CompTIA

Exam Questions CAS-004

CompTIA Advanced Security Practitioner (CASP+) Exam

NEW QUESTION 1
Which of the following are risks associated with vendor lock-in? (Choose two.)

A. The client can seamlessly move data.
B. The vendor can change product offerings.
C. The client receives a sufficient level of service.
D. The client experiences decreased quality of service.
E. The client can leverage a multicloud approach.
F. The client experiences increased interoperability.

Answer: BD

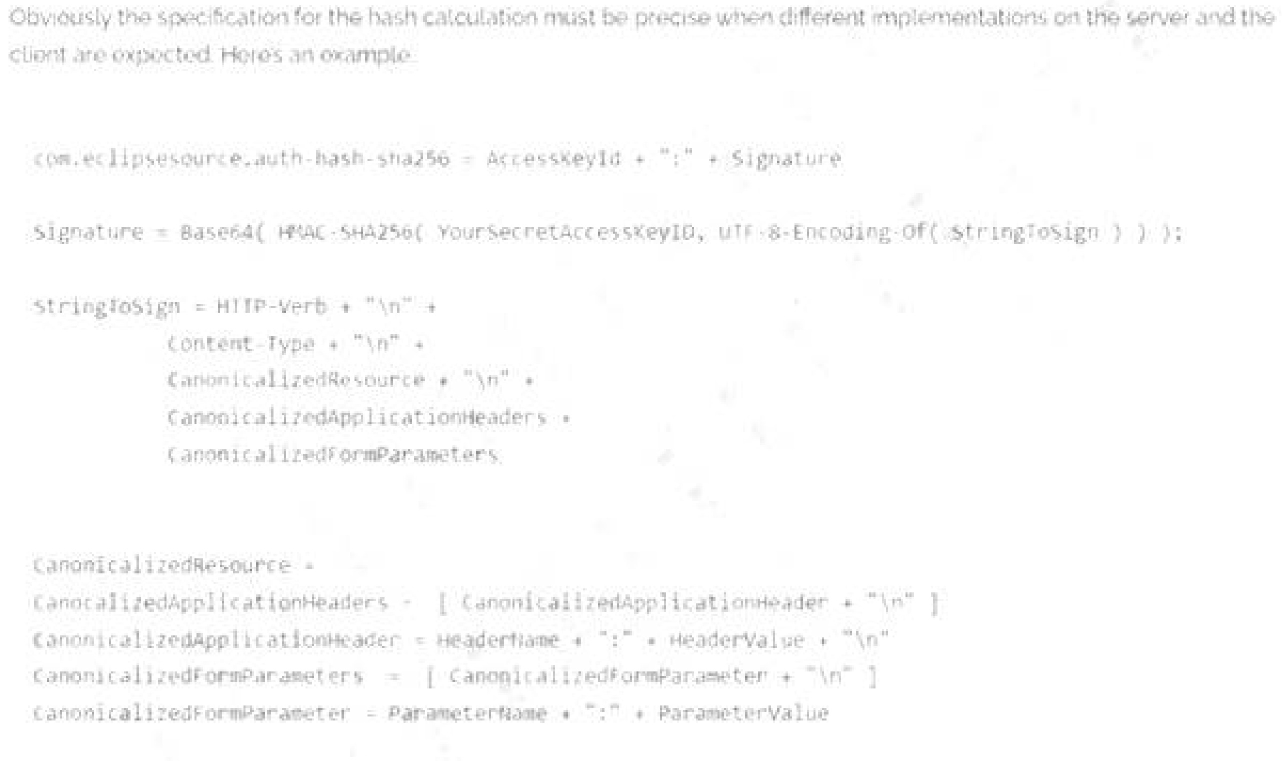
Explanation:
Reference: https://www.cloudflare.com/learning/cloud/what-is-vendor-lockin/#:~:text=Vendor%20lock%2Din%20can%20become,may%20involve%20reformatting%20the%20data

NEW QUESTION 2
An enterprise is deploying APIs that utilize a private key and a public key to ensure the connection string is protected. To connect to the API, customers must use the private key.
Which of the following would BEST secure the REST API connection to the database while preventing the use of a hardcoded string in the request string?

A. Implement a VPN for all APIs.
B. Sign the key with DSA.
C. Deploy MFA for the service accounts.
D. Utilize HMAC for the keys.

Answer: D

Explanation:
Reference: https://eclipsesource.com/blogs/2016/07/06/keyed-hash-message-authentication-code-in-rest-apis/



Obviously the specification for the hash calculation must be precise when different implementations on the server and the client are expected. Here's an example.

