**Assignment-AWS cloud**

IAM VPC EC2 S3 R53 CloudWatch AWS Codebuild code deploy Codepipelines Lambda Secret Manager parameter store KMS keys ECS

1. **Create one VPC, two public, private subnets in each availability zones.**
2. Create another VPC and create one ec2 instance in private subnet in each vpc and establish the communication between the two servers in different VPC’s (Hint: - create vpc peering)
3. Create one bastion host/jump server in public subnet to SSH into the ec2 instances which are in private subnets.
4. Deploy one sample application in ec2 instances in private subnets in each AZ and try to access it using Load Balancer.
5. Attach and mount the root volume of one ec2 instance to another.
6. Attach and mount the EBS volume of one ec2 instance(ap-south-1a) to ec2 instance which is in another AZ. Make the permanent mount of the volume.
7. Create one S3 bucket and try to push the object from ec2 instance to the bucket. Create one custom IAM policy that ec2 instance should be able to access only to the newly created bucket.

Hint: - create one IAM role, attach the policy to the role and attach the role to ec2 instance.

1. VPC endpoints?

**Hint**: *- Create one VPC end point for s3 because whenever we are trying to make an API call to S3 the request goes to internet and from internet*

1. **Create autoscaling with both launch and access the application via LB.**
2. **Test the scaling by configuring scaling policy with CPU or memory Utilization by increasing CPU load on the server.**
3. **Try to login to ec2 instances with different scenarios if pem file is lost justify your approaches below.**
4. **Enable path-based routing in Alb with same domain (create multiple target groups and use same domain).**
5. **Differentiate between ALB and NLB.**
6. **How do you login to your server if system is busy?**
7. **What are different S3 storage classes? & What is S3 life cycle policy?**
8. **Configure S3 cross region replication.**
9. **Transfer the data from one s3 bucket to another s3 bucket within the same region and same account.**
10. **Transfer the data from one s3 bucket to another s3 bucket same/different region but cross account.**
11. **Launch an Ec2 instance with specific IP address from selected subnet range.**
12. **Differentiate between Launch template and Launch configuration.**
13. **Differentiate between instance purchase types (on Demand, Reserved and Spot requests)**
14. **Differentiate between NACL and Security groups?**
15. **Push AWS ALB logs to S3**
16. **What are sticky sessions in LB?**
17. **How do you modify your disk size without reboot?**
18. **Create Ec2 lifecycle policy.**
19. **Justify placement groups.**
20. **What is R53? Differentiate between public and private hosted zones?**
21. **Differentiate between A and c name records? & what is alias?**
22. **What are health checks In R53?**
23. **Differentiate between IAM role and policy.**
24. **Explain about customer managed policy, aws managed policy, SCP policy and inline policies**
25. **Differentiate between federated user and IAM user.**
26. What is CloudWatch?
27. How do you configure custom metrics(memory metric) to CloudWatch using CloudWatch agent.
28. How many Subnets can you have per VPC?
29. What is the relation between the Availability Zone and Region?

### What is the use of lifecycle hooks is Autoscaling

### Can you change the Private IP Address of an EC2 instance while it is running or in a stopped state?

1. Configure VPC flow logs for VPC to Amazon s3 and S3 to cloudwatch log groups

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