Devops Training - 24 hrs

This DevOps Training helps you master Continuous Development , Continuous Testing Continuous Integration ,Continuous Deployment and Continuous Monitoring using DevOps tools - Git, Chef, Docker, Jenkins, Chef, Ansible and Nagios to automate multiple steps in SDLC.

Day 1:

Module 1 - DevOps Essentials

Learning Objectives: In this module, you will learn the reasons for the evolution of DevOps, what is DevOps, the various skills and market trends in DevOps, introduction to the delivery pipeline in DevOps and the DevOps ecosystem.

Topics :

- Why DevOps?
- What is DevOps?
- DevOps Market Trends
- DevOps Engineer Skills
- DevOps Delivery Pipeline
- DevOps Ecosystem & Use Case

Practicals to be covered: Sample use-case for using DevOps practice.

Module 2 -Managing Source Code – GIT and GiHub

Learning Objectives: In this module, you can learn about automatic Source Code Management using GIT and GitHub.

Topics-

- Introduction to CVS and GIT
- GIT File workflow
- Important GIT Commands
- Introduction to GitHub
- Using GIT and GitHub together.

Practicals to be covered : Show the various GIT commands to push and pull a repository, from Github.

Module 3 – Understanding and using Build tools

Learning Objectives: In this module, you can learn how to build an appropriate delivery pipeline and perform test automation on it.

Topics:

- Overview of Various Build tools
- What is Maven
- Maven Plugins
- Maven Archetypes
- Project Object Model (POM)
- Source Control Integration

Practicals to be covered: Create a build pipeline from compilation to deployment of application.

Day 2:

Module 4 - Continuous Integration using Jenkins

Learning Objectives: This module helps you integrate Jenkins, Docker and Puppet, and create an application using them.

Topics:

- Overview of Jenkins
- Jenkins architecture
- Jenkins Management
- Jenkins Build Pipeline

Practicals to be covered:

Installing and configuring Jenkins

Creating a build using Jenkins

Integrating with Jenkins

Module 5 - Containerization using Docker

Learning Objectives: This module will help you identify the difference between containers and VMs. You can learn about virtualization using Docker. You can also deep dive into image and containers concept in Docker.

Topics:

- What and Why of Containers
- Introduction to Docker
- Docker Fundamentals
- Image Distribution
- Docker Containers.

Practicals to be covered: Create First Image: Hello-World, Image Basics and Base Image Maintenance, Manage Containers, Create Images from Containers.

Module 6 -Docker Commands and Use-cases

Learning Objectives: This module deals with the various networking concepts in Docker, the best way to use the and creating a Docker file, working with Docker Compose. We will also learn about Docker Networking and Docker Orcherstration

Topics:

- Docker Files
- Docker Compose
- Docker Networking
- Docker Swarm

Practicals to be covered: Exposing Container Ports to the Host, Adding Content to Containers, Create Docker File , Working with Docker Swarm

Day 3:

Module 7 - Configuration Management using Chef:

Learning Objectives: This module has details the master-agent architecture and workstation configuration in Chef. You will also learn how to chef tools.

Topics:

- Chef Fundamentals
- Chef Architecture & Components – Server, Workstation and Nodes
- Chef Resources
- Recipes and Cookbooks,
- Chef Resources
- Chef tools

Practicals to be covered: Install and Configure Chef Server and Client

Module 8 - Configuration Management using Ansible

Learning Objectives: This module has details about Ansible, Architecture and working of Ansible. You will also learn how to Ansible tools.

Topics:

- Introduction to Ansible
- Installation & Configuration
- Writing Ansible Playbooks
- Using Ansible for Configuration Management tasks.

Practicals to be covered: Write Ansible playbook, Assign different roles in configuration tool

Module 9 - Continuous Monitoring using Nagios

Learning Objectives: This module helps you integrate Jenkins, Docker and Puppet, and create an application using them. You can also learn about system monitoring using Nagios and its components.

Topics:

- Introduction to Nagios
- Nagios Plugins
- Nagios Objects
- Nagios Commands & Nagios Notifications

Practicals to be covered: Configure Nagios to monitor Web server, Setup syslog and verify if logs are getting generated.

