# Exam Questions CAS-005

CompTIA SecurityX Exam

**https://www.2passeasy.com/dumps/CAS-005/**

**NEW QUESTION 1**
Which of the following best explains the business requirement a healthcare provider fulfills by encrypting patient data at rest?

A. Securing data transfer between hospitals
B. Providing for non-repudiation data
C. Reducing liability from identity theft
D. Protecting privacy while supporting portability.

**Answer:** D

**Explanation:**
Encrypting patient data at rest is a critical requirement for healthcare providers to ensure compliance with regulations such as the Health Insurance Portability and Accountability Act (HIPAA). The primary business requirement fulfilled by this practice is the protection of patient privacy while supporting the portability of medical information. By encrypting data at rest, healthcare providers safeguard sensitive patient information from unauthorized access, ensuring that privacy is maintained even if the storage media are compromised. Additionally, encryption supports the portability of patient records, allowing for secure transfer and access across different systems and locations while ensuring that privacy controls are in place.
References:
? CompTIA SecurityX Study Guide: Emphasizes the importance of data encryption for protecting sensitive information and ensuring compliance with regulatory requirements.
? HIPAA Security Rule: Requires healthcare providers to implement safeguards, including encryption, to protect patient data.
? "Health Informatics: Practical Guide for Healthcare and Information Technology Professionals" by Robert E. Hoyt: Discusses encryption as a key measure for protecting patient data privacy and supporting data portability.

**NEW QUESTION 2**
A company is having issues with its vulnerability management program New devices/IPs are added and dropped regularly, making the vulnerability report inconsistent Which of the following actions should the company lake to most likely improve the vulnerability management process'

A. Request a weekly report with all new assets deployed and decommissioned
B. Extend the DHCP lease lime to allow the devices to remain with the same address for a longer period.
C. Implement a shadow IT detection process to avoid rogue devices on the network
D. Perform regular discovery scanning throughout the 11 landscape using the vulnerability management tool

**Answer:** D

**Explanation:**
To improve the vulnerability management process in an environment where new devices/IPs are added and dropped regularly, the company should perform regular discovery scanning throughout the IT landscape using the vulnerability management tool. Here??s why:
? Accurate Asset Inventory: Regular discovery scans help maintain an up-to-date
inventory of all assets, ensuring that the vulnerability management process includes all relevant devices and IPs.
? Consistency in Reporting: By continuously discovering and scanning new and
existing assets, the company can generate consistent and comprehensive vulnerability reports that reflect the current state of the network.
? Proactive Management: Regular scans enable the organization to proactively identify and address vulnerabilities on new and existing assets, reducing the window of exposure to potential threats.
? References:

**NEW QUESTION 3**
A security analyst discovered requests associated with IP addresses known for born legitimate 3nd bot-related traffic. Which of the following should the analyst use to determine whether the requests are malicious?

A. User-agent string
B. Byte length of the request
C. Web application headers
D. HTML encoding field

**Answer:** A

**Explanation:**
The user-agent string can provide valuable information to distinguish between legitimate and bot-related traffic. It contains details about the browser, device, and sometimes the operating system of the client making the request.
Why Use User-Agent String?
? Identify Patterns: User-agent strings can help identify patterns that are typical of bots or legitimate users.
? Block Malicious Bots: Many bots use known user-agent strings, and identifying these can help block malicious requests.
? Anomalies Detection: Anomalous user-agent strings can indicate spoofing attempts or malicious activity.
Other options provide useful information but may not be as effective for initial determination of the nature of the request:
? B. Byte length of the request: This can indicate anomalies but does not provide
detailed information about the client.
? C. Web application headers: While useful, they may not provide enough distinction between legitimate and bot traffic.
? D. HTML encoding field: This is not typically used for identifying the nature of the request.
References:
? CompTIA SecurityX Study Guide
? "User-Agent Analysis for Security," OWASP
? NIST Special Publication 800-94, "Guide to Intrusion Detection and Prevention Systems (IDPS)"

**NEW QUESTION 4**
Users are willing passwords on paper because of the number of passwords needed in an environment. Which of the following solutions is the best way to manage this situation and decrease risks?

A. Increasing password complexity to require 31 least 16 characters

B. implementing an SSO solution and integrating with applications
C. Requiring users to use an open-source password manager
D. Implementing an MFA solution to avoid reliance only on passwords

**Answer:** B

**Explanation:**
Implementing a Single Sign-On (SSO) solution and integrating it with applications is the best way to manage the situation and decrease risks. Here??s why:
? Reduced Password Fatigue: SSO allows users to log in once and gain access to multiple applications and systems without needing to remember and manage multiple passwords. This reduces the likelihood of users writing down passwords.
? Improved Security: By reducing the number of passwords users need to manage, SSO decreases the attack surface and potential for password-related security breaches. It also allows for the implementation of stronger authentication methods.
? User Convenience: SSO improves the user experience by simplifying the login process, which can lead to higher productivity and satisfaction.
? References:

**NEW QUESTION 5**
A user submits a help desk ticket stating then account does not authenticate sometimes. An analyst reviews the following logs for the user:
Which of the following best explains the reason the user's access is being denied?

A. incorrectly typed password
B. Time-based access restrictions
C. Account compromise
D. Invalid user-to-device bindings

**Answer:** B

**Explanation:**
The logs reviewed for the user indicate that access is being denied due to time-based access restrictions. These restrictions are commonly implemented to limit access to systems during specific hours to enhance security. If a user attempts to authenticate outside of the allowed time window, access will be denied. This measure helps prevent unauthorized access during non-business hours, reducing the risk of security incidents.
References:
? CompTIA SecurityX Study Guide: Covers various access control methods, including time-based restrictions, as a means of enhancing security.
? NIST Special Publication 800-53, "Security and Privacy Controls for Information Systems and Organizations": Recommends the use of time-based access restrictions as part of access control policies.
? "Access Control and Identity Management" by Mike Chapple and Aaron French: Discusses the implementation and benefits of time-based access restrictions.

**NEW QUESTION 6**
SIMULATION
You are a security analyst tasked with interpreting an Nmap scan output from company??s privileged network.
The company??s hardening guidelines indicate the following: There should be one primary server or service per device. Only default ports should be used. Non-secure protocols should be disabled.
INSTRUCTIONS
Using the Nmap output, identify the devices on the network and their roles, and any open ports that should be closed.
For each device found by Nmap, add a device entry to the Devices Discovered list, with the following information:
The IP address of the device
The primary server or service of the device (Note that each IP should by associated with one service/port only)
The protocol(s) that should be disabled based on the hardening guidelines (Note that multiple ports may need to be closed to comply with the hardening guidelines)
If at any time you would like to bring back the initial state of the simulation, please click the Reset All button.

**NMAP Scan Output**

```
Nmap scan report for 10.1.45.65
Host is up (0.015s latency).
Not shown: 998 filtered ports
PORT      STATE SERVICE  VERSION
22/tcp    open  ssh      CrushFTP sftpd (protocol 2.0)
8080/tcp open  http     CrushFTP web interface
Warning: OSScan results may be unreliable because we could not find at least 1 open
and 1 closed port
Device type: general purpose
Running: Microsoft Windows 7|2008
OS CPE: cpe:/o:microsoft:windows_7 cpe:/o:microsoft:windows_server_2008:r2
OS details: Microsoft Windows 7 SP1 or Windows Server 2008 R2

Nmap scan report for 10.1.45.66
Host is up (0.016s latency).
Not shown: 998 closed ports
PORT      STATE  SERVICE  VERSION
25/tcp    closed smtp     Barracuda Networks Spam Firewall smtpd
415/tcp   open   ssl/smtp smtpd
587/tcp   open   ssl/smtp smtpd
443/tcp   open   ssl/http Microsoft IIS httpd 7.5
Aggressive OS guesses: Linux 3.16 (90%), OpenWrt Chaos Calmer 15.05 (Linux 3.18)
or Designated Driver (Linux 4.1 or 4.4) (89%), OpenWrt Kamikaze 7.09 (Linux 2.6.22)
(88%), Linux 4.5 (88%), Asus RT-AC66U router (Linux 2.6) (88%), Linux 3.16 - 4.6
(88%), OpenWrt 0.9 - 7.09 (Linux 2.4.30 - 2.4.34) (87%), OpenWrt White Russian 0.9
(Linux 2.4.30) (87%), Asus RT-N16 WAP (Linux 2.6) (87%), Asus RT-N66U WAP (Linux
2.6) (87%)
No exact OS matches for host (test conditions non-ideal).
Service Info: Host: barracuda.pnp.root; CPE:
cpe:/h:barracudanetworks:spam_%26_virus_firewall_600:-

Nmap scan report for 10.1.45.67
Host is up (0.026s latency).
Not shown: 991 filtered ports
PORT      STATE  SERVICE  VERSION
20/tcp    closed ftp-data
21/tcp    open   ftp      FileZilla ftpd 0.9.39 beta
22/tcp    closed ssh
80/tcp    open   http     Microsoft IIS httpd 7.5
443/tcp   open   ssl/http Microsoft IIS httpd 7.5
2001/tcp closed dc
2047/tcp closed dls
2196/tcp closed unknown
6001/tcp closed X11:1
Device type: general purpose
Running (JUST GUESSING): Microsoft Windows Vista|7|2008|8.1 (94%)
OS CPE: cpe:/o:microsoft:windows_vista::sp2 cpe:/o:microsoft:windows_7::sp1
cpe:/o:microsoft:windows_server_2008 cpe:/o:microsoft:windows_8.1:r1
Aggressive OS guesses: Microsoft Windows Vista SP2, Windows 7 SP1, or Windows
Server 2008 (94%), Microsoft Windows Server 2008 R2 (92%), Microsoft Windows
Server 2008 SP2 (90%), Microsoft Windows 7 SP1 or Windows Server 2008 R2 (90%),
Microsoft Windows Server 2008 (87%), Microsoft Windows Server 2008 R2 SP1 (86%),
Microsoft Windows Vista SP0 or SP1, Windows Server 2008 SP1, or Windows 7 (85%),
Microsoft Windows 8.1 R1 (85%)
No exact OS matches for host (test conditions non-ideal).
Service Info: OS: Windows; CPE: cpe:/o:microsoft:windows

Nmap scan report for 10.1.45.68
Host is up (0.016s latency).
Not shown: 999 filtered ports
PORT      STATE SERVICE        VERSION
21/tcp    open  ftp            Pure-FTPd
443/tcp   open  ssl/http-proxy SonicWALL SSL-VPN http proxy
Warning: OSScan results may be unreliable because we could not find at least 1 open
and 1 closed port
Device type: firewall|general purpose|media device
Running (JUST GUESSING): Linux 3.X|2.6.X (92%), IPCop 2.X (92%), Tiandy
embedded (86%)
OS CPE: cpe:/o:linux:linux_kernel:3.4 cpe:/o:ipcop:ipcop:2 cpe:/o:linux:linux_kernel:3.2
cpe:/o:linux:linux_kernel:2.6.32
Aggressive OS guesses: IPCop 2 firewall (Linux 3.4) (92%), Linux 3.2 (89%), Linux
2.6.32 (87%), Tiandy NVR (86%)
No exact OS matches for host (test conditions non-ideal).
```

