4-1-1: Examining Cloud Resource Lifecycle Management

After completing this episode, you should be able to:

- Identify and explain cloud resource lifecycle management, given a scenario

Description: In this episode, the learner will examine the common practices for cloud resource management. We will explore the lifecycle from planning to decommissioning, patching, testing, and more.

- Describe the cloud resource lifecycle
    - Planning and Design
        - Define business objectives and technical requirements.
        - Select appropriate cloud service models (IaaS, PaaS, SaaS) and deployment types (public, private, hybrid).
    - Provisioning and Deployment
        - Configure and deploy cloud resources according to defined specifications.
        - Automate provisioning using templates and configuration management tools.
        - Testing
            - Conduct thorough testing of cloud resources to ensure stability and performance after initial deployment
    - Configuration and Integration
        - Set up and configure software and services on cloud platforms.
        - Integrate cloud resources with existing on-premises infrastructure and other cloud services.
        - Testing
            - Conduct thorough testing of cloud resources to ensure stability and performance.
    - Monitoring and Performance Management
        - Implement monitoring tools to track performance, resource usage, and operational health.
        - Adjust resources dynamically based on performance data and scaling requirements.
    - Security and Compliance
        - Apply security controls and policies to protect data and resources.
        - Ensure compliance with regulatory requirements and best practices for data protection.
    - Updates and Maintenance
        - Patches
            - Apply small, critical updates that address security vulnerabilities or minor issues.
        - Updates
            - Major Updates - Implement significant changes that may include new features or performance enhancements.
            - Minor Updates - Deploy incremental improvements or fixes to refine functionality.
        - Perform regular maintenance checks to prevent performance degradation.
        - Testing
            - Conduct thorough testing of cloud resources to ensure stability and performance after updates and patches.
    - Data Management
        - Ephemeral Data - Manage temporary data created during active sessions, emphasizing dynamic resource allocation.

        - Persistent Data - Implement strategies for long-term data storage, ensuring data durability and accessibility.
- Cost Management and Optimization
    - Monitor and optimize cloud spending with cost management tools.
    - Identify underutilized resources and optimize capacity planning.
- Backup and Disaster Recovery
    - Implement backup solutions to protect data against loss and corruption.
    - Design and test disaster recovery plans to ensure business continuity.
    - Testing
        - Conduct thorough testing of cloud resources to ensure data recovery, integrity, and availability
- Decommissioning and Archiving
    - Safely decommission resources that are no longer needed.
    - Archive data and resources according to data retention policies.