Module 10- Mock Test, Interview Questions and FAQ's

To brief the learners on how to prepare for DevOps exam. The session will also focus on discussing the case-studies and questionnaires

DevOps Training- Prerequisites

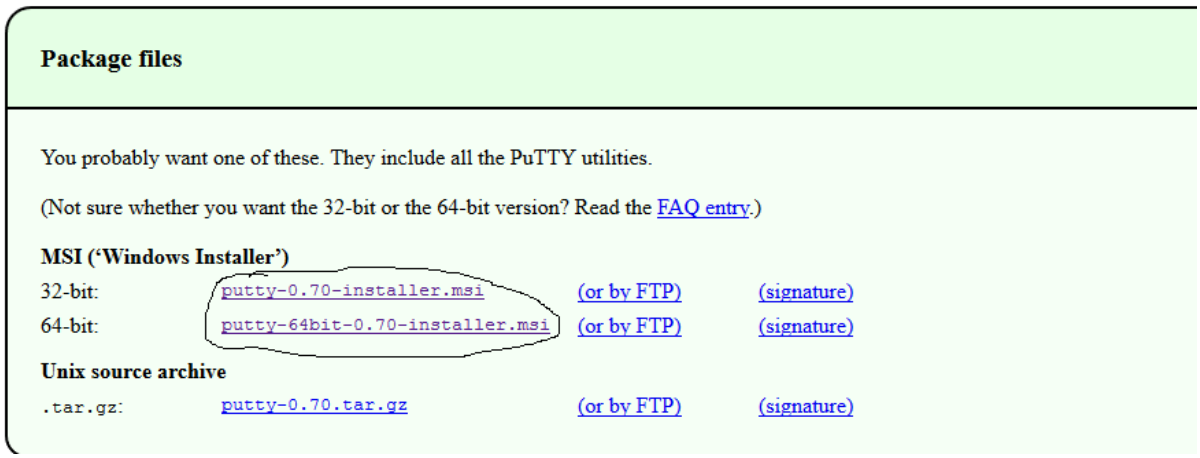
- Administrator access on the laptop/desktop (64 bit Machine)
- Guest Operating Systems – Preferably minimum Windows 2008 , Windows 7 is also fine.
- Access to internet
- Access to RDP for accessing Remote Machines – Remote Desktop Service must be enabled and port 3389 must be open
- Putty and Puttygen tools on participants systems (If participants are using Windows OS). Screenshots have been provided in the 2nd page for installation
- Latest Java to be installed on the systems
- ssh client (If participants are using Linux/Mac OS). I can also help the participants if required on the first day of the class.
- Latest Dockertoolbox along with Oracle Virtualbox to be installed on Windows OS
  Link : https://docs.docker.com/toolbox/toolbox_install_windows/
- Eclipse IDE to be installed and configured on the systems. Please refer the link :
  http://www.eclipse.org/downloads/packages/release/oxygen/r/eclipse-ide-java-ee-developers
- **All the labs will be done on personal AWS Cloud Free Account (Debit or Credit Card is required) – Screenshots are provided in 2nd and 3rd page**
- Ports to be opened – 22, 3389, 80, 443,8080, 8443, 3306, 5985,8140,3000 ,8443,

Appendix:

Installing Putty:

Logon to www.putty.org and click on here button as given below

In the next screen , please click on either 32-bit or 64-bit msi installer file , it will ask you to save file. Save and run the file