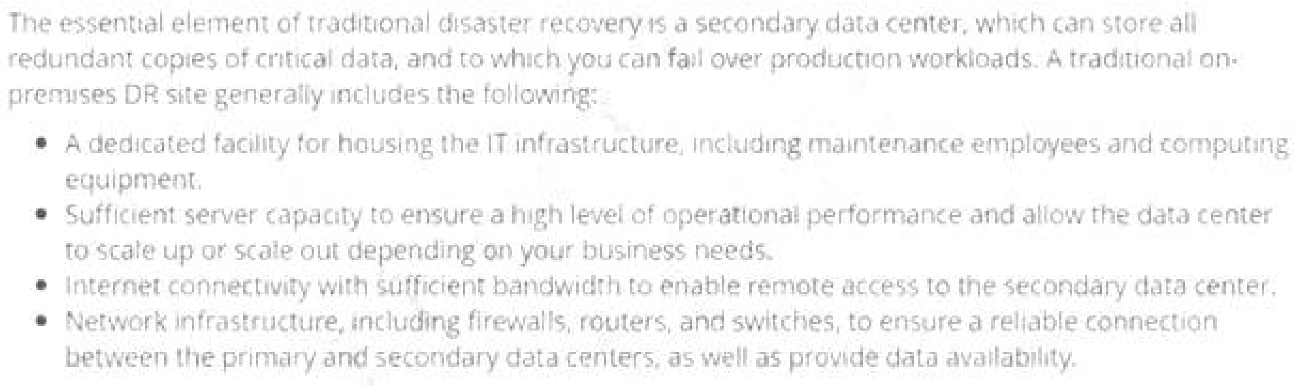
```
com.eclipsesource.auth-hash-sha256 = AccessKeyId + ":" + Signature

Signature = Base64( HMAC-SHA256( YourSecretAccessKeyID, UTF-8-Encoding-Of( StringToSign ) ) );

StringToSign = HTTP-Verb + "\n" +
               Content-Type + "\n" +
               CanonicalizedResource + "\n" +
               CanonicalizedApplicationHeaders +
               CanonicalizedFormParameters


CanonicalizedResource =
CanocalizedApplicationHeaders =  [ CanonicalizedApplicationHeader + "\n" ]
CanonicalizedApplicationHeader = HeaderName + ":" + HeaderValue + "\n"
CanonicalizedFormParameters  =  [ CanonicalizedFormParameter + "\n" ]
CanonicalizedFormParameter = ParameterName + ":" + ParameterValue
```

NEW QUESTION 3
A disaster recovery team learned of several mistakes that were made during the last disaster recovery parallel test. Computational resources ran out at 70% of restoration of critical services.
Which of the following should be modified to prevent the issue from reoccurring?

A. Recovery point objective
B. Recovery time objective
C. Mission-essential functions
D. Recovery service level

Answer: B

Explanation:
Reference: https://www.nakivo.com/blog/disaster-recovery-in-cloud-computing/



The essential element of traditional disaster recovery is a secondary data center, which can store all redundant copies of critical data, and to which you can fail over production workloads. A traditional on-premises DR site generally includes the following:

- A dedicated facility for housing the IT infrastructure, including maintenance employees and computing equipment.
- Sufficient server capacity to ensure a high level of operational performance and allow the data center to scale up or scale out depending on your business needs.
- Internet connectivity with sufficient bandwidth to enable remote access to the secondary data center.
- Network infrastructure, including firewalls, routers, and switches, to ensure a reliable connection between the primary and secondary data centers, as well as provide data availability.

NEW QUESTION 4
A security architect is implementing a web application that uses a database back end. Prior to the production, the architect is concerned about the possibility of XSS attacks and wants to identify security controls that could be put in place to prevent these attacks.
Which of the following sources could the architect consult to address this security concern?

A. SDLC
B. OVAL
C. IEEE
D. OWASP

Answer: B

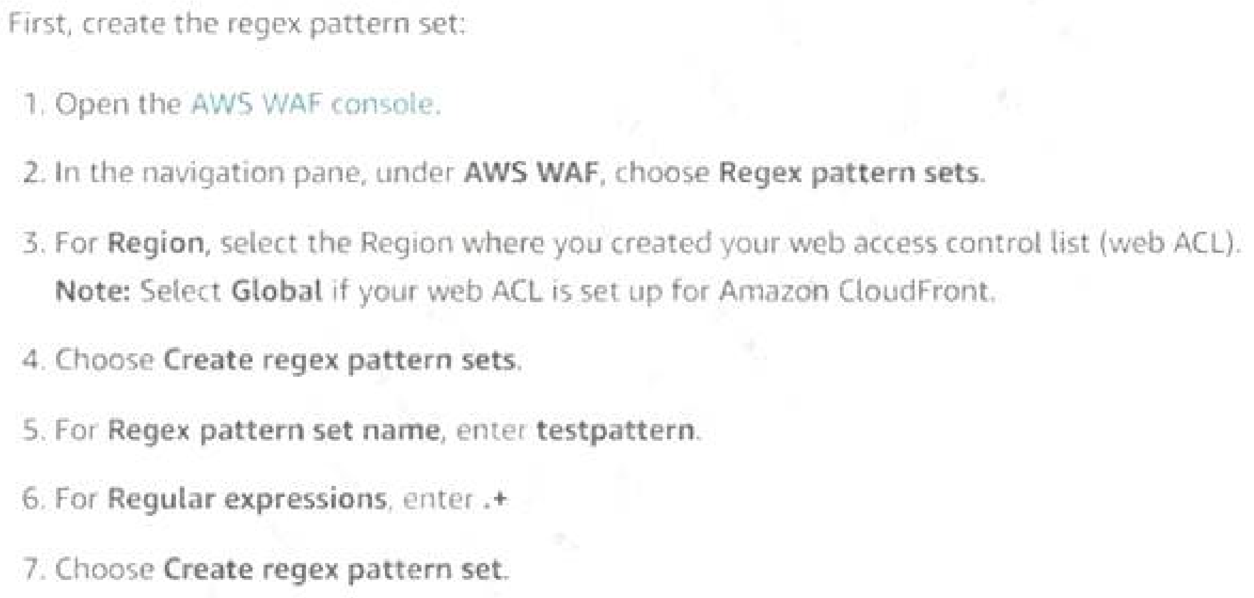
Explanation:
Reference: https://dzone.com/articles/what-is-oval-a-community-driven-vulnerability-mana

NEW QUESTION 5
A SOC analyst is reviewing malicious activity on an external, exposed web server. During the investigation, the analyst determines specific traffic is not being logged, and there is no visibility from the WAF for the web application.
Which of the following is the MOST likely cause?