**Devices Discovered (0)**

Add Device For

10.1.45.65
10.1.45.66
10.1.45.67
10.1.45.68

**NMAP Scan Output**

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and 1 closed port
Device type: general purpose
Running: Microsoft Windows 7|2008
OS CPE: cpe:/o:microsoft:windows_7 cpe:/o:microsoft:windows_server_2008:r2
OS details: Microsoft Windows 7 SP1 or Windows Server 2008 R2

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Host is up (0.016s latency).
Not shown: 998 closed ports
PORT      STATE  SERVICE  VERSION
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443/tcp   open   ssl/http Microsoft IIS httpd 7.5
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(88%), OpenWrt 0.9 - 7.09 (Linux 2.4.30 - 2.4.34) (87%), OpenWrt White Russian 0.9
(Linux 2.4.30) (87%), Asus RT-N16 WAP (Linux 2.6) (87%), Asus RT-N66U WAP (Linux
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No exact OS matches for host (test conditions non-ideal).
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Not shown: 991 filtered ports
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21/tcp    open   ftp      FileZilla ftpd 0.9.39 beta
22/tcp    closed ssh
80/tcp    open   http     Microsoft IIS httpd 7.5
443/tcp   open   ssl/http Microsoft IIS httpd 7.5
2001/tcp closed dc
2047/tcp closed dls
2196/tcp closed unknown
6001/tcp closed X11:1
Device type: general purpose
Running (JUST GUESSING): Microsoft Windows Vista|7|2008|8.1 (94%)
OS CPE: cpe:/o:microsoft:windows_vista::sp2 cpe:/o:microsoft:windows_7::sp1
cpe:/o:microsoft:windows_server_2008 cpe:/o:microsoft:windows_8.1:r1
Aggressive OS guesses: Microsoft Windows Vista SP2, Windows 7 SP1, or Windows
Server 2008 (94%), Microsoft Windows Server 2008 R2 (92%), Microsoft Windows
Server 2008 SP2 (90%), Microsoft Windows 7 SP1 or Windows Server 2008 R2 (90%),
Microsoft Windows Server 2008 (87%), Microsoft Windows Server 2008 R2 SP1 (86%),
Microsoft Windows Vista SP0 or SP1, Windows Server 2008 SP1, or Windows 7 (85%),
Microsoft Windows 8.1 R1 (85%)
No exact OS matches for host (test conditions non-ideal).
Service Info: OS: Windows; CPE: cpe:/o:microsoft:windows

