Experiment NO. 5B

- Title :-

  Cloud Computing

- Objectives :-

  ① Understand about basic concept of cloud computing.

  ② To host web application on AWS

- Problem statement :-

  Deploy / Host your web application on AWS VPC or AWS Elastic Beanstalk.

- Outcomes :-

  Student will be able to,

  ① Understand about basic concept of cloud computing

  ② Host web application on AWS.

- Software and Hardware Requirements :-

  Browser, Visual Studio.

Theory :-

• Cloud Computing -

is a technology paradigm that transformed the way business and individual use, store & manage application and service. It provide or demand access to computing resource over the internet.

- Cloud is the delivery of Computer Services, including services, storage, database, networking, Software, more over the internet To Faster, Innovation Flexible, resource and economies of Scale.

• AWS VPC (Virtual Private cloud) :

is a virtual network environment that allow you to provision of the AWS cloud where you can launch AWS resource.

- Hosting a web application in a VPC gives you Full control over the network architecture and Security Setting.

AWS Elastic Beanstalk :

is a platform as a service (Paas) offering from AWS that simplifies the deployment of web application.

- It abstract away the infrastruce management and allow you to focus on your application code.

Execution steps :-

- Deploying on AWS VPC :-

① create a VPC -

In the AWS management Console navigate to the VPC Services and create a new VPC. Define Subnets, route tables and Security groups to Configure network Setting.

② Lanuch EC2 Instaces :-

Create EC2 instance within your VPC. These instance will host your web application choose the appropriate instance type and amazon machine Image (AMI) For your application.

③ Configure Security :-

Set up Security groups and Network to control incomming and outgoing traffic to your instance. Define for SSH, HTTP and any other neccessary protocols.

④ Install Web Server :-

SSH into your EC2 instances and install a web server to host your application. Deploy your application code to these instance.

⑤ Domain Configuration :-

If you have a custom domain cofigure Route 53 or third-part DNS Service to point to your applications IP address.

⑥ Load Blancer (Optional) :-

For redundancy and Scaling Consider Setting up an Application Load Balancer (ALB) to distribute traffic across multiple instance.

- Deploying on AWS Elastic Beanstalk :-

① Create an Elastic Beanstalk Environment :-

In the AWS management console, navigate to Elastic Beanstalk and create a new environment. Choose the platform that matches your application.

② Upload Application Code :-

Package your web application code and upload it to Elastic Beanstalk. The platform will handle the deployment and scaling of your application automatically.

③ Environment configuration :-

Configure environment various database and any other service your application requires, Elastic Beanstalk makes it easy to manage these resources.

Domain Configuration - use AWS Services like Route or a custom domain registrar to set up your domain and route traffic to your Elastic Beanstalk environment.

⑤ Scaling options - Configure auto-scaling options to handle traffic spikes and ensure high available.

Conclusion :- Hosting a web application on AWS provides fine-grained control over it Suitable for complex and large application.

The choice between VPC and Elastic Beanstalk depend on your and your team's expertices in AWS services.