A. The user agent client is not compatible with the WAF.
B. A certificate on the WAF is expired.
C. HTTP traffic is not forwarding to HTTPS to decrypt.
D. Old, vulnerable cipher suites are still being used.

Answer: B

Explanation:
Reference: https://aws.amazon.com/premiumsupport/knowledge-center/waf-block-http-requests-no-user-agent/



First, create the regex pattern set:

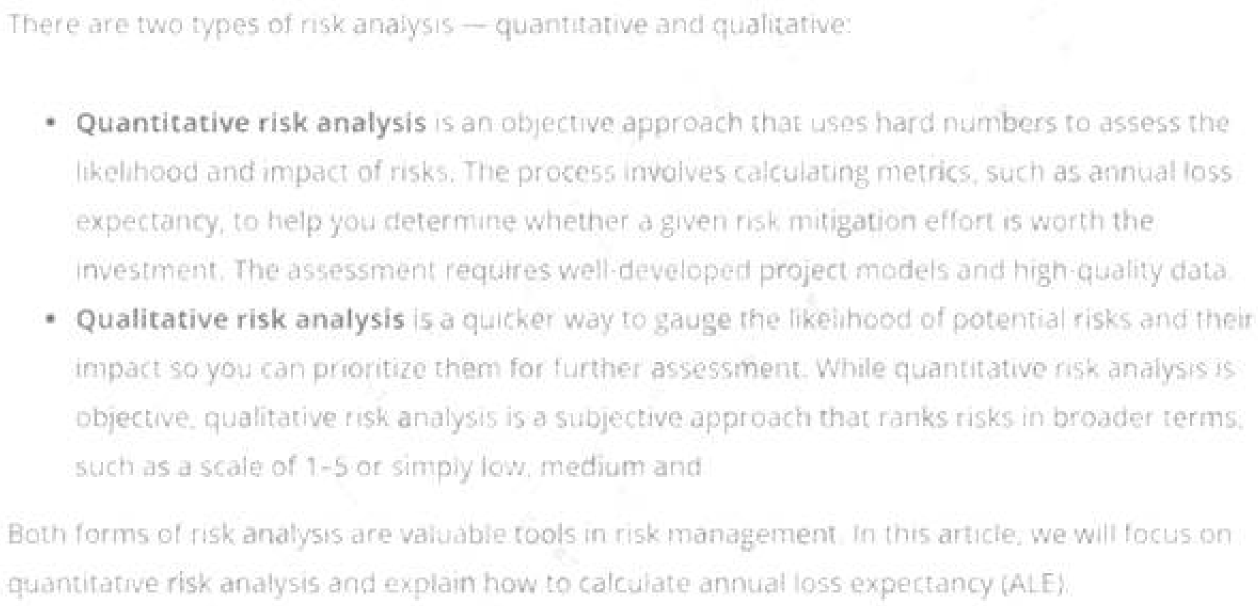
1. Open the AWS WAF console.
2. In the navigation pane, under **AWS WAF**, choose **Regex pattern sets**.
3. For **Region**, select the Region where you created your web access control list (web ACL).
   Note: Select **Global** if your web ACL is set up for Amazon CloudFront.
4. Choose **Create regex pattern sets**.
5. For **Regex pattern set name**, enter **testpattern**.
6. For **Regular expressions**, enter **.+**
7. Choose **Create regex pattern set**.

NEW QUESTION 6
A security engineer estimates the company’s popular web application experiences 100 attempted breaches per day. In the past four years, the company’s data has been breached two times.
Which of the following should the engineer report as the ARO for successful breaches?

A. 0.5
B. 8
C. 50
D. 36,500

Answer: A

Explanation:
Reference: https://blog.netwrix.com/2020/07/24/annual-loss-expectancy-and-quantitative-risk-analysis/



There are two types of risk analysis — quantitative and qualitative:

- **Quantitative risk analysis** is an objective approach that uses hard numbers to assess the likelihood and impact of risks. The process involves calculating metrics, such as annual loss expectancy, to help you determine whether a given risk mitigation effort is worth the investment. The assessment requires well-developed project models and high-quality data.
- **Qualitative risk analysis** is a quicker way to gauge the likelihood of potential risks and their impact so you can prioritize them for further assessment. While quantitative risk analysis is objective, qualitative risk analysis is a subjective approach that ranks risks in broader terms, such as a scale of 1-5 or simply low, medium and