Nmap scan report for 10.1.45.68
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Device type: firewall|general purpose|media device
Running (JUST GUESSING): Linux 3.X|2.6.X (92%), IPCop 2.X (92%), Tiandy
embedded (86%)
OS CPE: cpe:/o:linux:linux_kernel:3.4 cpe:/o:ipcop:ipcop:2 cpe:/o:linux:linux_kernel:3.2
cpe:/o:linux:linux_kernel:2.6.32
Aggressive OS guesses: IPCop 2 firewall (Linux 3.4) (92%), Linux 3.2 (89%), Linux
2.6.32 (87%), Tiandy NVR (86%)
No exact OS matches for host (test conditions non-ideal).
```

**Devices Discovered (1)**

Add Device For 10.1.45.66

IP Address: 10.1.45.65

Role:
- SFTP Server
- Email Server
- FTP Server
- UTM Appliance
- Web Server
- Database Server
- AD Server

Disable Protocols:
- 20/tcp
- 21/tcp
- 22/tcp
- 25/tcp
- 80/tcp
- 415/tcp
- 443/tcp
- 8080/tcp

A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
* 10.1.45.65 SFTP Server Disable 8080
* 10.1.45.66 Email Server Disable 415 and 443
* 10.1.45.67 Web Server Disable 21, 80
* 10.1.45.68 UTM Appliance Disable 21

**NEW QUESTION 7**
Which of the following is the main reason quantum computing advancements are leading companies and countries to deploy new encryption algorithms?

A. Encryption systems based on large prime numbers will be vulnerable to exploitation
B. Zero Trust security architectures will require homomorphic encryption.
C. Perfect forward secrecy will prevent deployment of advanced firewall monitoring techniques
D. Quantum computers will enable malicious actors to capture IP traffic in real time

**Answer:** A

**Explanation:**
Advancements in quantum computing pose a significant threat to current encryption systems, especially those based on the difficulty of factoring large prime numbers, such as RSA. Quantum computers have the potential to solve these problems exponentially faster than classical computers, making current cryptographic systems vulnerable.
Why Large Prime Numbers are Vulnerable:
? Shor's Algorithm: Quantum computers can use Shor's algorithm to factorize large integers efficiently, which undermines the security of RSA encryption.
? Cryptographic Breakthrough: The ability to quickly factor large prime numbers means that encrypted data, which relies on the hardness of this mathematical problem, can be decrypted.
Other options, while relevant, do not capture the primary reason for the shift towards new encryption algorithms:
? B. Zero Trust security architectures: While important, the shift to homomorphic
encryption is not the main driver for new encryption algorithms.
? C. Perfect forward secrecy: It enhances security but is not the main reason for new encryption algorithms.
? D. Real-time IP traffic capture: Quantum computers pose a more significant threat to the underlying cryptographic algorithms than to the real-time capture of traffic.
References:
? CompTIA SecurityX Study Guide
? NIST Special Publication 800-208, "Recommendation for Stateful Hash-Based Signature Schemes"
? "Quantum Computing and Cryptography," MIT Technology Review

**NEW QUESTION 8**
A security configure is building a solution to disable weak CBC configuration for remote access connections lo Linux systems. Which of the following should the security engineer modify?

A. The /etc/openssl.conf file, updating the virtual site parameter
B. The /etc/nsswith.conf file, updating the name server
C. The /etc/hosts file, updating the IP parameter
D. The /etc/etc/sshd, configure file updating the ciphers

**Answer:** D

**Explanation:**
The sshd_config file is the main configuration file for the OpenSSH server. To disable weak CBC (Cipher Block Chaining) ciphers for SSH connections, the security engineer should modify the sshd_config file to update the list of allowed ciphers. This file typically contains settings for the SSH daemon, including which encryption algorithms are allowed.
By editing the /etc/ssh/sshd_config file and updating the Ciphers directive, weak ciphers can be removed, and only strong ciphers can be allowed. This change ensures that the
SSH server does not use insecure encryption methods.
References:
? CompTIA Security+ Study Guide
? OpenSSH manual pages (man sshd_config)
? CIS Benchmarks for Linux

**NEW QUESTION 9**
A security engineer performed a code scan that resulted in many false positives. The security engineer must find a solution that improves the quality of scanning results before application deployment. Which of the following is the best solution?

A. Limiting the tool to a specific coding language and tuning the rule set
B. Configuring branch protection rules and dependency checks
C. Using an application vulnerability scanner to identify coding flaws in production
D. Performing updates on code libraries before code development

**Answer:** A

**Explanation:**
To improve the quality of code scanning results and reduce false positives, the best solution is to limit the tool to a specific coding language and fine-tune the rule set. By configuring the code scanning tool to focus on the specific language used in the application, the tool can more accurately identify relevant issues and reduce the number of false positives. Additionally, tuning the rule set ensures that the tool's checks are
appropriate for the application's context, further improving the accuracy of the scan results.
References:
? CompTIA SecurityX Study Guide: Discusses best practices for configuring code scanning tools, including language-specific tuning and rule set adjustments.
? "Secure Coding: Principles and Practices" by Mark G. Graff and Kenneth R. van Wyk: Highlights the importance of customizing code analysis tools to reduce false positives.
? OWASP (Open Web Application Security Project): Provides guidelines for configuring and tuning code scanning tools to improve accuracy.

**NEW QUESTION 10**
A company's security policy states that any publicly available server must be patched within 12 hours after a patch is released A recent lIS zero-day vulnerability was discovered that affects all versions of the Windows Server OS:

| | OS | Externally available? | Behind WAF? | IIS installed? |
|---|---|---|---|---|
| Host 1 | Windows 2019 | Yes | Yes | Yes |
| Host 2 | Windows 2008 R2 | No | N/A | No |
| Host 3 | Windows 2012 R2 | Yes | Yes | Yes |
| Host 4 | Windows 2022 | Yes | No | Yes |
| Host 5 | Windows 2012 R2 | No | N/A | No |
| Host 6 | Windows 2019 | Yes | No | No |

Which of the following hosts should a security analyst patch first once a patch is available?

A. 1
B. 2
C. 3
D. 4
E. 5
F. 6

**Answer:** A

**Explanation:**
Based on the security policy that any publicly available server must be patched within 12 hours after a patch is released, the security analyst should patch Host 1 first. Here??s why:
? Public Availability: Host 1 is externally available, making it accessible from the
internet. Publicly available servers are at higher risk of being targeted by attackers, especially when a zero-day vulnerability is known.
? Exposure to Threats: Host 1 has IIS installed and is publicly accessible, increasing its exposure to potential exploitation. Patching this host first reduces the risk of a successful attack.
? Prioritization of Critical Assets: According to best practices, assets that are exposed to higher risks should be prioritized for patching to mitigate potential threats promptly.
? References:

**NEW QUESTION 10**
An organization is looking for gaps in its detection capabilities based on the APTs that may target the industry Which of the following should the security analyst use to perform threat modeling?

A. ATT&CK
B. OWASP
C. CAPEC
D. STRIDE

**Answer:** A

**Explanation:**
The ATT&CK (Adversarial Tactics, Techniques, and Common Knowledge) framework is the best tool for a security analyst to use for threat modeling when looking for gaps in detection capabilities based on Advanced Persistent Threats (APTs) that may target the industry. Here??s why:
? Comprehensive Framework: ATT&CK provides a detailed and structured repository of known adversary tactics and techniques based on real-world observations. It helps organizations understand how attackers operate and what techniques they might use.
? Gap Analysis: By mapping existing security controls against the ATT&CK matrix, analysts can identify which tactics and techniques are not adequately covered by current detection and mitigation measures.
? Industry Relevance: The ATT&CK framework is continuously updated with the latest threat intelligence, making it highly relevant for industries facing APT threats. It provides insights into specific APT groups and their preferred methods of attack.
? References:

**NEW QUESTION 11**
Company A and Company D ate merging Company A's compliance reports indicate branch protections are not in place A security analyst needs to ensure that potential threats to the software development life cycle are addressed. Which of the following should me analyst
cons<der when completing this basic?

A. If developers are unable to promote to production
B. If DAST code is being stored to a single code repository
C. If DAST scans are routinely scheduled
D. If role-based training is deployed

**Answer:** C

**Explanation:**
Dynamic Application Security Testing (DAST) is crucial for identifying and addressing security vulnerabilities during the software development life cycle (SDLC). Ensuring that DAST scans are routinely scheduled helps in maintaining a secure development process. Why Routine DAST Scans?
? Continuous Security Assessment: Regular DAST scans help in identifying
vulnerabilities in real-time, ensuring they are addressed promptly.
? Compliance: Routine scans ensure that the development process complies with security standards and regulations.
? Proactive Threat Mitigation: Regular scans help in early detection and mitigation of potential security threats, reducing the risk of breaches.

? Integration into SDLC: Ensures security is embedded within the development process, promoting a security-first approach.
Other options, while relevant, do not directly address the continuous assessment and proactive identification of threats:
? A. If developers are unable to promote to production: This is more of an
operational issue than a security assessment.
? B. If DAST code is being stored to a single code repository: This concerns code management rather than security testing frequency.
? D. If role-based training is deployed: While important, training alone does not ensure continuous security assessment.
References:
? CompTIA SecurityX Study Guide
? OWASP Testing Guide
? NIST Special Publication 800-53, "Security and Privacy Controls for Information Systems and Organizations"

**NEW QUESTION 14**
A compliance officer is reviewing the data sovereignty laws in several countries where the organization has no presence Which of the following is the most likely reason for reviewing these laws?

A. The organization is performing due diligence of potential tax issues.
B. The organization has been subject to legal proceedings in countries where it has a presence.
C. The organization is concerned with new regulatory enforcement in other countries
D. The organization has suffered brand reputation damage from incorrect media coverage

**Answer:** C

**Explanation:**
Reviewing data sovereignty laws in countries where the organization has no presence is likely due to concerns about regulatory enforcement. Data sovereignty laws dictate how data can be stored, processed, and transferred across borders. Understanding these laws is crucial for compliance, especially if the organization handles data that may be subject to foreign regulations.
? A. The organization is performing due diligence of potential tax issues: This is less
likely as tax issues are generally not directly related to data sovereignty laws.
? B. The organization has been subject to legal proceedings in countries where it has a presence: While possible, this does not explain the focus on countries where the organization has no presence.
? C. The organization is concerned with new regulatory enforcement in other countries: This is the most likely reason. New regulations could impact the organization??s operations, especially if they involve data transfers or processing data from these countries.
? D. The organization has suffered brand reputation damage from incorrect media
coverage: This is less relevant to the need for reviewing data sovereignty laws.
References:
? CompTIA Security+ Study Guide
? GDPR and other global data protection regulations
? "Data Sovereignty: The Future of Data Protection?" by Mark Burdon

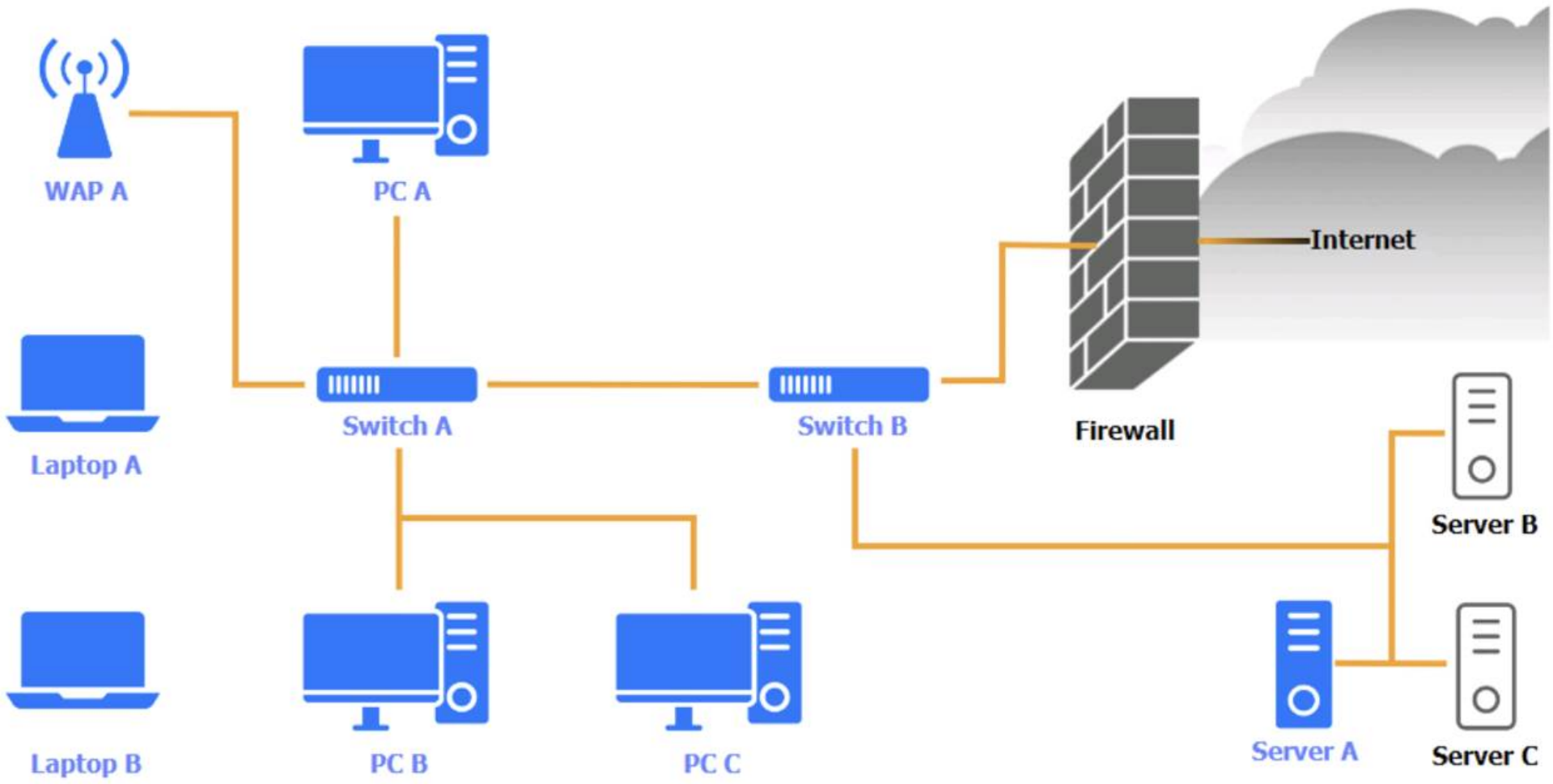
**NEW QUESTION 19**
A company hosts a platform-as-a-service solution with a web-based front end, through which customer interact with data sets. A security administrator needs to deploy controls to prevent application-focused attacks. Which of the following most directly supports the administrator's objective'

A. improving security dashboard visualization on SIEM
B. Rotating API access and authorization keys every two months
C. Implementing application toad balancing and cross-region availability
D. Creating WAF policies for relevant programming languages

**Answer:** D

**Explanation:**
The best way to prevent application-focused attacks for a platform-as-a- service solution with a web-based front end is to create Web Application Firewall (WAF) policies for relevant programming languages. Here's why:
? Application-Focused Attack Prevention: WAFs are designed to protect web
applications by filtering and monitoring HTTP traffic between a web application and the Internet. They help prevent attacks such as SQL injection, cross-site scripting (XSS), and other application-layer attacks.
? Customizable Rules: WAF policies can be tailored to the specific programming
languages and frameworks used by the web application, providing targeted protection based on known vulnerabilities and attack patterns.
? Real-Time Protection: WAFs provide real-time protection, blocking malicious
requests before they reach the application, thereby enhancing the security posture of the platform.
? References:

**NEW QUESTION 24**
SIMULATION
A security engineer needs to review the configurations of several devices on the network to meet the following requirements:
• The PostgreSQL server must only allow connectivity in the 10.1.2.0/24 subnet.
• The SSH daemon on the database server must be configured to listen to port 4022.
• The SSH daemon must only accept connections from a Single workstation.
• All host-based firewalls must be disabled on all workstations.
• All devices must have the latest updates from within the past eight days.
• All HDDs must be configured to secure data at rest.
• Cleartext services are not allowed.
• All devices must be hardened when possible.
Instructions:
Click on the various workstations and network devices to review the posture assessment results. Remediate any possible issues or indicate that no issue is found.
Click on Server A to review output data. Select commands in the appropriate tab to remediate connectivity problems to the pOSTGREsql DATABASE VIA ssh




WAP A

**WAP A**

| Finding | Status | Remediation |
|---|---|---|
| Firmware | Updated 5 days ago | ☑ No issue |
| Top 5 used ports | 22, 80, 443, 123, 53 | ☐ Patch management |
| SSID broadcast | Disabled | ☐ Update endpoint protection |
| Default admin account | Default password has been changed | ☐ Enabled disk encryption |
| HTTP server | Disabled | ☐ Enable port security on network device |
| | | ☐ Enable password complexity |
| | | ☐ Enable host-based firewall to block all traffic |
| | | ☐ Antivirus scan |
| | | ☐ Change default administrative password |
| | | ☐ Disable unneeded services |
| | | ☐ Enable all connectivity settings |

PC A

**PC A**

| | |
|---|---|
| OS updates | Updated 2 days ago, last checked 5:08 a.m. |
| Endpoint protection | Last checked 6:11 a.m. |
| Browser version | 91.2.5 (7/31/2023) |
| Disk encryption | Enabled |
| Password complexity | Enabled |
| Host-based firewall | Disabled |
| CPU & memory usage | Normal |
| Screensaver | Enabled |
| Top 5 used ports | 22, 80, 443, 389, 53 |
| Wireless | Disabled |

- [x] No issue
- [ ] Patch management
- [ ] Update endpoint protection
- [ ] Enabled disk encryption
- [ ] Enable port security on network device
- [ ] Enable password complexity
- [ ] Enable host-based firewall to block all traffic
- [ ] Antivirus scan
- [ ] Change default administrative password
- [ ] Disable unneeded services
- [ ] Enable all connectivity settings

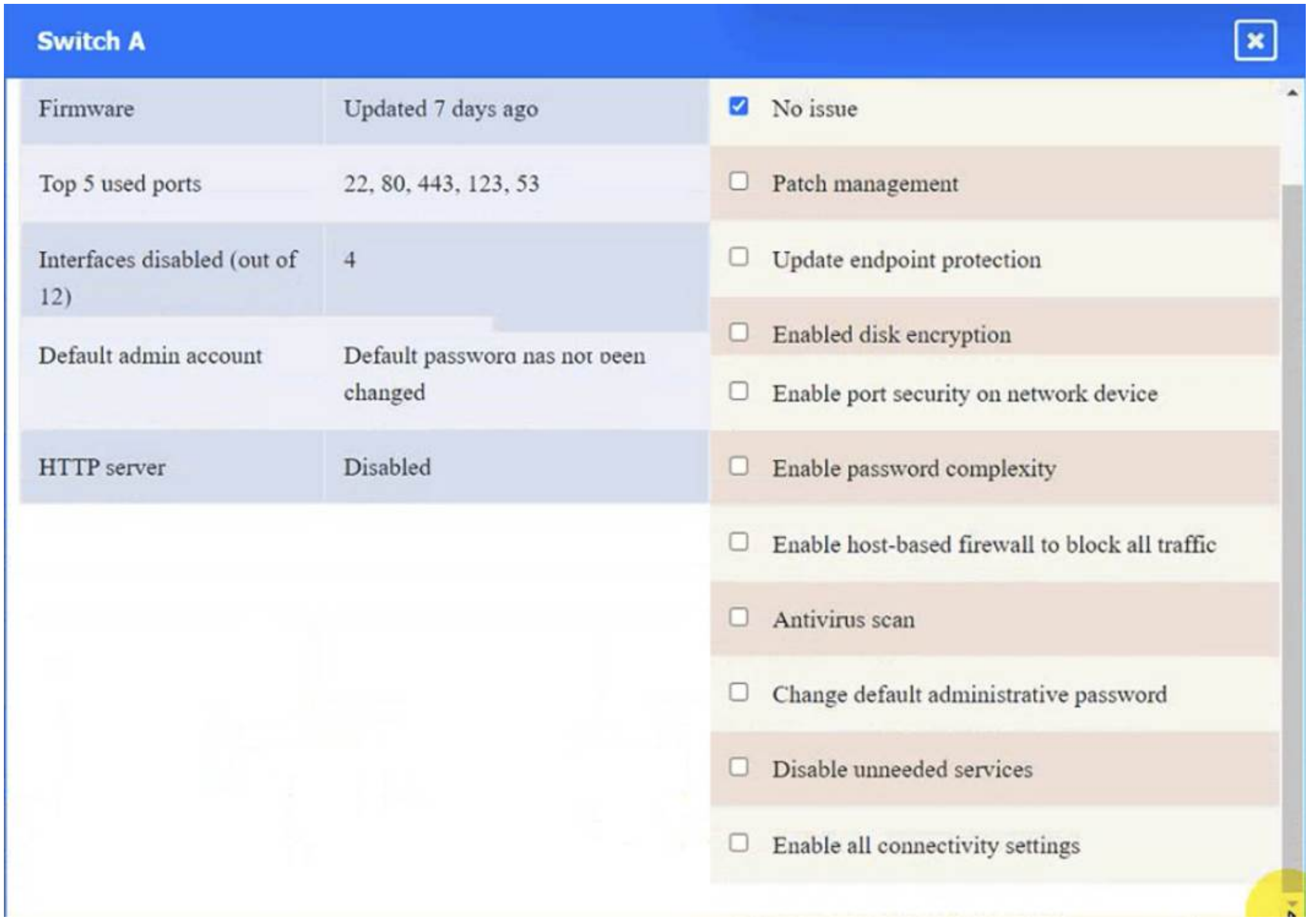
Laptop A

**Laptop A**

| | |
|---|---|
| OS updates | Updated 3 days ago, last checked 6:08 a.m. |
| Endpoint protection | Last checked in 6:13 a.m. |
| Browser version | 91.2.5 (7/31/2023) |
| Disk encryption | Enabled |
| Password complexity | Enabled |
| Host-based firewall | Disabled |
| CPU & memory usage | Medium |
| Screensaver | Enabled |
| Top 5 used ports | 22, 80, 443, 389, 53 |
| Wireless | Enabled |

- [x] No issue
- [ ] Patch management
- [ ] Update endpoint protection
- [ ] Enabled disk encryption
- [ ] Enable port security on network device
- [ ] Enable password complexity
- [ ] Enable host-based firewall to block all traffic
- [ ] Antivirus scan
- [ ] Change default administrative password
- [ ] Disable unneeded services
- [ ] Enable all connectivity settings

Switch A



**Switch A**

| | | |
|---|---|---|
| Firmware | Updated 7 days ago | ☑ No issue |
| Top 5 used ports | 22, 80, 443, 123, 53 | ☐ Patch management |
| Interfaces disabled (out of 12) | 4 | ☐ Update endpoint protection |
| Default admin account | Default password has not been changed | ☐ Enabled disk encryption |
| | | ☐ Enable port security on network device |
| HTTP server | Disabled | ☐ Enable password complexity |
| | | ☐ Enable host-based firewall to block all traffic |
| | | ☐ Antivirus scan |
| | | ☐ Change default administrative password |
| | | ☐ Disable unneeded services |
| | | ☐ Enable all connectivity settings |

Switch B:

**Switch B**

| | | |
|---|---|---|
| Firmware | Updated 7 days ago | ☑ No issue |
| Top 5 used ports | 22, 80, 443, 123, 53 | ☐ Patch management |
| Interfaces disabled (out of 6) | 1 | ☐ Update endpoint protection |
| Default admin account | Default password has been changed | ☐ Enabled disk encryption |
| HTTP server | Disabled | ☐ Enable port security on network device |
| | | ☐ Enable password complexity |
| | | ☐ Enable host-based firewall to block all traffic |
| | | ☐ Antivirus scan |
| | | ☐ Change default administrative password |
| | | ☐ Disable unneeded services |
| | | ☐ Enable all connectivity settings |

Laptop B

**Laptop B**

| | | |
|---|---|---|
| OS updates | Updated 3 days ago, last checked 8:08 a.m. | ☑ No issue |
| Endpoint protection | Last checked in 8:11 a.m. | ☐ Patch management |
| Browser version | 81.2.5 (7/31/2023) | ☐ Update endpoint protection |
| Disk encryption | Disabled | ☐ Enabled disk encryption |
| Password Complexity | Enabled | ☐ Enable port security on network device |
| Host-based firewall | Disabled | ☐ Enable password complexity |
| CPU & memory usage | Normal | ☐ Enable host-based firewall to block all traffic |
| Screensaver | Enabled | ☐ Antivirus scan |
| Top 5 used ports | 22, 80, 443, 8080, 53 | ☐ Change default administrative password |
| Wireless | Enabled | ☐ Disable unneeded services |
| | | ☐ Enable all connectivity settings |

PC B

**PC B**

| | | |
|---|---|---|
| OS updates | Updated 2 days ago, last checked 5:10 a.m. | ☑ No issue |
| Endpoint protection | Last checked in 6:13 a.m. | ☐ Patch management |
| Browser version | 91.2.5 (7/31/2023) | ☐ Update endpoint protection |
| Disk encryption | Enabled | ☐ Enabled disk encryption |
| Password complexity | Enabled | ☐ Enable port security on network device |
| Host-based firewall | Disabled | ☐ Enable password complexity |
| CPU & memory usage | Medium | ☐ Enable host-based firewall to block all traffic |
| Screensaver | Enabled | ☐ Antivirus scan |
| Top 5 used ports | 22, 80, 443, 389, 53 | ☐ Change default administrative password |
| Wireless | Disabled | ☐ Disable unneeded services |
| | | ☐ Enable all connectivity settings |

PC C

**PC C**

| | | |
|---|---|---|
| OS updates | Updated 22 days ago | ☑ No issue |
| Endpoint protection | Last checked 6:19 a.m. | ☐ Patch management |
| Browser version | 91.2.5 (7/18/2022) | ☐ Update endpoint protection |
| Disk encryption | Enabled | ☐ Enabled disk encryption |
| Password complexity | Enabled | ☐ Enable port security on network device |
| Host-based firewall | Disabled | ☐ Enable password complexity |
| CPU & memory usage | High | ☐ Enable host-based firewall to block all traffic |
| Screensaver | Enabled | ☐ Antivirus scan |
| Top 5 used ports | 22, 80, 443, 23, 53 | ☐ Change default administrative password |
| Wireless | Disabled | ☐ Disable unneeded services |
| | | ☐ Enable all connectivity settings |

Server A

**Server A**

Nmap | IP Tables

