**AWS 3 Tier Application Architecture**

1. Create VPC – 10.0.0.0/16
2. Subnets:
   1. Public-Subet-1 – 10.0.1.0/24(AZ-a)
   2. Public-Subet-2 – 10.0.2.0/24(AZ-b)
   3. Private-Subet-1 – 10.0.3.0/24(AZ-a)
   4. Private-Subet-2 – 10.0.4.0/24(AZ-b)
   5. DB-Subnet – 1 – 10.0.5.0/24(AZ-a)
   6. DB-Subnet – 2 – 10.0.6.0/24(AZ-b)
3. Route Tables:
   1. Public – RT – Associate Public Subnet 1 & 2
   2. Private – RT – Associate Private Subnet 1 & 2
4. Create Internet Gateway - Attach to the VPC we’ve created.
5. Create a NAT Gateway ( Use public Subnet 2)
6. In the Public – RT -- Add a route to Internet
   1. 0.0.0.0/0 -- IGW (Internet Gateway)
7. In the Private – RT -- Add a route to Internet
   1. 0.0.0.0/0 -- NAT (NAT Gateway)
8. Security Groups:
   1. LoadBalancer-SG -- Allow HTTP & HTTPS from 0.0.0.0/0
   2. App-Server-SG -- Allow HTTP from **LoadBalancer-SG**
   3. DB-SG -- Allow MySQL from **App-Server-SG**
9. Create an IAM Role called **EC2SSMAgent**  -- Add the below policy
   1. [AmazonSSMManagedInstanceCore](https://us-east-1.console.aws.amazon.com/iam/home?region=ap-south-1#/policies/details/arn%3Aaws%3Aiam%3A%3Aaws%3Apolicy%2FAmazonSSMManagedInstanceCore)
10. Create an Application-Server
    1. Launch Instance
    2. Select your VPC and Private-Subnet-1
    3. Select Existing SG -- Application-SG
    4. Under Advance Details -- IAM Instance Profile -- Choose the Role you’ve Created (EC2SSMAgent)
11. Install HTTPD, Start & Enable it.
    1. Sudo su
    2. Yum install httpd -y
    3. Systemctl start httpd
    4. Systemctl enable httpd
    5. dnf install mariadb105-server
    6. yum install php php-mysqli
12. Go to RDS & Create Subnet Group -- Select AZ a & b, Select your DB Subnets.
13. Login to Database using the below command
    1. Mysql -h <db-hostname> -u <user name> -p
    2. Show databases;
    3. Create database wordpress;
    4. Show databases;
    5. Exit
14. Go to Root Directory and Download WordPress
    1. Cd /var/www/html
    2. Wget <https://wordpress.org/latest.zip>
    3. Rm latest.zip
    4. Mv wordpress/\* .
15. Rename config-sample file
    1. Mv wp-config-sample.php wp-config.php
    2. Vi wp-config.php
    3. Give Database Parameters
       1. Dbname
       2. Db username
       3. Db password
       4. Db endpoint
16. Systemctl restart httpd
17. Create an AMI of you Application Server
18. Create a Target Group -- Select your VPC and Add Application Server
19. Create an Application Load Balancer -- Select your VPC and Select public subnet 1 & 2, Select the Load Balancer Security Group.
20. Check the Load Balancer DNS and confirm whether the Application is Working or not
21. Create AutoScaling Group
22. Create SNS and CloudWatch
23. Create Route-53
24. Go to Certificate Manager – Create new Certificate from your domain
25. Add Name Servers to Route 53
26. Edit Load balancer Lister to HTTPS