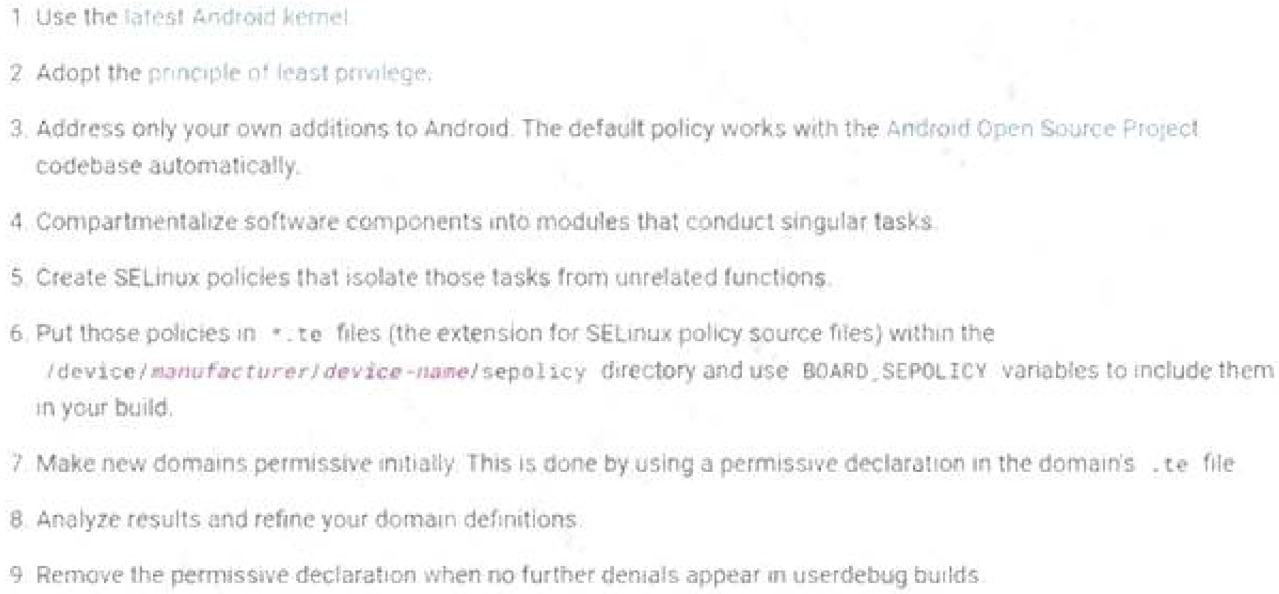
Both forms of risk analysis are valuable tools in risk management. In this article, we will focus on quantitative risk analysis and explain how to calculate annual loss expectancy (ALE).

NEW QUESTION 7
A shipping company that is trying to eliminate entire classes of threats is developing an SELinux policy to ensure its custom Android devices are used exclusively for package tracking.
After compiling and implementing the policy, in which of the following modes must the company ensure the devices are configured to run?

A. Protecting
B. Permissive
C. Enforcing
D. Mandatory

Answer: B

Explanation:
Reference: https://source.android.com/security/selinux/customize



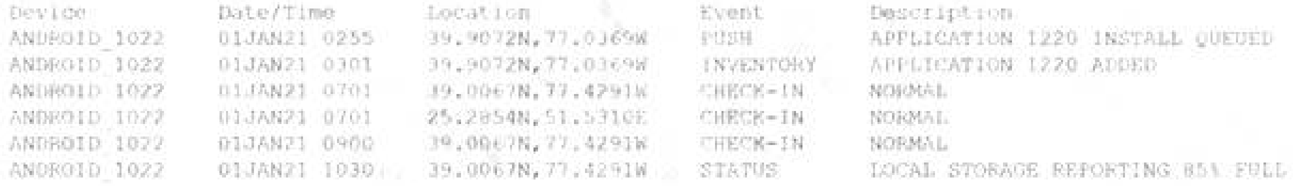
1. Use the latest Android kernel.
2. Adopt the principle of least privilege.
3. Address only your own additions to Android. The default policy works with the Android Open Source Project codebase automatically.
4. Compartmentalize software components into modules that conduct singular tasks.
5. Create SELinux policies that isolate those tasks from unrelated functions.
6. Put those policies in `*.te` files (the extension for SELinux policy source files) within the `/device/manufacturer/device-name/sepolicy` directory and use `BOARD_SEPOLICY` variables to include them in your build.
7. Make new domains permissive initially. This is done by using a permissive declaration in the domain's `.te` file
8. Analyze results and refine your domain definitions.
9. Remove the permissive declaration when no further denials appear in userdebug builds.

NEW QUESTION 8
A company is moving most of its customer-facing production systems to the cloud-facing production systems to the cloud.
IaaS is the service model being used. The Chief Executive Officer is concerned about the type of encryption available and requires the solution must have the highest level of security.
Which of the following encryption methods should the cloud security engineer select during the implementation phase?

A. Instance-based
B. Storage-based
C. Proxy-based
D. Array controller-based

Answer: A

NEW QUESTION 9
Device event logs sources from MDM software as follows:



```
Device          Date/Time       Location            Event       Description
ANDROID_1022    01JAN21 0255    39.9072N,77.0369W   PUSH        APPLICATION 1220 INSTALL QUEUED
ANDROID_1022    01JAN21 0301    39.9072N,77.0369W   INVENTORY   APPLICATION 1220 ADDED
ANDROID_1022    01JAN21 0701    39.0067N,77.4291W   CHECK-IN    NORMAL
ANDROID_1022    01JAN21 0701    25.2854N,51.5310E   CHECK-IN    NORMAL
ANDROID_1022    01JAN21 0900    39.0067N,77.4291W   CHECK-IN    NORMAL
ANDROID_1022    01JAN21 1030    39.0067N,77.4291W   STATUS      LOCAL STORAGE REPORTING 85% FULL
```

Which of the following security concerns and response actions would BEST address the risks posed by the device in the logs?

A. Malicious installation of an application; change the MDM configuration to remove application ID 1220.
B. Resource leak; recover the device for analysis and clean up the local storage.
C. Impossible travel; disable the device’s account and access while investigating.

