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# CompTIA

SY0-701  
CompTIA Security+ Exam 2024



[Questions and Answers \(PDF\)](#)

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# Total Questions: 171

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### Question: 1

A company's legal department drafted sensitive documents in a SaaS application and wants to ensure the documents cannot be accessed by individuals in high-risk countries. Which of the following is the most effective way to limit this access?

- A. Data masking
- B. Encryption
- C. Geolocation policy
- D. Data sovereignty regulation

**Answer: C**

Explanation:

A geolocation policy is a policy that restricts or allows access to data or resources based on the geographic location of the user or device. A geolocation policy can be implemented using various methods, such as IP address filtering, GPS tracking, or geofencing. A geolocation policy can help the company's legal department to prevent unauthorized access to sensitive documents from individuals in high-risk countries<sup>12</sup>.

The other options are not effective ways to limit access based on location:

Data masking: This is a technique of obscuring or replacing sensitive data with fictitious or anonymized data. Data masking can protect the privacy and confidentiality of data, but it does not prevent access to data based on location<sup>3</sup>.

Encryption: This is a process of transforming data into an unreadable format using a secret key or algorithm. Encryption can protect the integrity and confidentiality of data, but it does not prevent access to data based on location. Encryption can also be bypassed by attackers who have the decryption key or method<sup>4</sup>.

Data sovereignty regulation: This is a set of laws or rules that govern the storage, processing, and transfer of data within a specific jurisdiction or country. Data sovereignty regulation can affect the availability and compliance of data, but it does not prevent access to data based on location. Data sovereignty regulation can also vary depending on the country or region.

Reference = 1: CompTIA Security+ SY0-701 Certification Study Guide, page 972: Account Policies – SY0-601 CompTIA Security+ : 3.7, video by Professor Messer<sup>3</sup>: CompTIA Security+ SY0-701 Certification Study Guide, page 1004: CompTIA Security+ SY0-701 Certification Study Guide, page 101. : CompTIA Security+ SY0-701 Certification Study Guide, page 102.

### Question: 2

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Which of the following is a hardware-specific vulnerability?

- A. Firmware version
- B. Buffer overflow
- C. SQL injection
- D. Cross-site scripting

**Answer: A**

Explanation:

Firmware is a type of software that is embedded in a hardware device, such as a router, a printer, or a BIOS chip. Firmware controls the basic functions and operations of the device, and it can be updated or modified by the manufacturer or the user. Firmware version is a hardware-specific vulnerability, as it can expose the device to security risks if it is outdated, corrupted, or tampered with. An attacker can exploit firmware vulnerabilities to gain unauthorized access, modify device settings, install malware, or cause damage to the device or the network. Therefore, it is important to keep firmware updated and verify its integrity and authenticity. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 2, page 67. CompTIA Security+ SY0-701 Exam Objectives, Domain 2.1, page 10.

### Question: 3

While troubleshooting a firewall configuration, a technician determines that a “deny any” policy should be added to the bottom of the ACL. The technician updates the policy, but the new policy causes several company servers to become unreachable.

Which of the following actions would prevent this issue?

- A. Documenting the new policy in a change request and submitting the request to change management
- B. Testing the policy in a non-production environment before enabling the policy in the production network
- C. Disabling any intrusion prevention signatures on the 'deny any\* policy prior to enabling the new policy
- D. Including an 'allow any1 policy above the 'deny any\* policy

**Answer: B**

Explanation:

A firewall policy is a set of rules that defines what traffic is allowed or denied on a network. A firewall policy should be carefully designed and tested before being implemented, as a misconfigured policy can cause network disruptions or security breaches. A common best practice is to test the policy in a non-production environment, such as a lab or a simulation, before enabling the policy in the production network. This way, the technician can verify the

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functionality and performance of the policy, and identify and resolve any issues or conflicts, without affecting the live network. Testing the policy in a non-production environment would prevent the issue of the 'deny any' policy causing several company servers to become unreachable, as the technician would be able to detect and correct the problem before applying the policy to the production network.

Documenting the new policy in a change request and submitting the request to change management is a good practice, but it would not prevent the issue by itself. Change management is a process that ensures that any changes to the network are authorized, documented, and communicated, but it does not guarantee that the changes are error-free or functional. The technician still needs to test the policy before implementing it.

Disabling any intrusion prevention signatures on the 'deny any' policy prior to enabling the new policy would not prevent the issue, and it could reduce the security of the network. Intrusion prevention signatures are patterns that identify malicious or unwanted traffic, and allow the firewall to block or alert on such traffic. Disabling these signatures would make the firewall less effective in detecting and preventing attacks, and it would not affect the reachability of the company servers.

Including an 'allow any' policy above the 'deny any' policy would not prevent the issue, and it would render the 'deny any' policy useless. A firewall policy is processed from top to bottom, and the first matching rule is applied. An 'allow any' policy would match any traffic and allow it to pass through the firewall, regardless of the source, destination, or protocol. This would negate the purpose of the 'deny any' policy, which is to block any traffic that does not match any of the previous rules. Moreover, an 'allow any' policy would create a security risk, as it would allow any unauthorized or malicious traffic to enter or exit the network. Reference = CompTIA Security+ SY0-701 Certification Study Guide, page 204-205; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 2.1 - Network Security Devices, 8:00 - 10:00.

## Question: 4

An organization is building a new backup data center with cost-benefit as the primary requirement and RTO and RPO values around two days. Which of the following types of sites is the best for this scenario?

- A. Real-time recovery
- B. Hot
- C. Cold
- D. Warm

**Answer: C**

Explanation:

A cold site is a type of backup data center that has the necessary infrastructure to support IT operations, but does not have any pre-configured hardware or software. A cold site is the cheapest option among the backup data center types, but it also has the longest recovery time objective (RTO) and recovery point objective (RPO) values. A cold site is suitable for scenarios

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where the cost-benefit is the primary requirement and the RTO and RPO values are not very stringent. A cold site can take up to two days or more to restore the normal operations after a disaster. Reference = CompTIA Security+ SY0-701 Certification Study Guide, page 387; Backup Types – SY0-601 CompTIA Security+ : 2.5, video at 4:50.

### Question: 5

A company requires hard drives to be securely wiped before sending decommissioned systems to recycling. Which of the following best describes this policy?

- A. Enumeration
- B. Sanitization
- C. Destruction
- D. Inventory

**Answer: B**

Explanation:

Sanitization is the process of removing sensitive data from a storage device or a system before it is disposed of or reused. Sanitization can be done by using software tools or hardware devices that overwrite the data with random patterns or zeros, making it unrecoverable. Sanitization is different from destruction, which is the physical damage of the storage device to render it unusable. Sanitization is also different from enumeration, which is the identification of network resources or devices, and inventory, which is the tracking of assets and their locations. The policy of securely wiping hard drives before sending decommissioned systems to recycling is an example of sanitization, as it ensures that no confidential data can be retrieved from the recycled devices. Reference = Secure Data Destruction – SY0-601 CompTIA Security+ : 2.7, video at 1:00; CompTIA Security+ SY0-701 Certification Study Guide, page 387.

### Question: 6

A systems administrator works for a local hospital and needs to ensure patient data is protected and secure. Which of the following data classifications should be used to secure patient data?

- A. Private
- B. Critical
- C. Sensitive
- D. Public

**Answer: C**

Explanation:

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Data classification is a process of categorizing data based on its level of sensitivity, value, and impact to the organization if compromised. Data classification helps to determine the appropriate security controls and policies to protect the data from unauthorized access, disclosure, or modification. Different organizations may use different data classification schemes, but a common one is the four-tier model, which consists of the following categories: public, private, sensitive, and critical.

Public data is data that is intended for public access and disclosure, and has no impact to the organization if compromised. Examples of public data include marketing materials, press releases, and public web pages.

Private data is data that is intended for internal use only, and has a low to moderate impact to the organization if compromised. Examples of private data include employee records, financial reports, and internal policies.

Sensitive data is data that is intended for authorized use only, and has a high impact to the organization if compromised. Examples of sensitive data include personal information, health records, and intellectual property.

Critical data is data that is essential for the organization's operations and survival, and has a severe impact to the organization if compromised. Examples of critical data include encryption keys, disaster recovery plans, and system backups.

Patient data is a type of sensitive data, as it contains personal and health information that is protected by law and ethical standards. Patient data should be used only by authorized personnel for legitimate purposes, and should be secured from unauthorized access, disclosure, or modification. Therefore, the systems administrator should use the sensitive data classification to secure patient data.

Reference = CompTIA Security+ SY0-701 Certification Study Guide, page 90-91; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 5.5 - Data Classifications, 0:00 - 4:30.

## Question: 7

A U.S.-based cloud-hosting provider wants to expand its data centers to new international locations. Which of the following should the hosting provider consider first?

- A. Local data protection regulations
- B. Risks from hackers residing in other countries
- C. Impacts to existing contractual obligations
- D. Time zone differences in log correlation

**Answer: A**

Explanation:

Local data protection regulations are the first thing that a cloud-hosting provider should consider before expanding its data centers to new international locations. Data protection regulations are laws or standards that govern how personal or sensitive data is collected, stored, processed, and transferred across borders. Different countries or regions may have different data protection regulations, such as the General Data Protection Regulation (GDPR) in the

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European Union, the Personal Information Protection and Electronic Documents Act (PIPEDA) in Canada, or the California Consumer Privacy Act (CCPA) in the United States. A cloud-hosting provider must comply with the local data protection regulations of the countries or regions where it operates or serves customers, or else it may face legal penalties, fines, or reputational damage. Therefore, a cloud-hosting provider should research and understand the local data protection regulations of the new international locations before expanding its data centers there. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 7, page 269. CompTIA Security+ SY0-701 Exam Objectives, Domain 5.1, page 14.

## Question: 8

Which of the following would be the best way to block unknown programs from executing?

- A. Access control list
- B. Application allow list.
- C. Host-based firewall
- D. DLP solution

**Answer: B**

Explanation:

An application allow list is a security technique that specifies which applications are permitted to run on a system or a network. An application allow list can block unknown programs from executing by only allowing the execution of programs that are explicitly authorized and verified. An application allow list can prevent malware, unauthorized software, or unwanted applications from running and compromising the security of the system or the network<sup>12</sup>.

The other options are not the best ways to block unknown programs from executing:

Access control list: This is a security technique that specifies which users or groups are granted or denied access to a resource or an object. An access control list can control the permissions and privileges of users or groups, but it does not directly block unknown programs from executing<sup>13</sup>.

Host-based firewall: This is a security device that monitors and filters the incoming and outgoing network traffic on a single host or system. A host-based firewall can block or allow network connections based on predefined rules, but it does not directly block unknown programs from executing<sup>1</sup>.

DLP solution: This is a security system that detects and prevents the unauthorized transmission or leakage of sensitive data. A DLP solution can protect the confidentiality and integrity of data, but it does not directly block unknown programs from executing<sup>1</sup>.

Reference = 1: CompTIA Security+ SY0-701 Certification Study Guide, page 972: Application Whitelisting – CompTIA Security+ SY0-701 – 3.5, video by Professor Messer<sup>3</sup>: CompTIA Security+ SY0-701 Certification Study Guide, page 98. : CompTIA Security+ SY0-701 Certification Study Guide, page 99. : CompTIA Security+ SY0-701 Certification Study Guide, page 100.

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## Question: 9

A company hired a consultant to perform an offensive security assessment covering penetration testing and social engineering.

Which of the following teams will conduct this assessment activity?

- A. White
- B. Purple
- C. Blue
- D. Red

**Answer: D**

Explanation:

A red team is a group of security professionals who perform offensive security assessments covering penetration testing and social engineering. A red team simulates real-world attacks and exploits the vulnerabilities of a target organization, system, or network. A red team aims to test the effectiveness of the security controls, policies, and procedures of the target, as well as the awareness and response of the staff and the blue team. A red team can be hired as an external consultant or formed internally within the organization. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 1, page 18. CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain 1.8, page 4. Security Teams – SY0-601 CompTIA Security+ : 1.8

## Question: 10

A software development manager wants to ensure the authenticity of the code created by the company. Which of the following options is the most appropriate?

- A. Testing input validation on the user input fields
- B. Performing code signing on company-developed software
- C. Performing static code analysis on the software
- D. Ensuring secure cookies are use

**Answer: B**

Explanation:

Code signing is a technique that uses cryptography to verify the authenticity and integrity of the code created by the company. Code signing involves applying a digital signature to the code using a private key that only the company possesses. The digital signature can be verified by anyone who has the corresponding public key, which can be distributed through a trusted certificate authority. Code signing can prevent unauthorized modifications, tampering, or malware injection into the code, and it can also assure the users that the code is from a

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legitimate source. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 2, page 74. CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain 3.2, page 11. Application Security – SY0-601 CompTIA Security+ : 3.2

## Question: 11

Which of the following can be used to identify potential attacker activities without affecting production servers?

- A. Honey pot
- B. Video surveillance
- C. Zero Trust
- D. Geofencing

**Answer: A**

Explanation:

A honey pot is a system or a network that is designed to mimic a real production server and attract potential attackers. A honey pot can be used to identify the attacker's methods, techniques, and objectives without affecting the actual production servers. A honey pot can also divert the attacker's attention from the real targets and waste their time and resources<sup>12</sup>.

The other options are not effective ways to identify potential attacker activities without affecting production servers:

Video surveillance: This is a physical security technique that uses cameras and monitors to record and observe the activities in a certain area. Video surveillance can help to deter, detect, and investigate physical intrusions, but it does not directly identify the attacker's activities on the network or the servers<sup>3</sup>.

Zero Trust: This is a security strategy that assumes that no user, device, or network is trustworthy by default and requires strict verification and validation for every request and transaction. Zero Trust can help to improve the security posture and reduce the attack surface of an organization, but it does not directly identify the attacker's activities on the network or the servers<sup>4</sup>.

Geofencing: This is a security technique that uses geographic location as a criterion to restrict or allow access to data or resources. Geofencing can help to protect the data sovereignty and compliance of an organization, but it does not directly identify the attacker's activities on the network or the servers<sup>5</sup>.

Reference = 1: CompTIA Security+ SY0-701 Certification Study Guide, page 542: Honeypots and Deception – SY0-601 CompTIA Security+ : 2.1, video by Professor Messer<sup>3</sup>: CompTIA Security+ SY0-701 Certification Study Guide, page 974: CompTIA Security+ SY0-701 Certification Study Guide, page 985: CompTIA Security+ SY0-701 Certification Study Guide, page 99.

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## Question: 12

During an investigation, an incident response team attempts to understand the source of an incident. Which of the following incident response activities describes this process?

- A. Analysis
- B. Lessons learned
- C. Detection
- D. Containment

**Answer: A**

Explanation:

Analysis is the incident response activity that describes the process of understanding the source of an incident. Analysis involves collecting and examining evidence, identifying the root cause, determining the scope and impact, and assessing the threat actor's motives and capabilities. Analysis helps the incident response team to formulate an appropriate response strategy, as well as to prevent or mitigate future incidents. Analysis is usually performed after detection and before containment, eradication, recovery, and lessons learned. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 6, page 223. CompTIA Security+ SY0-701 Exam Objectives, Domain 4.2, page 13.

## Question: 13

A security practitioner completes a vulnerability assessment on a company's network and finds several vulnerabilities, which the operations team remediates. Which of the following should be done next?

- A. Conduct an audit.
- B. Initiate a penetration test.
- C. Rescan the network.
- D. Submit a report.

**Answer: C**

Explanation:

After completing a vulnerability assessment and remediating the identified vulnerabilities, the next step is to rescan the network to verify that the vulnerabilities have been successfully fixed and no new vulnerabilities have been introduced. A vulnerability assessment is a process of identifying and evaluating the weaknesses and exposures in a network, system, or application that could be exploited by attackers. A vulnerability assessment typically involves using automated tools, such as scanners, to scan the network and generate a report of the findings. The report may include information such as the severity, impact, and remediation of the

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vulnerabilities. The operations team is responsible for applying the appropriate patches, updates, or configurations to address the vulnerabilities and reduce the risk to the network. A rescan is necessary to confirm that the remediation actions have been effective and that the network is secure.

Conducting an audit, initiating a penetration test, or submitting a report are not the next steps after completing a vulnerability assessment and remediating the vulnerabilities. An audit is a process of reviewing and verifying the compliance of the network with the established policies, standards, and regulations. An audit may be performed by internal or external auditors, and it may use the results of the vulnerability assessment as part of the evidence. However, an audit is not a mandatory step after a vulnerability assessment, and it does not validate the effectiveness of the remediation actions.

A penetration test is a process of simulating a real-world attack on the network to test the security defenses and identify any gaps or weaknesses. A penetration test may use the results of the vulnerability assessment as a starting point, but it goes beyond scanning and involves exploiting the vulnerabilities to gain access or cause damage. A penetration test may be performed after a vulnerability assessment, but only with the proper authorization, scope, and rules of engagement. A penetration test is not a substitute for a rescan, as it does not verify that the vulnerabilities have been fixed.

Submitting a report is a step that is done after the vulnerability assessment, but before the remediation. The report is a document that summarizes the findings and recommendations of the vulnerability assessment, and it is used to communicate the results to the stakeholders and the operations team. The report may also include a follow-up plan and a timeline for the remediation actions. However, submitting a report is not the final step after the remediation, as it does not confirm that the network is secure.

Reference = CompTIA Security+ SY0-701 Certification Study Guide, page 372-375; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 4.1 - Vulnerability Scanning, 0:00 - 8:00.

## Question: 14

An administrator was notified that a user logged in remotely after hours and copied large amounts of data to a personal device.

Which of the following best describes the user's activity?

- A. Penetration testing
- B. Phishing campaign
- C. External audit
- D. Insider threat

**Answer: D**

Explanation:

An insider threat is a security risk that originates from within the organization, such as an employee, contractor, or business partner, who has authorized access to the organization's data and systems. An insider threat can be malicious, such as stealing, leaking, or sabotaging sensitive

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data, or unintentional, such as falling victim to phishing or social engineering. An insider threat can cause significant damage to the organization's reputation, finances, operations, and legal compliance. The user's activity of logging in remotely after hours and copying large amounts of data to a personal device is an example of a malicious insider threat, as it violates the organization's security policies and compromises the confidentiality and integrity of the data. Reference = Insider Threats – CompTIA Security+ SY0-701: 3.2, video at 0:00; CompTIA Security+ SY0-701 Certification Study Guide, page 133.

## Question: 15

Which of the following allows for the attribution of messages to individuals?

- A. Adaptive identity
- B. Non-repudiation
- C. Authentication
- D. Access logs

**Answer: B**

Explanation:

Non-repudiation is the ability to prove that a message or document was sent or signed by a particular person, and that the person cannot deny sending or signing it. Non-repudiation can be achieved by using cryptographic techniques, such as hashing and digital signatures, that can verify the authenticity and integrity of the message or document. Non-repudiation can be useful for legal, financial, or contractual purposes, as it can provide evidence of the origin and content of the message or document. Reference = Non-repudiation – CompTIA Security+ SY0-701 – 1.2, CompTIA Security+ SY0-301: 6.1 – Non-repudiation, CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain 1.2, page 2.

## Question: 16

Which of the following is the best way to consistently determine on a daily basis whether security settings on servers have been modified?

- A. Automation
- B. Compliance checklist
- C. Attestation
- D. Manual audit

**Answer: A**

Explanation:

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Automation is the best way to consistently determine on a daily basis whether security settings on servers have been modified. Automation is the process of using software, hardware, or other tools to perform tasks that would otherwise require human intervention or manual effort. Automation can help to improve the efficiency, accuracy, and consistency of security operations, as well as reduce human errors and costs. Automation can be used to monitor, audit, and enforce security settings on servers, such as firewall rules, encryption keys, access controls, patch levels, and configuration files. Automation can also alert security personnel of any changes or anomalies that may indicate a security breach or compromise<sup>12</sup>.

The other options are not the best ways to consistently determine on a daily basis whether security settings on servers have been modified:

**Compliance checklist:** This is a document that lists the security requirements, standards, or best practices that an organization must follow or adhere to. A compliance checklist can help to ensure that the security settings on servers are aligned with the organizational policies and regulations, but it does not automatically detect or report any changes or modifications that may occur on a daily basis<sup>3</sup>.

**Attestation:** This is a process of verifying or confirming the validity or accuracy of a statement, claim, or fact. Attestation can be used to provide assurance or evidence that the security settings on servers are correct and authorized, but it does not continuously monitor or audit any changes or modifications that may occur on a daily basis<sup>4</sup>.

**Manual audit:** This is a process of examining or reviewing the security settings on servers by human inspectors or auditors. A manual audit can help to identify and correct any security issues or discrepancies on servers, but it is time-consuming, labor-intensive, and prone to human errors. A manual audit may not be feasible or practical to perform on a daily basis.

Reference = 1: CompTIA Security+ SY0-701 Certification Study Guide, page 1022: Automation and Scripting – CompTIA Security+ SY0-701 – 5.1, video by Professor Messer<sup>3</sup>: CompTIA Security+ SY0-701 Certification Study Guide, page 974: CompTIA Security+ SY0-701 Certification Study Guide, page 98. : CompTIA Security+ SY0-701 Certification Study Guide, page 99.

## Question: 17

Which of the following tools can assist with detecting an employee who has accidentally emailed a file containing a customer's PII?

- A. SCAP
- B. Net Flow
- C. Antivirus
- D. DLP

**Answer: D**

Explanation:

DLP stands for Data Loss Prevention, which is a tool that can assist with detecting and preventing the unauthorized transmission or leakage of sensitive data, such as a customer's PII (Personally Identifiable Information). DLP can monitor, filter, and block data in motion (such as emails), data at rest (such as files), and data in use (such as applications). DLP can also alert the

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sender, the recipient, or the administrator of the data breach, and apply remediation actions, such as encryption, quarantine, or deletion. DLP can help an organization comply with data protection regulations, such as GDPR, HIPAA, or PCI DSS, and protect its reputation and assets. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 2, page 78. CompTIA Security+ SY0-701 Exam Objectives, Domain 2.5, page 11.

## Question: 18

An organization recently updated its security policy to include the following statement: Regular expressions are included in source code to remove special characters such as \$, |, ;, &, ` , and ? from variables set by forms in a web application.

Which of the following best explains the security technique the organization adopted by making this addition to the policy?

- A. Identify embedded keys
- B. Code debugging
- C. Input validation
- D. Static code analysis

**Answer: C**

Explanation:

Input validation is a security technique that checks the user input for any malicious or unexpected data before processing it by the application. Input validation can prevent various types of attacks, such as injection, cross-site scripting, buffer overflow, and command execution, that exploit the vulnerabilities in the application code. Input validation can be performed on both the client-side and the server-side, using methods such as whitelisting, blacklisting, filtering, sanitizing, escaping, and encoding. By including regular expressions in the source code to remove special characters from the variables set by the forms in the web application, the organization adopted input validation as a security technique. Regular expressions are patterns that match a specific set of characters or strings, and can be used to filter out any unwanted or harmful input. Special characters, such as \$, |, ;, &, ` , and ? , can be used by attackers to inject commands or scripts into the application, and cause damage or data theft. By removing these characters from the input, the organization can reduce the risk of such attacks.

Identify embedded keys, code debugging, and static code analysis are not the security techniques that the organization adopted by making this addition to the policy. Identify embedded keys is a process of finding and removing any hard-coded keys or credentials from the source code, as these can pose a security risk if exposed or compromised. Code debugging is a process of finding and fixing any errors or bugs in the source code, which can affect the functionality or performance of the application. Static code analysis is a process of analyzing the source code without executing it, to identify any vulnerabilities, flaws, or coding standards violations. These techniques are not related to the use of regular expressions to remove special characters from the input.

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Reference = CompTIA Security+ SY0-701 Certification Study Guide, page 375-376; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 4.1 - Vulnerability Scanning, 8:00 - 9:08; Application Security – SY0-601 CompTIA Security+ : 3.2, 0:00 - 2:00.

## Question: 19

A security analyst and the management team are reviewing the organizational performance of a recent phishing campaign. The user click-through rate exceeded the acceptable risk threshold, and the management team wants to reduce the impact when a user clicks on a link in a phishing message. Which of the following should the analyst do?

- A. Place posters around the office to raise awareness of common phishing activities.
- B. Implement email security filters to prevent phishing emails from being delivered
- C. Update the EDR policies to block automatic execution of downloaded programs.
- D. Create additional training for users to recognize the signs of phishing attempts.

**Answer: C**

Explanation:

An endpoint detection and response (EDR) system is a security tool that monitors and analyzes the activities and behaviors of endpoints, such as computers, laptops, mobile devices, and servers. An EDR system can detect, prevent, and respond to various types of threats, such as malware, ransomware, phishing, and advanced persistent threats (APTs). One of the features of an EDR system is to block the automatic execution of downloaded programs, which can prevent malicious code from running on the endpoint when a user clicks on a link in a phishing message. This can reduce the impact of a phishing attack and protect the endpoint from compromise. Updating the EDR policies to block automatic execution of downloaded programs is a technical control that can mitigate the risk of phishing, regardless of the user's awareness or behavior. Therefore, this is the best answer among the given options.

The other options are not as effective as updating the EDR policies, because they rely on administrative or physical controls that may not be sufficient to prevent or stop a phishing attack. Placing posters around the office to raise awareness of common phishing activities is a physical control that can increase the user's knowledge of phishing, but it may not change their behavior or prevent them from clicking on a link in a phishing message. Implementing email security filters to prevent phishing emails from being delivered is an administrative control that can reduce the exposure to phishing, but it may not be able to block all phishing emails, especially if they are crafted to bypass the filters. Creating additional training for users to recognize the signs of phishing attempts is an administrative control that can improve the user's skills of phishing detection, but it may not guarantee that they will always be vigilant or cautious when receiving an email. Therefore, these options are not the best answer for this question. Reference = Endpoint Detection and Response – CompTIA Security+ SY0-701 – 2.2, video at 5:30; CompTIA Security+ SY0-701 Certification Study Guide, page 163.

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## Question: 20

Which of the following has been implemented when a host-based firewall on a legacy Linux system allows connections from only specific internal IP addresses?

- A. Compensating control
- B. Network segmentation
- C. Transfer of risk
- D. SNMP traps

**Answer: A**

Explanation:

A compensating control is a security measure that is implemented to mitigate the risk of a vulnerability or a weakness that cannot be resolved by the primary control. A compensating control does not prevent or eliminate the vulnerability or weakness, but it can reduce the likelihood or impact of an attack. A host-based firewall on a legacy Linux system that allows connections from only specific internal IP addresses is an example of a compensating control, as it can limit the exposure of the system to potential threats from external or unauthorized sources. A host-based firewall is a software application that monitors and filters the incoming and outgoing network traffic on a single host, based on a set of rules or policies. A legacy Linux system is an older version of the Linux operating system that may not be compatible with the latest security updates or patches, and may have known vulnerabilities or weaknesses that could be exploited by attackers. Reference = Security Controls – SY0-601 CompTIA Security+ : 5.1, Security Controls – CompTIA Security+ SY0-501 – 5.7, CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 5, page 240. CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain 5.1, page 18.

## Question: 21

The management team notices that new accounts that are set up manually do not always have correct access or permissions.

Which of the following automation techniques should a systems administrator use to streamline account creation?

- A. Guard rail script
- B. Ticketing workflow
- C. Escalation script
- D. User provisioning script

**Answer: D**

Explanation:

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A user provisioning script is an automation technique that uses a predefined set of instructions or commands to create, modify, or delete user accounts and assign appropriate access or permissions. A user provisioning script can help to streamline account creation by reducing manual errors, ensuring consistency and compliance, and saving time and resources<sup>12</sup>.

The other options are not automation techniques that can streamline account creation:

**Guard rail script:** This is a script that monitors and enforces the security policies and rules on a system or a network. A guard rail script can help to prevent unauthorized or malicious actions, such as changing security settings, accessing restricted resources, or installing unwanted software<sup>3</sup>.

