

Class Test 1 Topics: CSE 4267 - Cloud Computing

Cloud Service Models

1. What are the three main Cloud Service Models (IaaS, PaaS, and SaaS), and how do they differ?
2. What are the key benefits of using Infrastructure as a Service (IaaS)? Provide examples of IaaS providers.
3. How does Platform as a Service (PaaS) simplify application development and deployment?
4. What is the Shared Responsibility Model in the context of cloud computing, and how does it differ across IaaS, PaaS, and SaaS?
5. A company is choosing between IaaS, PaaS, and SaaS to host their new web application. They want scalability, cost-efficiency, and minimal infrastructure management. Which model would you recommend and why?

Amazon EC2

1. What is Amazon EC2, and why is it considered a scalable service?
2. Explain EC2 Instance Types and how to select the right instance type for your application.
3. What is Auto Scaling in EC2, and how does it help manage traffic load?
4. Discuss the differences between On-Demand, Reserved, and Spot instances in EC2.
5. XYZ Corporation is hosting an e-commerce platform on AWS. Design an EC2 infrastructure solution using Auto Scaling, Instance Types, and other AWS features to handle traffic spikes during peak times while minimizing costs during off-peak periods.

Amazon S3

1. What is Amazon S3, and how is it used to store and manage data in the cloud?
2. Explain the different storage classes in S3 and how to choose the right one for your data.
3. What is versioning in Amazon S3, and how does it help with data recovery?
4. A media company uses Amazon S3 to store large video files. Design an S3 storage solution leveraging multiple storage classes, versioning, and lifecycle policies to manage files efficiently, ensuring cost savings and performance optimization.

AWS IAM

1. What is AWS IAM, and how does it help manage security in AWS?
2. Differentiate between IAM Users, Groups, and Roles. When would you use each?
3. What is MFA (Multi-Factor Authentication) in IAM, and how does it enhance security?
4. What is the principle of least privilege in IAM, and how do you apply it to AWS resources?
5. A startup wants to grant different permissions to developers (access to EC2 and S3), administrators (full access), and support staff (read-only access to logs and monitoring). Design an IAM policy strategy to achieve this while following the principle of least privilege.

Amazon VPC

1. What is Amazon VPC, and why is it considered "logically isolated"?
2. Differentiate between an Internet Gateway and a NAT Gateway.
3. Differentiate between public and private subnets with examples of their use cases.
4. XYZ Corporation needs:

- Public access for the web server.
- Secure private access to the database server.
- Internet connectivity for updates on the private server without exposing it publicly.

Design a VPC architecture to meet these requirements, including subnets, an Internet Gateway, and necessary components. Justify your design choices.