D. Falsified status reporting; remotely wipe the device.

Answer: A

NEW QUESTION 10
Which of the following terms refers to the delivery of encryption keys to a CASB or a third-party entity?

A. Key sharing
B. Key distribution
C. Key recovery
D. Key escrow

Answer: B

Explanation:
Reference: https://www.open.edu/openlearn/ocw/mod/oucontent/view.php?id=48322§ion=1.3

NEW QUESTION 10
A company is implementing SSL inspection. During the next six months, multiple web applications that will be separated out with subdomains will be deployed. Which of the following will allow the inspection of the data without multiple certificate deployments?

A. Include all available cipher suites.
B. Create a wildcard certificate.
C. Use a third-party CA.
D. Implement certificate pinning.

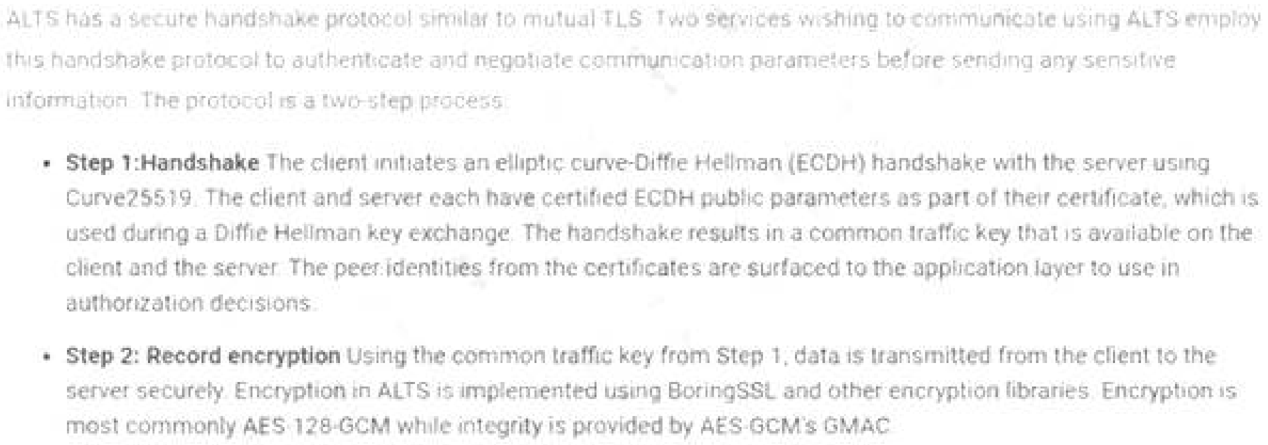
Answer: D

NEW QUESTION 12
A developer is creating a new mobile application for a company. The application uses REST API and TLS 1.2 to communicate securely with the external back- end server. Due to this configuration, the company is concerned about HTTPS interception attacks.
Which of the following would be the BEST solution against this type of attack?

A. Cookies
B. Wildcard certificates
C. HSTS
D. Certificate pinning

Answer: C

Explanation:
Reference: https://cloud.google.com/security/encryption-in-transit



ALTS has a secure handshake protocol similar to mutual TLS. Two services wishing to communicate using ALTS employ this handshake protocol to authenticate and negotiate communication parameters before sending any sensitive information. The protocol is a two-step process:

- **Step 1:Handshake** The client initiates an elliptic curve-Diffie Hellman (ECDH) handshake with the server using Curve25519. The client and server each have certified ECDH public parameters as part of their certificate, which is used during a Diffie Hellman key exchange. The handshake results in a common traffic key that is available on the client and the server. The peer identities from the certificates are surfaced to the application layer to use in authorization decisions.
- **Step 2: Record encryption** Using the common traffic key from Step 1, data is transmitted from the client to the server securely. Encryption in ALTS is implemented using BoringSSL and other encryption libraries. Encryption is most commonly AES-128-GCM while integrity is provided by AES-GCM's GMAC.

NEW QUESTION 13
A company hired a third party to develop software as part of its strategy to be quicker to market. The company's policy outlines the following requirements: The credentials used to publish production software to the container registry should be stored in a secure location.
Access should be restricted to the pipeline service account, without the ability for the third-party developer to read the credentials directly. Which of the following would be the BEST recommendation for storing and monitoring access to these shared credentials?

A. TPM
B. Local secure password file
C. MFA
D. Key vault

Answer: A

Explanation:
Reference: https://docs.microsoft.com/en-us/windows/security/information-protection/tpm/tpm-fundamentals

NEW QUESTION 16
A developer wants to maintain integrity to each module of a program and ensure the code cannot be altered by malicious users. Which of the following would be BEST for the developer to perform? (Choose two.)

A. Utilize code signing by a trusted third party.
B. Implement certificate-based authentication.
C. Verify MD5 hashes.
D. Compress the program with a password.
E. Encrypt with 3DES.
F. Make the DACL read-only.

