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**Exam Code: CV0-004**  
**Exam Name: CompTIA Cloud+**



## Exam A

### QUESTION 1

Which of the following requirements are core considerations when migrating a small business's on-premises applications to the cloud? (Select two).

- A. Availability
- B. Hybrid
- C. Testing
- D. Networking
- E. Compute
- F. Logs

**Correct Answer: A, D**

**Section:**

**Explanation:**

When migrating on-premises applications to the cloud for a small business, availability and networking are core considerations. Ensuring that applications are available and that the network is capable of handling the new cloud traffic are pivotal for a successful transition.

Reference: The migration process and its core considerations, including availability and networking, are topics within the Business Principles of Cloud Environments in the CompTIA Cloud+ material.

### QUESTION 2

The performance of an e-commerce website decreases dramatically during random periods. The IT team is evaluating available resources to mitigate the situation. Which of the following is the best approach to effectively manage this scenario'?

- A. Migrating to a dedicated host
- B. Purchasing additional servers
- C. Scheduling resource allocation
- D. Configuring automatic elasticity

**Correct Answer: D**

**Section:**

**Explanation:**

Configuring automatic elasticity is the best approach to manage an e-commerce website that experiences random performance drops due to variable traffic. Automatic elasticity enables the cloud resources to scale up or down automatically based on the current load, ensuring consistent performance even during unexpected traffic surges.

Reference: The concept of automatic elasticity is part of the cloud management and technical operations content in the CompTIA Cloud+ curriculum.

### QUESTION 3

A company needs to deploy its own code directly in the cloud without provisioning additional infrastructure. Which of the following is the best cloud service model for the company to use?

- A. PaaS
- B. SaaS
- C. IaaS
- D. XaaS

**Correct Answer: A**

**Section:**

**Explanation:**

Platform as a Service (PaaS) is the best cloud service model for deploying code directly in the cloud without provisioning additional infrastructure. PaaS provides a platform allowing customers to develop, run, and manage applications without the complexity of building and maintaining the infrastructure.

Reference: The PaaS model and its benefits for application deployment are covered under the Cloud Concepts domain in the CompTIA Cloud+ certification.

**QUESTION 4**

An administrator is setting up a cloud backup solution that requires the following features:

- \* Cost effective
- \* Granular recovery
- \* Multilocation

Which of the following backup types best meets these requirements?

- A. Off-site, full, incremental, and differential
- B. Cloud site, full, and differential
- C. On-site, full, and incremental
- D. On-site, full, and differential

**Correct Answer: A**

**Section:**

**Explanation:**

An off-site cloud backup solution that offers full, incremental, and differential backups would best meet the requirements of being cost-effective, allowing granular recovery, and supporting multi-location storage. This combination allows for comprehensive backup strategies that can be tailored to the company's needs while optimizing storage costs.

Reference: Backup strategies, including full, incremental, and differential backups, are an integral part of data management and protection strategies discussed in the CompTIA Cloud+ objectives.

**QUESTION 5**

A cloud engineer needs to deploy a new version of a web application to 100 servers. In the past, new version deployments have caused outages. Which of the following deployment types should the cloud engineer implement to prevent the outages from happening this time?

- A. Rolling
- B. Blue-green
- C. Canary
- D. Round-robin

**Correct Answer: C**

**Section:**

**Explanation:**

A canary deployment is a pattern that reduces the risk of introducing a new software version in production by slowly rolling out the change to a small subset of users before rolling it out to the entire infrastructure. It's an effective strategy to prevent outages since it allows for monitoring and quick rollback if issues arise without affecting all users.

Reference: Canary releases are part of deployment strategies that can help mitigate the risk of outages during updates, a concept included in the CompTIA Cloud+ curriculum.

**QUESTION 6**

A company wants to use a solution that will allow for quick recovery from ransomware attacks, as well as intentional and unintentional attacks on data integrity and availability. Which of the following should the company implement that will minimize administrative overhead?

- A. Object versioning
- B. Data replication
- C. Off-site backups

D. Volume snapshots

**Correct Answer: D**

**Section:**

**Explanation:**

Implementing volume snapshots is an effective solution for quick recovery from ransomware attacks and protecting data integrity and availability. Snapshots capture the state of a storage volume at a point in time and can be used to restore data quickly with minimal administrative overhead.

Reference: Data protection strategies like volume snapshots are discussed under cloud data management and protection in the CompTIA Cloud+ objectives.

#### QUESTION 7

A government agency in the public sector is considering a migration from on premises to the cloud. Which of the following are the most important considerations for this cloud migration? (Select two).

- A. Compliance
- B. IaaS vs. SaaS
- C. Firewall capabilities
- D. Regulatory
- E. Implementation timeline
- F. Service availability

**Correct Answer: A, D**

**Section:**

**Explanation:**

For a government agency considering cloud migration, compliance and regulatory considerations are of utmost importance. The agency must ensure that the migration aligns with legal requirements, industry standards, and government regulations specific to the public sector.

Reference: Compliance and regulatory considerations are crucial factors in the cloud migration process for government entities, as emphasized in the CompTIA Cloud+ certification.

#### QUESTION 8

Which of the following refers to the idea that data should stay within certain borders or territories?

- A. Data classification
- B. Data retention
- C. Data sovereignty
- D. Data ownership

**Correct Answer: C**

**Section:**

**Explanation:**

Data sovereignty refers to the concept that data is subject to the laws and governance structures within the nation it is collected or stored. It implies that regardless of where a company's data is stored, the data must comply with the laws of the country where it is physically located.

Reference: The principle of data sovereignty is a critical consideration in international cloud services and is included in the governance, risk, and compliance domain of CompTIA Cloud+.

#### QUESTION 9

A company recently migrated to a public cloud provider. The company's computer incident response team needs to configure native cloud services for detailed logging. Which of the following should the team implement on each cloud service to support root cause analysis of past events? (Select two).

- A. Log retention
- B. Tracing
- C. Log aggregation

- D. Log rotation
- E. Hashing
- F. Encryption

**Correct Answer: A, C**

**Section:**

**Explanation:**

For detailed logging to support root cause analysis of past events, the team should implement log retention to ensure logs are kept for the necessary amount of time and log aggregation to compile logs from various sources for easier analysis and correlation.