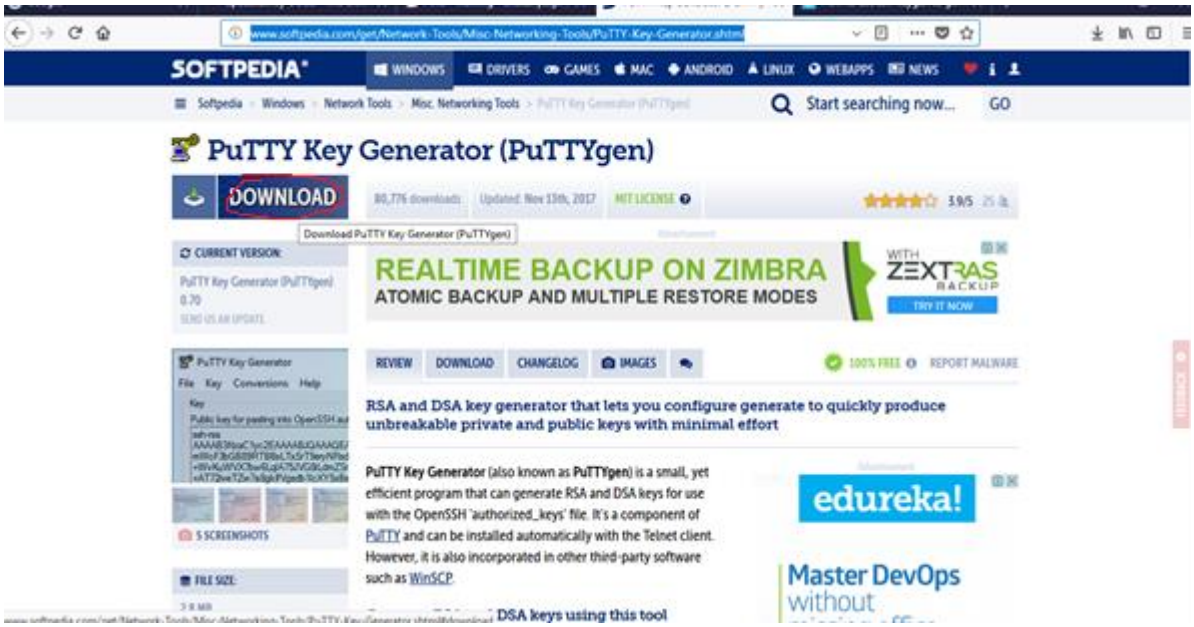


Installing Puttygen:

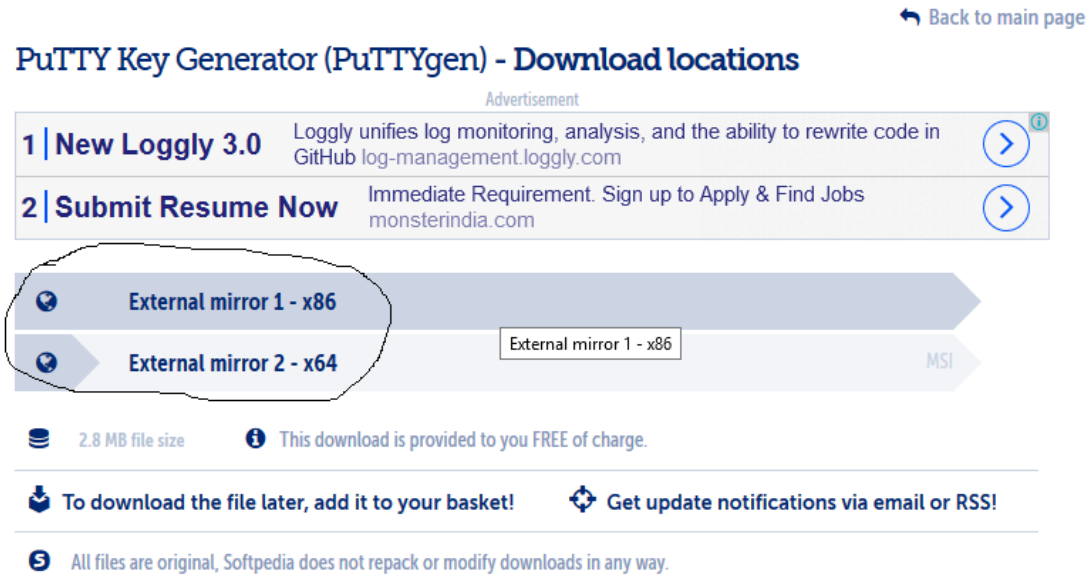
Logon to the below link

http://www.softpedia.com/get/Network-Tools/Misc-Networking-Tools/PuTTY-Key-Generator.shtml