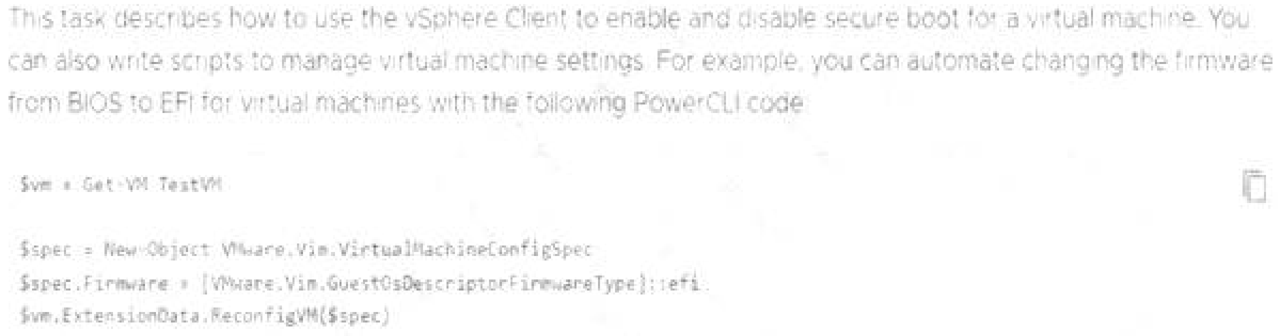
Answer: AB

NEW QUESTION 19
A systems administrator is in the process of hardening the host systems before connecting to the network. The administrator wants to add protection to the boot loader to ensure the hosts are secure before the OS fully boots.
Which of the following would provide the BEST boot loader protection?

A. TPM
B. HSM
C. PKI
D. UEFI/BIOS

Answer: D

Explanation:
Reference: https://docs.vmware.com/en/VMware-vSphere/7.0/com.vmware.vsphere.security.doc/GUID-898217D4-689D-4EB5-866C-888353FE241C.html



This task describes how to use the vSphere Client to enable and disable secure boot for a virtual machine. You can also write scripts to manage virtual machine settings. For example, you can automate changing the firmware from BIOS to EFI for virtual machines with the following PowerCLI code

```
$vm = Get-VM TestVM

$spec = New-Object VMware.Vim.VirtualMachineConfigSpec
$spec.Firmware = [VMware.Vim.GuestOsDescriptorFirmwareType]::efi
$vm.ExtensionData.ReconfigVM($spec)
```

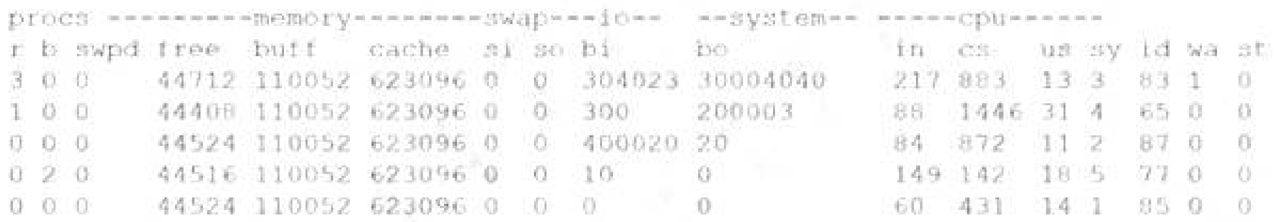
NEW QUESTION 21
An organization’s hunt team thinks a persistent threats exists and already has a foothold in the enterprise network.
Which of the following techniques would be BEST for the hunt team to use to entice the adversary to uncover malicious activity?

A. Deploy a SOAR tool.
B. Modify user password history and length requirements.
C. Apply new isolation and segmentation schemes.
D. Implement decoy files on adjacent hosts.

Answer: C

Explanation:
Reference: https://www.cynet.com/network-attacks/network-attacks-and-network-security-threats/

NEW QUESTION 23
A security analyst is concerned that a malicious piece of code was downloaded on a Linux system. After some research, the analyst determines that the suspected piece of code is performing a lot of input/ output (I/O) on the disk drive.



```
procs ---------memory---------swap---io--   --system-- -----cpu------
r b swpd free  buff   cache  si so bi     bo           in  cs   us sy id wa st
3 0 0    44712 110052 623096 0  0  304023 30004040     217 883  13 3  83 1  0
1 0 0    44408 110052 623096 0  0  300    200003       88  1446 31 4  65 0  0
0 0 0    44524 110052 623096 0  0  400020 20           84  872  11 2  87 0  0
0 2 0    44516 110052 623096 0  0  10     0            149 142  18 5  77 0  0
0 0 0    44524 110052 623096 0  0  0      0            60  431  14 1  85 0  0
```

Based on the output above, from which of the following process IDs can the analyst begin an investigation?

A. 65
B. 77
C. 83
D. 87

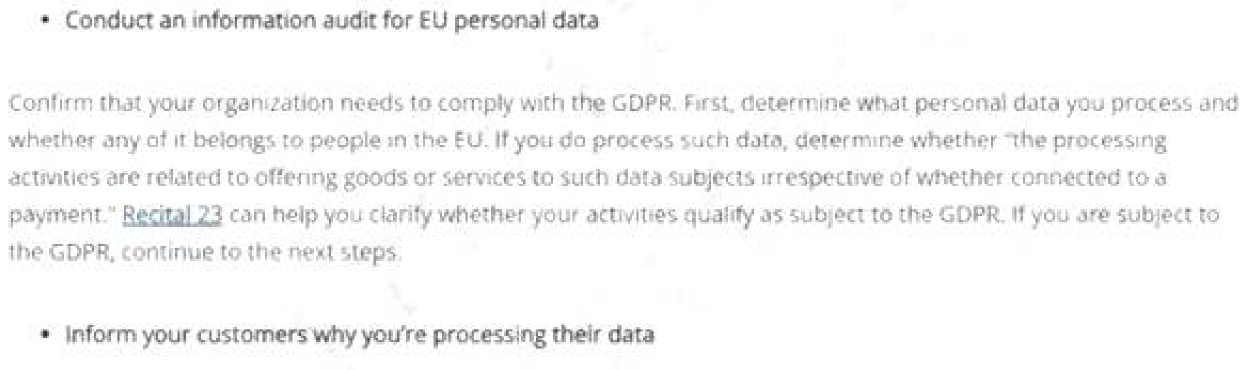
Answer: D

NEW QUESTION 26
A company is preparing to deploy a global service.
Which of the following must the company do to ensure GDPR compliance? (Choose two.)