Reference: Log management practices, including retention and aggregation, are part of the cloud management strategies covered in the CompTIA Cloud+ curriculum, particularly in the domain of technical operations.

#### QUESTION 10

A company experienced a data leak through its website. A security engineer, who is investigating the issue, runs a vulnerability scan against the website and receives the following output:

```
Nmap scan report for www.example.com (93.184.216.34)
Host is up (0.020s latency).

PORT STATE SERVICE
21/tcp open  ftp
443/tcp open  ssl/https
1119/tcp closed bnetgame
1935/tcp closed rtmp
```

Which of the following is the most likely cause of this leak?

- A. RTMP port open
- B. SQL injection
- C. Privilege escalation
- D. Insecure protocol



**Correct Answer: D**

**Section:**

**Explanation:**

The data leak is most likely caused by the use of an insecure protocol. The vulnerability scan output shows that port 21/tcp for FTP (File Transfer Protocol) is open. FTP is known for transmitting data unencrypted, which could allow sensitive data to be intercepted during transfer.

Reference: The security risks associated with the use of insecure or unencrypted protocols are covered under cloud security best practices in the CompTIA Cloud+ curriculum.

#### QUESTION 11

An engineer made a change to an application and needs to select a deployment strategy that meets the following requirements:

- \* Is simple and fast
- \* Can be performed on two identical platforms

Which of the following strategies should the engineer use?

- A. Blue-green
- B. Canary
- C. Rolling
- D. in-place

**Correct Answer: A**

**Section:**

**Explanation:**

The blue-green deployment strategy is ideal for scenarios where simplicity and speed are crucial. It involves two identical production environments: one (blue) hosts the current application version, while the other (green) is used to deploy the new version. Once testing is completed on the green environment and it's ready to go live, traffic is switched from blue to green, ensuring a quick and efficient rollout with minimal downtime. This method allows for immediate rollback if issues arise, by simply redirecting the traffic back to the blue environment.

Reference: CompTIA Cloud+ material emphasizes the importance of understanding various cloud deployment strategies, including blue-green, and their application in real-world scenarios to ensure efficient and reliable software deployment in cloud environments.

#### QUESTION 12

The change control board received a request to approve a configuration change 10 deploy in the cloud production environment. Which of the following should have already been completed?

- A. Penetration test
- B. End-to-end security testing
- C. Cost benefit analysis
- D. User acceptance testing

**Correct Answer: D**

**Section:**

**Explanation:**

Before a configuration change is deployed in the cloud production environment, it is crucial to conduct User Acceptance Testing (UAT). UAT involves testing the system by the end-users or clients to ensure it can handle required tasks in real-world scenarios, according to specifications. This testing is the final stage before the change is approved for production, ensuring that all functionalities meet user requirements and the system is ready for deployment.

Reference: The CompTIA Cloud+ certification highlights the significance of various testing phases, including UAT, as part of the cloud deployment process to validate the system's readiness and functionality for end-users.

#### QUESTION 13

A customer is migrating applications to the cloud and wants to grant authorization based on the classification levels of each system. Which of the following should the customer implement to ensure authorisation to systems is granted when the user and system classification properties match? (Select two).

- A. Resource tagging
- B. Discretionary access control
- C. Multifactor authentication
- D. Role-based access control
- E. Token-based authentication
- F. Bastion host

**Correct Answer: B, D**

**Section:**

**Explanation:**

Discretionary Access Control (DAC) and Role-Based Access Control (RBAC) are effective methods for granting authorization based on system classification levels. DAC allows resource owners to grant access rights, making it flexible for environments with varying classification levels. RBAC assigns permissions based on roles within an organization, aligning access rights with the user's job functions and ensuring that users access only what is necessary for their role, which can be mapped to system classifications.

Reference: CompTIA Cloud+ content covers various access control models, emphasizing the importance of implementing appropriate security measures that align with organizational policies and classification levels to ensure secure and authorized access to cloud systems.

#### QUESTION 14

A system surpasses 75% to 80% of resource consumption. Which of the following scaling approaches is the most appropriate?

- A. Trending
- B. Manual
- C. Load

D. Scheduled

**Correct Answer: C**

**Section:**

**Explanation:**

Load scaling is the most appropriate approach when a system surpasses 75% to 80% of resource consumption. This method involves adjusting resources dynamically in response to the current load, ensuring the system can handle increased demand without performance degradation. Load scaling can be automatic, allowing systems to scale up or down based on predefined metrics like CPU usage, memory, or network traffic, providing an efficient way to manage resources and maintain optimal performance.

Reference: The CompTIA Cloud+ exam objectives include understanding cloud management and technical operations, which encompass knowledge of various scaling approaches, including load scaling, to ensure efficient resource utilization in cloud environments.

#### QUESTION 15

A network administrator is budding a site-to-site VPN tunnel from the company's headquarters office to the company's public cloud development network. The network administrator confirms the following:

The VPN tunnel is established on the headquarter office firewall.

While inside the office, developers report that they cannot connect to the development network resources.

While outside the office on a client VPN, developers report that they can connect to the development network resources.

The office and the client VPN have different IP subnet ranges.

The firewall flow logs show VPN traffic is reaching the development network from the office.

Which of the following is the next step the next network administrator should take to troubleshoot the VPN tunnel?

- A. Review the development network routing table.
- B. Change the ciphers on the site-to-site VPN.
- C. Restart the site-to-site VPN tunnel.
- D. Check the ACLS on the development workloads

**Correct Answer: A**

**Section:**

**Explanation:**

The next step in troubleshooting the VPN tunnel issue is to review the development network routing table. This action will help determine if the routing configurations are correctly directing traffic from the headquarters office through the VPN tunnel to the development network resources. Proper routing ensures that data packets find their way to the correct destination within the cloud environment, which is critical for establishing successful communication between different network segments.

Reference: CompTIA Cloud+ materials stress the importance of networking fundamentals in cloud environments, including VPN configurations and routing, to ensure secure and efficient connectivity between on-premises infrastructure and cloud resources.

#### QUESTION 16

A company's main web application is no longer accessible via the internet. The cloud administrator investigates and discovers the application is accessible locally and only via an IP address. Which of the following was misconfigured?

