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- Topic Name: Cloud Computing - Cloud Computing
- Episode Name: Cloud Computing Basics
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Cloud Computing Basics

Objectives:

- Types of Cloud Services

    - IaaS
    - PaaS
    - SaaS
    - IDaaS

        - ID as a Service
        - Identity and Account Management Services

            - SSO
            - MFA

    - SECaaS

        - Security as a Service

            - Pentests
            - AV/EDR
            - Incident Response

    - CaaS

        - Container as a Service

            - Container/app/cluster management

    - FaaS

        - Function as a Service

            - Microservices
            - App Functions

                - AWS Lambda

- Responisibility Areas

    - On Prem

        - ALL Subscriber

    - IaaS

        - Subscriber

            - Applications
            - Data
            - Runtime
            - Middleware
            - OS

        - Service Provider

            - Virtualization environment
            - Metal servers
            - Storage
            - Network

    - PaaS

        - Subscriber

- Applications
- Data
  - Service Provider
    - Runtime
    - Middleware
    - OS
    - Virtualization environment
    - Metal servers
    - Storage
    - Network
- SaaS
  - ALL Serice Provider
- Deployment Models
  - Public
  - Private
    - Single org use
  - Community
    - Multiple org use
      - Common industry and security concerns
        - Healthcare
        - Transportation
        - Hotel
  - Hybrid
    - Some mixing of the cloud Deployment Models
  - Multi-Cloud
    - Environment that spans across Multiple cloud providers
      - Single management interface
- NIST Cloud Deployment Reference Architecture
  - https://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication500-292.pdf
  - Cloud Consumer
  - Cloud Provider
  - Cloud Carrier
    - The org that provides network connectivity between consumers and providers
  - Cloud Auditor
    - 3rd-party examiners
      - Regulation and compliance
      - Security and services
  - Cloud Broker
    - Intermediary that specializes in cloud management
      - Categories
        - Service aggregation
          - The cloud broker combines and integrates multiple existing services into new service, carrying responsibility of data integration between cloud consumer and cloud providers.
        - Service intermediation
          - A cloud broker provides value-added service, enhancing an existing service by improving some of its capabilities.

- Service arbitrage
    - This is similar to service aggregation but with flexible dynamic choice of service providers based on the broker's internal evaluations.
- Cloud Storage Architecture
    - Front-End
        - Where the end user interacts with the data through an API
    - Middleware
        - Data De-duplication and Replication
    - Back-End
        - Metal hardware