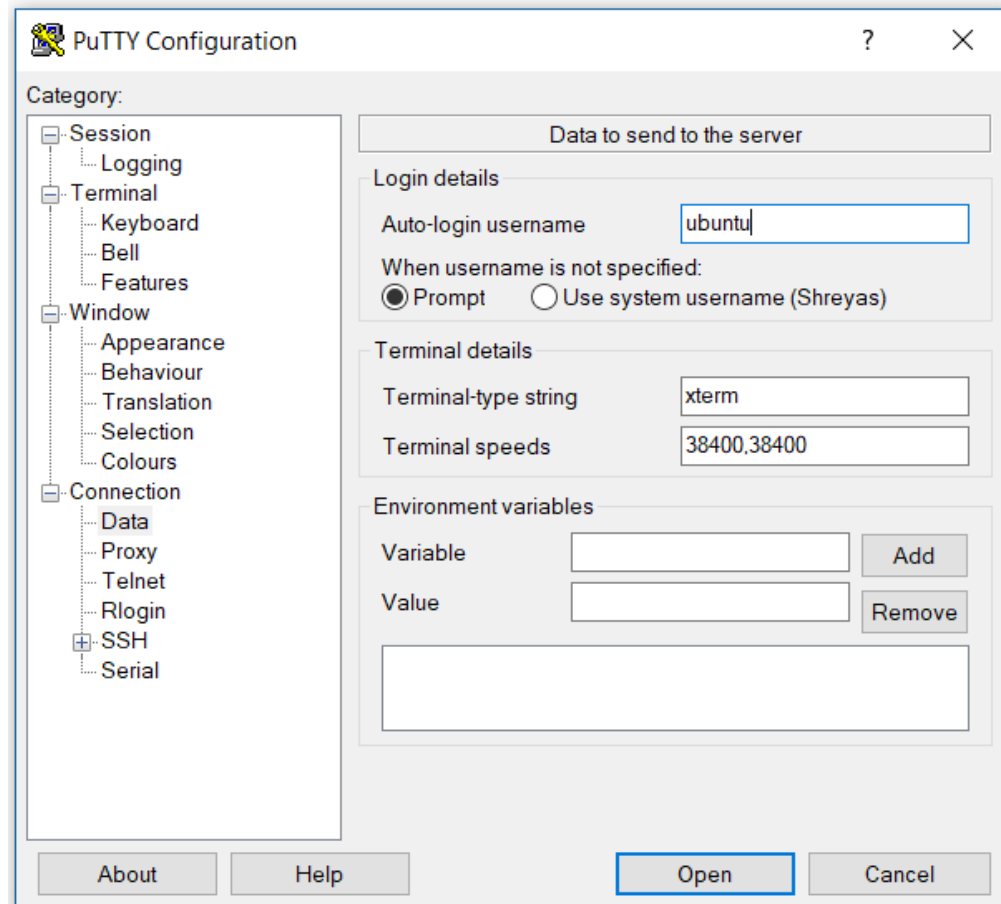
# Logging into Instance

- In the Host Name block copy the Instance's Public DNS.
- Leave the Port number as it is.
- After entering the IP, now select data at the bottom left.