- A. IP
- B. DHCP
- C. NAT
- D. DNS

**Correct Answer: D**

**Section:**

**Explanation:**

When a web application is accessible locally via an IP address but not via the internet, the issue likely lies with the Domain Name System (DNS). DNS is responsible for translating domain names into IP addresses. A misconfiguration in DNS records or failure in DNS resolution can prevent users from accessing the application through its domain name, even though the application itself is running and accessible via its direct IP address.

Reference: In the CompTIA Cloud+ curriculum, understanding cloud concepts and networking fundamentals, including DNS, is crucial for troubleshooting and ensuring applications are accessible and perform optimally in



cloud environments.

#### QUESTION 17

A cloud engineer is provisioning a new application that requires access to the organization's public cloud resources. Which of the following is the best way for the cloud engineer to authenticate the application?

- A. Access key
- B. API
- C. MFA token
- D. Username and Password

**Correct Answer: A**

**Section:**

**Explanation:**

The best way to authenticate an application requiring access to an organization's public cloud resources is through the use of an access key. Access keys provide a secure means of authentication for applications and services without the need for interactive login credentials. This method is particularly useful for automated processes or applications that need to interact with cloud services programmatically, ensuring secure and efficient access control.

Reference: CompTIA Cloud+ content emphasizes the importance of secure authentication mechanisms, such as access keys, in managing and securing access to cloud resources, aligning with best practices for cloud security and application deployment.

#### QUESTION 18

A security engineer identifies a vulnerability in a containerized application. The vulnerability can be exploited by a privileged process to read the content of the host's memory. The security engineer reviews the following Dockerfile to determine a solution to mitigate similar exploits:

```
FROM alpine:3.17
RUN apk update && apk upgrade
COPY . /myapp
ENTRYPOINT ["/myapp/app"]
```

Which of the following is the best solution to prevent similar exploits by privileged processes?

- A. Adding the USER myappuser instruction
- B. Patching the host running the Docker daemon
- C. Changing FROM alpine:3.17 to FROM alpine:latest
- D. Running the container with the read-only filesystem configuration

**Correct Answer: A**

**Section:**

**Explanation:**

Adding the 'USER myappuser' instruction to the Dockerfile is the best solution to prevent similar exploits by privileged processes. This instruction ensures that the container runs as a non-privileged user instead of the root user, significantly reducing the risk of privileged exploits. Running containers with least privilege principles minimizes the potential impact of vulnerabilities, enhancing the overall security posture of the containerized environment.

Reference: The CompTIA Cloud+ framework includes security concerns, measures, and concepts for cloud operations, highlighting the importance of container security practices, such as running containers as non-root users to prevent unauthorized access and exploitation.

#### QUESTION 19

A cross-site request forgery vulnerability exploited a web application that was hosted in a public IaaS network. A security engineer determined that deploying a WAF in blocking mode at a CDN would prevent the application from being exploited again. However, a week after implementing the WAF, the application was exploited again. Which of the following should the security engineer do to make the WAF control effective?

- A. Configure the DDoS protection on the CDN.
- B. Install endpoint protection software on the VMs
- C. Add an ACL to the VM subnet.



D. Deploy an IDS on the IaaS network.

**Correct Answer: C**

**Section:**

**Explanation:**

After a WAF deployment fails to prevent an exploit, adding an Access Control List (ACL) to the Virtual Machine (VM) subnet can be an effective control. ACLs provide an additional layer of security by explicitly defining which traffic can or cannot enter a network segment. By setting granular rules based on IP addresses, protocols, and ports, ACLs help to restrict access to resources, thereby mitigating potential exploits and enhancing the security of the IaaS network.

Reference: CompTIA Cloud+ materials cover governance, risk, compliance, and security for the cloud, including the implementation of network security controls like ACLs, to protect cloud environments from unauthorized access and potential security threats.

#### QUESTION 20

A cloud engineer wants containers to run the latest version of a container base image to reduce the number of vulnerabilities. The applications in use require Python 3.10 and are not compatible with any other version. The containers' images are created every time a new version is released from the source image. Given the container Dockerfile below:

```
FROM cgr.dev/chainguard/python:3.10
WORKDIR /myapp
COPY main.py ./
ENTRYPOINT ["python", "/myapp/main.py"]
```

Which of the following actions will achieve the objectives with the least effort?

- A. Perform docker pull before executing docker run.
- B. Execute docker update using a local cron to get the latest container version.
- C. Change the image to use python:latest on the image build process.
- D. Update the Dockerfile to pin the source image version.

**Correct Answer: A**

**Section:**

**Explanation:**

Performing a 'docker pull' before executing 'docker run' ensures that the latest version of the container base image is used, aligning with the objective of reducing vulnerabilities. This command fetches the latest image version from the repository, ensuring that the container runs the most up-to-date and secure version of the base image. This approach is efficient and requires minimal effort, as it automates the process of maintaining the latest image versions for container deployments.

Reference: Within the CompTIA Cloud+ examination scope, understanding management and technical operations in cloud environments, including container management and security, is critical. This includes best practices for maintaining up-to-date container images to minimize vulnerabilities.

#### QUESTION 21

An engineer wants to scale several cloud workloads on demand. Which of the following approaches is the most suitable?

- A. Load
- B. Scheduled
- C. Manual
- D. Trending

**Correct Answer: A**

**Section:**

**Explanation:**

Load scaling is the most suitable approach for scaling several cloud workloads on demand. It automatically adjusts the number of active servers in a cloud environment based on the current load or traffic, ensuring that resources are efficiently utilized to meet demand without manual intervention. This approach helps maintain optimal performance and availability, particularly during unexpected surges in workload or traffic.

Reference: Understanding cloud management and technical operations, including scaling strategies, is crucial for optimizing resource utilization and performance in cloud environments, as outlined in the CompTIA Cloud+ objectives.



**QUESTION 22**

A software engineer is integrating an application to the cloud that is web socket based. Which of the following applications is the engineer most likely deploying?

- A. Image-sharing
- B. Data visualization
- C. Chat
- D. File transfer

**Correct Answer: C**

**Section:**

**Explanation:**

A chat application is most likely to be deployed when integrating a web socket-based application to the cloud. Web sockets provide full-duplex communication channels over a single, long-lived connection, which is ideal for real-time applications like chat services that require persistent connections between the client and server for instant data exchange.

Reference: CompTIA Cloud+ materials cover cloud networking concepts, emphasizing the importance of choosing the right technologies, like web sockets, for specific application requirements to ensure efficient and responsive cloud-based services.