```
Nmap scan report for psql-srvr.acme.com
Host is up, received arp-response (0.00040s latency).
...
PORT          STATE   SERVICE        VERSION
22/tcp        open    ssh            OpenSSH 8.4
80/tcp        closed  http
443/tcp       closed  ssl/http
1433/tcp      closed  mssql
5432/tcp      closed  postgresql
...
```

1 2 3 4

```
iptables -R INPUT 1 -p tcp -s 10.1.2.25/32 --sport 4022 -j ACCEPT
iptables -D OUTPUT 1
iptables -A OUTPUT -p udp -d 0/0 -s 10.1.2.0/24 --sport 5432 -m state --state ESTABLISHED -j ACCEPT
iptables -A INPUT -p tcp -d 0/0 -s 10.1.2.0/24 --dport 5432 -m state --state NEW,ESTABLISHED -j ACCEPT
```

1 2 3 4

```
iptables -R INPUT 1 -p tcp -s 10.1.2.0/24 --dport 4022 -j ACCEPT
iptables -D OUTPUT 2
iptables -A OUTPUT -p tcp -d 0/0 -s 10.1.2.0/24 --sport 5432 -m state --state ESTABLISHED -j ACCEPT
iptables -A INPUT -p tcp -d 0/0 -s 10.1.2.0/24 --dport 5432 -m state --state NEW,ESTABLISHED -j ACCEPT
```

1 2 3 4

