Assignment 2

CO2: Explain how and why this paradigm came about and the influence of several enabling technologies physical and logical infrastructure

Q1) SnapStart is a performance optimization feature in Lambda to reduce a Java function's startup latency, commonly known as cold start time. With SnapStart, Lambda takes a Firecracker MicroVM snapshot of the initialized execution environment (memory and disk) when you publish a version and persists the encrypted snapshot. How can cloud service providers solve common challenges associated with inter-tenant network segmentation by proposing and evaluating various segmentation strategies that balance security requirements with performance and scalability considerations.

Q2) Customers who want to increase the creativity and speed of their development organizations without compromising their IT team's ability to provide a scalable, cost-effective, and manageable infrastructure find that AWS Lambda enables them to trade operational complexity for agility and better pricing, without compromising on scale or reliability. What are the challenges of data deletion in a cloud environment, how can organizations build and utilize robust mechanisms for securely erasing sensitive data from storage systems, ensuring compliance with data privacy regulations?

Q3) Security and Compliance is a shared responsibility between AWS and the customer. This shared responsibility model can help relieve your operational burden, as AWS operates, manages, and controls the components from the host operating system and virtualization layer, down to the physical security of the facilities in which the service operates. How can cloud architects plan and construct effective multitenancy solutions while ensuring robust isolation between tenants' network segments and minimizing the risk of data breaches or unauthorized access?

Q4) AWS Glue is a fully managed ETL (extract, transform and load) service that makes it simple and cost-effective to categorize, clean, enrich, and migrate data from a source system to a data store for ML. The AWS AWS Glue Data Catalog provides the location and schema of ETL jobs as well as metadata tables (where each table specifies a single source data store). A crawler can be set to automatically take inventory of the data in your data stores. How do cloud service providers make sure that only authorized users can access certain data or resources (storage isolation). Explain and analyse multi-factor authentication (MFA), role-based access control (RBAC), and least privilege models.

Q5) The Elastic Fabric Adaptor service (EFA) enhances the Elastic Network Adaptor (ENA), and is specifically engineered to support tightly-coupled HPC workloads which require low latency communication between instances. An EFA is a virtual network device which can be attached to an Amazon EC2 instance. EFA is suited to workloads using the Message Passing Interface (MPI). EFA may be worthy of consideration for some financial services workloads, such as weather predictions, as part of an insurance industry catastrophic event model. EFA traffic that bypasses the operating system (OS-bypass) is not routable, so it's limited to a single subnet. As a result, any peers in this network must be in the same subnet and

Availability Zone, which could alter resiliency strategies. The OS-bypass capabilities of EFA are also not supported on Windows Write a short note on security architecture of AWS lambda , how are lambda functions audited and monitored in AWS.