**QUESTION 23**

A manager wants information about which users signed in to a certain VM during the past month. Which of the following can the cloud administrator use to obtain this information?

- A. Retention
- B. Alerting
- C. Aggregation
- D. Collection

**Correct Answer: D**

**Section:**

**Explanation:**

To obtain information about which users signed in to a certain VM during the past month, a cloud administrator can use log collection. Log collection involves gathering and storing logs from various sources, including VMs, to provide historical data on system access and activity, which can then be analyzed to identify user login instances.

Reference: The CompTIA Cloud+ certification emphasizes the importance of monitoring and visibility in cloud environments, which includes log collection and analysis as key components of operational management and security monitoring.

**QUESTION 24**

A cloud engineer is reviewing the following Dockerfile to deploy a Python web application:

```
FROM cgr.dev/chainguard/python:latest
WORKDIR /myapp
COPY main.py ./
ENTRYPOINT ["python", "/myapp/main.py"]
```

Which of the following changes should the engineer make to the file to improve container security?

- A. Add the instruction 'USER nonroot.
- B. Change the version from latest to 3.11.
- C. Remove the ENTRYPOINT instruction.
- D. Ensure myapp/main.py is owned by root.

**Correct Answer: A**

**Section:**

**Explanation:**



To improve container security, the engineer should add the instruction 'USER nonroot' to the Dockerfile. This change ensures that the container does not run as the root user, which reduces the risk of privilege escalation attacks. Running containers as a non-root user is a best practice for enhancing security in containerized environments.

Reference: CompTIA Cloud+ content includes security concerns, measures, and concepts for cloud operations, highlighting container security best practices such as running containers with least privilege to mitigate security risks.

#### QUESTION 25

A company has decided to adopt a microservices architecture for its applications that are deployed to the cloud. Which of the following is a major advantage of this type of architecture?

- A. Increased security
- B. Simplified communication
- C. Reduced server cost
- D. Rapid feature deployment

**Correct Answer: D**

**Section:**

**Explanation:**

A major advantage of adopting a microservices architecture is rapid feature deployment. Microservices allow for independent development, deployment, and scaling of individual service components, enabling teams to bring new features to market more quickly and efficiently compared to monolithic architectures.

Reference: The CompTIA Cloud+ certification covers cloud design aspects, including architectural models like microservices, emphasizing their role in facilitating agile development practices and rapid feature release cycles in cloud environments.

#### QUESTION 26

A company wants to optimize cloud resources and lower the overhead caused by managing multiple operating systems. Which of the following compute resources would be best to help to achieve this goal?

- A. VM
- B. Containers
- C. Remote desktops
- D. Bare-metal servers

**Correct Answer: B**

**Section:**

**Explanation:**

Containers are the best compute resources to optimize cloud resources and lower the overhead caused by managing multiple operating systems. Containers encapsulate applications and their dependencies into a single executable package, running on a shared OS kernel, which reduces the need for separate operating systems for each application and simplifies resource management.

Reference: CompTIA Cloud+ materials discuss management and technical operations in cloud environments, including the use of containers to improve resource utilization and operational efficiency by minimizing the overhead associated with traditional VMs.

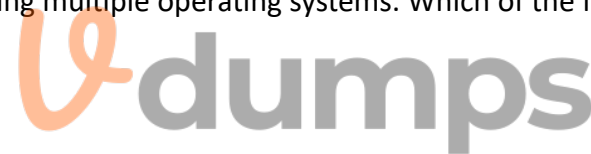
#### QUESTION 27

A developer is deploying a new version of a containerized application. The DevOps team wants:

- \* No disruption
- \* No performance degradation
- \* Cost-effective deployment
- \* Minimal deployment time

Which of the following is the best deployment strategy given the requirements?

- A. Canary
- B. In-place
- C. Blue-green



D. Rolling

**Correct Answer: C**

**Section:**

**Explanation:**

The blue-green deployment strategy is the best given the requirements for no disruption, no performance degradation, cost-effective deployment, and minimal deployment time. It involves maintaining two identical production environments (blue and green), where one hosts the current application version and the other is used to deploy the new version. Once testing on the green environment is complete, traffic is switched from blue to green, ensuring a seamless transition with no downtime.

Reference: Understanding various cloud deployment strategies, such as blue-green deployments, is essential for managing cloud environments effectively, as highlighted in the CompTIA Cloud+ objectives, to ensure smooth and efficient application updates.

#### QUESTION 28

An DevOps engineer is receiving reports that users can no longer access the company's web application after hardening of a web server. The users are receiving the following error:

ERR\_SSLJ/ERSION\_OR\_CIPHER\_MISMATCH.

Which of the following actions should the engineer take to resolve the issue?

- A. Restart the web server.
- B. Configure TLS 1.2 or newer.
- C. Update the web server.
- D. Review logs on the WAF

**Correct Answer: B**

**Section:**

**Explanation:**

To resolve the ERR\_SSL\_VERSION\_OR\_CIPHER\_MISMATCH error after hardening a web server, the engineer should configure the server to use TLS 1.2 or newer. This error often occurs when the server or client supports an outdated version of SSL/TLS or incompatible cipher suites. Updating to a modern, secure version of TLS ensures compatibility and enhances security.

Reference: The CompTIA Cloud+ certification includes governance, risk, compliance, and security for the cloud, emphasizing the importance of implementing up-to-date security protocols like TLS to protect data in transit and ensure secure communications in cloud environments.

#### QUESTION 29

A healthcare organization must follow strict compliance requirements to ensure that PII is not leaked. The cloud administrator needs to ensure the cloud email system can support this requirement Which of the following should the organization enable?

- A. IPS
- B. OLP
- C. ACL
- D. WAF

**Correct Answer: B**

**Section:**

**Explanation:**

To ensure that Personally Identifiable Information (PII) is not leaked and to comply with strict healthcare regulations, the organization should enable Data Loss Prevention (DLP). DLP systems are designed to detect and prevent unauthorized access or sharing of sensitive data, making them ideal for securing PII in cloud email systems and ensuring compliance with healthcare industry standards.

Reference: CompTIA Cloud+ content covers governance, risk, compliance, and security aspects of cloud computing, highlighting the role of DLP in safeguarding sensitive information and maintaining compliance in regulated industries like healthcare.