Click on DOWNOAD button in the below link



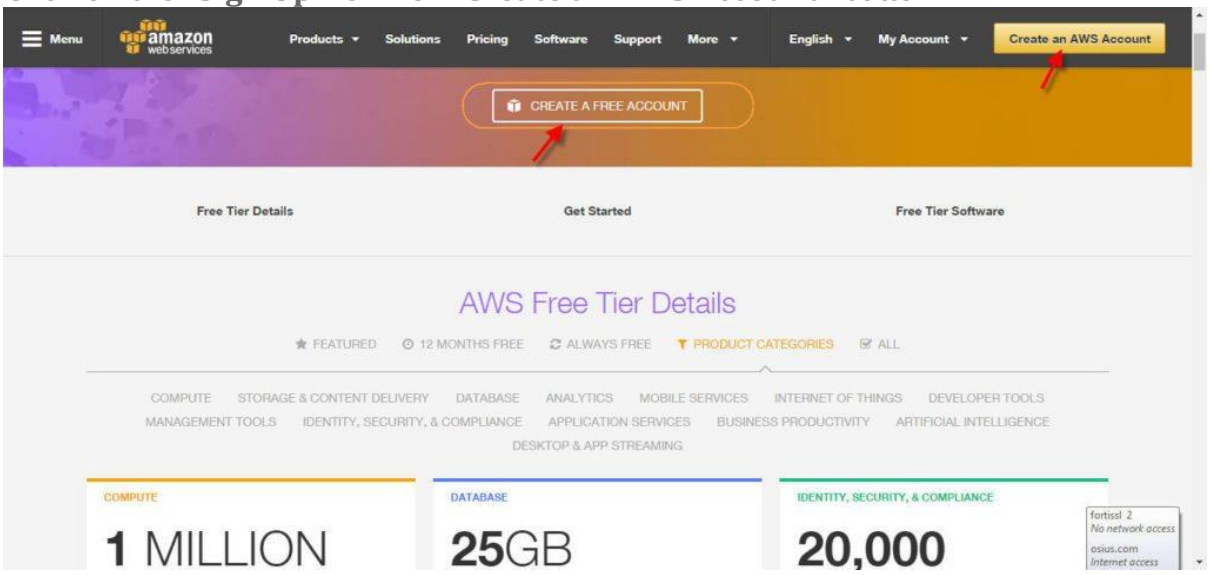
In the next screen which launches , click on either – External mirror 1 or External mirror based on the system architecture , download would start automatically. Save the file and run the file.



Creating AWS Free Root Account and Participant AWS Free Accounts (Ref: https://devopsmates.com/how-to-create-a-new-aws-free-tier-account/)

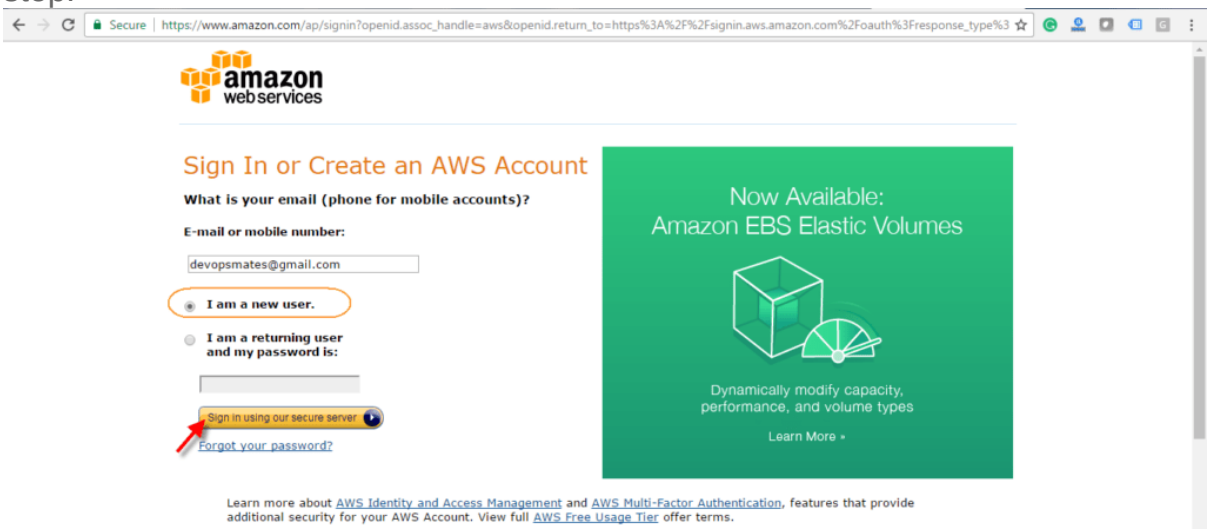
Step 1: First Open your web browser and navigate to https://aws.amazon.com/free/