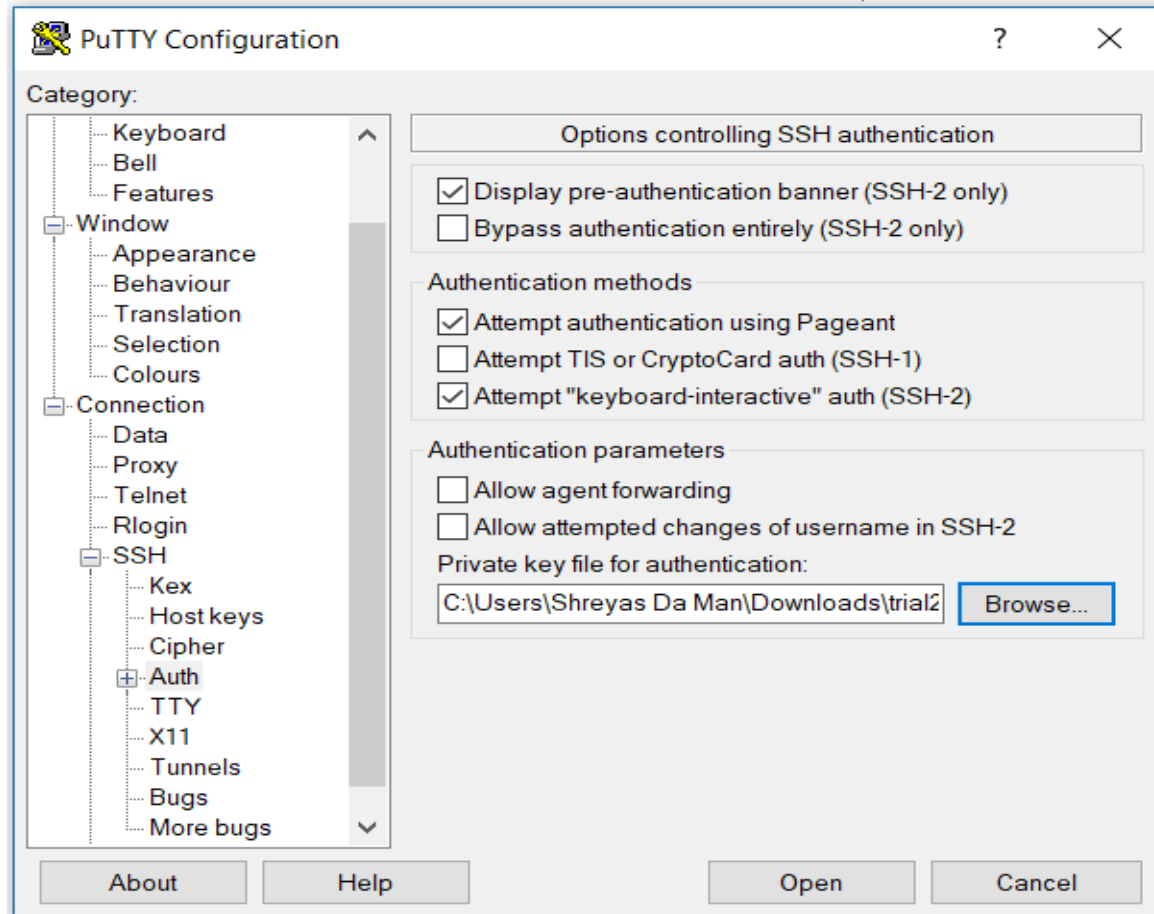
# Logging into Instance

- After entering the host name, you will have to enter the user name.
- By default ubuntu instance has a username of “**ubuntu**”.
- Enter this in the user name block.



# Getting back to Putty

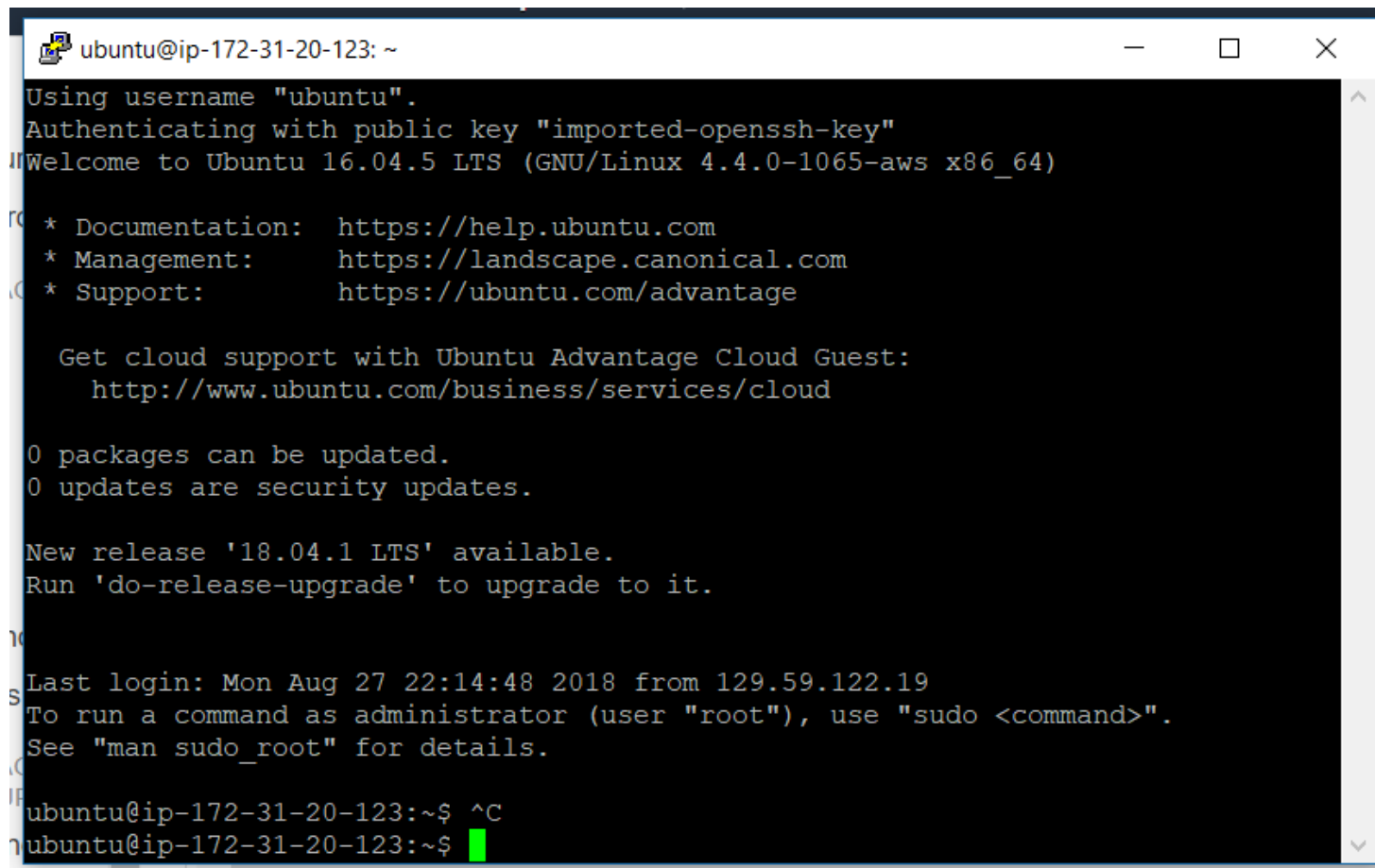
- The .ppk key generated from puttygen will be used for connecting to your instance.
- Now expand on **SSH (click on +)**, which is on the bottom left.
- From there select “**Auth**”, here you need to add your .ppk file. Browse it.
- After adding the private key, click on “**open**”