#### QUESTION 30

A cloud engineer wants to implement a monitoring solution to detect cryptojacking and other cryptomining malware on cloud instances. Which of the following metrics would most likely be used to identify the activity?

- A. Disk I/O
- B. Network packets
- C. Average memory utilization
- D. Percent of CPU utilization

**Correct Answer: D**

**Section:**

**Explanation:**

To detect cryptojacking and other cryptomining malware on cloud instances, monitoring the percent of CPU utilization is most effective. Cryptomining malware typically consumes a significant amount of CPU resources for mining operations, leading to unusually high CPU usage. Monitoring and analyzing CPU utilization metrics can help identify instances of cryptojacking by highlighting abnormal levels of resource consumption.

Reference: Understanding management and technical operations in cloud environments, as outlined in the CompTIA Cloud+ objectives, includes the use of monitoring solutions to detect and respond to security threats like cryptomining malware, ensuring the integrity and performance of cloud resources.

**QUESTION 31**

A developer is testing code that will be used to deploy a web farm in a public cloud. The main code block is a function to create a load balancer and a loop to create 1,000 web servers, as shown below:

```
my_load_balancer()
for x in range(1000):
    my_web_server()
```

The developer runs the code against the company's cloud account and observes that the load balancer is successfully created, but only 100 web servers have been created. Which of the following should the developer do to fix this issue?

- A. Request an increase of Instance quota.
- B. Run the code multiple times until all servers are created.
- C. Check the my\_web\_server () function to ensure it is using the right credentials.
- D. Place the my\_load\_balancer () function after the loop.



**Correct Answer: A**

**Section:**

**Explanation:**

The developer should request an increase of the instance quota from the cloud provider. Cloud services often have a limit on the number of instances that can be created, which is known as an instance quota. If the load balancer is successfully created but the number of web servers is limited to 100, it suggests that the quota has been reached. Increasing the quota will allow the creation of additional web server instances up to the desired number.

Reference: The scenario reflects an understanding of cloud resource management and limitations, which is a part of the CompTIA Cloud+ curriculum, specifically under the domain of Management and Technical Operations.

**QUESTION 32**

A cloud networking engineer is troubleshooting the corporate office's network configuration. Employees in the IT and operations departments are unable to resolve IP addresses on all devices, and the IT department cannot establish a connection to other departments' subnets. The engineer identifies the following configuration currently in place to support the office network:

Subnet	Department	Employees
10.1.20.1/24	Finance	50
10.1.30.1/24	IT	90
10.1.40.1/24	Legal	30
10.1.50.1/24	Operations	100

Each employee needs to connect to the network with a maximum of three hosts. Each subnet must be segregated, but the IT department must have the ability to communicate with all subnets. Which of the following meet the IP addressing and routing requirements? (Select two).

- A. Modifying the subnet mask to 255 255 254.0 for IT and operations departments
- B. Configuring static routing to allow access from each subnet to 10.1.40.1
- C. Modifying the BYOD policy to reduce the volume of devices that are allowed to connect to the corporate network
- D. Configuring static routing to allow access from 10.1.30.1 to each subnet
- E. Combining the subnets and increasing the allocation of IP addresses available to support three hosts for each employee
- F. Modifying the subnet mask to 255.255.255.128 for the IT and operations departments

**Correct Answer: D, F**

**Section:**

**Explanation:**

To meet the requirements of allowing the IT department to communicate with all subnets while keeping each department segregated and ensuring a maximum of three hosts per employee, two actions are required. First, configuring static routing from the IT subnet (10.1.30.1) to each of the other subnets would establish the necessary connectivity. Second, modifying the subnet mask to 255.255.255.128 for the IT and operations departments would provide the needed number of host addresses while maintaining subnet segregation.

Reference: This solution is based on networking and subnetting principles, which are part of the foundational knowledge for cloud networking within the CompTIA Cloud+ framework.

### QUESTION 33

A cloud developer is creating a static website that customers will be accessing globally. Which of the following services will help reduce latency?

- A. VPC
- B. Application load balancer
- C. CDN
- D. API gateway

**Correct Answer: C**

**Section:**

**Explanation:**

A Content Delivery Network (CDN) is the service that will help reduce latency for a static website accessed globally. CDNs distribute content across multiple geographically dispersed servers, allowing users to connect to a server that is closer to them, thereby reducing the time it takes to load the website.

Reference: The use of CDNs is a common practice to enhance global access and improve user experience, as covered under Cloud Concepts in the CompTIA Cloud+ certification.

### QUESTION 34

An administrator needs to adhere to the following requirements when moving a customer's data to the cloud:

\* The new service must be geographically dispersed.

\* The customer should have local access to data

\* Legacy applications should be accessible.

Which of the following cloud deployment models is most suitable?

- A. On-premises
- B. Private
- C. Hybrid
- D. Public

**Correct Answer: C**

**Section:**

**Explanation:**

A hybrid cloud deployment model is most suitable given the requirements. This model combines on-premises infrastructure (or private cloud) with public cloud services, providing geographic dispersion while allowing local access to data. It also facilitates the use of legacy applications that might not be well-suited for a full public cloud environment.

Reference: The hybrid model is a fundamental concept within the CompTIA Cloud+ curriculum, under the section of Cloud Concepts, that explains deployment models.



**QUESTION 35**

A technician receives an email from a vendor who is requesting payment of an invoice for human resources services. The email contains a request for bank account numbers. Which of the following types of attacks does this behavior most likely indicate?

- A. Malware
- B. Cryptojacking
- C. Ransomware
- D. Phishing

**Correct Answer: D**

**Section:**

**Explanation:**

The behavior described in the question indicates a phishing attack. Phishing typically involves an attacker masquerading as a legitimate entity to trick individuals into providing sensitive information, such as bank account numbers, through seemingly trustworthy communication channels like email.

Reference: Understanding security concerns and measures is part of the Governance, Risk, Compliance, and Security domain of the CompTIA Cloud+ objectives.

**QUESTION 36**

Which of the following best explains the concept of migrating from on premises to the cloud?

- A. The configuration of a dedicated pipeline to transfer content to a remote location
- B. The creation of virtual instances in an external provider to transfer operations of selected servers into a new, remotely managed environment
- C. The physical transportation, installation, and configuration of company IT equipment in a cloud services provider's facility
- D. The extension of company IT infrastructure to a managed service provider

**Correct Answer: B**

**Section:**

**Explanation:**

Migrating from on-premises to the cloud generally involves creating virtual instances in an external provider's environment and transferring the operations of selected servers to this new, remotely managed setup. This process allows organizations to leverage the cloud provider's resources and services.