1. Click on the **"Sign Up Now" or "Create an AWS Account"** button.



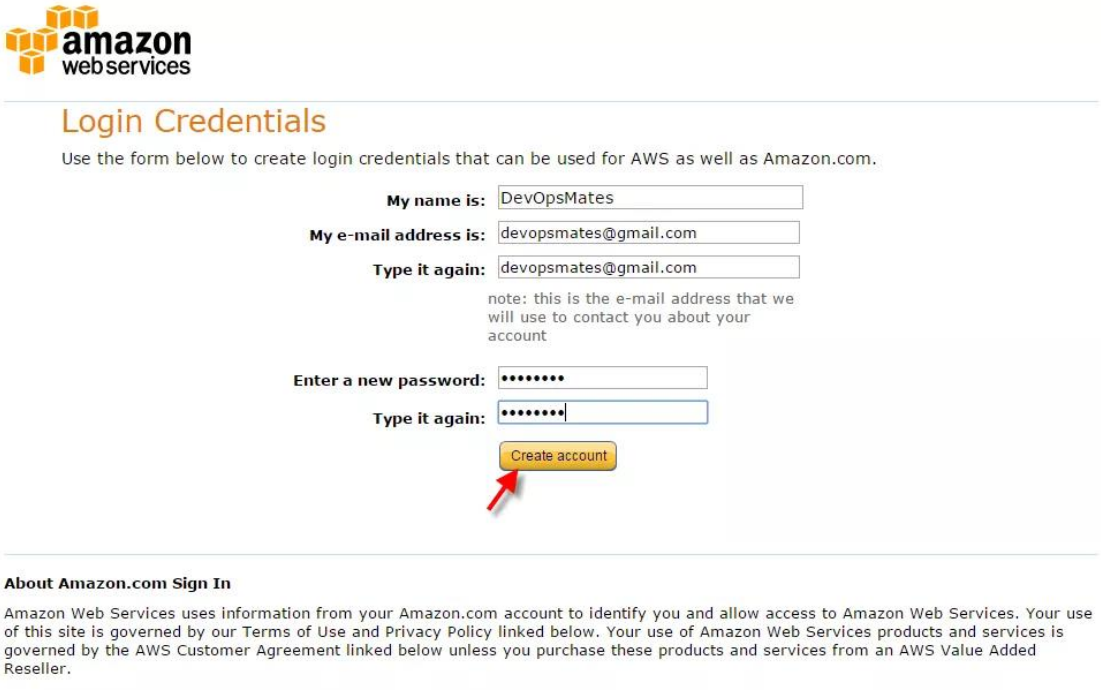
2. If you already have an Amazon store account you can use the same account to log into Amazon Web services (AWS) and then register for the free tier. If you don't have an Amazon store account you can create a new account here by typing your valid email ID and selecting the "**I am a new user**" button. Then click the "**Sign in using our secure server**" button to continue to next

step.



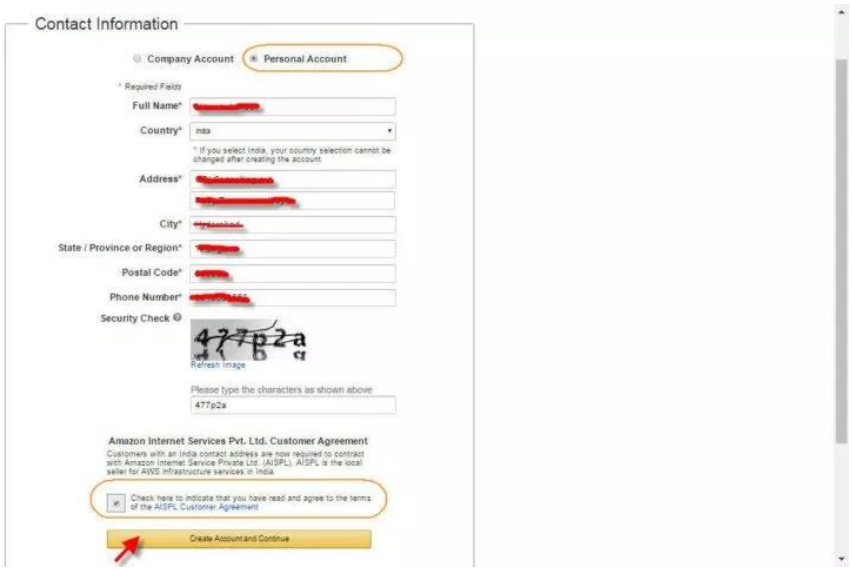
3. **Login Credentials:** Provide the details which you want to use for login your AWS account.

4.