**Ticketing workflow:** This is a process that tracks and manages the requests, issues, or incidents that are reported by users or customers. A ticketing workflow can help to improve the communication, collaboration, and resolution of problems, but it does not automate the account creation process<sup>4</sup>.

**Escalation script:** This is a script that triggers an alert or a notification when a certain condition or threshold is met or exceeded. An escalation script can help to inform the relevant parties or authorities of a critical situation, such as a security breach, a performance degradation, or a service outage.

Reference = 1: CompTIA Security+ SY0-701 Certification Study Guide, page 1022: User Provisioning – CompTIA Security+ SY0-701 – 5.1, video by Professor Messer<sup>3</sup>: CompTIA Security+ SY0-701 Certification Study Guide, page 1034: CompTIA Security+ SY0-701 Certification Study Guide, page 104. : CompTIA Security+ SY0-701 Certification Study Guide, page 105.

## Question: 22

A company is planning to set up a SIEM system and assign an analyst to review the logs on a weekly basis. Which of the following types of controls is the company setting up?

- A. Corrective
- B. Preventive
- C. Detective
- D. Deterrent

**Answer: C**

**Explanation:**

A detective control is a type of control that monitors and analyzes the events and activities in a system or a network, and alerts or reports when an incident or a violation occurs. A SIEM (Security Information and Event Management) system is a tool that collects, correlates, and analyzes the logs from various sources, such as firewalls, routers, servers, or applications, and provides a centralized view of the security status and incidents. An analyst who reviews the logs on a weekly basis can identify and investigate any anomalies, trends, or patterns that indicate a potential threat or a breach. A detective control can help the company to respond quickly and effectively to the incidents, and to improve its security posture and resilience. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions:

## Question: 23

A systems administrator is looking for a low-cost application-hosting solution that is cloud-based. Which of the following meets these requirements?

- A. Serverless framework
- B. Type 1 hypervisor
- C. SD-WAN
- D. SDN

**Answer: A**

Explanation:

A serverless framework is a cloud-based application-hosting solution that meets the requirements of low-cost and cloud-based. A serverless framework is a type of cloud computing service that allows developers to run applications without managing or provisioning any servers. The cloud provider handles the server-side infrastructure, such as scaling, load balancing, security, and maintenance, and charges the developer only for the resources consumed by the application. A serverless framework enables developers to focus on the application logic and functionality, and reduces the operational costs and complexity of hosting applications. Some examples of serverless frameworks are AWS Lambda, Azure Functions, and Google Cloud Functions.

A type 1 hypervisor, SD-WAN, and SDN are not cloud-based application-hosting solutions that meet the requirements of low-cost and cloud-based. A type 1 hypervisor is a software layer that runs directly on the hardware and creates multiple virtual machines that can run different operating systems and applications. A type 1 hypervisor is not a cloud-based service, but a virtualization technology that can be used to create private or hybrid clouds. A type 1 hypervisor also requires the developer to manage and provision the servers and the virtual machines, which can increase the operational costs and complexity of hosting applications. Some examples of type 1 hypervisors are VMware ESXi, Microsoft Hyper-V, and Citrix XenServer.

SD-WAN (Software-Defined Wide Area Network) is a network architecture that uses software to dynamically route traffic across multiple WAN connections, such as broadband, LTE, or MPLS. SD-WAN is not a cloud-based service, but a network optimization technology that can improve the performance, reliability, and security of WAN connections. SD-WAN can be used to connect remote sites or users to cloud-based applications, but it does not host the applications itself. Some examples of SD-WAN vendors are Cisco, VMware, and Fortinet.

SDN (Software-Defined Networking) is a network architecture that decouples the control plane from the data plane, and uses a centralized controller to programmatically manage and configure the network devices and traffic flows. SDN is not a cloud-based service, but a network automation technology that can enhance the scalability, flexibility, and efficiency of the network. SDN can be used to create virtual networks or network functions that can support

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cloud-based applications, but it does not host the applications itself. Some examples of SDN vendors are OpenFlow, OpenDaylight, and OpenStack.

Reference = CompTIA Security+ SY0-701 Certification Study Guide, page 264-265; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 3.1 - Cloud and Virtualization, 7:40 - 10:00; [Serverless Framework]; [Type 1 Hypervisor]; [SD-WAN]; [SDN].

## Question: 24

A security operations center determines that the malicious activity detected on a server is normal. Which of the following activities describes the act of ignoring detected activity in the future?

- A. Tuning
- B. Aggregating
- C. Quarantining
- D. Archiving

**Answer: A**

Explanation:

Tuning is the activity of adjusting the configuration or parameters of a security tool or system to optimize its performance and reduce false positives or false negatives. Tuning can help to filter out the normal or benign activity that is detected by the security tool or system, and focus on the malicious or anomalous activity that requires further investigation or response. Tuning can also help to improve the efficiency and effectiveness of the security operations center by reducing the workload and alert fatigue of the analysts. Tuning is different from aggregating, which is the activity of collecting and combining data from multiple sources or sensors to provide a comprehensive view of the security posture. Tuning is also different from quarantining, which is the activity of isolating a potentially infected or compromised device or system from the rest of the network to prevent further damage or spread. Tuning is also different from archiving, which is the activity of storing and preserving historical data or records for future reference or compliance. The act of ignoring detected activity in the future that is deemed normal by the security operations center is an example of tuning, as it involves modifying the settings or rules of the security tool or system to exclude the activity from the detection scope. Therefore, this is the best answer among the given options. Reference = Security Alerting and Monitoring Concepts and Tools – CompTIA Security+ SY0-701: 4.3, video at 7:00; CompTIA Security+ SY0-701 Certification Study Guide, page 191.

## Question: 25

A security analyst reviews domain activity logs and notices the following:

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```
UserID jsmith, password authentication: succeeded, MFA: failed (invalid code)
UserID jsmith, password authentication: succeeded, MFA: failed (invalid code)
UserID jsmith, password authentication: succeeded, MFA: failed (invalid code)
UserID jsmith, password authentication: succeeded, MFA: failed (invalid code)
```

Which of the following is the best explanation for what the security analyst has discovered?

- A. The user jsmith's account has been locked out.
- B. A keylogger is installed on [smith's workstation
- C. An attacker is attempting to brute force ismith's account.
- D. Ransomware has been deployed in the domain.

**Answer: C**

Explanation:

Brute force is a type of attack that tries to guess the password or other credentials of a user account by using a large number of possible combinations. An attacker can use automated tools or scripts to perform a brute force attack and gain unauthorized access to the account. The domain activity logs show that the user ismith has failed to log in 10 times in a row within a short period of time, which is a strong indicator of a brute force attack. The logs also show that the source IP address of the failed logins is different from the usual IP address of ismith, which suggests that the attacker is using a different device or location to launch the attack. The security analyst should take immediate action to block the attacker's IP address, reset ismith's password, and notify ismith of the incident. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 1, page 14. CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain 1.1, page 2. Threat Actors and Attributes – SY0-601 CompTIA Security+ : 1.1

## Question: 26

A company is concerned about weather events causing damage to the server room and downtime. Which of the following should the company consider?

- A. Clustering servers
- B. Geographic dispersion
- C. Load balancers
- D. Off-site backups

**Answer: B**

Explanation:

Geographic dispersion is a strategy that involves distributing the servers or data centers across different geographic locations. Geographic dispersion can help the company to mitigate the risk of weather events causing damage to the server room and downtime, as well as improve the availability, performance, and resilience of the network. Geographic dispersion can also enhance

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the disaster recovery and business continuity capabilities of the company, as it can provide backup and failover options in case of a regional outage or disruption<sup>12</sup>.

The other options are not the best ways to address the company's concern:

**Clustering servers:** This is a technique that involves grouping multiple servers together to act as a single system. Clustering servers can help to improve the performance, scalability, and fault tolerance of the network, but it does not protect the servers from physical damage or downtime caused by weather events, especially if the servers are located in the same room or building<sup>3</sup>.

**Load balancers:** These are devices or software that distribute the network traffic or workload among multiple servers or resources. Load balancers can help to optimize the utilization, efficiency, and reliability of the network, but they do not prevent the servers from being damaged or disrupted by weather events, especially if the servers are located in the same room or building<sup>4</sup>.

**Off-site backups:** These are copies of data or files that are stored in a different location than the original source. Off-site backups can help to protect the data from being lost or corrupted by weather events, but they do not prevent the servers from being damaged or disrupted by weather events, nor do they ensure the availability or continuity of the network services.

Reference = 1: CompTIA Security+ SY0-701 Certification Study Guide, page 972: High Availability – CompTIA Security+ SY0-701 – 3.4, video by Professor Messer<sup>3</sup>: CompTIA Security+ SY0-701 Certification Study Guide, page 984: CompTIA Security+ SY0-701 Certification Study Guide, page 99. : CompTIA Security+ SY0-701 Certification Study Guide, page 100.

## Question: 27

Which of the following is a primary security concern for a company setting up a BYOD program?

- A. End of life
- B. Buffer overflow
- C. VM escape
- D. Jailbreaking

**Answer: D**

Explanation:

Jailbreaking is a primary security concern for a company setting up a BYOD (Bring Your Own Device) program. Jailbreaking is the process of removing the manufacturer's or the carrier's restrictions on a device, such as a smartphone or a tablet, to gain root access and install unauthorized or custom software. Jailbreaking can compromise the security of the device and the data stored on it, as well as expose it to malware, viruses, or hacking. Jailbreaking can also violate the warranty and the terms of service of the device, and make it incompatible with the company's security policies and standards. Therefore, a company setting up a BYOD program should prohibit jailbreaking and enforce device compliance and

encryption. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 2, page 76. CompTIA Security+ SY0-701 Exam Objectives, Domain 2.4, page 11.

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## Question: 28

A company decided to reduce the cost of its annual cyber insurance policy by removing the coverage for ransomware attacks.

Which of the following analysis elements did the company most likely use in making this decision?

- A. IMTTR
- B. RTO
- C. ARO
- D. MTBF

**Answer: C**

Explanation:

ARO (Annualized Rate of Occurrence) is an analysis element that measures the frequency or likelihood of an event happening in a given year. ARO is often used in risk assessment and management, as it helps to estimate the potential loss or impact of an event. A company can use ARO to calculate the annualized loss expectancy (ALE) of an event, which is the product of ARO and the single loss expectancy (SLE). ALE represents the expected cost of an event per year, and can be used to compare with the cost of implementing a security control or purchasing an insurance policy.

The company most likely used ARO in making the decision to remove the coverage for ransomware attacks from its cyber insurance policy. The company may have estimated the ARO of ransomware attacks based on historical data, industry trends, or threat intelligence, and found that the ARO was low or negligible. The company may have also calculated the ALE of ransomware attacks, and found that the ALE was lower than the cost of the insurance policy. Therefore, the company decided to reduce the cost of its annual cyber insurance policy by removing the coverage for ransomware attacks, as it deemed the risk to be acceptable or manageable.

IMTTR (Incident Management Team Training and Readiness), RTO (Recovery Time Objective), and MTBF (Mean Time Between Failures) are not analysis elements that the company most likely used in making the decision to remove the coverage for ransomware attacks from its cyber insurance policy. IMTTR is a process of preparing and training the incident management team to respond effectively to security incidents. IMTTR does not measure the frequency or impact of an event, but rather the capability and readiness of the team. RTO is a metric that defines the maximum acceptable time for restoring a system or service after a disruption. RTO does not measure the frequency or impact of an event, but rather the availability and continuity of the system or service. MTBF is a metric that measures the average time between failures of a system or component. MTBF does not measure the frequency or impact of an event, but rather the reliability and performance of the system or component.

Reference = CompTIA Security+ SY0-701 Certification Study Guide, page 97-98; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 5.2 - Risk Management, 0:00 - 3:00.

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## Question: 29

Which of the following is the most likely to be included as an element of communication in a security awareness program?

- A. Reporting phishing attempts or other suspicious activities
- B. Detecting insider threats using anomalous behavior recognition
- C. Verifying information when modifying wire transfer data
- D. Performing social engineering as part of third-party penetration testing

**Answer: A**

### Explanation:

A security awareness program is a set of activities and initiatives that aim to educate and inform the users and employees of an organization about the security policies, procedures, and best practices. A security awareness program can help to reduce the human factor in security risks, such as social engineering, phishing, malware, data breaches, and insider threats. A security awareness program should include various elements of communication, such as newsletters, posters, videos, webinars, quizzes, games, simulations, and feedback mechanisms, to deliver the security messages and reinforce the security culture. One of the most likely elements of communication to be included in a security awareness program is reporting phishing attempts or other suspicious activities, as this can help to raise the awareness of the users and employees about the common types of cyberattacks and how to respond to them. Reporting phishing attempts or other suspicious activities can also help to alert the security team and enable them to take appropriate actions to prevent or mitigate the impact of the attacks. Therefore, this is the best answer among the given options.

The other options are not as likely to be included as elements of communication in a security awareness program, because they are either technical or operational tasks that are not directly related to the security awareness of the users and employees. Detecting insider threats using anomalous behavior recognition is a technical task that involves using security tools or systems to monitor and analyze the activities and behaviors of the users and employees and identify any deviations or anomalies that may indicate malicious or unauthorized actions. This task is usually performed by the security team or the security operations center, and it does not require the communication or participation of the users and employees. Verifying information when modifying wire transfer data is an operational task that involves using verification methods, such as phone calls, emails, or digital signatures, to confirm the authenticity and accuracy of the information related to wire transfers, such as the account number, the amount, or the recipient. This task is usually performed by the financial or accounting department, and it does not involve the security awareness of the users and employees. Performing social engineering as part of third-party penetration testing is a technical task that involves using deception or manipulation techniques, such as phishing, vishing, or impersonation, to test the security posture and the vulnerability of the users and employees to social engineering attacks. This task is usually performed by external security professionals or consultants, and it does not require the communication or consent of the users and employees. Therefore, these options are not the

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best answer for this question. Reference = Security Awareness and Training – CompTIA Security+ SY0-701: 5.2, video at 0:00; CompTIA Security+ SY0-701 Certification Study Guide, page 263.

## Question: 30

### HOTSPOT

Select the appropriate attack and remediation from each drop-down list to label the corresponding attack with its remediation.

### INSTRUCTIONS

Not all attacks and remediation actions will be used.

If at any time you would like to bring back the initial state of the simulation, please click the Reset All button.

Attack Description	Target	Attack Identified	BEST Preventative or Remediation Action
An attacker sends multiple SYN packets from multiple sources.	Web server	<ul style="list-style-type: none"> <li>Botnet</li> <li>RAT</li> <li>Logic Bomb</li> <li>Backdoor</li> <li>Virus</li> <li>Spyware</li> <li>Worm</li> <li>Adware</li> <li>Ransomware</li> <li>Keylogger</li> <li>Phishing</li> </ul>	<ul style="list-style-type: none"> <li>Enable DDoS protection</li> <li>Patch vulnerable systems</li> <li>Disable vulnerable services</li> <li>Change the default system password</li> <li>Update the cryptographic algorithms</li> <li>Change the default application password</li> <li>Implement 2FA using push notification</li> <li>Conduct a code review</li> <li>Implement application fuzzing</li> <li>Implement a host-based IPS</li> <li>Disable remote access services</li> </ul>
The attack establishes a connection, which allows remote commands to be executed.	User	<ul style="list-style-type: none"> <li>Botnet</li> <li>RAT</li> <li>Logic Bomb</li> <li>Backdoor</li> <li>Virus</li> <li>Spyware</li> <li>Worm</li> <li>Adware</li> <li>Ransomware</li> <li>Keylogger</li> <li>Phishing</li> </ul>	<ul style="list-style-type: none"> <li>Enable DDoS protection</li> <li>Patch vulnerable systems</li> <li>Disable vulnerable services</li> <li>Change the default system password</li> <li>Update the cryptographic algorithms</li> <li>Change the default application password</li> <li>Implement 2FA using push notification</li> <li>Conduct a code review</li> <li>Implement application fuzzing</li> <li>Implement a host-based IPS</li> <li>Disable remote access services</li> </ul>
The attack is self propagating and compromises a SQL database using well-known credentials as it moves through the network.	Database server	<ul style="list-style-type: none"> <li>Botnet</li> <li>RAT</li> <li>Logic Bomb</li> <li>Backdoor</li> <li>Virus</li> <li>Spyware</li> <li>Worm</li> <li>Adware</li> <li>Ransomware</li> <li>Keylogger</li> <li>Phishing</li> </ul>	<ul style="list-style-type: none"> <li>Enable DDoS protection</li> <li>Patch vulnerable systems</li> <li>Disable vulnerable services</li> <li>Change the default system password</li> <li>Update the cryptographic algorithms</li> <li>Change the default application password</li> <li>Implement 2FA using push notification</li> <li>Conduct a code review</li> <li>Implement application fuzzing</li> <li>Implement a host-based IPS</li> <li>Disable remote access services</li> </ul>
The attacker uses hardware to remotely monitor a user's input activity to harvest credentials.	Executive	<ul style="list-style-type: none"> <li>Botnet</li> <li>RAT</li> <li>Logic Bomb</li> <li>Backdoor</li> <li>Virus</li> <li>Spyware</li> <li>Worm</li> <li>Adware</li> <li>Ransomware</li> <li>Keylogger</li> <li>Phishing</li> </ul>	<ul style="list-style-type: none"> <li>Enable DDoS protection</li> <li>Patch vulnerable systems</li> <li>Disable vulnerable services</li> <li>Change the default system password</li> <li>Update the cryptographic algorithms</li> <li>Change the default application password</li> <li>Implement 2FA using push notification</li> <li>Conduct a code review</li> <li>Implement application fuzzing</li> <li>Implement a host-based IPS</li> <li>Disable remote access services</li> </ul>
The attacker embeds hidden access in an internally developed application that bypasses account login.	Application	<ul style="list-style-type: none"> <li>Botnet</li> <li>RAT</li> <li>Logic Bomb</li> <li>Backdoor</li> <li>Virus</li> <li>Spyware</li> <li>Worm</li> <li>Adware</li> <li>Ransomware</li> <li>Keylogger</li> <li>Phishing</li> </ul>	<ul style="list-style-type: none"> <li>Enable DDoS protection</li> <li>Patch vulnerable systems</li> <li>Disable vulnerable services</li> <li>Change the default system password</li> <li>Update the cryptographic algorithms</li> <li>Change the default application password</li> <li>Implement 2FA using push notification</li> <li>Conduct a code review</li> <li>Implement application fuzzing</li> <li>Implement a host-based IPS</li> <li>Disable remote access services</li> </ul>

Web server	Botnet	Enable DDoS protection
User	RAT	Implement a host-based IPS
Database server	Worm	Change the default application password
Executive	Keylogger	Disable vulnerable services
Application	Backdoor	Implement 2FA using push notification

# Answer:

Attack Description	Target	Attack Identified	BEST Preventative or Remediation Action
An attacker sends multiple SYN packets from multiple sources.	Web server	<ul style="list-style-type: none"> <li>Botnet</li> <li>RAT</li> <li>Logic Bomb</li> <li>Backdoor</li> <li>Virus</li> <li>Spyware</li> <li>Worm</li> <li>Adware</li> <li>Ransomware</li> <li>Keylogger</li> <li>Phishing</li> </ul>	<ul style="list-style-type: none"> <li>Enable DDoS protection</li> <li>Patch vulnerable systems</li> <li>Disable vulnerable services</li> <li>Change the default system password</li> <li>Update the cryptographic algorithms</li> <li>Change the default application password</li> <li>Implement 2FA using push notification</li> <li>Conduct a code review</li> <li>Implement application fuzzing</li> <li>Implement a host-based IPS</li> <li>Disable remote access services</li> </ul>
The attack establishes a connection, which allows remote commands to be executed.	User	<ul style="list-style-type: none"> <li>Botnet</li> <li>RAT</li> <li>Logic Bomb</li> <li>Backdoor</li> <li>Virus</li> <li>Spyware</li> <li>Worm</li> <li>Adware</li> <li>Ransomware</li> <li>Keylogger</li> <li>Phishing</li> </ul>	<ul style="list-style-type: none"> <li>Enable DDoS protection</li> <li>Patch vulnerable systems</li> <li>Disable vulnerable services</li> <li>Change the default system password</li> <li>Update the cryptographic algorithms</li> <li>Change the default application password</li> <li>Implement 2FA using push notification</li> <li>Conduct a code review</li> <li>Implement application fuzzing</li> <li>Implement a host-based IPS</li> <li>Disable remote access services</li> </ul>
The attack is self propagating and compromises a SQL database using well-known credentials as it moves through the network.	Database server	<ul style="list-style-type: none"> <li>Botnet</li> <li>RAT</li> <li>Logic Bomb</li> <li>Backdoor</li> <li>Virus</li> <li>Spyware</li> <li>Worm</li> <li>Adware</li> <li>Ransomware</li> <li>Keylogger</li> <li>Phishing</li> </ul>	<ul style="list-style-type: none"> <li>Enable DDoS protection</li> <li>Patch vulnerable systems</li> <li>Disable vulnerable services</li> <li>Change the default system password</li> <li>Update the cryptographic algorithms</li> <li>Change the default application password</li> <li>Implement 2FA using push notification</li> <li>Conduct a code review</li> <li>Implement application fuzzing</li> <li>Implement a host-based IPS</li> <li>Disable remote access services</li> </ul>
The attacker uses hardware to remotely monitor a user's input activity to harvest credentials.	Executive	<ul style="list-style-type: none"> <li>Botnet</li> <li>RAT</li> <li>Logic Bomb</li> <li>Backdoor</li> <li>Virus</li> <li>Spyware</li> <li>Worm</li> <li>Adware</li> <li>Ransomware</li> <li>Keylogger</li> <li>Phishing</li> </ul>	<ul style="list-style-type: none"> <li>Enable DDoS protection</li> <li>Patch vulnerable systems</li> <li>Disable vulnerable services</li> <li>Change the default system password</li> <li>Update the cryptographic algorithms</li> <li>Change the default application password</li> <li>Implement 2FA using push notification</li> <li>Conduct a code review</li> <li>Implement application fuzzing</li> <li>Implement a host-based IPS</li> <li>Disable remote access services</li> </ul>
The attacker embeds hidden access in an internally developed application that bypasses account login.	Application	<ul style="list-style-type: none"> <li>Botnet</li> <li>RAT</li> <li>Logic Bomb</li> <li>Backdoor</li> <li>Virus</li> <li>Spyware</li> <li>Worm</li> <li>Adware</li> <li>Ransomware</li> <li>Keylogger</li> <li>Phishing</li> </ul>	<ul style="list-style-type: none"> <li>Enable DDoS protection</li> <li>Patch vulnerable systems</li> <li>Disable vulnerable services</li> <li>Change the default system password</li> <li>Update the cryptographic algorithms</li> <li>Change the default application password</li> <li>Implement 2FA using push notification</li> <li>Conduct a code review</li> <li>Implement application fuzzing</li> <li>Implement a host-based IPS</li> <li>Disable remote access services</li> </ul>

Explanation:

## Question: 31

### HOTSPOT

You are security administrator investigating a potential infection on a network.

Click on each host and firewall. Review all logs to determine which host originated the Infection and then deny each remaining hosts clean or infected.

**192.168.10.22** ✕

```
4/17/2019 14:30 Info Scheduled scan initiated
4/17/2019 14:31 Info Checking for update
4/17/2019 14:32 Info No update available
4/17/2019 14:33 Info Checking for definition update
4/17/2019 14:34 Info No definition update available
4/17/2019 14:35 Info Scan type - full
4/17/2019 14:36 Info Scan start
4/17/2019 14:37 Info Scanning system files
4/17/2019 14:38 Info Scanning temporary files
4/17/2019 14:39 Info Scanning services
4/17/2019 14:40 Info Scanning boot sector
4/17/2019 14:41 Info Scan complete
4/17/2019 14:42 Info Files removed: 0
4/17/2019 14:43 Info Files quarantined: 0
4/17/2019 14:44 Info Boot sector: clean
4/17/2019 14:45 Info Next scheduled scan: 4/18/2019 14:30
4/18/2019 2:31 Warn Scheduled scan disabled by process svch0st.exe
4/18/2019 2:32 Warn Scheduled update disabled by process scvh0st.exe
```

192.168.10.37

X

```
4/17/2019 14:30 Info Scheduled scan initiated
4/17/2019 14:31 Info Checking for update
4/17/2019 14:32 Info No update available
4/17/2019 14:33 Info Checking for definition update
4/17/2019 14:34 Info No definition update available
4/17/2019 14:35 Info Scan type = full
4/17/2019 14:36 Info Scan start
4/17/2019 14:37 Info Scanning system files
4/17/2019 14:38 Info Scanning temporary files
4/17/2019 14:39 Info Scanning services
4/17/2019 14:40 Info Scanning boot sector
4/17/2019 14:41 Info Scan complete
4/17/2019 14:42 Info Files removed: 0
4/17/2019 14:43 Info Files quarantined: 0
4/17/2019 14:44 Info Boot sector: clean
4/17/2019 14:45 Info Next scheduled scan: 4/18/2019 14:30
4/18/2019 14:30 Info Scheduled scan initiated
4/18/2019 14:31 Info Checking for update
4/18/2019 14:32 Info No update available
4/18/2019 14:33 Info Checking for definition update
4/18/2019 14:34 Info Update available v10.2.3.4440
4/18/2019 14:33 Info Downloading update
4/18/2019 14:35 Info Definition update complete
4/18/2019 14:35 Info Scan type = full
4/18/2019 14:36 Info Scan start
4/18/2019 14:37 Info Scanning system files
4/18/2019 14:37 Warn File found svch0st.exe match definition v10.2.3.4440
4/18/2019 14:37 Warn File quarantined svch0st.exe
4/18/2019 14:38 Info Scanning temporary files
4/18/2019 14:39 Info Scanning services
```

192.168.10.41



