AWS Solutions Architect Questions and Answers

1. What are the security features in AWS?
    a. Security Groups
    b. Keypair
    c. Network ACL (Access control List) - NACL
    d. Route tables
    e. IAM
2. What is the difference between SG and NACL?
    a. Security groups are placed behind EC2 instances and NACL is firewall behind subnets
    b. By default, SG block all incoming and outgoing traffic into our resources while NACL allow all traffic
3. What is an AMI?
    a. Amazon Machine Image
    b. Contains software installed on EC2 instance
    c. Contains OS (Operating system e.g windows, linux)
4. What service is used to configure DNS in AWS?
    a. Route53
5. What is the difference between the 3 main storage types in AWS?
    a. EBS
        i. Elastic block store
        ii. Block storage
        iii. EBS is required to create an EC2 instance
        iv. Can only be mounted on a single
    b. S3
        i. File/object storage
        ii. Cannot be mounted on an EC2 instance
    c. EFS
        i. File system
        ii. Mount it on multiple EC2 instance at a time
6. What is IAM?
    a. Identity and access management
    b. Created users
    c. Created groups
    d. Create and manage policies
        i. What are policies?
            1. Set of rules/instructions granting or restricting access to a user, role, service or groups.
    e. Create and manage Role
7. What scenario will you go for S3 or EFS?
    a. S3
        i. Cheaper than EFS and EBS
        ii. Use to store large objects or media files
            1. Scenario 1 → S3

        a. You need to collect API calls to your account using Cloudtrail and save all that data in a cheap storage because for the life cycle of your AWS account, you need to keep record of every activity that happens inside of it.
        b. Static Website hosting
    2. Scenario 2 → EFS
        a. We have 2 Linux instances in AWS that needs to share data. Dev instance and Prod instance.
            i. Dev and pulling out some data that needs to be consumed to the prod server
            ii. Create and EFS and mount it on both servers
8. What are the 3 types of Load balancers in AWS and What is the difference between all 3?
    a. Network LB
        i. Performs routine network arrangements between incoming and outgoing traffic
    b. Application LB
        i. Receives incoming traffic and direct this traffic package to the Web Servers/EC2 instances that are behind it (using Target groups)
    c. Classic LB
        i. Round robin traffic distribution
            1. Equal distribution of traffic to all server behind it.
9. What is networking in AWS?
    a. VPC
        i. Virtual Private Cloud
        ii. You have provision for network resources like VPC, subnets, RT, IGW, NAT GWY to create a network to host applications in AWS account
    b. Subnets
    c. Route tables
    d. IP
        i. Used for communication, computer program interface, host Addresses
    e. VPN
    f. IGWY
    g. NAT GATEWAY
    h. Someone who has strong knowledge in VPC configuration, subnets and above.
    i. Network is a requirement to create some in AWS like EC2, ALB, ASG, EFS, RDS database.
10. What is EIP and what does stand for?
    a. EIP – Elastic Internet Protocol
        i. We can assign EIP to EC2 instance, ENI
        ii. Public IP address
        iii. Static IP address meaning it will never change.

11. What is Auto Scaling Group in AWS? Associated with increased performance
    a. Scenario.

You have a running EC2 instance that is very slow in performance. It's taking longer for users to get result on a web page. **Case 1**

You have an EC2 instance that is running out of memory and disk space (t3.large). **Case 2**

- i. 2 types
  1. Vertical
     a. **Case 2**
        i. **Move from a t3.large to t3.xlarge**
  2. Horizontal
     a. **Case 1**
        i. **We add the number of EC2 instance to our cluster.**
           - **Leave from 1 instance to 2 or 3 instance**
             a. **3 guys will now be doing work that one guy was doing before.**

12. What are EBS snapshots in AWS?
    a. Backup **in time** of our EC2 instances or EBS Volume or RDS
13. What is your backup strategy?
    a. RPO
       i. Recovery Point Object
          1. 1hr, 1 day, 1 week
          2. Amount of time that data loss wouldn't be an issue in case of any failure
    b. RTO
       i. Recovery Time Objective
          1. How long can you afford to be offline?
          2. How long can you afford to be in a downtime state?
       ii. For Example, a development server might have a longer RTO, meaning, that server can afford to be offline or can afford to have a longer downtime without affecting the business
       iii. For example, production server will have a shortly RPO/RTO…we need to take daily backups of production servers and also maintain a shorter recovery time e.g Netflix.com production web server might have an RPO of 5mins and RTP of 0min – no downtime.
       iv. Other production server might have RPO or 1 or 2hrs and RTO of or 1hr or less.