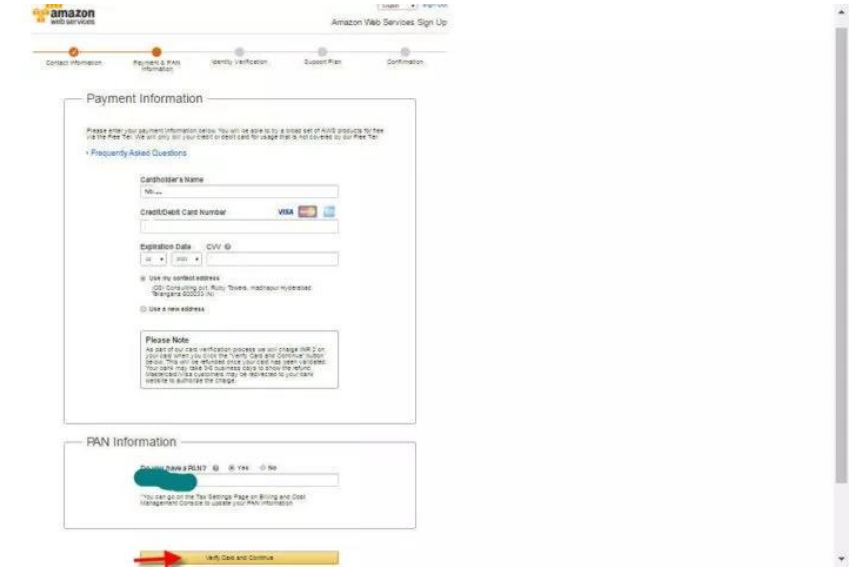
Step 2: Contact Information

Select your AWS type, then Fill the correct information to validate your account if you're going to create personal use then click on "personal Account" else use "company Account".

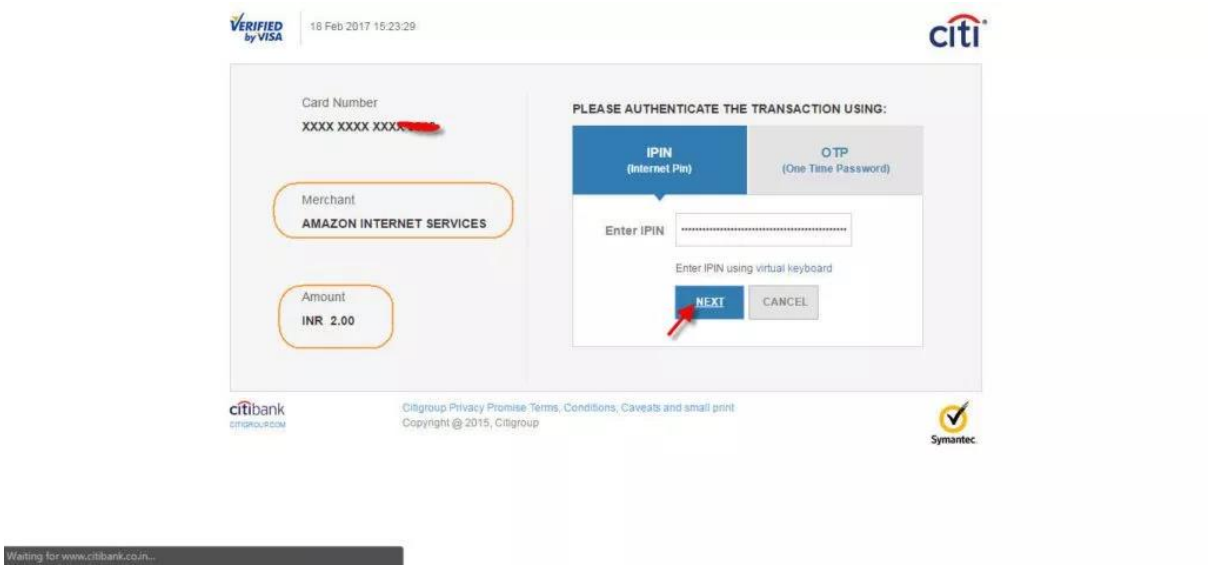


Make sure provide proper contact details and mobile no. to get the call from AWS for verification. After completed the form enters the captcha code and click on “create the account and continue”.

Step 3: Payment and PAN information:
In this step, you must fill in your credit card info and billing address. If you have PAN then fill those details here.