```
4/17/2019 14:36 Info Scan start
4/17/2019 14:37 Info Scanning system files
4/17/2019 14:38 Info Scanning temporary files
4/17/2019 14:39 Info Scanning services
4/17/2019 14:40 Info Scanning boot sector
4/17/2019 14:41 Info Scan complete
4/17/2019 14:42 Info Files removed: 0
4/17/2019 14:43 Info Files quarantined: 0
4/17/2019 14:44 Info Boot sector: clean
4/17/2019 14:45 Info Next scheduled scan: 4/18/2019 14:30
4/18/2019 14:30 Info Scheduled scan initiated
4/18/2019 14:31 Info Checking for update
4/18/2019 14:32 Info No update available
4/18/2019 14:33 Info Checking for definition update
4/18/2019 14:34 Error Unable to reach update server
4/18/2019 14:35 Info Scan type = full
4/18/2019 14:36 Info Scan start
4/18/2019 14:37 Info Scanning system files
4/18/2019 14:37 Warn File svch0st.exe match heuristic pattern 0c09488c08d0f3k
4/18/2019 14:37 Error Unable to quarantine file svch0st.exe
4/18/2019 14:38 Info Scanning temporary files
4/18/2019 14:39 Info Scanning services
4/18/2019 14:40 Info Scanning boot sector
4/18/2019 14:41 Info Scan complete
4/18/2019 14:42 Info Files removed: 0
4/18/2019 14:43 Info Files quarantined: 0
4/18/2019 14:43 Warn File quarantine file
4/18/2019 14:44 Info Boot sector: clean
4/18/2019 14:45 Info Next scheduled scan: 4/19/2019 14:30
```

## Firewall



Timestamp	Source	Destination	Destination Port	Application	Action	Client Bytes	Server Bytes
4/17/2019 16:01:44	10.10.9.18	57.203.54.183	443	ssl	Permit	6953	99427
4/17/2019 16:01:58	192.168.10.37	57.203.54.221	443	ssl	Permit	9301	199386
4/17/2019 16:17:06	192.168.10.22	10.10.9.12	135	rpc	Permit	175	1504
4/17/2019 16:27:36	192.168.10.41	10.10.9.12	445	smbv1	Permit	345	34757
4/17/2019 16:28:06	10.10.9.12	192.168.10.41	135	rpc	Permit	754	4771
4/17/2019 16:33:31	10.10.9.18	192.168.10.22	135	rpc	Permit	643	2355
4/17/2019 16:35:36	192.168.10.37	10.10.9.12	135	smbv2	Permit	649	5644
4/17/2019 23:58:36	10.10.9.12	192.168.10.41		icmp	Permit	128	128
4/17/2019 23:58:43	10.10.9.12	192.168.10.22		icmp	Permit	128	128
4/17/2019 23:58:45	10.10.9.12	192.168.10.37		icmp	Permit	128	128
4/18/2019 2:31:36	10.10.9.18	192.168.10.41	445	smbv2	Permit	1874	23874
4/18/2019 2:31:45	192.168.10.22	57.203.55.29	8080	http	Permit	7203	75997
4/18/2019 2:31:51	10.10.9.18	57.203.56.201	443	ssl	Permit	9953	199730
4/18/2019 2:31:02	192.168.10.22	57.203.55.234	443	http	Permit	4937	84937
4/18/2019 2:39:11	192.168.10.41	57.203.53.89	8080	http	Permit	8201	133183
4/18/2019 2:39:12	10.10.9.18	57.203.55.19	8080	ssl	Permit	1284	9102854
4/18/2019 2:39:32	192.168.10.37	57.203.56.113	443	ssl	Permit	9341	9938
4/18/2019 13:37:36	192.168.10.22	10.10.9.18	445	smbv3	Permit	1874	23874
4/18/2019 13:39:43	192.168.10.22	10.10.9.18	135	rpc	Permit	673	41358
4/18/2019 13:45:04	10.10.9.18	192.168.10.37	135	rpc	Permit	693	1952
4/18/2019 13:47:44	10.10.9.12	192.168.10.41	445	smbv3	Permit	482	3505
4/18/2019 13:52:57	10.10.9.18	192.168.10.22	135	rpc	Permit	545	9063
4/18/2019 13:53:01	192.168.10.37	10.10.9.12	335	smbv3	Permit	876	8068
4/18/2019 14:30:04	10.10.9.12	57.203.56.231	443	ssl	Permit	9901	199730
4/18/2019 14:30:04	192.168.10.37	57.203.56.143	443	ssl	Permit	10092	209938

## 10.10.9.12

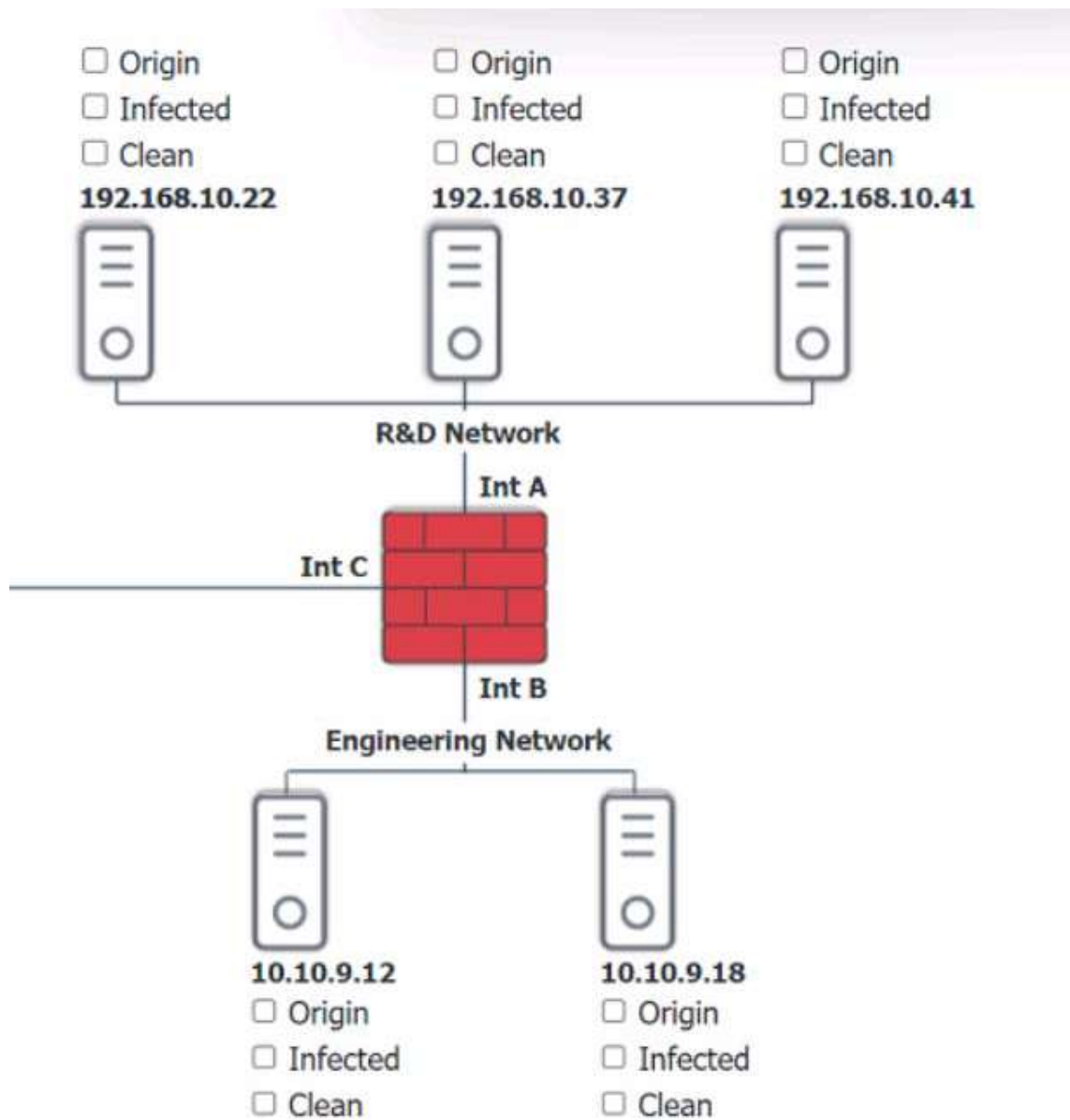


```
4/17/2019 14:30 Info Scheduled scan initiated
4/17/2019 14:31 Info Checking for update
4/17/2019 14:32 Info No update available
4/17/2019 14:33 Info Checking for definition update
4/17/2019 14:34 Info No definition update available
4/17/2019 14:35 Info Scan type = full
4/17/2019 14:36 Info Scan start
4/17/2019 14:37 Info Scanning system files
4/17/2019 14:38 Info Scanning temporary files
4/17/2019 14:39 Info Scanning services
4/17/2019 14:40 Info Scanning boot sector
4/17/2019 14:41 Info Scan complete
4/17/2019 14:42 Info Files removed: 0
4/17/2019 14:43 Info Files quarantined: 0
4/17/2019 14:44 Info Boot sector: clean
4/17/2019 14:45 Info Next scheduled scan: 4/18/2019 14:30
4/18/2019 14:30 Info Scheduled scan initiated
4/18/2019 14:31 Info Checking for update
4/18/2019 14:32 Info No update available
4/18/2019 14:33 Info Checking for definition update
4/18/2019 14:34 Info Update available v10.2.3.4440
4/18/2019 14:33 Info Downloading update
4/18/2019 14:35 Info Definition update complete
4/18/2019 14:35 Info Scan type = full
4/18/2019 14:36 Info Scan start
4/18/2019 14:37 Info Scanning system files
4/18/2019 14:37 Warn File found svch0st.exe match definition v10.2.3.4440
4/18/2019 14:37 Warn File quarantined svch0st.exe
4/18/2019 14:38 Info Scanning temporary files
4/18/2019 14:39 Info Scanning services
```

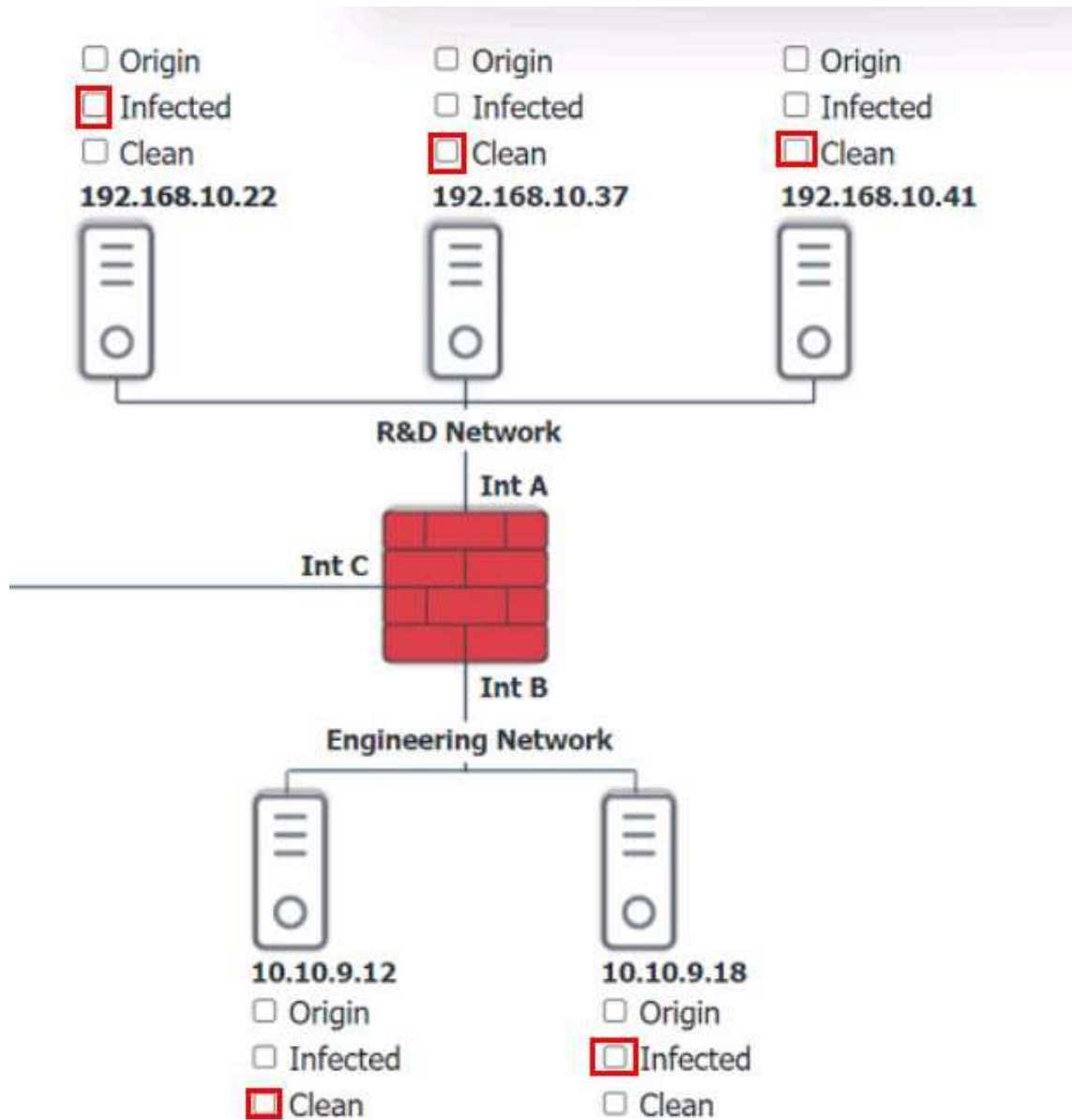
## 10.10.9.18



