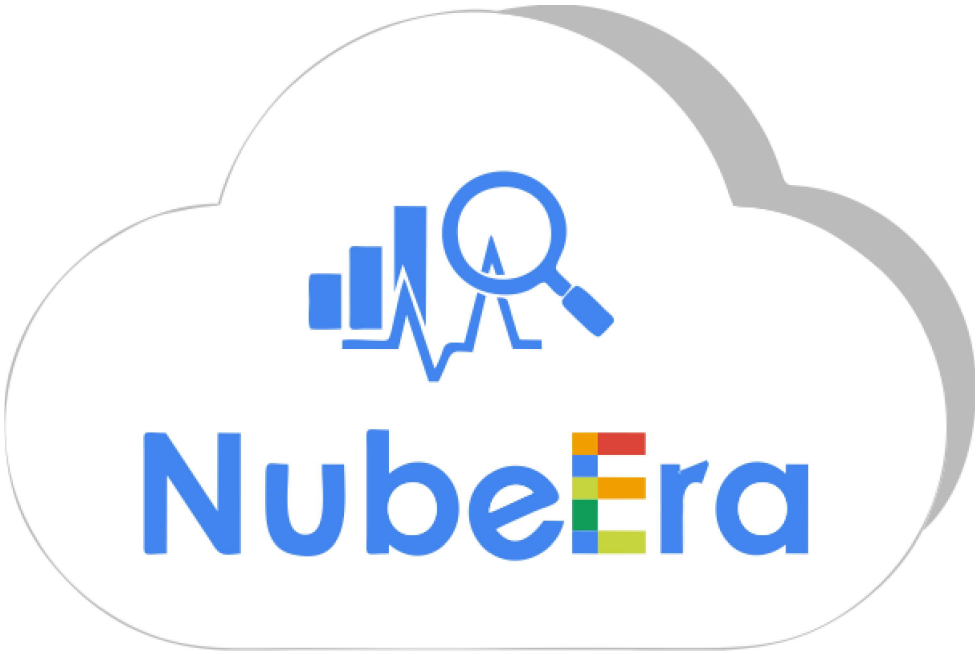

Subject: AWS Funda

Document Name: AWS EC2 Web Application Deployment & Storage Practice

Document No. 1

Project: Deploy a Web Server using Apache Tomcat

1. Create Key pair for EC2 Instance:

- Create key pair Name: storage
- Type of Key would be: pem
- Algorithm: RSA

2. Configure Security Group:

- Create a security group for the EC2 instance.
- Define inbound and outbound rules to control traffic access.
- Rule1 Inbound rule:
  - Protocol: Allow SSH (Secure Shell) traffic from your IP address:
  - Port: 22
  - Source: Your [IP address].
  - Description: Setting Security Group
- Rule2 Inbound rules:
  - Protocol: Allow HTTP traffic for web access:
  - Port 80
  - Source: 0.0.0.0/0 (or specify a specific range of IP addresses).
  - Description: For Accessing and Retrieving web content(War file)
- Rule3 Inbound rules:
  - Protocol: Allow HTTP traffic for web access:
  - Port 8080
  - Source: 0.0.0.0/0 (or specify a specific range of IP addresses).
  - Description: ApacheTomcat
- Rule4 Outbound:
  - Protocol: Allow all outbound traffic: All traffic
  - Port: 0-65535
  - Destination: 0.0.0.0/0
  - Description: For updating linux repositories

3. Create an EBS Volume:

- Create an Elastic Block Store (EBS) volume with following details:
  - Size: 9GB
  - Type of Storage: General Purpose

4. Launch an AWS EC2 instance:

- Select the EC2 instance (t2.micro)
- Choose an Ubuntu 22.04/latest Amazon Machine Image (AMI) that supports the Tomcat web server.
- To Deploy This WAR File On Apache Tomcat 9

  OR

https://github.com/teamnubeera/NEMCO-Tasks/raw/master/A.AWSFunda/01.WebServer/sample.war

5. Attach EBS Volume to EC2 Instance:

- Attach the created EBS volume to the EC2 instance as additional storage

6. Install Software and Dependencies:

- Connect to the EC2 instance using SSH or instance Connect
- Install Complete Open Java(JDK/JRE) with Version = 17 (ONLY)
- Apache Tomcat 9.x Version on the instance.

7. Configure Tomcat to Serve Web Application:

- Configure Tomcat User & roles, Set up environment variables, context paths
- Start Tomcat to deploy your WebApplication.

8. Test Web Application:

- Access the public IP/DNS of the EC2 instance in a web browser using MetaData & Curl.
- Verify that your web application is running correctly (Using Browser & curl command) .

9. Create Snapshot for Backup:

- Create a snapshot from EBS volume used by the AWS EC2 instance to have a backup of your data.

10. Create an Amazon Machine Image (AMI):

- Create an AMI from the EC2 instance, including all the installed software & configurations.

11. Launch Additional EC2 Instances for Scalability:

- Launch new EC2 instances using the AMI(Amazon Machine Image) to scale your web application horizontally.
- Description: Maintaining Scalability.

12. Take Screenshot of your work:

- Take Screenshot for KeyPair(type, Algorithm)
- Take Screenshot for Security group(inbound & outbound) rules.
- Take Screenshot for all Instances(Old and New one)
- Take Screenshot for Custom AMI that we created.
- Take Screenshot for all EBS (Volumes, Snapshot).

13. Delete all resources what we created:

- Delete KeyPair
- Delete Security group(inbound & outbound) rules.
- Delete All 2 Instances(Old and New one)
- Deregister Custom AMI that we created.
- Delete all EBS (Volumes, Snapshot).