# Your EC2 instance

- If you have followed these slides correctly, then you will land into your EC2 instance as shown below.
- Now you just use it as any ubuntu image to do your assignments.

A terminal window titled 'ubuntu@ip-172-31-20-123: ~' with standard window controls. The terminal output shows the login process for 'ubuntu' using a public key, followed by the Ubuntu 16.04.5 LTS welcome message and system information. It lists documentation, management, and support links, then provides cloud support information. It also shows package update status and a new release '18.04.1 LTS' available. The last login time and sudo instructions are displayed. The prompt returns to 'ubuntu@ip-172-31-20-123:~\$' after a carriage return.

```
ubuntu@ip-172-31-20-123: ~  
Using username "ubuntu".  
Authenticating with public key "imported-openssh-key"  
Welcome to Ubuntu 16.04.5 LTS (GNU/Linux 4.4.0-1065-aws x86_64)  
  
 * Documentation:  https://help.ubuntu.com  
 * Management:    https://landscape.canonical.com  
 * Support:        https://ubuntu.com/advantage  
  
Get cloud support with Ubuntu Advantage Cloud Guest:  
http://www.ubuntu.com/business/services/cloud  
  
0 packages can be updated.  
0 updates are security updates.  
  
New release '18.04.1 LTS' available.  
Run 'do-release-upgrade' to upgrade to it.  
  
Last login: Mon Aug 27 22:14:48 2018 from 129.59.122.19  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
ubuntu@ip-172-31-20-123:~$ ^C  
ubuntu@ip-172-31-20-123:~$
```

# References

- Getting started tutorial from Amazon
  - [https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EC2\\_GetStarted.html](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EC2_GetStarted.html)
- Connecting to EC2 instance using SSH
  - <https://medium.com/@GalarnykMichael/aws-ec2-part-2-ssh-into-ec2-instance-c7879d47b6b2>
  - Copying files between local machine and ec2 instance  
<https://forums.aws.amazon.com/thread.jspa?threadID=64703>
- Connecting to EC2 instance through PUTTY
  - [https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/putty.html?icmpid=docs\\_ec2\\_console](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/putty.html?icmpid=docs_ec2_console)
  - <https://www.youtube.com/watch?v=bi7ow5NGC-U>
- Copying files from your laptop to EC2 instance
  - <https://angus.readthedocs.io/en/2014/amazon/transfer-files-between-instance.html>