```
4/17/2019 14:30 Info Scheduled scan initiated
4/17/2019 14:31 Info Checking for update
4/17/2019 14:32 Info No update available
4/17/2019 14:33 Info Checking for definition update
4/17/2019 14:34 Info No definition update available
4/17/2019 14:35 Info Scan type = full
4/17/2019 14:36 Info Scan start
4/17/2019 14:37 Info Scanning system files
4/17/2019 14:38 Info Scanning temporary files
4/17/2019 14:39 Info Scanning services
4/17/2019 14:40 Info Scanning boot sector
4/17/2019 14:41 Info Scan complete
4/17/2019 14:42 Info Files removed: 0
4/17/2019 14:43 Info Files quarantined: 0
4/17/2019 14:44 Info Boot sector: clean
4/17/2019 14:45 Info Next scheduled scan: 4/18/2019 14:30
4/18/2019 14:30 Info Scheduled scan initiated
4/18/2019 14:31 Info Checking for update
4/18/2019 14:32 Info No update available
4/18/2019 14:33 Info Checking for definition update
4/18/2019 14:34 Error Unable to reach update server
4/18/2019 14:35 Info Scan type = full
4/18/2019 14:36 Info Scan start
4/18/2019 14:37 Info Scanning system files
4/18/2019 14:37 Warn File svch0st.exe match heuristic pattern 0c09488c08d0f3k
4/18/2019 14:37 Error Unable to quarantine file svch0st.exe
4/18/2019 14:38 Info Scanning temporary files
4/18/2019 14:39 Info Scanning services
4/18/2019 14:40 Info Scanning boot sector
4/18/2019 14:41 Info Scan complete
```



**Answer:**



Explanation:

## Question: 32

Which of the following vulnerabilities is exploited when an attacker overwrites a register with a malicious address?

- A. VM escape
- B. SQL injection
- C. Buffer overflow
- D. Race condition

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**Answer: C**

Explanation:

A buffer overflow is a vulnerability that occurs when an application writes more data to a memory buffer than it can hold, causing the excess data to overwrite adjacent memory locations. A register is a small storage area in the CPU that holds temporary data or instructions. An attacker can exploit a buffer overflow to overwrite a register with a malicious address that points to a shellcode, which is a piece of code that gives the attacker control over the system. By doing so, the attacker can bypass the normal execution flow of the application and execute arbitrary commands.

### Question: 33

Which of the following would be the best way to handle a critical business application that is running on a legacy server?

- A. Segmentation
- B. Isolation
- C. Hardening
- D. Decommissioning

**Answer: C**

Explanation:

A legacy server is a server that is running outdated or unsupported software or hardware, which may pose security risks and compatibility issues. A critical business application is an application that is essential for the operation and continuity of the business, such as accounting, payroll, or inventory management. A legacy server running a critical business application may be difficult to replace or upgrade, but it should not be left unsecured or exposed to potential threats.

One of the best ways to handle a legacy server running a critical business application is to harden it. Hardening is the process of applying security measures and configurations to a system to reduce its attack surface and vulnerability. Hardening a legacy server may involve steps such as:

Applying patches and updates to the operating system and the application, if available

Removing or disabling unnecessary services, features, or accounts

Configuring firewall rules and network access control lists to restrict inbound and outbound traffic

Enabling encryption and authentication for data transmission and storage

Implementing logging and monitoring tools to detect and respond to anomalous or malicious activity

Performing regular backups and testing of the system and the application

Hardening a legacy server can help protect the critical business application from unauthorized access, modification, or disruption, while maintaining its functionality and availability. However,

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hardening a legacy server is not a permanent solution, and it may not be sufficient to address all the security issues and challenges posed by the outdated or unsupported system. Therefore, it is advisable to plan for the eventual decommissioning or migration of the legacy server to a more secure and modern platform, as soon as possible.

### Question: 34

Which of the following describes the process of concealing code or text inside a graphical image?

- A. Symmetric encryption
- B. Hashing
- C. Data masking
- D. Steganography

**Answer: D**

Explanation:

Steganography is the process of hiding information within another medium, such as an image, audio, video, or text file. The hidden information is not visible or noticeable to the casual observer, and can only be extracted by using a specific technique or key. Steganography can be used for various purposes, such as concealing secret messages, watermarking, or evading detection by antivirus software<sup>12</sup>

1: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 5: Cryptography and PKI, page 233  
2: CompTIA Security+ Certification Kit: Exam SY0-701, 7th Edition, Chapter 5: Cryptography and PKI, page 235

### Question: 35

After a company was compromised, customers initiated a lawsuit. The company's attorneys have requested that the security team initiate a legal hold in response to the lawsuit. Which of the following describes the action the security team will most likely be required to take?

- A. Retain the emails between the security team and affected customers for 30 days.
- B. Retain any communications related to the security breach until further notice.
- C. Retain any communications between security members during the breach response.
- D. Retain all emails from the company to affected customers for an indefinite period of time.

**Answer: B**

Explanation:

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A legal hold (also known as a litigation hold) is a notification sent from an organization's legal team to employees instructing them not to delete electronically stored information (ESI) or discard paper documents that may be relevant to a new or imminent legal case. A legal hold is intended to preserve evidence and prevent spoliation, which is the intentional or negligent destruction of evidence that could harm a party's case. A legal hold can be triggered by various events, such as a lawsuit, a regulatory investigation, or a subpoena<sup>12</sup>

In this scenario, the company's attorneys have requested that the security team initiate a legal hold in response to the lawsuit filed by the customers after the company was compromised. This means that the security team will most likely be required to retain any communications related to the security breach until further notice. This could include emails, instant messages, reports, logs, memos, or any other documents that could be relevant to the lawsuit. The security team should also inform the relevant custodians (the employees who have access to or control over the ESI) of their preservation obligations and monitor their compliance. The security team should also document the legal hold process and its scope, as well as take steps to protect the ESI from alteration, deletion, or loss<sup>34</sup>

1: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 6: Risk Management, page 303  
2: CompTIA Security+ Certification Kit: Exam SY0-701, 7th Edition, Chapter 6: Risk Management, page 305  
3: Legal Hold (Litigation Hold) - The Basics of E-Discovery - Exterro 5  
4: The Legal Implications and Consequences of a Data Breach 6

## Question: 36

A network manager wants to protect the company's VPN by implementing multifactor authentication that uses:

- . Something you know
- . Something you have
- . Something you are

Which of the following would accomplish the manager's goal?

- A. Domain name, PKI, GeolIP lookup
- B. VPN IP address, company ID, facial structure
- C. Password, authentication token, thumbprint
- D. Company URL, TLS certificate, home address

**Answer: C**

Explanation:

The correct answer is C. Password, authentication token, thumbprint. This combination of authentication factors satisfies the manager's goal of implementing multifactor authentication that uses something you know, something you have, and something you are.

Something you know is a type of authentication factor that relies on the user's knowledge of a secret or personal information, such as a password, a PIN, or a security question. A password is a common example of something you know that can be used to access a VPN<sup>12</sup>

Something you have is a type of authentication factor that relies on the user's possession of a physical object or device, such as a smart card, a token, or a smartphone. An authentication

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token is a common example of something you have that can be used to generate a one-time password (OTP) or a code that can be used to access a VPN12

Something you are is a type of authentication factor that relies on the user's biometric characteristics, such as a fingerprint, a face, or an iris. A thumbprint is a common example of something you are that can be used to scan and verify the user's identity to access a VPN12  
1: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 4: Identity and Access Management, page 177 2: CompTIA Security+ Certification Kit: Exam SY0-701, 7th Edition, Chapter 4: Identity and Access Management, page 179

### Question: 37

A security manager created new documentation to use in response to various types of security incidents. Which of the following is the next step the manager should take?

- A. Set the maximum data retention policy.
- B. Securely store the documents on an air-gapped network.
- C. Review the documents' data classification policy.
- D. Conduct a tabletop exercise with the team.

**Answer: D**

Explanation:

A tabletop exercise is a simulated scenario that tests the effectiveness of a security incident response plan. It involves gathering the relevant stakeholders and walking through the steps of the plan, identifying any gaps or issues that need to be addressed. A tabletop exercise is a good way to validate the documentation created by the security manager and ensure that the team is prepared for various types of security incidents.

### Question: 38

Users at a company are reporting they are unable to access the URL for a new retail website because it is flagged as gambling and is being blocked.

Which of the following changes would allow users to access the site?

- A. Creating a firewall rule to allow HTTPS traffic
- B. Configuring the IPS to allow shopping
- C. Tuning the DLP rule that detects credit card data
- D. Updating the categorization in the content filter

**Answer: D**

Explanation:

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A content filter is a device or software that blocks or allows access to web content based on predefined rules or categories. In this case, the new retail website is mistakenly categorized as gambling by the content filter, which prevents users from accessing it. To resolve this issue, the content filter's categorization needs to be updated to reflect the correct category of the website, such as shopping or retail. This will allow the content filter to allow access to the website instead of blocking it.

### Question: 39

An administrator discovers that some files on a database server were recently encrypted. The administrator sees from the security logs that the data was last accessed by a domain user. Which of the following best describes the type of attack that occurred?

- A. Insider threat
- B. Social engineering
- C. Watering-hole
- D. Unauthorized attacker

**Answer: A**

Explanation:

An insider threat is a type of attack that originates from someone who has legitimate access to an organization's network, systems, or data.

a. In this case, the domain user who encrypted the files on the database server is an example of an insider threat, as they abused their access privileges to cause harm to the organization.

Insider threats can be motivated by various factors, such as financial gain, revenge, espionage, or sabotage.

### Question: 40

Which of the following automation use cases would best enhance the security posture of an organization by rapidly updating permissions when employees leave a company?

- A. Provisioning resources
- B. Disabling access
- C. Reviewing change approvals
- D. Escalating permission requests

**Answer: B**

Explanation:

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Disabling access is an automation use case that would best enhance the security posture of an organization by rapidly updating permissions when employees leave a company. Disabling access is the process of revoking or suspending the access rights of a user account, such as login credentials, email, VPN, cloud services, etc. Disabling access can prevent unauthorized or malicious use of the account by former employees or attackers who may have compromised the account. Disabling access can also reduce the attack surface and the risk of data breaches or leaks. Disabling access can be automated by using scripts, tools, or workflows that can trigger the action based on predefined events, such as employee termination, resignation, or transfer. Automation can ensure that the access is disabled in a timely, consistent, and efficient manner, without relying on manual intervention or human error.

## Question: 41

Which of the following must be considered when designing a high-availability network? (Select two).

- A. Ease of recovery
- B. Ability to patch
- C. Physical isolation
- D. Responsiveness
- E. Attack surface
- F. Extensible authentication

**Answer: A E**

Explanation:

A high-availability network is a network that is designed to minimize downtime and ensure continuous operation of critical services and applications. To achieve this goal, a high-availability network must consider two important factors: ease of recovery and attack surface.

Ease of recovery refers to the ability of a network to quickly restore normal functionality after a failure, disruption, or disaster. A high-availability network should have mechanisms such as redundancy, failover, backup, and restore to ensure that any single point of failure does not cause a complete network outage. A high-availability network should also have procedures and policies for incident response, disaster recovery, and business continuity to minimize the impact of any network issue on the organization's operations and reputation.

Attack surface refers to the exposure of a network to potential threats and vulnerabilities. A high-availability network should have measures such as encryption, authentication, authorization, firewall, intrusion detection and prevention, and patch management to protect the network from unauthorized access, data breaches, malware, denial-of-service attacks, and other cyberattacks. A high-availability network should also have processes and tools for risk assessment, threat intelligence, vulnerability scanning, and penetration testing to identify and mitigate any weaknesses or gaps in the network security.

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## Question: 42

Which of the following methods to secure credit card data is best to use when a requirement is to see only the last four numbers on a credit card?

- A. Encryption
- B. Hashing
- C. Masking
- D. Tokenization

**Answer: C**

Explanation:

Masking is a method to secure credit card data that involves replacing some or all of the digits with symbols, such as asterisks, dashes, or Xs, while leaving some of the original digits visible. Masking is best to use when a requirement is to see only the last four numbers on a credit card, as it can prevent unauthorized access to the full card number, while still allowing identification and verification of the cardholder. Masking does not alter the original data, unlike encryption, hashing, or tokenization, which use algorithms to transform the data into different formats.

## Question: 43

An administrator finds that all user workstations and servers are displaying a message that is associated with files containing an extension of .ryk. Which of the following types of infections is present on the systems?

- A. Virus
- B. Trojan
- C. Spyware
- D. Ransomware

**Answer: D**

Explanation:

Ransomware is a type of malware that encrypts the victim's files and demands a ransom for the decryption key. The ransomware usually displays a message on the infected system with instructions on how to pay the ransom and recover the files. The .ryk extension is associated with a ransomware variant called Ryuk, which targets large organizations and demands high ransoms<sup>1</sup>.

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## Question: 44

A healthcare organization wants to provide a web application that allows individuals to digitally report health emergencies.

Which of the following is the most important consideration during development?

- A. Scalability
- B. Availability
- C. Cost
- D. Ease of deployment

**Answer: B**

Explanation:

Availability is the ability of a system or service to be accessible and usable when needed. For a web application that allows individuals to digitally report health emergencies, availability is the most important consideration during development, because any downtime or delay could have serious consequences for the health and safety of the users. The web application should be designed to handle high traffic, prevent denial-of-service attacks, and have backup and recovery plans in case of failures<sup>2</sup>.

## Question: 45

An organization wants a third-party vendor to do a penetration test that targets a specific device. The organization has provided basic information about the device. Which of the following best describes this kind of penetration test?

- A. Partially known environment
- B. Unknown environment
- C. Integrated
- D. Known environment

**Answer: A**

Explanation:

A partially known environment is a type of penetration test where the tester has some information about the target, such as the IP address, the operating system, or the device type. This can help the tester focus on specific vulnerabilities and reduce the scope of the test. A partially known environment is also called a gray box test<sup>1</sup>.

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## Question: 46

An attacker posing as the Chief Executive Officer calls an employee and instructs the employee to buy gift cards. Which of the following techniques is the attacker using?

- A. Smishing
- B. Disinformation
- C. Impersonating
- D. Whaling

**Answer: D**

Explanation:

Whaling is a type of phishing attack that targets high-profile individuals, such as executives, celebrities, or politicians. The attacker impersonates someone with authority or influence and tries to trick the victim into performing an action, such as transferring money, revealing sensitive information, or clicking on a malicious link. Whaling is also called CEO fraud or business email compromise<sup>2</sup>.

## Question: 47

An analyst is evaluating the implementation of Zero Trust principles within the data plane. Which of the following would be most relevant for the analyst to evaluate?

- A. Secured zones
- B. Subject role
- C. Adaptive identity
- D. Threat scope reduction

**Answer: A**

Explanation:

Secured zones are a key component of the Zero Trust data plane, which is the layer where data is stored, processed, and transmitted. Secured zones are logical or physical segments of the network that isolate data and resources based on their sensitivity and risk. Secured zones enforce granular policies and controls to prevent unauthorized access and lateral movement within the network<sup>1</sup>.

## Question: 48

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An organization is leveraging a VPN between its headquarters and a branch location. Which of the following is the VPN protecting?

- A. Data in use
- B. Data in transit
- C. Geographic restrictions
- D. Data sovereignty

**Answer: B**

Explanation:

Data in transit is data that is moving from one location to another, such as over a network or through the air. Data in transit is vulnerable to interception, modification, or theft by malicious actors. A VPN (virtual private network) is a technology that protects data in transit by creating a secure tunnel between two endpoints and encrypting the data that passes through it.

### Question: 49

The marketing department set up its own project management software without telling the appropriate departments. Which of the following describes this scenario?

- A. Shadow IT
- B. Insider threat
- C. Data exfiltration
- D. Service disruption

**Answer: A**

Explanation:

Shadow IT is the term used to describe the use of unauthorized or unapproved IT resources within an organization. The marketing department set up its own project management software without telling the appropriate departments, such as IT, security, or compliance. This could pose a risk to the organization's security posture, data integrity, and regulatory compliance.

### Question: 50

An enterprise is trying to limit outbound DNS traffic originating from its internal network. Outbound DNS requests will only be allowed from one device with the IP address 10.50.10.25. Which of the following firewall ACLs will accomplish this goal?

- A. Access list outbound permit 0.0.0.0/0 0.0.0.0/0 port 53
- B. Access list outbound permit 0.0.0.0/0 10.50.10.25/32 port 53

- 
- C. Access list outbound permit 0.0.0.0/0 0.0.0.0/0 port 53
  - D. Access list outbound permit 10.50.10.25/32 0.0.0.0/0 port 53

**Answer: D**

Explanation:

A firewall ACL (access control list) is a set of rules that determines which traffic is allowed or denied by the firewall. The rules are processed in order, from top to bottom, until a match is found. The syntax of a firewall ACL rule is:

Access list <direction><action><source address><destination address><protocol><port>

To limit outbound DNS traffic originating from the internal network, the firewall ACL should allow only the device with the IP address 10.50.10.25 to send DNS requests to any destination on port 53, and deny all other outbound traffic on port 53. The correct firewall ACL is:

Access list outbound permit 10.50.10.25/32 0.0.0.0/0 port 53  
Access list outbound deny 0.0.0.0/0 0.0.0.0/0 port 53

The first rule permits outbound traffic from the source address 10.50.10.25/32 (a single host) to any destination address (0.0.0.0/0) on port 53 (DNS). The second rule denies all other outbound traffic on port 53.

## Question: 51

After a security incident, a systems administrator asks the company to buy a NAC platform. Which of the following attack surfaces is the systems administrator trying to protect?

- A. Bluetooth
- B. Wired
- C. NFC
- D. SCADA

**Answer: B**

Explanation:

A NAC (network access control) platform is a technology that enforces security policies on devices that attempt to access a network. A NAC platform can verify the identity, role, and compliance of the devices, and grant or deny access based on predefined rules. A NAC platform can protect both wired and wireless networks, but in this scenario, the systems administrator is trying to protect the wired attack surface, which is the set of vulnerabilities that can be exploited through a physical connection to the network.

## Question: 52

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Which of the following factors are the most important to address when formulating a training curriculum plan for a security awareness program? (Select two).

- A. Channels by which the organization communicates with customers
- B. The reporting mechanisms for ethics violations
- C. Threat vectors based on the industry in which the organization operates
- D. Secure software development training for all personnel
- E. Cadence and duration of training events
- F. Retraining requirements for individuals who fail phishing simulations

**Answer: C E**

Explanation:

A training curriculum plan for a security awareness program should address the following factors:

The threat vectors based on the industry in which the organization operates. This will help the employees to understand the specific risks and challenges that their organization faces, and how to protect themselves and the organization from cyberattacks. For example, a healthcare organization may face different threat vectors than a financial organization, such as ransomware, data breaches, or medical device hacking<sup>1</sup>.

The cadence and duration of training events. This will help the employees to retain the information and skills they learn, and to keep up with the changing security landscape. The training events should be frequent enough to reinforce the key concepts and behaviors, but not too long or too short to lose the attention or interest of the employees. For example, a security awareness program may include monthly newsletters, quarterly webinars, annual workshops, or periodic quizzes<sup>2</sup>.

### Question: 53

An organization disabled unneeded services and placed a firewall in front of a business-critical legacy system. Which of the following best describes the actions taken by the organization?

- A. Exception
- B. Segmentation
- C. Risk transfer
- D. Compensating controls

**Answer: D**

Explanation:

Compensating controls are alternative security measures that are implemented when the primary controls are not feasible, cost-effective, or sufficient to mitigate the risk. In this case, the organization used compensating controls to protect the legacy system from potential

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attacks by disabling unneeded services and placing a firewall in front of it. This reduced the attack surface and the likelihood of exploitation.

Official CompTIA Security+ Study Guide (SY0-701), page 29  
Security Controls - CompTIA Security+ SY0-701 - 1.1 1

### Question: 54

Which of the following is the best reason to complete an audit in a banking environment?

- A. Regulatory requirement
- B. Organizational change
- C. Self-assessment requirement
- D. Service-level requirement

**Answer: A**

Explanation:

A regulatory requirement is a mandate imposed by a government or an authority that must be followed by an organization or an individual. In a banking environment, audits are often required by regulators to ensure compliance with laws, standards, and policies related to security, privacy, and financial reporting. Audits help to identify and correct any gaps or weaknesses in the security posture and the internal controls of the organization.

Official CompTIA Security+ Study Guide (SY0-701), page 507  
Security+ (Plus) Certification | CompTIA IT Certifications 2

### Question: 55

A security administrator is deploying a DLP solution to prevent the exfiltration of sensitive customer data

- a. Which of the following should the administrator do first?
- A. Block access to cloud storage websites.
  - B. Create a rule to block outgoing email attachments.
  - C. Apply classifications to the data.
  - D. Remove all user permissions from shares on the file server.

**Answer: C**

Explanation:

Data classification is the process of assigning labels or tags to data based on its sensitivity, value, and risk. Data classification is the first step in a data loss prevention (DLP) solution, as it helps to identify what data needs to be protected and how. By applying classifications to the data, the

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security administrator can define appropriate policies and rules for the DLP solution to prevent the exfiltration of sensitive customer data. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 8: Data Protection, page 323. CompTIA Security+ Practice Tests: Exam SY0-701, 3rd Edition, Chapter 8: Data Protection, page 327.

### Question: 56

Which of the following describes a security alerting and monitoring tool that collects system, application, and network logs from multiple sources in a centralized system?

- A. SIEM
- B. DLP
- C. IDS
- D. SNMP

**Answer: A**

Explanation:

SIEM stands for Security Information and Event Management. It is a security alerting and monitoring tool that collects system, application, and network logs from multiple sources in a centralized system. SIEM can analyze the collected data, correlate events, generate alerts, and provide reports and dashboards. SIEM can also integrate with other security tools and support compliance requirements. SIEM helps organizations to detect and respond to cyber threats, improve security posture, and reduce operational costs. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 10: Monitoring and Auditing, page 393. CompTIA Security+ Practice Tests: Exam SY0-701, 3rd Edition, Chapter 10: Monitoring and Auditing, page 397.

### Question: 57

Which of the following are cases in which an engineer should recommend the decommissioning of a network device? (Select two).

- A. The device has been moved from a production environment to a test environment.
- B. The device is configured to use cleartext passwords.
- C. The device is moved to an isolated segment on the enterprise network.
- D. The device is moved to a different location in the enterprise.
- E. The device's encryption level cannot meet organizational standards.
- F. The device is unable to receive authorized updates.

**Answer: E**

Explanation:

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An engineer should recommend the decommissioning of a network device when the device poses a security risk or a compliance violation to the enterprise environment. A device that cannot meet the encryption standards or receive authorized updates is vulnerable to attacks and breaches, and may expose sensitive data or compromise network integrity. Therefore, such a device should be removed from the network and replaced with a more secure and updated one.

Reference

CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 2, Section 2.2, page 671

CompTIA Security+ Practice Tests: Exam SY0-701, 3rd Edition, Chapter 2, Question 16, page 512

## Question: 58

An administrator assists the legal and compliance team with ensuring information about customer transactions is archived for the proper time period. Which of the following data policies is the administrator carrying out?

- A. Compromise
- B. Retention
- C. Analysis
- D. Transfer
- E. Inventory

**Answer: B**

Explanation:

A data retention policy is a set of rules that defines how long data should be stored and when it should be deleted or archived. An administrator assists the legal and compliance team with ensuring information about customer transactions is archived for the proper time period by following the data retention policy of the organization. This policy helps the organization to comply with legal and regulatory requirements, optimize storage space, and protect data privacy and security.

Reference

CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 3, Section 3.4, page 1211

CompTIA Security+ Practice Tests: Exam SY0-701, 3rd Edition, Chapter 3, Question 15, page 832

## Question: 59

A systems administrator is working on a solution with the following requirements:

- Provide a secure zone.
- Enforce a company-wide access control policy.
- Reduce the scope of threats.

Which of the following is the systems administrator setting up?

- A. Zero Trust
- B. AAA
- C. Non-repudiation
- D. CIA

**Answer: A**

Explanation:

Zero Trust is a security model that assumes no trust for any entity inside or outside the network perimeter and requires continuous verification of identity and permissions. Zero Trust can provide a secure zone by isolating and protecting sensitive data and resources from unauthorized access. Zero Trust can also enforce a company-wide access control policy by applying the principle of least privilege and granular segmentation for users, devices, and applications. Zero Trust can reduce the scope of threats by preventing lateral movement and minimizing the attack surface.

5: This source explains the concept and benefits of Zero Trust security and how it differs from traditional security models.

8: This source provides an overview of Zero Trust identity security and how it can help verify the identity and integrity of users and devices.

## Question: 60

A security administrator needs a method to secure data in an environment that includes some form of checks so that the administrator can track any changes. Which of the following should the administrator set up to achieve this goal?

- A. SPF
- B. GPO
- C. NAC
- D. FIM

**Answer: D**

Explanation:

FIM stands for File Integrity Monitoring, which is a method to secure data by detecting any changes or modifications to files, directories, or registry keys. FIM can help a security administrator track any unauthorized or malicious changes to the data, as well as verify the integrity and compliance of the data. FIM can also alert the administrator of any potential breaches or incidents involving the data.

Some of the benefits of FIM are:

It can prevent data tampering and corruption by verifying the checksums or hashes of the files.

It can identify the source and time of the changes by logging the user and system actions.

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It can enforce security policies and standards by comparing the current state of the data with the baseline or expected state.

It can support forensic analysis and incident response by providing evidence and audit trails of the changes.

CompTIA Security+ SY0-701 Certification Study Guide, Chapter 5: Technologies and Tools, Section 5.3: Security Tools, p. 209-210

CompTIA Security+ SY0-701 Certification Exam Objectives, Domain 2: Technologies and Tools, Objective 2.4: Given a scenario, analyze and interpret output from security technologies, Sub-objective: File integrity monitor, p. 12

## Question: 61

Which of the following is the phase in the incident response process when a security analyst reviews roles and responsibilities?

- A. Preparation
- B. Recovery
- C. Lessons learned
- D. Analysis

**Answer: A**

Explanation:

Preparation is the phase in the incident response process when a security analyst reviews roles and responsibilities, as well as the policies and procedures for handling incidents. Preparation also involves gathering and maintaining the necessary tools, resources, and contacts for responding to incidents. Preparation can help a security analyst to be ready and proactive when an incident occurs, as well as to reduce the impact and duration of the incident.

Some of the activities that a security analyst performs during the preparation phase are: Defining the roles and responsibilities of the incident response team members, such as the incident manager, the incident coordinator, the technical lead, the communications lead, and the legal advisor.

Establishing the incident response plan, which outlines the objectives, scope, authority, and procedures for responding to incidents, as well as the escalation and reporting mechanisms. Developing the incident response policy, which defines the types and categories of incidents, the severity levels, the notification and reporting requirements, and the roles and responsibilities of the stakeholders.

Creating the incident response playbook, which provides the step-by-step guidance and checklists for handling specific types of incidents, such as denial-of-service, ransomware, phishing, or data breach.

Acquiring and testing the incident response tools, such as network and host-based scanners, malware analysis tools, forensic tools, backup and recovery tools, and communication and collaboration tools.

Identifying and securing the incident response resources, such as the incident response team, the incident response location, the evidence storage, and the external support.

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Building and maintaining the incident response contacts, such as the internal and external stakeholders, the law enforcement agencies, the regulatory bodies, and the media.  
CompTIA Security+ SY0-701 Certification Study Guide, Chapter 6: Architecture and Design, Section 6.4: Secure Systems Design, p. 279-280  
CompTIA Security+ SY0-701 Certification Exam Objectives, Domain 3: Architecture and Design, Objective 3.5: Given a scenario, implement secure network architecture concepts, Sub-objective: Incident response, p. 16

## Question: 62

A company is discarding a classified storage array and hires an outside vendor to complete the disposal. Which of the following should the company request from the vendor?

- A. Certification
- B. Inventory list
- C. Classification
- D. Proof of ownership

**Answer: A**

Explanation:

The company should request a certification from the vendor that confirms the storage array has been disposed of securely and in compliance with the company's policies and standards. A certification provides evidence that the vendor has followed the proper procedures and methods to destroy the classified data and prevent unauthorized access or recovery. A certification may also include details such as the date, time, location, and method of disposal, as well as the names and signatures of the personnel involved. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 3, page 1441

## Question: 63

Which of the following would be the best ways to ensure only authorized personnel can access a secure facility? (Select two).

- A. Fencing
- B. Video surveillance
- C. Badge access
- D. Access control vestibule
- E. Sign-in sheet
- F. Sensor

**Answer: C D**

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**Explanation:**

Badge access and access control vestibule are two of the best ways to ensure only authorized personnel can access a secure facility. Badge access requires the personnel to present a valid and authenticated badge to a reader or scanner that grants or denies access based on predefined rules and permissions. Access control vestibule is a physical security measure that consists of a small room or chamber with two doors, one leading to the outside and one leading to the secure area. The personnel must enter the vestibule and wait for the first door to close and lock before the second door can be opened. This prevents tailgating or piggybacking by unauthorized individuals. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 4, pages 197-1981

### Question: 64

A company's marketing department collects, modifies, and stores sensitive customer data.

- a. The infrastructure team is responsible for securing the data while in transit and at rest. Which of the following data roles describes the customer?
- A. Processor
  - B. Custodian
  - C. Subject
  - D. Owner

**Answer: C**

**Explanation:**

According to the CompTIA Security+ SY0-701 Certification Study Guide, data subjects are the individuals whose personal data is collected, processed, or stored by an organization. Data subjects have certain rights and expectations regarding how their data is handled, such as the right to access, correct, delete, or restrict their data. Data subjects are different from data owners, who are the individuals or entities that have the authority and responsibility to determine how data is classified, protected, and used. Data subjects are also different from data processors, who are the individuals or entities that perform operations on data on behalf of the data owner, such as collecting, modifying, storing, or transmitting data. Data subjects are also different from data custodians, who are the individuals or entities that implement the security controls and procedures specified by the data owner to protect data while in transit and at rest.

Reference

CompTIA Security+ SY0-701 Certification Study Guide, Chapter 2: Data Security, page 511

### Question: 65

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Malware spread across a company's network after an employee visited a compromised industry blog. Which of the following best describes this type of attack?

- A. Impersonation
- B. Disinformation
- C. Watering-hole
- D. Smishing

**Answer: C**

Explanation:

A watering-hole attack is a type of cyberattack that targets groups of users by infecting websites that they commonly visit. The attackers exploit vulnerabilities to deliver a malicious payload to the organization's network. The attack aims to infect users' computers and gain access to a connected corporate network. The attackers target websites known to be popular among members of a particular organization or demographic. The attack differs from phishing and spear-phishing attacks, which typically attempt to steal data or install malware onto users' devices<sup>1</sup>

In this scenario, the compromised industry blog is the watering hole that the attackers used to spread malware across the company's network. The attackers likely chose this blog because they knew that the employees of the company were interested in its content and visited it frequently. The attackers may have injected malicious code into the blog or redirected the visitors to a spoofed website that hosted the malware. The malware then infected the employees' computers and propagated to the network.

Reference

1: Watering Hole Attacks: Stages, Examples, Risk Factors & Defense ...

## Question: 66

After a recent ransomware attack on a company's system, an administrator reviewed the log files. Which of the following control types did the administrator use?

- A. Compensating
- B. Detective
- C. Preventive
- D. Corrective

**Answer: B**

Explanation:

Detective controls are security measures that are designed to identify and monitor any malicious activity or anomalies on a system or network. They can help to discover the source, scope, and impact of an attack, and provide evidence for further analysis or investigation.

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Detective controls include log files, security audits, intrusion detection systems, network monitoring tools, and antivirus software. In this case, the administrator used log files as a detective control to review the ransomware attack on the company's system. Log files are records of events and activities that occur on a system or network, such as user actions, system errors, network traffic, and security alerts. They can provide valuable information for troubleshooting, auditing, and forensics.

Security+ (Plus) Certification | CompTIA IT Certifications, under "About the exam", bullet point 3: "Operate with an awareness of applicable regulations and policies, including principles of governance, risk, and compliance."

CompTIA Security+ Certification Kit: Exam SY0-701, 7th Edition, Chapter 1, page 14: "Detective controls are designed to identify and monitor any malicious activity or anomalies on a system or network."

Control Types – CompTIA Security+ SY0-401: 2.1 - Professor Messer IT ..., under "Detective Controls": "Detective controls are security measures that are designed to identify and monitor any malicious activity or anomalies on a system or network."

## Question: 67

Which of the following agreement types defines the time frame in which a vendor needs to respond?

- A. SOW
- B. SLA
- C. MOA
- D. MOU

**Answer: B**

Explanation:

A service level agreement (SLA) is a type of agreement that defines the expectations and responsibilities between a service provider and a customer. It usually includes the quality, availability, and performance metrics of the service, as well as the time frame in which the provider needs to respond to service requests, incidents, or complaints. An SLA can help ensure that the customer receives the desired level of service and that the provider is accountable for meeting the agreed-upon standards.

Security+ (Plus) Certification | CompTIA IT Certifications, under "About the exam", bullet point 3: "Operate with an awareness of applicable regulations and policies, including principles of governance, risk, and compliance."

CompTIA Security+ Certification Kit: Exam SY0-701, 7th Edition, Chapter 1, page 14: "Service Level Agreements (SLAs) are contracts between a service provider and a customer that specify the level of service expected from the service provider."

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## Question: 68

A Chief Information Security Officer wants to monitor the company's servers for SQLi attacks and allow for comprehensive investigations if an attack occurs. The company uses SSL decryption to allow traffic monitoring. Which of the following strategies would best accomplish this goal?

- A. Logging all NetFlow traffic into a SIEM
- B. Deploying network traffic sensors on the same subnet as the servers
- C. Logging endpoint and OS-specific security logs
- D. Enabling full packet capture for traffic entering and exiting the servers

**Answer: D**

Explanation:

Full packet capture is a technique that records all network traffic passing through a device, such as a router or firewall. It allows for detailed analysis and investigation of network events, such as SQLi attacks, by providing the complete content and context of the packets. Full packet capture can help identify the source, destination, payload, and timing of an SQLi attack, as well as the impact on the server and database. Logging NetFlow traffic, network traffic sensors, and endpoint and OS-specific security logs can provide some information about network activity, but they do not capture the full content of the packets, which may limit the scope and depth of the investigation. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 372-373

## Question: 69

A client demands at least 99.99% uptime from a service provider's hosted security services. Which of the following documents includes the information the service provider should return to the client?

- A. MOA
- B. SOW
- C. MOU
- D. SLA

**Answer: D**

Explanation:

A service level agreement (SLA) is a document that defines the level of service expected by a customer from a service provider, indicating the metrics by which that service is measured, and the remedies or penalties, if any, should the agreed-upon levels not be achieved. An SLA can specify the minimum uptime or availability of a service, such as 99.99%, and the consequences for failing to meet that standard. A memorandum of agreement (MOA), a statement of work

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(SOW), and a memorandum of understanding (MOU) are other types of documents that can be used to establish a relationship between parties, but they do not typically include the details of service levels and performance metrics that an SLA does. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 16-17

### Question: 70

A company is adding a clause to its AUP that states employees are not allowed to modify the operating system on mobile devices. Which of the following vulnerabilities is the organization addressing?

- A. Cross-site scripting
- B. Buffer overflow
- C. Jailbreaking
- D. Side loading

**Answer: C**

Explanation:

Jailbreaking is the process of removing the restrictions imposed by the manufacturer or carrier on a mobile device, such as an iPhone or iPad. Jailbreaking allows users to install unauthorized applications, modify system settings, and access root privileges. However, jailbreaking also exposes the device to potential security risks, such as malware, spyware, unauthorized access, data loss, and voided warranty. Therefore, an organization may prohibit employees from jailbreaking their mobile devices to prevent these vulnerabilities and protect the corporate data and network. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 10: Mobile Device Security, page 507 2

### Question: 71

Which of the following practices would be best to prevent an insider from introducing malicious code into a company's development process?

- A. Code scanning for vulnerabilities
- B. Open-source component usage
- C. Quality assurance testing
- D. Peer review and approval

**Answer: D**

Explanation:

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Peer review and approval is a practice that involves having other developers or experts review the code before it is deployed or released. Peer review and approval can help detect and prevent malicious code, errors, bugs, vulnerabilities, and poor quality in the development process. Peer review and approval can also enforce coding standards, best practices, and compliance requirements. Peer review and approval can be done manually or with the help of tools, such as code analysis, code review, and code signing. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 11: Secure Application Development, page 543 2

### Question: 72

A systems administrator is creating a script that would save time and prevent human error when performing account creation for a large number of end users. Which of the following would be a good use case for this task?

- A. Off-the-shelf software
- B. Orchestration
- C. Baseline
- D. Policy enforcement

**Answer: B**

Explanation:

Orchestration is the process of automating multiple tasks across different systems and applications. It can help save time and reduce human error by executing predefined workflows and scripts. In this case, the systems administrator can use orchestration to create accounts for a large number of end users without having to manually enter their information and assign permissions. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 457 1

### Question: 73

After an audit, an administrator discovers all users have access to confidential data on a file server. Which of the following should the administrator use to restrict access to the data quickly?

- A. Group Policy
- B. Content filtering
- C. Data loss prevention
- D. Access control lists

**Answer: D**

Explanation:

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Access control lists (ACLs) are rules that specify which users or groups can access which resources on a file server. They can help restrict access to confidential data by granting or denying permissions based on the identity or role of the user. In this case, the administrator can use ACLs to quickly modify the access rights of the users and prevent them from accessing the data they are not authorized to see. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 308 1

### Question: 74

A Chief Information Security Officer (CISO) wants to explicitly raise awareness about the increase of ransomware-as-a-service in a report to the management team. Which of the following best describes the threat actor in the CISO's report?

- A. Insider threat
- B. Hacktivist
- C. Nation-state
- D. Organized crime

**Answer: D**

Explanation:

Ransomware-as-a-service is a type of cybercrime where hackers sell or rent ransomware tools or services to other criminals who use them to launch attacks and extort money from victims. This is a typical example of organized crime, which is a group of criminals who work together to conduct illegal activities for profit. Organized crime is different from other types of threat actors, such as insider threats, hacktivists, or nation-states, who may have different motives, methods, or targets. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 17 1

### Question: 75

A small business uses kiosks on the sales floor to display product information for customers. A security team discovers the kiosks use end-of-life operating systems. Which of the following is the security team most likely to document as a security implication of the current architecture?

- A. Patch availability
- B. Product software compatibility
- C. Ease of recovery
- D. Cost of replacement

**Answer: A**

Explanation:

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End-of-life operating systems are those that are no longer supported by the vendor or manufacturer, meaning they do not receive any security updates or patches. This makes them vulnerable to exploits and attacks that take advantage of known or unknown flaws in the software. Patch availability is the security implication of using end-of-life operating systems, as it affects the ability to fix or prevent security issues. Other factors, such as product software compatibility, ease of recovery, or cost of replacement, are not directly related to security, but rather to functionality, availability, or budget. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 29 1

## Question: 76

A company is developing a critical system for the government and storing project information on a fileshare. Which of the following describes how this data will most likely be classified? (Select two).

- A. Private
- B. Confidential
- C. Public
- D. Operational
- E. Urgent
- F. Restricted

**Answer: B F**

Explanation:

Data classification is the process of assigning labels to data based on its sensitivity and business impact. Different organizations and sectors may have different data classification schemes, but a common one is the following<sup>1</sup>:

Public: Data that can be freely disclosed to anyone without any harm or risk.

Private: Data that is intended for internal use only and may cause some harm or risk if disclosed.

Confidential: Data that is intended for authorized use only and may cause significant harm or risk if disclosed.

Restricted: Data that is intended for very limited use only and may cause severe harm or risk if disclosed.

In this scenario, the company is developing a critical system for the government and storing project information on a fileshare. This data is likely to be classified as confidential and restricted, because it is not meant for public or private use, and it may cause serious damage to national security or public safety if disclosed. The government may also have specific requirements or regulations for handling such data, such as encryption, access control, and auditing<sup>2</sup>. 1: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 16-17 2: Data Classification Practices: Final Project Description Released

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## Question: 77

After reviewing the following vulnerability scanning report:

Server:192.168.14.6

Service: Telnet

Port: 23 Protocol: TCP

Status: Open Severity: High

Vulnerability: Use of an insecure network protocol

A security analyst performs the following test:

```
nmap -p 23 192.168.14.6 --script telnet-encryption
```

```
PORT STATE SERVICE REASON
```

```
23/tcp open telnet syn-ack
```

```
I telnet encryption:
```

```
|_ Telnet server supports encryption
```

Which of the following would the security analyst conclude for this reported vulnerability?

- A. It is a false positive.
- B. A rescan is required.
- C. It is considered noise.
- D. Compensating controls exist.

**Answer: A**

Explanation:

A false positive is a result that indicates a vulnerability or a problem when there is none. In this case, the vulnerability scanning report shows that the telnet service on port 23 is open and uses an insecure network protocol. However, the security analyst performs a test using nmap and a script that checks for telnet encryption support. The result shows that the telnet server supports encryption, which means that the data transmitted between the client and the server can be protected from eavesdropping. Therefore, the reported vulnerability is a false positive and does not reflect the actual security posture of the server. The security analyst should verify the encryption settings of the telnet server and client and ensure that they are configured properly. 3: Telnet Protocol - Can You Encrypt Telnet?

## Question: 78

A security consultant needs secure, remote access to a client environment. Which of the following should the security consultant most likely use to gain access?

- A. EAP
- B. DHCP
- C. IPSec
- D. NAT

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**Answer: C**

Explanation:

IPSec is a protocol suite that provides secure communication over IP networks. IPSec can be used to create virtual private networks (VPNs) that encrypt and authenticate the data exchanged between two or more parties. IPSec can also provide data integrity, confidentiality, replay protection, and access control. A security consultant can use IPSec to gain secure, remote access to a client environment by establishing a VPN tunnel with the client's network. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 8: Secure Protocols and Services, page 385 1

### Question: 79

Which of the following best practices gives administrators a set period to perform changes to an operational system to ensure availability and minimize business impacts?

- A. Impact analysis
- B. Scheduled downtime
- C. Backout plan
- D. Change management boards

**Answer: B**

Explanation:

Scheduled downtime is a planned period of time when a system or service is unavailable for maintenance, updates, upgrades, or other changes. Scheduled downtime gives administrators a set period to perform changes to an operational system without disrupting the normal business operations or affecting the availability of the system or service. Scheduled downtime also allows administrators to inform the users and stakeholders about the expected duration and impact of the changes. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 12: Security Operations and Administration, page 579 1

### Question: 80

Which of the following actions could a security engineer take to ensure workstations and servers are properly monitored for unauthorized changes and software?

- A. Configure all systems to log scheduled tasks.
- B. Collect and monitor all traffic exiting the network.
- C. Block traffic based on known malicious signatures.
- D. Install endpoint management software on all systems.

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**Answer: D**

Explanation:

Endpoint management software is a tool that allows security engineers to monitor and control the configuration, security, and performance of workstations and servers from a central console. Endpoint management software can help detect and prevent unauthorized changes and software installations, enforce policies and compliance, and provide reports and alerts on the status of the endpoints. The other options are not as effective or comprehensive as endpoint management software for this purpose. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 137 1

### Question: 81

After a security awareness training session, a user called the IT help desk and reported a suspicious call. The suspicious caller stated that the Chief Financial Officer wanted credit card information in order to close an invoice. Which of the following topics did the user recognize from the training?

- A. Insider threat
- B. Email phishing
- C. Social engineering
- D. Executive whaling

**Answer: C**

Explanation:

Social engineering is the practice of manipulating people into performing actions or divulging confidential information, often by impersonating someone else or creating a sense of urgency or trust. The suspicious caller in this scenario was trying to use social engineering to trick the user into giving away credit card information by pretending to be the CFO and asking for a payment. The user recognized this as a potential scam and reported it to the IT help desk. The other topics are not relevant to this situation. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 19 1

### Question: 82

Which of the following exercises should an organization use to improve its incident response process?

- A. Tabletop
- B. Replication

- C. Failover
- D. Recovery

**Answer: A**

Explanation:

A tabletop exercise is a simulated scenario that tests the organization's incident response plan and procedures. It involves key stakeholders and decision-makers who discuss their roles and actions in response to a hypothetical incident. It can help identify gaps, weaknesses, and improvement areas in the incident response process. It can also enhance communication, coordination, and collaboration among the participants. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 525 1

### Question: 83

Which of the following is used to validate a certificate when it is presented to a user?

- A. OCSP
- B. CSR
- C. CA
- D. CRC

**Answer: A**

Explanation:

OCSP stands for Online Certificate Status Protocol. It is a protocol that allows applications to check the revocation status of a certificate in real-time. It works by sending a query to an OCSP responder, which is a server that maintains a database of revoked certificates. The OCSP responder returns a response that indicates whether the certificate is valid, revoked, or unknown. OCSP is faster and more efficient than downloading and parsing Certificate Revocation Lists (CRLs), which are large files that contain the serial numbers of all revoked certificates issued by a Certificate Authority (CA). CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 337 1

### Question: 84

A newly identified network access vulnerability has been found in the OS of legacy IoT devices. Which of the following would best mitigate this vulnerability quickly?

- A. Insurance
- B. Patching
- C. Segmentation

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D. Replacement

**Answer: C**

Explanation:

Segmentation is a technique that divides a network into smaller subnetworks or segments, each with its own security policies and controls. Segmentation can help mitigate network access vulnerabilities in legacy IoT devices by isolating them from other devices and systems, reducing their attack surface and limiting the potential impact of a breach. Segmentation can also improve network performance and efficiency by reducing congestion and traffic. Patching, insurance, and replacement are other possible strategies to deal with network access vulnerabilities, but they may not be feasible or effective in the short term. Patching may not be available or compatible for legacy IoT devices, insurance may not cover the costs or damages of a cyberattack, and replacement may be expensive and time-consuming. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 142-143

## Question: 85

A bank insists all of its vendors must prevent data loss on stolen laptops. Which of the following strategies is the bank requiring?

- A. Encryption at rest
- B. Masking
- C. Data classification
- D. Permission restrictions

**Answer: A**

Explanation:

Encryption at rest is a strategy that protects data stored on a device, such as a laptop, by converting it into an unreadable format that can only be accessed with a decryption key or password. Encryption at rest can prevent data loss on stolen laptops by preventing unauthorized access to the data, even if the device is physically compromised. Encryption at rest can also help comply with data privacy regulations and standards that require data protection. Masking, data classification, and permission restrictions are other strategies that can help protect data, but they may not be sufficient or applicable for data stored on laptops. Masking is a technique that obscures sensitive data elements, such as credit card numbers, with random characters or symbols, but it is usually used for data in transit or in use, not at rest. Data classification is a process that assigns labels to data based on its sensitivity and business impact, but it does not protect the data itself. Permission restrictions are rules that define who can access, modify, or delete data, but they may not prevent unauthorized access if the laptop is stolen and the security controls are bypassed. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 17-18, 372-373

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## Question: 86

Which of the following would be best suited for constantly changing environments?

- A. RTOS
- B. Containers
- C. Embedded systems
- D. SCADA

**Answer: B**

Explanation:

Containers are a method of virtualization that allows applications to run in isolated environments with their own dependencies, libraries, and configurations. Containers are best suited for constantly changing environments because they are lightweight, portable, scalable, and easy to deploy and update. Containers can also support microservices architectures, which enable faster and more frequent delivery of software features. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 10: Mobile Device Security, page 512 1

## Question: 87

A security analyst scans a company's public network and discovers a host is running a remote desktop that can be used to access the production network. Which of the following changes should the security analyst recommend?

- A. Changing the remote desktop port to a non-standard number
- B. Setting up a VPN and placing the jump server inside the firewall
- C. Using a proxy for web connections from the remote desktop server
- D. Connecting the remote server to the domain and increasing the password length

**Answer: B**

Explanation:

A VPN is a virtual private network that creates a secure tunnel between two or more devices over a public network. A VPN can encrypt and authenticate the data, as well as hide the IP addresses and locations of the devices. A jump server is a server that acts as an intermediary between a user and a target server, such as a production server. A jump server can provide an additional layer of security and access control, as well as logging and auditing capabilities. A firewall is a device or software that filters and blocks unwanted network traffic based on predefined rules. A firewall can protect the internal network from external threats and limit the exposure of sensitive services and ports. A security analyst should recommend setting up a VPN

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and placing the jump server inside the firewall to improve the security of the remote desktop access to the production network. This way, the remote desktop service will not be exposed to the public network, and only authorized users with VPN credentials can access the jump server and then the production server. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 8: Secure Protocols and Services, page 382-383 1; Chapter 9: Network Security, page 441-442 1

## Question: 88

Which of the following involves an attempt to take advantage of database misconfigurations?

- A. Buffer overflow
- B. SQL injection
- C. VM escape
- D. Memory injection

**Answer: B**

Explanation:

SQL injection is a type of attack that exploits a database misconfiguration or a flaw in the application code that interacts with the database. An attacker can inject malicious SQL statements into the user input fields or the URL parameters that are sent to the database server. These statements can then execute unauthorized commands, such as reading, modifying, deleting, or creating data, or even taking over the database server. SQL injection can compromise the confidentiality, integrity, and availability of the data and the system. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 215 1

## Question: 89

An organization would like to store customer data on a separate part of the network that is not accessible to users on the main corporate network. Which of the following should the administrator use to accomplish this goal?

- A. Segmentation
- B. Isolation
- C. Patching
- D. Encryption

**Answer: A**

Explanation:

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Segmentation is a network design technique that divides the network into smaller and isolated segments based on logical or physical boundaries. Segmentation can help improve network security by limiting the scope of an attack, reducing the attack surface, and enforcing access control policies. Segmentation can also enhance network performance, scalability, and manageability. To accomplish the goal of storing customer data on a separate part of the network, the administrator can use segmentation technologies such as subnetting, VLANs, firewalls, routers, or switches. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 308-309 1

### Question: 90

Which of the following is used to quantitatively measure the criticality of a vulnerability?

- A. CVE
- B. CVSS
- C. CIA
- D. CERT

**Answer: B**

Explanation:

CVSS stands for Common Vulnerability Scoring System, which is a framework that provides a standardized way to assess and communicate the severity and risk of vulnerabilities. CVSS uses a set of metrics and formulas to calculate a numerical score ranging from 0 to 10, where higher scores indicate higher criticality. CVSS can help organizations prioritize remediation efforts and compare vulnerabilities across different systems and vendors. The other options are not used to measure the criticality of a vulnerability, but rather to identify, classify, or report them. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 39

### Question: 91

A technician is opening ports on a firewall for a new system being deployed and supported by a SaaS provider. Which of the following is a risk in the new system?

- A. Default credentials
- B. Non-segmented network
- C. Supply chain vendor
- D. Vulnerable software

**Answer: C**

Explanation:

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A supply chain vendor is a third-party entity that provides goods or services to an organization, such as a SaaS provider. A supply chain vendor can pose a risk to the new system if the vendor has poor security practices, breaches, or compromises that could affect the confidentiality, integrity, or availability of the system or its data. The organization should perform due diligence and establish a service level agreement with the vendor to mitigate this risk. The other options are not specific to the scenario of using a SaaS provider, but rather general risks that could apply to any system.

### Question: 92

Which of the following security concepts is the best reason for permissions on a human resources fileshare to follow the principle of least privilege?

- A. Integrity
- B. Availability
- C. Confidentiality
- D. Non-repudiation

**Answer: C**

Explanation:

Confidentiality is the security concept that ensures data is protected from unauthorized access or disclosure. The principle of least privilege is a technique that grants users or systems the minimum level of access or permissions that they need to perform their tasks, and nothing more. By applying the principle of least privilege to a human resources fileshare, the permissions can be restricted to only those who have a legitimate need to access the sensitive data, such as HR staff, managers, or auditors. This can prevent unauthorized users, such as hackers, employees, or contractors, from accessing, copying, modifying, or deleting the data. Therefore, the principle of least privilege can enhance the confidentiality of the data on the fileshare. Integrity, availability, and non-repudiation are other security concepts, but they are not the best reason for permissions on a human resources fileshare to follow the principle of least privilege. Integrity is the security concept that ensures data is accurate and consistent, and protected from unauthorized modification or corruption. Availability is the security concept that ensures data is accessible and usable by authorized users or systems when needed. Non-repudiation is the security concept that ensures the authenticity and accountability of data and actions, and prevents the denial of involvement or responsibility. While these concepts are also important for data security, they are not directly related to the level of access or permissions granted to users or systems. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 16-17, 372-373

### Question: 93

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Security controls in a data center are being reviewed to ensure data is properly protected and that human life considerations are included. Which of the following best describes how the controls should be set up?

- A. Remote access points should fail closed.
- B. Logging controls should fail open.
- C. Safety controls should fail open.
- D. Logical security controls should fail closed.

**Answer: C**

Explanation:

Safety controls are security controls that are designed to protect human life and physical assets from harm or damage. Examples of safety controls include fire alarms, sprinklers, emergency exits, backup generators, and surge protectors. Safety controls should fail open, which means that they should remain operational or allow access when a failure or error occurs. Failing open can prevent or minimize the impact of a disaster, such as a fire, flood, earthquake, or power outage, on human life and physical assets. For example, if a fire alarm fails, it should still trigger the sprinklers and unlock the emergency exits, rather than remain silent and locked. Failing open can also ensure that essential services, such as healthcare, transportation, or communication, are available during a crisis. Remote access points, logging controls, and logical security controls are other types of security controls, but they should not fail open in a data center. Remote access points are security controls that allow users or systems to access a network or a system from a remote location, such as a VPN, a web portal, or a wireless access point. Remote access points should fail closed, which means that they should deny access when a failure or error occurs. Failing closed can prevent unauthorized or malicious access to the data center's network or systems, such as by hackers, malware, or rogue devices. Logging controls are security controls that record and monitor the activities and events that occur on a network or a system, such as user actions, system errors, security incidents, or performance metrics. Logging controls should also fail closed, which means that they should stop or suspend the activities or events when a failure or error occurs. Failing closed can prevent data loss, corruption, or tampering, as well as ensure compliance with regulations and standards. Logical security controls are security controls that use software or code to protect data and systems from unauthorized or malicious access, modification, or destruction, such as encryption, authentication, authorization, or firewall. Logical security controls should also fail closed, which means that they should block or restrict access when a failure or error occurs. Failing closed can prevent data breaches, cyberattacks, or logical flaws, as well as ensure confidentiality, integrity, and availability of data and systems. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 142-143, 372-373, 376-377

## Question: 94

Which of the following is the most common data loss path for an air-gapped network?

- A. Bastion host

- B. Unsecured Bluetooth
- C. Unpatched OS
- D. Removable devices

**Answer: D**

Explanation:

An air-gapped network is a network that is physically isolated from other networks, such as the internet, to prevent unauthorized access and data leakage. However, an air-gapped network can still be compromised by removable devices, such as USB drives, CDs, DVDs, or external hard drives, that are used to transfer data between the air-gapped network and other networks. Removable devices can carry malware, spyware, or other malicious code that can infect the air-gapped network or exfiltrate data from it. Therefore, removable devices are the most common data loss path for an air-gapped network. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 9: Network Security, page 449 1

### Question: 95

Which of the following can best protect against an employee inadvertently installing malware on a company system?

- A. Host-based firewall
- B. System isolation
- C. Least privilege
- D. Application allow list

**Answer: D**

Explanation:

An application allow list is a security technique that specifies which applications are authorized to run on a system and blocks all other applications. An application allow list can best protect against an employee inadvertently installing malware on a company system because it prevents the execution of any unauthorized or malicious software, such as viruses, worms, trojans, ransomware, or spyware. An application allow list can also reduce the attack surface and improve the performance of the system. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 11: Secure Application Development, page 551 1

### Question: 96

An organization is struggling with scaling issues on its VPN concentrator and internet circuit due to remote work. The organization is looking for a software solution that will allow it to reduce traffic on the VPN and internet circuit, while still providing encrypted tunnel access to the data

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center and monitoring of remote employee internet traffic. Which of the following will help achieve these objectives?

- A. Deploying a SASE solution to remote employees
- B. Building a load-balanced VPN solution with redundant internet
- C. Purchasing a low-cost SD-WAN solution for VPN traffic
- D. Using a cloud provider to create additional VPN concentrators

**Answer: A**

Explanation:

SASE stands for Secure Access Service Edge. It is a cloud-based service that combines network and security functions into a single integrated solution. SASE can help reduce traffic on the VPN and internet circuit by providing secure and optimized access to the data center and cloud applications for remote employees. SASE can also monitor and enforce security policies on the remote employee internet traffic, regardless of their location or device. SASE can offer benefits such as lower costs, improved performance, scalability, and flexibility compared to traditional VPN solutions. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 457-458 1

### Question: 97

A company's end users are reporting that they are unable to reach external websites. After reviewing the performance data for the DNS servers, the analyst discovers that the CPU, disk, and memory usage are minimal, but the network interface is flooded with inbound traffic. Network logs show only a small number of DNS queries sent to this server. Which of the following best describes what the security analyst is seeing?

- A. Concurrent session usage
- B. Secure DNS cryptographic downgrade
- C. On-path resource consumption
- D. Reflected denial of service

**Answer: D**

Explanation:

A reflected denial of service (RDoS) attack is a type of DDoS attack that uses spoofed source IP addresses to send requests to a third-party server, which then sends responses to the victim server. The attacker exploits the difference in size between the request and the response, which can amplify the amount of traffic sent to the victim server. The attacker also hides their identity by using the victim's IP address as the source. A RDoS attack can target DNS servers by sending forged DNS queries that generate large DNS responses. This can flood the network interface of the DNS server and prevent it from serving legitimate requests from end users. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 215-216 1

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## Question: 98

A systems administrator wants to prevent users from being able to access data based on their responsibilities. The administrator also wants to apply the required access structure via a simplified format. Which of the following should the administrator apply to the site recovery resource group?

- A. RBAC
- B. ACL
- C. SAML
- D. GPO

**Answer: A**

Explanation:

RBAC stands for Role-Based Access Control, which is a method of restricting access to data and resources based on the roles or responsibilities of users. RBAC simplifies the management of permissions by assigning roles to users and granting access rights to roles, rather than to individual users. RBAC can help enforce the principle of least privilege and reduce the risk of unauthorized access or data leakage. The other options are not as suitable for the scenario as RBAC, as they either do not prevent access based on responsibilities, or do not apply a simplified format. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 133 1

## Question: 99

One of a company's vendors sent an analyst a security bulletin that recommends a BIOS update. Which of the following vulnerability types is being addressed by the patch?

- A. Virtualization
- B. Firmware
- C. Application
- D. Operating system

**Answer: B**

Explanation:

Firmware is a type of software that is embedded in hardware devices, such as BIOS, routers, printers, or cameras. Firmware controls the basic functions and operations of the device, and can be updated or patched to fix bugs, improve performance, or enhance security. Firmware vulnerabilities are flaws or weaknesses in the firmware code that can be exploited by attackers to gain unauthorized access, modify settings, or cause damage to the device or the network. A

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BIOS update is a patch that addresses a firmware vulnerability in the basic input/output system of a computer, which is responsible for booting the operating system and managing the communication between the hardware and the software. The other options are not types of vulnerabilities, but rather categories of software or technology.

### Question: 100

A security analyst locates a potentially malicious video file on a server and needs to identify both the creation date and the file's creator. Which of the following actions would most likely give the security analyst the information required?

- A. Obtain the file's SHA-256 hash.
- B. Use hexdump on the file's contents.
- C. Check endpoint logs.
- D. Query the file's metadata.

**Answer: D**

Explanation:

Metadata is data that describes other data, such as its format, origin, creation date, author, and other attributes. Video files, like other types of files, can contain metadata that can provide useful information for forensic analysis. For example, metadata can reveal the camera model, location, date and time, and software used to create or edit the video file. To query the file's metadata, a security analyst can use various tools, such as MediaInfo1, ffprobe2, or hexdump3, to extract and display the metadata from the video file. By querying the file's metadata, the security analyst can most likely identify both the creation date and the file's creator, as well as other relevant information. Obtaining the file's SHA-256 hash, checking endpoint logs, or using hexdump on the file's contents are other possible actions, but they are not the most appropriate to answer the question. The file's SHA-256 hash is a cryptographic value that can be used to verify the integrity or uniqueness of the file, but it does not reveal any information about the file's creation date or creator. Checking endpoint logs can provide some clues about the file's origin or activity, but it may not be reliable or accurate, especially if the logs are tampered with or incomplete. Using hexdump on the file's contents can show the raw binary data of the file, but it may not be easy or feasible to interpret the metadata from the hex output, especially if the file is large or encrypted. 1: How do I get the meta-data of a video file? 2: How to check if an mp4 file contains malware? 3: [Hexdump - Wikipedia]

### Question: 101

After a recent vulnerability scan, a security engineer needs to harden the routers within the corporate network. Which of the following is the most appropriate to disable?

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- A. Console access
  - B. Routing protocols
  - C. VLANs
  - D. Web-based administration

**Answer: D**

Explanation:

Web-based administration is a feature that allows users to configure and manage routers through a web browser interface. While this feature can provide convenience and ease of use, it can also pose a security risk, especially if the web interface is exposed to the internet or uses weak authentication or encryption methods. Web-based administration can be exploited by attackers to gain unauthorized access to the router's settings, firmware, or data, or to launch attacks such as cross-site scripting (XSS) or cross-site request forgery (CSRF). Therefore, disabling web-based administration is a good practice to harden the routers within the corporate network. Console access, routing protocols, and VLANs are other features that can be configured on routers, but they are not the most appropriate to disable for hardening purposes. Console access is a physical connection to the router that requires direct access to the device, which can be secured by locking the router in a cabinet or using a strong password. Routing protocols are essential for routers to exchange routing information and maintain network connectivity, and they can be secured by using authentication or encryption mechanisms. VLANs are logical segments of a network that can enhance network performance and security by isolating traffic and devices, and they can be secured by using VLAN access control lists (VACLs) or private VLANs (PVLANS). CCNA SEC: Router Hardening Your Router's Security Stinks: Here's How to Fix It

## Question: 102

Which of the following should a systems administrator use to ensure an easy deployment of resources within the cloud provider?

- A. Software as a service
- B. Infrastructure as code
- C. Internet of Things
- D. Software-defined networking

**Answer: B**

Explanation:

Infrastructure as code (IaC) is a method of using code and automation to manage and provision cloud resources, such as servers, networks, storage, and applications. IaC allows for easy deployment, scalability, consistency, and repeatability of cloud environments. IaC is also a key component of DevSecOps, which integrates security into the development and operations

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processes. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 6: Cloud and Virtualization Concepts, page 294.

### Question: 103

An enterprise has been experiencing attacks focused on exploiting vulnerabilities in older browser versions with well-known exploits. Which of the following security solutions should be configured to best provide the ability to monitor and block these known signature-based attacks?

- A. ACL
- B. DLP
- C. IDS
- D. IPS

**Answer: D**

Explanation:

An intrusion prevention system (IPS) is a security device that monitors network traffic and blocks or modifies malicious packets based on predefined rules or signatures. An IPS can prevent attacks that exploit known vulnerabilities in older browser versions by detecting and dropping the malicious packets before they reach the target system. An IPS can also perform other functions, such as rate limiting, encryption, or redirection. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 3: Securing Networks, page 132.

### Question: 104

During the onboarding process, an employee needs to create a password for an intranet account. The password must include ten characters, numbers, and letters, and two special characters. Once the password is created, the company will grant the employee access to other company-owned websites based on the intranet profile. Which of the following access management concepts is the company most likely using to safeguard intranet accounts and grant access to multiple sites based on a user's intranet account? (Select two).

- A. Federation
- B. Identity proofing
- C. Password complexity
- D. Default password changes
- E. Password manager
- F. Open authentication

**Answer: A C**

Explanation:

Federation is an access management concept that allows users to authenticate once and access multiple resources or services across different domains or organizations. Federation relies on a trusted third party that stores the user's credentials and provides them to the requested resources or services without exposing them. Password complexity is a security measure that requires users to create passwords that meet certain criteria, such as length, character types, and uniqueness. Password complexity can help prevent brute-force attacks, password guessing, and credential stuffing by making passwords harder to crack or guess. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 308-309 and 312-313 1

**Question: 105**

An administrator is reviewing a single server's security logs and discovers the following:

Keywords	Date and Time	Source	Event ID	Task	Category
Audit	09/16/2022	Microsoft	4625	Logon	
Failure	11:13:05 AM	Windows security			
Audit	09/16/2022	Microsoft	4625	Logon	
Failure	11:13:07 AM	Windows security			
Audit	09/16/2022	Microsoft	4625	Logon	
Failure	11:13:09 AM	Windows security			
Audit	09/16/2022	Microsoft	4625	Logon	
Failure	11:13:11 AM	Windows security			
Audit	09/16/2022	Microsoft	4625	Logon	
Failure	11:13:13 AM	Windows security			
Audit	09/16/2022	Microsoft	4625	Logon	
Failure	11:13:15 AM	Windows security			
Audit	09/16/2022	Microsoft	4625	Logon	
Failure	11:13:17 AM	Windows security			
Audit	09/16/2022	Microsoft	4625	Logon	
Failure	11:13:19 AM	Windows security			
Audit	09/16/2022	Microsoft	4625	Logon	
Failure	11:13:21 AM	Windows security			
Audit	09/16/2022	Microsoft	4625	Logon	
Failure	11:13:23 AM	Windows security			
Audit	09/16/2022	Microsoft	4625	Logon	
Failure	11:13:25 AM	Windows security			
Audit	09/16/2022	Microsoft	4625	Logon	
Failure	11:13:27 AM	Windows security			

Which of the following best describes the action captured in this log file?

- A. Brute-force attack
- B. Privilege escalation
- C. Failed password audit

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D. Forgotten password by the user

**Answer: A**

Explanation:

A brute-force attack is a type of attack that involves systematically trying all possible combinations of passwords or keys until the correct one is found. The log file shows multiple failed login attempts in a short amount of time, which is a characteristic of a brute-force attack. The attacker is trying to guess the password of the Administrator account on the server. The log file also shows the event ID 4625, which indicates a failed logon attempt, and the status code 0xC000006A, which means the user name is correct but the password is wrong. These are indicators of compromise (IoC) that suggest a brute-force attack is taking place. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 215-216 and 223 1

### Question: 106

A security engineer is implementing FDE for all laptops in an organization. Which of the following are the most important for the engineer to consider as part of the planning process? (Select two).

- A. Key escrow
- B. TPM presence
- C. Digital signatures
- D. Data tokenization
- E. Public key management
- F. Certificate authority linking

**Answer: A B**

Explanation:

Key escrow is a method of storing encryption keys in a secure location, such as a trusted third party or a hardware security module (HSM). Key escrow is important for FDE because it allows the recovery of encrypted data in case of lost or forgotten passwords, device theft, or hardware failure. Key escrow also enables authorized access to encrypted data for legal or forensic purposes.

TPM presence is a feature of some laptops that have a dedicated chip for storing encryption keys and other security information. TPM presence is important for FDE because it enhances the security and performance of encryption by generating and protecting the keys within the chip, rather than relying on software or external devices. TPM presence also enables features such as secure boot, remote attestation, and device authentication.

### Question: 107

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A hacker gained access to a system via a phishing attempt that was a direct result of a user clicking a suspicious link. The link laterally deployed ransomware, which laid dormant for multiple weeks, across the network. Which of the following would have mitigated the spread?

- A. IPS
- B. IDS
- C. WAF
- D. UAT

**Answer: A**

Explanation:

IPS stands for intrusion prevention system, which is a network security device that monitors and blocks malicious traffic in real time. IPS is different from IDS, which only detects and alerts on malicious traffic, but does not block it. IPS would have mitigated the spread of ransomware by preventing the hacker from accessing the system via the phishing link, or by stopping the ransomware from communicating with its command and control server or encrypting the files.

### Question: 108

A user is attempting to patch a critical system, but the patch fails to transfer. Which of the following access controls is most likely inhibiting the transfer?

- A. Attribute-based
- B. Time of day
- C. Role-based
- D. Least privilege

**Answer: D**

Explanation:

The least privilege principle states that users and processes should only have the minimum level of access required to perform their tasks. This helps to prevent unauthorized or unnecessary actions that could compromise security. In this case, the patch transfer might be failing because the user or process does not have the appropriate permissions to access the critical system or the network resources needed for the transfer. Applying the least privilege principle can help to avoid this issue by granting the user or process the necessary access rights for the patching activity. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 931

### Question: 109

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Which of the following is used to protect a computer from viruses, malware, and Trojans being installed and moving laterally across the network?

- A. IDS
- B. ACL
- C. EDR
- D. NAC

**Answer: C**

Explanation:

Endpoint detection and response (EDR) is a technology that monitors and analyzes the activity and behavior of endpoints, such as computers, laptops, mobile devices, and servers. EDR can help to detect and prevent malicious software, such as viruses, malware, and Trojans, from infecting the endpoints and spreading across the network. EDR can also provide visibility and response capabilities to contain and remediate threats. EDR is different from IDS, which is a network-based technology that monitors and alerts on network traffic anomalies. EDR is also different from ACL, which is a list of rules that control the access to network resources. EDR is also different from NAC, which is a technology that enforces policies on the network access of devices based on their identity and compliance status. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 2561

### Question: 110

A systems administrator set up a perimeter firewall but continues to notice suspicious connections between internal endpoints. Which of the following should be set up in order to mitigate the threat posed by the suspicious activity?

- A. Host-based firewall
- B. Web application firewall
- C. Access control list
- D. Application allow list

**Answer: A**

Explanation:

A host-based firewall is a software application that runs on an individual endpoint and filters the incoming and outgoing network traffic based on a set of rules. A host-based firewall can help to mitigate the threat posed by suspicious connections between internal endpoints by blocking or allowing the traffic based on the source, destination, port, protocol, or application. A host-based firewall is different from a web application firewall, which is a type of firewall that protects web applications from common web-based attacks, such as SQL injection, cross-site scripting, and session hijacking. A host-based firewall is also different from an access control list, which is a list of rules that control the access to network resources, such as files, folders, printers, or

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routers. A host-based firewall is also different from an application allow list, which is a list of applications that are authorized to run on an endpoint, preventing unauthorized or malicious applications from executing. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 254

### Question: 111

A business received a small grant to migrate its infrastructure to an off-premises solution. Which of the following should be considered first?

- A. Security of cloud providers
- B. Cost of implementation
- C. Ability of engineers
- D. Security of architecture

**Answer: D**

Explanation:

Security of architecture is the process of designing and implementing a secure infrastructure that meets the business objectives and requirements. Security of architecture should be considered first when migrating to an off-premises solution, such as cloud computing, because it can help to identify and mitigate the potential risks and challenges associated with the migration, such as data security, compliance, availability, scalability, and performance. Security of architecture is different from security of cloud providers, which is the process of evaluating and selecting a trustworthy and reliable cloud service provider that can meet the security and operational needs of the business. Security of architecture is also different from cost of implementation, which is the amount of money required to migrate and maintain the infrastructure in the cloud. Security of architecture is also different from ability of engineers, which is the level of skill and knowledge of the IT staff who are responsible for the migration and management of the cloud infrastructure. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 3491

### Question: 112

A company is planning a disaster recovery site and needs to ensure that a single natural disaster would not result in the complete loss of regulated backup data.

- a. Which of the following should the company consider?
- A. Geographic dispersion
  - B. Platform diversity
  - C. Hot site
  - D. Load balancing

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**Answer: A**

Explanation:

Geographic dispersion is the practice of having backup data stored in different locations that are far enough apart to minimize the risk of a single natural disaster affecting both sites. This ensures that the company can recover its regulated data in case of a disaster at the primary site. Platform diversity, hot site, and load balancing are not directly related to the protection of backup data from natural disasters. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 449; Disaster Recovery Planning: Geographic Diversity