A. Inform users regarding what data is stored.
B. Provide opt-in/out for marketing messages.
C. Provide data deletion capabilities.
D. Provide optional data encryption.
E. Grant data access to third parties.
F. Provide alternative authentication techniques.

Answer: AB

Explanation:
Reference: https://gdpr.eu/compliance-checklist-us-companies/



- Conduct an information audit for EU personal data

Confirm that your organization needs to comply with the GDPR. First, determine what personal data you process and whether any of it belongs to people in the EU. If you do process such data, determine whether "the processing activities are related to offering goods or services to such data subjects irrespective of whether connected to a payment." Recital 23 can help you clarify whether your activities qualify as subject to the GDPR. If you are subject to the GDPR, continue to the next steps.

- Inform your customers why you're processing their data

NEW QUESTION 27
While investigating a security event, an analyst finds evidence that a user opened an email attachment from an unknown source. Shortly after the user opened the attachment, a group of servers experienced a large amount of network and resource activity. Upon investigating the servers, the analyst discovers the servers were encrypted by ransomware that is demanding payment within 48 hours or all data will be destroyed. The company has no response plans for ransomware.
Which of the following is the NEXT step the analyst should take after reporting the incident to the management team?

A. Pay the ransom within 48 hours.
B. Isolate the servers to prevent the spread.
C. Notify law enforcement.
D. Request that the affected servers be restored immediately.

Answer: C

NEW QUESTION 29
An organization is designing a network architecture that must meet the following requirements: Users will only be able to access predefined services.
Each user will have a unique allow list defined for access.
The system will construct one-to-one subject/object access paths dynamically.
Which of the following architectural designs should the organization use to meet these requirements?

A. Peer-to-peer secure communications enabled by mobile applications
B. Proxied application data connections enabled by API gateways
C. Microsegmentation enabled by software-defined networking
D. VLANs enabled by network infrastructure devices

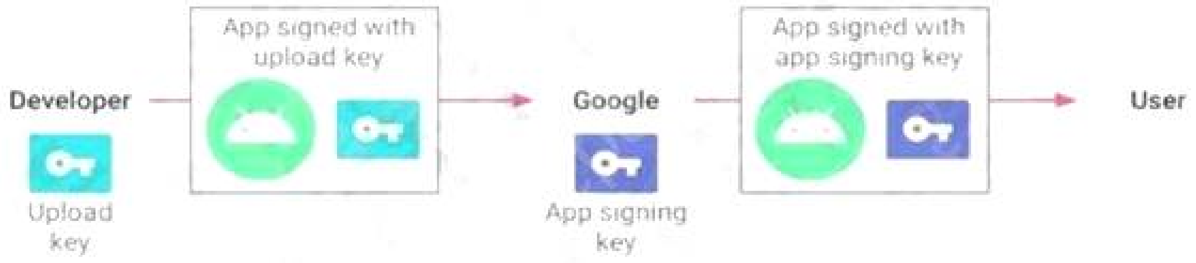
Answer: C

NEW QUESTION 30
A company publishes several APIs for customers and is required to use keys to segregate customer data sets. Which of the following would be BEST to use to store customer keys?

A. A trusted platform module
B. A hardware security module
C. A localized key store
D. A public key infrastructure

Answer: C

Explanation:
Reference: https://developer.android.com/studio/publish/app-signing



NEW QUESTION 33
A university issues badges through a homegrown identity management system to all staff and students. Each week during the summer, temporary summer school students arrive and need to be issued a badge to access minimal campus resources.
The security team received a report from an outside auditor indicating the homegrown system is not consistent with best practices in the security field and leaves the institution vulnerable.
Which of the following should the security team recommend FIRST?

A. Investigating a potential threat identified in logs related to the identity management system
B. Updating the identity management system to use discretionary access control
C. Beginning research on two-factor authentication to later introduce into the identity management system
D. Working with procurement and creating a requirements document to select a new IAM system/vendor

Answer: A

NEW QUESTION 36
A satellite communications ISP frequently experiences outages and degraded modes of operation over one of its legacy satellite links due to the use of deprecated hardware and software. Three days per week, on average, a contracted company must follow a checklist of 16 different high-latency commands that must be run in serial to restore nominal performance. The ISP wants this process to be automated.
Which of the following techniques would be BEST suited for this requirement?

A. Deploy SOAR utilities and runbooks.
B. Replace the associated hardware.
C. Provide the contractors with direct access to satellite telemetry data.
D. Reduce link latency on the affected ground and satellite segments.

Answer: A

NEW QUESTION 37
An organization recently experienced a ransomware attack. The security team leader is concerned about the attack reoccurring. However, no further security measures have been implemented.
Which of the following processes can be used to identify potential prevention recommendations?

A. Detection
B. Remediation
C. Preparation
D. Recovery

Answer: A

NEW QUESTION 41
A company created an external application for its customers. A security researcher now reports that the application has a serious LDAP injection vulnerability that could be leveraged to bypass authentication and authorization.
Which of the following actions would BEST resolve the issue? (Choose two.)