```
iptables -R OUTPUT 1 -p tcp -s 10.1.2.25/32 --sport 4022 -j ACCEPT
iptables -F OUTPUT
iptables -A OUTPUT -p tcp -d 0/0 -s 10.1.2.0/24 --sport 5432 -m state --state ESTABLISHED -j ACCEPT
iptables -A INPUT -p tcp -d 0/0 -s 10.1.2.0/24 --dport 5432 -m state --state NEW,ESTABLISHED -j ACCEPT
```

1 2 3 4

```
iptables -R INPUT 1 -p tcp -s 10.1.2.25/32 --dport 4022 -j ACCEPT
iptables -D OUTPUT 1
iptables -A OUTPUT -p tcp -d 0/0 -s 10.1.2.0/24 --sport 5432 -m state --state ESTABLISHED -j ACCEPT
iptables -A INPUT -p tcp -d 0/0 -s 10.1.2.0/24 --dport 5432 -m state --state NEW,ESTABLISHED -j ACCEPT
```

Nmap | IP Tables

```
#iptables --list --verbose

Chain INPUT (policy DROP 5 packets, 341 bytes)

pkts bytes  target  prot  opt in  out source    destination

0    0      ACCEPT  tcp   --  any any anywhere  anywhere    tcp spts:login:65535 dpt:ssh state NEW,ESTABLISHED

1   28      DROP    all   --  any any anywhere  anywhere


Chain FORWARD (policy DROP 0 packets, 0 bytes)
```

A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
WAP A: No issue found. The WAP A is configured correctly and meets the requirements. PC A = Enable host-based firewall to block all traffic
This option will turn off the host-based firewall and allow all traffic to pass through. This will comply with the requirement and also improve the connectivity of PC A to other devices on the network. However, this option will also reduce the security of PC A and make it more vulnerable to attacks. Therefore, it is recommended to use other security measures, such as antivirus, encryption, and password complexity, to protect PC A from potential threats.
Laptop A: Patch management
This option will install the updates that are available for Laptop A and ensure that it has the most recent security patches and bug fixes. This will comply with the requirement and also improve the performance and stability of Laptop A. However, this option may also require a reboot of Laptop A and some downtime during the update process. Therefore, it is recommended to backup any important data and close any open applications before applying the updates.
Switch A: No issue found. The Switch A is configured correctly and meets the requirements.
Switch B: No issue found. The Switch B is configured correctly and meets the requirements.
Laptop B: Disable unneeded services
This option will stop and disable the telnet service that is using port 23 on Laptop B. Telnet
is a cleartext service that transmits data in plain text over the network, which exposes it to eavesdropping, interception, and modification by attackers. By disabling the telnet service, you will comply with the requirement and also improve the security of Laptop B. However, this option may also affect the functionality of Laptop B if it needs to use telnet for remote administration or other purposes. Therefore, it is recommended to use a secure alternative to telnet, such as SSH or HTTPS, that encrypts the data in transit.
PC B: Enable disk encryption
This option will encrypt the HDD of PC B using a tool such as BitLocker or VeraCrypt. Disk encryption is a technique that protects data at rest by converting it into an unreadable format that can only be decrypted with a valid key or password. By enabling disk encryption, you will comply with the requirement and also improve the confidentiality and integrity of PC B??s data. However, this option may also affect the performance and usability of PC B, as it requires additional processing time and user authentication to access the encrypted data. Therefore, it is recommended to backup any important data and choose a strong key or password before encrypting the disk.
PC C: Disable unneeded services
This option will stop and disable the SSH daemon that is using port 22 on PC C. SSH is a secure service that allows remote access and command execution over an encrypted channel. However, port 22 is the default and well-known port for SSH, which makes it a common target for brute-force attacks and port scanning. By disabling the SSH daemon on port 22, you will comply with the requirement and also improve the security of PC C. However, this option may also affect the functionality of PC C if it needs to use SSH for remote administration or other purposes. Therefore, it is recommended to enable the SSH daemon on a different port, such as 4022, by editing the configuration file using the following command:
sudo nano /etc/ssh/sshd_config Server A. Need to select the following:
white screen with white text

1 | 2 | 3 | 4