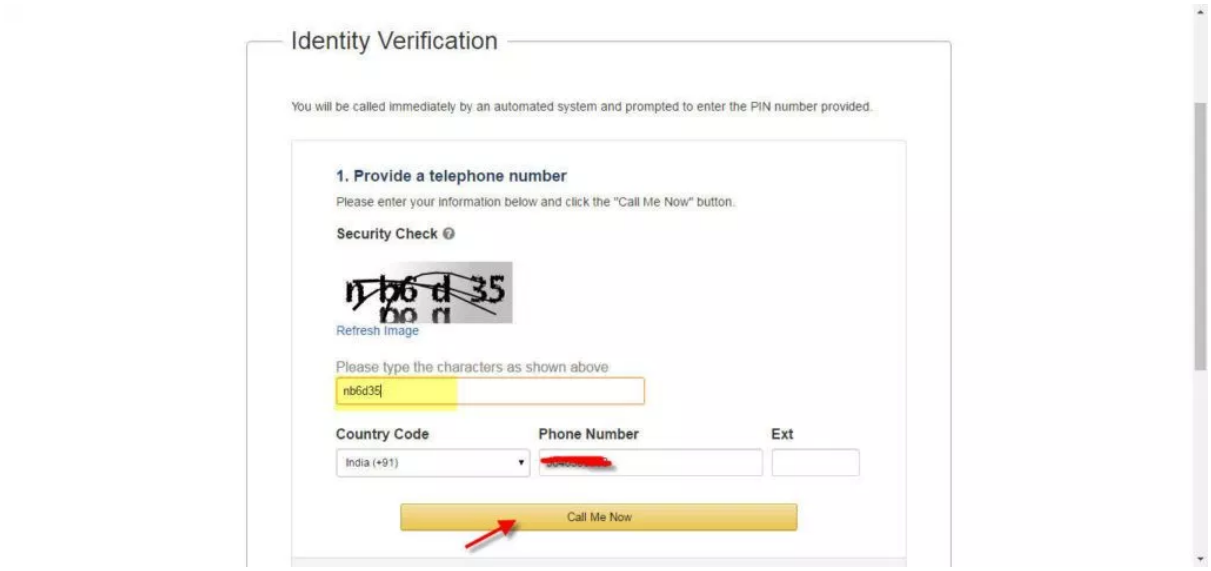


Step4: In this step, it will take you to the payment gateway to validate your payment information and for your credit card verification Amazon will charge the minimal price based on Country. Here I have provided India, so Amazon charged **2 INR**.



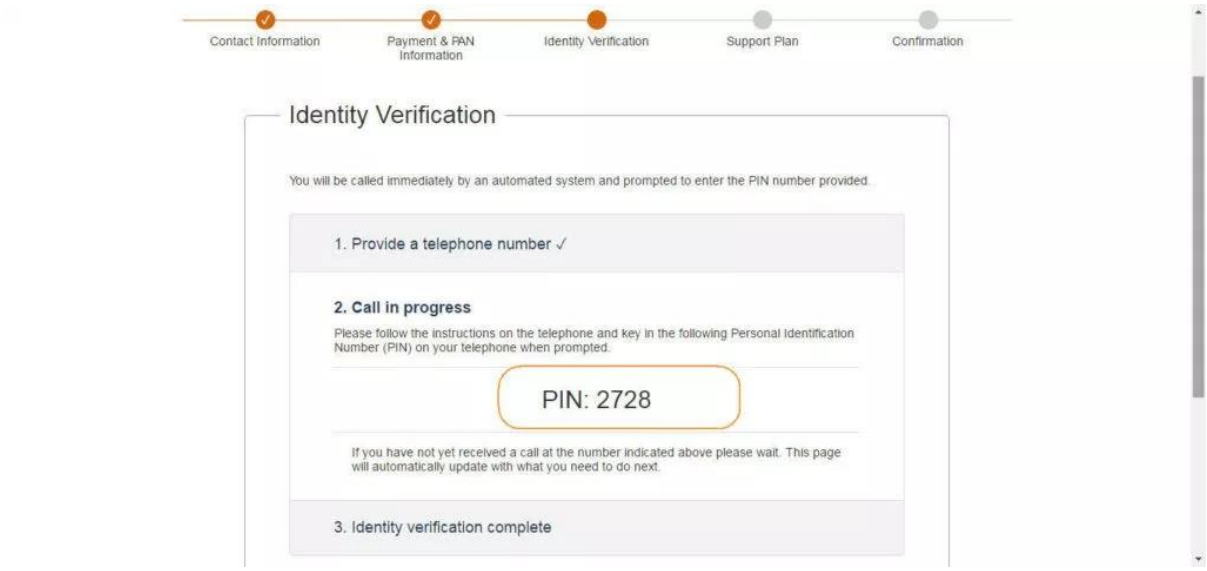
Step 5: Identity verification

Here you will be taken to an identity verification page that will already have your phone number, so you just have to click the "**Call me now**" button to continue the process.



Step 6: Personal Identification number

After receiving a call from AWS, the next page will show your **PIN** # while a call is made to the phone number you have provided. When it ask you to type your **PIN** # the webpage is providing you for identity verification purposes.



