



CompTIA CV0-004

CompTIA Cloud+ (2024)

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Question: 1

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

Answer: A

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: 2

The change control board received a request to approve a configuration change to 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

Answer: D

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: 3

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

Answer: B, D

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: 4

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

Answer: C

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: 5

A network administrator is budding a site-to-site VPN tunnel from the company's headquarters office 10 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

Answer: A

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: 6

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

Answer: D

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: 7

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

Answer: A

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: 8

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

Answer: A

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: 9

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.

Answer: C

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: 10

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.

Answer: A

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: 11

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

Answer: A

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: 12

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

Answer: C

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: 13

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

Answer: D

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: 14

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.

Answer: A

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: 15

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

Answer: D

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: 16

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

Answer: B

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: 17

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

Answer: C

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: 18

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_SSL/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

Answer: B

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: 19

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

Answer: B

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: 20

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

Answer: D

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.

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