```
iptables -R INPUT 1 -p tcp -s 10.1.2.0/24 --dport 4022 -j ACCEPT
iptables -D OUTPUT 2
iptables -A OUTPUT -p tcp -d 0/0 -s 10.1.2.0/24 --sport 5432 -m state --state ESTABLISHED -j ACCEPT
iptables -A INPUT -p tcp -d 0/0 -s 10.1.2.0/24 --dport 5432 -m state --state NEW,ESTABLISHED -j ACCEPT
```

**NEW QUESTION 27**
A company receives reports about misconfigurations and vulnerabilities in a third-party hardware device that is part of its released products. Which of the following solutions is the best way for the company to identify possible issues at an earlier stage?

A. Performing vulnerability tests on each device delivered by the providers
B. Performing regular red-team exercises on the vendor production line
C. Implementing a monitoring process for the integration between the application and the vendor appliance
D. Implementing a proper supply chain risk management program

**Answer:** D

**Explanation:**
Addressing misconfigurations and vulnerabilities in third-party hardware requires a comprehensive approach to manage risks throughout the supply chain. Implementing a proper supply chain risk management (SCRM) program is the most effective solution as it encompasses the following:
? Holistic Approach: SCRM considers the entire lifecycle of the product, from initial
design through to delivery and deployment. This ensures that risks are identified and managed at every stage.
? Vendor Management: It includes thorough vetting of suppliers and ongoing
assessments of their security practices, which can identify and mitigate vulnerabilities early.
? Regular Audits and Assessments: A robust SCRM program involves regular audits
and assessments, both internally and with suppliers, to ensure compliance with security standards and best practices.
? Collaboration and Communication: Ensures that there is effective communication
and collaboration between the company and its suppliers, leading to faster identification and resolution of issues.
Other options, while beneficial, do not provide the same comprehensive risk management:
? A. Performing vulnerability tests on each device delivered by the providers: While useful, this is reactive and only addresses issues after they have been delivered.
? B. Performing regular red-team exercises on the vendor production line: This can identify vulnerabilities but is not as comprehensive as a full SCRM program.
? C. Implementing a monitoring process for the integration between the application and the vendor appliance: This is important but only covers the integration phase, not the entire supply chain.
References:
? CompTIA SecurityX Study Guide
? NIST Special Publication 800-161, "Supply Chain Risk Management Practices for Federal Information Systems and Organizations"
? ISO/IEC 27036-1:2014, "Information technology — Security techniques — Information security for supplier relationships"

**NEW QUESTION 29**
A financial technology firm works collaboratively with business partners in the industry to share threat intelligence within a central platform This collaboration gives partner organizations the ability to obtain and share data associated with emerging threats from a variety of adversaries Which of the following should the organization most likely leverage to facilitate this activity? (Select two).

A. CWPP
B. YAKA
C. ATTACK
D. STIX
E. TAXII
F. JTAG

**Answer:** DE

**Explanation:**
? D. STIX (Structured Threat Information eXpression): STIX is a standardized language for representing threat information in a structured and machine-readable format. It facilitates the sharing of threat intelligence by ensuring that data is consistent and can be easily understood by all parties involved.
? E. TAXII (Trusted Automated eXchange of Indicator Information): TAXII is a transport mechanism that enables the sharing of cyber threat information over a secure and trusted network. It works in conjunction with STIX to automate the exchange of threat intelligence among organizations.
Other options:
? A. CWPP (Cloud Workload Protection Platform): This focuses on securing cloud workloads and is not directly related to threat intelligence sharing.
? B. YARA: YARA is used for malware research and identifying patterns in files, but it is not a platform for sharing threat intelligence.
? C. ATT&CK: This is a knowledge base of adversary tactics and techniques but does not facilitate the sharing of threat intelligence data.
? F. JTAG: JTAG is a standard for testing and debugging integrated circuits, not related to threat intelligence.
References:
? CompTIA Security+ Study Guide
? "STIX and TAXII: The Backbone of Threat Intelligence Sharing" by MITRE
? NIST SP 800-150, "Guide to Cyber Threat Information Sharing"

**NEW QUESTION 32**
A company wants to invest in research capabilities with the goal to operationalize the research output. Which of the following is the best option for a security architect to recommend?

A. Dark web monitoring
B. Threat intelligence platform
C. Honeypots
D. Continuous adversary emulation

**Answer:** B

**Explanation:**
Investing in a threat intelligence platform is the best option for a company looking to operationalize research output. A threat intelligence platform helps in collecting, processing, and analyzing threat data to provide actionable insights. These platforms integrate data from various sources, including dark web monitoring, honeypots, and other security tools, to offer a comprehensive view of the threat landscape.
Why a Threat Intelligence Platform?
? Data Integration: It consolidates data from multiple sources, including dark web monitoring and honeypots, making it easier to analyze and derive actionable insights.
? Actionable Insights: Provides real-time alerts and reports on potential threats, helping the organization take proactive measures.
? Operational Efficiency: Streamlines the process of threat detection and response, allowing the security team to focus on critical issues.
? Research and Development: Facilitates the operationalization of research output by providing a platform for continuous monitoring and analysis of emerging threats.
Other options, while valuable, do not offer the same level of integration and operationalization capabilities:
? A. Dark web monitoring: Useful for specific threat intelligence but lacks
comprehensive operationalization.
? C. Honeypots: Effective for detecting and analyzing specific attack vectors but not for broader threat intelligence.
? D. Continuous adversary emulation: Important for testing defenses but not for integrating and operationalizing threat intelligence.
References:
? CompTIA SecurityX Study Guide
? "Threat Intelligence Platforms," Gartner Research

? NIST Special Publication 800-150, "Guide to Cyber Threat Information Sharing"

**NEW QUESTION 37**
A systems administrator wants to use existing resources to automate reporting from disparate security appliances that do not currently communicate. Which of the following is the best way to meet this objective?

A. Configuring an API Integration to aggregate the different data sets
B. Combining back-end application storage into a single, relational database
C. Purchasing and deploying commercial off the shelf aggregation software
D. Migrating application usage logs to on-premises storage

**Answer:** A

**Explanation:**
The best way to automate reporting from disparate security appliances that do not currently communicate is to configure an API Integration to aggregate the different data sets. Here's why:
? Interoperability: APIs allow different systems to communicate and share data, even
if they were not originally designed to work together. This enables the integration of various security appliances into a unified reporting system.
? Automation: API integrations can automate the process of data collection,
aggregation, and reporting, reducing manual effort and increasing efficiency.
? Scalability: APIs provide a scalable solution that can easily be extended to include
additional security appliances or data sources as needed.
? References:

**NEW QUESTION 40**
A systems administrator works with engineers to process and address vulnerabilities as a result of continuous scanning activities. The primary challenge faced by the administrator is differentiating between valid and invalid findings. Which of the following would the systems administrator most likely verify is properly configured?

A. Report retention time
B. Scanning credentials
C. Exploit definitions
D. Testing cadence

**Answer:** B

**Explanation:**
When differentiating between valid and invalid findings from vulnerability scans, the systems administrator should verify that the scanning credentials are properly configured. Valid credentials ensure that the scanner can authenticate and access the systems being evaluated, providing accurate and comprehensive results. Without proper credentials, scans may miss vulnerabilities or generate false positives, making it difficult to prioritize and address the findings effectively.
References:
? CompTIA SecurityX Study Guide: Highlights the importance of using valid credentials for accurate vulnerability scanning.
? "Vulnerability Management" by Park Foreman: Discusses the role of scanning credentials in obtaining accurate scan results and minimizing false positives.
? "The Art of Network Security Monitoring" by Richard Bejtlich: Covers best practices for configuring and using vulnerability scanning tools, including the need for valid credentials.

**NEW QUESTION 45**
A company that relies on an COL system must keep it operating until a new solution is available Which of the following is the most secure way to meet this goal?

A. Isolating the system and enforcing firewall rules to allow access to only required endpoints
B. Enforcing strong credentials and improving monitoring capabilities
C. Restricting system access to perform necessary maintenance by the IT team
D. Placing the system in a screened subnet and blocking access from internal resources

**Answer:** A

**Explanation:**
To ensure the most secure way of keeping a legacy system (COL) operating until a new solution is available, isolating the system and enforcing strict firewall rules is the best approach. This method minimizes the attack surface by restricting access to only the necessary endpoints, thereby reducing the risk of unauthorized access and potential security breaches. Isolating the system ensures that it is not exposed to the broader network, while firewall rules control the traffic that can reach the system, providing a secure environment until a replacement is implemented.
References:
? CompTIA SecurityX Study Guide: Recommends network isolation and firewall rules as effective measures for securing legacy systems.
? NIST Special Publication 800-82, "Guide to Industrial Control Systems (ICS) Security": Advises on isolating critical systems and using firewalls to control access.
? "Network Security Assessment" by Chris McNab: Discusses techniques for isolating systems and enforcing firewall rules to protect vulnerable or legacy systems.
By isolating the system and implementing strict firewall controls, the organization can maintain the necessary operations securely while working on deploying a new solution.

**NEW QUESTION 50**
An organization is implementing Zero Trust architecture A systems administrator must increase the effectiveness of the organization's context-aware access system. Which of the following is the best way to improve the effectiveness of the system?

A. Secure zone architecture
B. Always-on VPN
C. Accurate asset inventory
D. Microsegmentation

**Answer:** D

**Explanation:**
Microsegmentation is a critical strategy within Zero Trust architecture that enhances context-aware access systems by dividing the network into smaller, isolated segments. This reduces the attack surface and limits lateral movement of attackers within the network. It ensures that even if one segment is compromised, the attacker cannot easily access other segments. This granular approach to network security is essential for enforcing strict access controls and monitoring within Zero Trust environments.
Reference: CompTIA SecurityX Study Guide, Chapter on Zero Trust Security, Section on Microsegmentation and Network Segmentation.

**NEW QUESTION 53**
After an incident occurred, a team reported during the lessons-learned review that the team.
* Lost important Information for further analysis.
* Did not utilize the chain of communication
* Did not follow the right steps for a proper response
Which of the following solutions is the best way to address these findinds?

A. Requesting budget for better forensic tools to Improve technical capabilities for Incident response operations
B. Building playbooks for different scenarios and performing regular table-top exercises
C. Requiring professional incident response certifications tor each new team member
D. Publishing the incident response policy and enforcing it as part of the security awareness program

**Answer:** B

**Explanation:**
Building playbooks for different scenarios and performing regular table-top exercises directly addresses the issues identified in the lessons-learned review. Here's why:
? Lost important information for further analysis: Playbooks outline step-by-step procedures for incident response, ensuring that team members know exactly what to document and how to preserve evidence.
? Did not utilize the chain of communication: Playbooks include communication protocols, specifying who to notify and when. Regular table-top exercises reinforce these communication channels, ensuring they are followed during actual incidents.
? Did not follow the right steps for a proper response: Playbooks provide a clear sequence of actions to be taken during various types of incidents, helping the team to respond in a structured and effective manner. Regular exercises allow the team to practice these steps, identifying and correcting any deviations from the plan.
Investing in better forensic tools (Option A) or requiring certifications (Option C) are also valuable, but they do not directly address the procedural and communication gaps identified. Publishing and enforcing the incident response policy (Option D) is important but not as practical and hands-on as playbooks and exercises in ensuring the team is prepared.
References:
? CompTIA Security+ Study Guide
? NIST SP 800-61 Rev. 2, "Computer Security Incident Handling Guide"
? SANS Institute, "Incident Handler's Handbook"

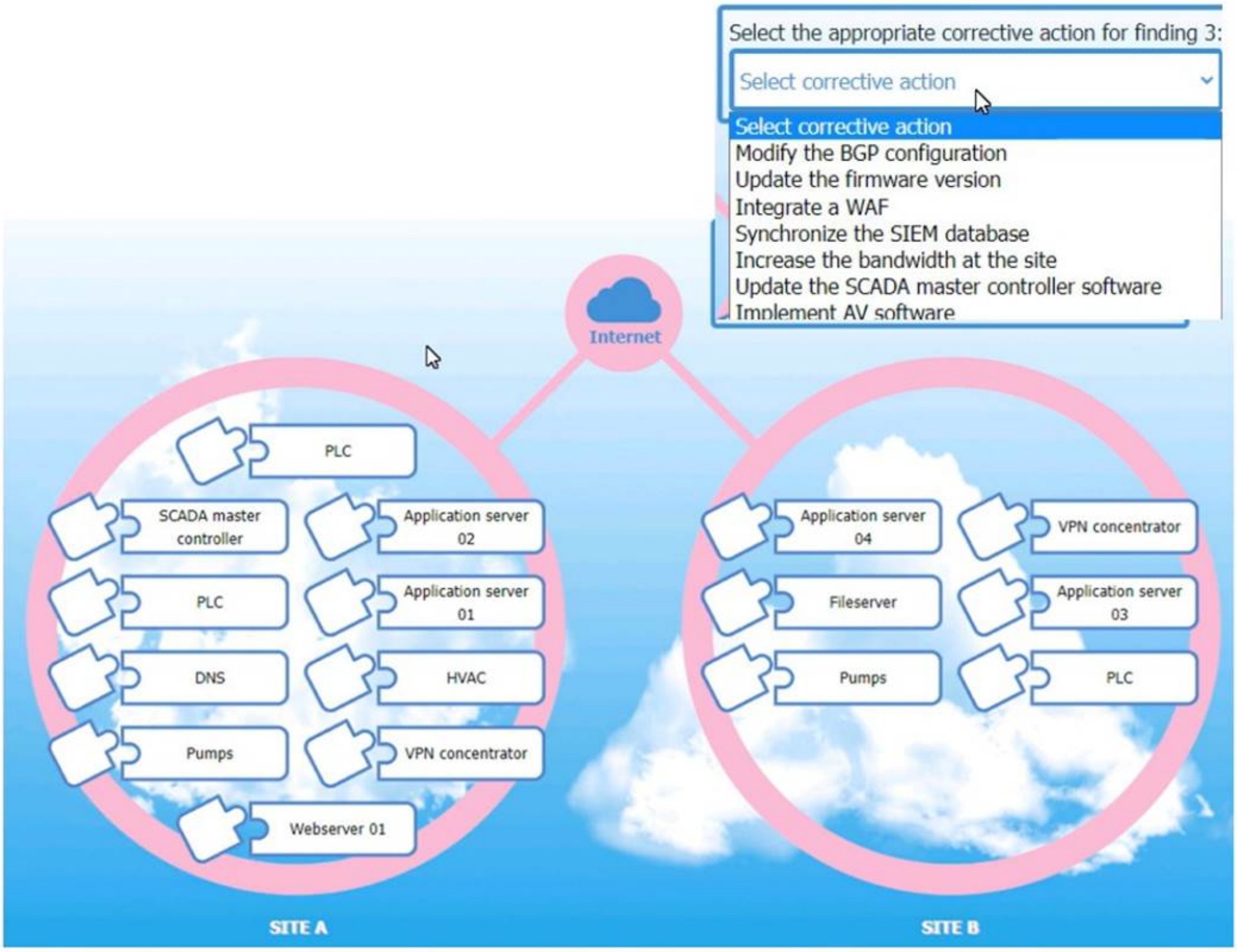
**NEW QUESTION 54**
Which of the following best describes the challenges associated with widespread adoption of homomorphic encryption techniques?

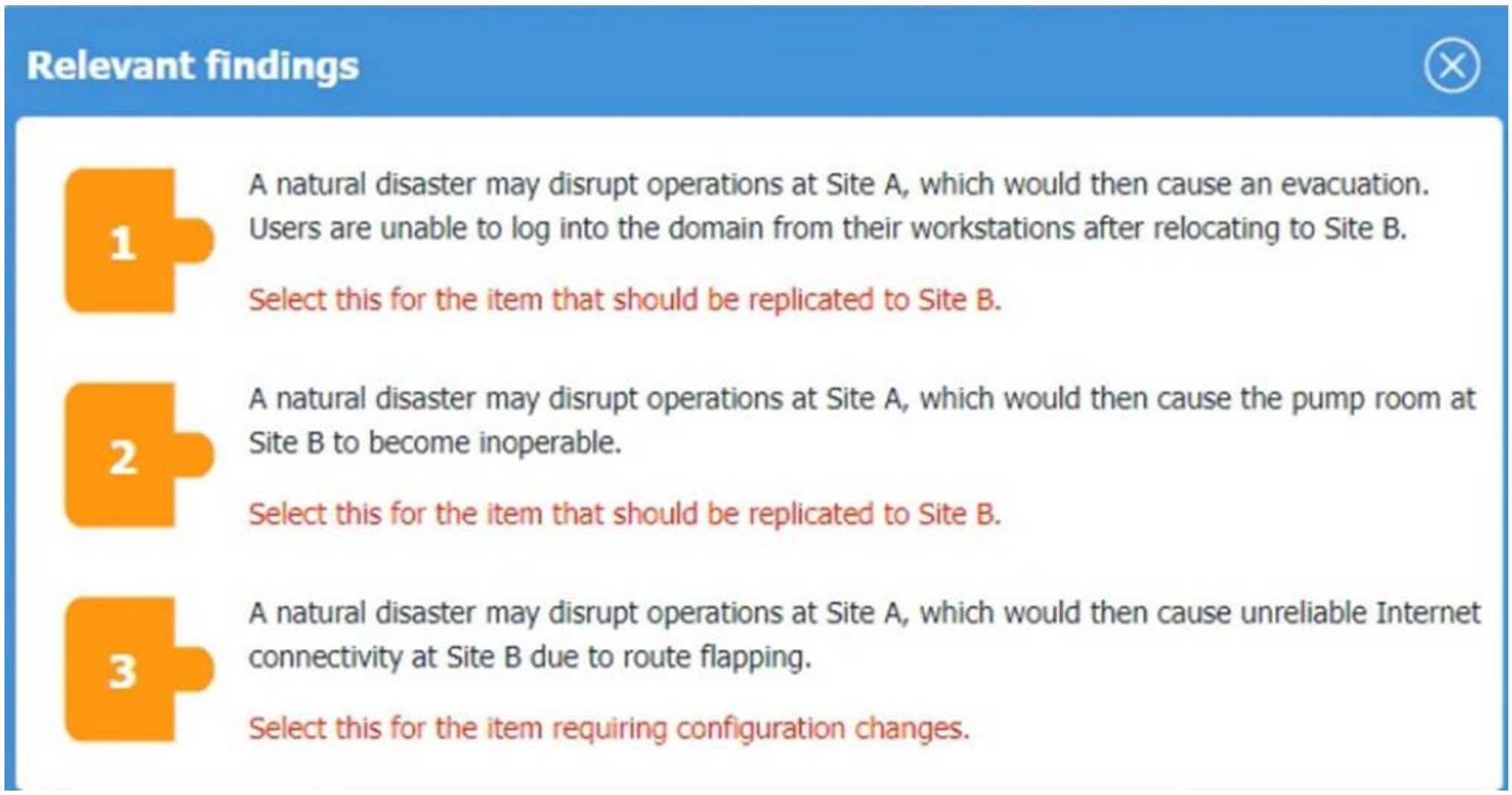
A. Incomplete mathematical primitives
B. No use cases to drive adoption
C. Quantum computers not yet capable
D. insufficient coprocessor support

**Answer:** D

**Explanation:**
Homomorphic encryption allows computations to be performed on encrypted data without decrypting it, providing strong privacy guarantees. However, the adoption of homomorphic encryption is challenging due to several factors:
? A. Incomplete mathematical primitives: This is not the primary barrier as the theoretical foundations of homomorphic encryption are well-developed.
? B. No use cases to drive adoption: There are several compelling use cases for homomorphic encryption, especially in privacy-sensitive fields like healthcare and finance.
? C. Quantum computers not yet capable: Quantum computing is not directly related to the challenges of adopting homomorphic encryption.
? D. Insufficient coprocessor support: The computational overhead of homomorphic encryption is significant, requiring substantial processing power. Current general- purpose processors are not optimized for the intensive computations required by homomorphic encryption, limiting its practical deployment. Specialized hardware or coprocessors designed to handle these computations more efficiently are not yet widely available.
References:
? CompTIA Security+ Study Guide
? "Homomorphic Encryption: Applications and Challenges" by Rivest et al.
? NIST, "Report on Post-Quantum Cryptography"

**NEW QUESTION 59**
SIMULATION
An organization is planning for disaster recovery and continuity of operations, and has noted the following relevant findings:
* 1. A natural disaster may disrupt operations at Site A, which would then cause an evacuation. Users are unable to log into the domain from-their workstations after relocating to Site B.
* 2. A natural disaster may disrupt operations at Site A, which would then cause the pump room at Site B to become inoperable.
* 3. A natural disaster may disrupt operations at Site A, which would then cause unreliable internet connectivity at Site B due to route flapping.
INSTRUCTIONS
Match each relevant finding to the affected host by clicking on the host name and selecting the appropriate number.
For findings 1 and 2, select the items that should be replicated to Site B. For finding 3, select the item requiring configuration changes, then select the appropriate corrective action from the drop-down menu.




A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**

Matching Relevant Findings to the Affected Hosts:
? Finding 1:
? Finding 2:
? Finding 3:
Corrective Actions for Finding 3:
? Finding 3 Corrective Action:
? Replication to Site B for Finding 1:
? Replication to Site B for Finding 2:
? Configuration Changes for Finding 3:
References:
? CompTIA Security+ Study Guide: This guide provides detailed information on disaster recovery and continuity of operations, emphasizing the importance of replicating critical services and making necessary configuration changes to ensure seamless operation during disruptions.
? CompTIA Security+ Exam Objectives: These objectives highlight key areas in disaster recovery planning, including the replication of critical services and network configuration adjustments.
? Disaster Recovery and Business Continuity Planning (DRBCP): This resource outlines best practices for ensuring that operations can continue at an alternate site during a disaster, including the replication of essential services and network stability measures.
By ensuring that critical services like DNS and control systems for pumps are replicated at the alternate site, and by addressing network routing issues through proper BGP configuration, the organization can maintain operational continuity and minimize the impact of natural disasters on their operations.

**NEW QUESTION 62**
A security architect for a global organization with a distributed workforce recently received funding lo deploy a CASB solution Which of the following most likely explains the choice to use a proxy-based CASB?

A. The capability to block unapproved applications and services is possible
B. Privacy compliance obligations are bypassed when using a user-based deployment.
C. Protecting and regularly rotating API secret keys requires a significant time commitment
D. Corporate devices cannot receive certificates when not connected to on-premises devices

**Answer:** A

**Explanation:**
A proxy-based Cloud Access Security Broker (CASB) is chosen primarily for its ability to block unapproved applications and services. Here??s why:
? Application and Service Control: Proxy-based CASBs can monitor and control the
use of applications and services by inspecting traffic as it passes through the proxy. This allows the organization to enforce policies that block unapproved applications and services, ensuring compliance with security policies.
? Visibility and Monitoring: By routing traffic through the proxy, the CASB can
provide detailed visibility into user activities and data flows, enabling better monitoring and threat detection.
? Real-Time Protection: Proxy-based CASBs can provide real-time protection
against threats by analyzing and controlling traffic before it reaches the end user, thus preventing the use of risky applications and services.
? References:

**NEW QUESTION 65**
An organization wants to manage specialized endpoints and needs a solution that provides the ability to
* Centrally manage configurations
* Push policies.
• Remotely wipe devices
• Maintain asset inventory
Which of the following should the organization do to best meet these requirements?

A. Use a configuration management database
B. Implement a mobile device management solution.
C. Configure contextual policy management
D. Deploy a software asset manager

**Answer:** B

**Explanation:**
To meet the requirements of centrally managing configurations, pushing policies, remotely wiping devices, and maintaining an asset inventory, the best solution is to implement a Mobile Device Management (MDM) solution.
MDM Capabilities:
? Central Management: MDM allows administrators to manage the configurations of all devices from a central console.
? Policy Enforcement: MDM solutions enable the push of security policies and updates to ensure compliance across all managed devices.
? Remote Wipe: In case a device is lost or stolen, MDM provides the capability to remotely wipe the device to protect sensitive data.
? Asset Inventory: MDM maintains an up-to-date inventory of all managed devices, including their configurations and installed applications.
Other options do not provide the same comprehensive capabilities required for managing specialized endpoints.
References:
? CompTIA SecurityX Study Guide
? NIST Special Publication 800-124 Revision 1, "Guidelines for Managing the Security of Mobile Devices in the Enterprise"
? "Mobile Device Management Overview," Gartner Research

**NEW QUESTION 68**
A systems administrator wants to reduce the number of failed patch deployments in an organization. The administrator discovers that system owners modify systems or applications in an ad hoc manner. Which of the following is the best way to reduce the number of failed patch deployments?

A. Compliance tracking
B. Situational awareness
C. Change management
D. Quality assurance

**Answer:** C

**Explanation:**
To reduce the number of failed patch deployments, the systems administrator should implement a robust change management process. Change management ensures that all modifications to systems or applications are planned, tested, and approved before deployment. This systematic approach reduces the risk of unplanned changes that can cause patch failures and ensures that patches are deployed in a controlled and predictable manner.
References:
? CompTIA SecurityX Study Guide: Emphasizes the importance of change management in maintaining system integrity and ensuring successful patch deployments.
? ITIL (Information Technology Infrastructure Library) Framework: Provides best practices for change management in IT services.
? "The Phoenix Project" by Gene Kim, Kevin Behr, and George Spafford: Discusses the critical role of change management in IT operations and its impact on system stability and reliability.

**NEW QUESTION 71**
All organization is concerned about insider threats from employees who have individual access to encrypted material. Which of the following techniques best addresses this issue?

A. SSO with MFA
B. Sating and hashing
C. Account federation with hardware tokens
D. SAE
E. Key splitting

**Answer:** E

**Explanation:**
The technique that best addresses the issue of insider threats from employees who have individual access to encrypted material is key splitting. Here??s why:
? Key Splitting: Key splitting involves dividing a cryptographic key into multiple parts and distributing these parts among different individuals or systems. This ensures that no single individual has complete access to the key, thereby mitigating the risk of insider threats.
? Increased Security: By requiring multiple parties to combine their key parts to access encrypted material, key splitting provides an additional layer of security. This approach is particularly useful in environments where sensitive data needs to be protected from unauthorized access by insiders.
? Compliance and Best Practices: Key splitting aligns with best practices and regulatory requirements for handling sensitive information, ensuring that access is tightly controlled and monitored.
? References:
By employing key splitting, organizations can effectively reduce the risk of insider threats and enhance the overall security of encrypted material.

**NEW QUESTION 74**
A hospital provides tablets to its medical staff to enable them to more quickly access and edit patients' charts. The hospital wants to ensure that if a tablet is Identified as lost or stolen and a remote command is issued, the risk of data loss can be mitigated within seconds. The tablets are configured as follows to meet hospital policy
• Full disk encryption is enabled
• "Always On" corporate VPN is enabled
• ef-use-backed keystore is enabled'ready.
• Wi-Fi 6 is configured with SAE.
• Location services is disabled.
•Application allow list is configured

A. Revoking the user certificates used for VPN and Wi-Fi access
B. Performing cryptographic obfuscation
C. Using geolocation to find the device
D. Configuring the application allow list to only per mil emergency calls
E. Returning on the device's solid-state media to zero

**Answer:** E

**Explanation:**
To mitigate the risk of data loss on a lost or stolen tablet quickly, the most effective strategy is to return the device's solid-state media to zero, which effectively erases all data on the device. Here's why:
? Immediate Data Erasure: Returning the solid-state media to zero ensures that all
data is wiped instantly, mitigating the risk of data loss if the device is lost or stolen.
? Full Disk Encryption: Even though the tablets are already encrypted, physically erasing the data ensures that no residual data can be accessed if someone attempts to bypass encryption.
? Compliance and Security: This method adheres to best practices for data security and compliance, ensuring that sensitive patient data cannot be accessed by unauthorized parties.

**NEW QUESTION 75**
SIMULATION
A product development team has submitted code snippets for review prior to release. INSTRUCTIONS
Analyze the code snippets, and then select one vulnerability, and one fix for each code snippet.
Code Snippet 1

Code Snippet 1 Code Snippet 2