Reference: The migration process and strategies are topics included in the Business Principles of Cloud Environments within the CompTIA Cloud+ curriculum.

**QUESTION 37**

Which of the following service options would provide the best availability for critical applications in the event of a disaster?

- A. Edge computing
- B. Cloud bursting
- C. Availability zones
- D. Multicloud tenancy

**Correct Answer: C**

**Section:**

**Explanation:**

Availability zones provide the best availability for critical applications in the event of a disaster. They are distinct locations within a cloud region that are engineered to be isolated from failures in other availability zones, thus providing redundancy and failover capabilities, which is essential for maintaining high availability of critical applications.

Reference: The concept of availability zones and their importance in disaster recovery and high availability is covered under the domain of Management and Technical Operations in the CompTIA Cloud+ objectives.

**QUESTION 38**

A newly configured VM fails to run application updates despite having internet access. The updates download automatically from a third-party network. Given the following output:



```
$dig +short apac.updatesterver.net
38.102.218.7
$dig +short na.updatesterver.net
request timeout
```

Which of the following troubleshooting steps would be best to take?

- A. Checking DNS configurations
- B. Reconfiguring routing protocols
- C. Testing the IP address configuration
- D. Running a trace to the router

**Correct Answer: A**

**Section:**

**Explanation:**

The best troubleshooting step to take given the output is to check DNS configurations. The failure to resolve the 'na.updatesterver.net' domain suggests a DNS resolution issue, which could be due to incorrect DNS settings, a failure in the DNS service, or an issue with the DNS server itself.

Reference: Troubleshooting DNS issues is a crucial skill in cloud management, as DNS plays a fundamental role in network connectivity and access to resources. It is covered under Cloud Concepts in the CompTIA Cloud+ curriculum.

#### QUESTION 39

A company migrated its CRM system to a SaaS solution. The security team is updating the RAG matrix for the newly migrated CRM. Given the following table:

	Data-center security	CRM software security	CRM server patching	CRM development life cycle
Customer	C,I	I	A, I	A,C,I
CSP	R,A	R,A,C	R,C	R



Which of the following responsibility assignments best aligns with the shared responsibility model for the new CRM?

- A. Data-center security
- B. CRM software security
- C. CRM server patching
- D. CRM development life cycle

**Correct Answer: A**

**Section:**

**Explanation:**

For the newly migrated SaaS CRM, the responsibility assignment that best aligns with the shared responsibility model is data-center security. In a SaaS model, the cloud service provider (CSP) is responsible for the security of the infrastructure, including data centers, while the customer is typically responsible for the data and possibly the user access management.

Reference: The shared responsibility model and its implications for different service models are foundational concepts included in the CompTIA Cloud+ certification, under the domain of Governance, Risk, Compliance, and Security.

#### QUESTION 40

A social networking company operates globally. Some users from Brazil and Argentina are reporting the following error: website address was not found. Which of the following is the most likely cause of this outage?

- A. Client DNS misconfiguration
- B. Regional DNS provider outage
- C. DNS server misconfiguration



D. DNS propagation issues

**Correct Answer: B**

**Section:**

**Explanation:**

The most likely cause of the outage, with users from specific regions like Brazil and Argentina reporting an error that the website address was not found, is a regional DNS provider outage. This type of outage would affect users in particular areas, preventing domain name resolution and leading to the reported error.

Reference: Regional outages and their impact on service availability are discussed within the Cloud Concepts domain, which includes understanding the importance of DNS in cloud services, as per the CompTIA Cloud+ objectives.

#### QUESTION 41

A cloud engineer is designing a cloud-native, three-tier application. The engineer must adhere to the following security best practices:

- \* Minimal services should run on all layers of the stack.
- \* The solution should be vendor agnostic.
- \* Virtualization could be used over physical hardware.

Which of the following concepts should the engineer use to design the system to best meet these requirements?

- A. Virtual machine
- B. Micro services
- C. Fan-out
- D. Cloud-provided managed services

**Correct Answer: B**

**Section:**

**Explanation:**

Microservices architecture is the most suitable design principle that aligns with the security best practices mentioned. It involves developing a suite of small services, each running in its own process and communicating with lightweight mechanisms, often an HTTP resource API. This architecture minimizes the services running on each layer, allows for vendor-agnostic solutions, and is well-suited for virtualization over physical hardware.

Reference: Microservices as an architectural approach is discussed in the context of cloud-native applications within the CompTIA Cloud+ material.

#### QUESTION 42

A high-usage cloud resource needs to be monitored in real time on specific events to guarantee its availability. Which of the following actions should be used to meet this requirement?

- A. Configure a ping command to identify when the cloud instance is out of service.
- B. Create a dashboard with visualizations to filter the status of critical activities.
- C. Collect all the daily activity from the cloud instance and create a dump file for analysis.
- D. Schedule an hourly scan of the network to check for the availability of the resource.

**Correct Answer: B**

**Section:**

**Explanation:**

To guarantee real-time monitoring of a high-usage cloud resource, creating a dashboard with visualizations to filter the status of critical activities is effective. This allows for a quick visual assessment of the system's health and performance, enabling immediate action if specific events indicate potential issues with availability.

Reference: Real-time monitoring and the use of dashboards for tracking critical cloud resources are part of the cloud management best practices covered under the CompTIA Cloud+ objectives.

#### QUESTION 43

A junior cloud administrator was recently promoted to cloud administrator and has been added to the cloud administrator group. The cloud administrator group is the only one that can access the engineering VM. The new administrator unsuccessfully attempts to access the engineering VM. However, the other administrators can access it without issue. Which of the following is the best way to identify the root cause?

- A. Rebooting the engineering VM
- B. Reviewing the administrator's permissions to access the engineering VM
- C. Allowing connections from 0.0.0.070 to the engineering VM
- D. Performing a packet capture on the engineering VM

**Correct Answer: B**

**Section:**

**Explanation:**

The best way to identify the root cause of why the new cloud administrator cannot access the engineering VM is by reviewing the administrator's permissions. It is possible that, despite being added to the cloud administrator group, the specific permissions to access the engineering VM were not properly configured.