A. Conduct input sanitization.
B. Deploy a SIEM.
C. Use containers.
D. Patch the OS
E. Deploy a WAF.
F. Deploy a reverse proxy
G. Deploy an IDS.

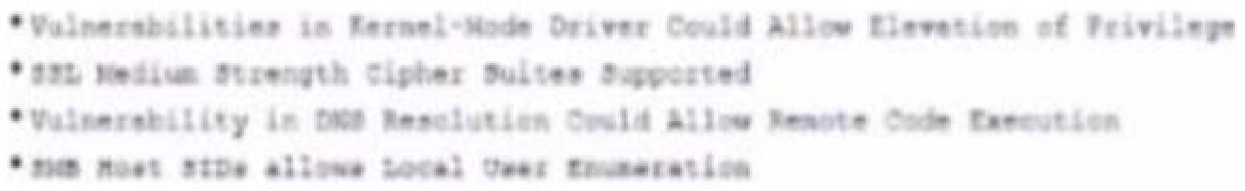
Answer: BD

NEW QUESTION 42
A security engineer needs to recommend a solution that will meet the following requirements: Identify sensitive data in the provider's network
Maintain compliance with company and regulatory guidelines
Detect and respond to insider threats, privileged user threats, and compromised accounts Enforce datacentric security, such as encryption, tokenization, and access control Which of the following solutions should the security engineer recommend to address these requirements?

A. WAF
B. CASB
C. SWG
D. DLP

Answer: A

NEW QUESTION 46
An analyst execute a vulnerability scan against an internet-facing DNS server and receives the following report:



- Vulnerabilities in Kernel-Mode Driver Could Allow Elevation of Privilege
- SSL Medium Strength Cipher Suites Supported
- Vulnerability in DNS Resolution Could Allow Remote Code Execution
- SMB Host SIDs allows Local User Enumeration

Which of the following tools should the analyst use FIRST to validate the most critical vulnerability?

A. Password cracker
B. Port scanner
C. Account enumerator
D. Exploitation framework

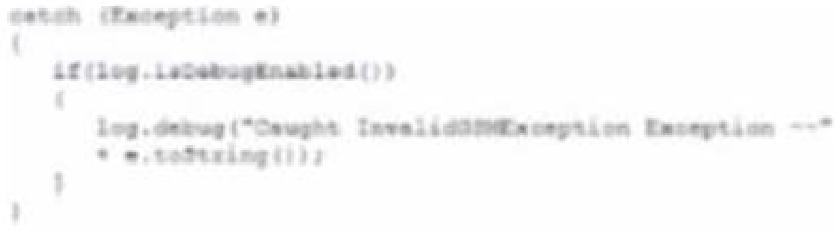
Answer: A

NEW QUESTION 47
The Chief information Officer (CIO) wants to establish a non-banding agreement with a third party that outlines the objectives of the mutual arrangement dealing with data transfers between both organizations before establishing a format partnership .
Which of the follow would MOST likely be used?

A. MOU
B. OLA
C. NDA
D. SLA

Answer: A

NEW QUESTION 52
A developer implement the following code snippet.



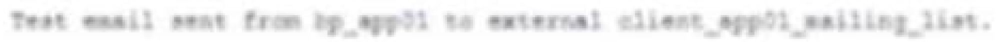
```
catch (Exception e)
{
    if(log.isDebugEnabled())
    {
        log.debug("Caught InvalidGSMException Exception --"
        + e.toString());
    }
}
```

Which of the following vulnerabilities does the code snippet resolve?

A. SQL inject
B. Buffer overflow
C. Missing session limit
D. Information leakage

Answer: D

NEW QUESTION 57
A security analyst is investigating a series of suspicious emails by employees to the security team. The email appear to come from a current business partner and do not contain images or URLs. No images or URLs were stripped from the message by the security tools the company uses instead, the emails only include the following in plain text.



```
Test email sent from bp_app01 to external client_app01_mailing_list.
```

Which of the following should the security analyst perform?

A. Contact the security department at the business partner and alert them to the email event.
B. Block the IP address for the business partner at the perimeter firewall.
C. Pull the devices of the affected employees from the network in case they are infected with a zero-day virus.
D. Configure the email gateway to automatically quarantine all messages originating from the business partner.

Answer: A

NEW QUESTION 59
Company A is establishing a contractual with Company B. The terms of the agreement are formalized in a document covering the payment terms, limitation of liability, and intellectual property rights .
Which of the following documents will MOST likely contain these elements?

A. Company A-B SLA v2.docx
B. Company A OLA v1b.docx
C. Company A MSA v3.docx
D. Company A MOU v1.docx
E. Company A-B NDA v03.docx

Answer: A

NEW QUESTION 62
The Chief information Officer (CIO) asks the system administrator to improve email security at the company based on the following requirements:
* Transaction being requested by unauthorized individuals.
* Complete discretion regarding client names, account numbers, and investment information.
* Malicious attackers using email to malware and ransomeware.
* Exfiltration of sensitive company information.
The cloud-based email solution will provide anti-malware reputation-based scanning, signature-based scanning, and sandboxing .
Which of the following is the BEST option to resolve the boar's concerns for this email migration?

A. Data loss prevention
B. Endpoint detection response
C. SSL VPN
D. Application whitelisting

Answer: A

NEW QUESTION 63
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