```
Web browser:
URL: https://comptia.org/profiles/userdetails?userid=103



Web server code:
…
String accountQuery = "SELECT * from users WHERE userid = ?";
PreparedStatement stmt = connection.prepareStatement(accountQuery);
stmt.setString(1, request.getParameter("userid"));
ResultSet queryResponse = stmt.executeQuery();
…
```

Code Snippet 2

```
Caller:
URL: https://comptia.org/api/userprofile?userid=103



API endpoint (/searchDirectory):
...
import subprocess
from http.server import HTTPServer, BaseHTTPRequestHandler
httpd = HTTPServer(('192.168.0.5, 8443), BaseHTTPRequestHandler)
httpd.serve_forever()

def get_request(request):
 userId = request.getParam(userid)

 ldapLookup = 'ldapsearch -D "cn=' + userId + '" -W -p 389
                          -h loginserver.comptia.org
                          -b "dc=comptia,dc=org" -s sub -x "(objectclass=*)"'
 accountLookup = subprocess.popen(ldapLookup)

 if (userExists(accountLookup))
     accountFound = true
 else
     accountFound = false
...
```

Vulnerability 1:
? SQL injection
? Cross-site request forgery
? Server-side request forgery
? Indirect object reference
? Cross-site scripting
Fix 1:
? Perform input sanitization of the userid field.
? Perform output encoding of queryResponse,
? Ensure usex:ia belongs to logged-in user.
? Inspect URLS and disallow arbitrary requests.
? Implement anti-forgery tokens.
Vulnerability 2
1) Denial of service
2) Command injection
3) SQL injection
4) Authorization bypass
5) Credentials passed via GET
Fix 2
A) Implement prepared statements and bind variables.
B) Remove the serve_forever instruction.
C) Prevent the "authenticated" value from being overridden by a GET parameter.
D) HTTP POST should be used for sensitive parameters.
E) Perform input sanitization of the userid field.

A. Mastered
B. Not Mastered

**Answer:** A

**Explanation:**
Code Snippet 1
Vulnerability 1: SQL injection
SQL injection is a type of attack that exploits a vulnerability in the code that interacts with a database. An attacker can inject malicious SQL commands into the input fields, such as username or password, and execute them on the database server. This can result in data theft, data corruption, or unauthorized access.
Fix 1: Perform input sanitization of the userid field.
Input sanitization is a technique that prevents SQL injection by validating and filtering the user input values before passing them to the database. The input sanitization should remove any special characters, such as quotes, semicolons, or dashes, that can alter the intended SQL query. Alternatively, the input sanitization can use a whitelist of allowed values and reject any other values.
Code Snippet 2
Vulnerability 2: Cross-site request forgery
Cross-site request forgery (CSRF) is a type of attack that exploits a vulnerability in the code that handles web requests. An attacker can trick a user into sending a malicious web request to a server that performs an action on behalf of the user, such as changing their password, transferring funds, or deleting data. This can result in unauthorized actions, data loss, or account compromise.
Fix 2: Implement anti-forgery tokens.
Anti-forgery tokens are techniques that prevent CSRF by adding a unique and secret value to each web request that is generated by the server and verified by the server before performing the action. The anti-forgery token should be different for each user and each session, and should not be predictable or reusable by an attacker. This way, only legitimate web requests from the user??s browser can be accepted by the server.

**NEW QUESTION 79**
A company isolated its OT systems from other areas of the corporate network These systems are required to report usage information over the internet to the vendor Which oi the following b*st reduces the risk of compromise or sabotage' (Select two).

A. Implementing allow lists
B. Monitoring network behavior
C. Encrypting data at rest
D. Performing boot Integrity checks
E. Executing daily health checks
F. Implementing a site-to-site IPSec VPN

**Answer:** AF

**Explanation:**
? A. Implementing allow lists: Allow lists (whitelisting) restrict network communication to only authorized devices and applications, significantly reducing the attack surface by ensuring that only pre-approved traffic is permitted.
? F. Implementing a site-to-site IPSec VPN: A site-to-site VPN provides a secure, encrypted tunnel for data transmission between the OT systems and the vendor, protecting the data from interception and tampering during transit.
Other options:
? B. Monitoring network behavior: While useful for detecting anomalies, it does not proactively reduce the risk of compromise or sabotage.
? C. Encrypting data at rest: Important for protecting data stored on devices, but does not address network communication risks.
? D. Performing boot integrity checks: Ensures the integrity of the system at startup but does not protect ongoing network communications.
? E. Executing daily health checks: Useful for maintaining system health but does not directly reduce the risk of network-based compromise or sabotage.
References:
? CompTIA Security+ Study Guide
? NIST SP 800-82, "Guide to Industrial Control Systems (ICS) Security"
? "Industrial Network Security" by Eric D. Knapp and Joel Thomas Langill

**NEW QUESTION 83**
A software company deployed a new application based on its internal code repository Several customers are reporting anti-malware alerts on workstations used to test the application Which of the following is the most likely cause of the alerts?

A. Misconfigured code commit
B. Unsecure bundled libraries
C. Invalid code signing certificate
D. Data leakage

**Answer:** B

**Explanation:**
The most likely cause of the anti-malware alerts on customer workstations is unsecure bundled libraries. When developing and deploying new applications, it is common for developers to use third-party libraries. If these libraries are not properly vetted for security, they can introduce vulnerabilities or malicious code.
Why Unsecure Bundled Libraries?
? Third-Party Risks: Using libraries that are not secure can lead to malware infections if the libraries contain malicious code or vulnerabilities.
? Code Dependencies: Libraries may have dependencies that are not secure, leading to potential security risks.
? Common Issue: This is a frequent issue in software development where libraries are used for convenience but not properly vetted for security.
Other options, while relevant, are less likely to cause widespread anti-malware alerts:
? A. Misconfigured code commit: Could lead to issues but less likely to trigger anti- malware alerts.
? C. Invalid code signing certificate: Would lead to trust issues but not typically anti- malware alerts.
? D. Data leakage: Relevant for privacy concerns but not directly related to anti- malware alerts.
References:
? CompTIA SecurityX Study Guide
? "Securing Open Source Libraries," OWASP
? "Managing Third-Party Software Security Risks," Gartner Research

**NEW QUESTION 86**

A company updates its cloud-based services by saving infrastructure code in a remote repository. The code is automatically deployed into the development environment every time the code is saved lo the repository The developers express concern that the deployment often fails, citing minor code issues and occasional security control check failures in the development environment Which of the following should a security engineer recommend to reduce the deployment failures? (Select two).

A. Software composition analysis
B. Pre-commit code linting
C. Repository branch protection
D. Automated regression testing
E. Code submit authorization workflow
F. Pipeline compliance scanning

**Answer:** BD

**Explanation:**
? B. Pre-commit code linting: Linting tools analyze code for syntax errors and adherence to coding standards before the code is committed to the repository. This helps catch minor code issues early in the development process, reducing the likelihood of deployment failures.
? D. Automated regression testing: Automated regression tests ensure that new code changes do not introduce bugs or regressions into the existing codebase. By running these tests automatically during the deployment process, developers can catch issues early and ensure the stability of the development environment.
Other options:
? A. Software composition analysis: This helps identify vulnerabilities in third-party components but does not directly address code quality or deployment failures.
? C. Repository branch protection: While this can help manage the code submission process, it does not directly prevent deployment failures caused by code issues or security check failures.
? E. Code submit authorization workflow: This manages who can submit code but does not address the quality of the code being submitted.
? F. Pipeline compliance scanning: This checks for compliance with security policies but does not address syntax or regression issues.
References:
? CompTIA Security+ Study Guide
? "Continuous Integration and Continuous Delivery" by Jez Humble and David Farley
? OWASP (Open Web Application Security Project) guidelines on secure coding practices

**NEW QUESTION 89**
A security architect is establishing requirements to design resilience in un enterprise system trial will be extended to other physical locations. The system must
• Be survivable to one environmental catastrophe
• Re recoverable within 24 hours of critical loss of availability
• Be resilient to active exploitation of one site-to-site VPN solution

A. Load-balance connection attempts and data Ingress at internet gateways
B. Allocate fully redundant and geographically distributed standby sites.
C. Employ layering of routers from diverse vendors
D. Lease space to establish cold sites throughout other countries
E. Use orchestration to procure, provision, and transfer application workloads lo cloudservices
F. Implement full weekly backups to be stored off-site for each of the company's sites

**Answer:** B

**Explanation:**
To design resilience in an enterprise system that can survive environmental catastrophes, recover within 24 hours, and be resilient to active exploitation, the best strategy is to allocate fully redundant and geographically distributed standby sites. Here??s why:
? Geographical Redundancy: Having geographically distributed standby sites ensures that if one site is affected by an environmental catastrophe, the other sites can take over, providing continuity of operations.
? Full Redundancy: Fully redundant sites mean that all critical systems and data are replicated, enabling quick recovery in the event of a critical loss of availability.
? Resilience to Exploitation: Distributing resources across multiple sites reduces the risk of a single point of failure and increases resilience against targeted attacks.
? References:

**NEW QUESTION 91**
A security architect wants to develop a baseline of security configurations These configurations automatically will be utilized machine is created Which of the following technologies should the security architect deploy to accomplish this goal?

A. Short
B. GASB
C. Ansible
D. CMDB

**Answer:** C

**Explanation:**
To develop a baseline of security configurations that will be automatically utilized when a machine is created, the security architect should deploy Ansible. Here??s why:
? Automation: Ansible is an automation tool that allows for the configuration, management, and deployment of applications and systems. It ensures that security configurations are consistently applied across all new machines.
? Scalability: Ansible can scale to manage thousands of machines, making it suitable for large enterprises that need to maintain consistent security configurations across their infrastructure.
? Compliance: By using Ansible, organizations can enforce compliance with security policies and standards, ensuring that all systems are configured according to best practices.
? References:

**NEW QUESTION 92**
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