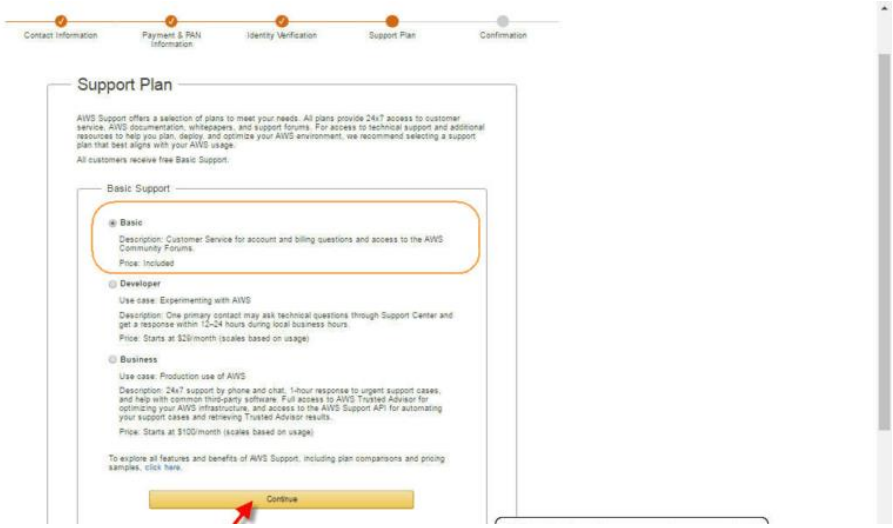
Step 7: Identity Verification complete

Once your verification is complete just click the "**Continue**" button

Step 8: Support plan

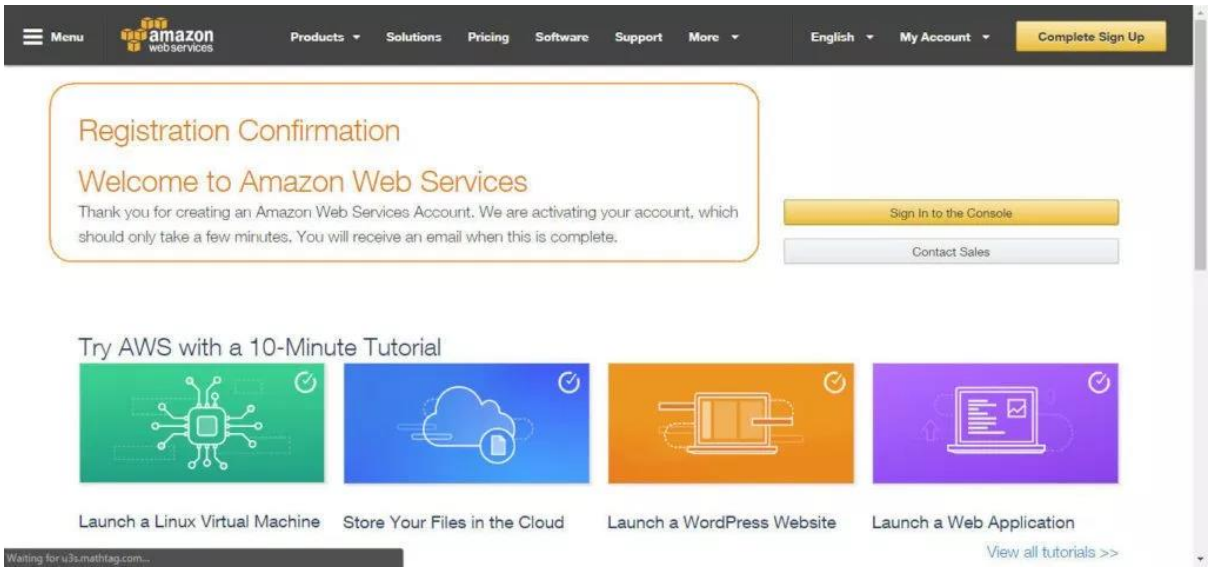
AWS support offers a selection of plans to meet your business needs. Select your suitable plan then click continue.

Note: All customers receive free basic support.



Step 9: Registration Confirmation page.

Once you completed all the above steps and process. You'll get the confirmation page like below**.** Now your account will be processed for activation. It may take somewhere between 30 minutes to 1 hour for you to receive an email confirmation that your Amazon Cloud Services account has been activated.



Step 10: Check out Free Tutorials/Guides – 10 Minute Tutorials

This step will give you 10 minutes tutorials to get hands-on with AWS.