Reference: Permission issues are a common problem in cloud environments, and troubleshooting such issues is part of the cloud management skills discussed in the CompTIA Cloud+ certification

#### QUESTION 44

A cloud solutions architect is designing a VM-based solution that requires reducing the cost as much as possible. Which of the following solutions will best satisfy this requirement?

- A. Using ephemeral storage on replicated VMs
- B. Creating Spot VMs in one availability zone
- C. Spreading the VMs across different regions
- D. Using provisioned IOPS storage

**Correct Answer: B**

**Section:**

**Explanation:**

Using Spot VMs is a cost-effective solution as these are available at significantly reduced prices compared to standard instances. Spot VMs are ideal for workloads that can tolerate interruptions and are a way to take advantage of unused cloud capacity.

Reference: The concept of Spot VMs and their cost benefits are included in the financial aspects of managing cloud resources, as per the CompTIA Cloud+ certification guidelines.

#### QUESTION 45

A critical security patch is required on a network load balancer in a public cloud. The organization has a major sales conference next week, and the Chief Executive Officer does not want any interruptions during the demonstration of an application behind the load balancer. Which of the following approaches should the cloud security engineer take?

- A. Ask the management team to delay the conference.
- B. Apply the security patch after the event.
- C. Ask the upper management team to approve an emergency patch window.
- D. Apply the security patch immediately before the conference.

**Correct Answer: C**

**Section:**

**Explanation:**

Given the critical nature of the patch and the upcoming major sales conference, the cloud security engineer should seek approval for an emergency patch window. This approach balances the need for security with the business requirement of no interruptions during the conference.

Reference: The strategy of managing critical updates in alignment with business operations is part of the governance and risk management topics in the CompTIA Cloud+ certification material.

#### QUESTION 46

A cloud engineer has provisioned a VM for a high-frequency trading application. After the VM is put into production, users report high latency in trades. The engineer checks the last six hours of VM metrics and sees the following:

- \* CPU utilization is between 30% to 60%.
- \* NetworkIn is between 50Kbps and 70Kbps.

- \* NetworkOut is between 3.000Kpbs and 5.000Kpbs.
- \* DiskReadOps is at 30.
- \* DiskWriteOps is at 70
- \* Memory utilization is between 50% and 70%.

Which of the following steps should the engineer take next to solve the latency issue?

- A. Move to a network-optimized instance type as the network throughput is not enough.
- B. Modify the disk IOPS to a higher value as the disk IO is being bottlenecked at 100 IOPS.
- C. Increase the memory of the instance as the high-frequency trading application requires more RAM.
- D. Increase the instance size to allocate more vCPUs as the CPU utilization is very high.

**Correct Answer: A**

**Section:**

**Explanation:**

Since the NetworkOut is significantly higher than NetworkIn and considering the nature of a high-frequency trading application, the issue most likely lies with network throughput. Moving to a network-optimized instance type would provide higher network bandwidth, which can reduce latency in trades.

Reference: This solution is derived from the Management and Technical Operations domain of the CompTIA Cloud+ objectives, focusing on performance optimization for cloud services.

#### QUESTION 47

A cloud engineer was deploying the company's payment processing application, but it failed with the following error log:

ERFOR:root: Transaction failed http 429 response, please try again Which of the following are the most likely causes for this error? (Select two).

- A. API throttling
- B. API gateway outage
- C. Web server outage
- D. Oversubscription
- E. Unauthorized access
- F. Insufficient quota



**Correct Answer: A, F**

**Section:**

**Explanation:**

The error 'http 429 response, please try again' typically indicates API throttling, where the number of requests exceeds the rate limit set by the API provider, and insufficient quota, where the allowed number of API calls within a given timeframe has been exceeded.

Reference: API throttling and quota management are key concepts in the management of cloud resources, as highlighted in the CompTIA Cloud+ curriculum.

#### QUESTION 48

An organization's web application experiences periodic bursts of traffic when a new video is launched. Users are reporting poor performance in the middle of the month. Which of the following scaling approaches should the organization use to scale based on forecasted traffic?

- A. Scheduled
- B. Manual
- C. Event
- D. Load

**Correct Answer: A**

**Section:**

**Explanation:**

For periodic bursts of traffic that are predictable, such as when a new video is launched, a scheduled scaling approach is suitable. This strategy involves scaling resources based on forecasted or known traffic patterns, ensuring that the infrastructure can handle the load during expected peak times.

Reference: The use of scheduled scaling to manage predictable traffic increases is discussed within the Management and Technical Operations section of the CompTIA Cloud+ exam objectives.

**QUESTION 49**

An organization needs to retain its data for compliance reasons but only when required. Which of the following would be the most cost-effective type of tiered storage?

- A. Warm
- B. Hot
- C. Archive
- D. Cold

**Correct Answer: C**

**Section:**

**Explanation:**

Archive storage is the most cost-effective type of tiered storage for retaining data that is infrequently accessed and only when required for compliance reasons. It is designed for long-term storage and offers lower storage costs compared to hot, cold, or warm storage tiers.

Reference: Understanding data storage and the various tiers, including archival storage, is part of cloud storage strategies covered in the CompTIA Cloud+ certification.

**QUESTION 50**

A developer is building a new application version using a CI/CD pipeline. The developer receives the following error message log when the build fails:

```
Traceback (most recent call last):
  File "app.py", line 4, in <module>
    import requests
ModuleNotFoundError: No module named 'requests'
```



Which of the following is the most likely cause of this failure?

- A. Incorrect version
- B. Test case failure
- C. Broken build pipeline
- D. Dependency issue

**Correct Answer: D**

**Section:**

**Explanation:**

The error message indicates that the 'requests' module, which is a dependency, is not found. The failure is most likely due to the 'requests' library not being installed or not included in the environment where the application is running.

Reference: Dependency management is a crucial part of maintaining a CI/CD pipeline, a topic included in the CompTIA Cloud+ examination objectives.

**QUESTION 51**

Which of the following cloud deployment strategies is best for an organization that wants to run open-source workloads with other organizations that are sharing the cost?

- A. Community
- B. Public
- C. Hybrid
- D. Private

**Correct Answer: A**

**Section:**

**Explanation:**

A community cloud deployment strategy is best for an organization that wants to run open-source workloads with other organizations while sharing the cost. Community clouds are collaborative efforts where infrastructure is shared between several organizations with common concerns, which could be regulatory, security, or compliance-related.