### Question: 113

A security analyst receives alerts about an internal system sending a large amount of unusual DNS queries to systems on the internet over short periods of time during non-business hours. Which of the following is most likely occurring?

- A. A worm is propagating across the network.
- B. Data is being exfiltrated.
- C. A logic bomb is deleting data.
- D. Ransomware is encrypting files.

**Answer: B**

Explanation:

Data exfiltration is a technique that attackers use to steal sensitive data from a target system or network by transmitting it through DNS queries and responses. This method is often used in advanced persistent threat (APT) attacks, in which attackers seek to persistently evade detection in the target environment. A large amount of unusual DNS queries to systems on the internet over short periods of time during non-business hours is a strong indicator of data exfiltration. A worm, a logic bomb, and ransomware would not use DNS queries to communicate with their command and control servers or perform their malicious actions. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 487; Introduction to DNS Data Exfiltration; Identifying a DNS Exfiltration Attack That Wasn't Real — This Time

### Question: 114

An employee receives a text message from an unknown number claiming to be the company's Chief Executive Officer and asking the employee to purchase several gift cards. Which of the following types of attacks does this describe?

- A. Vishing

- B. Smishing
- C. Pretexting
- D. Phishing

**Answer: B**

Explanation:

Smishing is a type of phishing attack that uses text messages or common messaging apps to trick victims into clicking on malicious links or providing personal information. The scenario in the question describes a smishing attack that uses pretexting, which is a form of social engineering that involves impersonating someone else to gain trust or access. The unknown number claims to be the company's CEO and asks the employee to purchase gift cards, which is a common scam tactic. Vishing is a similar type of attack that uses phone calls or voicemails, while phishing is a broader term that covers any email-based attack. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 771; Smishing vs. Phishing: Understanding the Differences2

### Question: 115

Which of the following would help ensure a security analyst is able to accurately measure the overall risk to an organization when a new vulnerability is disclosed?

- A. A full inventory of all hardware and software
- B. Documentation of system classifications
- C. A list of system owners and their departments
- D. Third-party risk assessment documentation

**Answer: A**

Explanation:

A full inventory of all hardware and software is essential for measuring the overall risk to an organization when a new vulnerability is disclosed, because it allows the security analyst to identify which systems are affected by the vulnerability and prioritize the remediation efforts. Without a full inventory, the security analyst may miss some vulnerable systems or waste time and resources on irrelevant ones. Documentation of system classifications, a list of system owners and their departments, and third-party risk assessment documentation are all useful for risk management, but they are not sufficient to measure the impact of a new vulnerability. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 1221; Risk Assessment and Analysis Methods: Qualitative and Quantitative3

### Question: 116

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A systems administrator is changing the password policy within an enterprise environment and wants this update implemented on all systems as quickly as possible. Which of the following operating system security measures will the administrator most likely use?

- A. Deploying PowerShell scripts
- B. Pushing GPO update
- C. Enabling PAP
- D. Updating EDR profiles

**Answer: B**

Explanation:

A group policy object (GPO) is a mechanism for applying configuration settings to computers and users in an Active Directory domain. By pushing a GPO update, the systems administrator can quickly and uniformly enforce the new password policy across all systems in the domain. Deploying PowerShell scripts, enabling PAP, and updating EDR profiles are not the most efficient or effective ways to change the password policy within an enterprise environment. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 115; Password Policy - Windows Security

### Question: 117

A company is planning to set up a SIEM system and assign an analyst to review the logs on a weekly basis. Which of the following types of controls is the company setting up?

- A. Corrective
- B. Preventive
- C. Detective
- D. Deterrent

**Answer: C**

Explanation:

A detective control is a type of security control that monitors and analyzes events to detect and report on potential or actual security incidents. A SIEM system is an example of a detective control, as it collects, correlates, and analyzes security data from various sources and generates alerts for security teams. Corrective, preventive, and deterrent controls are different types of security controls that aim to restore, protect, or discourage security breaches, respectively. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 33; What is Security Information and Event Management (SIEM)?

### Question: 118

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Visitors to a secured facility are required to check in with a photo ID and enter the facility through an access control vestibule. Which of the following best describes this form of security control?

- A. Physical
- B. Managerial
- C. Technical
- D. Operational

**Answer: A**

Explanation:

A physical security control is a device or mechanism that prevents unauthorized access to a physical location or asset. An access control vestibule, also known as a mantrap, is a physical security control that consists of a small space with two sets of interlocking doors, such that the first set of doors must close before the second set opens. This prevents unauthorized individuals from following authorized individuals into the facility, a practice known as piggybacking or tailgating. A photo ID check is another form of physical security control that verifies the identity of visitors. Managerial, technical, and operational security controls are not directly related to physical access, but rather to policies, procedures, systems, and processes that support security objectives. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 341; Mantrap (access control) - Wikipedia<sup>2</sup>

### Question: 119

A company must ensure sensitive data at rest is rendered unreadable. Which of the following will the company most likely use?

- A. Hashing
- B. Tokenization
- C. Encryption
- D. Segmentation

**Answer: C**

Explanation:

Encryption is a method of transforming data in a way that makes it unreadable without a secret key necessary to decrypt the data back into plaintext. Encryption is one of the most common and effective ways to protect data at rest, as it prevents unauthorized access, modification, or theft of the data. Encryption can be applied to different types of data at rest, such as block storage, object storage, databases, archives, and so on. Hashing, tokenization, and segmentation are not methods of rendering data at rest unreadable, but rather of protecting data in other ways. Hashing is a one-way function that generates a fixed-length output, called a

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hash or digest, from an input, such that the input cannot be recovered from the output. Hashing is used to verify the integrity and authenticity of data, but not to encrypt it. Tokenization is a process that replaces sensitive data with non-sensitive substitutes, called tokens, that have no meaning or value on their own. Tokenization is used to reduce the exposure and compliance scope of sensitive data, but not to encrypt it. Segmentation is a technique that divides a network or a system into smaller, isolated units, called segments, that have different levels of access and security. Segmentation is used to limit the attack surface and contain the impact of a breach, but not to encrypt data at rest. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, pages 77-781; Protecting data at rest - Security Pillar3

### Question: 120

Which of the following describes the maximum allowance of accepted risk?

- A. Risk indicator
- B. Risk level
- C. Risk score
- D. Risk threshold

**Answer: D**

Explanation:

Risk threshold is the maximum amount of risk that an organization is willing to accept for a given activity or decision. It is also known as risk appetite or risk tolerance. Risk threshold helps an organization to prioritize and allocate resources for risk management. Risk indicator, risk level, and risk score are different ways of measuring or expressing the likelihood and impact of a risk, but they do not describe the maximum allowance of accepted risk. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 34; Accepting Risk: Definition, How It Works, and Alternatives

### Question: 121

Which of the following incident response activities ensures evidence is properly handled?

- A. E-discovery
- B. Chain of custody
- C. Legal hold
- D. Preservation

**Answer: B**

Explanation:

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Chain of custody is the process of documenting and preserving the integrity of evidence collected during an incident response. It involves recording the details of each person who handled the evidence, the time and date of each transfer, and the location where the evidence was stored. Chain of custody ensures that the evidence is admissible in legal proceedings and can be traced back to its source. E-discovery, legal hold, and preservation are related concepts, but they do not ensure evidence is properly handled. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 487; NIST SP 800-61: 3.2. Evidence Gathering and Handling

### Question: 122

Which of the following risk management strategies should an enterprise adopt first if a legacy application is critical to business operations and there are preventative controls that are not yet implemented?

- A. Mitigate
- B. Accept
- C. Transfer
- D. Avoid

**Answer: A**

Explanation:

Mitigate is the risk management strategy that involves reducing the likelihood or impact of a risk. If a legacy application is critical to business operations and there are preventative controls that are not yet implemented, the enterprise should adopt the mitigate strategy first to address the existing vulnerabilities and gaps in the application. This could involve applying patches, updates, or configuration changes to the application, or adding additional layers of security controls around the application. Accept, transfer, and avoid are other risk management strategies, but they are not the best options for this scenario. Accept means acknowledging the risk and accepting the consequences without taking any action. Transfer means shifting the risk to a third party, such as an insurance company or a vendor. Avoid means eliminating the risk by removing the source or changing the process. These strategies may not be feasible or desirable for a legacy application that is critical to business operations and has no preventative controls in place. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 1221; A Risk-Based Framework for Legacy System Migration and Deprecation2

### Question: 123

Which of the following teams combines both offensive and defensive testing techniques to protect an organization's critical systems?

- A. Red

- B. Blue
- C. Purple
- D. Yellow

**Answer: C**

Explanation:

Purple is the team that combines both offensive and defensive testing techniques to protect an organization's critical systems. Purple is not a separate team, but rather a collaboration between the red team and the blue team. The red team is the offensive team that simulates attacks and exploits vulnerabilities in the organization's systems. The blue team is the defensive team that monitors and protects the organization's systems from real and simulated threats. The purple team exists to ensure and maximize the effectiveness of the red and blue teams by integrating the defensive tactics and controls from the blue team with the threats and vulnerabilities found by the red team into a single narrative that improves the overall security posture of the organization. Red, blue, and yellow are other types of teams involved in security testing, but they do not combine both offensive and defensive techniques. The yellow team is the team that builds software solutions, scripts, and other programs that the blue team uses in the security testing. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 1331; Penetration Testing: Understanding Red, Blue, & Purple Teams<sup>3</sup>

## Question: 124

A company is working with a vendor to perform a penetration test Which of the following includes an estimate about the number of hours required to complete the engagement?

- A. SOW
- B. BPA
- C. SLA
- D. NDA

**Answer: A**

Explanation:

A statement of work (SOW) is a document that defines the scope, objectives, deliverables, timeline, and costs of a project or service. It typically includes an estimate of the number of hours required to complete the engagement, as well as the roles and responsibilities of the parties involved. A SOW is often used for penetration testing projects to ensure that both the client and the vendor have a clear and mutual understanding of what is expected and how the work will be performed. A business partnership agreement (BPA), a service level agreement (SLA), and a non-disclosure agreement (NDA) are different types of contracts that may be related to a penetration testing project, but they do not include an estimate of the number of hours required to complete the engagement. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 492; What to Look For in a Penetration Testing Statement of Work?

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## Question: 125

The local administrator account for a company's VPN appliance was unexpectedly used to log in to the remote management interface. Which of the following would have most likely prevented this from happening'?

- A. Using least privilege
- B. Changing the default password
- C. Assigning individual user IDs
- D. Reviewing logs more frequently

**Answer: B**

Explanation:

Changing the default password for the local administrator account on a VPN appliance is a basic security measure that would have most likely prevented the unexpected login to the remote management interface. Default passwords are often easy to guess or publicly available, and attackers can use them to gain unauthorized access to devices and systems. Changing the default password to a strong and unique one reduces the risk of brute-force attacks and credential theft. Using least privilege, assigning individual user IDs, and reviewing logs more frequently are also good security practices, but they are not as effective as changing the default password in preventing the unexpected login. CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 116; Local Admin Accounts - Security Risks and Best Practices (Part 1)

## Question: 126

Which of the following threat actors is the most likely to be hired by a foreign government to attack critical systems located in other countries?

- A. Hacktivist
- B. Whistleblower
- C. Organized crime
- D. Unskilled attacker

**Answer: C**

Explanation:

Organized crime is a type of threat actor that is motivated by financial gain and often operates across national borders. Organized crime groups may be hired by foreign governments to conduct cyberattacks on critical systems located in other countries, such as power grids, military networks, or financial institutions. Organized crime groups have the resources, skills, and

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connections to carry out sophisticated and persistent attacks that can cause significant damage and disruption<sup>12</sup>. Reference = 1: Threat Actors - CompTIA Security+ SY0-701 - 2.1 2: CompTIA Security+ SY0-701 Certification Study Guide

### Question: 127

Which of the following is used to add extra complexity before using a one-way data transformation algorithm?

- A. Key stretching
- B. Data masking
- C. Steganography
- D. Salting

**Answer: D**

Explanation:

Salting is the process of adding extra random data to a password or other data before applying a one-way data transformation algorithm, such as a hash function. Salting increases the complexity and randomness of the input data, making it harder for attackers to guess or crack the original data using precomputed tables or brute force methods. Salting also helps prevent identical passwords from producing identical hash values, which could reveal the passwords to attackers who have access to the hashed data. Salting is commonly used to protect passwords stored in databases or transmitted over networks. Reference =

Passwords technical overview

Encryption, hashing, salting – what’s the difference?

Salt (cryptography)

### Question: 128

An employee clicked a link in an email from a payment website that asked the employee to update contact information. The employee entered the log-in information but received a “page not found” error message. Which of the following types of social engineering attacks occurred?

- A. Brand impersonation
- B. Pretexting
- C. Typosquatting
- D. Phishing

**Answer: D**

Explanation:

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Phishing is a type of social engineering attack that involves sending fraudulent emails that appear to be from legitimate sources, such as payment websites, banks, or other trusted entities. The goal of phishing is to trick the recipients into clicking on malicious links, opening malicious attachments, or providing sensitive information, such as log-in credentials, personal data, or financial details. In this scenario, the employee received an email from a payment website that asked the employee to update contact information. The email contained a link that directed the employee to a fake website that mimicked the appearance of the real one. The employee entered the log-in information, but received a “page not found” error message. This indicates that the employee fell victim to a phishing attack, and the attacker may have captured the employee’s credentials for the payment website. Reference = Other Social Engineering Attacks – CompTIA Security+ SY0-701 – 2.2, CompTIA Security+: Social Engineering Techniques & Other Attack ... - NICCS, [CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition]

### Question: 129

An enterprise is trying to limit outbound DNS traffic originating from its internal network. Outbound DNS requests will only be allowed from one device with the IP address 10.50.10.25. Which of the following firewall ACLs will accomplish this goal?

- A. Access list outbound permit 0.0.0.0 0 0.0.0.0/0 port 53 Access list outbound deny 10.50.10.25 32 0.0.0.0/0 port 53
- B. Access list outbound permit 0.0.0.0/0 10.50.10.25 32 port 53 Access list outbound deny 0.0.0.0 0 0.0.0.0/0 port 53
- C. Access list outbound permit 0.0.0.0 0 0.0.0.0/0 port 53 Access list outbound deny 0.0.0.0/0 10.50.10.25 32 port 53
- D. Access list outbound permit 10.50.10.25 32 0.0.0.0/0 port 53 Access list outbound deny 0.0.0.0.0.0.0.0.0/0 port 53

**Answer: D**

Explanation:

The correct answer is D because it allows only the device with the IP address 10.50.10.25 to send outbound DNS requests on port 53, and denies all other devices from doing so. The other options are incorrect because they either allow all devices to send outbound DNS requests (A and C), or they allow no devices to send outbound DNS requests (B). Reference = You can learn more about firewall ACLs and DNS in the following resources:

CompTIA Security+ SY0-701 Certification Study Guide, Chapter 4: Network Security1  
Professor Messer’s CompTIA SY0-701 Security+ Training Course, Section 3.2: Firewall Rules2  
TOTAL: CompTIA Security+ Cert (SY0-701) | Udemy, Section 6: Network Security, Lecture 28: Firewall Rules3

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## Question: 130

A data administrator is configuring authentication for a SaaS application and would like to reduce the number of credentials employees need to maintain. The company prefers to use domain credentials to access new SaaS applications. Which of the following methods would allow this functionality?

- A. SSO
- B. LEAP
- C. MFA
- D. PEAP

**Answer: A**

Explanation:

SSO stands for single sign-on, which is a method of authentication that allows users to access multiple applications or services with one set of credentials. SSO reduces the number of credentials employees need to maintain and simplifies the login process. SSO can also improve security by reducing the risk of password reuse, phishing, and credential theft. SSO can be implemented using various protocols, such as SAML, OAuth, OpenID Connect, and Kerberos, that enable the exchange of authentication information between different domains or systems. SSO is commonly used for accessing SaaS applications, such as Office 365, Google Workspace, Salesforce, and others, using domain credentials<sup>123</sup>.

B) LEAP stands for Lightweight Extensible Authentication Protocol, which is a Cisco proprietary protocol that provides authentication for wireless networks. LEAP is not related to SaaS applications or domain credentials<sup>4</sup>.

C) MFA stands for multi-factor authentication, which is a method of authentication that requires users to provide two or more pieces of evidence to prove their identity. MFA can enhance security by adding an extra layer of protection beyond passwords, such as tokens, biometrics, or codes. MFA is not related to SaaS applications or domain credentials, but it can be used in conjunction with SSO.

D) PEAP stands for Protected Extensible Authentication Protocol, which is a protocol that provides secure authentication for wireless networks. PEAP uses TLS to create an encrypted tunnel between the client and the server, and then uses another authentication method, such as MS-CHAPv2 or EAP-GTC, to verify the user's identity. PEAP is not related to SaaS applications or domain credentials.

Reference = 1: Security+ (SY0-701) Certification Study Guide | CompTIA IT Certifications 2: What is Single Sign-On (SSO)? - Definition from WhatIs.com 3: Single sign-on - Wikipedia 4: Lightweight Extensible Authentication Protocol - Wikipedia : What is Multi-Factor Authentication (MFA)? - Definition from WhatIs.com : Protected Extensible Authentication Protocol - Wikipedia

## Question: 131

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Which of the following scenarios describes a possible business email compromise attack?

- A. An employee receives a gift card request in an email that has an executive's name in the display field of the email.
- B. Employees who open an email attachment receive messages demanding payment in order to access files.
- C. A service desk employee receives an email from the HR director asking for log-in credentials to a cloud administrator account.
- D. An employee receives an email with a link to a phishing site that is designed to look like the company's email portal.

**Answer: A**

Explanation:

A business email compromise (BEC) attack is a type of phishing attack that targets employees who have access to company funds or sensitive information. The attacker impersonates a trusted person, such as an executive, a vendor, or a client, and requests a fraudulent payment, a wire transfer, or confidential data. The attacker often uses social engineering techniques, such as urgency, pressure, or familiarity, to convince the victim to comply with the request<sup>12</sup>.

In this scenario, option A describes a possible BEC attack, where an employee receives a gift card request in an email that has an executive's name in the display field of the email. The email may look like it is coming from the executive, but the actual email address may be spoofed or compromised. The attacker may claim that the gift cards are needed for a business purpose, such as rewarding employees or clients, and ask the employee to purchase them and send the codes. This is a common tactic used by BEC attackers to steal money from unsuspecting victims<sup>34</sup>.

Option B describes a possible ransomware attack, where malicious software encrypts the files on a device and demands a ransom for the decryption key. Option C describes a possible credential harvesting attack, where an attacker tries to obtain the login information of a privileged account by posing as a legitimate authority. Option D describes a possible phishing attack, where an attacker tries to lure the victim to a fake website that mimics the company's email portal and capture their credentials. These are all types of cyberattacks, but they are not examples of BEC attacks. Reference = 1: Business Email Compromise - CompTIA Security+ SY0-701 - 2.2 2: CompTIA Security+ SY0-701 Certification Study Guide 3: Business Email Compromise: The 12 Billion Dollar Scam 4: TOTAL: CompTIA Security+ Cert (SY0-701) | Udemy

## Question: 132

A company prevented direct access from the database administrators' workstations to the network segment that contains database servers. Which of the following should a database administrator use to access the database servers?

- A. Jump server
- B. RADIUS
- C. HSM

D. Load balancer

**Answer: A**

Explanation:

A jump server is a device or virtual machine that acts as an intermediary between a user's workstation and a remote network segment. A jump server can be used to securely access servers or devices that are not directly reachable from the user's workstation, such as database servers. A jump server can also provide audit logs and access control for the remote connections. A jump server is also known as a jump box or a jump host<sup>12</sup>.

RADIUS is a protocol for authentication, authorization, and accounting of network access. RADIUS is not a device or a method to access remote servers, but rather a way to verify the identity and permissions of users or devices that request network access<sup>34</sup>.

HSM is an acronym for Hardware Security Module, which is a physical device that provides secure storage and generation of cryptographic keys. HSMs are used to protect sensitive data and applications, such as digital signatures, encryption, and authentication. HSMs are not used to access remote servers, but rather to enhance the security of the data and applications that reside on them<sup>5</sup>.

A load balancer is a device or software that distributes network traffic across multiple servers or devices, based on criteria such as availability, performance, or capacity. A load balancer can improve the scalability, reliability, and efficiency of network services, such as web servers, application servers, or database servers. A load balancer is not used to access remote servers, but rather to optimize the delivery of the services that run on them. Reference =

How to access a remote server using a jump host

Jump server

RADIUS

Remote Authentication Dial-In User Service (RADIUS)

Hardware Security Module (HSM)

[What is an HSM?]

[Load balancing (computing)]

[What is Load Balancing?]

## Question: 133

An organization's internet-facing website was compromised when an attacker exploited a buffer overflow. Which of the following should the organization deploy to best protect against similar attacks in the future?

- A. NGFW
- B. WAF
- C. TLS
- D. SD-WAN

**Answer: B**

Explanation:

A buffer overflow is a type of software vulnerability that occurs when an application writes more data to a memory buffer than it can hold, causing the excess data to overwrite adjacent memory locations. This can lead to unexpected behavior, such as crashes, errors, or code execution. A buffer overflow can be exploited by an attacker to inject malicious code or commands into the application, which can compromise the security and functionality of the system. An organization's internet-facing website was compromised when an attacker exploited a buffer overflow. To best protect against similar attacks in the future, the organization should deploy a web application firewall (WAF). A WAF is a type of firewall that monitors and filters the traffic between a web application and the internet. A WAF can detect and block common web attacks, such as buffer overflows, SQL injections, cross-site scripting (XSS), and more. A WAF can also enforce security policies and rules, such as input validation, output encoding, and encryption. A WAF can provide a layer of protection for the web application, preventing attackers from exploiting its vulnerabilities and compromising its data. Reference = Buffer Overflows – CompTIA Security+ SY0-701 – 2.3, Web Application Firewalls – CompTIA Security+ SY0-701 – 2.4, [CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition]

## Question: 134

An administrator notices that several users are logging in from suspicious IP addresses. After speaking with the users, the administrator determines that the employees were not logging in from those IP addresses and resets the affected users' passwords. Which of the following should the administrator implement to prevent this type of attack from succeeding in the future?

- A. Multifactor authentication
- B. Permissions assignment
- C. Access management
- D. Password complexity

**Answer: A**

Explanation:

The correct answer is A because multifactor authentication (MFA) is a method of verifying a user's identity by requiring more than one factor, such as something the user knows (e.g., password), something the user has (e.g., token), or something the user is (e.g., biometric). MFA can prevent unauthorized access even if the user's password is compromised, as the attacker would need to provide another factor to log in. The other options are incorrect because they do not address the root cause of the attack, which is weak authentication. Permissions assignment (B) is the process of granting or denying access to resources based on the user's role or identity. Access management (C) is the process of controlling who can access what and under what conditions. Password complexity (D) is the requirement of using strong passwords that are hard to guess or crack, but it does not prevent an attacker from using a stolen password. Reference =

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You can learn more about multifactor authentication and other security concepts in the following resources:

CompTIA Security+ SY0-701 Certification Study Guide, Chapter 1: General Security Concepts<sup>1</sup>

Professor Messer's CompTIA SY0-701 Security+ Training Course, Section 1.2: Security Concepts<sup>2</sup>

Multi-factor Authentication – SY0-601 CompTIA Security+ : 2.43

TOTAL: CompTIA Security+ Cert (SY0-701) | Udemy, Section 3: Identity and Access Management, Lecture 15: Multifactor Authentication<sup>4</sup>

CompTIA Security+ Certification SY0-601: The Total Course [Video], Chapter 3: Identity and Account Management, Section 2: Enabling Multifactor Authentication<sup>5</sup>

## Question: 135

An employee receives a text message that appears to have been sent by the payroll department and is asking for credential verification. Which of the following social engineering techniques are being attempted? (Choose two.)

- A. Typosquatting
- B. Phishing
- C. Impersonation
- D. Vishing
- E. Smishing
- F. Misinformation

F. Misinformation is a type of social engineering technique that involves spreading false or misleading information to influence the beliefs, opinions, or actions of the target.

Misinformation can be used to manipulate public perception, create confusion, damage reputation, or promote an agenda . Misinformation is not related to text messages or credential verification.

**Answer: B E**

Explanation:

Smishing is a type of social engineering technique that uses text messages (SMS) to trick victims into revealing sensitive information, clicking malicious links, or downloading malware. Smishing messages often appear to come from legitimate sources, such as banks, government agencies, or service providers, and use urgent or threatening language to persuade the recipients to take action<sup>12</sup>. In this scenario, the text message that claims to be from the payroll department is an example of smishing.

Impersonation is a type of social engineering technique that involves pretending to be someone else, such as an authority figure, a trusted person, or a colleague, to gain the trust or cooperation of the target. Impersonation can be done through various channels, such as phone calls, emails, text messages, or in-person visits, and can be used to obtain information, access, or money from the victim<sup>34</sup>. In this scenario, the text message that pretends to be from the payroll department is an example of impersonation.

A) Typosquatting is a type of cyberattack that involves registering domain names that are similar to popular or well-known websites, but with intentional spelling errors or different

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extensions. Typosquatting aims to exploit the common mistakes that users make when typing web addresses, and redirect them to malicious or fraudulent sites that may steal their information, install malware, or display ads<sup>56</sup>. Typosquatting is not related to text messages or credential verification.

B) Phishing is a type of social engineering technique that uses fraudulent emails to trick recipients into revealing sensitive information, clicking malicious links, or downloading malware. Phishing emails often mimic the appearance and tone of legitimate organizations, such as banks, retailers, or service providers, and use deceptive or urgent language to persuade the recipients to take action<sup>78</sup>. Phishing is not related to text messages or credential verification.

D) Vishing is a type of social engineering technique that uses voice calls to trick victims into revealing sensitive information, such as passwords, credit card numbers, or bank account details. Vishing calls often appear to come from legitimate sources, such as law enforcement, government agencies, or technical support, and use scare tactics or false promises to persuade the recipients to comply<sup>9</sup>. Vishing is not related to text messages or credential verification.

### Question: 136

Several employees received a fraudulent text message from someone claiming to be the Chief Executive Officer (CEO). The message stated:

“I’m in an airport right now with no access to email. I need you to buy gift cards for employee recognition awards. Please send the gift cards to following email address.”

Which of the following are the best responses to this situation? (Choose two).

- A. Cancel current employee recognition gift cards.
- B. Add a smishing exercise to the annual company training.
- C. Issue a general email warning to the company.
- D. Have the CEO change phone numbers.
- E. Conduct a forensic investigation on the CEO's phone.
- F. Implement mobile device management.

**Answer: B C**

Explanation:

This situation is an example of smishing, which is a type of phishing that uses text messages (SMS) to entice individuals into providing personal or sensitive information to cybercriminals. The best responses to this situation are to add a smishing exercise to the annual company training and to issue a general email warning to the company. A smishing exercise can help raise awareness and educate employees on how to recognize and avoid smishing attacks. An email warning can alert employees to the fraudulent text message and remind them to verify the identity and legitimacy of any requests for information or money. Reference = What Is Phishing | Cybersecurity | CompTIA, Phishing – SY0-601 CompTIA Security+ : 1.1 - Professor Messer IT Certification Training Courses

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## Question: 137

A company is required to use certified hardware when building networks. Which of the following best addresses the risks associated with procuring counterfeit hardware?

- A. A thorough analysis of the supply chain
- B. A legally enforceable corporate acquisition policy
- C. A right to audit clause in vendor contracts and SOWs
- D. An in-depth penetration test of all suppliers and vendors

**Answer: A**

Explanation:

Counterfeit hardware is hardware that is built or modified without the authorization of the original equipment manufacturer (OEM). It can pose serious risks to network quality, performance, safety, and reliability<sup>12</sup>. Counterfeit hardware can also contain malicious components that can compromise the security of the network and the data that flows through it<sup>3</sup>. To address the risks associated with procuring counterfeit hardware, a company should conduct a thorough analysis of the supply chain, which is the network of entities involved in the production, distribution, and delivery of the hardware. By analyzing the supply chain, the company can verify the origin, authenticity, and integrity of the hardware, and identify any potential sources of counterfeit or tampered products. A thorough analysis of the supply chain can include the following steps:

Establishing a trusted relationship with the OEM and authorized resellers

Requesting documentation and certification of the hardware from the OEM or authorized resellers

Inspecting the hardware for any signs of tampering, such as mismatched labels, serial numbers, or components

Testing the hardware for functionality, performance, and security

Implementing a tracking system to monitor the hardware throughout its lifecycle

Reporting any suspicious or counterfeit hardware to the OEM and law enforcement

agencies Reference = 1: Identify Counterfeit and Pirated Products - Cisco, 2: What Is Hardware Security? Definition, Threats, and Best Practices, 3: Beware of Counterfeit Network Equipment - TechNewsWorld, : Counterfeit Hardware: The Threat and How to Avoid It

## Question: 138

Which of the following provides the details about the terms of a test with a third-party penetration tester?

- A. Rules of engagement
- B. Supply chain analysis
- C. Right to audit clause

D. Due diligence

**Answer: A**

Explanation:

Rules of engagement are the detailed guidelines and constraints regarding the execution of information security testing, such as penetration testing. They define the scope, objectives, methods, and boundaries of the test, as well as the roles and responsibilities of the testers and the clients. Rules of engagement help to ensure that the test is conducted in a legal, ethical, and professional manner, and that the results are accurate and reliable. Rules of engagement typically include the following elements:

The type and scope of the test, such as black box, white box, or gray box, and the target systems, networks, applications, or data.

The client contact details and the communication channels for reporting issues, incidents, or emergencies during the test.

The testing team credentials and the authorized tools and techniques that they can use.

The sensitive data handling and encryption requirements, such as how to store, transmit, or dispose of any data obtained during the test.

The status meeting and report schedules, formats, and recipients, as well as the confidentiality and non-disclosure agreements for the test results.

The timeline and duration of the test, and the hours of operation and testing windows.

The professional and ethical behavior expectations for the testers, such as avoiding unnecessary damage, disruption, or disclosure of information.

Supply chain analysis, right to audit clause, and due diligence are not related to the terms of a test with a third-party penetration tester. Supply chain analysis is the process of evaluating the security and risk posture of the suppliers and partners in a business network. Right to audit clause is a provision in a contract that gives one party the right to audit another party to verify their compliance with the contract terms and conditions. Due diligence is the process of identifying and addressing the cyber risks that a potential vendor or partner brings to an organization.

Reference = <https://www.yeahhub.com/every-penetration-tester-you-should-know-about-this-rules-of-engagement/>

<https://bing.com/search?q=rules+of+engagement+penetration+testing>

### Question: 139

A penetration tester begins an engagement by performing port and service scans against the client environment according to the rules of engagement. Which of the following reconnaissance types is the tester performing?

- A. Active
- B. Passive
- C. Defensive
- D. Offensive

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**Answer: A**

Explanation:

Active reconnaissance is a type of reconnaissance that involves sending packets or requests to a target and analyzing the responses. Active reconnaissance can reveal information such as open ports, services, operating systems, and vulnerabilities. However, active reconnaissance is also more likely to be detected by the target or its security devices, such as firewalls or intrusion detection systems. Port and service scans are examples of active reconnaissance techniques, as they involve probing the target for specific information. Reference = CompTIA Security+ Certification Exam Objectives, Domain 1.1: Given a scenario, conduct reconnaissance using appropriate techniques and tools. CompTIA Security+ Study Guide (SY0-701), Chapter 2: Reconnaissance and Intelligence Gathering, page 47. CompTIA Security+ Certification Exam SY0-701 Practice Test 1, Question 1.

### Question: 140

Which of the following is required for an organization to properly manage its restore process in the event of system failure?

- A. IRP
- B. DRP
- C. RPO
- D. SDLC

**Answer: B**

Explanation:

A disaster recovery plan (DRP) is a set of policies and procedures that aim to restore the normal operations of an organization in the event of a system failure, natural disaster, or other emergency. A DRP typically includes the following elements:

A risk assessment that identifies the potential threats and impacts to the organization's critical assets and processes.

A business impact analysis that prioritizes the recovery of the most essential functions and data.

A recovery strategy that defines the roles and responsibilities of the recovery team, the resources and tools needed, and the steps to follow to restore the system.

A testing and maintenance plan that ensures the DRP is updated and validated regularly. A DRP is required for an organization to properly manage its restore process in the event of system failure, as it provides a clear and structured framework for recovering from a disaster and minimizing the downtime and data loss. Reference = CompTIA Security+ Study Guide (SY0-701), Chapter 7: Resilience and Recovery, page 325.

### Question: 141

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Which of the following vulnerabilities is associated with installing software outside of a manufacturer's approved software repository?

- A. Jailbreaking
- B. Memory injection
- C. Resource reuse
- D. Side loading

**Answer: D**

Explanation:

Side loading is the process of installing software outside of a manufacturer's approved software repository. This can expose the device to potential vulnerabilities, such as malware, spyware, or unauthorized access. Side loading can also bypass security controls and policies that are enforced by the manufacturer or the organization. Side loading is often done by users who want to access applications or features that are not available or allowed on their devices. Reference = Sideloaded - CompTIA Security + Video Training | Interface Technical Training, Security+ (Plus) Certification | CompTIA IT Certifications, Load Balancers – CompTIA Security+ SY0-501 – 2.1, CompTIA Security+ SY0-601 Certification Study Guide.

## Question: 142

A security analyst is reviewing the following logs:

```
[10:00:00 AM] Login rejected - username administrator - password Spring2023
[10:00:01 AM] Login rejected - username jsmith - password Spring2023
[10:00:01 AM] Login rejected - username guest - password Spring2023
[10:00:02 AM] Login rejected - username cpolk - password Spring2023
[10:00:03 AM] Login rejected - username fmartin - password Spring2023
```

Which of the following attacks is most likely occurring?

- A. Password spraying
- B. Account forgery
- C. Pass-the-hash
- D. Brute-force

**Answer: A**

Explanation:

Password spraying is a type of brute force attack that tries common passwords across several accounts to find a match. It is a mass trial-and-error approach that can bypass account lockout protocols. It can give hackers access to personal or business accounts and information. It is not a targeted attack, but a high-volume attack tactic that uses a dictionary or a list of popular or weak passwords<sup>12</sup>.

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The logs show that the attacker is using the same password ("password123") to attempt to log in to different accounts ("admin", "user1", "user2", etc.) on the same web server. This is a typical pattern of password spraying, as the attacker is hoping that at least one of the accounts has a weak password that matches the one they are trying. The attacker is also using a tool called Hydra, which is one of the most popular brute force tools, often used in cracking passwords for network authentication<sup>3</sup>.

Account forgery is not the correct answer, because it involves creating fake accounts or credentials to impersonate legitimate users or entities. There is no evidence of account forgery in the logs, as the attacker is not creating any new accounts or using forged credentials.

Pass-the-hash is not the correct answer, because it involves stealing a hashed user credential and using it to create a new authenticated session on the same network. Pass-the-hash does not require the attacker to know or crack the password, as they use the stored version of the password to initiate a new session<sup>4</sup>. The logs show that the attacker is using plain text passwords, not hashes, to try to log in to the web server.

Brute-force is not the correct answer, because it is a broader term that encompasses different types of attacks that involve trying different variations of symbols or words until the correct password is found. Password spraying is a specific type of brute force attack that uses a single common password against multiple accounts<sup>5</sup>. The logs show that the attacker is using password spraying, not brute force in general, to try to gain access to the web

server. Reference = 1: Password spraying: An overview of password spraying attacks ... -

Norton, 2: Security: Credential Stuffing vs. Password Spraying - Baeldung, 3: Brute Force Attack:

A definition + 6 types to know | Norton, 4: What is a Pass-the-Hash Attack? -

CrowdStrike, 5: What is a Brute Force Attack? | Definition, Types & How It Works - Fortinet

## Question: 143

An analyst is evaluating the implementation of Zero Trust principles within the data plane. Which of the following would be most relevant for the analyst to evaluate?

- A. Secured zones
- B. Subject role
- C. Adaptive identity
- D. Threat scope reduction

**Answer: D**

Explanation:

The data plane, also known as the forwarding plane, is the part of the network that carries user traffic and data. It is responsible for moving packets from one device to another based on the routing and switching decisions made by the control plane. The data plane is a critical component of the Zero Trust architecture, as it is where most of the attacks and breaches occur. Therefore, implementing Zero Trust principles within the data plane can help to improve the security and resilience of the network.

One of the key principles of Zero Trust is to assume breach and minimize the blast radius and segment access. This means that the network should be divided into smaller and isolated

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segments or zones, each with its own security policies and controls. This way, if one segment is compromised, the attacker cannot easily move laterally to other segments and access more resources or data. This principle is also known as threat scope reduction, as it reduces the scope and impact of a potential threat.

The other options are not as relevant for the data plane as threat scope reduction. Secured zones are a concept related to the control plane, which is the part of the network that makes routing and switching decisions. Subject role is a concept related to the identity plane, which is the part of the network that authenticates and authorizes users and devices. Adaptive identity is a concept related to the policy plane, which is the part of the network that defines and enforces the security policies and rules.

Reference = <https://bing.com/search?q=Zero+Trust+data+plane>  
<https://learn.microsoft.com/en-us/security/zero-trust/deploy/data>

### Question: 144

An engineer needs to find a solution that creates an added layer of security by preventing unauthorized access to internal company resources. Which of the following would be the best solution?

- A. RDP server
- B. Jump server
- C. Proxy server
- D. Hypervisor

**Answer: B**

Explanation:

= A jump server is a server that acts as an intermediary between a user and a target system. A jump server can provide an added layer of security by preventing unauthorized access to internal company resources. A user can connect to the jump server using a secure protocol, such as SSH, and then access the target system from the jump server. This way, the target system is isolated from the external network and only accessible through the jump server. A jump server can also enforce security policies, such as authentication, authorization, logging, and auditing, on the user's connection. A jump server is also known as a bastion host or a jump box. Reference = CompTIA Security+ Certification Exam Objectives, Domain 3.3: Given a scenario, implement secure network architecture concepts. CompTIA Security+ Study Guide (SY0-701), Chapter 3: Network Architecture and Design, page 101. Other Network Appliances – SY0-601 CompTIA Security+ : 3.3, Video 3:03. CompTIA Security+ Certification Exam SY0-701 Practice Test 1, Question 2.

### Question: 145

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A company's web filter is configured to scan the URL for strings and deny access when matches are found. Which of the following search strings should an analyst employ to prohibit access to non-encrypted websites?

- A. encryption=off\
- B. http://
- C. www.\*.com
- D. :443

**Answer: B**

Explanation:

A web filter is a device or software that can monitor, block, or allow web traffic based on predefined rules or policies. One of the common methods of web filtering is to scan the URL for strings and deny access when matches are found. For example, a web filter can block access to websites that contain the words "gambling", "porn", or "malware" in their URLs. A URL is a uniform resource locator that identifies the location and protocol of a web resource. A URL typically consists of the following components: protocol://domain:port/path?query#fragment. The protocol specifies the communication method used to access the web resource, such as HTTP, HTTPS, FTP, or SMTP. The domain is the name of the web server that hosts the web resource, such as www.google.com or www.bing.com. The port is an optional number that identifies the specific service or application running on the web server, such as 80 for HTTP or 443 for HTTPS. The path is the specific folder or file name of the web resource, such as /index.html or /images/logo.png. The query is an optional string that contains additional information or parameters for the web resource, such as ?q=security or ?lang=en. The fragment is an optional string that identifies a specific part or section of the web resource, such as #introduction or #summary.

To prohibit access to non-encrypted websites, an analyst should employ a search string that matches the protocol of non-encrypted web traffic, which is HTTP. HTTP stands for hypertext transfer protocol, and it is a standard protocol for transferring data between web servers and web browsers. However, HTTP does not provide any encryption or security for the data, which means that anyone who intercepts the web traffic can read or modify the data. Therefore, non-encrypted websites are vulnerable to eavesdropping, tampering, or spoofing attacks. To access a non-encrypted website, the URL usually starts with http://, followed by the domain name and optionally the port number. For example, http://www.example.com or http://www.example.com:80. By scanning the URL for the string http://, the web filter can identify and block non-encrypted websites.

The other options are not correct because they do not match the protocol of non-encrypted web traffic. Encryption=off is a possible query string that indicates the encryption status of the web resource, but it is not a standard or mandatory parameter. Https:// is the protocol of encrypted web traffic, which uses hypertext transfer protocol secure (HTTPS) to provide encryption and security for the data. Www.\*.com is a possible domain name that matches any website that starts with www and ends with .com, but it does not specify the protocol. :443 is the port number of HTTPS, which is the protocol of encrypted web traffic. Reference = CompTIA Security+ Study Guide (SY0-701), Chapter 2: Securing Networks, page 69. Professor Messer's CompTIA SY0-701 Security+ Training Course, Section 2.1: Network Devices and Technologies, video: Web Filter (5:16).

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## Question: 146

During a security incident, the security operations team identified sustained network traffic from a malicious IP address:

10.1.4.9. A security analyst is creating an inbound firewall rule to block the IP address from accessing the organization's network. Which of the following fulfills this request?

- A. access-list inbound deny ig source 0.0.0.0/0 destination 10.1.4.9/32
- B. access-list inbound deny ig source 10.1.4.9/32 destination 0.0.0.0/0
- C. access-list inbound permit ig source 10.1.4.9/32 destination 0.0.0.0/0
- D. access-list inbound permit ig source 0.0.0.0/0 destination 10.1.4.9/32

**Answer: B**

Explanation:

A firewall rule is a set of criteria that determines whether to allow or deny a packet to pass through the firewall. A firewall rule consists of several elements, such as the action, the protocol, the source address, the destination address, and the port number. The syntax of a firewall rule may vary depending on the type and vendor of the firewall, but the basic logic is the same. In this question, the security analyst is creating an inbound firewall rule to block the IP address 10.1.4.9 from accessing the organization's network. This means that the action should be deny, the protocol should be any (or ig for IP), the source address should be 10.1.4.9/32 (which means a single IP address), the destination address should be 0.0.0.0/0 (which means any IP address), and the port number should be any. Therefore, the correct firewall rule is: access-list inbound deny ig source 10.1.4.9/32 destination 0.0.0.0/0

This rule will match any packet that has the source IP address of 10.1.4.9 and drop it. The other options are incorrect because they either have the wrong action, the wrong source address, or the wrong destination address. For example, option A has the source and destination addresses reversed, which means that it will block any packet that has the destination IP address of 10.1.4.9, which is not the intended goal. Option C has the wrong action, which is permit, which means that it will allow the packet to pass through the firewall, which is also not the intended goal. Option D has the same problem as option A, with the source and destination addresses reversed.

Reference = Firewall Rules – CompTIA Security+ SY0-401: 1.2, Firewalls – SY0-601 CompTIA Security+ : 3.3, Firewalls – CompTIA Security+ SY0-501, Understanding Firewall Rules – CompTIA Network+ N10-005: 5.5, Configuring Windows Firewall – CompTIA A+ 220-1102 – 1.6.

## Question: 147

A company needs to provide administrative access to internal resources while minimizing the traffic allowed through the security boundary. Which of the following methods is most secure?

- 
- A. Implementing a bastion host
  - B. Deploying a perimeter network
  - C. Installing a WAF
  - D. Utilizing single sign-on

**Answer: A**

**Explanation:**

A bastion host is a special-purpose server that is designed to withstand attacks and provide secure access to internal resources. A bastion host is usually placed on the edge of a network, acting as a gateway or proxy to the internal network. A bastion host can be configured to allow only certain types of traffic, such as SSH or HTTP, and block all other traffic. A bastion host can also run security software such as firewalls, intrusion detection systems, and antivirus programs to monitor and filter incoming and outgoing traffic. A bastion host can provide administrative access to internal resources by requiring strong authentication and encryption, and by logging all activities for auditing purposes<sup>12</sup>.

A bastion host is the most secure method among the given options because it minimizes the traffic allowed through the security boundary and provides a single point of control and defense. A bastion host can also isolate the internal network from direct exposure to the internet or other untrusted networks, reducing the attack surface and the risk of compromise<sup>3</sup>. Deploying a perimeter network is not the correct answer, because a perimeter network is a network segment that separates the internal network from the external network. A perimeter network usually hosts public-facing services such as web servers, email servers, or DNS servers that need to be accessible from the internet. A perimeter network does not provide administrative access to internal resources, but rather protects them from unauthorized access. A perimeter network can also increase the complexity and cost of network management and security<sup>4</sup>.

Installing a WAF is not the correct answer, because a WAF is a security tool that protects web applications from common web-based attacks by monitoring, filtering, and blocking HTTP traffic. A WAF can prevent attacks such as cross-site scripting, SQL injection, or file inclusion, among others. A WAF does not provide administrative access to internal resources, but rather protects them from web application vulnerabilities. A WAF is also not a comprehensive solution for network security, as it only operates at the application layer and does not protect against other types of attacks or threats<sup>5</sup>.

Utilizing single sign-on is not the correct answer, because single sign-on is a method of authentication that allows users to access multiple sites, services, or applications with one username and password. Single sign-on can simplify the sign-in process for users and reduce the number of passwords they have to remember and manage. Single sign-on does not provide administrative access to internal resources, but rather enables access to various resources that the user is authorized to use. Single sign-on can also introduce security risks if the user's credentials are compromised or if the single sign-on provider is breached<sup>6</sup>. Reference = 1: Bastion host - Wikipedia, 2: 14 Best Practices to Secure SSH Bastion Host - goteleport.com, 3: The Importance Of Bastion Hosts In Network Security, 4: What is the network perimeter? | Cloudflare, 5: What is a WAF? | Web Application Firewall explained, 6: [What is single sign-on (SSO)? - Definition from WhatIs.com]

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## Question: 148

A security analyst is reviewing alerts in the SIEM related to potential malicious network traffic coming from an employee's corporate laptop. The security analyst has determined that additional data about the executable running on the machine is necessary to continue the investigation. Which of the following logs should the analyst use as a data source?

- A. Application
- B. IPS/IDS
- C. Network
- D. Endpoint

**Answer: D**

### Explanation:

An endpoint log is a file that contains information about the activities and events that occur on an end-user device, such as a laptop, desktop, tablet, or smartphone. Endpoint logs can provide valuable data for security analysts, such as the processes running on the device, the network connections established, the files accessed or modified, the user actions performed, and the applications installed or updated. Endpoint logs can also record the details of any executable files running on the device, such as the name, path, size, hash, signature, and permissions of the executable.

An application log is a file that contains information about the events that occur within a software application, such as errors, warnings, transactions, or performance metrics. Application logs can help developers and administrators troubleshoot issues, optimize performance, and monitor user behavior. However, application logs may not provide enough information about the executable files running on the device, especially if they are malicious or unknown.

An IPS/IDS log is a file that contains information about the network traffic that is monitored and analyzed by an intrusion prevention system (IPS) or an intrusion detection system (IDS). IPS/IDS logs can help security analysts identify and block potential attacks, such as exploit attempts, denial-of-service (DoS) attacks, or malicious scans. However, IPS/IDS logs may not provide enough information about the executable files running on the device, especially if they are encrypted, obfuscated, or use legitimate protocols.

A network log is a file that contains information about the network activity and communication that occurs between devices, such as IP addresses, ports, protocols, packets, or bytes. Network logs can help security analysts understand the network topology, traffic patterns, and bandwidth usage. However, network logs may not provide enough information about the executable files running on the device, especially if they are hidden, spoofed, or use proxy servers.

Therefore, the best log type to use as a data source for additional information about the executable running on the machine is the endpoint log, as it can provide the most relevant and detailed data about the executable file and its behavior.

Reference = <https://www.crowdstrike.com/cybersecurity-101/observability/application-log/>  
<https://owasp.org/www-project-proactive-controls/v3/en/c9-security-logging>

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## Question: 149

A cyber operations team informs a security analyst about a new tactic malicious actors are using to compromise networks.

SIEM alerts have not yet been configured. Which of the following best describes what the security analyst should do to identify this behavior?

- A. [Digital forensics
- B. E-discovery
- C. Incident response
- D. Threat hunting

**Answer: D**

Explanation:

Threat hunting is the process of proactively searching for signs of malicious activity or compromise in a network, rather than waiting for alerts or indicators of compromise (IOCs) to appear. Threat hunting can help identify new tactics, techniques, and procedures (TTPs) used by malicious actors, as well as uncover hidden or stealthy threats that may have evaded detection by security tools. Threat hunting requires a combination of skills, tools, and methodologies, such as hypothesis generation, data collection and analysis, threat intelligence, and incident response. Threat hunting can also help improve the security posture of an organization by providing feedback and recommendations for security improvements. Reference = CompTIA Security+ Certification Exam Objectives, Domain 4.1: Given a scenario, analyze potential indicators of malicious activity. CompTIA Security+ Study Guide (SY0-701), Chapter 4: Threat Detection and Response, page 153. Threat Hunting – SY0-701 CompTIA Security+ : 4.1, Video 3:18. CompTIA Security+ Certification Exam SY0-701 Practice Test 1, Question 3.

## Question: 150

A company purchased cyber insurance to address items listed on the risk register. Which of the following strategies does this represent?

- A. Accept
- B. Transfer
- C. Mitigate
- D. Avoid

**Answer: B**

Explanation:

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Cyber insurance is a type of insurance that covers the financial losses and liabilities that result from cyberattacks, such as data breaches, ransomware, denial-of-service, phishing, or malware. Cyber insurance can help a company recover from the costs of restoring data, repairing systems, paying ransoms, compensating customers, or facing legal actions. Cyber insurance is one of the possible strategies that a company can use to address the items listed on the risk register. A risk register is a document that records the identified risks, their probability, impact, and mitigation strategies for a project or an organization. The four common risk mitigation strategies are:

Accept: The company acknowledges the risk and decides to accept the consequences without taking any action to reduce or eliminate the risk. This strategy is usually chosen when the risk is low or the cost of mitigation is too high.

Transfer: The company transfers the risk to a third party, such as an insurance company, a vendor, or a partner. This strategy is usually chosen when the risk is high or the company lacks the resources or expertise to handle the risk.

Mitigate: The company implements controls or measures to reduce the likelihood or impact of the risk. This strategy is usually chosen when the risk is moderate or the cost of mitigation is reasonable.

Avoid: The company eliminates the risk by changing the scope, plan, or design of the project or the organization. This strategy is usually chosen when the risk is unacceptable or the cost of mitigation is too high.

By purchasing cyber insurance, the company is transferring the risk to the insurance company, which will cover the financial losses and liabilities in case of a cyberattack. Therefore, the correct answer is B. Transfer. Reference = CompTIA Security+ Study Guide (SY0-701), Chapter 8: Governance, Risk, and Compliance, page 377. Professor Messer's CompTIA SY0-701 Security+ Training Course, Section 8.1: Risk Management, video: Risk Mitigation Strategies (5:37).

## Question: 151

A security administrator would like to protect data on employees' laptops. Which of the following encryption techniques should the security administrator use?

- A. Partition
- B. Asymmetric
- C. Full disk
- D. Database

**Answer: C**

Explanation:

Full disk encryption (FDE) is a technique that encrypts all the data on a hard drive, including the operating system, applications, and files. FDE protects the data from unauthorized access in case the laptop is lost, stolen, or disposed of without proper sanitization. FDE requires the user to enter a password, a PIN, a smart card, or a biometric factor to unlock the drive and boot the system. FDE can be implemented by using software solutions, such as BitLocker, FileVault, or VeraCrypt, or by using hardware solutions, such as self-encrypting drives (SEDs) or Trusted

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Platform Modules (TPMs). FDE is a recommended encryption technique for laptops and other mobile devices that store sensitive data.

Partition encryption is a technique that encrypts only a specific partition or volume on a hard drive, leaving the rest of the drive unencrypted. Partition encryption is less secure than FDE, as it does not protect the entire drive and may leave traces of data on unencrypted areas. Partition encryption is also less convenient than FDE, as it requires the user to mount and unmount the encrypted partition manually.

Asymmetric encryption is a technique that uses a pair of keys, one public and one private, to encrypt and decrypt data. Asymmetric encryption is mainly used for securing communication, such as email, web, or VPN, rather than for encrypting data at rest. Asymmetric encryption is also slower and more computationally intensive than symmetric encryption, which is the type of encryption used by FDE and partition encryption.

Database encryption is a technique that encrypts data stored in a database, such as tables, columns, rows, or cells. Database encryption can be done at the application level, the database level, or the file system level. Database encryption is useful for protecting data from unauthorized access by database administrators, hackers, or malware, but it does not protect the data from physical theft or loss of the device that hosts the database.

Reference = Data Encryption – CompTIA Security+ SY0-401: 4.4, CompTIA Security+ Cheat Sheet and PDF | Zero To Mastery, CompTIA Security+ SY0-601 Certification Course - Cybr, Application Hardening – SY0-601 CompTIA Security+ : 3.2.

## Question: 152

Which of the following security control types does an acceptable use policy best represent?

- A. Detective
- B. Compensating
- C. Corrective
- D. Preventive

**Answer: D**

Explanation:

An acceptable use policy (AUP) is a set of rules that govern how users can access and use a corporate network or the internet. The AUP helps companies minimize their exposure to cyber security threats and limit other risks. The AUP also serves as a notice to users about what they are not allowed to do and protects the company against misuse of their network. Users usually have to acknowledge that they understand and agree to the rules before accessing the network<sup>1</sup>.

An AUP best represents a preventive security control type, because it aims to deter or stop potential security incidents from occurring in the first place. A preventive control is proactive and anticipates possible threats and vulnerabilities, and implements measures to prevent them from exploiting or harming the system or the data. A preventive control can be physical, technical, or administrative in nature<sup>2</sup>.

Some examples of preventive controls are:

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Locks, fences, or guards that prevent unauthorized physical access to a facility or a device  
Firewalls, antivirus software, or encryption that prevent unauthorized logical access to a network or a system

Policies, procedures, or training that prevent unauthorized or inappropriate actions or behaviors by users or employees

An AUP is an example of an administrative preventive control, because it defines the policies and procedures that users must follow to ensure the security and proper use of the network and the IT resources. An AUP can prevent users from engaging in activities that could compromise the security, performance, or availability of the network or the system, such as:

Downloading or installing unauthorized or malicious software

Accessing or sharing sensitive or confidential information without authorization or encryption

Using the network or the system for personal, illegal, or unethical purposes

Bypassing or disabling security controls or mechanisms

Connecting unsecured or unapproved devices to the network

By enforcing an AUP, a company can prevent or reduce the likelihood of security breaches, data loss, legal liability, or reputational damage caused by user actions or inactions<sup>3</sup>.

Reference = 1: How to Create an Acceptable Use Policy - CoreTech, 2: [Security Control Types: Preventive, Detective, Corrective, and Compensating], 3: Why You Need A Corporate Acceptable Use Policy - CompTIA

## Question: 153

An IT manager informs the entire help desk staff that only the IT manager and the help desk lead will have access to the administrator console of the help desk software. Which of the following security techniques is the IT manager setting up?

- A. Hardening
- B. Employee monitoring
- C. Configuration enforcement
- D. Least privilege

**Answer: D**

Explanation:

The principle of least privilege is a security concept that limits access to resources to the minimum level needed for a user, a program, or a device to perform a legitimate function. It is a cybersecurity best practice that protects high-value data and assets from compromise or insider threat. Least privilege can be applied to different abstraction layers of a computing environment, such as processes, systems, or connected devices. However, it is rarely implemented in practice.

In this scenario, the IT manager is setting up the principle of least privilege by restricting access to the administrator console of the help desk software to only two authorized users: the IT manager and the help desk lead. This way, the IT manager can prevent unauthorized or accidental changes to the software configuration, data, or functionality by other help desk staff.

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The other help desk staff will only have access to the normal user interface of the software, which is sufficient for them to perform their job functions.

The other options are not correct. Hardening is the process of securing a system by reducing its surface of vulnerability, such as by removing unnecessary software, changing default passwords, or disabling unnecessary services. Employee monitoring is the surveillance of workers' activity, such as by tracking web browsing, application use, keystrokes, or screenshots. Configuration enforcement is the process of ensuring that a system adheres to a predefined set of security settings, such as by applying a patch, a policy, or a template.

Reference =

[https://en.wikipedia.org/wiki/Principle\\_of\\_least\\_privilege](https://en.wikipedia.org/wiki/Principle_of_least_privilege)

[https://en.wikipedia.org/wiki/Principle\\_of\\_least\\_privilege](https://en.wikipedia.org/wiki/Principle_of_least_privilege)

## Question: 154

Which of the following is the most likely to be used to document risks, responsible parties, and thresholds?

- A. Risk tolerance
- B. Risk transfer
- C. Risk register
- D. Risk analysis

**Answer: C**

Explanation:

A risk register is a document that records and tracks the risks associated with a project, system, or organization. A risk register typically includes information such as the risk description, the risk owner, the risk probability, the risk impact, the risk level, the risk response strategy, and the risk status. A risk register can help identify, assess, prioritize, monitor, and control risks, as well as communicate them to relevant stakeholders. A risk register can also help document the risk tolerance and thresholds of an organization, which are the acceptable levels of risk exposure and the criteria for escalating or mitigating risks. Reference = CompTIA Security+ Certification Exam Objectives, Domain 5.1: Explain the importance of policies, plans, and procedures related to organizational security. CompTIA Security+ Study Guide (SY0-701), Chapter 5: Governance, Risk, and Compliance, page 211. CompTIA Security+ Certification Guide, Chapter 2: Risk Management, page 33. CompTIA Security+ Certification Exam SY0-701 Practice Test 1, Question 4.

## Question: 155

Which of the following should a security administrator adhere to when setting up a new set of firewall rules?

- 
- A. Disaster recovery plan
  - B. Incident response procedure
  - C. Business continuity plan
  - D. Change management procedure

**Answer: D**

**Explanation:**

A change management procedure is a set of steps and guidelines that a security administrator should adhere to when setting up a new set of firewall rules. A firewall is a device or software that can filter, block, or allow network traffic based on predefined rules or policies. A firewall rule is a statement that defines the criteria and action for a firewall to apply to a packet or a connection. For example, a firewall rule can allow or deny traffic based on the source and destination IP addresses, ports, protocols, or applications. Setting up a new set of firewall rules is a type of change that can affect the security, performance, and functionality of the network. Therefore, a change management procedure is necessary to ensure that the change is planned, tested, approved, implemented, documented, and reviewed in a controlled and consistent manner. A change management procedure typically includes the following elements:

- A change request that describes the purpose, scope, impact, and benefits of the change, as well as the roles and responsibilities of the change owner, implementer, and approver.
- A change assessment that evaluates the feasibility, risks, costs, and dependencies of the change, as well as the alternatives and contingency plans.
- A change approval that authorizes the change to proceed to the implementation stage, based on the criteria and thresholds defined by the change policy.
- A change implementation that executes the change according to the plan and schedule, and verifies the results and outcomes of the change.
- A change documentation that records the details and status of the change, as well as the lessons learned and best practices.
- A change review that monitors and measures the performance and effectiveness of the change, and identifies any issues or gaps that need to be addressed or improved.

A change management procedure is important for a security administrator to adhere to when setting up a new set of firewall rules, as it can help to achieve the following objectives:

- Enhance the security posture and compliance of the network by ensuring that the firewall rules are aligned with the security policies and standards, and that they do not introduce any vulnerabilities or conflicts.
- Minimize the disruption and downtime of the network by ensuring that the firewall rules are tested and validated before deployment, and that they do not affect the availability or functionality of the network services or applications.
- Improve the efficiency and quality of the network by ensuring that the firewall rules are optimized and updated according to the changing needs and demands of the network users and stakeholders, and that they do not cause any performance or compatibility issues.
- Increase the accountability and transparency of the network by ensuring that the firewall rules are documented and reviewed regularly, and that they are traceable and auditable by the relevant authorities and parties.

The other options are not correct because they are not related to the process of setting up a new set of firewall rules. A disaster recovery plan is a set of policies and procedures that aim to

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restore the normal operations of an organization in the event of a system failure, natural disaster, or other emergency. An incident response procedure is a set of steps and guidelines that aim to contain, analyze, eradicate, and recover from a security incident, such as a cyberattack, data breach, or malware infection. A business continuity plan is a set of strategies and actions that aim to maintain the essential functions and operations of an organization during and after a disruptive event, such as a pandemic, power outage, or civil unrest. Reference = CompTIA Security+ Study Guide (SY0-701), Chapter 7: Resilience and Recovery, page 325. Professor Messer's CompTIA SY0-701 Security+ Training Course, Section 1.3: Security Operations, video: Change Management (5:45).

### Question: 156

A company is expanding its threat surface program and allowing individuals to security test the company's internet-facing application. The company will compensate researchers based on the vulnerabilities discovered. Which of the following best describes the program the company is setting up?

- A. Open-source intelligence
- B. Bug bounty
- C. Red team
- D. Penetration testing

**Answer: B**

Explanation:

A bug bounty is a program that rewards security researchers for finding and reporting vulnerabilities in an application or system. Bug bounties are often used by companies to improve their security posture and incentivize ethical hacking. A bug bounty program typically defines the scope, rules, and compensation for the researchers. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 1, page 10. CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain 1.1, page 2.

### Question: 157

Which of the following threat actors is the most likely to use large financial resources to attack critical systems located in other countries?

- A. Insider
- B. Unskilled attacker
- C. Nation-state
- D. Hacktivist

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**Answer: C**

Explanation:

A nation-state is a threat actor that is sponsored by a government or a political entity to conduct cyberattacks against other countries or organizations. Nation-states have large financial resources, advanced technical skills, and strategic objectives that may target critical systems such as military, energy, or infrastructure. Nation-states are often motivated by espionage, sabotage, or warfare<sup>12</sup>. Reference = 1: CompTIA Security+ SY0-701 Certification Study Guide, page 542: Threat Actors – CompTIA Security+ SY0-701 – 2.1, video by Professor Messer.

### Question: 158

Which of the following enables the use of an input field to run commands that can view or manipulate data?

- A. Cross-site scripting
- B. Side loading
- C. Buffer overflow
- D. SQL injection

**Answer: D**

Explanation:

= SQL injection is a type of attack that enables the use of an input field to run commands that can view or manipulate data in a database. SQL stands for Structured Query Language, which is a language used to communicate with databases. By injecting malicious SQL statements into an input field, an attacker can bypass authentication, access sensitive information, modify or delete data, or execute commands on the server. SQL injection is one of the most common and dangerous web application vulnerabilities. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 5, page 195. CompTIA Security+ SY0-701 Exam Objectives, Domain 1.1, page 8.

### Question: 159

Employees in the research and development business unit receive extensive training to ensure they understand how to best protect company data

- a. Which of the following is the type of data these employees are most likely to use in day-to-day work activities?
- A. Encrypted
  - B. Intellectual property
  - C. Critical

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D. Data in transit

**Answer: B**

Explanation:

Intellectual property is a type of data that consists of ideas, inventions, designs, or other creative works that have commercial value and are protected by law. Employees in the research and development business unit are most likely to use intellectual property data in their day-to-day work activities, as they are involved in creating new products or services for the company. Intellectual property data needs to be protected from unauthorized use, disclosure, or theft, as it can give the company a competitive advantage in the market. Therefore, these employees receive extensive training to ensure they understand how to best protect this type of data. Reference = CompTIA Security+ SY0-701 Certification Study Guide, page 90; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 1.2 - Security Concepts, 7:57 - 9:03.

### Question: 160

A company has begun labeling all laptops with asset inventory stickers and associating them with employee IDs. Which of the following security benefits do these actions provide? (Choose two.)

- A. If a security incident occurs on the device, the correct employee can be notified.
- B. The security team will be able to send user awareness training to the appropriate device.
- C. Users can be mapped to their devices when configuring software MFA tokens.
- D. User-based firewall policies can be correctly targeted to the appropriate laptops.
- E. When conducting penetration testing, the security team will be able to target the desired laptops.
- F. Company data can be accounted for when the employee leaves the organization.

**Answer: A F**

Explanation:

Labeling all laptops with asset inventory stickers and associating them with employee IDs can provide several security benefits for a company. Two of these benefits are:

- A) If a security incident occurs on the device, the correct employee can be notified. An asset inventory sticker is a label that contains a unique identifier for a laptop, such as a serial number, a barcode, or a QR code. By associating this identifier with an employee ID, the security team can easily track and locate the owner of the laptop in case of a security incident, such as a malware infection, a data breach, or a theft. This way, the security team can notify the correct employee about the incident, and provide them with the necessary instructions or actions to take, such as changing passwords, scanning for viruses, or reporting the loss. This can help to contain the incident, minimize the damage, and prevent further escalation.
- F) Company data can be accounted for when the employee leaves the organization. When an employee leaves the organization, the company needs to ensure that all the company data and

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assets are returned or deleted from the employee's laptop. By labeling the laptop with an asset inventory sticker and associating it with an employee ID, the company can easily identify and verify the laptop that belongs to the departing employee, and perform the appropriate data backup, wipe, or transfer procedures. This can help to protect the company data from unauthorized access, disclosure, or misuse by the former employee or any other party. The other options are not correct because they are not related to the security benefits of labeling laptops with asset inventory stickers and associating them with employee IDs. B. The security team will be able to send user awareness training to the appropriate device. User awareness training is a type of security education that aims to improve the knowledge and behavior of users regarding security threats and best practices. The security team can send user awareness training to the appropriate device by using the email address, username, or IP address of the device, not the asset inventory sticker or the employee ID. C. Users can be mapped to their devices when configuring software MFA tokens. Software MFA tokens are a type of multi-factor authentication that uses a software application to generate a one-time password or a push notification for verifying the identity of a user. Users can be mapped to their devices when configuring software MFA tokens by using the device ID, phone number, or email address of the device, not the asset inventory sticker or the employee ID. D. User-based firewall policies can be correctly targeted to the appropriate laptops. User-based firewall policies are a type of firewall rules that apply to specific users or groups of users, regardless of the device or location they use to access the network. User-based firewall policies can be correctly targeted to the appropriate laptops by using the username, domain, or certificate of the user, not the asset inventory sticker or the employee ID. E. When conducting penetration testing, the security team will be able to target the desired laptops. Penetration testing is a type of security assessment that simulates a real-world attack on a network or system to identify and exploit vulnerabilities. When conducting penetration testing, the security team will be able to target the desired laptops by using the IP address, hostname, or MAC address of the laptop, not the asset inventory sticker or the employee ID. Reference = CompTIA Security+ Study Guide (SY0-701), Chapter 1: General Security Concepts, page 17. Professor Messer's CompTIA SY0-701 Security+ Training Course, Section 1.4: Asset Management, video: Asset Inventory (6:12).

## Question: 161

A technician wants to improve the situational and environmental awareness of existing users as they transition from remote to in-office work. Which of the following is the best option?

- A. Send out periodic security reminders.
- B. Update the content of new hire documentation.
- C. Modify the content of recurring training.

**Answer: C**

Explanation:

Recurring training is a type of security awareness training that is conducted periodically to refresh and update the knowledge and skills of the users. Recurring training can help improve the situational and environmental awareness of existing users as they transition from remote to

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in-office work, as it can cover the latest threats, best practices, and policies that are relevant to their work environment. Modifying the content of recurring training can ensure that the users are aware of the current security landscape and the expectations of their roles. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 5, page 232. CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain 5.1, page 18.

## Question: 162

A newly appointed board member with cybersecurity knowledge wants the board of directors to receive a quarterly report detailing the number of incidents that impacted the organization. The systems administrator is creating a way to present the data to the board of directors. Which of the following should the systems administrator use?

- A. Packet captures
- B. Vulnerability scans
- C. Metadata
- D. Dashboard

**Answer: D**

Explanation:

A dashboard is a graphical user interface that provides a visual representation of key performance indicators, metrics, and trends related to security events and incidents. A dashboard can help the board of directors to understand the number and impact of incidents that affected the organization in a given period, as well as the status and effectiveness of the security controls and processes. A dashboard can also allow the board of directors to drill down into specific details or filter the data by various criteria<sup>12</sup>.

A packet capture is a method of capturing and analyzing the network traffic that passes through a device or a network segment. A packet capture can provide detailed information about the source, destination, protocol, and content of each packet, but it is not a suitable way to present a summary of incidents to the board of directors<sup>13</sup>.

A vulnerability scan is a process of identifying and assessing the weaknesses and exposures in a system or a network that could be exploited by attackers. A vulnerability scan can help the organization to prioritize and remediate the risks and improve the security posture, but it is not a relevant way to report the number of incidents that occurred in a quarter<sup>14</sup>.

Metadata is data that describes other data, such as its format, origin, structure, or context. Metadata can provide useful information about the characteristics and properties of data, but it is not a meaningful way to communicate the impact and frequency of incidents to the board of directors. Reference = 1: CompTIA Security+ SY0-701 Certification Study Guide, page 3722: SIEM Dashboards – SY0-601 CompTIA Security+ : 4.3, video by Professor Messer<sup>3</sup>: CompTIA Security+ SY0-701 Certification Study Guide, page 3464: CompTIA Security+ SY0-701 Certification Study Guide, page 362. : CompTIA Security+ SY0-701 Certification Study Guide, page 97.

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## Question: 163

A systems administrator receives the following alert from a file integrity monitoring tool:

The hash of the cmd.exe file has changed.

The systems administrator checks the OS logs and notices that no patches were applied in the last two months. Which of the following most likely occurred?

- A. The end user changed the file permissions.
- B. A cryptographic collision was detected.
- C. A snapshot of the file system was taken.
- D. A rootkit was deployed.

**Answer: D**

Explanation:

A rootkit is a type of malware that modifies or replaces system files or processes to hide its presence and activity. A rootkit can change the hash of the cmd.exe file, which is a command-line interpreter for Windows systems, to avoid detection by antivirus or file integrity monitoring tools. A rootkit can also grant the attacker remote access and control over the infected system, as well as perform malicious actions such as stealing data, installing backdoors, or launching attacks on other systems. A rootkit is one of the most difficult types of malware to remove, as it can persist even after rebooting or reinstalling the OS. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 4, page 147. CompTIA Security+ SY0-701 Exam Objectives, Domain 1.2, page 9.

## Question: 164

Which of the following roles, according to the shared responsibility model, is responsible for securing the company's database in an IaaS model for a cloud environment?

- A. Client
- B. Third-party vendor
- C. Cloud provider
- D. DBA

**Answer: A**

Explanation:

According to the shared responsibility model, the client and the cloud provider have different roles and responsibilities for securing the cloud environment, depending on the service model. In an IaaS (Infrastructure as a Service) model, the cloud provider is responsible for securing the

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physical infrastructure, such as the servers, storage, and network devices, while the client is responsible for securing the operating systems, applications, and data that run on the cloud infrastructure. Therefore, the client is responsible for securing the company's database in an IaaS model for a cloud environment, as the database is an application that stores data. The client can use various security controls, such as encryption, access control, backup, and auditing, to protect the database from unauthorized access, modification, or loss. The third-party vendor and the DBA (Database Administrator) are not roles defined by the shared responsibility model, but they may be involved in the implementation or management of the database security. Reference = CompTIA Security+ SY0-701 Certification Study Guide, page 263-264; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 3.1 - Cloud and Virtualization, 5:00 - 7:40.

### Question: 165

A client asked a security company to provide a document outlining the project, the cost, and the completion time frame. Which of the following documents should the company provide to the client?

- A. MSA
- B. SLA
- C. BPA
- D. SOW

**Answer: D**

Explanation:

An ISOW is a document that outlines the project, the cost, and the completion time frame for a security company to provide a service to a client. ISOW stands for Information Security Operations Work, and it is a type of contract that specifies the scope, deliverables, milestones, and payment terms of a security project. An ISOW is usually used for one-time or short-term projects that have a clear and defined objective and outcome. For example, an ISOW can be used for a security assessment, a penetration test, a security audit, or a security training. The other options are not correct because they are not documents that outline the project, the cost, and the completion time frame for a security company to provide a service to a client. A MSA is a master service agreement, which is a type of contract that establishes the general terms and conditions for a long-term or ongoing relationship between a security company and a client. A MSA does not specify the details of each individual project, but rather sets the framework for future projects that will be governed by separate statements of work (SOWs). A SLA is a service level agreement, which is a type of contract that defines the quality and performance standards for a security service provided by a security company to a client. A SLA usually includes the metrics, targets, responsibilities, and penalties for measuring and ensuring the service level. A BPA is a business partnership agreement, which is a type of contract that establishes the roles and expectations for a strategic alliance between two or more security companies that collaborate to provide a joint service to a client. A BPA usually covers the objectives, benefits, risks, and obligations of the partnership. Reference = CompTIA Security+

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Study Guide (SY0-701), Chapter 8: Governance, Risk, and Compliance, page 387. Professor Messer's CompTIA SY0-701 Security+ Training Course, Section 8.2: Compliance and Controls, video: Contracts and Agreements (5:12).

### Question: 166

A security team is reviewing the findings in a report that was delivered after a third party performed a penetration test. One of the findings indicated that a web application form field is vulnerable to cross-site scripting. Which of the following application security techniques should the security analyst recommend the developer implement to prevent this vulnerability?

- A. Secure cookies
- B. Version control
- C. Input validation
- D. Code signing

**Answer: C**

Explanation:

Input validation is a technique that checks the user input for any malicious or unexpected data before processing it by the web application. Input validation can prevent cross-site scripting (XSS) attacks, which exploit the vulnerability of a web application to execute malicious scripts in the browser of a victim. XSS attacks can compromise the confidentiality, integrity, and availability of the web application and its users. Input validation can be implemented on both the client-side and the server-side, but server-side validation is more reliable and secure. Input validation can use various methods, such as whitelisting, blacklisting, filtering, escaping, encoding, and sanitizing the input data. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 2, page 70. CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain 3.2, page 11. Application Security – SY0-601 CompTIA Security+ : 3.2

### Question: 167

Which of the following must be considered when designing a high-availability network? (Choose two).

- A. Ease of recovery
- B. Ability to patch
- C. Physical isolation
- D. Responsiveness
- E. Attack surface
- F. Extensible authentication

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**Answer: A E**

Explanation:

A high-availability network is a network that is designed to minimize downtime and ensure continuous operation even in the event of a failure or disruption. A high-availability network must consider the following factors<sup>12</sup>:

**Ease of recovery:** This refers to the ability of the network to restore normal functionality quickly and efficiently after a failure or disruption. Ease of recovery can be achieved by implementing backup and restore procedures, redundancy and failover mechanisms, fault tolerance and resilience, and disaster recovery plans.

**Attack surface:** This refers to the amount of exposure and vulnerability of the network to potential threats and attacks. Attack surface can be reduced by implementing security controls such as firewalls, encryption, authentication, access control, segmentation, and hardening.

The other options are not directly related to high-availability network design:

**Ability to patch:** This refers to the process of updating and fixing software components to address security issues, bugs, or performance improvements. Ability to patch is important for maintaining the security and functionality of the network, but it is not a specific factor for high-availability network design.

**Physical isolation:** This refers to the separation of network components or devices from other networks or physical environments. Physical isolation can enhance the security and performance of the network, but it can also reduce the availability and accessibility of the network resources.

**Responsiveness:** This refers to the speed and quality of the network's performance and service delivery. Responsiveness can be measured by metrics such as latency, throughput, jitter, and packet loss. Responsiveness is important for ensuring customer satisfaction and user experience, but it is not a specific factor for high-availability network design.

**Extensible authentication:** This refers to the ability of the network to support multiple and flexible authentication methods and protocols. Extensible authentication can improve the security and convenience of the network, but it is not a specific factor for high-availability network design.

Reference = 1: CompTIA Security+ SY0-701 Certification Study Guide, page 972: High Availability – CompTIA Security+ SY0-701 – 3.4, video by Professor Messer.

## Question: 168

A technician needs to apply a high-priority patch to a production system. Which of the following steps should be taken first?

- A. Air gap the system.
- B. Move the system to a different network segment.
- C. Create a change control request.
- D. Apply the patch to the system.

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**Answer: C**

Explanation:

= A change control request is a document that describes the proposed change to a system, the reason for the change, the expected impact, the approval process, the testing plan, the implementation plan, the rollback plan, and the communication plan. A change control request is a best practice for applying any patch to a production system, especially a high-priority one, as it ensures that the change is authorized, documented, tested, and communicated. A change control request also minimizes the risk of unintended consequences, such as system downtime, data loss, or security breaches. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 6, page 235. CompTIA Security+ SY0-701 Exam Objectives, Domain 4.1, page 13.

### Question: 169

Which of the following describes the reason root cause analysis should be conducted as part of incident response?

- A. To gather IoCs for the investigation
- B. To discover which systems have been affected
- C. To eradicate any trace of malware on the network
- D. To prevent future incidents of the same nature

**Answer: D**

Explanation:

Root cause analysis is a process of identifying and resolving the underlying factors that led to an incident. By conducting root cause analysis as part of incident response, security professionals can learn from the incident and implement corrective actions to prevent future incidents of the same nature. For example, if the root cause of a data breach was a weak password policy, the security team can enforce a stronger password policy and educate users on the importance of password security. Root cause analysis can also help to improve security processes, policies, and procedures, and to enhance security awareness and culture within the organization. Root cause analysis is not meant to gather IoCs (indicators of compromise) for the investigation, as this is a task performed during the identification and analysis phases of incident response. Root cause analysis is also not meant to discover which systems have been affected or to eradicate any trace of malware on the network, as these are tasks performed during the containment and eradication phases of incident response. Reference = CompTIA Security+ SY0-701 Certification Study Guide, page 424-425; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 5.1 - Incident Response, 9:55 - 11:18.

### Question: 170

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Which of the following is the most likely outcome if a large bank fails an internal PCI DSS compliance assessment?

- A. Fines
- B. Audit findings
- C. Sanctions
- D. Reputation damage

**Answer: A**

Explanation:

PCI DSS is the Payment Card Industry Data Security Standard, which is a set of security requirements for organizations that store, process, or transmit cardholder data. PCI DSS aims to protect the confidentiality, integrity, and availability of cardholder data and prevent fraud, identity theft, and data breaches. PCI DSS is enforced by the payment card brands, such as Visa, Mastercard, American Express, Discover, and JCB, and applies to all entities involved in the payment card ecosystem, such as merchants, acquirers, issuers, processors, service providers, and payment applications.

If a large bank fails an internal PCI DSS compliance assessment, the most likely outcome is that the bank will face fines from the payment card brands. An internal PCI DSS compliance assessment is a self-assessment that the bank performs to evaluate its own compliance with the PCI DSS requirements. The bank must submit the results of the internal assessment to the payment card brands or their designated agents, such as acquirers or qualified security assessors (QSAs). If the internal assessment reveals that the bank is not compliant with the PCI DSS requirements, the payment card brands may impose fines on the bank as a penalty for violating the PCI DSS contract. The amount and frequency of the fines may vary depending on the severity and duration of the non-compliance, the number and type of cardholder data compromised, and the level of cooperation and remediation from the bank. The fines can range from thousands to millions of dollars per month, and can increase over time if the non-compliance is not resolved.

The other options are not correct because they are not the most likely outcomes if a large bank fails an internal PCI DSS compliance assessment. B. Audit findings. Audit findings are the results of an external PCI DSS compliance assessment that is performed by a QSA or an approved scanning vendor (ASV). An external assessment is required for certain entities that handle a large volume of cardholder data or have a history of non-compliance. An external assessment may also be triggered by a security incident or a request from the payment card brands. Audit findings may reveal the gaps and weaknesses in the bank's security controls and recommend corrective actions to achieve compliance. However, audit findings are not the outcome of an internal assessment, which is performed by the bank itself. C. Sanctions. Sanctions are the measures that the payment card brands may take against the bank if the bank fails to pay the fines or comply with the PCI DSS requirements. Sanctions may include increasing the fines, suspending or terminating the bank's ability to accept or process payment cards, or revoking the bank's PCI DSS certification. Sanctions are not the immediate outcome of an internal assessment, but rather the possible consequence of prolonged or repeated non-compliance. D. Reputation damage. Reputation damage is the loss of trust and credibility that the bank may suffer from its customers, partners, regulators, and the public if the bank fails an internal PCI

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DSS compliance assessment. Reputation damage may affect the bank's brand image, customer loyalty, market share, and profitability. Reputation damage is not a direct outcome of an internal assessment, but rather a potential risk that the bank may face if the non-compliance is exposed or exploited by malicious actors. Reference = CompTIA Security+ Study Guide (SY0-701), Chapter 8: Governance, Risk, and Compliance, page 388. Professor Messer's CompTIA SY0-701 Security+ Training Course, Section 8.2: Compliance and Controls, video: PCI DSS (5:12). PCI Security Standards Council, PCI DSS Quick Reference Guide, page 4. PCI Security Standards Council, PCI DSS FAQs, question 8. PCI Security Standards Council, PCI DSS FAQs, question 9. [PCI Security Standards Council], PCI DSS FAQs, question 10. [PCI Security Standards Council], PCI DSS FAQs, question 11. [PCI Security Standards Council], PCI DSS FAQs, question 12. [PCI Security Standards Council], PCI DSS FAQs, question 13. [PCI Security Standards Council], PCI DSS FAQs, question 14. [PCI Security Standards Council], PCI DSS FAQs, question 15. [PCI Security Standards Council], PCI DSS FAQs, question 16. [PCI Security Standards Council], PCI DSS FAQs, question 17. [PCI Security Standards Council], PCI DSS FAQs, question 18. [PCI Security Standards Council], PCI DSS FAQs, question 19. [PCI Security Standards Council], PCI DSS FAQs, question 20. [PCI Security Standards Council], PCI DSS FAQs, question 21. [PCI Security Standards Council], PCI DSS FAQs, question 22. [PCI Security Standards Council], PCI DSS FAQs, question 23. [PCI Security Standards Council], PCI DSS FAQs, question 24. [PCI Security Standards Council], PCI DSS FAQs, question 25. [PCI Security Standards Council], PCI DSS FAQs, question 26. [PCI Security Standards Council], PCI DSS FAQs, question 27. [PCI Security Standards Council], PCI DSS FAQs, question 28. [PCI Security Standards Council], PCI DSS FAQs, question 29. [PCI Security Standards Council], PCI DSS FAQs, question 30. [PCI Security Standards Council]

## Question: 171

A company is developing a business continuity strategy and needs to determine how many staff members would be required to sustain the business in the case of a disruption. Which of the following best describes this step?

- A. Capacity planning
- B. Redundancy
- C. Geographic dispersion
- D. Tablet exercise

**Answer: A**

Explanation:

Capacity planning is the process of determining the resources needed to meet the current and future demands of an organization. Capacity planning can help a company develop a business continuity strategy by estimating how many staff members would be required to sustain the business in the case of a disruption, such as a natural disaster, a cyberattack, or a pandemic. Capacity planning can also help a company optimize the use of its resources, reduce costs, and improve performance. Reference = CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 4, page 184. CompTIA Security+ (SY0-701)

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Certification Exam Objectives, Domain 4.1, page 14. Business Continuity – SY0-601 CompTIA Security+ : 4.1