Reference: The concept of community clouds is discussed in the domain of Cloud Concepts within the CompTIA Cloud+ exam objectives.

**QUESTION 52**

A company's content management system (CMS) service runs on an IaaS cluster on a public cloud. The CMS service is frequently targeted by a malicious threat actor using DDoS. Which of the following should a cloud engineer monitor to identify attacks?

- A. Network flow logs
- B. Endpoint detection and response logs
- C. Cloud provider event logs
- D. Instance syslog

**Correct Answer: A**

**Section:**

**Explanation:**

To identify DDoS attacks against a CMS service, a cloud engineer should monitor network flow logs. These logs provide data about the IP traffic going to and from network interfaces in a public cloud, which is essential for detecting the increased traffic volumes typically associated with DDoS attacks.

Reference: CompTIA Cloud+ Study Guide (Exam CV0-004) - Chapter on Security in the Cloud

**QUESTION 53**

A cloud engineer needs to integrate a new payment processor with an existing e-commerce website. Which of the following technologies is the best fit for this integration?

- A. RPC over SSL
- B. Transactional SQL
- C. REST API over HTTPS
- D. Secure web socket

**Correct Answer: C**

**Section:**

**Explanation:**

The best technology for integrating a new payment processor with an existing e-commerce website is a REST API over HTTPS. This method is widely used for web services, allowing secure communication over the internet and a standardized way for applications to communicate with each other.

Reference: CompTIA Cloud+ Study Guide (Exam CV0-004) - Chapter on Cloud Integration

**QUESTION 54**

A company that has several branches worldwide needs to facilitate full access to a specific cloud resource to a branch in Spain. Other branches will have only read access. Which of the following is the best way to grant access to the branch in Spain?

- A. Set up MFA for the users working at the branch.
- B. Create a network security group with required permissions for users in Spain.
- C. Apply a rule on the WAF to allow only users in Spain access to the resource.
- D. Implement an IPS/IDS to detect unauthorized users.

**Correct Answer: B**

**Section:**

**Explanation:**

The best way to grant full access to a specific cloud resource to a branch in Spain, while other branches have only read access, is to create a network security group with the required permissions. This group can be configured to allow full access to users within the branch's IP range while restricting others to read-only access.

Reference: CompTIA Cloud+ Study Guide (Exam CV0-004) - Chapter on Security Configuration

**QUESTION 55**

Which of the following network types allows the addition of new features through the use of network function virtualization?

- A. Local area network
- B. Wide area network
- C. Storage area network
- D. Software-defined network

**Correct Answer: D**

**Section:**

**Explanation:**

A Software-Defined Network (SDN) is a network approach that allows the addition of new features through software configurations rather than hardware updates, making use of network function virtualization (NFV). NFV decouples network functions from proprietary hardware appliances, so they can run in software, which aligns with the flexibility offered by SDN.

Reference: CompTIA Cloud+ Study Guide (Exam CV0-004) - Chapter on Network Management

**QUESTION 56**

Which of the following migration types is best to use when migrating a highly available application, which is normally hosted on a local VM cluster, for usage with an external user population?

- A. Cloud to on-premises
- B. Cloud to cloud
- C. On-premises to cloud
- D. On-premises to on-premises

**Correct Answer: C**

**Section:**

**Explanation:**

When migrating a highly available application normally hosted on a local VM cluster for usage with an external user population, the best migration type would be on-premises to cloud. This allows the application to leverage the cloud's scalability and reach, providing better access to the external users.

Reference: CompTIA Cloud+ Study Guide (Exam CV0-004) - Chapter on Cloud Migration

**QUESTION 57**

A company's engineering department is conducting a month-long test on the scalability of an in-house-developed software that requires a cluster of 100 or more servers. Which of the following models is the best to use?

- A. PaaS
- B. SaaS
- C. DBaaS
- D. IaaS

**Correct Answer: D**

**Section:**

**Explanation:**

For testing the scalability of an in-house-developed software that requires a cluster of 100 or more servers, Infrastructure as a Service (IaaS) is the best model. IaaS provides the necessary compute resources and allows the



engineering department to configure the environment as needed for their specific test without the constraints that might be present in PaaS or SaaS offerings.

Reference: CompTIA Cloud+ Study Guide (Exam CV0-004) - Chapter on Cloud Service Models

#### QUESTION 58

Which of the following is used to deliver code quickly and efficiently across the development, test, and production environments?

- A. Snapshot
- B. Container image
- C. Serverless function
- D. VM template

**Correct Answer: B**

**Section:**

**Explanation:**

A container image is used to deliver code quickly and efficiently across the development, test, and production environments. Container images are lightweight, standalone, executable software packages that include everything needed to run a piece of software, including the code, runtime, system tools, libraries, and settings.

Reference: CompTIA Cloud+ Study Guide (Exam CV0-004) - Chapter on Cloud Deployment Methods

#### QUESTION 59

A cloud engineer is collecting web server application logs to troubleshoot intermittent issues. However, the logs are piling up and causing storage issues. Which of the following log mechanisms should the cloud engineer implement to address this issue?

- A. Splicing
- B. Rotation
- C. Sampling
- D. Inspection

**Correct Answer: B**

**Section:**

**Explanation:**

Log rotation is the mechanism the cloud engineer should implement to address the issue of logs piling up and causing storage issues. Log rotation involves automatically archiving old log files and creating new ones after a certain size or time period, preventing storage issues.

Reference: CompTIA Cloud+ Study Guide (Exam CV0-004) - Chapter on Cloud Monitoring and Management

#### QUESTION 60

A security engineer recently discovered a vulnerability in the operating system of the company VMs. The operations team reviews the issue and decides all VMs need to be updated from version 3.4.0 to 3.4.1. Which of the following best describes the type of update that will be applied?

- A. Consistent
- B. Major
- C. Minor
- D. Ephemeral

**Correct Answer: C**

**Section:**

**Explanation:**

The update from version 3.4.0 to 3.4.1 is considered a minor update, typically involving small bug fixes or security patches that do not include major feature changes or improvements.

Reference: CompTIA Cloud+ Study Guide (Exam CV0-004) - Chapter on Systems Management

